

**A COMPARATIVE ANALYSIS OF PLANNING AND MANAGEMENT OF CEMETERIES
IN NAIROBI**

By

NDUNG'U JOSEPH KARANJA

B. A. Land Economics (Hons.), University of Nairobi

A THESIS SUBMITTED IN PARTIAL FULLFILMENT OF THE REQUIREMENTS FOR THE
DEGREE OF MASTER OF ARTS IN PLANNING (URBAN AND REGIONAL PLANNING)

Department of Urban and Regional Planning
UNIVERSITY OF NAIROBI

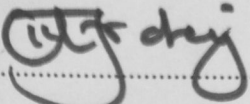
UNIVERSITY OF NAIROBI
ADD LIBRARY

July 2015



DECLARATION

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


.....
Signed

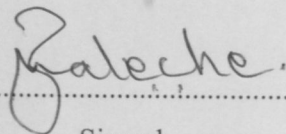
30.7.2015
.....
Date

NDUNG'U JOSEPH KARANJA

REG.: B63/64286/2010

(CANDIDATE)

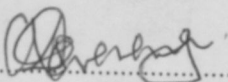
This thesis has been submitted for examination with our approval as the university supervisors.


.....
Signed

30th July, 2015.
.....
Date

ZACHARIAH MALECHE

(SUPERVISOR)


.....
Signed

30th July, 2015
.....
Date

CHARLES OSENGO

(SUPERVISOR)

DEDICATION

This thesis is dedicated to my family who have stood with me during the entire academic period.

“Whether we embrace or deny it, death remains a central fact of life. Awareness of its inevitability is a mark of our humanity, of our higher intelligence, and a reminder of the brevity and preciousness of our time on earth. Our cemeteries, if they serve no practical purpose beyond the disposal of our dead, may still remind us of this (Keith Eggener, 2010)”.

ACKNOWLEDGEMENT

During these past three years, I have been surrounded by so many extraordinary people that it would be impossible to thank each and every individual. For those not mentioned please know that you have not been forgotten and I am eternally grateful for the influence you have all had on my life and work.

I would wish to earnestly thank my Supervisors, Mr. Zachariah Maleche and Mr. Charles Osengo for their invaluable guidance in undertaking this research and supervising me until the end of my thesis. Your dedication and passion for planning discipline inspired me through the academic period. As supervisors you provided leadership, guidance, knowledge, reassurance, patience and understanding. You provided insight, direction and support without hesitation. Thank you for inspiring my work and confidence.

I would be extremely remiss were I not to mention the staff at the Nairobi War and Lang'ata Cemetery, respondents, and key informant, too numerous to mention, who lent their time and talent to provide the requisite information and documents. This project could not have been accomplished without their generosity.

I would like to convey my heartfelt thanks to my family especially my wife, Naomi Karanja, son- Ian Karanja and daughter- Joy Karanja, for their unending support during my study. I am quite certain that this project would have been substantially more difficult, if not impossible, were it not for their encouragement and support.

Finally, and most importantly, I would like to thank my work colleagues at KTDA and classmates for their support. I hope that this thesis enriches your lives in some way, and that it helps to awaken our calling to preserve with dignity the history of our departed citizens who have no voting right or voice to determine their welfare.

ABSTRACT

This research focuses on planning and management of cemeteries as a land use in Nairobi County. As a comparative analysis, Nairobi War Cemetery and Lang'ata Cemetery have been used to draw lessons on how various cemeteries in Nairobi are planned and managed. The research undertakes an in-depth analysis of planning and management issues employed in the operation of the cemeteries in Nairobi, interrogates the dynamic cultural changes within the Nairobi City, the sustainable practices and requirements of cemeteries and possible planning and management intervention. Cemetery is the place for institutionalised burial practice and although burial land is of special meaning and importance to people, both the dead and the living, cemetery planning and management has long been ignored. The cemeteries capacity may be not enough to meet the increasing demand due to the fast increase of population and urbanization, and the indiscriminate placing of cemetery sites raise many conflicts between burial land and other kinds of land use because of its particular characteristics. The lack of planned and affordable land, which is the basic component of cemeteries calls for the responsibility of urban planners managers and policy makers to address the problem before the situation slips irretrievably out of control.

A comprehensive review of burial practice is carried out in order to determine the elements involved in cemetery planning and management. Existing situation in the case study area is assessed to define the burial needs and requirements. As cemetery planning and management concerns both practical and immaterial issues, problem analysis is taken into account with a structured criteria system consist of institutional, environmental, social and cultural aspects. The study establishes that the main policy challenge is how to support and regulate the interment of dead bodies in order to promote employment, social and religious obligations for the urban growing populations, while at the same time ensuring safety, health and socially acceptable environment. The study calls for a mixture of interventions in containing the negative impacts of the social activities in the urban areas without causing social and religious distress, promoting awareness on benefits of other interment methods while guaranteeing cultural and social rights and using planning as a tool to address social and cultural challenges in urban areas.

TABLE OF CONTENTS.

DECLARATION.....	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT.....	v
TABLE OF CONTENTS.....	vi
List of Tables.....	ix
List of Charts.....	ix
List of Maps	ix
List of Figures	x
List of Plates	x
Acronyms.....	xi
CHAPTER ONE: INTRODUCTION.....	1
1.1 Background Information.....	1
1.2 Statement of the Problem.....	6
1.3 Research Purpose	9
1.4 Research Questions	10
1.5 Objectives of the Study	10
1.6 Assumptions of the Study	10
1.7 Justification	11
1.8 Scope of the Study	12
1.9 Limitations of the Study.....	13
1.10 Definition of Terms	13
CHAPTER TWO: LITERATURE REVIEW	15
2.1 Introduction.....	15
2.2 Characteristics of Cemeteries	16
2.3 Purpose and Ownership of Cemeteries	18
2.4 The Value of Cemeteries	19
2.5 The Introduction of the Cemeteries Ideas	22
2.6 An Understudied Geography of Death	24

2.7	Demographics, Burial Space and Place	26
2.8	Rationale for Cemetery Planning and Management	27
2.9	Existing Cemeteries Regulations and Examples from Practice	32
2.10	Cemetery Planning	33
2.11	Cemetery Management	53
2.12	Policy, Legal and Institutional Framework	61
2.13	Planning Interventions	66
2.14	Conceptual Framework	75
CHAPTER THREE: RESEARCH METHODOLOGY		80
3.1	Introduction	80
3.2	Research Design	80
3.3	Sampling Techniques	85
3.4	Data Needs/ Requirements	87
3.5	Methods of Data Collection	87
3.6	Observation	88
3.7	Research Instruments	88
3.8	Digital Photography	89
3.9	Data Analysis	89
3.10	Data Presentation	89
3.11	Ethical Consideration	90
3.12	Study Limitation	90
3.13	Conclusion	90
CHAPTER FOUR: BACKGROUND TO THE STUDY AREA		91
4.1	Introduction	91
4.2	Background	91
4.3	Nairobi City	92
4.4	Physical Characteristics	94
4.5	Cemeteries in Nairobi County	96
4.6	Case Study for Comparative Analysis	102
4.7	Summary of the Emerging Issues	113

CHAPTER FIVE: RESEARCH FINDINGS.....	114
5.1 Introduction.....	114
5.2 Demographic and Social-Economic Characteristics of Respondents.....	114
5.3 Cemeteries Visits.....	118
5.4 Service Provision.....	121
5.5 Public Participation.....	122
5.6 Current Planning and Management Systems.....	123
5.7 Situation Analysis at Nairobi War Cemetery.....	142
5.8 Policy & Regulatory Framework.....	152
5.9 Summary of Key Study Findings.....	153
5.10 Summary of Emerging Issues.....	155
CHAPTER SIX: PLANNING IMPLICATIONS OF THE FINDINGS.....	157
6.1 Introduction.....	157
6.2 Future Interment Options for Nairobi City.....	158
6.3 Synthesis of the Findings.....	165
6.4 Recommendations.....	168
CHAPTER SEVEN: SUMMARY AND CONCLUSION.....	175
7.1 Appraisal of the Research.....	175
7.2 Conclusions.....	179
7.3 Recommendation for Further Research.....	180
BIBLIOGRAPHY.....	181
APPENDICES.....	184

List of Tables

Table 1: Physical and Sanitary Aspects for Cemetery Site Investigation	42
Table 2: Excavatability Assessment	44
Table 3: Functional Areas of a Cemetery	45
Table 4: Road Type and Measurements in Cemeteries	46
Table 5: Cemetery Management Guidelines	54
Table 7: Summary of Objectives, Data Collected and Collection Methods Matrix	83
Table 8: Lang'ata Cemetery Sampling	86
Table 9: Nairobi War Cemetery Sampling	86
Table 10: Administrative Regions in Nairobi	92
Table 11: Population Densities	95
Table 12: Breakdown of Numbers of War Dead by Forces	100
Table 13: Characteristics of Cemeteries	120
Table 14: Service Delivery within Cemeteries	121
Table 15: Annual Interment Rates.....	124
Table 16: Annual Cemetery Revenue	128
Table 17: Year 2014 Annual Revenue.....	129

List of Charts

Chart 1: Nairobi Population Growth Trends	95
Chart 2: Household Sex and Age Composition	115
Chart 3: Respondents Main Source of Income	115
Chart 4: Respondents Income Levels	116
Chart 5: Respondents Year of Relocation to Nairobi	117
Chart 6: Respondents Visits to Cemetery	118
Chart 7: Respondents Purpose of Visit to Cemetery	119
Chart 8: Frequency of Visits to the Grave after the Burial	122
Chart 9: Burial Trends at the Permanent Section.....	125
Chart 10: Burial Trends at the Temporary Section	125
Chart 11: Burial Trends at the Muslim Section & Cremation.....	126
Chart 12: Year 2014 Bodies Disposal Analysis	126
Chart 13: Year 2013 Bodies Disposal Analysis	127
Chart 14: Year 2012 Bodies Disposal Analysis	127
Chart 15: Annual Burials at the Muslim Section	135
Chart 16: Annual Burials at Temporary Grave	138

List of Maps

Map 1: Administrative Map of Nairobi City.....	93
Map 2: Distribution of Cemeteries in Nairobi City	97
Map 3: Location Map for Lang'ata and Nairobi War Cemetery	103
Map 4: Survey Plan for Lang'ata Public Cemetery.....	107
Map 5: Sketch Plan for Lang'ata Public Cemetery	108
Map 6: Survey Plan for Nairobi War Cemetery.....	111
Map 7: Physical Plan for Nairobi War Cemetery	112

List of Figures

Figure 1: Conceptual Framework Summary.....	79
Figure 2: Research Process Flow Chart.....	82
Figure 3: A Sketch of Cross Section of the Grave.....	129
Figure 4: A Sketch of a Cross Section of the New Permanent Grave.....	132
Figure 5: A Sketch of a Cross Section of the New Temporary Grave.....	137
Figure 6: A Sketch of a Grave Topology.....	144

List of Plates

Plate 1: Showing Neglected Graves.....	128
Plate 2: Showing Driveway and Reserved Graves.....	131
Plate 3: Showing New Graves on the Driveway.....	131
Plate 4: Showing the Space between Graves along the Width.....	132
Plate 5: Showing the Space between Graves along the Length.....	133
Plate 6: Showing the New Space between Graves along the Width.....	134
Plate 7: Showing the new Space between Graves along the Length.....	134
Plate 8: Showing the Muslim Burial Site and Crematorium.....	136
Plate 9: Showing the General Public Temporary Site.....	138
Plate 10: Showing a 2 feet Deep Grave at Temporary Site.....	139
Plate 11: Showing Bodies Disposal Site at Temporary Section.....	139
Plate 12: Showing Office Premises/Storage.....	140
Plate 13: Showing Large Swaths of Temporary Section without Trees.....	141
Plate 14: Showing the East Africa Memorial.....	143
Plate 15: Showing Arrangement of Headstones.....	145
Plate 16: Showing Central Monument.....	146
Plate 17: Showing Office Buildings.....	146
Plate 18: Showing Staff Quarters.....	147
Plate 19: Showing Storage Building.....	147
Plate 20: Showing Trees within the Cemetery.....	148
Plate 21: Showing Grass Lawns between Graves.....	149
Plate 22: Showing GWGC Staff Planting Tree.....	149
Plate 23: Showing Equipment for Garden Maintenance.....	150
Plate 24: Showing Driveway from Ngong' Road.....	150

Acronyms

CBOs-	Community Based Organizations
CCN/NCC-	City County of Nairobi
CSOs-	Civil Society Organizations
CWGC-	Commonwealth War Grave Commission
GIS-	Geographic Information Systems
GOK-	Government of Kenya
HIV/AIDS-	Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome
KARA-	Kenya Alliance of Resident Association
KNBS-	Kenya National Bureau of Statistics
KPHC-	Kenya Population and Housing Census
KNCHR-	Kenya National Commission on Human Right
LPAC -	Local Planning Advisory Committee,
MDGs-	Millennium Development Goals
MOH-	Ministry of Health
NGOs-	Non- Governmental Organizations
NEMA-	National Environmental and Management Authority
UN-	United Nations
UNDP-	United Nations Development Programme
USAID-	United States Agency for International Development
UN Habitat-	United Nations Human Settlement
WHO-	World Health Organization

CHAPTER ONE

INTRODUCTION.

1.1 Background Information

A cemetery is defined as a burial ground, especially a large landscaped park or ground laid out expressly for the deposition or interment of the dead, not being a churchyard attached to a place of worship (Curl, 1999 in Rugg, 2000). Kolbuszewski, 1995, views the cemetery as a text of culture, proposing the view that not every place of burial is a cemetery. He describes a cemetery as a certain sector of space delimited by certain a priori formulated resolutions, according to which it is there that funeral practices consistent with religious, ethnic, cultural (that is customary) and other easily defined needs of a given community, will be carried out (Kolbuszewski, 1995: 17 in Rugg, 2000).

In the global setup, cemeteries have multifarious social- and personal-level functions. Besides disposing of bodies, communities commemorate the dead with the displaying and construction of identity that this entails. Yet another social function is to express basic cultural beliefs and religious concerning death and the meaning of life. Throughout history burial grounds have also been places where people meet for different sorts of social gatherings. The individual function primarily concerns commemoration. For the bereaved, the cemetery is a place where the relationship between the dead and the bereaved is established and maintained. Consolation is taken from visits to the grave, and from planting around and decorating the plot. Cemeteries are sites where family and communal loyalties are linked and reaffirmed, (Etlin, 1984).

In the United States for instance, there are often different cemeteries for different ethnic and religious groups and different social classes. Even when this is not the case, different sections of a cemetery can be designated to different categories of people. The most salient predecessor to the modern Western cemetery is the Roman cemetery, where each body was given an identifiable home in a separate grave. Excavations from fourth-century British cemeteries reveal extensive urban burial grounds, often on new sites outside the borders of town. The separation of the living from the dead, with the town boundary as the dividing line, was absolute. With the weakening of the Roman Empire, the organization of society in rural villages, and the Christian cult of martyrs,

this practice gradually changed. When funerary chapels, baptisteries, and churches were constructed over the remains of martyrs, death moved into the center of the lives of the living (Etlin, 1984).

In the African and Kenyan setup cemeteries provide a physical platform where the dead and the living can interact. This interaction is deemed very essential, especially because it is believed that the dead retain a functional role in the world of the living, specifically in the life of their living kinsmen; indeed, African kin-groups are often described as communities of both the living and the dead. The relation of the ancestors to their living kinsmen has been described as ambivalent, as both punitive and benevolent and sometimes even as unpredictable. In general, ancestral benevolence is assured through propitiation and sacrifice; neglect is believed to bring about punishment, (Mbinda, 2006).

In most of the rural settings of Kenya, this relationship is kept close by ensuring that the departed loved ones are buried within homesteads or at least somewhere nearby. However, in the urban setup, this does not happen because of the fact that many people of diverse cultural backgrounds all live together, and more often than not, the major priority for land is economic activities rather than for burial sites. This has therefore necessitated the seclusion of specific areas in the urban areas where everyone can have their dead people buried, and thereafter, people visit the graves to maintain the valued relationship between the living and the dead.

Planning and management of cemeteries varies across societies. They are generally not governed by laws that apply to real property or corporations due to their inherently different nature. Most states have established laws that specifically apply to cemeteries. In South Australia for instance, cemeteries are governed by a range of legislation like The Local Government Act, 1934, which among other things, allows for community land management plans to be developed which is an appropriate form of management for historic cemeteries. There are also a number of Australian Standards and Conservation Charters which apply to the management of cemeteries and some of these include Burra Charter which provides standards and processes relevant to the conservation of the cultural values of historic places; the Natural Heritage Charter which provides processes and standards for managing native vegetation and the natural environment; and the Australian Standard

4204-1994 Headstones and Cemetery Monuments which sets out the requirements for new grave plots and monumentation (McDougall, 2005).

A clear cultural, religious, humanitarian, social, economic and environmental value governs the attitude of planning and management of cemeteries, (London Planning Advisory Council, 1997). Planning and management of cemeteries should address the following strategic response; choice for burial space, cost of disposing the dead by whatever means, proximity to places of memorials, open space for green chains and natural habitats, historic features and biodiversity.

Further, cemeteries planning and management must address the concept of sustainability by ensuring that burial grounds are sustainable across all aspects of well-being, (Auckland Council, 2013). The concept of sustainability in cemeteries planning and management entail; social sustainability which is the ability of a social system to function at a high level of well-being and harmony, cultural sustainability which will include social equity and the protection of cultural values, environmental sustainability through providing large swaths of green space, and economic sustainability through contribution to the local economy and improving local skills base.

In Kenya, cemeteries are one of the land uses that are provided for in the planning of cities and towns. Ideally, they should be planned and managed by the county governments. Essentially, Kenya has no legislation that purely stipulates guidelines for planning and management of cemeteries. Rather, cemeteries are included among other public spaces such as recreational parks. However, few legislation such as the Physical Planning Act (1996) and Public Health Act (Cap 242) mention cemeteries and highlight a few ways to maintain them, just like any other type of public space. In Nairobi particularly, planning for cemeteries is done by the Department of City Planning while their management is done by the Department of Social Services, Nairobi City County Government.

A variety of cemeteries are in operation in Nairobi which comprises; public, special and private cemeteries. In the public cemeteries, any member of the public can be buried in accordance with their religious norms upon completion of the required logistics of death registration and fee payment to the County Government. The planning for these public cemeteries is done by the Department of City Planning while their management is done by the Department of Social

Services, Nairobi City County Government. The public cemeteries includes; Lang'ata Cemetery, Sunni Muslim Cemetery which is part of Lang'ata Cemetery, Waithaka Cemetery in Dagorreti area, Kariokor Muslim Cemetery, Kibera Muslim Community Cemetery for the Nubian community, and the City Park Cemetery. There are not clear guidelines or policy for the planning and management of the public cemeteries. Lang'ata Cemetery is the largest public cemetery in Nairobi accommodating all religious briefs notably Christians, Muslims and Hindus.

In the special cemeteries, a specific special group of people are buried with no new burial taking place. The special cemeteries are managed under the Commonwealth War Grave Commission, (CWGC), and they include; Nairobi War Cemetery situated along Ngong' Road, Nairobi South Cemetery situated along Uhuru Highway, Nairobi City Park Cemetery situated along Forest Road, Kariokor World War (II) Cemetery along Kinyanjui Street. The planning and management of CWGC cemeteries all over the world are guided by Sir Frederic Kenyon (1863-1952), a British paleographer, biblical and classical scholar, vision for the Commission cemeteries in February 1918; *"the general appearance of a British cemetery will be that of an enclosure with plots of grass or flowers (or both) separated by paths of varying size, and set with orderly rows of headstones, uniform in height and width. Shrubs and trees will be arranged in various places, sometimes as clumps at the junctions of ways, sometimes as avenues along the sides of the principal paths, sometimes around the borders of the cemetery. The graves will, wherever possible, face towards the east, and at the eastern end of the cemetery will be a great altar stone, raised upon broad steps, and bearing some brief and appropriate phrase or text. Either over the stone, or elsewhere in the cemetery, will be a small building, where visitors may gather for shelter or for worship, and where the register of the graves will be kept. And at some prominent spot will raise the Cross, as the symbol of the Christian faith and of the self-sacrifice of the men who now lie beneath its shadow."*

The CWGC honours the 1,700,000 men and women of the forces of the Commonwealth who died in the two world wars and ensures that their memory is never forgotten. CWGC take cares for cemeteries and memorials at 23,000 locations in 153 countries. Six member governments, Australia, Canada, India, New Zealand, South Africa and the United Kingdom make up the CWGC. The cost of the Commission's work is met by the member governments in proportion to the number of their war graves. The Secretary of State for Defence in the United Kingdom is the

chairman of the Commission. Each of the other member governments appoints its High Commissioner in London to be its Commission representative. Nairobi War Cemetery is the largest amongst the CWGC cemeteries in Nairobi.

On the other hand private cemeteries also referred to as community cemeteries are designated for members of a specific community or religion. They include the Aga Khan Shia Imami Khoja Ismaili Cemetery in Kariokor, Nairobi St. Austin's Mission Cemetery for catholic priests and School Cemetery in Groganville Estate along Mahiga Mairu Avenue, Nairobi. Planning and management of these cemeteries is carried out by the specific institution or community with designated offices responsible for the planning, management and funding for the various projects. These types of cemeteries are smaller in size as they cater for smaller groups of people and therefore their operations are not as complex as the public and special cemeteries.

In addition, some cemetery's land in Nairobi has been converted into other land uses. These former cemeteries land include the up-market Funguo residential estate along Mbagathi Way and Jua Kali vehicle mechanic site in Kariokor area along Quarry Road.

It must be noted that the different types of cemeteries in Nairobi manifest different features of planning and management. There are overall guiding principles or criteria for determining whether or not a cemetery is well planned and managed. McDougall and Vines, 2005, developed parameters to determine if cemeteries are properly planned and managed. It is thus inevitable in this study that these criteria are examined in this study especially because they are a platform upon which cemeteries to be studied are selected for comparison purposes.

These parameters includes; planning and management policy guideline, development and maintenance of infrastructures within the cemeteries, staff and safety policies, provision of public utilities, maintenance of heritage value and character, landscaping and environmental management, stakeholders and public participation, funding and budgeting process.

Public and special cemeteries provide a complex planning and management process by various government institutions. In Nairobi, the two types of cemeteries portray contrasting features of planning and management if examined using the above parameters. Hence, a fresh attention and

enquiry into the issues of planning and management of the cemeteries in Nairobi is found necessary. Lang'ata Cemetery and Nairobi War Cemetery situated along Ngong' Road are the largest cemeteries in Nairobi in the two categories and they have been chosen for this study.

1.2 Statement of the Problem

Policy maker often think of cities in terms of buildings, roads and the revenue generated. Instead, it is the intangible qualities that arguably shape our understanding of urban environments. Historical events, people's memories, and a city's aura shape the urban experience because they create a sense of place rather than space. Cemeteries are often overlooked in the monotonous sprawl of cities. The cemetery's role as a repository of the history and memories of the local communities is fading and therefore the need to preserve people's final resting place.

As pointed out earlier, cemeteries are an integral part of the urban space. Like for any other public space, effective planning and management of the facilities are a necessity. Until this is done, avoiding incompatibility of land uses and chaos in the urban space is inevitable. Furthermore, socio-cultural issues which revolve around matters of the living and the dead, religion and related beliefs automatically become disharmonized if planning and management of cemeteries is ignored.

Particular cemeteries in Nairobi manifest different kinds of challenges. Lang'ata Cemetery is one such kind. One major challenge is lack of clear policy guidelines and legislation that govern planning, provision and management of the cemeteries. As earlier mentioned, the few legislative documents that mention anything about the cemetery just do so in passing, either in a sentence or a paragraph where other public spaces are talked about collectively.

Secondly, little or no funds at all are assigned within the city's annual budgets for provision and maintenance of cemeteries. Generally speaking, it can be said that cemeteries have not be given the proper attention as one of the crucial land uses within the urban space. As such, they are handled with a reactive rather than the proactive approach required, whereby little or no planning is done before hand. This result to cemeteries with inadequate facilities that are otherwise very essential yet they contribute revenue generation of the county.

Thirdly, there is higher demand than supply of the burial spaces within the cemetery. The planning and management authority in charge has evidently not kept with the pace of urban death rates. According to 2009 Census, the urbanization rate in Nairobi is at 3.3% (G.o.K, 2009), and is expected to increase. Comparatively, the death rate is tipped to rise due to high rate of urbanization, life expectancy and disease prevalence. Similarly, the percentage of the dead being buried within the cemeteries in Nairobi has also increased due to high rate of urbanization and population growth. However, provision of burial space has not been kept up with the rate of demand. As such, cemeteries like Lang'ata exhibit unpleasant phenomena like exposure of human remains hence unhealthy and unsightly environment.

Furthermore, development and maintenances of infrastructures and public facilities are neglected. Key infrastructures such as perimeter fences, water points, internal roads, electric supply and lighting, toilets, parking facilities, chapels, shelters and seats are hardly available within the confines of the cemetery. These are essential facilities for a cemetery to function. The few roads that are provided are not only ill maintained but are also inadequate hence difficulty in circulation within the facility.

On environmental sustainability, cemeteries ought to provide large swathes of green space that provide lungs for the city by regeneration of native vegetation within the old. The management of cemeteries are supposed to continue examining burial techniques that consider methods whereby less green space is consumed to accommodate demand. However, in Lang'ata Cemetery, some sections have cemented graves and others metal structures have been developed to prevent grave robbers and this prevent the cemetery from playing its role in open spaces provision particularly as green chains and natural habitats. Further, the scenery is a stark reminder of sorrow that is not good for the bereaved and other urban dwellers.

Nairobi residents comprise of different sects, cultural and religious beliefs. Further, it is a person's basic right to choose how their dead are disposed. Therefore, planning and management of cemeteries should address the resident's beliefs and rights. However, lack of clear guidelines and legislation to direct planning and management of cemeteries has lead to shortage of burial places, human bodies being dug up by animals, unsightly environments and lack of social aspect in celebrating anniversaries for the departed kinsmen. In 2008, the then Nairobi City Council

declared the cemetery to be full and resulted to acquire another parcel as a burial land. Reports of human body parts being dug up by dogs and deposited all over the cemetery are common as the graves are only dug to less than four feet deep than the required six feet to avoid exhuming bodies laid earlier in the same space.

Lang'ata cemetery is divided between a "permanent" and "temporary" section. Plots in the permanent section range from about Kshs. 12,500 for a baby to Kshs. 25,500 for an adult and can be "cemented in" to thwart grave robbers. But this amount is also too high for many people to afford. So a large number of Nairobi's poor choose to bury their family members in the temporary section, which can cost up to Kshs. 7,000 where bodies are exhumed by wild animals and graves are flattened after every five years or less to make room for new burials. The plot size of a full size grave, as allocated in the public cemeteries is 8 ft by 4 ft and 6ft depth. No records are kept in the temporary section and families are not allowed to visit after the burial. This works against the memorial meetings and cultural values that may require a visit to the graveyard.

Conversely, other cemeteries such as special and private cemeteries manifest a different scenario. They have controlled numbers of dead bodies coming in and so the capacity of the cemetery is never exceeded. Secondly, the activity spaces are situated in a functionally coordinated manner. The graveyards are properly demarcated with adequate circulation area. Satisfactory level of beauty is evident and the management personnel are adequate too. Nairobi War Cemetery is an example of such cemeteries and is one of the 23,000 burial sites in 153 countries, where the Commonwealth of Nations military service members who died in the two World Wars have been buried and all of which are under the management of the Commonwealth War Graves Commission (CWGC). CWGC is an intergovernmental organization of six independent member states whose principal function is to mark record and maintain the graves, and places of commemoration, of Commonwealth of Nations military service members who died in the two World Wars. Apart from a few exceptions, due to local geological conditions, the cemeteries follow the same uniform layout and aesthetic all over the world. This makes the cemeteries easily recognizable and distinguishes them from war graves administered by other groups or countries.

The Nairobi War Cemetery, like all the others in the different countries, is surrounded by a low wall or hedge and with a wrought-iron gate entrance. It has a register with an inventory of the

burials, a plan of the plots and rows, and a basic history of the cemetery. The register is located within a metal cupboard that is marked with a cross located in either the wall near the cemetery entrance or in a shelter within the cemetery. The cemetery ground is grass covered with a floral border around the headstones. There is also an absence of any paving between the headstone rows which is intended to make the cemetery appear like a traditional walled garden where visitors could experience a sense of peace.

Comparatively therefore, Lang'ata Cemetery is the opposite of the Nairobi War Cemetery. Unlike the Lang'ata Cemetery, the latter gives a better example of a relatively well planned and managed cemetery from which lessons can be drawn for the purposes of maintaining a public cemetery. It is therefore worthy that a comparison of the two cemeteries be explored in this study.

Furthermore, the wellbeing of a cemetery is proved to be a plus to the surrounding built and natural environments as well as people's health and the economy at large. There is also a functional relationship between that area which is used for burial in a city and the other activity spaces of that very city. According to geographer Edward Relph, 1976, place does not come from its location, the community that occupies it, or the superficial experiences which takes place in it, but rather the essence of place is its role as the center of human existence. Unlocking the qualities of place is vital, because when people feel connected to a place, emotionally, culturally, and spiritually, they are more apt to care for it. As such, planning and management of the burial place in the context of other activity spaces is found to be essential and so it is an aspect that is intended for deeper exploration in this study.

1.3 Research Purpose

The purpose of this study is intended to examine the functional relationships between a cemetery and other activity areas of the existing situations in both Lang'ata and Nairobi War Cemeteries with a purpose of establishing their existing conditions regarding their planning and management and comparative experience problems. The intention is to derive appropriate guideline and requirements for efficient planning and management of cemeteries in urban areas.

1.4 Research Questions

- a) What are the planning and management issues surrounding the operations of cemeteries in Nairobi?
- b) What are the comparative lessons learned in the dynamic cultural changes within the city?
- c) What are the sustainable planning and management practices and requirements for cemeteries?
- d) What are the policy and planning interventions that can be sought to address the planning and management of cemeteries in Nairobi City?

1.5 Objectives of the Study

The study objectives are:

- a) To undertake an in-depth analysis of planning and management issues employed in the operations of the cemeteries in Nairobi.
- b) To identify comparative lessons learned within the dynamic cultural changes within Nairobi City
- c) To establish sustainable planning and management practices and requirements for cemeteries
- d) To propose policy and planning interventions that can be sought to address the planning and management of cemeteries in Nairobi.

1.6 Assumptions of the Study

Effective planning and management of cemeteries is significantly determined or influenced by the type of institution responsible for the provision and management of cemeteries and its resource capacities. Further the demand for burial sites in Nairobi will increase relatively to the increasing growth and expansion of the city in population, urbanization and social cultural changes.

1.7 Justification

The study of planning and management of cemeteries is justified on various grounds. First, the field of cemetery planning and management is under-researched with scarce literature on public cemeteries in Kenya but it is potentially revelatory landscape for intrepid researcher. The available literature is predominantly historical in focus. This research will contribute to the work of scholars such as Lily Kong (1999) and Scott Howard (2003) to further expand the presently limited, geographical and planning literature on the cemetery planning and management. Culturally and historically influenced scholars such as John R. Stilgoe (1983) and William Lloyd Warner (1959) have concentrated their research on the evolution of burial practices, places and customs, up to, but seldom including, the present-day situations.

Although they have often been considered static landscapes, despite numerous periods of physical transformation, they remain dynamic and exist as a shifting and functioning institution of modern society. The past two decades in particular have involved substantial change within the cemetery landscape. However, as Julie Rugg, of the Cemetery Research Group argues, these changes, especially as they relate to the present cemetery landscape, remain largely unstudied with research on the contemporary burial landscape extremely limited. The current research will help bridge this gap between past and present studies of the commemorative landscape by providing an in-depth present-day focused analysis of cemetery in Nairobi.

Secondly, cemeteries are a crucial part of the landscape within the city and like any other land use; they demand space from time to time. Land on the other hand is a resource that is fixed in production and whose use must thus be adequately planned. In this context, it is thus very necessary that like any other land use, burial places must be well planned and managed hence the relevance of this study. There is also need to enquire into the adequacy of the policy guidelines along which cemeteries are operated so that in case of any identifiable flaws, improvements can be made.

In Nairobi particularly, planning and management of public cemeteries is still inadequate. This has led to inadequate burial spaces and non-appealing sites in the existing public cemetery, discouraging physical and economic developments in the neighbourhood. Nairobi being the capital

city of the country, it is expected to lead in all fronts, including image. Anything contrary to this must thus be countered. Hence it is essential that this study is conducted so that an in-depth evaluation of planning, policy and management issues surrounding the operation of cemeteries can be articulated for correction purposes.

The purpose of this study is thus to examine the functional relationships between a cemetery and other activity areas, evaluate the inadequacies that crop in due to improper planning and management of the cemeteries and as such propose planning and policy interventions that can help improve the situation.

In particular, the study is intended to investigate the factors that have enabled the better planning, management and maintenance of some cemetery in a bid to draw lessons that can be applied in the improvement others. Some of the aspects to be examined include existence and the appropriateness of the plans and designs of the two cemeteries; the legal and policy frameworks of operation of the cemeteries; the institutional structures and capacities for the planning and management of the two cemeteries; and the interaction between each of the cemeteries and the surrounding land uses among others.

It is expected that by the end of this study, the knowledge gap on the planning and management issues regarding cemeteries shall have been filled and the factors that influence proper operations of a cemeteries in the context of other land uses will be unearthed in this study. Finally, it is envisioned that, in cases of identifiable flaws, adequate policy and planning solutions will be established, for the purposes of improvement of public cemeteries.

1.8 Scope of the Study

The scope will involve review of the current planning and management systems and the constraints facing the institutions in the management of cemeteries. Information that has to be sought include historical background of the cemeteries under study, the planning and management actors considered in the establishment of each of them, the policy guidelines in existence for the operation of each of the cemetery, the institutional framework for planning and management of each of the cemeteries and the shortcomings and strong points evident in each of them.

Being a comparative study, the study is expected to draw useful lessons from the different cases and eventually establish the best practices possible for planning and management of cemeteries. The researcher will use Lang'ata Public Cemetery and Nairobi War cemetery as case studies and will identify the various actors responsible in the planning and management of the public cemetery who include; Nairobi City County Government, National Environmental and Management Authority (NEMA), and Ministry of Health. Other actors will include; Kenya Alliance of Resident Association (KARA), Kenya National Commission on Human Right (KNCHR) and neighbourhood and the Commonwealth War Grave Commission representatives in Nairobi. The study will be conducted by interviewing sampled residents in the neighbouring estate in Lang'ata area, institution officials and literature review.

The thesis chapters will be organized as follows: Chapter I: Introduction providing the background information of the study, problem statement, research questions and objectives; Chapter II which will provide the literature review for the research study; Chapter III will detail the research methodology; Chapter IV will detail the background information to the study area; Chapter V will entail the research findings; Chapter VI will provide planning implications of the findings and Chapter VII document the summary and conclusions of the research study.

1.9 Limitations of the Study

The study was undertaken within the limitations of resources and time.

1.10 Definition of Terms

- a) Cemetery: The term cemetery comes from the Greek word koimeterion, meaning sleeping chamber or burial place, and refers to a place of interment for the dead (Merriam-Webster 1999). Though some say that the word cemetery refers to modern burial grounds and the word graveyard refers to more historic, less commercial burial grounds, the two shall be used herein interchangeably.
- b) Grave: The term grave refers to a specific place in a cemetery where a body is buried. The terms grave and plot are used herein interchangeably. Though a grave generally is reserved for one

individual, it is not altogether uncommon for two or more individuals to be buried together; this generally occurs only in the case of twins, though there are exceptions.

- c) **Public cemetery:** A public cemetery is one used by the general community, a neighborhood, or a church while a private cemetery is one used only by a family or a small portion of the community. However, public use rather than ownership determines whether a cemetery is public. In *Garland v. Clark*, 264 Ala. 402, 405-406 (Ala. 1956), court held that for a place to be called a public cemetery, "The intention of the owner of the land to dedicate it for a public cemetery, together with the acceptance and use of the same by the public, or the consent and acquiescence of the owner in the long-continued use of his lands for such purpose, are sufficient."
- d) **Headstone:** The term headstone refers to a stone marker placed at the head of a grave. The terms headstone, marker, monument, and gravestone are used herein interchangeably. The term footstone refers to an additional stone marker that is often found at the end of a grave opposite from where the headstone is located. Though it is not always the case, the footstone is generally smaller than the headstone.

CHAPTER TWO

LITERATURE REVIEW.

2.1 Introduction

J. S. Curl is one of the few writers to have ventured into the task of defining different types of burial space. He defines a cemetery as a burial ground, especially a large landscaped park or ground laid out expressly for the deposition or interment of the dead, not being a churchyard attached to a place of worship (Curl, 1999). Kolbuszewski takes a broader approach in his discussion of the cemetery as a text of culture, proposing the view that not every place of burial is a cemetery.

He noted that one consequence of ethnic cleansing' in the former Yugoslavia was the creation of a number of mass graves. These graves were simply a place of disposal, where corpses could 'disappear'. He contrasts these burial sites with the cemetery, which he describes as: a certain sector of space delimited by certain a priori formulated resolutions, according to which it is there that funeral practices consistent with religious, ethnic, cultural (that is customary) and other easily defined needs of a given community, will be carried out (Kolbuszewski, 1995: 17). Thus for Kolbuszewski, the cemetery carries two necessary interconnected requirements: a priori formulated resolutions, and the ability of the space to facilitate burial carried out in an appropriately ritualized way (1995: 18). Thus the cemetery becomes more than an ad hoc site in which the disposal of human remains has taken place: its purpose as a site of burial has been formally defined. Furthermore, the site has been so constituted that ritual customary religious, ethnic and cultural funeral practices can be readily accommodated.

Both Curl and Kolbuszewski's analyses are useful but it is clear that the task of definition can be extended to include other, critical, factors and other types of burial space. For example, Curl notes just one feature that makes cemeteries different from churchyards, but there are many others: churchyards are often small tracts of burial land owned by and located close to the Church and used over centuries, while cemeteries often larger in scale and predominantly owned by secular authorities have been in common use only since the 19th century.

Distinctions can also be made between ordinary civic cemeteries and war cemeteries: although both are generally owned by secular authorities and can be similar in scale, war cemeteries are evidently reserved for those who died as a consequence of conflict, which also sets their chronological pattern of establishment and their role in fixing new expressions of national identity. Thus, ownership and purpose become further factors in the task of defining more exactly the nature both of cemeteries and of other locales for burial.

For Meyer, another feature has more importance: cemeteries contain grave markers that describe characteristics of a deceased person's life and dates of birth and death (Meyer, 1997). Thus the site carries the purpose of enshrining the identity of the deceased as an individual. Additional features can also usefully be brought into consideration, which can be ranged under two broad headings: other physical features of the site, such as boundary and internal layout; and the site's 'sacredness', which may be defined in religious terms but can also include an assessment of pilgrimage to the site, its permanence, and its ability to act as a context for grief.

2.2 Characteristics of Cemeteries

Cemeteries have a number of distinctive characteristics, the first of which is particular physical features. The most marked of these is location. Cemeteries are generally located close to but not necessarily within settlements. When cemeteries were first introduced in number in the second half of the 18th and first half of the 19th century, many were laid out perhaps half a mile away from the more populous areas of town. This trend reflected a conscious attempt to relocate the corpse which by the 18th century was increasingly deemed to be a danger to public health from inner-city churchyards to a site at the edge of town. This location also meant that cemeteries could be substantial in size far larger than the overcrowded churchyards. Many cemeteries were in excess of 10-15 acres, and were able to expand as required.

As well as location, cemeteries have a number of other obvious physical properties. The most immediate of these is an established perimeter. In some instances, the boundary is marked by a hedge or other planting. Commonly, a more substantial structure is used: either a high wall or railings, or a combination of the two. The boundary structure is by no means an incidental feature of the site. Another important feature of cemeteries is that they offer the possibility of, and a

context for, memorializing a particular individual: the identity of the deceased can be enshrined in the site's internal order. Implicit in the landscaping of a cemetery is the ability of users to locate a specific grave. Thus, internally, the site will be divided by roads and paths: each grave will have an established 'address', registered as such in the site's documentation and so giving each family a sense of ownership of and control over a particular plot. Early cemeteries actually offered burial rights 'in perpetuity', granting families rights over burial plots from which the remains would never be removed.

A further distinguishing feature of different kinds of burial sites is the extent to which they are regarded as 'sacred'. 'Sacredness' is a concept that is in itself slippery (Hubert, 1994). Dictionary definitions give the word a range of meanings, from the 'holy' and 'consecrated', implying a spiritual element, through to 'protected from irreligious action' and the almost secular in tone 'worthy of or regarded with reverence, awe or respect' (Makins, 1991). The sacred nature of cemetery space is a subject worthy of more detailed discussion than can be presented here.

Perhaps as a precursor to extended debate, it is contended that, although some cemeteries are opened after rituals that consecrate all or part of the site, cemeteries are for the most part considered sacred only in so far as the site is 'regarded with respect'. Much of this respect rests largely on the fact that the site acts as a context for grief, and it is the bereaved that need to be protected from inappropriate activity. Thus, behaviour in cemeteries can be subject to a number of regulations, banning for example ball games or loud music (Strange, 2000). There are two further, closely associated, elements that combine as a measure of the sacred nature of burial sites: pilgrimage and permanence. 'Pilgrimage' is a term that can be used to describe visits to a burial site for the purpose of tending or viewing a particular grave. Three intertwined reasons can be ascribed to grave visits: the private and personal (Francis et al., 2000); the overtly or inadvertently political (Hartman, 1986); and the recreational (Rojek, 1993). In the case of the cemetery, going to the site is for the most part a private and personal activity.

The majority of visitors have friends or family buried at the site, and the essential interest in the site is largely restricted to a particular town. The 19th century cemetery is often embedded in local historical narrative, partly because of its use over generations, partly because it tended to flourish in periods of rapid urban growth, and partly because it often achieved a near monopoly with

respect to accommodating the dead of a particular location. The high incidence of visits over a protracted period of time means that the site becomes sacred and is afforded some degree of permanence.

2.3 Purpose and Ownership of Cemeteries

In addition to certain physical features, cemeteries can also be distinguished by their purpose and ownership. The principal function of the cemetery as with many other burial sites is the interment of the dead. However, as with other sites, the population represented by the dead is an important consideration. Generally cemeteries serve a complete community, with the catchments area being an entire district or town. Aries notes that one aim of early French Revolutionary cemeteries was to represent a microcosm of society, reproducing the community as a whole: all are brought together in the same enclosure, but each has his own place (Aries, 1983: 503; McManners, 1981). The cemetery's completeness in this regard has remained a distinguishing feature. That is not to say that the site does not contain internal demarcation. Echoing societal divisions, areas within the site may be set aside for the exclusive use of religious groups or minority ethnic communities. The allocation of space within the site may take place when the cemetery is established, or develop over time.

The purpose of cemeteries can extend beyond the community's need for burial space. The reasons attached to cemetery foundation change over time, and can include concerns over public health (Finer, 1952) and a desire to offer protection and privacy both to the corpse and to the bereaved (McManners, 1981). The cemetery can also be a way of demonstrating a degree of civic pride (Bender, 1975). The ebb and flow of ideas attached to burial of the dead also means that cemeteries can be located within a specific time period: it is possible to trace the chronology of their inception and development.

Thus, cemeteries fitting the description given here are a distinctive development in the modern period. Interest in burial reform becomes marked from the second decade of the 18th century in mainland Europe (Etlin, 1984; Quer, 1989) and from the second decade of the 19th century in the UK, the USA and Australia (Rugg, 1998; Nichol, 1994; Sloane, 1995). The common establishment of cemeteries tends to be a feature of the 19th century.

In Kenya, just like in many European countries, the municipality has dominated the provision of cemeteries, which tend to be managed as any other local service, for example environmental health enforcement or recreational amenities. Private enterprise has also constituted a leading agency for cemetery establishment: in the USA, through private corporations; and in the UK in the 19th century through joint stock companies.

Although the scale of operations may vary ownership may be by a large multimillion dollar business concern or a town council operating only one site the essential feature is that ownership is principally secular. In most cases the involvement of religious authorities tends to be marginal, although there are exceptions. For example, in Denmark and Sweden Church authorities have maintained a degree of control over the expansion of burial facilities, which in all other respects reflects cemetery development (Nielsen, 1989; Reimers, 1999).

2.4 The Value of Cemeteries

Armstrong (2012) identifies seven values of cemeteries;

a) History

The “history” value seems fairly straightforward; the cemetery is obviously historic. However, this should be focused to identify how the cemetery best communicates certain aspects to visitors. The cemetery may be the only place in the community where certain facets of history are evident. The various ethnic histories represented in the cemetery need to be documented and showcased. Military headstones are very distinct, and serve as a record of the military heritage of a community. A cemetery will likely be the only tangible reminder in a community of the effects of epidemic diseases, and the realities of life before the benefits of modern medicine.

b) Art

The “art” value is manifested in the craftsmanship and architecture of gravestones, vaults, tombs and other memorials on site, and possibly the landscape of the site itself. Similar to narrowing the focus with the “history” value, the survey could determine which aspects of the art and architecture interest visitors the most. The development of trends in funerary art would be easy to show, as

would the meaning behind symbolism that appears on different gravestones. In the case of the tombs, vaults, or mausoleums, explaining the construction and how the dead were placed inside may be interesting to guests. The memorials that we see in the cemeteries were not cheap, and certain conclusions about wealth distribution among those buried in a cemetery can be made based on the size, amount of embellishment, and the material the markers are made of.

c) People/Stories

The “people/stories” value is one that will be important to narrow down. Naturally, there will a vast multitude of stories that can be told at any cemetery. Every person interred is likely to have a story. However, only a selection of these stories can be told. There may be famous individuals and prominent citizens, or famous feuds and love stories that the tombs will tell. It is important to identify which of these stories will resonate most with visitors, and whose story will enrich the understanding of the local history.

d) Sacred/Spiritual

While to some extent the “sacred/spiritual” value is inherent to cemeteries, it may not be deemed appropriate for special focus in a tour. If a cemetery has roots in a particular church or belief, it will be an important part of the story to tell. There may be prominent members of the religious community buried at the site, and visiting these graves in a tour may be an adequate way to incorporate this into the visitor’s experience.

e) Preservation

The “preservation” value is important to the survival of the cemetery, and is equally important to communicate to the visitors. Preservation work justifies the costs associated with taking the tours. A survey question may determine if participants would be willing to pay more for a tour if they knew the money was going toward restoring a specific monument or another preservation project, rather than just a general preservation fund. Visitors may want to see preservationists in action during a visit as well, which may mean that instead of closing a cemetery to do work, it is opened up to the public, with docents on hand to explain the process to guests.

f) Supernatural

The “supernatural” value, is one that must be treated sensitively. There is a profound interest in some visitors in the paranormal, and its perceived connection to cemeteries (as they have featured prominently in many horror movies and ghost stories), but focusing on such an aspect can seem irreverent or irresponsible, from the standpoint of a steward of heritage. Nighttime tours may be a way to indulge this value. The more sinister stories (those of murder or those not suitable for children) may be told at this time. Instead of billing a tour as a “paranormal” or “ghost” tour, it could be given as a tour that relates local urban legends, a part of the folk heritage of the community, but which treats them as simply legends. Presenting an authentic representation of the resource is paramount, and trumps the desire of the public to experience something ghoulish.

g) Nature

The “nature” value is one that may be specific, or at least more immediately relevant, to the rural cemeteries. As these sites were designed to be a natural setting, there is often a horticultural legacy that supports this. This may give unique seasonal opportunities, as seen with Mount Auburn and Oakland. Fall foliage tours and blooming spring floral tours are extremely popular at other cemeteries. Knowing the specific plantings in the cemetery will be instrumental in developing such a tour. Certain plants and trees held symbolic meaning in the context of mourning, and such symbolism could be the foundation for a fascinating horticultural tour. Also, certain groups in the community, such as garden clubs, may be interested in booking special tours, or offering their volunteer services.

h) War Cemeteries

Although similar to mass graves in the sense of their being established as a means of burying a large number of dead, the war cemetery remains a very specific type of burial space. Its most obvious purpose is the burial of military dead during or following periods of conflict. For example in 1862 during the American Civil War, a War Department Order required commanding officers to secure land for burial (Laderman, 1996). Similarly, ‘authorized sites’ were also selected for use by British officials in the First World War, as described retrospectively by Fabian Ware in 1926. The sites were close to the trenches, where the dead could be buried, and the soldiers were promised

that, if they brought their dead comrades to these, which they not infrequently did at the cost of their lives, they would rest there permanently undisturbed (Ware, quoted in Gibson & Ward, 1995: 49).

Following the War, the promise was kept with respect to the sites, and the Imperial (later Commonwealth) War Graves Commission (CWGC) took responsibility for surveying areas where conflict had taken place, to locate remains. The subsequent war cemeteries established by the CWGC have specific aesthetic characteristics that have been the subject of a great deal of study (Winter, 1995) but their principal feature is a commitment to identifying and differentiating the deceased.

2.5 The Introduction of the Cemeteries Ideas

Cemetery is an evolving cultural landscape that represents, though slowly, social changes in communities. The individual gravestones are crystallizations of the emotions and ideas of the deceased, of the people who mourned them and of the society within which they lived, and the cemetery as a whole is a residue which we can use as evidence of social trends, cultural patterns and prevailing ideologies, (Watkins, 1999).

The cemetery ideal was the creation of the upper classes to regulate and control bodies—both living and dead. It evolved from the principles of the Enlightenment and Romanticism, thus being prescribed with both functional utilitarianism on the one hand, and aesthetic and moralistic qualities on the other. It was seen as the answer to the sanitary problems of the overcrowded churchyards and scruples over the treatment and integrity of the corpse. Cemeteries were defined and designed in the nineteenth century to perform both private and public functions of disposal, consolation, and education. The cemetery landscape was central to the cemetery ideal's vision, where nature and religion combined to produce a sublime environment. Through its location, landscape and monuments, the cemetery was to be a sanctuary of spirituality, decency and decorum. The cemetery was seen as an important civic institution that improved the taste and morals of the public. Cemeteries were visited, written about and discussed as cultural places that resonated with religious, social and historical meanings for the community (Curl, 1993; Rugg, 1998; Murray, 2001).

From about the 7th century, European burial was under the control of the Church and could only take place on consecrated church ground. Practices varied, but in continental Europe, bodies were usually buried in a mass grave until they had decomposed. The bones were then exhumed and stored in ossuaries, either along the arcaded bounding walls of the cemetery, or within the church under floor slabs and behind walls. In most cultures those who were vastly rich, had important professions, were part of the nobility or were of any other high social status were usually buried in individual crypts inside or beneath the relevant place of worship with an indication of their name, date of death and other biographical data. In Europe this was often accompanied with a depiction of their coat of arms, (Murray, 2001).

Most others were buried in graveyards again divided by social status. Mourners who could afford the work of a stonemason had a headstone engraved with a name, dates of birth and death and sometimes other biographical data, and set up over the place of burial. Usually, the more writing and symbols carved on the headstone, the more expensive it was. As with most other human property such as houses and means of transport, richer families used to compete for the artistic value of their family headstone in comparison to others around it, sometimes adding a statue (such as a weeping angel) on the top of the grave.

Those who could not pay for a headstone at all usually had some religious symbol made from wood on the place of burial such as a Christian cross; however, this would quickly deteriorate under the rain or snow. Some families hired a blacksmith and had large crosses made from various metals put on the place of burial. Starting in the early 19th century, the burial of the dead in graveyards began to be discontinued, due to rapid population growth in the early stages of the Industrial Revolution, continued outbreaks of infectious disease near graveyards and the increasingly limited space in graveyards for new interment. In many European states, burial in graveyards was eventually outlawed altogether through government legislation.

Instead of graveyards, completely new places of burial were established away from heavily populated areas and outside of old towns and city centers. Many new cemeteries became municipally owned or were run by their own corporations, and thus independent from churches and their churchyards. In some cases, skeletons were exhumed from graveyards and moved into ossuaries or catacombs. A large action of this type occurred in 18th century Paris when human

remains were transferred from graveyards all over the city to the Catacombs of Paris. The bones of an estimated 6 million people are to be found there, (Sloane, 1991).

An early example of a landscape-style cemetery is Père Lachaise in Paris. This embodied the idea of state- rather than church-controlled burial, a concept that spread through the continent of Europe with the Napoleonic invasions. This could include the opening of cemeteries by private or joint stock companies. The shift to municipal cemeteries or those established by private companies was usually accompanied by the establishing of landscaped burial grounds outside the city e.g. extramural, (Aries, 1981; Bloch & Parry, 1983; Laderman, 1999; Sanders, 2008).

2.6 An Understudied Geography of Death

In his book *The City in History*, Lewis Mumford notes that “soon after one picks up man’s trail in the earliest campfire or chipped stone tool one finds evidence of interests and anxieties that have no animal counterpart; in particular, a ceremonious concern for the dead, manifested in their deliberate burial” (1961, pp. 6-7). The cultural-historical dimensions of death and burial have since been well studied, particularly in Western Europe and the United States (Aries, 1981; Bloch & Parry, 1983; Laderman, 1999; Sanders, 2008). In the several centuries between the first European contact and the early 19th century, cemeteries tended to be small and informal. Though townships, counties, and cities usually maintained potters’ fields for burial of the indigent, most cemeteries were maintained by church congregations and families (Sloane, 1991, p. 13). But beginning in the mid 19th century, a series of design and management innovations permanently transformed burial grounds.

In 1831, the structure of cemeteries for example in United States underwent its first major change when Mt. Auburn opened on the outskirts of Boston (Bender, 1974; Linden-Ward, 1989). The archetype of what would come to be known as rural cemeteries, the formal, picturesque design of Mt. Auburn sparked a boom in the development of rural cemeteries on the fringes of cities across the country, and ultimately proved to be a major influence on the design of urban parks and suburbs (Bender, 1974; Jackson & Vergara, 1996; Schuyler, 1986; Sloane, 1991). Later in the 19th century, the structure of cemeteries changed for the second time. Adolph Strauch transformed Spring Grove Cemetery in Cincinnati into a pastoral lawn-park in the late 1850s by shrinking

gravestones to create an open, unobstructed view of the rolling landscape, a move that also made maintenance easier and cheaper (Sloane, 1991, p. 99).

In 1913, Hubert Eaton opened Forest Lawn Memorial Park in Glendale, CA. Representing the third major change in cemetery structure, Forest Lawn marked the emergence of modern memorial-park cemeteries, which married efficiency and profit to a highly commercialized expression of sentiment (McNamara, 2002; Sloane, 1991, pp. 159-160). Using aggressive sales techniques, subsequent proprietors of the lawn-park and memorial-park cemeteries learned to both generate a market for their products and to satisfy the demands of the emerging urban middle class for burial space that matched their worldly aspirations (McNamara, 2002; Rugg, 2006; Sloane, 1991, p. 159; Yalom & Yalom, 2008). The 20th century for-profit cemetery thrived on self promotion, restrictiveness, and often a marriage of faith, business acumen, and elaborate decoration (Llewellyn, 1991, p. 28; Walter, 2005, p. 179). By the middle of the 20th century, burial in the US had become a specialized part of a larger industry of death, employing modern marketing to attract buyers, adopting new technology to streamline operations, developing economies of scale, and forming industry trade groups to promote the interests of cemetery owners in the political arena (Bowman, 1959; Mitford, 1963; Sanders, 2008; Sloane, 1991, p. 218; Walter, 2005; Waugh, 1948).

In delimiting modern burial practices, researchers have debated what defines a cemetery (Curl, 1999; Rugg, 2000), explored the history of cemetery and monument design (Jackson & Vergara, 1996; Sloane, 1991), and examined the rise of cremation (Prothero, 2001). But in spite of the recognized importance of death and burial as social, cultural, and economic phenomena, the urban spatial issues associated with cemeteries have been vastly understudied (Capels & Senville, 1994; Francaviglia, 1971; Pattison, 1955; Rugg, 2006). As Zelinsky (1994, p. 30) noted, the few existing studies of cemetery geography have usually been limited to considerations of burial conditions in "specific localities or at best sub-national regions," of which Pattison's (1955) study of Chicago cemeteries stands as perhaps the best example. More recent examples are scarce (Harvey, 2006). Planners have been conspicuously silent on the issue.

The dearth of scholarly, or even popular, literature focused on the issue of planning for burial does not reflect the potential severity of the dilemma. The cultural aversion toward publicly discussing

death and burial inhibits conversations about whether cemeteries and burial grounds could be used to serve other important ecological and social functions. Unlike many of the things we plan for, mortality is a certainty and the disposal of the dead an unavoidable if not macabre task.

Planning future interment space presents an odd assortment of challenges. There exists almost no standardized information available to guide planners in understanding the dimensions of future demand for cemetery space. While models exist for projecting a variety of dimensions of community development, no recent source provides clear information about how mortality will impact land use, or how to project demands for burial space (American Society of Planning Officials, 1950; Nelson, 2004). The environmental impacts of managing space in which the deceased are housed, while long conjectured, are just beginning to be taken seriously, and indeed may turn out to be significant (Dent, Forbes, & Stuart, 2004; Prothero, 2001; Spongberg & Becks, 2000; Trick et al., 2004).

Existing cemeteries frequently possess local historical and cultural significance worth preserving, but properly maintaining those grounds can saddle private owners and municipal governments with difficult maintenance and repair expenses (Brown, 2008; Capels & Senville, 2006; Meierding, 1993). While the graves of notable fallen figures could become attractions, the less notable still represent an emotional landscape most communities consider important enough to maintain. Yet proposals for new or expanded cemeteries often face community resistance, especially from would-be neighbors who recoil at the idea of living next to a burial site (Lewis, 2001; Nurse, 2001).

2.7 Demographics, Burial Space and Place

As the demographic increases, a surge in demand for burial space appears imminent, even assuming that cremation rates continue to rise. The increase in demographic and the sheer number of deaths set to occur will likely overwhelm existing interment capacity in the absence of careful planning. The popularity of alternatives to traditional burial vary considerably by state and region (Kellaher, Pendergast, & Hockney, 2005; Prothero, 2001). In some cases, planners may temper these challenges by adapting the function of cemeteries to also serve the living. Indeed, careful planning and management can help cemeteries satisfy competing demands for space, environmental preservation, and economic activity.

Historically, mortality and fertility have followed a distinct pattern: as mortality rates rose, fertility rates did as well; when mortality began to decline, fertility followed (Lee, 2003; Zelinsky, 1971). In the art of population forecasting, calculating a reasonable measure of how many deaths are likely to occur in a specific town or county is challenging because of population mobility (Zelinsky, 1971). In general, the likelihood of an individual making a residential move varies over the life course. Moving rates tend to go up and down between ages five and 64, with a peak in the 18 to 30 year old range. Past age 65, when individuals usually leave the labor force and enter a higher mortality cohort, mobility rates usually drop, but recent surveys have shown that a not insignificant 20% of individuals aged 65 and over report having moved within a five-year period (He & Schachter, 2003). Such sustained levels of population movement have made predicting where a given individual will die and be interred complex.

Gains in life expectancy and quality of life may further change late life mobility patterns. A few demographers and planners have begun to argue that just over the horizon lies a huge new demand for communities more amenable to age diversity, communities that will enable people to live and age and die in place while still having all their needs met (Frey, 2007; Frey, Berube, Singer, & Wilson, 2007). In theory, lifelong communities will make forecasting the spatial dimensions of mortality clearer. If the young generations age into retirement and die in the places they live their productive years, the geography of burial should simply reflect the geography of life. Yet unforeseen mobility and migration factors could counteract this expectation, complicating our understanding of future locational demands for burial (Frey, Berube, Singer, & Wilson, 2007). In practical terms, this means that the likelihood of individuals dying and being buried in the same place they were born remains unknown, which makes the task of figuring out where to expand or build cemeteries quite difficult (Capels & Senville, 2006; Smith, 1996, p. 366-368).

2.8 Rationale for Cemetery Planning and Management

Cemeteries are an integral part of the urban space. In particular, cemeteries are a part of the public spaces which should be planned and designed as a systemic network, i.e. as elements of a large system, which is the city, where they establish relations of complementarity and interdependency. A network of public spaces is not composed only of each isolated space (a square, a garden, a street, etc.), but also by the links between the different public spaces and the complementarity

relations established between them. It is these linkages and complementarity relations that influence how people experiences the spaces and also how they move within the city.

Programming, planning and designing public spaces, taking into account this systemic network logic, is based on a "top down" approach, in contrast to approaches such as "bottom up", since the starting point of view is the city scale descending, afterwards, to the public space scale. It is this kind of approach that makes it possible to promote territorial cohesion of urban space, having the planning of the public spaces network as one of the main tools. Knowing and understanding the characteristics of the city's public spaces network, it is possible to improve the relationships of continuity and complementarity between spaces; to generate regenerative social dynamics; or even to create dynamic functional logics. It is important to stand out that planning and designing public spaces as part of a urban network brings out the possibility not only to restructure the existing spaces but also to develop new public spaces in the expansion urban areas (especially relevant in new developing areas) so that they can create cohesive cities, promoting urban sustainability. Cemeteries must therefore be planned for in the context of other land uses in a city or town.

Land-use planning is the term used for a branch of urban planning encompassing various disciplines which seek to order and regulate land use in an efficient and ethical way, thus preventing land-use conflicts. Governments use land-use planning to manage the development of land within their jurisdictions. In doing so, the governmental unit can plan for the needs of the community while safeguarding natural resources. To this end, it is the systematic assessment of land and water potential, alternatives for land use, and economic and social conditions in order to select and adopt the best land-use options.

This definition provides a normative theory of land use which provides that a locality could establish what its pattern of land use ought to be. In this perspective, urban spatial structures is a conjunctive outcome of the functioning of market and political processes, the one providing the means by which individuals, firms, and institutions pursue their self interests and the other, the means by which governments articulates and pursue the common/public interest, (Chapin and Kaiser, 1979). The public interest is frequently used in law to refer to what the courts will sanction as a public purpose, whether under the police power, the power of eminent domain, the power of taxation, or another power. For planning purposes, a more advanced concept of the public interest

is built on legal tests but seeks forward looking guideposts taken directly from social currents of the times. In land use planning, the factors usually identified with public interest are nine: health, safety, convenience, efficiency, energy conservation, environmental quality, social equity, social choice and amenity, (Chapin and Kaiser, 1979). The nine factors are detailed below;

a) Health and Safety

Although they may be considered as separate public purposes, health and safety are frequently involved in combination and thus customarily linked together. As might be expected, regulatory measures such as health, sanitation, housing and building codes provides the principal operating definitions of this aspect of the public interest. Many of regulatory controls commonly associated with health and safety apply to individuals structures or relates to specific practices or services carried in the community. In land use planning, there are other forms of intervention exercised in the public interest. These may be negative or positive. In the first category are regulative measures which includes; control over exposure to stress, disease and accidents by regulating location, density, use, bulk and forms of construction involved in land development including its subsequent occupancy. The most generally recognized land use controls exercised in the interest of health and safety take the form of zoning, subdivision regulations, and the reservation of lands for streets and other public facilities. Intervention may also take the form of development measures, such as the programming and carrying out public works or urban renewal proposals.

b) Convenience

Though frequently viewed as a lower order consideration of the public welfare, convenience is nevertheless closely associated with the public interest and constitutes a third major basis for government action. The courts have recognized public convenience to be an element of public interest in upholding the construction of streets and highways and the provision of mass transit as public purposes and viewed in combination with health and safety, convenience has been given judicial sanction as a basis for regulating the traffic using these streets and highways. However, public convenience is not only a function of circulatory systems of the community but a derivative of the locational arrangements of land use and the relationship that each functional use area bears to every other one. Thus convenience can be judged in terms of home-to-work, home-to-school, work-to-recreational, home-to-shopping,

retail and industrial areas and variety of other area relationships intrinsic to the urban land use pattern. Land use planning is concerned with location of these destinations, which play an important role in maximizing in the ease of movement.

c) Efficiency and Energy Conservation

Customarily, efficiency is associated with public cost implications, whether in terms of municipal expenditures or cost to the urban dwellers in general. In this context, it has to do with land development from the viewpoint of the community as a whole as opposed to the viewpoint of the entrepreneur or the collective actions of people functioning in the urban land market. The location of use areas and their intensity of development are key considerations in both cost and energy efficiency, as they are for the question of public convenience. In addition to location considerations, the intensity in the way land is put to use also affects the efficiency of land development. These considerations of the public interest must of course be balanced against dictates of health, sometimes environmental quality, and amenity, which may cause the emphasis to lean toward an open-order pattern of urban development

d) Environmental Quality

Although a number of environmental concerns have long been recognized as a part of the health component of the public interest, a much broader view of environmental factors emerged during the 1970s due to unequal distribution of resources and their ultimate limits. A few environmental processes have been well recognized in land use planning for sometimes, for example, the aspect of hydrological cycles which produce floods. The firmest basis of action has come into being in connection with air and water quality. With respect to air quality, they have an impact on the type and location of transportation facilities and the distribution of density of land uses.

e) Social Equity and Social Choice

These are grouped together because they both involve fundamental human rights on the urban scene. Social equity concerns equal opportunities for access to the necessities of life i.e. work, shelter, education, medical care etc and the fair share distribution of benefits and costs of development action. Social choice has to do with the range of opportunities among which choices are made and the participation of sub-publics in the definition of choices most

directly affecting them. Whereas social equity is concerned with elimination of constraints on opportunities, social choice involves the more positive concern of creating opportunities for choice.

f) Amenity

These refer to the pleasantness of the urban environment as a place in which to live, work and spend one's leisure time. This last element of the public interest relates to the perceptual aspect of urban surroundings, their aesthetic appearances and comfort and enjoyment offered. Modern planning in the Western countries has developed to challenge existing boundaries between public and private. Citizens have continuously confronted the definition of the public interest in liberal democracy which is the dominant mode of the modern state. Questions about existing notions of the public interest arose from political conflicts, economic problems, and changes in societal relations. Faced by ongoing challenges from citizens, the public interest, and therefore planning governance itself, has had to be revised accordingly. Therefore, the public interest is not a static concept. The public interest is a vehicle for changes in planning practices about the desirable form of the built environment, governance, democracy, collective values and human rights in the Western liberal democracy.

The emergence of planning policy in the modern states was a turning point in the relationship between the market and the state. The principle of a *laissez-faire* economy, free from state intervention, was modified following the crises of the foundation of economic production – a loss of productivity in urban labour that was related to deteriorating public health in cities (Fraser 1984; Hall 1996a). Furthermore, the state also had to provide the necessary infrastructure to make urban life for both capital and labour work smoothly (Harvey 1985; Klosterman 1996). The constraints on the environmental and physical capacity of early industrial cities in the West changed the boundaries between 'private' (the market) and 'public' (the state) in capitalist society.

Further, the creation of spaces for 'public life' also became a major planning challenge in the modern state. As seen in the development of the public sphere in the late nineteenth century, urban spaces such as streets, parks, and squares were important as they allowed the gathering of people, the exchange of information and opinions, and also mass protests. Not only did these 'public' spaces offer places for political activities, they were crucial to social life as well. However,

suburbanization, motorization and the separation between work and living spaces in modern cities made it difficult to maintain public spaces as lively places. In fact, Jane Jacob's criticism of modern planning is mainly based on this decline of social life and the breakdown of established inner city communities in late twentieth century American cities (Jacobs 1972).

2.9 Existing Cemeteries Regulations and Examples from Practice

While the days of haphazard church graveyards and potters fields are gone, the rules and regulations governing burial remain fragmented between cities, regions, states, and the governments. The regulation of cemetery development and burial practices that most directly affect land use remains largely decentralized. In most places, cemetery owners retain considerable latitude in how they plan, build, and operate their burial grounds. Not surprisingly, states display wide variability in the focus and breadth of their regulations. More surprising is the lack of detail in local government regulations. Depending on the country, cemetery statutes regulate everything from the kinds of corollary services cemetery owners can provide, to the structure of endowment care trusts to ensure long term financial solvency, to the size, depth, and materials of graves and urns (Harrington & Krynski, 2002; Iowa Cemetery Act, 2005; Llewellyn, 1998, appendix B; Sloane, 1991, p. 196). Local and regional governments in a country, however, tend to rely on a rather consistent set of basic standards that simply describe the zoning categories in which cemeteries can be built and specify minimum lot sizes and setbacks, (Mandelker, 1997, p. 263).

In United State, local governments are the gatekeepers of the zoning process, the public power that most directly influences the location of burial facilities. Cities, counties, towns and villages vary in how they use zoning to regulate cemeteries. Most treat them as conditional uses. Some jurisdictions strictly limit the location of cemeteries, while others permit them almost everywhere. Regardless of zoning, cemeteries almost always must meet minimum lot size requirements. This can vary from as little as two acres to ten acres or more. Several examples re presented to illustrate the range of local regulations. The town of Waverly, IA, a small college town, allows cemeteries as conditional uses only in agricultural zones, which are reserved for agriculture production related activities and extremely low density residential development. Cemeteries must be at minimum 10 acres (City of Waverly, 2007, Sec. 100.5.02). This virtually ensures that any new burial grounds will remain on the fringe. Other municipalities allow cemeteries almost anywhere. Naperville, IL,

an affluent Chicago suburb, permits cemeteries in three low-density zoning districts as long as they are two acres or larger (City of Naperville, 2009).

The states governments have laws that oversee the operation of cemeteries, but the breadth of the laws varies significantly. Some states have comprehensive rules that govern everything from licensing of cemetery operators to the placement of vaults. Others regulate only a few essentials, mostly concerned with the long-term financial stability of cemetery corporations and the qualifications of cemetery and crematory operators. Iowa, a state with a long tradition of public ownership of cemeteries, possesses a cemetery act that is one of the nation's more comprehensive and coherent pieces of legislation governing interment. Cemetery regulations in California are split among several different sections of state code. The state's Code of Regulations stipulates the composition and responsibilities of the state cemetery board, as well as licensing requirements for operators, fines for rules violations, and annual endowment care reports (California Code of Regulations, 2009, Title 16, Division 23). The California Health and Safety code also regulates certain cemetery functions, including rules for disinterment, requirements for burial, and the rights of plot owners (California Health and Safety Code, 2009, Division 7).

In regard to Federal Government, historically, federal regulation of cemeteries has been limited. Aside from federal ownership of veteran's cemeteries, it was not until the late 20th century that federal legislation addressing mortuaries and burial practices was adopted. In 1984, the Federal Trade Commission (FTC) introduced the Funeral Trade Rule, which was designed to protect consumers from fraudulent behavior on the part of funeral industry representatives and cemetery agents. The Funeral Trade Rule requires "funeral directors to give you itemized prices... and also requires funeral directors to give you other information about their goods and services." (Federal Trade Commission, 2000, p. 5).

2.10 Cemetery Planning

Countries which have space limitation for existing cemeteries or difficulty finding new suitable areas for cemetery planning have to re-examine all the systems of disposal of human remains and all the parameters involved in the process of the bodies decomposition, (Santarsiero et al, 2000). It is a very difficult question to single out possible solutions because they involve technical

parameters as well as a new way of considering the burial. In order to get a comprehensive idea of this ever ignored and almost undeveloped field in urban planning, cemetery planning is reviewed from different perspectives, locational guideline and functional organization.

2.10.1 Institutional Perspective

Unlike in ancient days when burial land was largely or totally determined by customs or religions, today, many of the cultural traditions that were once part of our community and family have been institutionalised and commercialized, (Marika, 1996).

2.10.1.1 Policies Aspect

Most countries have their own policies on funeral and cemetery management, but seldom have any given special items for cemetery planning. Thus lack of norms in legislation, which brings lack of essential knowledge on them for urban planner, has aroused difficulties in developing the location planning for urban cemeteries. This makes it essential to extract those useful ones as the conditions in cemetery planning:

- a) The methods of human remain disposal: This is basic information resulted from institutionalised customs and related to the environmental and social impact of cemeteries as different type of burial will lead to its coordinate demand on physical/ chemical characteristics of land and their contaminative effect will determine the minimum safety distance between the cemetery and the buildup areas;
- b) Number of cemeteries: Directions on how to size up the burial grounds in the construction of cemeteries to face the burial demand and on the other hand, avoid redundant land be lying idle for burial;
- c) Location of land use for burial purpose: On one hand, polices often give constraints on places where burial is not permitted in order to ensure the well-balanced land use pattern;
- d) The principle and rules on cemetery management: Limits on size of graves, expiry of land utilization (the minimum time/rotation time of the disinterment system after which an operation of exhumation is permitted) related to cemetery capacity and business issues related to economic factors.

For the case of Nairobi County, these above policy conditions would guide urban planners and policy makers in terms of appropriate bodies disposals, location of burial land as well as principles and rules on the cemetery management.

2.10.1.2 Economic Aspect

The economic aspect of cemetery planning focuses on the following;

- a) **Land Utilization:** A cemetery shall have such a capacity of burial sites to meet the demand from resident population of an area. Planning work should supply enough land for burial purpose and on the other hand, avoid a large and valuable area of ground being locked up and rendered profitless by its use as cemeteries and burial grounds. Since land is a sizable expense for the cemetery, maximizing grave sites is an important consideration, (BOE, 1997). Generally speaking, a cemetery plan shall be laid down on the basis of the average mortality-rate and the types of burial normally carried out in the last decades. Santarsiero, (2000), suggested the capacity of a cemetery-plan be evaluated approximately by the following formula under the circumstance of Italian cemetery planning:

$$C = \frac{(P \times m \times t \times i)}{1000} + st + b + se + sre$$

"Where: [C] = capacity (area required); [P] = population of the town which the plan belongs to; [m] = mortality-rate calculated on a statistics base expressed as per thousandth ⁰/₁₀₀; [t] = expressed as a number of years, and represents the time limit after which a buried corpse may be exhumed, before such a time limit it is considered an offence to disturb human remains. [i] = inhumation $\approx 3.5 \text{ m}^2/\text{corpse}$, space required by the inhumation of a corpse; [st] = space designated to small temples; [b] = buildings; [se] = space designed for epidemic events; [sre] = space designated to roads among the various devices and buildings inside the cemetery."

The above formula shows implications that the capacity of a cemetery should depend on some local conditions such as type of burial, size of grave, religions etc. and no absolute universality exists in it. The calculation approach should be modified if these parameters vary. For example, if cremation is also applied, the calculation of areas for inhumation and cremation should be separated as the graves size are different and if improvements such as mausoleum and

columbarium are used, the number of human remains should be subtracted from the total while the area of land held by mausoleum and columbarium should be added. In addition, if the cemetery management is based on a rotation interment system, which means burial sites can be reused after a fixed number of years, the recovery of burial sites should also be considered if the cemetery goes beyond an absolute accumulation stage of early years.

The size of a cemetery is very often limited by the non-availability of suitable conditions, especially in areas characterized by dense drainage networks and where shallow bedrock or shallow water tables are prevalent. However, from an economic point of view, a minimum-sized unit should be defined to justify an engineering geological or geotechnical investigation of this nature. Moreover, whatever the whole size of the cemetery may be, the area of the improvement part would not fluctuate much from one to another because the fundamental demand and service of them are relatively invariant. So a too small cemetery size should be lack of economic feasibility (Kang and Kang, 1999). Considering factors such as the cost and time spent, as well as the period before implementation, a minimum continuous of at least two to three hectare is recommended for burial purpose (Fisher 1992).

- b) **Economic Cemetery Location:** Location is an important factor in cemetery value, since it affects plot prices and absorption rates. Occasionally a site is selected because it is economically unsuitable for other purposes (BOE, 1997). The selection of a site, however, is at times influenced by circumstances that have no relation to physical, aesthetic, and geographic requirements.

Gently rolling land with favourable subsoil conditions and natural drainage is ideal for cemetery usage. Undulating land offers the best advantage for effective and economical landscaping. Flat areas can be developed in a manner to neutralize monotony, but require greater expense (BOE, 1997). In terms of accessibility, the spatial proximity will affect the impression of cemeteries to the family of the deceased. Occasionally, bodies will be returned home to the ancestral lands of the deceased but in most cases families psychologically want loved ones to be buried near to them (Salisbury, 2002). Further, the proximity will affect the carriage cost of human remains and the traffic cost when visiting the gravesites for the residents, although these pragmatic issues have much less importance than the emotional ones.

2.10.2 Environmental Perspective

There are various issues of cemetery related to environment. Here they are classified to two categories: physical aspect mainly contains those concerns physical characters a cemetery should have for the sake of well-balanced running; ecological aspect mainly concerns those related to its contaminations to surrounding environment. However, to allow this to happen it is necessary to increase our understanding of the physical, chemical and microbiological processes occurring within a burial ground.

2.10.2.1 Ecological Aspect

The process of decomposition in fact involves the following phases: gas phase; colliquative phase; skeletrization; that give rise to gaseous, liquid and solid outflows. The biodegradation of a buried corpse and the purification of its liquid, solid and gaseous products depend on several factors including the environment surrounding the buried coffin. Recent research and investigation, (Fisher and Croukamp 1993), reveals several pertinent facts:

- a. The impact of cemeteries on the environment has been neglected worldwide.
- b. Cemeteries pose a pollution threat far exceeding original perceptions.
- c. A significant number of existing cemeteries (>40%) contaminate our already beleaguered water resources.
- d. Microbiological pollutants (including bacteria, viruses and parasites) remain active within the water table at much greater distances from their source than previously speculated.
- e. Town authorities do not perceive cemeteries to be a significant source of pollution.

The perceived lack of interest and knowledge prevailing in this field by laymen and professionals such as town and regional planners, engineers and people in related earth science fields, further adds to this pollution problem. In many countries there is no legislation exists to govern the location of cemeteries from the consideration of pollution (Fisher, 1992). Recent research has shown that poorly sited cemeteries pose a potential ground water pollution threat of at least equal magnitude, as that posed by conventional waste disposal sites. The scale and severity exceeds existing perceptions. A point has been reached where this problem must be addressed before the situation slips irretrievable out of control (Fisher, 1994). Most existing cemeteries were sited without thinking about potential risks to the local environment or local community. Commonly, they are constructed close to settlements because of religious and culture circumstances.

The ecological aspects in cemetery planning are key guidelines in siting the land for cemetery due to their impact on environment. Poor management of cemetery in Nairobi have potential for environmental pollution especially Lang'ata Cemetery where bodies are buried at 2 feet deep.

- a) **Survival and Retention of Bacteria and Viruses.** In order to identify the environmental impacts of cemeteries, information is needed on the survival of bacteria and viruses and the fate of the decay products from human corpses in soils and groundwater. Both survival and retention are dependent on the type of the soil in which a cemetery is sited, the type of microorganisms present, the prevailing ground temperature and rainfall. Where soil pH is above 7, the fraction of bacteria and viruses retained by the soil decreases markedly. Furthermore, an increase in cation concentration of the seepage water from cemeteries increases the retention capacity of the soil for bacteria and viruses
- b) **Movement of bacteria and viruses through soils.** Soils play a major role in the movement of bacteria and viruses. From laboratory work, it has been found that most of the microorganisms, such as polioviruses, are filtered out on or near the soil surface. Most polioviruses are held within the first 5 cm depth below the surface of loamy sandy soil, (WHO, 2000; Lance, J.C. & Gerba, 1980). Whilst soil adsorbs most of the pathogens, adsorption decreases with increasing water velocity. Plants could possibly be used to remove some viruses and bacteria from the soil. Also, the movement of bacteria and viruses is restricted physically by the root system of plants. Planting of trees and border plants should be encouraged around cemeteries to help decrease the movement off-site of bacteria and viruses in seepage water and rain water, (WHO, 2000; Corry, 1978; Lance, J.C. & Gerba, 1980).
- c) **Groundwater composition in the vicinity of the cemeteries.** During the progress of decomposition within human corpses, the products of decomposition are released. The principal mechanism for the transport of decomposition products is percolating water entering the groundwater. Many of the decomposition products are identical to those present naturally in the environment. In addition, ammonia gas and carbon dioxide are also formed as decay products from human corpses. Another important point is the presence of wood, fabrics and plastics, which come from coffins. Little is known about the composition of their products of degradation, (Lance, J.C. & Gerba, 1980).

- d) **Exposure of chemicals used on corpses to animals in the vicinity of cemeteries.** For cemeteries that has been full for several years, but to which bodies continue to arrive every day for burial (like Lang'ata), sometimes it is not possible to bury them the requisite six feet under. In such instances, human body parts being dug up by dogs and deposited all over the cemetery are common as the graves are only dug to less than four feet deep than the required six feet to avoid exhuming bodies laid earlier in the same space. In other area domestic animals are allowed to graze within the cemeteries precepts. These animals consume chemicalized material due to the contact with the bodies that had been preserved using dangerous chemicals like formalin. This is dangerous to not only the animals but also human beings that later on consume the animal meat, (WHO, 2000; Corry, 1978; Lance, J.C. & Gerba, 1980).
- e) **Hydro geological properties of the cemeteries.** The base of all burial pits at cemeteries should be above the highest natural water table to minimize seepage directly into the aquifer during putrefaction of human corpses. Cemeteries could also be planted with deep-rooting trees that consume large volumes of groundwater and seepage water passing through the unsaturated zone. Also, the water level beneath cemeteries will be decreased by trees and so further help to contain seepage within the environs of a cemetery, (Corry, 1978).

In conclusion, aquifer pollution can vary according to the geological strata and cemetery layout and management. Surface drains will intercept most surface runoff water entering a site from outside before any serious contamination takes place. The pollution potential from cemeteries is present, but in a well managed cemetery with suitable soil conditions and drainage arrangements, the risk is probably slight, (WHO, 2000; Lance, J.C. & Gerba, 1980). The conditions highlighted below could be used to site and plan a future well managed cemetery:

- a) Human or animal remains must not be buried within 250 metres (This distance may be greater if the site has a steep hydro geological gradient or the velocity of groundwater flow within an aquifer is rapid) of any well, borehole or spring from which a potable water supply is drawn.
- b) The place of interment should be at least 30 metres away from any other spring or watercourse and at least 10 metres from any field drain.

- c) All burial pits on the site must maintain a minimum of one metre of subsoil below the bottom of the burial pit (i.e. the base of the burial must be at least one metre above solid rock).
- d) The base of all burial pits on the site must maintain a minimum of one metre clearance above the highest natural water table. (Any variability in the water table should be taken into account).
- e) Burial excavations should be backfilled as soon as the remains are interred, providing a minimum of one metre soil cover at the surface.

2.10.3 Social-Cultural Perspective

2.10.3.1 Social Aspect

People pay their respect to the ancestors' remains by not disturbing the burial land, thus cemeteries are lands carrying cultural, historic and ethic significance. Its preservative function makes it the last zone to be replaced or removed. On the other hand, cemeteries have expanded with growing population. Even when the gravesites could be recovered after a rotation interment period, the increase of population will also give rise to the demand of new gravesites therefore the need for cemetery planning.

2.10.3.2 Cultural Aspect

Death creates a combination of transformations and changes of the physical body, social relations, and community balances. Death is a phase of transition involving loss and adjustment. The cemetery must satisfy the needs of the bereaved during different stages of grief (Salisbury, 2002). The cemetery is an integral part of the larger community, both in a physical sense and in a psychological sense.

A. Psychological Needs

In his bookmaking *The Image of City*, Lynch (1961) has proposed five kinds of image elements from the perspective of landscape sense: path, edges, district, nodes and landmarks. He pointed out that image is resulted from the interaction between environment and observer. The process of grieving often far outlasts the funeral services, with the bereaved requiring many months, if not

years, to fully recover. In many cases the memorial and cemetery becomes an important tool in the recovery process (Salisbury, 2002).

B. Tradition and Custom

Understanding of former practice is essential for any planning works. The modern cemetery has developed over the last several hundred years in part, as a result of changing values and cultural identities. But many combination of the modern and the traditional are to be found in concrete social settings and even in the most modernized of modern societies, tradition continues to play a role (Giddens, 1990). The exploration of funeral customs revealed that the tradition and customs has considerable durative, and many of our current funeral practice have their basis in long held tradition and customs.

2.10.4 Cemetery Site Investigation and Location Guidelines

Poorly sited cemetery sites pose a potential groundwater pollution threat of at least equal magnitude as that posed by conventional waste disposal sites. The indiscriminate siting of cemeteries is increasing, largely due to accelerating rates of urbanization, including the development of informal settlements, with potential health consequences of epidemic magnitude. Ignorance of the potential health problem is a further cause for concern. Ground conditions must be suitable before the establishment of any cemetery site. The permeability of subsoil and bedrock, position of water table, topography, and distance to drainage features and water abstraction points are critical factors. Other factors considered include the ease of excavation, the stability of grave side walls and the aerial extent of proposed sites, (Hall and Hanbury, 1990).

Hall and Hanbury (1990) recommend a six-fold investigation based on physical aspects (excavatability, stability of sidewalls and workability through replacement of removed soil back into the grave) and sanitary aspects (position of the water table, subsoil permeability and the presence of attenuation or aeration zones, and drainage as the risk of water draining through the backfill material into the grave) as shown in Table 1.

The investigation of site for siting cemetery based on physical aspects as highlighted in table 1 below on excavatability, stability of sidewalls and workability through replacement of removed

soil back into the grave and sanitary aspects establishes a criteria that guides planners in their land use planning and avoid the political class manipulations.

Table 1: Physical and Sanitary Aspects for Cemetery Site Investigation

EXCAVATABILITY	Assessment		Rating Scores
Easy spade	Geological pick pushed in 50 mm with ease		15
Pick and spade	Geological pick causes slight indentation		10
Machine	Firm blows with pick cause 1 – 3 mm indentations		5
Blasting	Back actor refusal		0
STABILITY	Assessment		Rating Scores
Stable	Little over break with safe excavation profiling		20
Over break	Over break between 1.3 and 1.8 m		15
Slightly unstable	Minor falls of material		8
Unstable	Collapse of excavation likely		1
WORKABILITY	Unified	MOD AASHTO	Rating Score
Excellent to good	GW, SW, GP	> 1 800 kg/m ³	10
Fair	SP, SM	< 1 800 kg/m ³	5
Poor	OL, CL, NL	< 1 700 kg/m ³	2
Very poor	OH, CH, MH	< 1 500 kg/m ³	0
WATER TABLE	Water Table Depth (m)		Rating Score
Deep water table	> 8		25
Intermediate water table	4 – 8		5
Possible perched water table	0 – 4		5
Waterlogged soil	0 – 4		Fail
SUBSOIL PERMEABILITY	Percolation Rate	Approx. Permeability	Rating Score
Impermeable	Not measurable	< 10 ⁻⁷ m/s	15
Relatively impermeable	10 – 15 mm/h	10 ⁻⁶ – 10 ⁻⁷ m/s	20
Relatively permeable	15 – 50 mm/h	10 ⁻⁵ – 10 ⁻⁶ m/s	10
Permeable	50 – 1 000 mm/h	< 10 ⁻⁵ m/s	0
BACKFILL PERMEABILITY	Unified Class		Rating Score
Impermeable	OH, CL, CH		5
Relatively impermeable	GC, SC, MH		10
Relatively permeable	GP, SP, GW		7
Very permeable	SW, SP		0
FINAL RANKING	Suitability		
> 90	Very good		
75 – 90	Satisfactory		
60 – 75	Poor – precautions required		
< 60	Unacceptable		

Source: Hall and Hanbury, 1990

Fisher (1992) recommends investigation of geological factors influencing soil conditions, underlying rock, groundwater conditions and surface water. Soil conditions include soil type, structure, density, permeability and moisture content whereas underlying rock comprise bedrock, pathogenic material, joint and discontinuity frequency, joint condition, joint fill material and degree of weathering. Groundwater conditions relate to the depth of the permanent water table,

frequency of perched water tables, prevailing hydraulic gradient, as well as the relationship between topography and groundwater table. Surface water occurring in drainage features refers to perennial or non-perennial streams, as well as the frequency of flow of the latter, stream order, storage dams, topographical and climatic influences, slope shape and gradient, and the incised nature of the landscape. Fisher (1994) also recommends the following requirements for a site to serve as a cemetery:

- a) The surface gradient should be between 2° and 6° (up to 9° in extreme cases) to ensure adequate drainage of the site, to minimise erosion and to promote mobility on site.
- b) The soil profile depth should be at least 1.80 m for ease of excavation.
- c) The soil consistency should be such that it ensures the stability of the grave walls for a few days.
- d) The underlying site soils should have a low permeability (10^{-5} to 10^{-6} cm/s) to prevent groundwater contamination.
- e) The site should be located at least 100 m from the 50-year flood line.
- f) The groundwater depth should exceed 4 m.
- g) A buffer zone of at least 2.5 m should be present between the bottom of the grave and the top of the groundwater table.
- h) No drainage channels should intersect the proposed cemetery area.
- i) The site should not be underlain by dolomite material.
- j) No borehole drinking water should be located closer than 500 m of the proposed cemetery.
- k) The cemetery should be large enough for future expansions at an estimated 3000 graves per hectare.

Croucamp and Richards (2002), recommend ten selection criteria based on engineering and hydrological conditions. Based on all the following factors, a cemetery can be considered suitable or unsuitable.

- a) Soil excavatability, pertaining to the ease of grave excavation without any mechanical aid, to a minimum depth of 1.80 m, is addressed according to soil consistency. Very loose to loose (very soft to soft) material is readily excavated by means of a spade and will be suitable, provided that grave stability is not a problem. Medium dense (or firm) material requires picks and spades and is considered ideal.

- b) Soil permeability relates to the rate of fluid movement through the soil and must be between 1×10^{-7} cm/s and 5×10^{-5} cm/s. Where the cemeteries are located further from water sources than recommended, the upper limit can be extended to 1×10^{-4} cm/s.
- c) The position with respect to domestic water sources depends on the soil permeability range and the maximum survival times of several bacteria and viruses.
- d) The position with respect to drainage features (including lakes, dams, rivers, streams and gully heads) is important to ensure that these features are not affected in any way by pollutants from the cemetery sites.
- e) Site drainage should ensure minimal ingress of surface water into the graves and storm water run-off should be implemented to ensure this.
- f) Site topography should ideally have a gradient between 2° and 6° with a maximum gradient of 9° being considered acceptable. The basal buffer zone refers to the vertical soil succession between the base of the deepest grave and the water table, forming a barrier between the source of pollution (the grave) and the groundwater.
- g) Grave stability is required to ensure competency in the excavated graves.
- h) Soil workability entails the ease of manipulation of soil from and into the grave.
- i) Cemetery size, finally, is often limited by the lack of suitable conditions due to, for instance, dense drainage networks and the required capacity for the intended community.

An excavatability assessment based on the engineering geological soil profiling nomenclature as advocated by Jennings et al. (1973) for soil consistency and rock hardness, is presented in Table 2 which are key guideline that can be used for Nairobi cemetery planning.

Table 2: Excavatability Assessment *

Soil Consistency	Excavation Method	Cemetery Suitability
Very loose and loose, very soft and soft	Spade	Suitable, but grave stability may be problematic
Medium dense and firm	Pick and spade	Ideal
Dense and stiff, very soft rock	Back actor	Suitable, although weathered rock should be avoided where possible.
Very dense and very stiff, soft and hard rock	Jackhammer	Not suitable, but allowable only if alternative site options do not exists.
Very hard rock and extremely hard rock	Blasting	Not recommended

Source: Jennings et al. 1973

2.10.5 Functional Organization of Cemeteries

For design programming purposes, cemetery buildings and site areas can be divided into several "functional areas." Tasks, users and specific requirements are identified for each functional area.

The cemetery can be divided into several functional areas in three major categories as follows:

- Site Elements /Features,
- Public Information Center, and
- Administration/Maintenance Complex

Table 3: Functional Areas of a Cemetery

Site Elements/ Features	Public Information Center	Administration/Maintenance Complex
Entrance area	Telephone Reception/Cortege	General office
Roadway system	Control	Operation Centre
Site Furnishings	Graveside locator	Staff/public rest rooms
Interment area	Public rest rooms	Locker Room, Toilets & Shower
Grading, Drainage & Planting	Lobby	Material storage
Utility Distribution System	Cortege Assembly Area (Parallel Parking Lanes)	Flammable Storage
Irrigation system	Visitor Parking Area (Pull-off)	Pesticide/Herbicide Storage
Memorial Walkway / Donations Area		Vehicle & Equipment Storage(Enclosed)
Committal Service Shelter(s)		Maintenance Yard: Employee Parking Lot

Source: Shibata K, 2006

2.10.5.1 Site Considerations

- a) Entrance Area. The primary importance of the main entrance to a cemetery is to create for each visitor a sense of arrival at a special place. The Entrance Area to the a cemetery should be an architectural or landscape architectural feature that portrays the significance and dignity of a national cemetery without overpowering the visitor.
- b) Roadway System. The hierarchy of roads in the cemetery includes the entrance road as a divided two-lane road leading into the system of primary and secondary roads and service drives. The design of all the roads should accommodate anticipated traffic volume at a design speed of 24 km/h (15 mph). The roadway system should allow for funeral corteges to proceed in a forward direction from entry to departure. The roadway system should be simple and provide good access to all burial sections.

Table 4: Road Type and Measurements in Cemeteries

Road Type	Minimum Width & Radius
Entrance Road	5.4 m (18'), face to face of curb; 7.2 m (24'), edge to edge, with no curb 15 m (50') minimum radius
Primary Road	7.2 m (24'), face to face of curb; 7.2 m (24'), edge to edge, with no curb 9 m (30') minimum radius
Secondary Road	6 m (20'), face to face of curb; 7.2 m (24'), edge to edge, with no curb 9 m (30') minimum radius
Service Roads: (i) Service Entrance: (ii) Service Entrance:	7.2 m (24'), face to face of curb; 7.2 m (24'), edge to edge, with no curb 15 m (50') minimum radius
	3 m (10'), edge to edge, no curbs 9 m (30') minimum radius
Committal Service Shelter Drives:	8.1 m (27'), face to face of curb; 9 m (30'), edge to edge, with no curb; Narrow to 3.6 m (12') at throat 9 m (30') minimum radius

- c) Site Furnishings. The components of the site furnishings system should coordinate with and complement each other, the cemetery architectural design, and the site as a whole. Site furnishings, including signage, benches, trash receptacles and flower container/ water receptacles, shall be simple, standardized, and properly scaled with the function and character of the site.
- d) Gravesite locator stand. This is a stand which holds a 215 mm x 275 mm (8-1/2" x 11") book-type listing of individuals interred in the cemetery along with the corresponding gravesite number.
- e) Interment Areas /Burial Sections. Interment areas are those portions of the cemetery acreage that are developed for burials of either full casket or cremated remains. Interment areas may be subdivided into Burial Sections of varying sizes and shapes. Burial sections are visually separate areas, broken by vegetated areas (woods), roads, walks and topography.
- f) Memorial Sites and Sections. A memorial section may be located in areas of a cemetery not suitable, because of soils, terrain or landscape features, for casketed interments. The size and configuration of the memorial section will depend on the terrain, network of roads, walks, etc.,

the size of the individual memorial site, and the demand at a particular cemetery for memorial sites.

- g) **Section Markers.** Each burial section is marked by one or more section markers bearing either the number or letter assigned to that section. Section markers are an element of the signage system for the cemetery. Section markers are positioned at the edge of the section, usually near a road, drive, or walk, where they are readily visible to the public.
- h) **Grading, Drainage, and Planting.** The site should be retained in the natural state as possible. Grading should be kept to a minimum, while meeting the functional requirements of the cemetery.

2.10.5.2 Architectural Considerations

Architectural considerations involves the sitting of the buildings and facilities in the cemetery, space and accommodation, visitors parking location, public rest rooms, and administration/maintenance complex. Building materials used are very important and should coordinate with the other cemetery structures and require little maintenance. The buildings should have durable, easy to maintain interior finishes for heavy public use. The capacity of the facilities, i.e. how many persons are accommodated in a specified time period, is determined on an individual project basis. Future expansion of this area is a possibility.

2.10.6 Cemeteries Planning Approaches

2.10.6.1 Planning for Burial Space in London City

During London's history, fundamental shifts have taken place in infrastructure provision in response to formidable problems. These created a better quality of life for London's residents and fed its growth and prosperity. From 1830s, London built the network of private and municipal cemeteries. Their construction overcame the major environmental problems experienced by London's overcrowded churchyards, inadequate for the rapid growth of its population. Reflecting the great increase in cremation since the 1940s, London has built only eleven cemeteries during that time; nine of which are in the outer London. Successive rounds of legislation have created the system of burial and cremation existing in London today. Each Local Authority in London, which

is also a Burial Authority, has provided burial space and cremation and kept its own record of interments, (LPAC, 1996).

In 1996, Local Planning Advisory Committee, (LPAC), the Confederation of Burial Authorities, and the City of London Corporation commissioned a study entitled "Burial Space Needs in London". Halcrow Fox and the Cemetery Research Group of the University of York undertook the research. It is the first comprehensive study of London wide burial space needs and supply; and the first investigative of burial space from a land use planning viewpoint since a study by the GLC Intelligence Unit for the London Boroughs Association in 1971. The study provides much of the background needed to inform the preparation of advice on burial space needs. It indicated that some parts of London had run out of burial space and the areas they were relying on were also running short of space, (LPAC, 1996).

LPAC's study used the Office for National Statistics and London Research Centre data to project the number of deaths occurring in London. They projected demand for burial space to 2016 and had gone as far as possible to provide a separate estimate for Muslim deaths using the Pakistan and Bangladeshi population as an approximate proxy for the Muslim community. The study projections were underpinned by a series of assumption about trends in death, population composition and movement and attitude to burial and cremation. These assumptions, taken together, result in an optimistic forecast of burial needs in London. Matching potential burial space supply against its projected demand shows the situation for each Borough more clearly and enables a London-wide picture to emerge, (LPAC, 1996).

2.10.6.2 Planning for Burial Space in Urban China

In China there are approximately 8 million deaths each year, $\frac{5}{8}$ of which are inhumed and $\frac{3}{8}$ are cremated. The disposal of human remains consumes over 10 billion RMB, 4×10^6 m³ woods and 6.67×10^7 lands per annum (Zhou & Yang, 1998; CAOG, 2001). Some scientists have calculated that the area of Chinese burial lands needed in 10 years equals to the whole domain of a Singapore (Wen & Zhou, 1999). Civil Affairs Ministry of China defines cemeteries in Temporary Measure of Cemetery Management (Civil Affair Code 24 of 1992) as: Communal facilities to inter cremated and/or uncremated human remains for urban and rural area residents.

The population growth and age structure change for China make the situation urgent. For example, until 1995 the total population has increased to 1.2 billion, and is still increasing at a rate of 1.5 million annually. The aged people (above 60 years old) have increased to 117 million and will reach 370 million in 2040, counting to 24.8% of the total population. At the same time, the arable land per person in China amounts only $\frac{1}{4}$ of the world average. The effect of high population growth and ageing problem that contributes to a potential demand of burial land, along with the current shortage of available land raises an urgent alarm (Zhou & Yang, 1998).

In China, the management of the cemetery is based on a 20-year rotation interment system in the common cemeteries, after which buried cadavers are exhumed in order to recover the sites for new burials if the relation of the decedents do not pay for the rent of the next rotation, and the duration of the time of recovery is much shorter in some other countries (e.g. only 10 years in Italy). The Ministry of Civil Affairs in the State Department is in charge of the funeral and interment management of the country and local offices of civil affairs take the charge of local management. The planning of cemetery should first be examined by government and civil affair bureau of the city or county and then approved by the government and civil affair office of the province or autonomous region (3 and 8 of Decree no.225, 1997). It should be pointed out that in China, cemetery is a kind of essential funeral service and disposal method in current stage. But in a long term, disposal methods that occupy less or no land are more encouraged, helping to achieve the strategic objective of sustainable development. Thus cemetery construction is only a transitional operation and not the direction of funeral reform, (Civil Affair Code 132, 1998).

Former policies have given some general conditions on the planning of new cemeteries and/or on the expanding of existing cemeteries, which concern: the hydrological, geological characteristics and weather, traffic and infrastructures of the area and convenience for residents (Temporary Measure of Funeral Industry Management, Civil Affair Code 50, 1983). Location on or near barren hills or sloping fields is suggested and some forbidden zones are outlined (Temporary Measure of Cemetery Management, Civil Affair Code 24, 1992). Chinese Funeral and Interment Management Ordinance (Decree No.225, 1997) provides the followings;

Six parts constitute the Decree no.225 of 1997. Chapter 1 includes the general principles; chapter 2 gives conditions on management of funeral establishment; chapter 3 prescribes the management of

human remains disposal and bereavement activities; chapter 4 regulates the management of funeral equipment; chapter 5 orders the penalty rules and chapter 6 is the supplementary articles. As we searching for the correlative ones mentioned above, we may regard the following items:

Item 2 of the Decree gives guideline of Chinese funeral and interment management as Spreading cremation actively and gradually as reform to inhumation; saving burial grounds, demolishing undesirable customs and advocating civilized and economical bereavement. Item 4 gives guidance on zoning regulation in delimiting the cremation and inhumation districts to local authorities: in regions with high population density, lack of arable land and convenient traffic, cremation should be carried out; while in regions without conditions for cremation practice, inhumation is permitted. In principle, human remains should be buried in the district where the death occurs; further procedure is needed when carriage would happen. Item 6 grants the right for some minority nationalities and clergies to retain their inhumation custom. Item 10 forbids burial activities in: (1) plantation, woodlands; (2) urban parks, beauty spots, relic protection areas; (3) reservoir areas, embankment areas, water protection area; (4) roadsides of highways and railways. The illegal graves in these areas should be moved to cemeteries or cleared. Item 15 forbids inhumation anywhere other than in cemeteries.

2.10.6.3 Planning for Cemeteries in South Africa Cities

Cemeteries, devoid of religious affiliation, date largely from the early 19th century and many were planned as spacious, landscaped gardens to house human remains, (Moodley, 2009). In South Africa, these are a responsibility of local government according to Schedule 5B of the Republic of South Africa Constitution of 1996 and are therefore funded mainly through the equitable share, Urban Settlements Development Grant (USDG), a conditional grant as per the annual Division of Revenue Act as well as municipalities' own revenue. In many major urban municipalities, the older cemeteries which were initially considered to be large often run out of space for new burials and vacant land is scarce to extend the cemetery or to develop new cemeteries. There is more demand for burial land as a result of increased population. This challenge has mainly been compounded by the scourge of HIV/AIDS which has caused a spike in deaths (Moodley, 2009). Rapid urbanization in towns and cities is also resulting in fierce competition for well located land.

Further compounding the shortage of cemeteries is the fact that a cemetery, among many cultures, is much more than just a place of burial for the dead but a place of spiritual and cultural reference. As a result, there is often resistance among some communities to adopt alternative ways of disposing of the dead such as sharing of graves, grave leasing, and cremation among others hence addressing scarcity of land for cemeteries is proving difficult (SALGA, 2012). Moreover, there are cemeteries that were also developed on geologically unsuitable land for burial due to non-compliance with or non-existence of related environmental management policies at the time. While these are a threat to development of sustainable communities in this country, remedies to this problem become complex due to cultural beliefs associated with cemeteries, death and burial (SALGA, 2012).

South Africa Local Government Association, (SALGA), as the representative of municipalities took it upon itself to provide support in this area and has had some preliminary engagements with municipalities to establish the dynamics of the challenges at hand. A conference with a special focus on cemeteries was convened in October 2011 by the Institute of Environment and Recreation Management, (IERM), in which SALGA participated and interacted with municipalities on the issue. This was followed up by a National Seminar and Local Government Summit on the 21st February 2012 and 12-13 September 2012 respectively whereby Metros and other municipalities, CRL Rights Commission), Institute of Environment and Recreation Management (IERM), Council for Scientific and Industrial Research (CSIR) and Funeral companies attended to further deliberate and find mechanisms to deal with the concerning issues associated with cemeteries. Subsequent to these engagements, it was recommended by SALGA governance structures that a local government policy position and a strategy on cemeteries be developed. Research was conducted to further validate the development of this policy position and strategy. It focused on the current urban municipal responses to challenges associated with cemeteries hence it sought to:

1. Establish the challenges facing the cemetery sector in urban municipalities
2. Determine the strategies employed by municipality in response to challenges faced
3. Determine how municipal processes can be better oriented to meet the burial needs as well as socio-economic needs of communities.

In a bid to curb challenges associated with cemeteries, municipalities have employed different strategies. For example, City of Cape Town offers Berm burial (only allowing headstones) at a

much lower price than Full Monumental private graves (40% of the price). Cremation is also kept at a low premium (R1000 per cremation (2011 price)). Buffalo City Municipality encourages, more so, cremation than traditional burial although they also continue lobbying for more budget allocation to erect and maintain cemetery infrastructure which is currently in poor condition. Mangaung Metro reported that in order to meet the demands of communities, they had to purchase privately owned land for building more cemeteries. EThekweni Metro and Ekurhuleni have allocated a specific budget for awareness and education around different methods of internment in a bid to encourage communities to opt for other methods other than in-ground, traditional burial although success of such an approach has not been measured yet. City of Tshwane intends to close cemeteries that are found to be located on unsuitable landscapes while CoJ uses undertakers and their internal marketing department to encourage communities to adopt alternative methods of burial, (SALGA, 2012).

2.10.6.4 Lessons Learnt from the Case Studies

In the above case studies, it is evident that cemetery planning is a challenge in most cities and authorities have devised ways of addressing the challenges. Some of the ways devised to address the challenges that could be employed in Nairobi includes;

- a) Commissioning of an independent study of all available cemeteries in the city, their conditions and existing problem. The commissioning of the burial space needs in London by LPAC provided the background needed to inform the preparation of advice on burial space needs. Similar conference was held in South Africa to deliberate and find mechanisms to deal with the concerning issues of cemeteries.
- b) During planning of urban centre, there is need to project the demand for burial space. The projections should be underpinned on a series of assumptions about trends in death, population composition/structure, growth and movement and attitude to burial and cremation. Matching potential burial space supply against its projected demand would show the situation in Nairobi more clearly and enables a wide picture to emerge.
- c) There is need to establish a policy and regulatory frameworks to administer cemetery planning. These frameworks should clearly provide the responsible authority, planning and management, and sustainable development in cemetery. The policies should also focus on promotion of cremation and delimiting the inhumation areas

- d) Sufficient budget allocation is necessary for the planning and management of cemeteries. National and county government should avail sufficient funds for the planning and management of cemeteries.
- e) Public awareness is important for any cemetery planning as well as other available interment methods.

2.11 Cemetery Management

Existing as community organizations, cemeteries are defined by the institutions, families or individuals that control their management, engineered and designed by professionals and the management they serve and reflective of the sentiments of plot-holders. The weight that lies on matters of management of cemeteries is thus massive and worth giving serious considerations (Thompson, 2007). Management of cemeteries is a multifaceted process involving different people, policies, laws and standards and should be sustainable across all aspects of well-being. The concept of sustainability in cemetery management involves;

- a) **Social sustainability:** This is the ability of a social system, such as a community, to function at a high level of well-being and harmony. This is achieved by addressing a number of specific needs for cemetery services by ensuring cemeteries are not just places for burials, but places to bring together communities in the celebration of life. This also include ensuring that all future cemetery sites, or expansions of existing sites, have sufficient ancillary facilities, such as chapels, function rooms, and reflection areas.
- b) **Cultural sustainability:** Cultural sensitivity includes social equity and the protection of cultural values. This is achieved through ensuring that cemeteries and crematoria continue to protect community's cultural heritage through the preservation of areas of historical significance. Management of cemeteries ensure that there is a balance in the need for additional burial space with the need to retain historical structures, and ensuring those cemeteries of great cultural significance, are kept in a state befitting that status.
- c) **Environmental sustainability:** Environmental sustainability seeks to reduce cemetery's contribution to the national carbon footprint and address the impacts of climate change. Management ensures that cemeteries continue to provide large swathes of green space, providing lungs for the city. This could be achieved through regeneration of native vegetation within old cemeteries, helping restore them to a park-like status. Further management should

continually examine the burial techniques to consider methods whereby less green space is consumed to accommodate demand.

- d) **Economic sustainability:** Economic sustainability contributes to the local economy, and improves community skill base. This is contributed by ensuring that there is sufficient burial space to cater for the growing population. It further explore options to provide better burial services for a lesser cost, possibly through innovative methods of burial, new cremation technologies, or enhanced administration processes.

2.11.1 Management Plan Guidelines

The objective of cemeteries management guidelines is to ensure cemeteries are managed in a way which will preserve and enhance their cultural and natural heritage values while, where appropriate, allowing them to continue to function as operational burial places. A Management Plan overcomes the problem of changes in staff and loss of corporate memory. It formalizes the approach to management of a cemetery and provides guidance for all of those who need to undertake any activities in the cemetery or close by. It provides consistency of information, (McDougall & Vines, 2005). According to McDougall & Vines, 2005, the following list covers issues relating to cemetery management;

Table 5: Cemetery Management Guidelines

Management Guideline	Management Issues
Development and maintenance of infrastructure	<ul style="list-style-type: none"> ▪ Internal roads and paving surfaces ▪ Signage, Guidelines and signage (protocols and safety) ▪ Water supply, Irrigation, Water conservation, Storm water drainage ▪ Electrical supply and lighting ▪ Gates and perimeter fencing, internal markers and fences ▪ Lights, bins, seats, Rubbish collection and removal, location of stockpiles
Workers in the Cemetery	<ul style="list-style-type: none"> ▪ Staff management, skills and training, ▪ Volunteer workers and work and training protocols ▪ Occupational Health and Safety policy and practice, Insurance and liability
Public facilities	<ul style="list-style-type: none"> ▪ User access, vehicle access, parking, pedestrian access ▪ Toilets, shelters and seats, information signs ▪ Insurance and liability
Immediate Operational Issues	<ul style="list-style-type: none"> ▪ General maintenance, ▪ Compliance with legislation and regulations, standards ▪ Retention/removal of existing headstones ▪ Reuse of burial sites - methods used - responsibility for headstone ▪ New burial guidelines and Records management

	<ul style="list-style-type: none"> ▪ Columbarium and mausoleum requirements ▪ Elaboration of memorials, tributes ▪ Security of site, fencing, graves and buildings ▪ Animal pest control and fencing
Care of War Graves	<ul style="list-style-type: none"> ▪ Definition and standards, Legislative requirements ▪ Contacts and information
Heritage value and character	<ul style="list-style-type: none"> ▪ Conservation of headstones (including cleaning) ▪ Repair of damaged headstones ▪ Scale and character of memorials and monuments in historic areas (desired future character) ▪ New commemorative structures: stillborn areas, significant families, dates etc ▪ Heritage interpretation and application for funding
Management of vegetation in and around the cemetery	<ul style="list-style-type: none"> ▪ Relevant legislation ▪ Maintenance of current landscaping ▪ Retention and management of historic cultural landscape features ▪ Identification of significant vegetation in grave sites and areas ▪ Management of significant or endangered indigenous or endemic vegetation ▪ Timing of work schedules to allow for winter plant rescue ▪ Management of unused areas ▪ Invasive vegetation and weed and plant disease control ▪ Bushfire safety controls, access and risk management ▪ Awareness of Natural Heritage Charter principles
Funding and Scheduling of Works	<ul style="list-style-type: none"> ▪ Costing of required works ▪ Council budgeting processes and works schedules ▪ Sources of funding for works and conservation (National Heritage Trust, ▪ Locating sponsorship for works ▪ Levy on licences for conservation works
Consultation, communication and publicity	<ul style="list-style-type: none"> ▪ Contacting leaseholders ▪ Establishing and coordinating Friends groups ▪ Creating participatory programs - "adopt-a-grave" ▪ Design and production of logos, brochures, signs and other information ▪ Conduct of meetings and preparation of press releases ▪ Operations, income and expenditure ▪ Marketing and cultural development ▪ Long term development plan

Source: McDougall & Vines, 2005

2.11.1.1 Development of Infrastructure and Buildings

Infrastructure and buildings within the cemetery and its immediate linkages with surrounding areas need to be considered. New structures should be carefully considered in any cemetery, historic or recent. The following issues should be resolved and clear policies and programs developed for their installation and/or appropriate maintenance. The siting of new structures must also avoid damage to any remnant native vegetation. The rescue of plants which are likely to be damaged by the new works should occur prior to any works being undertaken. Control of floral and other

tributes on graves. The operational policies for the cemetery should set out appropriate types and locations for floral tributes. As part of maintenance, any damaged, deteriorated or dead tributes should be removed from graves after a reasonable period of time.

Some cemeteries are better managed than others and their aesthetic value is definitely high and the institutional structures in place are quite effective. Such cemeteries are automatically attractive. The ones that are not well managed (in which case the majorities are the public ones, especially in Kenya) are never appealing at all since more often than not, their aesthetic value is considerably poor. In Nairobi, planning and management of the existing public cemeteries have not been very satisfactory. Nonetheless, this is not to say that no consideration has been given at all. The fact that some of the past plans of the city have given provisions for space to bury the departed (Lang'ata cemetery being a good example) cannot be overlooked. This notwithstanding, it must be pointed out that there have been visible flaws that cannot be ignored.

2.11.2 Cemetery Management Approaches: Case Studies

2.11.2.1 Oakland Cemetery in Atlanta, Georgia

a) Background of the Cemetery

Oakland Cemetery was established in 1850 when the city of Atlanta purchased six acres of land near the city from a local farmer, (Sweeney, 2009). Authorities had the tract laid out according to the rural cemetery tradition and used its various parts for burials of individuals from all economic classes. By the end of the century, the cemetery covered 48 acres and the grounds had become a popular destination for leisurely carriage rides among Atlanta's wealthier citizens. As Atlanta was rebuilt during the decades following the Civil War, the city's urban fabric began to envelope Oakland with a major rail line and other roads constructed immediately bordering the landscape, (Historic Oakland Foundation, 2010).

By the first years of the twentieth century, the city had sold all available burial plots in Oakland, consequently losing the regular source of income that these sales had generated for the city. Perpetual care contracts were not included in the price of lot sales, and families therefore were expected to care for gravesites themselves, (Sweeney, 2009). However, many families moved away

from the area through the course of the twentieth century, leaving behind their responsibility to care for these lots. An increasing rate of absentee ownership led to neglect of the grounds. As a consequence, Oakland fell into a state of disrepair by the middle of the century, succumbing regularly to crimes like vandalism, (Lightsey, 2008). Stepping in to help arrest what they saw as a loss of an important part of Atlanta's cultural heritage, private citizens formed a non-profit group called the Historic Oakland Foundation, (HOF), in 1976. This group partnered with the city of Atlanta and established as its primary goals the preservation, restoration and enhancement of Oakland as a cultural resource for Atlanta's citizens, (Historic Oakland Foundation, 2010).

b) Maintenance and Management Approaches

Management at Oakland today is coordinated through a partnership between the Historic Oakland Foundation and the Atlanta Department of Parks, Recreation and Cultural Affairs. The cemetery is owned and operated by the City of Atlanta, which is responsible for daily operations, while the non-profit foundation cultivates resources for its preservation, restoration and promotion. Although the City of Atlanta retains the ultimate authority to regulate all of the HOF's decisions pertaining to the cemetery landscape, they allow the HOF a great deal of autonomy in shaping individual initiatives such as community events and preservation projects, (Historic Oakland Foundation, 2010).

The city's responsibilities at Oakland include basic grounds maintenance like opening and closing the gates each day and keeping the grass mowed and bushes trimmed, as well as tending to administrative and legal issues associated with the few burials that still take place in the cemetery, (Historic Oakland Foundation, 2010). Although plot-owning families still technically are responsible for maintaining their own burial parcels, only about one percent of total graves actually are maintained in this way, (Lightsey, 2008). To fill the remaining need, the city pays a sexton and three additional full-time staff members.

The Historic Oakland Foundation, on the other hand, manages community events and major capital projects, such as monument restorations, for which they typically hire outside professional firms, (Oakland Herald, 2008). As with FOHC, fundraising is another key facet of the HOF's work that makes such initiatives possible. There is inevitably some overlap in the duties of city employees and the HOF. The foundation, for example, supplies labor for monthly cemetery cleanup days, and

for staffing a cemetery store and visitor's center, by recruiting and coordinating a large pool of volunteers, (Sweeney, 2009). Additionally, the coordination between the parks department and the HOF is critical in ensuring the success of Oakland's many public events, (Oakland Herald, 2008).

As a part of the city parks and recreation department, Oakland is managed much like any other city park. The cemetery has opening and closing hours, but during the time the gates are open, management actively encourages visitors to enter and spend time on cemetery grounds for any number of different recreational purposes, (Oakland Herald, 2009). Around ten to fifteen burials per year still take place at Oakland, but attracting and accommodating new business of this type is not a major management concern, (Sweeney, 2009). The relatively small number of burials means that fewer visitors are using the grounds for mourning than at many other cemeteries still in active use. Indeed, a survey of cemetery users showed that visitors to Oakland were overwhelmingly motivated by a desire to view the landscape's art and architecture, (Lightley, 2008).

A master plan guides management at Oakland, and preservation projects are prioritized according to a ten-phase restoration plan that managers adopted in 2002. Preservation is, accordingly, one of the Historic Oakland Foundation's main focuses, and they use the U.S. Secretary of Interior's Standards for Rehabilitation to guide their landscape-based decisions, (Historic Oakland Foundation, 2010). The foundation's other major focus is promoting the cemetery to the public, because it views the use of cemetery grounds by community members as the best way to perpetuate Oakland's long-term care. The group believes that making the cemetery more attractive for visitors will support cemetery preservation goals by attracting volunteers and donations, (Oakland Herald, 2011).

2.11.2.2 Davis Cemetery District in Davis, California

a) Background and History

Davis Cemetery District is the main burial ground of the City of Davis, California, located in California's Central Valley near Sacramento. According to Davis Cemetery's master plan, in 1850 a private citizen purchased five acres of land for the purpose of creating a public cemetery. Settlers in the area erected the first burial markers on the grounds in 1855, but the cemetery's development proceeded slowly due to the relatively small size of the rural community. A cemetery association

was first formed in 1901, and incorporated officially in 1922 as the Davis Cemetery District, (Indigo/Hammond & Playle, 2005). The cemetery "district" was a designation of local government, independent from the City of Davis, which community members created specifically to satisfy the community's burial needs, (Loving, 2007). During the 1960s, the district added twenty additional acres to the cemetery's holdings and hired their first superintendent. This worker oversaw restoration of the grounds and new infrastructure improvements. While the cemetery has had problems with vandalism in the past, today its managers are chiefly concerned with restoring the cemetery's relevance to the local community. Managers point to a national trend of falling interest in cemetery landscapes. They hope their management strategies can ensure this fate does not befall their community's cemetery, (Indigo/Hammond & Playle, 2005).

b) Maintenance and Management Approaches

Management at Davis Cemetery is the responsibility of the specially designated district entity, which is overseen by a five-member board of trustees. The trustees, who, like at Oconee Hill, serve as volunteers, set cemetery policies and bear the ultimate responsibility for the cemetery's care and its financial condition. The board employs four permanent staff members: a superintendent, a grounds foreman, a community outreach director and an office manager (Davis Cemetery District). The Davis Cemetery District is the City of Davis's main burial ground and it continues to accommodate regular interments. Half of the district's income comes from the fees that these interments generate, while the other half is provided by revenues collected from property taxes within the district, (Loving, 2007).

Like at Oakland, managers see a strong connection between the level of community presence on cemetery grounds and the level of care that the community will ultimately invest in the landscape. They believe, for example, that higher visitation rates will lead to prevention of crimes like vandalism, (Loving, 2007). Management at Davis Cemetery is guided by a master plan that the board of trustees commissioned a professional architecture firm to carry out in 2005, (Indigo/Hammond & Playle, 2005). Through the policies it endorses, the plan strives to respond to national trends in public interests, such as changing preferences for final disposition of human remains and a growing concern for protecting urban ecological systems. To fulfill the trustees' interest in pursuing "green" management practices, the master plan endorses a maintenance approach of "benign neglect," which seeks to cultivate an aesthetic of "picturesque disorder." This

strategy, the management team hopes, will contribute to increased biodiversity as well increased community interest in wildlife viewing on cemetery grounds, (Indigo/Hammond & Playle, 2005).

In shifting to more ecologically responsible maintenance techniques, Davis's managers have focused largely on the choice and disposition of plant material. They have created the long-term goal of gradually replacing most of the ornamental species currently part of the cemetery landscape with more drought-tolerant native species of trees, shrubs and grasses, (Indigo/Hammond & Playle, 2005). They emphasize planting areas of native grasses that require only occasional maintenance, require little application of pesticides and attract native insects that are important food sources for local bird populations. At the same time, they have installed solar panels that generate the electricity needed to power the cemetery's office building as well as the landscape's irrigation system, (YB News, 2008).

Capitalizing on their efforts to improve the cemetery's ecological functions, the trustees applied for and received certification from the National Wildlife Federation under the category of "Backyard Habitat" (Wexler, 2008). They viewed this distinction as an easy but conspicuous way to advertise their eagerness to attract not only wildlife, but a public interested in wildlife related recreation. Certification costs only \$15 and requires criteria that many heavily vegetated cemeteries either already meet or could meet with minimal management changes. Because of the ease with which a landscape can receive this certification, cemetery staffs recommend this step to other cemeteries wishing to reach out to the public, (Loving, 2007). In another effort to pursue ecologically responsible tactics and to reach a broader public, the management team at Davis Cemetery has begun offering so-called "green" or "natural" burials. This practice is a form of in-ground interment in which the body is not embalmed and is placed in the ground in a casket made of biodegradable material. Many in the Davis community view this as an attractive option for final disposition of human remains and such interments account for around 16% of the cemetery's total business, (YB News, 2008). To further attract new customers, the cemetery's master plan also calls for the construction of a small columbarium for those who would prefer to memorialize the cremated remains of a loved one in this way, (Indigo/Hammond & Playle, 2005).

2.11.2.3 Lessons Learnt from the Case Studies

From the above case studies, the following are the key lessons learnt that could be employed in the management of cemeteries in Nairobi County;

- a) Where there is no assigned role of maintaining the graves by either the family of the deceased or the government, it led to neglect of the grounds succumbing to crimes of vandalism.
- b) Community participation either through community based organizations or public private partnership is essential in maintenance, preservation and restoration of cemetery. The county government could own the cemetery and handle all daily operations while the community based organization cultivates resources for its preservation, restoration and promotion. This joint venture had been established in Lang'ata Cemetery through the partnership between the then Nairobi City Council and the Britam Insurance Company in planting trees.
- c) If properly maintained, cemeteries could provide recreational facilities which would in turn generate revenues. This could be enhanced through tour training, volunteers and public awareness.
- d) Educational outreach programs should be introduced to attract younger generations to study topics that are uniquely displayed in the cemetery landscape. The management should invite schools to visit the grounds to study and this would change community views on cemetery.
- e) Employment of qualified staff is key to successful cemetery management. The staffs are a strong connection between the level of community presence on cemetery ground and the level of care that the community will ultimately invest in the landscape.
- f) A master plan and management guideline and policy must be developed by professional for every cemetery and should be followed through by the management. Every staff should understand these policies and constantly communicated to the community.

2.12 Policy, Legal and Institutional Framework

Kenya has not had a single and clearly defined policy and legal framework since independence to guide the planning and management of cemeteries. This, together with the existence of many land laws, some of which are incompatible, has resulted in a complex land management and

administration system. The various policies and legislations that have an influence on cemetery planning and management includes;

2.12.1 Policy Framework

a) Kenya Vision 2030

Kenya Vision 2030 is the country blue print covering the period 2008- 2030. It aims at transforming Kenya into a newly industrializing middle income country and providing a high quality life to all citizens by 2030, (GOK, 2007). This key policy document is silent on cemetery planning and management. However, it recognizes the important of land use planning and land reform which could have impact on cemetery planning and management.

b) Nairobi Metro 2030

The Vision of Nairobi is to be a world class African metropolis by 2030. It will strive to create a world class working environment with a wide range of jobs, transport options and communication infrastructure. It is a vision of a world class living environment with modern housing, healthcare, cultural amenities and recreational facilities, (UNDESA, 2008). Nairobi Metro 2030 is part of the overall national Kenya Vision 2030. This key policy document is silent on cemetery planning and management but recognizes improvements of cultural amenities.

c) National Land Policy (2009)

The policy's vision is to guide the country towards efficient, sustainable and equitable use of land for prosperity and posterity. Its mission on the other hand is to ensure positive land reforms for the improvement of the livelihoods of Kenyans through the establishment of accountable and transparent institutions dealing with land, (GOK, 2009). Though the policy is silent on cemetery planning and management it seek for actualization of spatial frameworks for orderly management of human activities to ensure that such activities are carried out taking into account considerations such as the economy, safety, aesthetics, harmony in land use and environmental sustainability. Further it seeks to establish an effective framework for coordination of land use plans to ensure implementation of the planning proposals and regulations.

d) National Urban Development Policy (2012)

The anticipated demographic, social and economic changes brought about by urbanization has prompted the Government of Kenya to prepare a National Urban Development Policy (NUDP) that aims to strengthen development planning, urban governance and management, urban investments and delivery of social and physical infrastructure in urban areas throughout the country, (Nabutola, 2011). This policy recognizes planning as the software for delivering urban development as it provides a structured framework for coordinating and integrating sectoral plans and activities, and supports the systematic implementation of urban development programmes. In addition, it provides a platform for mobilization for public participation in urban development, while also seeking to optimize resource allocation and utilization. However, the policy is not specific on the provision of cemetery planning and management.

2.12.2 Legislative Framework

a) The Constitution of Kenya (2010)

Article 42 on Environment indicates that every person has the right to a clean and healthy environment, which includes the right; to have the environment protected for the benefits of present, future generations through legislative and other measures, particularly those contemplated in Article 69 to have obligations relating to the environment fulfilled under Article 70. Further Article 66 (i) provides that the State may regulate the use of land or any interest in or right over any land in the interest of defense, public safety, public order, public morality, public health or land use planning. Social equity and justice is enshrined in the constitution as a bill of rights which every citizen can move the court for the performance or reinstitutions. Though not specific on cemetery planning and management which is a public good, under the bill of rights, environmental protection and public interest, it can be argued that the constitution recognizes the important role played by cemeteries.

b) Public Health Act Cap 242

The provisions of cemeteries in the country are anchored in Public Health Act in part XIII. However, the Act is not specific on planning and management except provision, burial and opening. Section 144 provides that dead should be buried in appointed cemeteries. In particular, subsection (1) provides that it shall be lawful for the Minister to select and appoint and to notify in

the *Gazette* sufficient and proper places to be the sites of and to be used as cemeteries; and it shall be obligatory where such cemeteries exist to bury the dead in such cemeteries in conformity with the provisions of rules made by any local authority. Subsection (2) further provides that any person who is guilty of a breach of any such rule shall be guilty of an offence and liable to a fine not exceeding one thousand five hundred shillings.

Section 149 provides for the closing of cemeteries. It provides that it shall be lawful for the Minister to notify in the *Gazette* that any cemetery or burial ground shall, from a time in such notification to be specified, be closed, and the same shall be closed accordingly, and whosoever, after the said specified time, buries anybody or the remains of anybody in the said cemetery or burial ground shall be guilty of an offence and liable to a fine not exceeding one thousand five hundred shillings. Section 146 to 148 deals with exhumation process, permits, and procedures.

Part of the duties transferred to the Minister for Local Government, Health and Housing in Public Health Ordinance Cap 130 includes Section 144, 145 and 147 that relates to cemeteries. Under the Legal Notice No. 172/1960, in exercise of the powers conferred by section 2 of The Transfer and Delegation of Powers Ordinance No. 31 of 1955, the Governor, with the approval of the Legislative Council transferred to the Ministers for Local Government powers and duties as per Legal Notice 187/1956 matters regarding cemetery operations amongst others.

e) The Local Government Act Cap 265, (Repealed)

The Local Government Act Cap 265 was repealed after the enactment and operation of Urban Areas and Cities Act No. 13 of 2011 and County Management Act No. 17 of 2012. However, the Act under section 161 (a) provided that every municipal council or town council and every urban council shall have power to establish cemeteries at sites appointed under, and maintain cemeteries authorized under, the Public Health Act Cap 242, to conduct funerals; to establish and maintain mortuaries and crematoria within or without its area; to prohibit the disposal of human bodies within its area otherwise than by interment or cremation in or at any such cemetery or crematorium established or approved by it; and to control undertakers and regulate the conveyance and disposal of dead bodies.

Under section 167 (1), the Act provides that it shall be the duty of every municipal council, town council or urban council, to provide for the burial of all destitute persons who die within its area.

Section 167 (3) provides that it shall be the duty of every municipal council, town council and urban and area council, to ensure that in its area there are adequate and suitable arrangements for the burial or cremation of the dead. This section is in conformity with Legal Notices No. 634/1963, 31 of 1971, and 11 of 1984. However, the Act is not very specific on the cemetery planning and management.

d) Urban Areas and Cities Act (No. 13 of 2011)

This is an act of parliament to give effect to Article 184 of the Constitution of Kenya. The Act is silent on the planning and management of cemeteries despite its enactment to replace the Local Government Act Cap 265 as noted above. However, Section 13 and 14 provides for establishment and membership of boards of cities and municipalities while Section 20 details the functions of the Board which comprises amongst others; formulation and implementation of an integrated development plan; control land use, and zoning within the framework of the spatial and master plans for the city or municipality as may be delegated by the county government. Further, under the First Schedules on classification of cities and towns by services, the Act provides that in classifying an area as a city, municipality or town, regard shall be to the ability of cities, municipality, town to provide amongst others, cemeteries and crematoria, planning and development control, and funeral parlour.

e) Physical Planning Act (Cap 286)

This is the critical Act that governs the land use planning in the country. However, the Act is silent on the cemetery planning and management. Under Section 29, the Act empowers planning authorities; to consider and approve all development applications and grant all development permissions and to formulate by-laws to regulate zoning in respect of use and density of development. Through the above powers, the planning authorities could spearhead the planning and management of cemeteries.

f) Other Acts of Parliament

Some of the other key legislative framework that touches on the land use planning and management but not specifically on cemeteries include; Environmental Management and Coordination Act Cap 387 that provides for mandatory Environmental Impact Assessment for any project, Land Act Cap 280 (No 2 of 2012), Land Registration Act Cap 300 (No 3 of 2012),

Surveyor Act Cap 299 and Draft Physical Planning Handbook. Those these Acts are not specific on the cemetery, their general guidelines on land use planning, environmental protection, registration and ownership have impact on the cemetery planning and management.

2.13 Planning Interventions

Land use and zoning regulations give local governments' considerable influence over where new cemeteries are built and how existing cemeteries expand, but the factors that influence cemetery management and planning are complex and cut across several substantive issues. As cultural landscapes, cemeteries touch deeply held beliefs and emotions (Llewellyn, 1998, p. 23). As institutions with a decidedly public function, cemeteries interact with a range of interest groups: owners, managers, undertakers, religious congregations, planners, politicians, plot owners, and the public. Each group shares concern about where new cemeteries will be located, how they will be planned, managed, and how expansions will be handled. With so many interests clamoring for a seat at the table, planners dealing with burial issues face a challenging environment (Harrington & Krynski, 2002). Yet case studies that detail the process of planning, building, or expanding a cemetery are nonexistent. Without much guidance or even good information, planners faced with community burial issues have been left to pick their way through an adhoc process.

There are however strategic points at which planners can effectively intervene. Five key levels that planners can operate at the local and regional level to address burial includes; through land use plans, zoning ordinances, public participation, intergovernmental coordination, and environmental regulations. Revisions to comprehensive land use plans and zoning ordinances can encourage communities to reduce overall consumption of land and improve the way community burial space is managed. Through strategic outreach and coordination across political boundaries, planners can help communities begin to discuss policies that encourage a more wide ranging perspective on how to efficiently manage existing cemetery space and decide cooperatively where future deaths will be accommodated.

2.13.1 Land Use Plans

Burial facilities occupy complicated ground in terms of community land use. While the majority of cemeteries are publicly built, owned, and operated, they serve an essentially public and private

function and therefore occupy important space in community geography (Pattison, 1955). The task of negotiating the planning of new cemeteries or expansions of existing cemeteries, whether private or public, in part falls to community planners and municipal administrators. Despite their ubiquity, cemeteries are rarely discussed as critical land uses, either in the context of local planning problems or in broader considerations of land use as a social, economic, or cultural phenomenon (Harvey, 2006; Pattison, 1955).

Though cataloging the location of cemeteries has been made easier with Geographic Information Systems (GIS) and the widespread availability of digital geospatial data, the fragmented patterns of ownership and variable conditions of cemeteries makes cataloging details about their relationship to municipal land use extremely challenging (Zelinsky, 1994). At present, planners are almost entirely dependent on irregular and proprietary data published by cemetery owners and cemetery industry associations (Llewellyn, 1998). Few communities include cemeteries or burial facilities as part of their comprehensive plans. The more common technique to evaluate cemetery expansion issues seems to be stand-alone capacity studies (City of Santa Monica, 2009; Local Agency Formation Commission of Napa County, 2008), though such studies are infrequent and do not address the relationship between burial and local land use. While plans cannot solve missing data problems, including cemeteries as part of larger discussions of community land use offers an excellent starting point for planners to introduce the issue of planning for the dead. Through land use plans, planners can develop future scenarios that include burial needs. In addition to information about the age structure of the community, plans can project the number of deaths, catalog existing burial space, outline state regulations governing burial facilities, and propose locations for future burial facilities.

2.13.2 Zoning

As the one document through which local governments most often regulate the location of burial facilities, zoning ordinances are particularly important to cemetery planning. Without challenging the fundamental structure of a city code, planners can advocate for changes in zoning ordinances that make new cemeteries or cemetery expansions more palatable. Reducing minimum lot sizes, changing buffer requirements, or expanding the number of districts where burial facilities can be located could significantly alter how burial landscapes are incorporated into the community.

Thoughtfully designed, small community burial grounds could provide valuable green spaces. Even simple changes like expanding the hours of operation or requiring gates to be open could encourage greater public use of existing cemeteries. In places with high rates of cremation, planners can adjust zoning ordinances to help communities incorporate scattering gardens into existing public lands.

In Nairobi County, the county government has established the Nairobi City Development Ordinances and Zones which provides for twenty development zones. However, this policy guideline does not provided the development controls for cemeteries but provides for the allowable developments, the ground coverage, plot ration and minimum development area in an area within the city. This guide give a simplified guide to those aspects of the development ordinances that every property developer in this City requires in setting up any form of development – be it residential, commercial, industrial, institutional or religious. With the continued high rate of urbanization, the City Council of Nairobi has a duty to use planning controls to ensure that development is allowed only where it is needed, while ensuring that the character and amenity of the area are not adversely affected.

2.13.3 Public Participation

The public tends to perceive cemeteries as both benefit and curse. While established cemeteries often blend seamlessly into the residential landscape, in many cases becoming amenities to a neighborhood, proposals to build new cemeteries or expand existing ones frequently are met with public outcry (Llewellyn, 1998, p. 64). Because cemeteries are typically large land uses, they can meet the kind of resistance as commercial or residential subdivisions or certain non-family households (Feagans, 2004; Lake, 1993; Lewis, 2001; Ritzdorf, 1985). Yet existing cemeteries, provided nothing about them is changed, can also be seen as community resources that deserve protection.

Conflict over burial grounds can stem from several sources: The visible reminders of mortality that active cemeteries present, the idea that burial grounds depress property values, the value that neighbors place on unchanging view sheds, and the nuisance of increased traffic and noise (Capels & Senville, 2006; Sloane, 1991, p. 243). Examples abound. In Culver City, CA, the owners of

Hillside Memorial Park proposed adding a large mausoleum in a section of the cemetery where soil and topography was incompatible with burial, but “the neighbors were concerned that the new building would block their beautiful view of Hillside's park-like setting” (Loving, 2004, p. 7). Alterations to this view shed were considered by nearby residents a taking of the aesthetic environment to which they had grown accustomed (and perhaps had paid for). In Fayette County, GA, a plan to build a new private cemetery to meet the county's growing demand for burial space was met with resistance from the public. In most instances, planners should approach controversy over cemeteries as public relations problems. Orchestrating public outreach when an expansion or new burial ground is proposed could help palliate conflict after it has erupted. Introducing the issue of burial early in the community planning process, and allowing community members a voice in deciding where future interments should be located, could build long term community support and head off conflict before it starts.

Due to past history on the way of carrying out business in Nairobi City County the challenges facing public participation are still rife such as bad relationship, conflict, lack of trust, corruption, opportunism and poor use of resources. The previous requirements of LATF and LASDAP, which required more open, participatory and accountable systems that deliver tangible improvements for citizens, did not live to its billing of entrenching public participation in the decision making process in the local authorities in Kenya. With the promulgation of a new constitution in 2010, ease access to judicial review mechanisms and modern democracy there is active roles from the population and participation from members of the community. It is no longer the case that those who are governed act only to elect, and then, whatever the outcome they are governed without opportunities to interact with their representatives. This participation is transforming systems by creating a lasting linkage between the elected and electorate. Therefore, creating room for rational decisions, better understanding of problems in communities and close cooperation in working towards achievable solutions to these problems.

2.13.4 Intergovernmental Coordination

The regional land market influences the location of cemeteries. In theory, ground dedicated to memorializing the dead should be spatially proximate to the population it serves. But open land close to population centers that could be devoted to burial can often fetch a much higher price from

residential or commercial developers (Harrington & Krynski, 2002; Teather, 1998; Zelinsky, 1994). Because most existing cemeteries, once located on the urban outskirts, have since been hemmed in by development, opportunities for adjacent expansions are often limited (Capels & Senville, 1994). State regulations governing grave density, along with local zoning requirements for buffers and minimum lot sizes, can significantly increase the amount of land needed to build a new cemetery of even modest capacity (Llewellyn, 1998). Together, the regional land market and local regulations can make new cemeteries in developed places expensive propositions long before any dirt is turned.

The challenge of adapting existing intergovernmental relationships to the anticipated demand for new burial space may be tempered by reframing death spaces as being a service to the living. Like other planning problems with spillover effects or significant costs, planners can work to encourage regional cooperation around burial. As the demand for space expands, planners can experiment with techniques to encourage local governments to work together to create regional burial plans that distribute costs and benefits fairly. In Kenya, the intergovernmental coordination is anchored in an Act of Parliament, Intergovernmental Relations Act No. 2 of 2012, which establishes a framework for consultation and co-operation between the national and county governments and amongst county governments; to establish mechanisms for the resolution of intergovernmental disputes pursuant to Articles 6 and 189 of the Constitution, and for connected purposes. The Act come into operation upon the final announcement of the results of the first elections under the Constitution. In matter relating to cemetery planning and management which is core function of the county governments, the Act vide Section 19 (1) establishes the Council of County Governors consisting of the forty seven counties. Further, the function of providing, planning and management of cemeteries could be transferred to the national government as per Section 24 to 29 of the Act.

Considering the current scarcity of suitable land within Nairobi county for establishing cemeteries, intergovernmental coordination with the neighbouring counties of Kiambu, Kajiado and Machakos will be ideal in acquiring land. Without this intergovernmental coordination, the planning of cemeteries is not feasible due to land scarcity and the legislations.

2.13.5 Environmental Regulations

To be part of municipal green infrastructure, planners must work to preserve cemeteries as well as mitigate the environmental impacts of upkeep. Strategies for managing the environmental footprint of burial facilities can use the same policies that regulate tree removal, grading, and protect sensitive landscapes. Like other properties, cemeteries are subject to landscape ordinances, as well as stream and wetland buffers. Using such ordinances as leverage, planners can push cemetery operators to employ more environmentally sensitive landscape management techniques, influence how cemeteries are expanded, and ensure that new burial facilities are developed in an environmentally friendly manner. Burial facilities could even be included in regional green space or land conservation programs, which often employ heightened standards to protect fragile natural resources.

Kenya's legal and institutional framework is fairly robust and addresses many of the most important challenges facing environmental management in a modern state. The current legislation is quite comprehensive, although the control measures on cemetery is one gap. Despite this gap, the National Environmental Management Authority (NEMA), along with other lead agencies like the Kenya Wildlife Service, Nairobi County Government, or the Water Regulation Management Authority, have the legislative tools they need to adequately protect and conserve the environment of Kenya, ensuring a clean and healthy environment for all citizens. Nevertheless, a clean and healthy environment has not been secured for all Kenyans. The biggest obstacles to this realization lay in the implementation and enforcement of existing laws and a lack of cooperation between agencies within the government.

Kenya's current environmental regulatory regime originates from Parliament's passage of the Environmental Management and Co-ordination Act (EMCA) of 1999. Before the passage of EMCA, which aims to address the whole scope of environmental regulatory issues facing a modern state, Kenya lacked comprehensive environmental regulation legislation. The EMCA of 1999 is expansive, but its most important contribution to the governance of environmental regulations is the creation of the National Environmental Management Authority (NEMA). NEMA is charged with enforcing EMCA's provisions as well as the subsidiary legislation that has been passed over the last decade. The subsidiary legislation includes water quality, waste management,

controlled substances, biodiversity, wetland, river and seashore, and environmental impact assessment (EIA) regulations. Most of the provisions contained in EMCA, as well as the subsidiary legislation, are intended to provide regulations for the usage and type of allowable activity in the different ecosystems and habitats of Kenya. Thus, NEMA's main task is to review and grant licenses to proponents that plan to change land-use. To complete this task, EMCA grants NEMA the power to compel any authority or ministry to comply with existing environmental regulations.

However, NEMA shares, or rather, competes with other government entities for jurisdiction over certain activities. At both the national and local level, duplication of licensing jurisdiction abounds, creating differing standards and confusion; not to mention undermining any wider environmental management plan NEMA might want to employ, (Bird and Kirira, 7-8, 2009).

2.13.6 Promotion of Conservation Burials

Urban planners are in a unique position to instigate change in contemporary burial practice. Basmajian and Coutts (2010), articulate the potential for planners to influence the burial process and describe how "designs that accommodate multiple uses and conservation space might bring burial facilities back into community life and simultaneously contribute to a community's green infrastructure".

Cities should have the foresight to include these ecologically and culturally rich places in their comprehensive plans. Bringing the cemetery back into the mainstream of local planning and civic culture increases the visible presence of natural and conservation burial. Such visibility serves the public by giving people an informed picture of their end-of-life options. There are additional socioeconomic advantages to conservation burial, in that "sacredness serves the practical purpose of preservation" (Hester 2006, 135). Burying the dead imbues a place with a sense of meaning, which has the potential to connect people to their environment and community. Many cultures embrace the connection between the environment and death; for example, planting a tree for the dead is common in Kenyan culture. By seeing entire habitats and landscapes as "embodiments of personal and cultural identity and history," people are motivated to be stewards of the land, taking action "to maintain, restore, and improve their community, the landscape, and larger ecosystems"

(Hester 2006, 364). Such efforts also have the potential to bring community members together for a common cause.

Planners can support conservation burial through policy incentives, permits, comprehensive land use plans, zoning ordinances, and environmental regulations. Environmental ordinances can give planners leverage to encourage the creation of more environmentally sensitive cemeteries. In order to create and follow through with specific ecological conservation goals, baseline information about existing geology, hydrology, soils, topography, plants, and wildlife must be collected. Guidelines need to be established to bring credibility to the conservation burial process and they need to address issues of burial plot density, preparation of the body, and materials used. Deed restrictions or conservation easements should be used, and they should incorporate standards to protect the land as open space and ensure that the site is accessible to the public. Potential management structures for conservation burial include land trusts, conservation organizations, nonprofit organizations, and individual proprietorship with a conservation easement in place. Conservation burial sites can also be owned by, or operated in conjunction with, a government agency.

In Nairobi, conservation burial is practice in Lang'ata Cemetery through the grave reopening option. This allows the family of the deceased to reopen the grave and bury another dead body within the same grave. This option promotes maximum utilization of the available space as the grave can accommodate several bodies if properly utilized with clear provision of the depth for the various burials. More public sensitization is required for public adoption of this burial practice.

2.13.7 Promotion of Cremation

Due to the changing trends in funeral practices, cremation has gained eminence in Christian and traditional setting that previously believed only in the conventional burial systems. Cremation (using fire and heat) is the process by which the body of the deceased is reduced to its basic elements. Cremation is permitted for Christians as long as it is not chosen in denial of Christian teaching on the Resurrection and the sacredness of the human body. Cremation is prohibited in Islamic faith. Cremation is increasingly becoming popular in Kenya, especially amongst the younger generation. Among the many reasons for this growing trend is the breadth of options

cremation provides for a final memorial service. Cremation gives people the flexibility to search for types of tributes that reflect the life being honored. But this doesn't mean that aspects of traditional funeral services have to be discarded. Even with cremation, a meaningful memorial that is personalized to reflect the life of the deceased could include: a visitation prior to the service in Kenya; an open or closed casket; special music; a ceremony at the funeral chapel, your place of worship or other special Kenya location; and participation by friends and family.

Commonly, cremated remains are placed in an urn and committed to an indoor or outdoor mausoleum or columbarium; interred in a family burial plot; or included in a special urn garden. Cremation also gives families in Kenya the option to scatter the remains. This can be done in a designated cemetery garden in Kenya or at a place that was special to the person. Today, cremated remains can even become part of an ocean reef or made into diamonds.

2.13.8 Enactment of Legislation on Disposal of Dead Persons

The issue of disposing a dead body has been a controversial subject in Kenya since the colonial era. Failure to have legislation on the same is what has contributed to most of the controversies. There is no provision as to who should have the responsibility of burying the deceased and even where the deceased should be buried. Planners ought to spearhead the enactment of The Burial and Cremation Act to regulate all cemeteries, burial grounds and related facilities in Kenya. Likewise, every county government should enact their regulations for the implementation of the act to guide the process of planning and management of cemeteries within their jurisdiction. The enactment of the legislation would be aimed at;

1. To provide for cemeteries for the burial of dead bodies and crematoria for cremation of dead bodies.
2. To provide for procedures, methods and practices to regulate the burial and exhumation of dead bodies, the provision of grave plots and the maintenance thereof as well as the cremation of dead bodies.

The relevant authority for a cemetery, natural burial ground or crematorium would then be responsible for various matters including planning, interments, maintenance, and the setting aside of parts of cemeteries for specified purposes. The Act should overhaul the way in which all such

matters are to being currently managed. Furthermore, the relevant authority for a cemetery must keep certain prescribed registers, records and plans relating to matters including burials, exhumations, memorials and interment rights.

2.14 Conceptual Framework

In this study, the conceptualization of cemetery planning and management is based on the concept of public interest. This is anchored on literature review that explains that land use planning encompasses various disciplines which seek to order and regulate land use in an efficient and ethical way, thus preventing land use conflict. In this perspective, urban spatial structure is a conjunctive outcome of the functioning of market and political processes, the one, market process, providing the means by which individuals, firms, and institutions pursue their self interests and the other, the political process, the means by which governments articulates and pursue the public interest as stated by Chapin and Kaiser, 1979.

Effective land use policy, recognizing the importance of cemeteries and the value that society places on this use must be both permissive and enabling. Generally, the literature and, where they exist, existing land use policies, recognize the compatibility of this form of land use. Whereas any development must be responsive to the context within which it is to be located, the overall notion of what constitutes good land use planning should guide the development of any land use, including cemeteries. The key factors in planning for cemeteries are as follows:

- a) The planning horizon for cemeteries is not the same as other land uses. Simply put, the 20 to 25 year planning horizon contemplated by the Physical Planning Act and regulations does not relate to the practical realities of multi-generational planning which is the basis for cemetery development.
- b) As with traditional land use planning, population projections are important, but from a different perspective; they must be related to mortality rates and projections. For instance, when planning for communities it is important to know what the eventual population will be in order to ensure that appropriate opportunities (access to housing, employment, recreation, institutions, transportation systems, etc), will be provided as and when needed. It is equally important to be able to project how much land will be required to accommodate the dead, based on the projections of population and mortality rates.

- c) The location for cemeteries is an important consideration. It is important that land use policy recognize that cemeteries constitute both an urban and non-urban use. Official plan policy that recognize cemeteries as only an urban use does not consider this land use in the context of the efficient and appropriate use of land and municipal services. Furthermore, it must be understood that the size of modern cemeteries make their development within urban areas unlikely.
- d) The size of a proposed cemetery is important. To a certain extent this is dependent on the expected composition of the client base for the new cemetery. It is recognized that cemeteries may represent various cultural, ethnic, and religious groups. The size of a cemetery that focuses on one segment of society e.g. Nairobi War Cemetery may be different than a cemetery that is non-denominational / non-cultural based like Lang'ata Cemetery. The size must be compatible with the projected client base over the planning horizon (which has been shown to be ~100 years, or 4-generations).
- e) It is important that new cemeteries are designed to be flexible and responsive to potential societal and cultural changes in attitudes towards how death and burial is to be accommodated. The modern history of cemeteries suggests that they will continue to require large properties, notwithstanding evolving practices such as a wider acceptance of cremation (Mytum, 2004). In practice, although individuals may choose to be cremated, the general practice is to have their ashes buried in a cemetery (Annand, Memorial Gardens Dickson Hill Cemetery Needs Analysis Markham, ON, 2011). It is also important that opportunities are provided for the placing of memorials (monuments, etc) as a form of 'touchstone', whereby their descendants may go to connect with their heritage.
- f) Finally, it is recognized that, as with any form of development, potential environmental impacts must be considered in the land use approvals process. Historically, urban graveyards and cemeteries were the cause of some concern respecting the prospect of the spread of disease. This was the result of overcrowding and poor sanitation and health practices (Mytum, 2004). The development of the modern cemetery represented a response to these concerns and issues. Nevertheless, public concerns are not uncommon when a new cemetery is proposed in proximity to a settlement area. These concerns are often manifest in concerns for the local residents' potable water sources, although they may be based on superstition, naivety about the use, and other reasons. It is important, therefore, the proposals for new cemeteries address any potential environmental concerns in order to justify the locational choice.

In light of the foregoing, a land use policy respecting cemeteries should consider the policy direction that recognizes that cemeteries constitute an important societal use, which by their nature are to be considered to be permanent. Further, it also recognize that cemeteries, by the nature of their development form, are considered to be generally compatible to all other land uses within the urban centres and therefore proposals for new cemeteries and management shall be permitted, provided that the following matters have been addressed to the satisfaction of the planning authority and the public;

- a) The area and capacity of the cemetery and the accessory uses are appropriate for the location, and sufficient in size to serve the project population within the planning horizon of the cemetery, notwithstanding that it is recognized that the cemetery planning horizon is different (longer) than the planning horizon typically used in traditional land use planning.
- b) An analysis of the proposed use shall be provided, wherein the need for the new cemetery (or an expansion of an existing cemetery) will be demonstrated through an examination of the demand for additional cemetery land, assessed against the existing and potential supply of such land within the planning horizon for cemetery uses.
- c) Opportunities for alternative interment and/or burial practices to meet the needs of a diverse cultures and efficient use of the land area will be considered;
- d) An environmental evaluation of the proposed cemetery shall be prepared, which will include the completion of hydrological and hydro-geological studies, which indicate that the use will not have adverse impacts on the quality and quantity of ground and surface water on or nearby the site or any wetland;
- e) An analysis of traffic patterns, including the consideration of any potential impacts to existing surrounding and area uses, including an assessment of projected onsite parking requirements in relation to such accessory uses as defined herein, shall be prepared; and,
- f) An enhancement plan shall be prepared that demonstrates the use of existing site characteristics, such as topography and vegetation, identifies natural native vegetation enhancement and sequential plantings, including opportunities for memorial groves and the establishment of arboreta, improvements to connectivity between key natural heritage features and key hydrologic features, provides for the development of a forest canopy.

The weight that lies on management of cemeteries is massive and worth giving serious

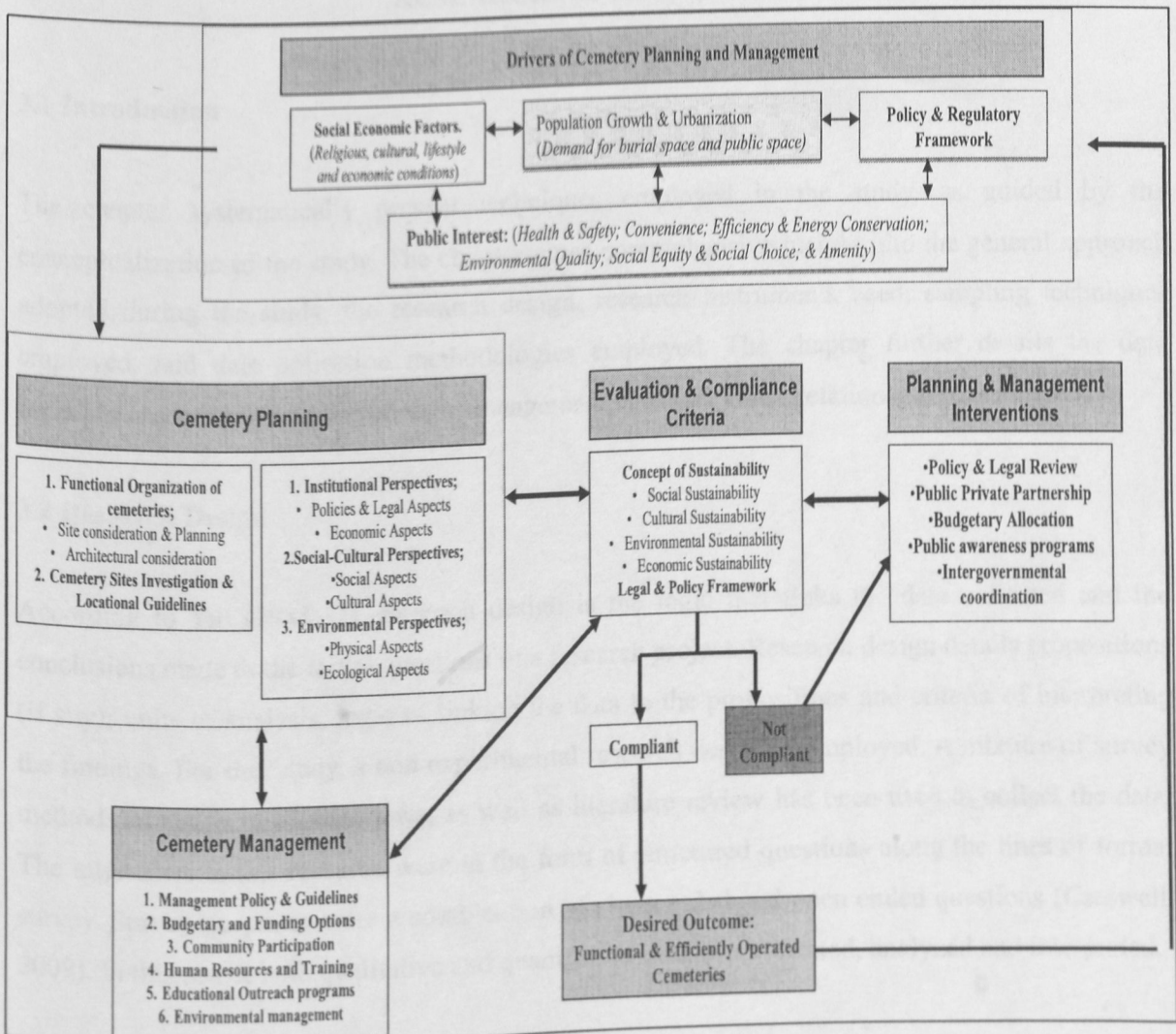
considerations. Management of cemeteries is a multifaceted process involving different people, policies, laws and standards and should be sustainable across all aspects of well-being. The concept of sustainability in cemeteries management entail; social sustainability which is the ability of a social system to function at a high level of well-being and harmony, cultural sustainability which will include social equity and the protection of cultural values, environmental sustainability through providing large swaths of green space, and economic sustainability through contribution to the local economy and improving local skills base. Other key consideration in cemetery management includes; management plan guidelines and policies, public private partnership, fund mobilization, staff and safety policies, educational and outreach programmes, community sensitization, and public participation.

There are overall guiding principles or criteria for determining whether or not a cemetery is well managed. These parameters includes; planning and management policy guideline, development and maintenance of infrastructures within the cemeteries, staff and safety policies, provision of public utilities, maintenance of heritage value and character, landscaping and environmental management, stakeholders and public participation, funding and budgeting process.

Therefore, planning and management intervention should focus on holistic approaches both at county and national level. The ad-hoc short term decisions that neither benefit the public space utilization nor help improve the quality of life of the citizens should be replaced with long term solutions focusing on policy and regulatory framework, managing growth, urban renewal strategies to create new opportunities, localized development and management controls to make it more effective and participatory, and local and regional planning and management approaches to guide planning and management of cemeteries. Interventions must aim at regulating the planning and management of cemeteries to promote cemetery's functionality and operations.

In summary, the conceptual framework details the driving forces for functional cemetery, their social spatial impacts and effects and the desired effects after planning and management intervention which ensures that cemeteries are sustainable in all aspects i.e. social sustainability, environmental sustainability, cultural sustainability and economic sustainability. The dynamics around cemeteries planning and management are summarized in Figure 1;

Figure 1: Conceptual Framework Summary



Source: Author, 2015

CHAPTER THREE

RESEARCH METHODOLOGY.

3.1 Introduction

The chapter systematically present techniques employed in the study, as guided by the conceptualization of the study. The chapter gives comprehensive insight into the general approach adopted during the study, the research design, research instruments used, sampling techniques employed, and data collection methodologies employed. The chapter further details the data handling procedures focusing on data management, analysis, interpretation and presentation.

3.2 Research Design

According to Yin (1984:12), research design is the logic that links the data collected and the conclusions made to the initial questions of a research project. Research design details propositions (if any); units of analysis, logic of linking the data to the propositions and criteria of interpreting the findings. For this study, a non experimental research design is employed. A mixture of survey methods in the form of interviews, as well as literature review has been used to collect the data. The interviews in this research were in the form of structured questions along the lines of formal survey. Survey questions were a combination of close ended and open ended questions (Creswell, 2009). In this sense, both qualitative and quantitative data was collected, analyzed and interpreted.

Figure 2 detail the primary sources and methods for collecting and data synthesis activities. The various activities were linked in an interactive process.

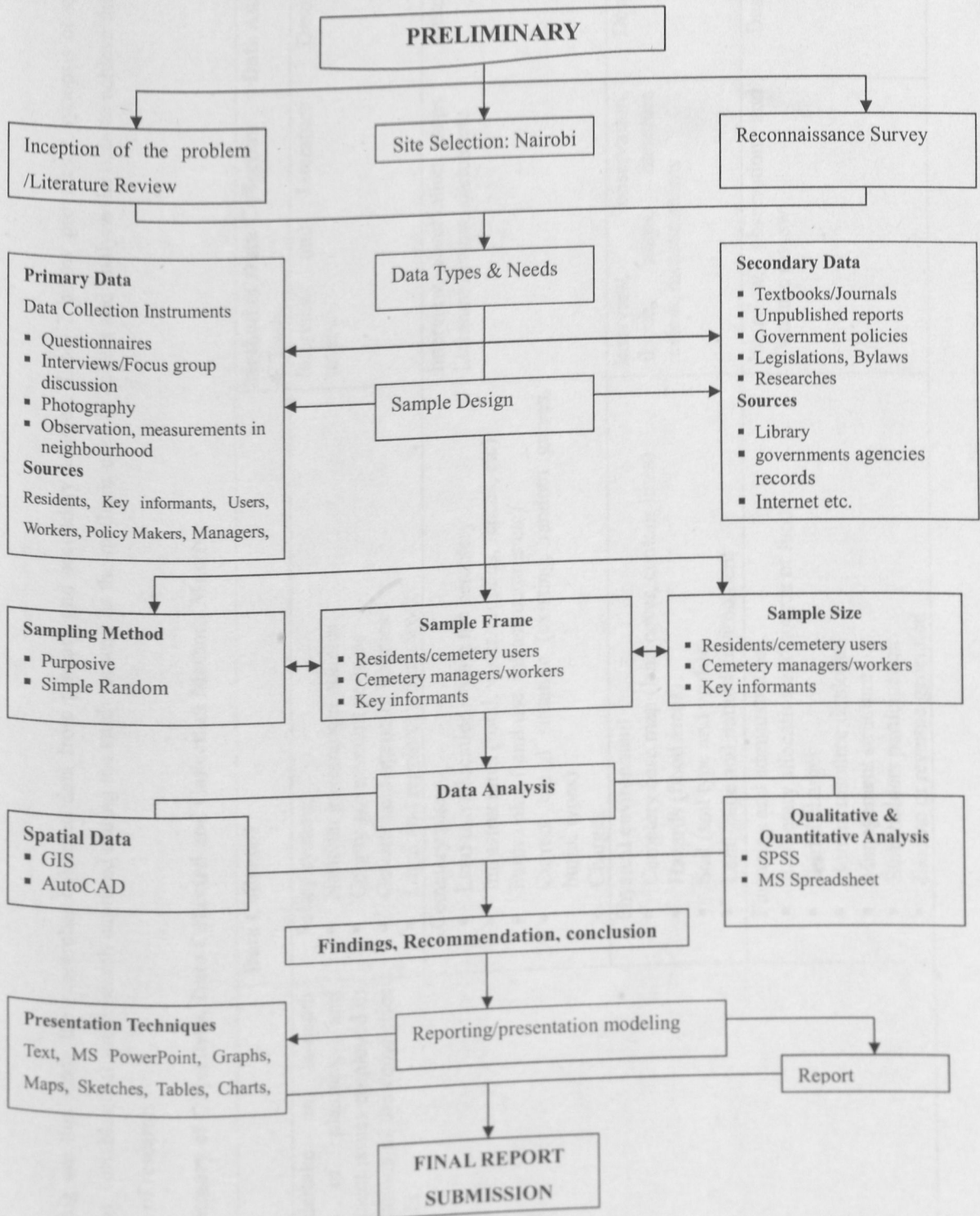
3.2.1 Unit of Analysis

A variety of cemeteries are in operation in Nairobi which comprises; public, special and private cemeteries. Public and special cemeteries provide a complex planning and management process by various government institutions. In Nairobi, the two types of cemeteries portray contrasting features of planning and management and have been chosen for this study. For comparative analysis, one cemetery from each category i.e. public and special cemeteries was chosen for study,

guided by research design as well as the study objectives. Lang'ata Cemetery and Nairobi War Cemetery are the largest cemeteries in Nairobi representing the two categories and they were chosen for this study.

It is from these two cemeteries that interviews were undertaken to get and analyse information on the planning and management of the cemeteries in Nairobi and issues that emerge from there. The user survey generally targeted residents within the neighbourhood, who in one way or another derive services from the cemeteries or experience certain form of externalities or benefits from the cemeteries. Through numerical values, the study was able to infer the findings to make generalisations.

Figure 2: Research Process Flow Chart



Source: Researcher, 2015

In carrying out this study the researcher collected data from primary and secondary sources. Table 7 below provides a synopsis of specific objectives, variables that the research captured during the study as well as the methods used to collect and analyze the data to achieve the main objective of research.

Table 6: Summary of Objectives, Data Collected and Collection Methods Matrix

Objective	Data Collected	Method of Data Collection & Tools	Data Analysis
To undertake an in-depth analysis of planning and management issues employed in the operations of the cemeteries in Nairobi.	Policy system; <ul style="list-style-type: none"> ▪ National government policies ▪ County government policies ▪ Government agencies policies ▪ Legal and regulatory framework 	Interview and Literature review	Descriptive
	Cemetery plan <ul style="list-style-type: none"> ▪ Land use allocation within the cemetery ▪ Infrastructures (road, water supplies, fences, etc) ▪ Future plan (land use, infrastructures etc) ▪ Current burial situation (existing, random graves, burial types) ▪ Charges 	Interview, observation, maps literature review, sketch, etc.	Descriptive
	Physical environment <ul style="list-style-type: none"> ▪ Cemetery base map (land cover, contour lines) ▪ Hazards (flood areas) ▪ Soil (soil type and profile) ▪ Landscape and natural environment 	Interview, observation, sketch, maps, literature review, measurements	Descriptive
	Financing and administration, <ul style="list-style-type: none"> ▪ Budgetary allocation and source of funds ▪ Burial charges ▪ Human resource deployed ▪ Management structure ▪ Stakeholders participation ▪ Income or revenue generated 	Interview, observation and literature review	Descriptive

To identify comparative lessons learned within the dynamic cultural changes within Nairobi City	Institutional lessons	Key informant interview and Literature review	Descriptive
	Physical and environmental lessons	Key informant interview and Literature review	Descriptive
	Social economic lessons (cultural values)	Key informant interview and Literature review	Descriptive
	Legal and regulatory framework	Key informant interview and Literature review	Descriptive
To establish sustainable planning and management practices and requirements for cemeteries	Social-Economic requirements <ul style="list-style-type: none"> ▪ Population (growth rate, mortality rate) ▪ Current burial situation (existing cemeteries, religion, culture and burial types etc) ▪ Per capita income 	Key informant interview and Literature review	Descriptive
	Institutional requirements <ul style="list-style-type: none"> ▪ Policy system ▪ Legal and regulatory framework ▪ Financing and budgetary allocation ▪ Human resource capacity 	Key informant interview and Literature review	Descriptive
	Physical and environmental requirements <ul style="list-style-type: none"> ▪ Site selection ▪ Ecological criteria ▪ Infrastructure provisions ▪ Accessibility 	Key informant interview and Literature review	Descriptive
To propose policy and planning interventions that can be sought to address the planning and management of cemeteries in Nairobi.	Policy level intervention	Key informant interviews and literature review	Descriptive
	Local level intervention	Key informant interviews and literature review	Descriptive

Source: Researcher, 2015

3.3 Sampling Techniques

This involved choosing a method of selecting items to be observed for residents' questionnaires necessary for the quantitative analysis. The purpose of sampling procedure was to enable selection of a fraction of the population that was representative of the entire population.

3.3.1 Selection of Sample Size

A sampling frame is the actual set of units from which a sample is drawn. It contains properties that can identify every single element to be included in the sample, (Martyn, 2008). On this basis a sampling frame was developed from the public and special cemeteries. Three sets of samples was used during the study, guided by the research design, as well as the study objectives. The first sample targeted the key informants, the second, the cemetery managers and staff and the third sample the residents/users of the cemetery neighbourhood.

3.3.2 Sampling for Key Informants

Purposive sampling was used in identifying key informants to compliment and triangulate information gathered from the cemetery users, residents, managers and senior workers. A total of 10 key informants interviews was undertaken with the following persons: development control officers from the county government, public health officer county government, 2 practicing urban planner in the city, environmental officer from NEMA, District land officer in the Ministry of Land, Housing and Urban Development, land officer at the National Land Commission, official of residents associations, the provincial administration, and one lecturer at the University of Nairobi of urban and regional planning

3.3.3 Sampling for Cemetery Managers and Workers

Purposive sampling was used in identifying the cemetery managers and workers for Lang'ata and Nairobi War Cemetery. In each cemetery, a manager and two workers were interviewed.

3.3.4 Resident/ Cemetery User Sampling

For the resident survey, the individual plot housing dwelling units was used as the sampling unit. Lang'ata Cemetery is located within Lang'ata Location, Lang'ata Sub location while Nairobi War Cemetery is located within Riruta Location, Ngando sub-location, Nairobi County. Lang'ata Sub location has 2,866 households occupying an area measuring 17.5 Sq. km while Ngando location has 11,162 households occupying an area measuring 3.2 Sq. km, (KNBS, 2010).

Two estates in each of the location were chosen for sampling. For Lang'ata Cemetery, the residents sampling was carried out at Ngei and Otiende Estates and for Nairobi War Cemetery sampling was carried out at Dagorreti Corner and Ngando Estates. A combination of Google earth maps was used to identify the estate geographical spread and the road.

The study randomly selected 3 roads per estate for the resident survey. The demand for cemetery services to the residents of these estates are fairly homogenous as burial within their residential homes are not allowed under the planning regulations and was found appropriate to sample 1 per cent of the total population hence the targeted sample size was 144. The households were selected using simple random techniques, guided by the cadastral map of the area as noted below.

Table 7: Lang'ata Cemetery Sampling

Ngei Estate		Otiende Estate	
Road	No. of Sample	Road	No. of Residents
Kitengela Road	12	Police Dog Unit Road	12
Kungu Karumba Rd	12	Sasumua Road	12
Maboko Road & Crescent	12	Kalobot Road	12

Table 8: Nairobi War Cemetery Sampling

Ngando Estate		Dagorreti Corner Estate	
Road	No. of Sample	Road	No. of Residents
Wanyee Road	12	Wanyee Road	12
Ngong' Road (from Santak Estate to Lenana Road)	12	St. Daniel Comboni Road	12
Lenana Road	12	Ngong' Road (Dagorreti Corner shopping area)	12

3.4 Data Needs/ Requirements

The study relied on both qualitative and quantitative approaches of data collection as suggested by Glesne & Peshkin (1992). The integrated approach of collecting and analyzing data is important in contextualising the issues gathered during the study. Issues that could not be gathered quantitatively using questionnaires was gathered using qualitative methods to better understand the underlying issues. The study collected both primary and secondary sources of data, to obtain information on planning and management of cemeteries in Nairobi.

3.4.1 Primary Data

Primary data was mainly in quantitative and qualitative form. The data was focused on nature and type of the cemeteries, existing policy systems, physical environment of the cemeteries, plans, financial and administration aspect of the cemeteries, institutional systems and compliance with the various legal and regulatory frameworks, amongst others. Primary data was collected from the neighbourhood residents, cemetery works and managers, key informants and the cemetery users.

3.4.2 Secondary Data

Secondary data was collected by means of literature review. The data collected focused on the planning and management of cemeteries and data on planning policy framework within the city, the neighbourhood and the country in general and derived best practices across the world. The secondary data sources for the study included, the national and county government and its agencies policies, legislations, internet and previous academic articles on cemeteries and plans.

3.5 Methods of Data Collection

3.5.1 Key Informant Interview

Key informant interviews was conducted with 10 key informant that includes; leaders of resident association in the neighbourhoods, practising planners, county government officer, public health officer, national government and its agencies officers, and senior lecturer at the University of Nairobi. According to (Wright, 1996), usually 10 to 15 in-depth interviews are commonly applied in a given research enquiry. According to

Newman and McNeil (1998), the purpose of key informants' interview is to collect information from a wide range of people including community leaders, professionals or residents who have firsthand knowledge about the issue under study.

3.5.2 Cemetery User and Resident Survey

This data was collected using questionnaires. Data collection method relied on personal interview survey to collect information. Questionnaires were administered by trained enumerators who understand the urban planning issues related to cemetery. Newman and McNeil(1998) note several advantages of using proposal interviews surveys including the ability to get sensitive data, as well as opportunity for interviewer to understand why the respondent responded the way he/she did. This method also allowed the research team to administer complex and probing questions since the interviewer could elaborate such questions and the interviewer could elaborate such questions and answers.

3.6 Observation

An observation checklist was prepared to help the researcher note issues like facilities provided, topology of gravesides, nature, location, distribution structure type as well as general surrounding characteristics of the cemetery. A digital camera was used to capture some of these aspects that will be considered to be significant in informing this study.

3.7 Research Instruments

3.7.1 Questionnaires

Two sets of questionnaires was employed; residents'/cemetery user questionnaires, and cemetery managers and workers questionnaires. The questionnaires was structured and designed based on the study objectives. For questions that elicited perception based answers, likert scale question models were used to collect feedback. Likert scale questionnaires are instrumental in measuring individual perceptions on various issues.

3.7.2 Key Informants Guides

A key informant guide for each informant category was developed.

3.8 Digital Photography

A digital camera was used to capture some of these aspects that was considered to be significant in informing this study.

3.9 Data Analysis

The data collected was analyzed both quantitatively and qualitatively. This is significant in examining extracting information as per the research objectives.

Quantitative data was coded (for open-ended questions) and entered into the computer using the statistical package for social sciences (SPSS) software. The software was used to generate data in the form of frequency tables, pie charts, bar charts and tables. Cross tabulation was used to correlate factors that were considered to be interdependent on each other. The data was then organized, reduced, presented and interpreted using summary statistics as means, percentages, tables, graphs, and pie-charts. Cross tabulation was used to compare different scenarios recorded during the data collection process.

Qualitative data resulting from interviews with officials and key informants was reduced, organized and interpreted on the basis of themes generated from the study. The data was transcribed into written texts by merging the notes taken during the interviews into coherent descriptions and analyzed quantitatively.

3.10 Data Presentation

The presentation of the empirical work was precise descriptions accompanied by several visual images of maps photographs and figures. Information was also presented in narrative form.

3.11 Ethical Consideration

The research observed all ethical consideration for similar studies and to the best level operated within the required ethical standards. The research assistant engaged were mature and well trained to ensure that data collection process was carried out professionally and to guarantee confidentiality of information given by respondents.

3.12 Study Limitation

The study was limited by financial resources and time that made it difficult to cover the whole of Nairobi County. This was addressed through sampling technique to obtain representative samples for the cemetery neighbourhoods. It was also not easy accessing the cemetery plans for Lang'ata Cemetery and other public cemeteries due to the time lapse between their inception and the time of undertaking the study as well as mismanagement of the records within the City Hall.

3.13 Conclusion

This chapter has indicated the various techniques employed in collecting and analyzing information to feed into the study objectives. The main focus of the research was a comparative analysis of planning and management of cemetery within Nairobi. The methodology was therefore designed to cover the following: an in-depth analysis of planning and management issues employed in the operations of the cemeteries in Nairobi, comparative lessons learned within the dynamic cultural changes within Nairobi City, sustainable planning and management practices and requirements for cemeteries, and policy and planning interventions that could be sought to address the planning and management of cemeteries in Nairobi. The chapter therefore highlighted the research instruments used as well as how they were used in meeting the objectives of the study.

CHAPTER FOUR

BACKGROUND TO THE STUDY AREA.

4.1 Introduction

This chapter looks at the study area in context, to give a general understanding of the economic, social, legal and environmental conditions of the study area that may shape various factors within the study area. The chapter looks at the general location context of the study area, which is Nairobi City County, its administrative, demographic and physical characteristics, before narrowing down to describe the site-specific characteristics of the two cemeteries under study. All these are necessary in aiding the understanding of the factors that influence operations of the cemeteries in Nairobi.

4.2 Background

The growth of Nairobi has for a longtime been controlled only by economic forces. First attempts to structure its growth was in 1926 when initial zoning arrangement was made, (Nairobi Urban Study Group, 1973). However, little was done to curb land speculation, and development proceeded in an uncontrolled manner. The first comprehensive plan of the city (the Nairobi Master plan for a colonial city) was commissioned in 1948, but was never adopted fully. The plan laid down guidelines for Nairobi's future development, earmarked land for major uses and made important proposals for extensions to the road network. Nairobi was not free from rapid urbanization problems, which have persisted to date.

Between 1962 and 1969, the population of Nairobi increased at a very high rate (12.2%), further complicating the problems and challenges of the city, (Agwanda et al. 2004). As a result of these sectoral pressures, the Nairobi Metropolitan Growth Strategy 1973 recommended, among others, decentralization and development of alternative service centers; modification, upgrading and extension of the road network; formulation of realistic housing programmes; and extension of the city boundaries to the west and north-east as and when required, as well as encouraging the growth of satellite towns surrounding the city, that is, Thika, Athi River and Machakos. The city has to date grown to form a larger Metropolis Area.

4.3 Nairobi City

The city of Nairobi is situated at the southern end of the agricultural heartland of Kenya. The present administrative boundary covers an area of 696 KM², which has expanded from 3.84 KM² in 1910, (Owuor & Mbatia, 2009). It is the centre of administration, politics, economy and culture of Kenya. The country is surrounded by Kiambu County on the southern and south east side, Machakos County on the Western side and Kajiado County on the Northern Side.

4.3.1 Administrative Areas

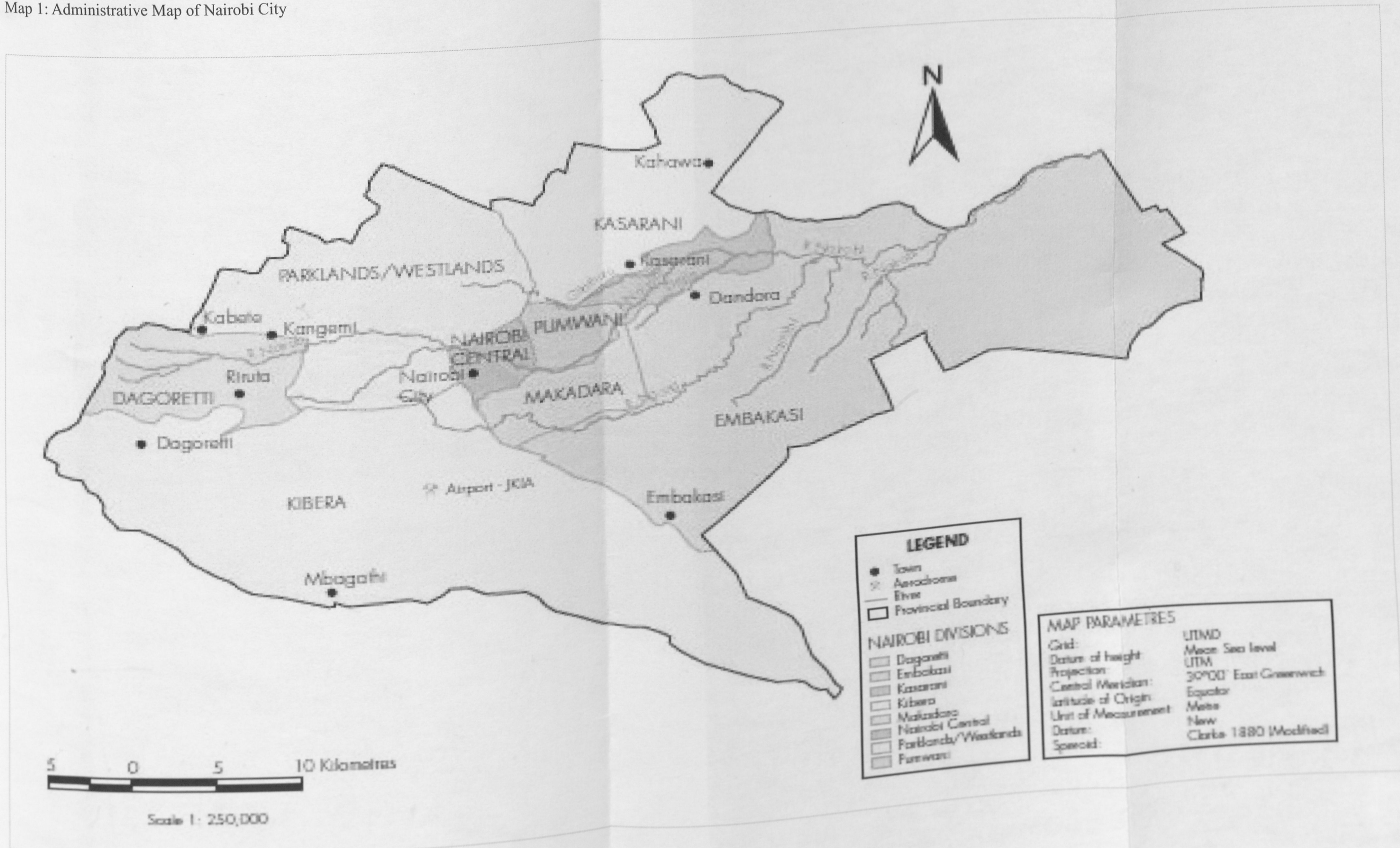
Nairobi has four main districts consisting of Nairobi West, Nairobi East, Nairobi North and Westlands. Each district consists of divisions as shown in table 10 below. Our study area is found in Nairobi West, Dagoretti and Lang'ata Divisions.

Table 9: Administrative Regions in Nairobi

District/Sub County	Divisions
Nairobi West	Dagoretti, Kibera, Lang'ata
Nairobi East	Embakasi, Njiru, Makadara
Nairobi North	Central/ Starehe, Kasarani, Pumani/ Kamukunji
Westlands	Westlands

Source: Republic of Kenya, 2013

Map 1: Administrative Map of Nairobi City



Source: RCMRD, 2009

4.4 Physical Characteristics

4.4.1 Topography and Drainage

The city of Nairobi is characterized by undulating hilly topography with an elevation in range of 1,460 m to 1,920 m. Lowest elevation occurs at the Athi River at the eastern boundary of city and highest at the western rim of the city. The eastern part of the city is generally flat with black cotton soils, which was considered less attractive to residential development by the colonial government, and thus used to settle Africans.

4.4.2 Geology and Soils

The geology of Nairobi is dominated by volcanic activity whereby a thick succession of alkaline lavas and associated tuffs began accumulating millions of years ago. Almost the entire Nairobi area is covered by these volcanic rocks derived from the Rift valley region and estimated to accumulate a volume to over 250 cubic miles (1,042 KM²) and covering an area of nearly 1,200 square miles (3,000 KM²). As a result, the most prevalent geological formation from Nairobi West and South Central area and downstream through Industrial Area and Embakasi is impermeable Nairobi Phonolite, (Wayumba, 2001; Ndede, 2002).

4.4.3 Climate

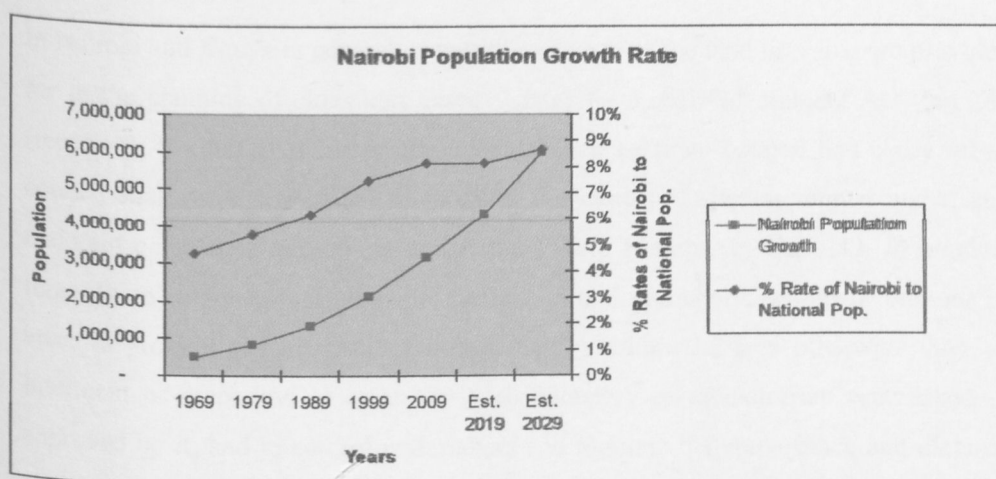
The climate in Nairobi City is usually dry and cool between July and August but hot and dry in January and February. The average annual rainfall in Nairobi is about 900mm. The first peak of monthly rainfall occurs in April and the second peak takes place in November. The mean daily maximum temperature by month ranges from 28°C to 22°C and the minimum ranges from 14°C to 12°C, (KMD, 2013).

4.4.4 Population

Nairobi City is estimated to have a total population of 3,313,369 accounting for 8.1% of the national population, (KNBS, 2009). In the last four decades, the population of the City of Nairobi increased from 0.5 million in 1969 to 1.3 million in 1989 and 2.1 million in 1999.

According to Kenya National Bureau of Statistics, the city annual population growth rate of 3.8 % is very high compared to the overall national growth rate of 3% over the same period (KNBS, 2009). For the study the population of the city is projected to grow at 3.8% annually and in 2029 is estimated at 6 Million. Year 2000 city population was estimated at 2.7 million people and the rate of city population growth is estimated at 5.16 % for the period 2000 - 2005 and 4.31 percent for the period 2005 - 2015 (United Nations, 1996, p. 451).

Chart 1: Nairobi Population Growth Trends



Source: KNBS, 2009

The average population density excluding Nairobi National Park is 5,429 per KM². The Central Division and Pumwani (Kamukunji) Division located at the centre have a much higher density than others in excess of 20,000 per KM². The study area falls within Dagoretti and Lang'ata giving a population density of 8,532 and 3,346 people per square kilometer respectively.

Table 10: Population Densities

Division	Population	Area in KM ²	Density per KM ²
Central	274,607	11	25,640
Kamukunji	261,855	12	21,623
Makadara	218,841	23	9,481
Dagoretti	329,577	39	8,532
Kasarani	525,624	86	6,081
Embakasi	925,775	204	4,546
Kibera/Lang'ata	355,188	106	3,346
Wetlands	247,103	97	2,538

Source: KNBS, 2009

4.4.5 Vegetation Cover

The vegetation of the study area is Savannah grassland- characterized by open, grassy plains. Though this form of should ideally be dominant in the area, the high intensity of developments here have left very little of the natural vegetation and only a few thorn trees that are evident. The limited visible grass species in the area of study are likened with the *Themada trianda* and *pennisetum megianum* of the Athi-Kapiti plains

4.5 Cemeteries in Nairobi County

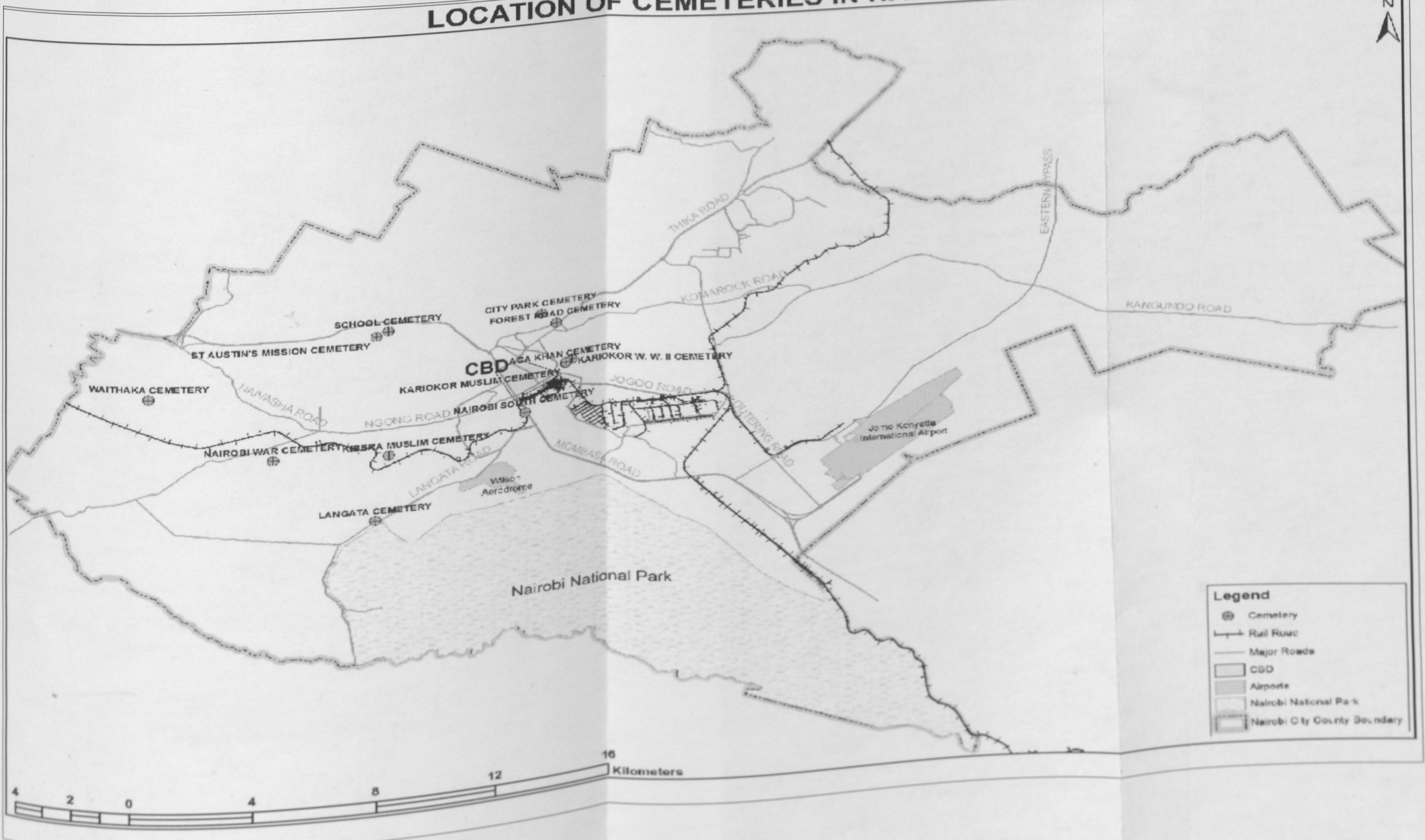
In Nairobi and Kenya in general, cemeteries are one of the land uses that are provided for in the planning of cities and towns. Under the Local Government Act Cap 265 (repealed), Section 161. Every municipal council or town council and every urban council shall have power; (a) to establish cemeteries at sites appointed under, and maintain cemeteries authorized under, the Public Health Act Cap 242, to conduct funerals; to establish and maintain mortuaries and crematoria within or without its area; to prohibit the disposal of human bodies within its area otherwise than by interment or cremation in or at any such cemetery or crematorium established or approved by it; and to control undertakers and regulate the conveyance and disposal of dead bodies. Section 167 subsection (3) provides that, "it shall be the duty of every municipal council; town council and urban and area council, to ensure that in its area there are adequate and suitable arrangements for the burial or cremation of the dead."

Further, the Public Health Act Cap 242 of the laws of Kenya, Section 144, subsection (1) provides that "it shall be lawful for the Minister to select and appoint and to notify in the Gazette sufficient and proper places to be the sites of and to be used as cemeteries; and it shall be obligatory where such cemeteries exist to bury the dead in such cemeteries in conformity with the provisions of rules made by any local authority."

Pursuant to the above legislative provisions, the government has established a variety of cemeteries which are in operation in Nairobi as shown in Map 2 and comprises; public, special and private cemeteries.

Map 2: Distribution of Cemeteries in Nairobi City

LOCATION OF CEMETERIES IN NAIROBI



Source: Researcher, 2015

4.5.1 Public Cemeteries

A public cemetery is open for use by all residents unlike other type of cemeteries that are used only by a small segment of a community or by a family. A cemetery includes not only the actual grave sites but also surrounding areas such as avenues, walks, and grounds. The establishment of a cemetery involves the process of formally designating a tract of land for use for the burial of the dead. It must be set apart, marked, and distinguished from adjoining ground as a graveyard as provided in the law.

In the public cemeteries, any member of the public can be buried in accordance with their religious norms upon completion of the required logistics of death registration and fee payment to the Nairobi City County Government. The planning for these public cemeteries is done by the Department of City Planning while their management is done by the Department of Social Services. The public cemeteries include;

- a) Lang'ata Cemetery: The cemetery is situated along Lang'ata Road within Lang'ata area. The cemetery was opened in 1958 and measures approximately 53 acres. It comprises the general public interment area, the Sunni Muslim Cemetery and the Hindu crematorium. The interment area is divided between "permanent" and "temporary" section. In the permanent section, the leasing of the graves is for a long period and cementing of the graves is allowed. However, in the temporary section, the leasing of the graves is for a short period and they are re-used to burry more bodies. The temporary section includes the Sunni Muslim section and not permanent structures are allowed. As per the Kenya National Assembly Official Report, Wednesday, October 13, 2004, page 3609, the Lang'ata Cemetery has been full.
- b) Waithaka Cemetery in Dagorreti area: This is unfenced cemetery site for burying people living within Waithaka area. Part of the cemetery has been occupied.
- c) Kariokor Muslim Cemetery: Cemetery is located in the Kariokor district of Nairobi about 2 kilometers north-east of the city centre. The cemetery was set aside for the burial of Muslim community but it has been full since December 2008 as per the Kenya National Assembly Hansard report of Wednesday, July

29, 2009, Question No. 266, *Provision of Cemeteries to Muslims by Nairobi City Council*.

- d) Kibera Muslim Community Cemetery for the Nubian community: This is cemetery site located within Kibera for the burial of the Nubian community. As per the Kenya National Assembly Hansard report of Thursday, July 1, 1993, Question No. 516, *Issuance of Title Deeds to the Nubian Community*
- e) City Park Cemetery: The cemetery often referred to as Nairobi City Park Cemetery lies north of the City Park and Forest Road Cemetery. City Park Cemetery is a large civil cemetery and Second World War graves about 3 kilometers to the north of the city centre, just off the main road to Thika. It is situated near the roundabout at the Pangani end of Forest Road. The main war graves plot will be found at the bottom end of the cemetery access road, and there are other scattered war graves within the cemetery.

There are no clear guidelines or policy for the planning and management of the public cemeteries in Nairobi County. The existing cemeteries operated by Nairobi County Government were provided during the colonial period and the recent attempt to acquire new cemetery in by the defunct Nairobi City Council did not succeed due to corruption related issues. Lang'ata Cemetery is the largest public cemetery in Nairobi accommodating all religion notably Christians, Muslims and Hindus.

4.5.2 Special Cemeteries

In the special cemeteries, a specific special group of people are buried with no new burial taking place. In Nairobi, the special cemetery relates to the cemetery owned and managed by the Commonwealth War Grave Commission, (CWGC). The CWGC (formerly the Imperial War Graves Commission) was founded in 1917 by Sir Fabian Ware who, saddened by the enormous losses during the First World War, sought to find a way to ensure that the final resting places of the dead would not be lost forever. Under Ware's leadership, his unit of the British Red Cross in France began recording and caring for all the graves they could find. Encouraged by the Price of Wales, Ware submitted a memorandum to the Imperial War Conference and on May 21, 1917, the Imperial War Graves Commission was established by a Royal Charter, (CWGC, 2014).

Six member governments make up the CWGC; Australia, Canada, India, New Zealand, South Africa and the United Kingdom. The cost of the Commission's work is met by the member governments in proportion to the number of their war dead. The secretary of State Defence in the United Kingdom is the Chairman of the Commission. Each of the other member governments appoints its High Commissioner in London to be its Commission representative.

Table 11: Breakdown of Numbers of War Dead by Forces

Break Down of Numbers of War Dead by Forces							
Nationality	1914-1918 War		1939-1945 War		Both Wars		Overall
	Identified Burials	Memorials	Identified Burials	Memorials	Identified Burials	Memorials	Casualty Count
Australian	38,856	23,267	28,580	12,089	67,436	35,356	102,792
Canadian	45,510	19,487	37,301	8,067	82,811	27,554	110,365
Indian	8,230	65,665	18,216	68,812	26,446	134,477	160,923
Newzealand	11,762	6,291	9,043	2,888	20,805	9,179	29,984
South African	6,685	2,907	10,019	1,887	16,704	4,794	21,498
United Kingdom	480,222	407,489	244,817	138,901	725,039	546,390	1,271,429
Total	591,265	525,106	347,976	232,644	939,241	757,750	1,696,991

Sources: CWGC, 2014

The Commission's purpose is defined in the Royal Charter to preserve the memory of the 1.7 million Commonwealth servicemen and women who died in the two World Wars by;

- a) Maintaining cemeteries and memorials at 23,000 locations in 153 countries across all continents except for Antarctica
- b) Maintaining and updating an extensive and accessible records archive of the Commonwealth war dead

In Kenya, the CWGC commemorate 8,202 Commonwealth War Dead in 315 Non War Graves and 31 burial grounds, (CWGC, 2014). However in Nairobi County, the CWGC cemetery includes;

- a) Nairobi War Cemetery situated along Ngong' Road: The War Cemetery is on the south-western outskirts of Nairobi, about 10 kilometres west of the city centre on Ngong Road, which is the main road to the Government Forest Reserve. The cemetery is adjacent to Nairobi Race Course and is included within the Ngong Forest Reserve. It is reached by way of a long driveway off Ngong Road, the turning being indicated by a CWGC direction sign.

- b) Nairobi South Cemetery situated along Uhuru Highway: This cemetery is located 3 kilometers south-east of the city centre on Uhuru Highway leading from the airport to Nairobi town centre. Coming from the airport the cemetery is situated directly beside the road on the left, adjacent to the Banyala roundabout. This is the first roundabout after the Nyayo National Stadium. The wide dirt road leading to the cemetery entrance is marked by a CWGC direction sign.
- c) Nairobi Forest Road Cemetery situated along Forest Road, Nairobi: Forest Road Cemetery is a large civil cemetery about 3 kilometers to the north of the city centre, just off the main road to Thika. It is situated near the roundabout at the Pangani end of Forest Road. The main war graves plot will be found at the bottom end of the cemetery access road, and there are other scattered war graves within the cemetery.
- d) Nairobi Kariokor Cemetery along Kinyanjui Street: Nairobi (Kariokor) Cemetery is located in the Kariokor district of Nairobi about 2 kilometres north-east of the city centre. The cemetery is on Kinyanini Street, which is directly across Kariokor Market, and approximately 250 metres past the Central Division District Commissioners offices. The cemetery entrance, which is set back on the right side of the road, is indicated by a CWGC direction sign.
- e) Nairobi (Quarry Road) Muslim Cemetery: The cemetery is located in the Kariokor district of Nairobi about 2 kilometres east of the city centre. The cemetery is approximately 250 metres down Quarry Road on the left. The scattered war graves are mostly to the right of the path about 80 metres from the entrance.

The CWGC honours the 1,700,000 men and women of the forces of the Commonwealth who died in the two world wars and ensures that their memory is never forgotten. CWGC take care for cemeteries and memorials at 23,000 locations in 153 countries. Six member governments, Australia, Canada, India, New Zealand, South Africa and the United Kingdom make up the CWGC. The cost of the Commission's work is met by the member governments in proportion to the number of their war graves. The Secretary of State for Defence in the United Kingdom is the

chairman of the Commission. Each of the other member governments appoints its High Commissioner in London to be its Commission representative.

4.5.3 Private Cemeteries

On the other hand private cemeteries also referred to as community cemeteries are designated for members of a specific community or religion. They include;

- a) Aga Khan Shia Imami Khoja Ismaili Cemetery in Kariokor: The cemetery is located in the Kariokor district of Nairobi about 2 kilometres north-east of the city centre. The cemetery is on Kinyanini Street, which is directly across Kariokor Market, and approximately 250 metres past the Central Division District Commissioners offices.
- b) Nairobi St. Austin's Mission Cemetery for catholic priests: The cemetery is located in the grounds of the old St Austin's Mission. It can be found by following the signs to St Mary's School either from James Gichuru Road or at the end of Rhapta Road on the western side of Nairobi. The cemetery is located close to the Rhapta Road entrance which is at the farthest end of the road traveling away from Westlands. The cemetery as primarily set up for missionaries, priests, nuns and others in the Catholic Church.
- c) School Cemetery in Groganville Estate along Mahiga Mairu Avenue, Nairobi. The cemetery is situated in Groganville estate and is primarily set up for the burial of Catholics nuns and priests

4.6 Case Study for Comparative Analysis

Public and special cemeteries provide a complex planning and management process by various government institutions. In Nairobi, the two types of cemeteries portray contrasting features of planning and management. Hence, a fresh attention and enquiry into the issues of planning and management of the cemeteries in Nairobi is found necessary. Lang'ata Cemetery situated along Lang'ata Road and Nairobi War Cemetery situated along Ngong' Road are the largest cemeteries in Nairobi in the two categories and they have been chosen for this study as shown in Figure 6.

Map 3: Location Map for Lang'ata and Nairobi War Cemetery



Source: Edited from Wikimapia, 2015

4.6.1 Background to the Lang'ata Cemetery

Lang'ata Cemetery was opened in 1958 and it is approximately 53 acres. Tens of thousands of bodies have been buried there since then. As Nairobi's population continues to increase to an estimated three million people in 2009 (KNBS, Census Report 2009), more strain on the already-bulging cemetery facilities is being experienced. The cemetery has been full for several years, but bodies continue to arrive every day for burial. Lang'ata cemetery is divided between a "permanent" and "temporary" section. The plot size of a full size grave as allocated in the public cemeteries is 8 by 4 ft. The depth of the grave ought to be 6ft. Graves at the temporary section are flattened every five years or less to make room for burial of more bodies. The historical record for Lang'ata Cemetery is not available for review as the officers have misplaced the records and refused to share the information. As shown in figure 4.6, Lang'ata Cemetery is subdivided into blocks.

a) Transformation within the Cemetery

The initial assumptions around the cemetery planning have not worked in Lang'ata Cemetery. Like other public cemetery, Lang'ata has undergone densification, neglect, and lack provision of basic infrastructures necessary for the smooth operation of a cemetery. Consequently, deviations from the initial plan have continued to thrive due to weaknesses in planning and management control. Due to high number of burial, the designated access road within the permanent section of the cemetery has been converted into graves which are 4ft. deep. In temporary section, the graves are currently experiencing the third burial phase and the grave depths are at 2ft deep which is a health hazard.

b) Effort to Acquire New Cemetery Land for Nairobi City

In 2008, the defunct Nairobi City Council, NCC, started the process of acquiring a new cemetery ground. It identified L. R. No. 14759/1 in Athi River Township registered in the name of Henry Kilonzi measuring 48.30 Hectares for acquisition. However, the registered owner had agreed to sell the land to Ms. Naen Rech at Kshs. 110 Million but no title transfer had been carried out. The Ministry of Land had valued the land at Kshs. 24 Million but Naen Rech offered it for sale to NCC at Kshs.

300 Million. The criteria set for the identification of land for cemetery by NCC were that;

- a) Land must be within Nairobi Metropolitan
- b) Easily accessible by public
- c) Soil must be preferably red and more than 6 feet deep

According to the Kenya National Assembly "*Report on the Procurement of Cemetery Land by the City Council of Nairobi*" dated January 2010, the land at Athi River Township was not easily accessible and the soil was not red and measured 4 feet deep. However, during the NCC Tender Committee meeting of November 11, 2008, officers in the planning department raised objections and advised that the land was not viable for cemetery purpose. The procurement committee did not object on the acquisition as the medical officer of health was present and confirmed the land was suitable for a cemetery. Further the Permanent Secretary of the Local Government had written to the Town Clerk on October 30, 2008 threatening that the Ministry would take over the process if they did not conclude it within 5 days, (Kenya National Assembly, 2010).

During the public hearing, the Mayor of Mavoko Municipal Council informed the parliamentary committee that the City Council of Nairobi had never sought opinion from them in regard to the land they intended to acquire. Further, he noted that the land was still agricultural as the Council had not approved change of user. Mavoko Municipal Council Town Clerk informed the committee that there is no red soil within the area which is normally suitable for a cemetery and no planning brief was brought to them for approval and guidance. He added that the area was mainly agricultural and no environmental assessment had been carried out to show whether the area is suitable for a cemetery.

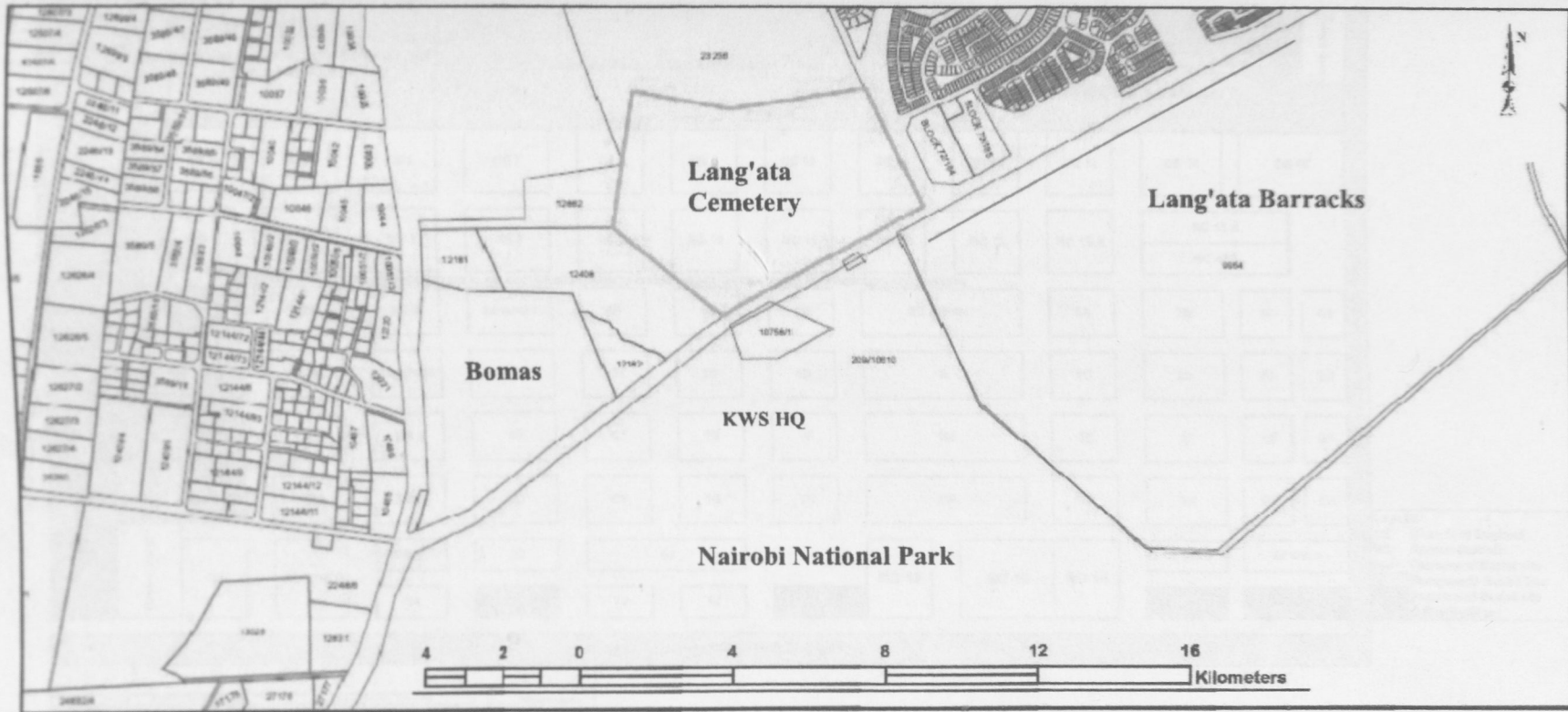
From the evidence adduced during the public hearing, the committee ascertained the following pertinent issues:-

- a) The advice of the Director of City Planning on the tender documents and search for land for use as cemetery, important as it was, was not considered during the entire process of the procurement

- b) The Municipal Council of Mavoko did not grant approval of change of user of the land in question from agricultural to cemetery.
- c) National Environmental Management Authority did not grant clearance on environmental impact once use of the land has changed.
- d) The fact that the area is dry grassland and is a wildlife migratory corridor was ignored during the procurement process.
- e) The site inspection showed that the land is situated at approximately 12kms west of Kitengela Township and borders Merciful Redeemer Children's home. The access of the land is rough road which is not all weather usable and is impassible during wet seasons.
- f) The soil was not red and it is shallow with a rocky base and cannot attain a depth of 6 feet.
- g) The land had not been marked with beacons and can be encroached.
- h) There were no amenities on the land e.g. water, telephone etc.
- i) That there was evidence of corruption because the vendor only got Kshs. 110 Million and the rest had been shared among the key players.
- j) There was clear evidence from the Mayor and the Clerk of Mavoko Municipal Council that the City Council of Nairobi did not apply for change of user of land for the land in question.

As a result of the above corrupt dealings during the acquisition of land, the Kenya Anti-corruption Commission instituted investigations and charged the Ministry of Local Government and NCC officers for corruption vide Anti-Corruption Cases No. 19, 20 and 44 of 2010 which are ongoing.

Map 4: Survey Plan for Lang'ata Public Cemetery



Source: Nairobi City County Government, 2015

4.6.2 Background to the Nairobi War Cemetery

The Nairobi Commonwealth War Cemetery is one of the 23,000 burial sites in 153 countries, where the Commonwealth of Nations military service members who died in the two World Wars have been buried and all of which are under the management of the Commonwealth War Graves Commission (CWGC). During the Second World War, Nairobi was the headquarters of the East African Force and the base for the conquest of Jubaland and Italian Somaliland, the liberation of British Somaliland and the sweep north-westwards to open Addis Ababa for the return of the Emperor. It was also a hospital centre; No.87 British General Hospital arrived in June 1943 and was still there in December 1945, while No.150 British General Hospital was there for a period in 1943.

The war cemetery was opened in 1941 by the military authorities. Besides the original burials, numerous graves were transferred to this cemetery from African civil cemeteries and temporary army burial grounds at Garissa, Gelib, Kinangop, Marsabit, Mega and other inaccessible places, so that it is now the largest war cemetery in East Africa. Nairobi War Cemetery now contains over 2,000 Commonwealth burials of the Second World War, 11 of which are unidentified. There are also 80 non-war burials and one French grave. It was designed by G. Vey. Within the cemetery is the East Africa Memorial which commemorates men of the land forces who lost their lives in the advance from the south into Italian Somaliland and Ethiopia and during the occupation of those territories, and who have no known grave. Along with them are honoured those who died during the operations in Madagascar in 1942 and who have no known grave. Besides those who died in these campaigns, many men who were lost in the sinking of the troopship 'Khedive Ismail' en route to Ceylon on 12 February 1944 are commemorated here; they include a great part of the 301st Field Regiment, East African Artillery.

The cemetery also contains the Nairobi Memorial which commemorates 477 men of the United Kingdom, South African, and East African Forces who died in the non-operational zones of Kenya whilst in training, or on lines of communication or garrison duty, and whose graves could not be located or are so situated as to be unmaintainable.

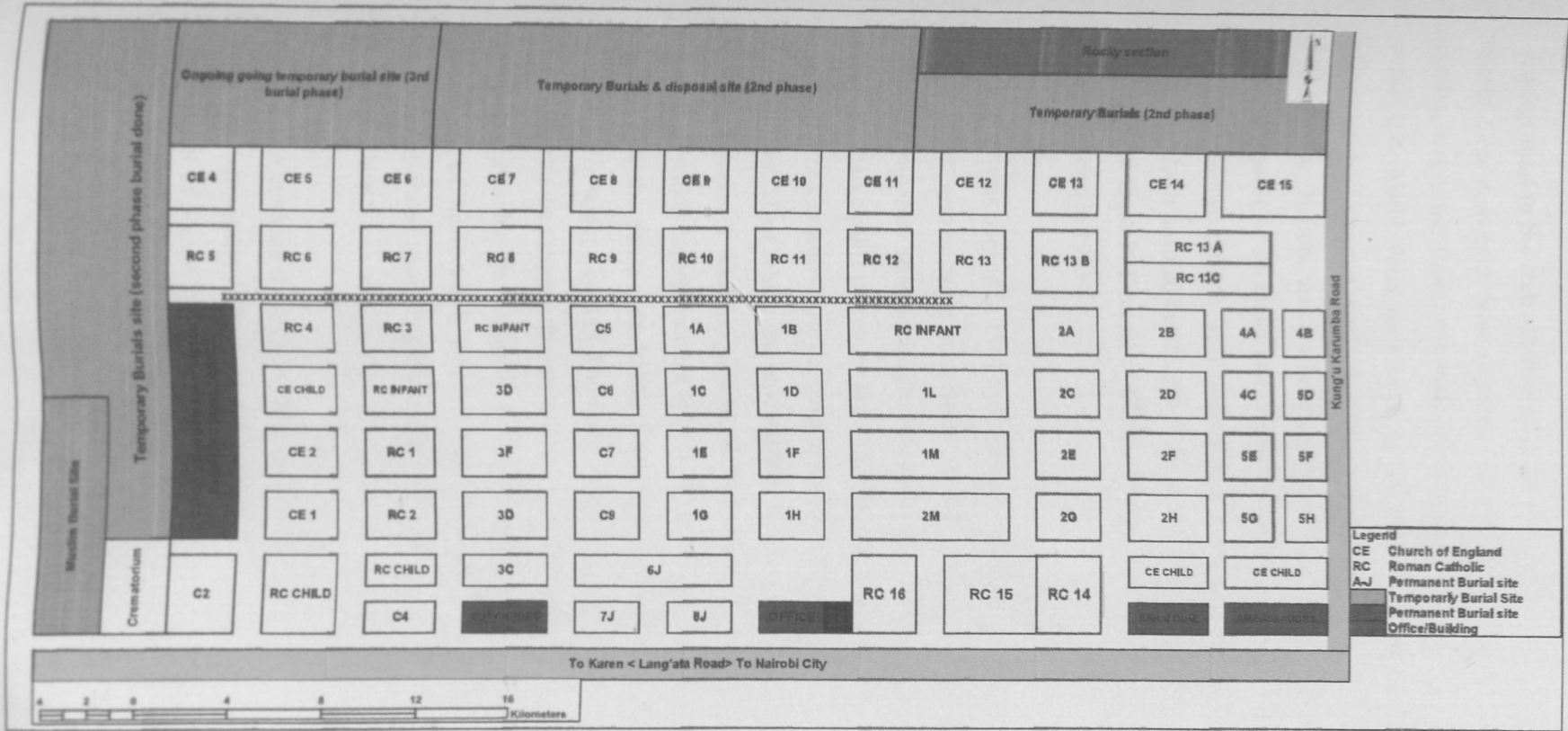
4.6.2 Background to the Nairobi War Cemetery

The Nairobi Commonwealth War Cemetery is one of the 23,000 burial sites in 153 countries, where the Commonwealth of Nations military service members who died in the two World Wars have been buried and all of which are under the management of the Commonwealth War Graves Commission (CWGC). During the Second World War, Nairobi was the headquarters of the East African Force and the base for the conquest of Jubaland and Italian Somaliland, the liberation of British Somaliland and the sweep north-westwards to open Addis Ababa for the return of the Emperor. It was also a hospital centre; No.87 British General Hospital arrived in June 1943 and was still there in December 1945, while No.150 British General Hospital was there for a period in 1943.

The war cemetery was opened in 1941 by the military authorities. Besides the original burials, numerous graves were transferred to this cemetery from African civil cemeteries and temporary army burial grounds at Garissa, Gelib, Kinangop, Marsabit, Mega and other inaccessible places, so that it is now the largest war cemetery in East Africa. Nairobi War Cemetery now contains over 2,000 Commonwealth burials of the Second World War, 11 of which are unidentified. There are also 80 non-war burials and one French grave. It was designed by G. Vey. Within the cemetery is the East Africa Memorial which commemorates men of the land forces who lost their lives in the advance from the south into Italian Somaliland and Ethiopia and during the occupation of those territories, and who have no known grave. Along with them are honoured those who died during the operations in Madagascar in 1942 and who have no known grave. Besides those who died in these campaigns, many men who were lost in the sinking of the troopship 'Khedive Ismail' en route to Ceylon on 12 February 1944 are commemorated here; they include a great part of the 301st Field Regiment, East African Artillery.

The cemetery also contains the Nairobi Memorial which commemorates 477 men of the United Kingdom, South African, and East African Forces who died in the non-operational zones of Kenya whilst in training, or on lines of communication or garrison duty, and whose graves could not be located or are so situated as to be unmaintainable.

Map 5: Sketch Plan for Lang'ata Public Cemetery



NB: Not to scale

Source: Researcher, 2015

4.6.2 Background to the Nairobi War Cemetery

The Nairobi Commonwealth War Cemetery is one of the 23,000 burial sites in 153 countries, where the Commonwealth of Nations military service members who died in the two World Wars have been buried and all of which are under the management of the Commonwealth War Graves Commission (CWGC). During the Second World War, Nairobi was the headquarters of the East African Force and the base for the conquest of Jubaland and Italian Somaliland, the liberation of British Somaliland and the sweep north-westwards to open Addis Ababa for the return of the Emperor. It was also a hospital centre; No.87 British General Hospital arrived in June 1943 and was still there in December 1945, while No.150 British General Hospital was there for a period in 1943.

The war cemetery was opened in 1941 by the military authorities. Besides the original burials, numerous graves were transferred to this cemetery from African civil cemeteries and temporary army burial grounds at Garissa, Gelib, Kinangop, Marsabit, Mega and other inaccessible places, so that it is now the largest war cemetery in East Africa. Nairobi War Cemetery now contains over 2,000 Commonwealth burials of the Second World War, 11 of which are unidentified. There are also 80 non-war burials and one French grave. It was designed by G. Vey. Within the cemetery is the East Africa Memorial which commemorates men of the land forces who lost their lives in the advance from the south into Italian Somaliland and Ethiopia and during the occupation of those territories, and who have no known grave. Along with them are honoured those who died during the operations in Madagascar in 1942 and who have no known grave. Besides those who died in these campaigns, many men who were lost in the sinking of the troopship 'Khedive Ismail' en route to Ceylon on 12 February 1944 are commemorated here; they include a great part of the 301st Field Regiment, East African Artillery.

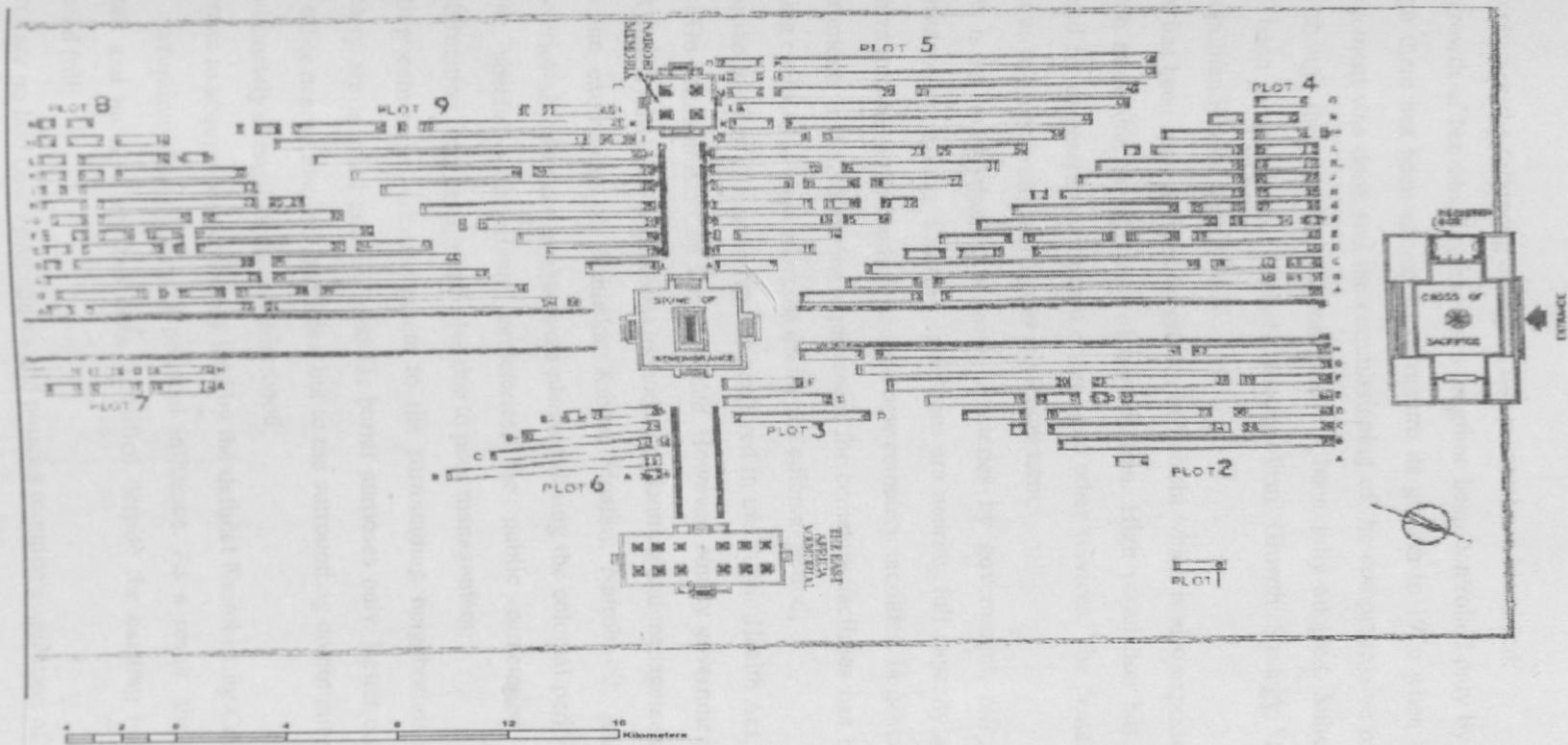
The cemetery also contains the Nairobi Memorial which commemorates 477 men of the United Kingdom, South African, and East African Forces who died in the non-operational zones of Kenya whilst in training, or on lines of communication or garrison duty, and whose graves could not be located or are so situated as to be unmaintainable.

The Nairobi cemetery, like all the others in the different countries, is surrounded by a low wall or hedge and with a wrought-iron gate entrance. It has a register with an inventory of the burials, a plan of the plots and rows, and a basic history of the cemetery. The register is located within a metal cupboard that is marked with a cross located in either the wall near the cemetery entrance or in a shelter within the cemetery. The cemetery ground is grass covered with a floral border around the headstones. There is also an absence of any paving between the headstone rows which is intended to make the cemetery feel like a traditional walled garden where visitors could experience a sense of peace.

a) Transformation within the Cemetery

The initial plan for the cemetery has been maintained and no changes have been carried out. There are several policies to ensure that the maintenance of the cemetery is in accordance with the set international standards.

Map 7: Physical Plan for Nairobi War Cemetery



Source: CWGC, 2015

4.7 Summary of the Emerging Issues

From the chapter, the following emerging issues have been identified;

- a) The growth of Nairobi City has for a longtime been controlled only by economic forces though there has been attempts to structure its growth in 1926 when the initial zoning arrangement was done and the commissioning of the comprehensive plan of the city in 1948 though their implementation have not been fully adopted. Subsequent strategies have been proposed i.e. Nairobi Metropolitan Growth Strategy, 1973 and Nairobi Metropolitan Region Vision 2030.
- b) There has been high population growth in Nairobi which is also expected to continue on upward scale due to high rate of urbanization. High population has led to increased demand for cemeteries, reception centres and other services. The demand is expected to continue to grow even further over the longer term;
- c) There is no establishment of new cemeteries by government, religious, ethnic and fraternal organizations. Existing cemeteries are nearing full capacity and few religious organizations have the funds to acquire new cemetery facilities. In general, the interest of governments in fulfilling the requirement for cemetery facilities has been declining as existing cemeteries were provided during the colonial period;
- d) The establishment of cemeteries are anchored in the Public Health Act, Cap 242 and the Local Government Act Cap 265-*appealed*. However, county governments are required to enact their bylaws and regulations to guide the planning and management of cemeteries.
- e) With the exemption of Waithaka, Kibera Muslim, Nairobi St. Austin, and School Cemeteries all other cemeteries were planned during the colonial period. With exception of the special and private cemeteries, the public cemeteries have undergone transformation from their initial plan due to poor management;
- f) Existing cemeteries are not assets to the surrounding neighborhoods. Currently, the cemetery are isolated and are used for burial purposes only. Better connecting it to not only other nearby historic amenities, but to the surrounding community will increase use and ultimately strengthen the neighborhood;
- g) Attempts to acquire new cemetery land by the defunct Nairobi City Council was plagued with corruption allegations and political influence. As a result, the procurement was aborted and no new site has been identified despite the existing burial ground being declared full;
- h) There are no laid down procedures and policies to guide acquisition of cemetery land.

CHAPTER FIVE

RESEARCH FINDINGS.

5.1 Introduction

This chapter details the study findings guided by the study objectives. The first section describes the social economic and demographic characteristics of sample respondents. The second section analyzes cemetery characteristics, focusing on the nature, type of development as well as planning dynamics of the cemeteries. The third section deals with the dynamic of cemetery management, legal and regulatory compliance aspects of the cemetery. The last section provides a critical summary of the study findings, laying the ground for a detailed synthesis of the findings to come up with conclusions and recommendation.

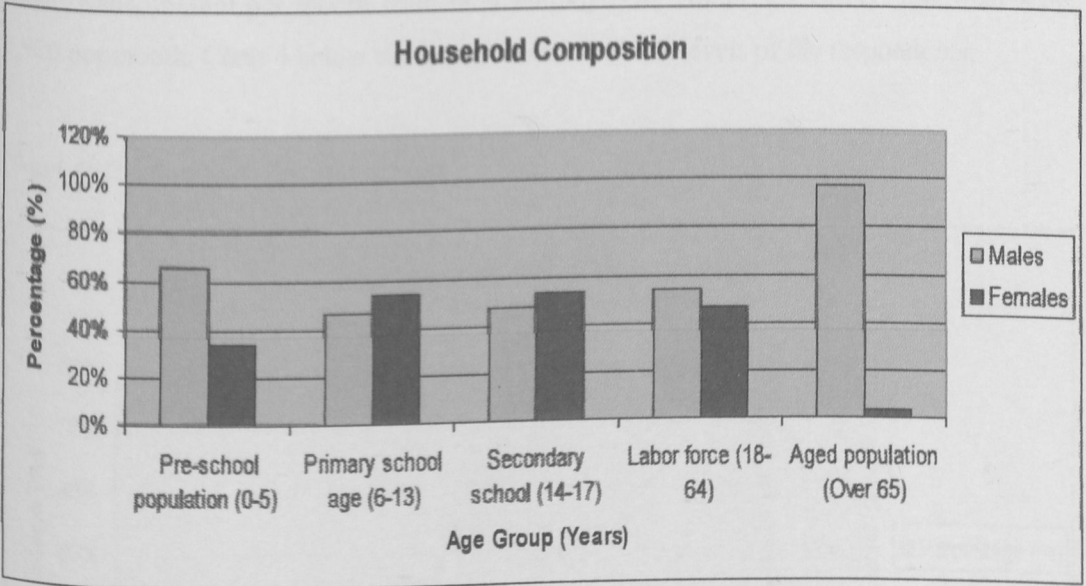
5.2 Demographic and Social-Economic Characteristics of Respondents

The section discusses the residents characteristics related to age, sex, migration status, and income level and source. These personal background characteristics are hypothesised to have a direct impact on the need of cemetery.

5.2.1 Age and Sex of Respondents

The study results show that about 58.3% of the respondents were males. The mean age of the respondents was 29 years, while the most common age was 25 years. The findings concur with various literatures sources that show that most of the residents are youth due to urbanization and urban migration. With an average age of 25 years, it can be argued that there is high rate of urbanization and most residents have migrated from other region to Nairobi. This means that proper planning and management of cemetery is necessary to cater for this increased urban migration. The average households' size of the residents was 3 persons. Chart 2 below shows the composition of household.

Chart 2: Household Sex and Age Composition

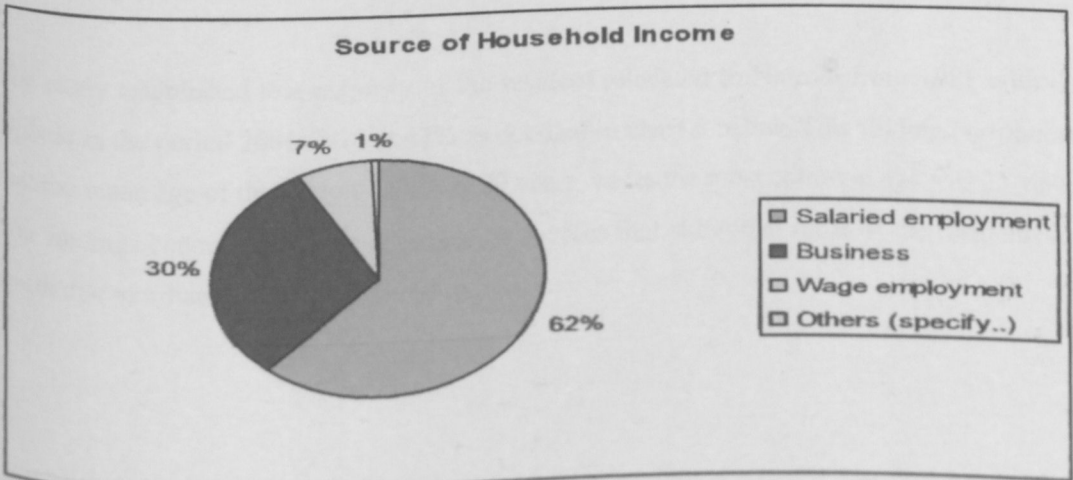


Source: Field Studies, 2015

5.2.2 Income Level and Source

The study established that majority (62%) of the respondents are in formal employment with 39% in business activities. Chart 3 below shows the various source of income.

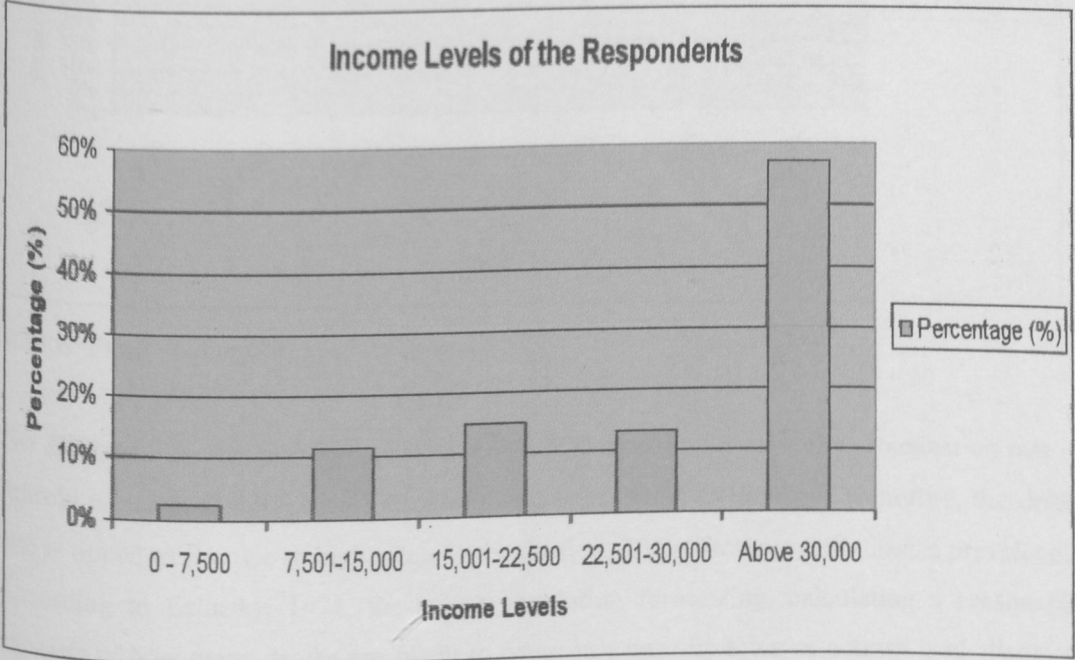
Chart 3: Respondents Main Source of Income



Source: Field Studies, 2015

The average monthly income of the respondents varied with 57% of the respondents earning above Kshs. 30,000 per month from their employment. About 3% earned less than Kshs. 7,500 per month. Chart 4 below shows the various income levels of the respondents;

Chart 4: Respondents Income Levels

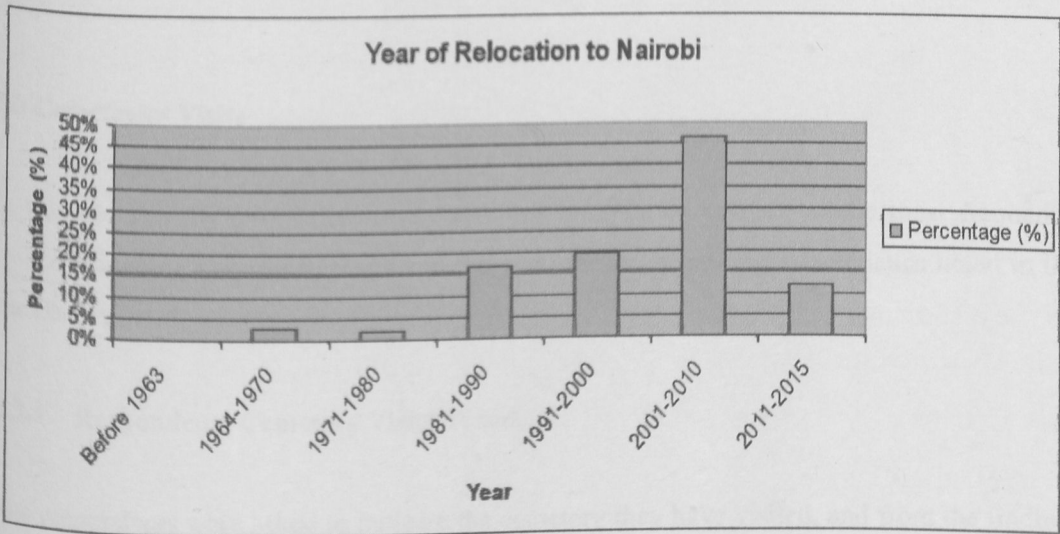


Source: Field Studies, 2015

5.2.3 Migration Trends of the Respondents

The study established that majority of the resident relocated to Nairobi from 1981 with the highest in the period 2001-2010 at 47% as detailed in chart 5 below. This finding corroborate that the mean age of the respondents was 29 years, while the most common age was 25 years. The findings concur with various literatures sources that show that most of the residents are youth due to urbanization and urban migration.

Chart 5: Respondents Year of Relocation to Nairobi



Source: Field Studies, 2015

The findings therefore corroborate with the 2009 Census outcome on the urbanization rate in Nairobi which is at 3.3% (G. o. K, 2009), and is expected to increase. Therefore, the death rate is tipped to rise due to high rate of urbanization, life expectancy and disease prevalence. According to Zelinsky, 1971, the art of population forecasting, calculating a reasonable measure of how many deaths are likely to occur in a specific town or county is challenging because of population mobility (Zelinsky, 1971). In general, the likelihood of an individual making a residential move varies over the life course. Moving rates tend to go up and down between ages five and 64, with a peak in the 18 to 30 year old range. Past age 65, when individuals usually leave the labor force and enter a higher mortality cohort, mobility rates usually drop. Such sustained levels of population movement have made predicting where a given individual will die and be interred complex.

Frey, Berube, Singer, & Wilson, 2007 argues that if the young generations age into retirement and die in the places they live their productive years, the geography of burial should simply reflect the geography of life. Yet unforeseen mobility and migration factors could counteract this expectation, complicating the understanding of future locational demands for burial. In practical terms, this means that the likelihood of individuals dying and being buried in the same place they were born remains unknown, which makes the task of figuring out where to

expand or build cemeteries quite difficult (Capels & Senville, 2006; Smith, 1996, p. 366-368).

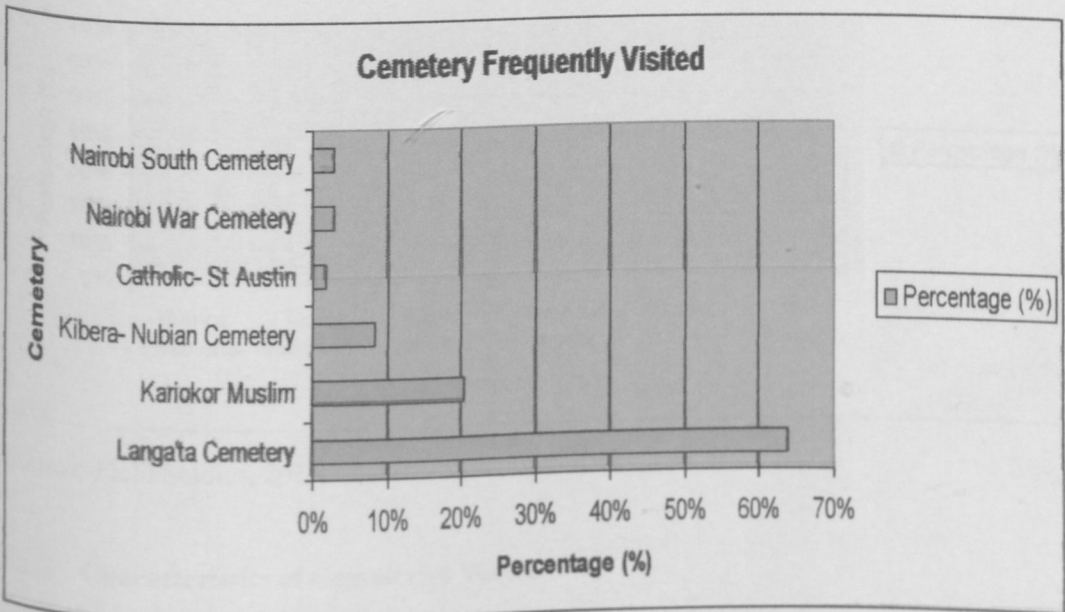
5.3 Cemeteries Visits

In this section, the study attempted to gather information relating to the most frequently visited cemetery, purpose of visits and the positive and negative characteristics noted in the cemetery visited.

5.3.1 Respondents Cemetery Visits Trend

The respondents were asked to indicate the cemetery they have visited, and from the finding, Lang'ata Cemetery was the highest visited cemetery with 69%. These findings underpin the importance of the Lang'ata Cemetery as a public cemetery in Nairobi County.

Chart 6: Respondents Visits to Cemetery



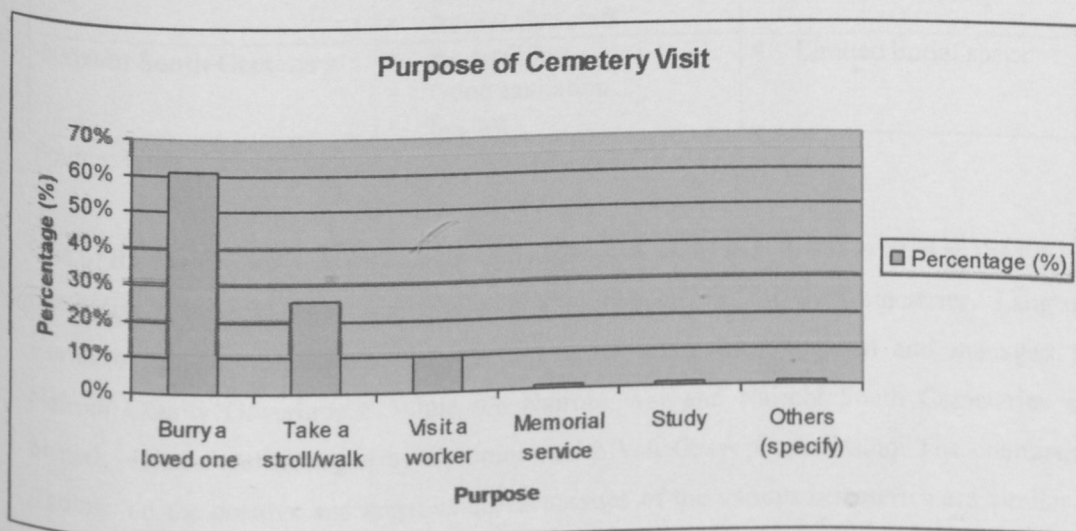
Source: Field Studies, 2015

Further cross tabulation of the purpose of visit, reveals that 61% had visited the cemetery to bury a loved one. This finding corroborate the study outcome of the most frequently visited cemeteries which include, Lang'ata Cemetery (64%), Kariokor Muslim Cemetery (20%) and

Nubian Cemetery in Kibera at 8%. One of the purpose of planning cemetery cited in the literature review is the desire for the creation of 'public' spaces, in particular amenities where people could enjoy light, air and the green in the public interest, (Gehl and Gemzæe 1996b; Van Rooijen 2000). The study shows that 26% of the respondents visited the cemetery to take a stroll or walk.

However, only 1% of the respondents visit the cemetery for memorial services. This finding is a departure from the assumption that the process of grieving often far outlasts the funeral services, with the bereaved requiring many months, if not years, to fully recover. In many cases the memorial and cemetery becomes an important tool in the recovery process (Salisbury, 2002).

Chart 7: Respondents Purpose of Visit to Cemetery



Source: Field Studies, 2015

5.3.2 Characteristics of Cemeteries Visited

The study sought to establish the characteristics of the various cemeteries visited, what caused them and how the negative characteristics can be addressed. Table 13 show the positive and negative characteristics identified by respondents in the various cemeteries visited;

Table 12: Characteristics of Cemeteries

Cemetery	Positive Characteristics	Negative Characteristics
Lang'ata Cemetery	<ul style="list-style-type: none"> ▪ Affordable ▪ Accessible ▪ Ready Burial Site ▪ Located away from the main town centre 	<ul style="list-style-type: none"> ▪ Congestion ▪ Shallow graves ▪ Poor management ▪ Insecurity ▪ No vegetation
Kariokor Muslim Cemetery	<ul style="list-style-type: none"> ▪ Affordable ▪ Accessible 	<ul style="list-style-type: none"> ▪ Overcrowded ▪ Insecurity ▪ Poor management
Kibera Nubian Cemetery	<ul style="list-style-type: none"> ▪ Affordable 	<ul style="list-style-type: none"> ▪ Not accessible ▪ Poor sanitation ▪ Congestion ▪ Insecurity ▪ Poor management
Nairobi War Cemetery	<ul style="list-style-type: none"> ▪ Beautiful Lawns ▪ Secure ▪ Accessible ▪ Good sanitation ▪ Responsive staff 	<ul style="list-style-type: none"> ▪ Limited burial space
Nairobi South Cemetery	<ul style="list-style-type: none"> ▪ Accessible ▪ Good sanitation ▪ Secure 	<ul style="list-style-type: none"> ▪ Limited burial space

Source: Field Studies, 2015

One of the reasons for poor planning and management of the cemeteries is cited as the type of institution responsible with the planning and management of the cemeteries. Lang'ata, Kariokor Muslim and Kibera Nubian Cemeteries are owned, planned and managed by Nairobi County Government. While the Nairobi War and Nairobi South Cemeteries are owned, planned and managed by Commonwealth War Grave Commission. The contrasting findings on the positive and negative characteristics of the various cemeteries are similar to various cemeteries owned by various institutions. The study further sought to establish what causes the above negative characteristics and the respondent noted that some of the causes included; lack of enough land for burial purposes, poor planning by local authorities, lack of political goodwill in the management and planning of cemeteries, minimal or insufficient allocation of funds, lack of staff motivation working in the cemeteries, high number of the dead in urban centres, lack of interest by the people to take care of the environment, lack of boundary wall to control those accessing the cemetery leading to insecurity, lack of policy and regulatory framework to control planning and management of cemeteries as well as land grabbing and corruption

To address the above challenges, the respondents noted that the following should be considered; government to allocate adequate land, prudent planning and management of land, improve the staff working conditions, sufficient budgetary allocation by the national and county government, provision of the basic infrastructures to control access and exit within the cemetery facilities, enactment of legislation to govern the planning and management of cemeteries, public sensitization on the management of the cemeteries and improve health facilities to reduce death rate

5.4 Service Provision

5.4.1 Service Delivery

The study sought to establish the level of service delivery in terms of standards of ground maintenance, presentation of grave and burial areas, communication within cemetery areas, attitude of staff, and the value of money. The result shows that majority of respondents felt the level of service delivery within the cemeteries they visited was between good and poor. In contrast, few respondents felt the services delivery was either excellent or very poor. Table 14 below gives detail on the findings of the study on service delivery.

Table 13: Service Delivery within Cemeteries

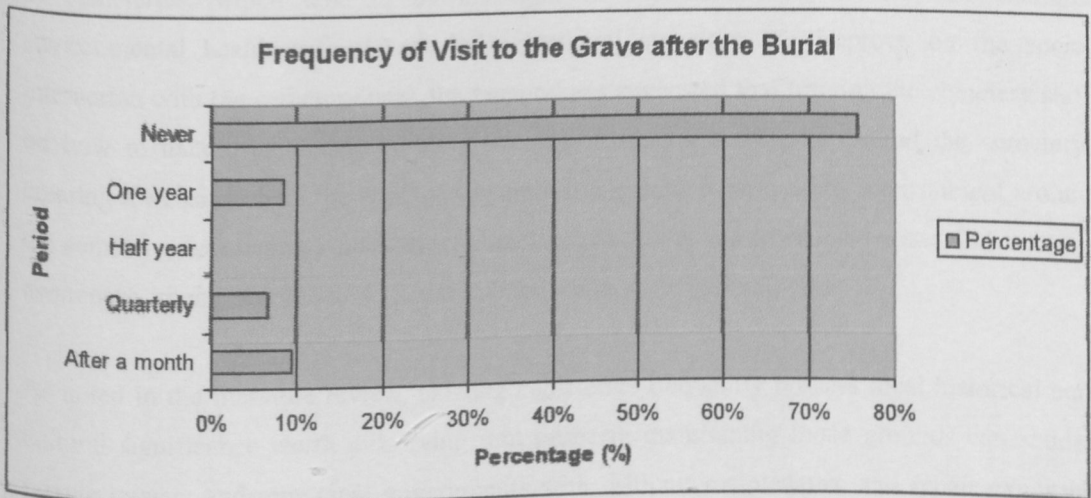
Particulars	Excellent	Good	Poor	Very Poor
	%	%	%	%
Facilities				
How did you find the standards of grounds maintenance at the cemetery?	4%	49%	43%	4%
How would you rate the presentation of the grave and burial area	4%	26%	66%	4%
Access to the Services				
How would you describe communication with the cemetery management?	4%	56%	40%	0%
How would you describe the ease with which you could identify and contact staff?	0%	49%	51%	0%
What is the standards of additional services provided other than the graveside by the management?	2%	29%	67%	2%
Staff				
How did you find the attitude of the staff, in terms of respect, helpfulness and understanding of your feeling?	2%	36%	60%	2%
Overall Satisfaction				
How do you rate the value for money you paid during the visit?	2%	59%	33%	7%
Please rate overall how satisfied you were with standards of service you have received from the cemetery department?	0%	27%	71%	2%

Source: Field Studies, 2015

5.4.2 Cemeteries Visits

Further cross tabulation on service delivery revealed that visit of the cemetery is allowed with 93% of respondent confirming that they are allowed to visit. However, 76% of the respondents indicated they have never visited the graves of their loved one after the burial as noted in chart 8 below. These findings negate the assumption of the sacred nature of burial sites in terms of pilgrimage and memorial sites. The reasons ascribed to grave visits includes the private and personal (Francis et al., 2000); the overtly or inadvertently political (Hartman, 1986); and the recreational (Rojek, 1993).

Chart 8: Frequency of Visits to the Grave after the Burial



Source: Field Studies, 2015

The respondents who have visited the graves of their loved after the burial reported that the graveyards had been neglected and congestion was on the rise. During the period they had not been involved in the management of the graveyards for their loved one.

5.5 Public Participation

The study also revealed that there is minimal or no public participation in the planning and management of cemeteries. The study establishes that 84% of the respondents have never been involved in the planning and management of cemeteries in their localities. Further this finding support the reasons the graveyards for those buried in the cemeteries have been neglected. The respondents noted that they are never involved in the planning and

management of cemeteries in their areas due to; lack of legal framework requiring the institutional responsible with the cemetery management and planning to involve them, general lack of interest from the member of the public in matter relating to cemetery, general belief that cemetery provision is the work of the local authority for those who have no land in their ancestral areas, lack of knowledge of how to get involved and some residents have never buried in a cemetery.

The general lack of public participation in the planning and management of cemeteries corroborate the literature review that in Kenya the municipality has dominated the provision of cemeteries, which tend to be managed as any other local service, for example environmental health enforcement or recreational amenities. To improve on the social interaction with the cemetery user, the respondents suggested that training the cemetery staff on how to handle the users, building social amenities like chapels around the cemetery, creating a website where the users can interact freely, creating a friendly environment around the cemetery, developing guides which enables the users to use when need arises and creating awareness among people would assist in improving on social interaction.

As noted in the literature review, existing cemeteries frequently possess local historical and cultural significance worth preserving, but properly maintaining those grounds can saddle private owners and municipal governments with difficult maintenance and repair expenses (Brown, 2008; Capels & Senville, 2006; Meierding, 1993). While the graves of notable fallen figures could become attractions, the less notable still represent an emotional landscape most communities consider important enough to maintain. This study finding shows the need to actively involve the public in the planning and management of the cemeteries.

5.6 Current Planning and Management Systems

In this section the study attempted to gather information on the current planning and management system applied at the Lang'ata and Nairobi war Cemetery and draw lessons

5.6.1 Situation Analysis at Lang'ata Cemetery

The cemetery was opened in 1958 and measures approximately 53 acres. It comprises the general public interment area, the Sunni Muslim Cemetery and the Hindu crematorium. The interment area is divided between "permanent" and "temporary" section. In the permanent

section, the graves are cemented while in the temporary section including the Sunni Muslim site, the leasing of the graves is for a short period and they are re-used to bury more bodies. The study reveals that the cemetery is full and the findings corroborate the literature review and the Kenya National Assembly Official Report, Wednesday, October 13, 2004, page 3609.

5.6.2 Annual Interment Trends

The study finding shows that there is numerous interment activities in Lang'ata cemetery despite that the cemetery is full. In year 2014, a total of 2,727 interments were carried out including the cremation. This rate is lower than that of 2013 and 2012 that recorded 2,938 and 3,406 interments respectively. In January 2015 to March 2015, 611 bodies have been buried in the three sections, 16 cremations, 5 reservations and 2 exhumations. Further, there are those cemetery users who reserve graves for future interment of their loved one or carrying out exhumation for relocation to other cemeteries or cremation as shown in table 15 below. This implies that the demand for burial space in Nairobi County is high and the residents use the available space within the cemetery to bury their loved one. Reservation of graveside is an indication of anxieties by the residents with the scarce resource.

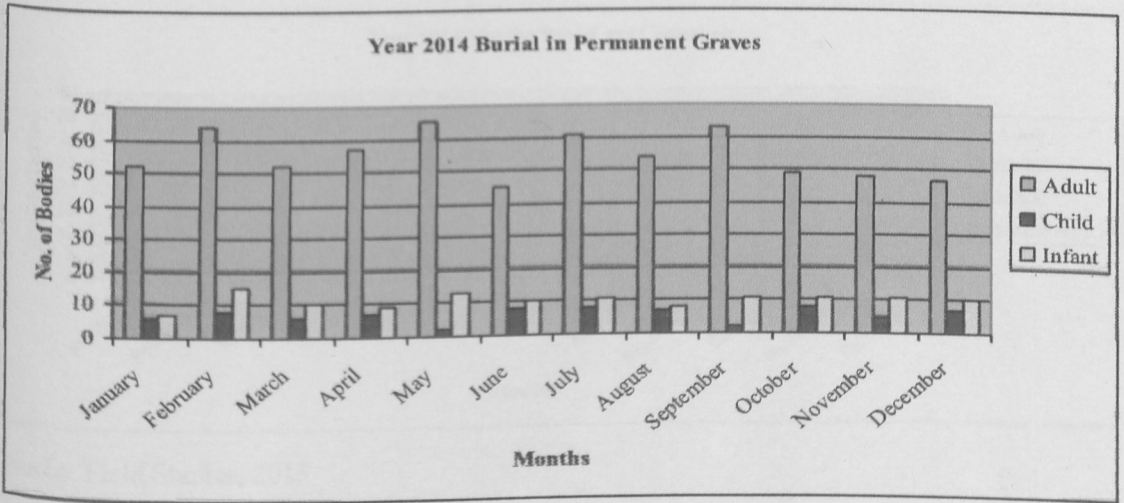
Table 14: Annual Interment Rates

YEAR	PERMANENT			TEMPORARY			MUSLIM BURIAL			CREMATION	TOTAL BURIAL	RESERVATION	EXHUMATION
	Adult	Child	Infant	Adult	Child	Infant	Adult	Child	Infant				
2014	657	74	126	373	253	1,006	186	1	3	48	2,727	31	2
2013	612	60	140	421	249	1,073	317	4	3	59	2,938	29	2
2012	580	67	133	440	305	1,382	433	7	10	49	3,406	6	4

Source: Field Studies, 2015

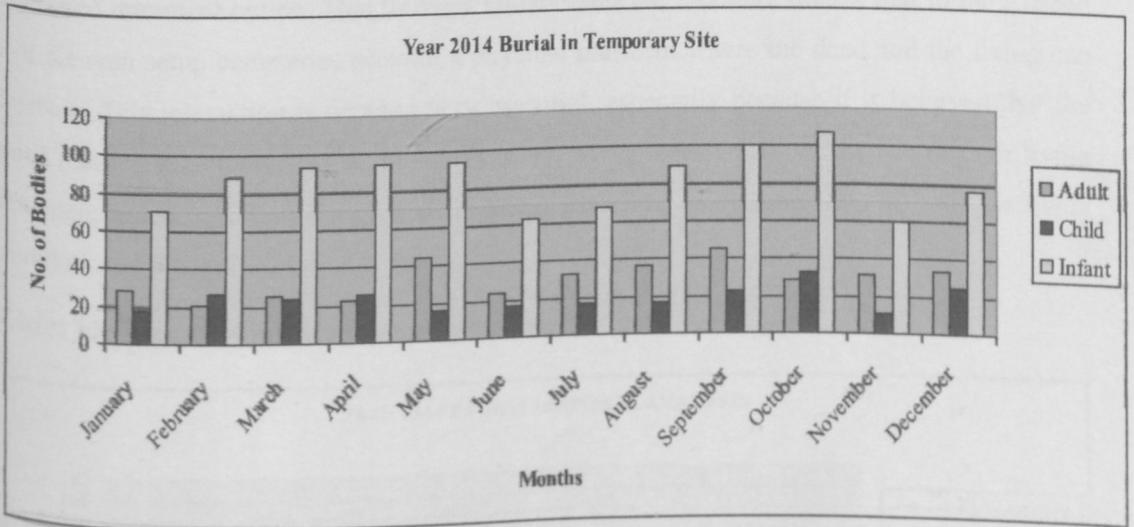
The annual interment trends reflect the additional revenue generated by county government through sales of graveside, cremation, exhumation and reservation. This revenue if properly utilized would be sufficient to acquire additional burial facilities to cater the increased demand. The study reveals that there are high annual interment rates at the temporary site than at the permanent and Muslim sections. These interment trends show that the infant mortality rate is also high within Nairobi County. The monthly interment trends in 2014 are as shown in chart 9, 10 and 11 below;

Chart 9: Burial Trends at the Permanent Section



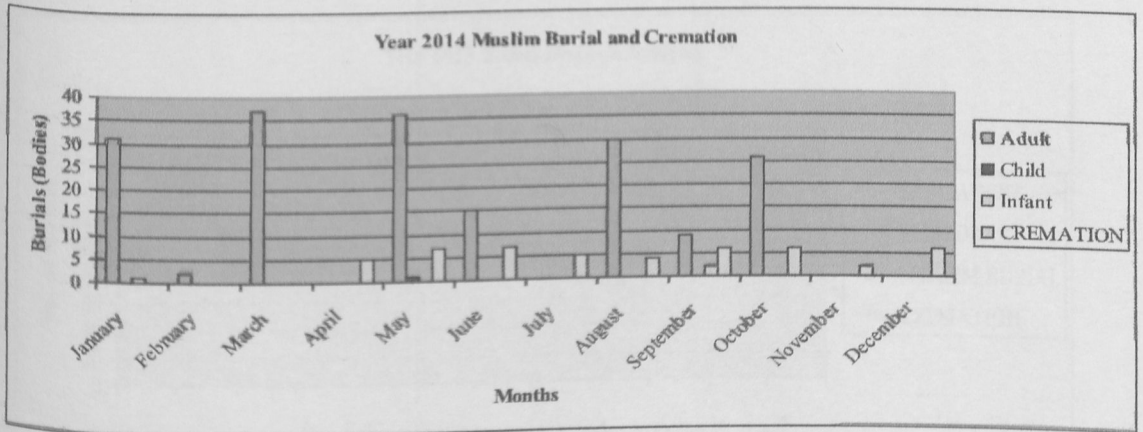
Source: Field Studies, 2015

Chart 10: Burial Trends at the Temporary Section



Source: Field Studies, 2015

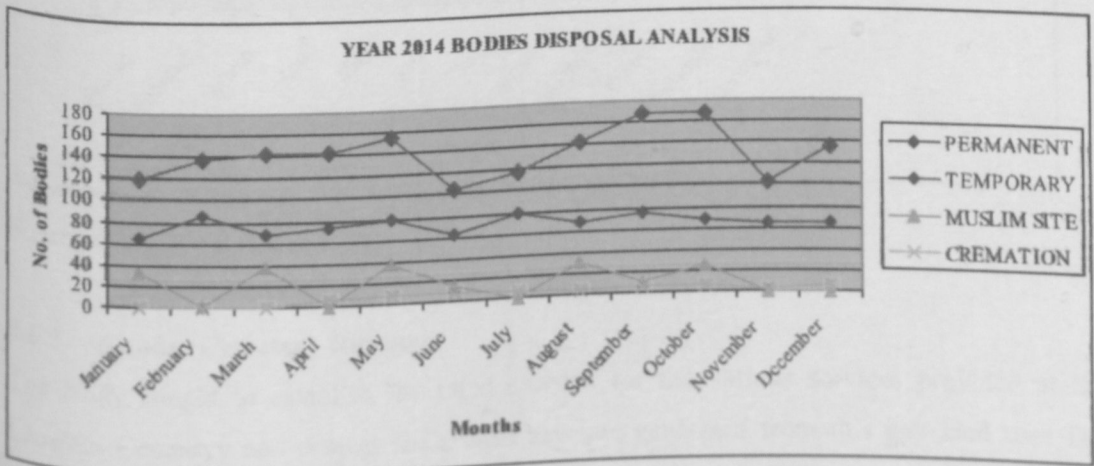
Chart 11: Burial Trends at the Muslim Section & Cremation



Source: Field Studies, 2015

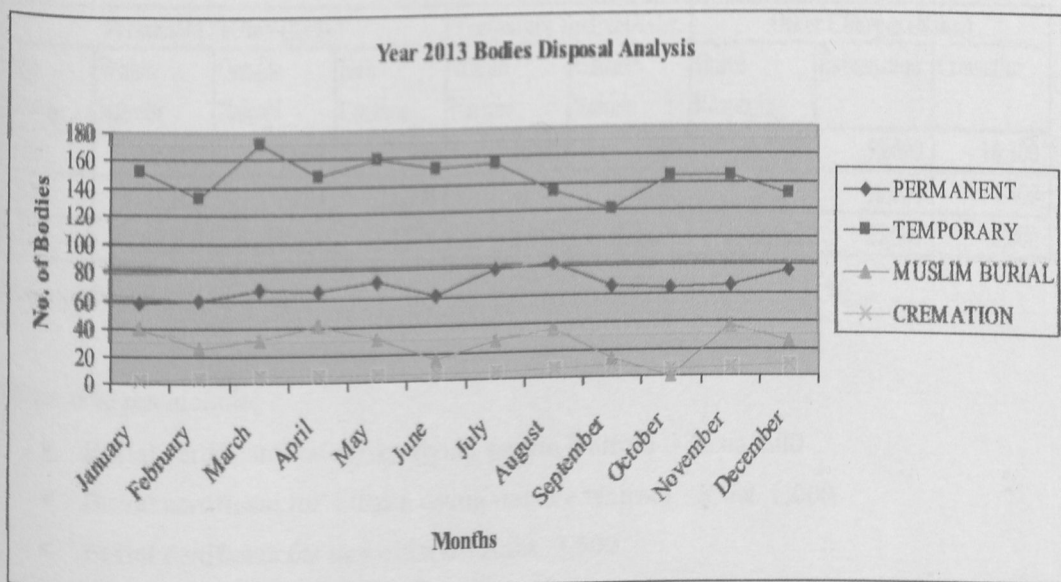
Chart 12 to 14 below details the analysis of bodies' disposal at Lang'ata Cemetery in the permanent, temporary and Muslim section as well as the cremation practices. This finding show the dynamics of cultural practices in Nairobi where burial is the mostly culturally approved interment option. This findings collaborates the literature review that in the African and Kenyan setup cemeteries provide a physical platform where the dead and the living can interact. This interaction is deemed very essential, especially because it is believed that the dead retain a functional role in the world of the living, specifically in the life of their living kinsmen; indeed, African kin-groups are often described as communities of both the living and the dead (Mbinda, 2006).

Chart 12: Year 2014 Bodies Disposal Analysis



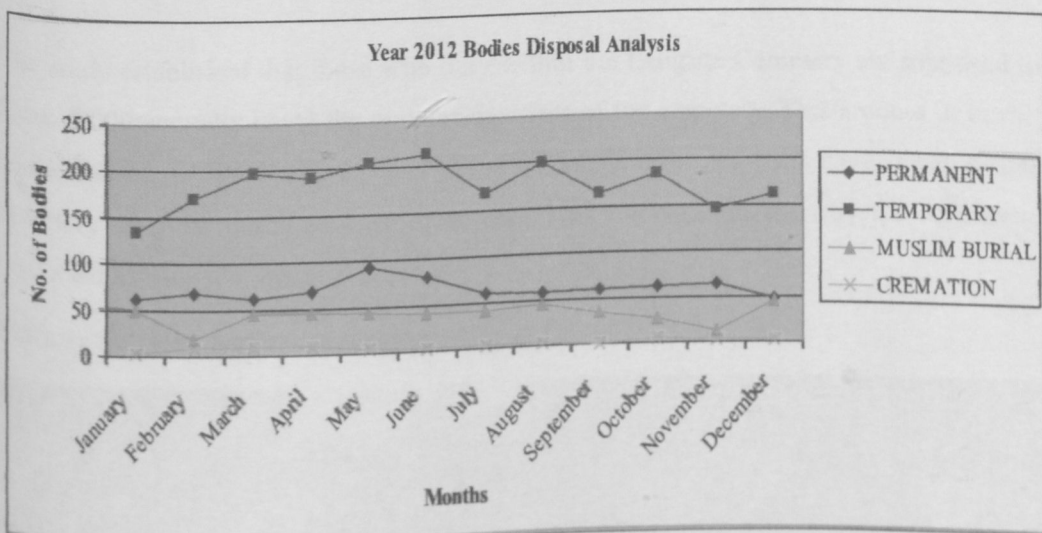
Source: Field Studies, 2015

Chart 13: Year 2013 Bodies Disposal Analysis



Source: Field Studies, 2015

Chart 14: Year 2012 Bodies Disposal Analysis



Source: Field Studies, 2015

5.6.3 Annual Cemetery Revenue

The study sought to establish the rates charged for the various services provided at the Lang'ata Cemetery and project the annual revenue generated from this key land use. The finding revealed that the various charge levied are stipulated in the Nairobi County Finance Bill, 2013 as shown in the table 15 below;

Table 15: Annual Cemetery Revenue

Age Group	Permanent Section (Kshs.)			Temporary Section(Kshs.)		Other Charges (Kshs.)		
	Within Nairobi	Outside Nairobi	Non - Citizens	Within Nairobi	Outside Nairobi	Grave Reopening	Exhumation	Cremation
Adult	25,000	31,000	37,500	7,000	7,000	40,000	50,000	16,300
Child	15,500	19,200	22,500	4,000	4,000	20,000	30,000	14,800
Infant	12,500	16,000	17,500	2,000	2,000	15,000	25,000	12,800

Source: Field Studies, 2015

Other charges include;

- Burial certificate for citizen dying within Nairobi - Kshs. 500
- Burial certificate for citizen dying outside Nairobi - Kshs. 1,000
- Burial certificate for non citizen - Kshs. 2,500
- Grave maintenance fees- Kshs. 3,500
- Grave search fee - Kshs. 1,000
- Reservation- Kshs. 40,000 per grave

The study established that those who bury within the Lang'ata Cemetery are supposed to pay Kshs. 3,000 annually being the maintenance fees of the cemetery. This amount is never paid and as shown in figure 5.5, 76% of the respondents indicated they have never visited the cemetery after the burial of their loved one. This finding explains why the cemeteries are neglected as shown in plate 1 below

Plate 1: Showing Neglected Graves



Source: Field Studies, 2015

In year 2014, the cemetery generated Kshs. 28.22 Million as revenue to Nairobi County being the charges for interment only. Other charges have not been factored in estimating the revenue.

Table 16: Year 2014 Annual Revenue

2014 Annual Revenue (Kshs.)							
Type	Permanent Section	Temporary Section	Muslim Section	Cremation	Exhumation	Reservation	Total
Adult	16,425,000	2,611,000	1,302,000	782,400	100,000	1,240,000	22,460,400
Child	1,147,000	1,012,000	4,000	-	-	-	2,163,000
Infant	1,575,000	2,012,000	6,000	-	-	-	3,593,000
Total	19,147,000	5,635,000	1,312,000	782,400	100,000	1,240,000	28,216,400

Source: Field Studies, 2015

5.6.4 Graveside Utilization and Topology

It was not easy getting the official plan for Lang'ata Cemetery from both the site and the City Mortuary where the management of cemeteries are carried out. However, it was evident that there was an approved plan previously used in allocating the graveyard. The initial plan had provided sufficient access routes which are currently being utilized for interment thus making circulation within the cemetery impossible.

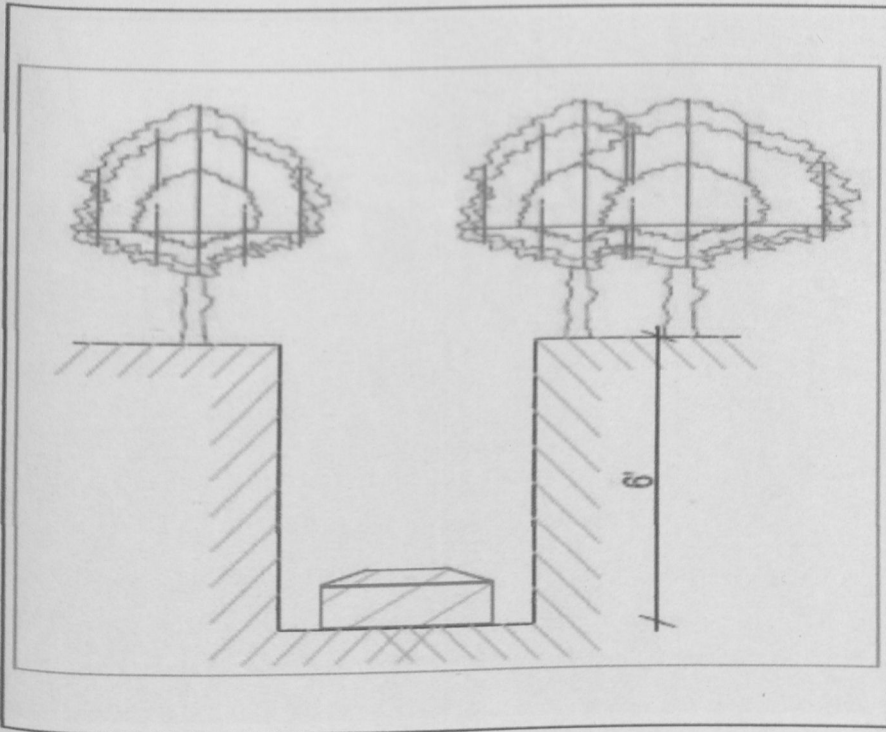
(a) Permanent Section

According to the International Cemetery, Cremation and Funeral Association, ICCFA, a standard grave is 2.5 feet wide by 8 feet long by 6 feet deep.

The ICCFA also recommends that cemeteries allot a certain number of 3 feet wide by 9 feet long and 4 feet wide by 10 feet wide spaces to accommodate interments of individuals who may require a lot that exceeds standard measurements. The recommended depth of a grave, for sanitary and health reasons is 6 feet.

The study finding indicates that the initial plan had allocated the sections' sizes and shapes in accordance with the general landscape plan and the layout of the roads; each separate tract surrounded by driveways being considered a section. The length of the sections was not less than three times their width providing a 700 to 800 feet long. The laying out of these long sections saves the loss of ground, the expense of making and the maintenance of large areas of driveways.

Figure 3: A Sketch of Cross Section of the Grave



Source: Field Studies, 2015

The study reveals that the initial burial in the permanent sections met the ICCFA standards as they were 4 feet wide by 8 feet long by 6 feet deep. Further, the placing of concrete slab was require being 3 feet width by 6 feet long and should have been carried out after one year to allow the settlement of the soil and dispute resolution of any case that would arise after the burial. Current, the study established that the standards have been violated as the graves are 4 feet wide by 8 feet long by 4 feet deep and placing the concrete slab which measures 3 feet wide by 7 feet long is done immediately to prevent grave robberies.

Plate 2: Showing Driveway and Reserved Graves



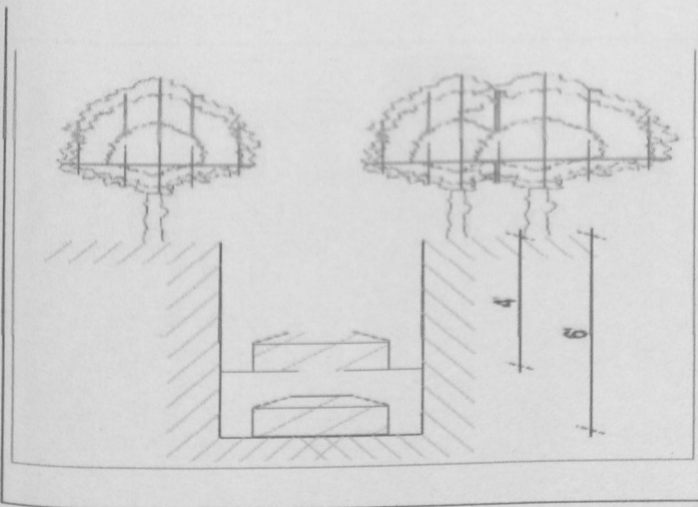
Source: Field Studies, 2015

Plate 3: Showing New Graves on the Driveway



Source: Field Studies, 2015

Figure 4: A Sketch of a Cross Section of the New Permanent Grave



Source: Field Studies, 2015

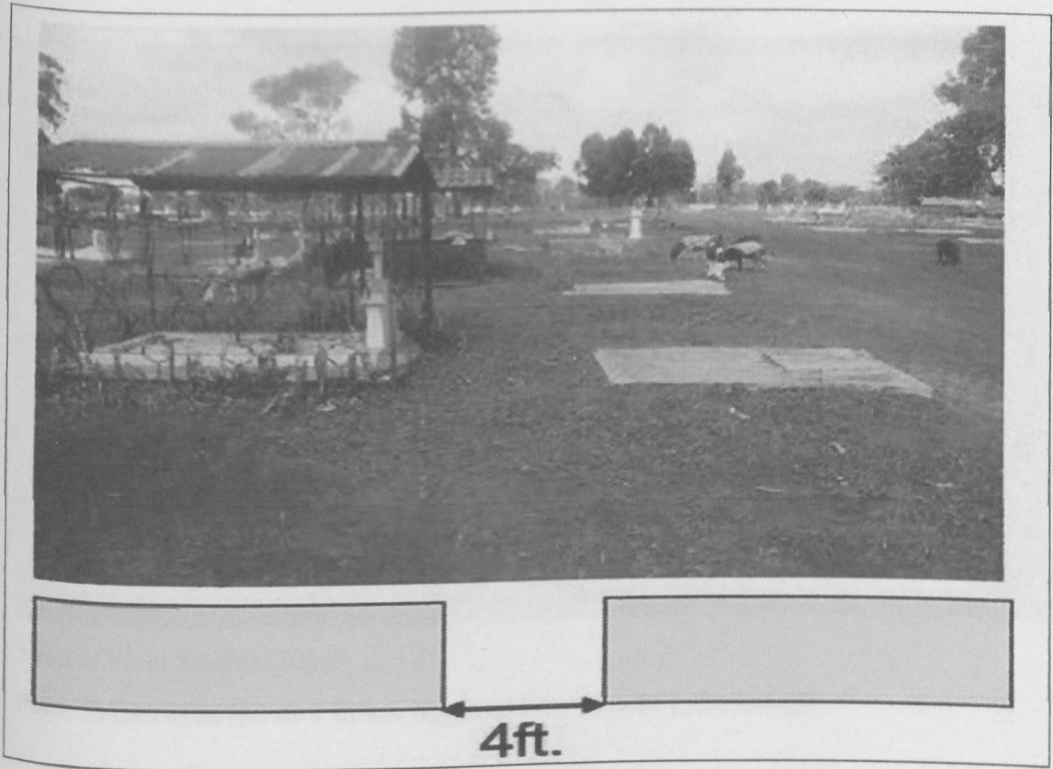
The permanent graves are carried out at the sites previous used as temporary graves where the initial burials were 6 feet deep. To accommodate the demand of burial sites, the second phase burials are carried out at 4 feet deep graveyard as shown in figure 4. The study further established that a space measuring 3 feet is provided between each grave width and 4 feet their length in the old cemetery section as shown in Plate 4 and 5 below. This provision is in accordance with the ICCFA requirement and the space could be used for walking during memorial and provisions of drains and water pipes.

Plate 4: Showing the Space between Graves along the Width



Source: Field Studies, 2015

Plate 5: Showing the Space between Graves along the Length



Source: Field Studies, 2015

The study further reveals that there is a shift in the spacing of the graves with the current spacing not exceeding a foot on the width and length. This is caused by the constraints on available land for burial as the burial is done on the existing driveways or reclaimed temporary sections, lack of controls on allocation, and immediate placing of the concrete slab without allowing settlement. Plate 6 and 7 shows the tight spacing between the graves.

Plate 6: Showing the New Space between Graves along the Width



Source: Field Studies, 2015

Plate 7: Showing the new Space between Graves along the Length



Source: Field Studies, 2015

In the permanent section, there exist burial records for the area and one can be able to locate the grave of loved one upon payment of grave search fees. However, due to poor control on

access and exit from the cemetery site, it's hard to identify those coming to visit the graves for memorial services which lead to loss of revenue.

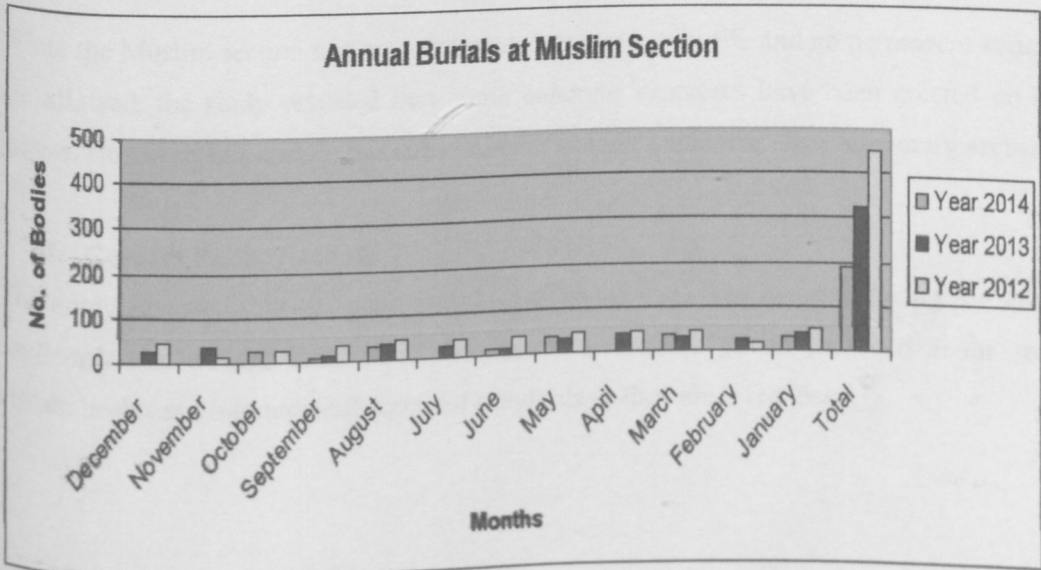
(b) Temporary Section

The study revealed that the temporary section consists the Muslim and other general public section. In this area, no permanent structure is allowed on the graveside.

i. Muslim Section:

The study revealed that the initial five acres allocated to the Muslim for the burial of Muslim faithful is filled up and the Nairobi County Assembly extended the section with a further 5 acres in the initial temporary section. The graves at the current section are 4 feet deep to avoid exhumation or interference with the first phase burial. chart 15 below shows the burial trends which reflect a decline on the number of the burials taking place on the site.

Chart 15: Annual Burials at the Muslim Section



Source: Field Studies, 2015

Plate 8: Showing the Muslim Burial Site and Crematorium



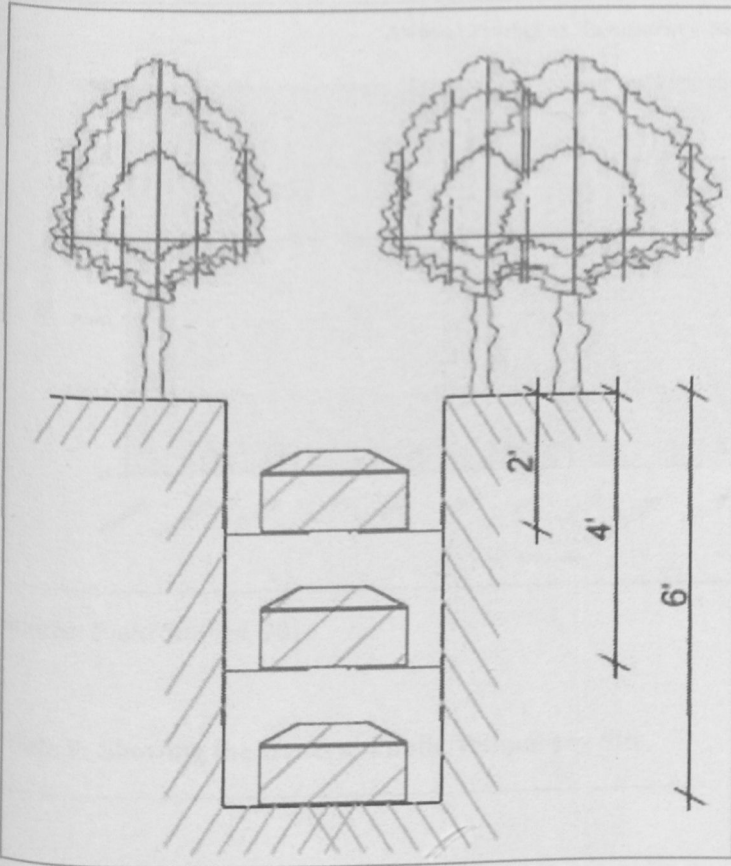
Source: Field Studies, 2015

While the Muslim section has been delineated as temporary site and no permanent structures are allowed, the study revealed that some concrete structures have been erected on some graves. However, this section has some level of orderly unlike the other temporary section.

ii. General Public Section:

The study revealed that the general public temporary section is experiencing the greatest challenges due to high increase in demand. Current, the graves provided in the section violate health and international accepted standards as they are 2 feet deep.

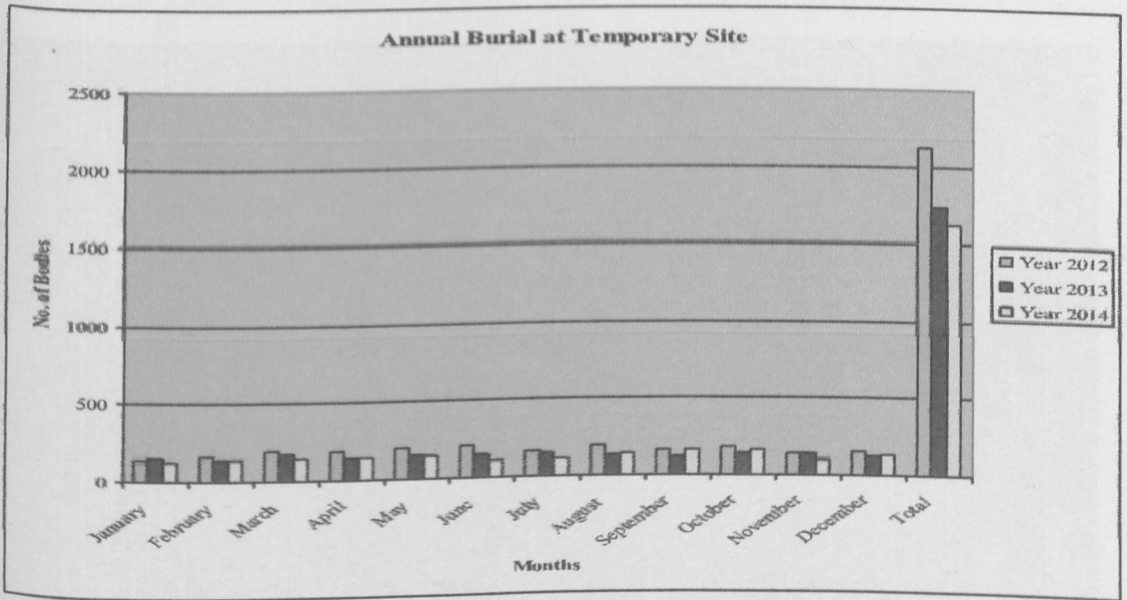
Figure 5: A Sketch of a Cross Section of the New Temporary Grave



Source: Field Studies, 2015

The study revealed that the current burials taking place are the third phase of the burial. As shown in figure 5, the initial temporary burials had provided 6 feet deep which were followed by the second phase at 4 feet deep. Current burials are at 2 feet deep that only leave approximate one foot for soil coverage thus violating WHO regulations. In its publication, *The Impact of Cemeteries on the Environment and Public Health*, WHO in 1998 provided that burial excavations should be backfilled as soon as the remains are interred and should provide a minimum of one metre soil cover at the surface. chart 16 below shows the burial trends which reflect a high demand for burial facilities though with declining number of the burials taking place annual from 2012 to 2014.

Chart 16: Annual Burials at Temporary Grave



Source: Field Studies, 2015

Plate 9: Showing the General Public Temporary Site



Source: Field Studies, 2015

Plate 10 below shows a 2 feet deep grave at the temporary site. Such a site is easy for wild animal to excavate and remove the deed bodies.

Plate 10: Showing a 2 feet Deep Grave at Temporary Site



Source: Field Studies, 2015

Plate 11: Showing Bodies Disposal Site at Temporary Section



Source: Field Studies, 2015

The study reveals that bodies that are not claimed in City Mortuary are disposed off at Lang'ata Cemetery. Plate 11 shows the bodies' disposal site each measuring 2 Metres wide by 3 metres long and 4 feet deep. The number of bodies disposed off at each grave was not provided but some sections were not fully covered thus creating a health risk to other cemetery users, domestic animals feeding on site and the general public.

iii. Other Facilities:

Other facilities provide in the building include, the crematorium, staff quarters, office facility/storage and washrooms. However, the staff quarter, office facility/storage and washrooms are not sufficiently provided. The study further established that a perimeter fence part stone wall and other chain link with barbed wire has been erected on site but several areas have been damaged rendering the access to site uncontrolled. The main gates along Kung'u Karumba Road and Lang'ata Road are not working and not security personnel stationed on site to provide access and exit of the compound.

Plate 12: Showing Office Premises/Storage



Source: Field Studies, 2015

5.6.5 Environmental Management

The study established that little attention in the management of environment. Through a private public partnership, the Nairobi City Council partnered with Blue Shield Insurance Company Ltd in planting the cemetery with ornamental trees in the cemetery site. However, these initiatives failed as the plant were not taken care of after the planting. The study revealed that the County Government has not promoted and encouraged composting greater amount of grass, leaves, flowers and other plant material removed from the grounds, increasing tree planting in order to offset carbon dioxide emissions. It is important to note that the County Government has not formulated a comprehensive cemetery management plans designed to protect the environment, character, biodiversity, and landscape and heritage value of cemeteries. The cemetery management plan should also promote the additional use of cemeteries as educational resources and valuable community assets.

Plate 13: Showing Large Swaths of Temporary Section without Trees



Source: Field Studies, 2015

5.6.6 Cemetery Sustainability

The study reveals that the current planning and management of Lang'ata Cemetery does not address the concept of sustainability by ensuring that burial grounds are sustainable across all aspects of well-being. The concept of sustainability in cemeteries planning and management

entail; social sustainability which is the ability of a social system to function at a high level of well-being and harmony, cultural sustainability which will include social equity and the protection of cultural values, environmental sustainability through providing large swaths of green space, and economic sustainability through contribution to the local economy and improving local skills base.

5.7 Situation Analysis at Nairobi War Cemetery

To undertake a comparative analysis the situation analysis of Nairobi War Cemetery was carried out. The Study revealed that there are no new burial is taking place and the responsibility of the CWGC is to maintain the cemetery as per the approved standards and coordinate memorial services. The cemetery is planned in 9 plots which are meticulously arranged with well manicured lawns and ornamental shrubs. The access roads are well maintained with adequate security and low hedge fence.

The study established that there are international standards that govern the planning and management of the cemetery and is practice across the globe where CWGC have cemetery. Any change has to go through rigorous review before implementation to ensure it does not affect the theme, character, objectives and aspirations of the CWGC.

5.7.1 Annual Interment Rates

The study established that the cemetery measures approximately 11 acres and a total of 1,921 bodies are buried on site. Further, the cemetery commemorates 2,400 men of forces in both the Nairobi Memorial (for those graves located in other areas where memorial cannot be conducted) and East Africa Memorial who lost their lives and their graves cannot be identified. In the cemetery, the burials have been uniformly without separating on religion or ranks of the dead officer.

Plate 14: Showing the East Africa Memorial

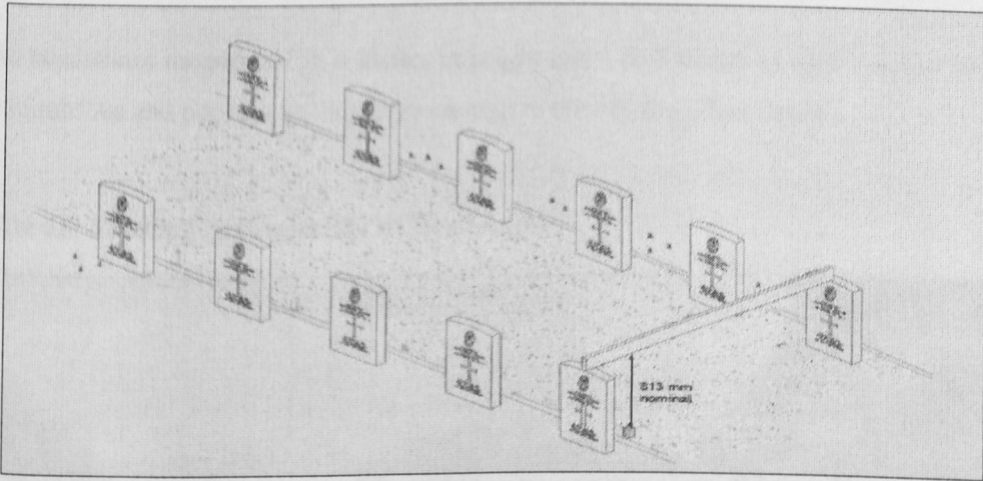


Source: Field Studies, 2015

5.7.2 Planning Topology

From the study findings, it was established that uniformity of the graves and equality of treatment is paramount in the cemetery. It study established that the provision of monuments could not be left to individual or families initiatives. In a few cases, where money and good taste were not wanting, a satisfactory result would be obtained, in the sense that a fine individual monument would be erected. In the large majority of cases either no monument would be erected, or it would be poor in quality; and the total result would be one of inequality, haphazard and disorder. The cemetery would become a collection of individual memorials, a few good, but many bad, and with a total want of congruity and uniformity. The monuments of the more well-to-do would overshadow those of their poorer comrades; the whole sense of comradeship and of common service would be lost. The Commission, on the other hand, felt that where the sacrifice had been common, the memorial should be common also; and they desired that the cemeteries should be the symbol of a great Army and an united Empire. It was therefore ordained that what was done for one should be done for all, and that all, whatever their military rank or position in civil life, should have equal treatment in their graves.

Figure 6: A Sketch of a Grave Topology



Source: Field Studies, 2015

The study established that the principle of equality and uniformity of treatment having been adopted is carried through each grave having its own headstone, of uniform dimensions, on which the name of the dead will be carved, with his rank, regiment, and date of death as shown in figure 6 above. The study further established that by adapting this method of planning, it would achieve the following;

- a) The headstones will clearly indicate the nature of the enclosure, that it is a cemetery and not a garden. The fact that they are cemeteries, containing the bodies of hundreds of thousands of men who have given their lives for their country, should be evident at first sight, and should be constantly present to the minds of those who pass by or who visit them.
- b) The rows of headstones in their ordered ranks carry on the military idea, giving the appearance as of a battalion on parade, and suggesting the spirit of discipline and order which is the soul of an army. They will perpetuate the effect, which all who have seen them feel to be impressive, of the present rows of wooden crosses.
- c) The existence of individual headstones will go far to meet the wishes of relatives, who above all things are interested in the single grave. Many of them, as indicated above, will be disappointed that they are not allowed to erect their own monument over their own dead; but they will be much more disappointed if no monument except a mere indication number marks that grave at all. The individual headstone, marking the

individual grave, will serve as centre and focus of the emotions of the relatives who visit it.

The headstones measures 2 ft. 6 inches in height and 1 ft. 3 inches in width; not so large as to be cumbrous and oppressive, but large enough to convey the effect desired.

Plate 15: Showing Arrangement of Headstones



Source: Field Studies, 2015

The study further established that a central monument is erected in the cemetery to represent the idea of self sacrifice. The guiding principles of the central monument are that it should be simple, durable, dignified and expressive of the higher feelings with which CWGC regard its dead. In order to achieve this, it must have, or be capable of, religious associations, and while it must satisfy the religious emotions of as many as possible, it must give no reasonable ground of offence to any. The central sentiment of the commemoration of the dead is grateful and undying remembrance of their sacrifice, and it is this sentiment which most persons will wish to see symbolized in the central monument.

Plate 16: Showing Central Monument



Source: Field Studies, 2015

Besides the cross and stone, the study established that some form of building are required in cemetery which include office, storage, register room, sentry house, shelter for visitors and some place where simple religious services may be held. Plate 17 to 19 show some of the building provided at the cemetery.

Plate 17: Showing Office Buildings



Source: Field Studies, 2015

Plate 18: Showing Staff Quarters



Source: Field Studies, 2015

Plate 19: Showing Storage Building



Source: Field Studies, 2015

5.7.3 Environmental Management

The study established that larger part of cemetery planning and management involves horticultural. The study revealed that much of the general effect of the cemeteries depends on the planting, and it is essential that the architectural designers of the cemeteries work in the closest cooperation with the horticultural experts. The former will be responsible for the effect to be produced, but the latter alone can advise what trees or shrubs or flowers are suitable to the soil and will produce the required results.

The study established that main architectural features of Nairobi Cemetery is given by the trees and shrubs planted in it. For the rest, grass or flowers provide the best covering for the actual graves. This distinguish the Nairobi War Cemetery as a places of gloom, the restfulness of grass and the brightness of flowers in fitting combination appear to strike the proper note of brightness and life. The study noted that care is given to the flowers and grass through properly mowing to ensure that it does not grow in such profusion as to overshadow the headstones and disguise the fact that the place is a cemetery.

Plate 20: Showing Trees within the Cemetery



Source: Field Studies, 2015

Plate 21: Showing Grass Lawns between Graves



Source: Field Studies, 2015

Plate 22: Showing GWGC Staff Planting Tree



Source: Field Studies, 2015

Plate 23: Showing Equipment for Garden Maintenance



Source: Field Studies, 2015

Plate 24: Showing Driveway from Ngong' Road



Source: Field Studies, 2015

The study further revealed that permanence and protection of the cemetery is the guiding requisites and therefore the cemetery is fenced in by a live hedge boundary to keep off intruders and conceals the nature of the enclosure from the passer-by, but by a low wall which leaves the ground within open to view, but effectually protects it from violation.

5.7.4 Cemetery Sustainability

The study reveals that the current planning and management of Nairobi Cemetery address the concept of sustainability by ensuring that burial grounds are sustainable across all aspects of well-being. In terms of social sustainability, the cemetery has managed to provide a platform through which the relatives of the buried men have a memorial place, equity and uniformity, protection of cultural and religious values and more importantly through its horticultural activities, the environmental sustainability is realised.

To ensure the sustainability of the planning and management of the cemetery, CWGC has established the following key legal framework and policies that guide day to day operations of its cemeteries. The policies and legal have enabled the high standards to be maintained at Nairobi War Cemetery in comparison with other public cemetery and includes;

- a) **The Royal Charter.** The charter establishes the CWGC and details its objective. It requires CWGC to produce an annual report of its proceedings, with a duly certified statement of the accounts and of the finances of the Commission. It also requires the report to be submitted to Her Majesty The Queen and copies are sent to the governments represented on the CWGC
- b) **Horticultural Manual:** The Horticultural Manual defines the role of horticultural staff in achieving this objective. It describes how to plant and maintain the horticultural features used in cemeteries and memorials. The procedures, which are based on experience, promote the techniques that are most likely to achieve the required standards. The Horticultural Manual comprises seven modules:
 - i. **Module 1: Policy.** Describes the types of horticultural features used in the Commission's cemeteries and memorials, with their maintenance requirements.
 - ii. **Module 2: Pesticides and Pest Control.** Describes how to store, use and dispose of pesticides safely.
 - iii. **Module 3: Machinery Operations:** Describes how to use and maintain horticultural equipment.

- iv. Module 4: **Turf**: Describes how to plant and maintain the sward in cemeteries and memorials.
 - v. Module 5: **Border Planting**. Describes how to plant and maintain the headstone borders in cemeteries.
 - vi. Module 6: **Trees**. Describes how to plant and maintain trees.
 - vii. Module 7: **Ornamental Features**. Describes how to plant and maintain horticultural features, such as hedges and shrubberies, in cemeteries and memorials.
- c) Report by Report to the Imperial War Graves Commission by Lieut.-Colonel Sir Frederic Kenyon, K.C.B., Director of the British Museum on How the Telemetries Abroad will be designed

5.8 Policy & Regulatory Framework

Based on the discussion with key informants, the study probed further to try and analyse if there exists policies and regulatory framework guiding the planning and management of cemeteries. The study revealed that except the private cemeteries and the Kibera Muslim Cemetery for the Nubian community other types of cemeteries were provided during the colonial periods and the subsequent governments of have only been involved in their daily operations and management. Further, the provision, planning and management of cemeteries are only provided for in the Public Health Act Cap 242 and the Repealed Local Government Act Cap 265. Urban Areas and Cities Act No. 13 of 2011 has also attempted to address the issue of planning and requires that for a urban area to be declared a city or a municipal area it must have the capacity to provide cemeteries and crematoriums.

The study further revealed that there exist no policy in place to guide the planning and management of the cemeteries and the departments responsible with the same function have not dedicated resources in addressing this problem. As a result, this has lead to the deplorable conditions of the cemeteries in Nairobi. However, the special cemeteries follow the legislations and policies established by CWGC and member states as noted earlier.

The study revealed that the various government agencies that are responsible with the public health, land, environment and public finance have not common approach on the provision of cemeteries or cultural sensitization to address the cemeteries challenges.

5.9 Summary of Key Study Findings

From the study the following are the key issues findings of the research;

5.9.1 Social Economic Issues

The study findings support the literature review that cemeteries in Nairobi are a manifestation of idealized social way of life and convey the social, economic and religious status of the dead and the living. The high rate of annual burial in Lang'ata Cemetery compared with the rate of cremation signifies the religious and traditional inclination of the interment of the dead through burial system. While the cultural beliefs are inclined to the interment of dead bodies through burial, the study reveals that in Lang'ata Cemetery, the highest rate of annual burials are in the temporary site where the charges are modest. This shows that burial facilities in urban area and specifically in Nairobi are a public good that should be provided at affordable rates to cater for the less fortunate in the society.

The study further revealed that as population growth increases, the death rate increases. The challenge has further been compounded by high rate of urbanization and development of the available land within the Nairobi County that would have been utilized for cemetery purposes. The available land that could be utilized for the purposes of the cemetery are within the devolved units of Kajiado, Machakos and Kiambu and this complicate the matter further. To address the challenge, there is need for a policy intervention to promote interment methods that conserve land i.e. cremation and conservation burial systems. However, this policy intervention will require public education and mobilization for the policy adoption.

5.9.2 Policy, Regulatory and Institutional Framework

The study revealed that there are no clear policy and regulatory framework guiding the planning and management of the cemeteries. The existing laws, Public Health Act Cap 242, Local Government Act Cap 265 (repealed) and Urban Areas and Cities Act No. 13 of 2011 do not guide the how the cemetery should be dealt with in terms of planning and management. The study revealed further that weak enforcement of generally accepted planning and health regulations as well as WHO requirements has lead to poor state provision, planning and management of cemeteries in Nairobi especially the Lang'ata Cemetery. The institutional weaknesses mainly in development control and public health section of the county government, NEMA and public health in national government has lead

to manifestation of poor planning and management of cemeteries and burial of bodies in uncontrolled manner.

The weaknesses in planning and management could be attributed to capacity challenges, as well as other social political factors that make enforcement of planning regulations a difficult task. Budgetary allocation and skilled staff engagement has been relegated on this public purposes facilities. There is little doubt that non conformity to generally accepted regulations leaves the cemetery users and Nairobi residents open to unhygienic conditions. Conversely, while the Nairobi War Cemetery is situated in Nairobi, the planning and management of the facility is with no doubt properly done. The study revealed that there are policies and regulatory framework established by CWGC on the management and planning of its cemeteries across the globe. There exist institutional synergy and sufficient finances are allocated in ensuring the standards are maintained in the cemetery operations. Skilled staffs have been employed to ensure the planning and management of the cemetery which is coupled with the government support.

5.9.3 Physical and Environmental Factors

The study revealed that physical and environment factors are key consideration in the planning and management of cemeteries as it affect the wellbeing of society. The biodegradation of a buried corpse and the purification of its liquid, solid and gaseous products depend on several factors including the environment surrounding the buried coffin. Recent research and investigation, (Fisher and Croukamp 1993), reveals several pertinent facts:

- a. The impact of cemeteries on the environment has been neglected worldwide.
- b. Cemeteries pose a pollution threat far exceeding original perceptions.
- c. A significant number of existing cemeteries (>40%) contaminate our already beleaguered water resources.
- d. Microbiological pollutants (including bacteria, viruses and parasites) remain active within the water table at much greater distances from their source than previously speculated.
- e. Town authorities do not perceive cemeteries to be a significant source of pollution.

The study reveals that the perceived lack of interest and knowledge prevailing in this field by laymen and professionals such as town and regional planners, engineers and people in related

earth science fields, further adds to this pollution problem. In many countries there is no legislation existing either to govern the location of cemeteries from the consideration of pollution (Fisher, 1992).

For Lang'ata Cemetery that has been full for several years, but to which bodies continue to arrive every day for burial, it is not possible to bury them the requisite six feet under. In such instances, human body parts being dug up by dogs and wild animals and deposited all over the cemetery are common as the graves are only dug to two feet deep than the required six feet to avoid exhuming bodies laid earlier in the same space. Further domestic animals are allowed to graze within the cemeteries precepts. These animals consume chemicalized material due to the contact with the bodies that had been preserved using dangerous chemicals like formalin. This is dangerous to not only the animals but also human beings that later on consume the animal meat, (WHO, 2000; Corry, 1978; Lance, J.C. & Gerba, 1980).

The study findings reveal that urbanization and urban expansion affects the physical shape of a region as well as the social experience of those who live there. The ways in which urbanization transforms a region depends on the nature of what occurs. Physical urban growth alters the natural and built landscape while population growth reshapes politics and culture. Urbanization may produce new urban spaces and livable neighbourhoods or destroy critical environmental features and important cultural resources (Pivo, 1996). The rate and pattern of urbanization are producing deep public concern over growth related problems and negative environmental consequences. These public concerns produced by urbanization and urban expansion include the mode of disposal of the dead.

The study of Nairobi War Cemetery reveals that there is no reason why cemeteries should be places of gloom; but the restfulness of grass and the brightness of flowers in fitting combination would appear to strike the proper note of brightness and life. Care must be taken that the grass is properly mown and that the flowers do not grow in such profusion as to overshadow the headstones and disguise the fact that the place is a cemetery; and in general a sheet of grass, with occasional beds of flowers seems to give a better result than continuous flower beds.

5.10 Summary of Emerging Issues

Below are the emerging issues on planning and management of cemeteries in Nairobi;

- a) Society's need for memorialisation of the deceased may vary by culture, but generally, the places used to accommodate this need (i.e. cemeteries) are overlooked in the land use planning process in Nairobi.
- b) There is no land use policy or regulatory framework that guide in planning and management of cemeteries in Kenya
- c) Most of the existing cemeteries were planned during the colonial period and they had a plan. However, this plan have not been followed through by the authority responsible with their management.
- d) All existing cemeteries are full and there is acute shortage of cemetery land. The study reveals that the Nairobi City is in need of a suitable land for cemeteries. There is scarcity of alternative land to be allocated for the use of cemeteries in Nairobi County.
- e) Lack of adequate budgetary allocation and political goodwill are constraining Nairobi City County Government from allocating sufficient land, planning and management of cemeteries
- f) There is need for public participation in planning and management of cemeteries. Dialogue must occur at all levels of governments to find expression in spatial frameworks. Non-adherence to standards of burials relating to the depth of the grave, among others, are issues that each community needs to tackle.
- g) Private and special cemeteries are well planned and maintained with adequate human and financial capital
- h) The following challenges have been identified in the planning and management of cemeteries in Nairobi;
 - Awareness challenges: Currently, planners, policy makers, and residents have limited knowledge on the cemetery planning and management.
 - Environmental Challenges: This challenge is predominant at the public cemeteries
 - Socio-cultural Challenges: Nairobi has a diverse cultural fabric. This diversity is largely attributable to rural urban migration – one result of this pluralism has been the emergence of a multitude of cultural and secular groups in Nairobi society with varying practices, rituals and beliefs regarding death and burial. Hence, there are a number of religious, spiritual and philosophical approaches to birth, life and death.
 - Legislative Challenges: There exist no legal framework to guide in planning and management of cemeteries in Nairobi. Special cemeteries are guided by the legislative framework established in United Kingdom

CHAPTER SIX

PLANNING IMPLICATIONS OF THE FINDINGS.

6.1 Introduction

Cemeteries are an integral part of the urban space. In particular, cemeteries are a part of the public spaces which should be planned, designed and managed as a systemic network, i.e. as elements of a large system, which is the city, where they establish relations of complementarity and interdependency.

Due to this critical role cemeteries play in the cultural set up there is the need for the planning professions to come up with ways of addressing the cemeteries planning and management in Nairobi and in general the entire country. As noted, the defunct Nairobi City Council commenced the process of acquiring a new cemetery site in Mavoko Municipality in 2008 but the process was plagued with confusion due to the process employed and corruption allegations. Clear lack of policy, legislative and methodological guidelines in planning for cemeteries lead to political manipulation in the site acquisition which caused huge loss of public resources. This policy, legislative and methodological vacuum has hindered effort of acquiring new cemetery sites despite the huge demand, environmental, economical and safety concerns facing the Lang'ata Cemetery.

Nairobi City is modernizing at a very high rate. Within Sub-Saharan Africa, apart from South African Cities, Nairobi City is the most modernized, attracting high international community. Particularly, with its accommodation of major United Nations Agencies and gateway to the African continent, its future development cannot be limited to mere local cultural system but must embrace global trends in community development. It must therefore be willing to learn critical lessons from other cities where growth factors have been experienced on how to deal with interment of dead bodies in the face of rapid urbanization and high mortality rate.

To cope with high demand for interment spaces within a dynamic and diverse social cultural environment, the future options for Nairobi for the interment of the dead would include;

1. Continue with the current interment practices;
2. Adoption of cremation method as the main means of interment
3. Implement an integrated interment system that combine the two options

The choices of any of the above options will require to be guided through policy and regulatory framework to address the various weaknesses and gaps identified in the study. The research has analyzed the rationale for cemetery planning and management, institutional weakness, policy and regulatory framework gaps that have contributed to the challenges in the provision, planning and management of cemeteries in Nairobi. This offers a platform for re-thinking the planning and institutional systems as well as regulatory framework of urban areas planning to suit the context of societal cultural norms and obligations. The research has pointed out the cemeteries as a bigger social economic factor that needs structural transformation to manage.

6.2 Future Interment Options for Nairobi City

Land use planning is an essential tool for achieving sustainability in urban development in Nairobi City. The study has revealed that the current interment trends are not sustainable and that public awareness and participation, education, and training, policy shifts and regulatory changes are key to moving society toward sustainability.

At this point there are a number of possibilities about how the future interment options might evolve. Which way it develops will be largely dependent on leadership and clear thinking at both the national and county levels and how public, religious leaders and private providers respond. While the number of problems and our understanding of the interment issues for the future will continue to evolve, the following options are available for Nairobi City County to address the challenges of planning and management of cemeteries.

6.2.1 Continue with the Current Interment Practices

The study has revealed that the current interment practices in Nairobi County are mainly burial systems with minimal cremation. Nairobi County enjoys rich a cultural diversity and the awareness of culture and cultural characteristics is of high importance. Nairobi's cultural heterogeneity and diversity on one hand is a burden and a challenge for a common policy, on the other hand it is seen as an 'indispensable feature and opportunity to achieve the Nairobi's strategic objectives of prosperity, harmony and security. The Nairobi cultural context is characterized by particularities of history, by attitudes, beliefs and values, religious, political and legal traditions, different socio-economic patterns and concepts of justice, interpretations of planning tasks and responsibilities, and different structures of governance.

In the context of the planning and management of cemeteries in Nairobi, and with regard to the Nairobi Metropolitan Strategy and Vision 2030 objectives of a balanced, polycentric, sustainable and competitive city, this requires knowledge of the specific cultural characteristics of the county to promote a professional discourse of knowledge and opinions on these issues. This will consist of more than planning instruments and procedures but the aggregate of the social, environmental, institutional and historical changes of the society.

For the continuity of this practice, the Nairobi County and the National Government will be required to acquire additional land for the establishment of new cemeteries to replace the existing public and private cemeteries which are currently full. To avoid the challenges experienced in 2008 during the acquisition of a new cemetery land in Mavoko Municipality, the national and county government would require to implement the highlighted legislations, policies and selection criteria with the acquisition of the land being managed through the National Land Commission on behalf of the national and county governments;

1. **Enactment by the National Government the Funeral, Burial and Cremation Services Act.** This Act will provide for the establishment, planning and management of cemeteries, burial and cremation regulations, opening of graves and exhumation, and conditions for county governments, cities and municipalities as provided in the Urban Areas and Cities Act to establish Cemetery and Crematoria By-Laws. The Act will further restrict for migration of bodies across the counties and address the overload of facilities in Nairobi and establishment of cemetery land selection guideline. Nairobi should learn from China where Chinese Funeral and Interment Management Ordinance (Decree No. 225, 1997) has been enacted to address the high demand for burial space, allocation of duties and responsibilities between various arms and levels of governments. Similarly, in South Africa every municipality has enacted a bylaw to guide in the planning and management of cemeteries which has enable the country to address the earlier existing challenges.
2. **Enactment of Cemetery and Cremation By-Laws.** Nairobi County Government will be required to enact Cemetery and Cremation By-Laws to give effect to the implementation of the Funeral, Burial and Cremation Services Act.
3. **Establishment of criteria and guideline for selecting cemetery land.** Land use planning and urban spatial structure are conjunctive outcome of the functioning of

market and political processes as reflected in the acquisition of Mavoko Municipality cemetery land. The market process provide the means by which individuals and institutions pursue their self interests and the political process the means by which governments articulates and pursue the public interest, (Chapin and Kaiser, 1979). To protect public interest from manipulation by market process, the Nairobi City County should establish a policy guideline in accordance with the above mention legal framework for future acquisition of land. The criteria should be broad, actionable and realistic in consideration of the existing social economic challenges. The policy should cater and provide rating for the physical and sanitary aspects of a site which includes; excavatability of the ground, stability of soil formation, workability within the soil structures, depth of water tables, subsoil permeability and backfill permeability. The above physical and sanitary aspects will entail;

- a) Soil excavatability pertaining to the ease of grave excavation without any mechanical aid to a minimum depth of 1.80m;
- b) Soil permeability relates to the rate of fluid movement through the soil and must be between 1×10^{-7} cm/s and 5×10^{-5} cm/s. Where the cemeteries are located further from water sources than recommended, the upper limit can be extended to 1×10^{-4} cm/s;
- c) The position with respect to drainage features (including lakes, dams, rivers, streams and gully heads) is important to ensure that these features are not affected in any way by pollutants from the cemetery sites;
- d) Site drainage be considered to ensure minimal ingress of surface water into the graves;
- e) Site topography should ideally have a gradient between 2° and 6° with a maximum gradient of 9° . The basal buffer zone refers to the vertical soil succession between the base of the deepest grave and the water table, forming a barrier between the source of pollution (the grave) and the groundwater;
- f) An environmental evaluation of the proposed cemetery should be prepared and approved by National Environmental Management Authority which will include the completion of hydrological and hydro-geological studies which will indicates that the use will not have adverse impacts on the quality of ground and surface water on or nearby the site;
- g) Grave stability is required to ensure competency in the excavated graves;

- h) Soil workability entails the ease of manipulation of soil from and into the grave;
- i) No borehole drinking water should be located closer than 500m of the proposed cemetery;
- j) The cemetery should be large enough for future expansions for multi generational planning of 100 year. This should be guided by the population growth and death rate projections of the city;

4. **Amendment and review of current legislations and regulations to provide for the planning and management of cemeteries.** The various Acts of Parliament that would require amendment to give effect to the Funeral, Burial and Cremation Services Act will includes;

- a) Public Health Act, Cap 242. This Act of Parliament currently anchor the provision of cemeteries in the country. However, the Act does not provide the process of planning and management of this public good. The Act should be amended in line with Funeral, Burial and Cremation Services Act to allow for a comprehensive approach;
- b) Environmental Management and Coordination Act Cap 387. The Act should be amended to provide specific requirements for an Environmental Impact Assessment requiring the completion of hydrological and hydro-geological studies for any proposed cemeteries sites;
- c) Physical Planning Act Cap 286. This Act empowers the planning authorities to control land use and development within their jurisdictions. The Act should be amended to provided proper zoning and land use that recognizes the need for the provision of cemetery and the size. The draft Planning Handbook and National Spatial Plan should take into consideration of the importance of cemeteries.
- d) Urban Areas and Cities Act, No. 13 of 2011. This Act of Parliament was enacted to replace the Local Government Act Cap 265 which had recognized the cemetery provision as critical in the urban spatial structure. The Act should be amended to provide for specific requirement of the cemeteries as per the proposed legislation.
- e) Intergovernmental Relation Act No. 2 of 2012 which will help in establishment of cemetery facilities within counties by different county government.

This future option will be successful if both the national and county government will implement the above policies and legal framework. The option will address the social

economic dynamics of the county, market and political process and ensure that planning and management of cemeteries are not left to the whims of political leaders. However, the option is not sustainable due to scarcity and high cost of land resources that is needed for the interment of the dead bodies within Nairobi County. This has been caused by high rate of urbanization and economic growth that require land as a factor of production reducing the availability of land within the Nairobi County.

After the implementation of the above policies and legal framework, the required cemetery land should be acquired based on the projected population growth and death rate. The land should be properly planned taking into consideration public participation, environmental factors and social economic condition. The cemetery plan should provide an internment areas that is flexible for choices in terms of costs and memorial structures. All the necessary cemetery infrastructures should be provided with an aim of establishing a memorial park rather than a place of gloom. The planning should be subjected to an evaluation and compliance criteria which will establish if the plan comply with the concept of sustainability as well as policy and regulatory framework as discussed above. The aim of subjecting the cemetery plan to this evaluation criteria is to ensure the cemetery will be functional and efficiently operated.

After undertaking the cemetery planning and evaluation, the next phase is the management function which is a key factor in efficiently operated cemeteries. The weight that lies on management of cemeteries is massive and worth giving serious considerations. Management of cemeteries is a multifaceted process involving different people, policies, laws and standards and should be sustainable across all aspects of well-being. Key consideration in cemetery management includes; management plan guidelines and policies, public private partnership, fund mobilization, staff and safety policies, educational and outreach programmes, community sensitization, and public participation.

Similarly the management should be constantly subjected to an evaluation criteria to ensure that cemeteries are functional and efficiently operated. There are overall guiding principles or criteria for determining whether or not a cemetery is well managed. These parameters includes; existence of planning and management policy guideline, development and maintenance of infrastructures within the cemeteries, staff and safety policies and their implementation, provision of public utilities, maintenance of heritage value and character,

landscaping and environmental management, stakeholders and public participation, funding and budgeting process.

The above recommended holistic approach to planning and management details the driving forces for functional cemetery, their social spatial impacts and effects and the desired effects which ensures that cemeteries are sustainable in all aspects i.e. social sustainability, environmental sustainability, cultural sustainability and economic sustainability. The study has revealed that this approach is achievable as demonstrated at Nairobi War Cemetery.

6.2.2 Adoption of Cremation Method

Nairobi County should embrace the China initiative that encourages adoption of disposal methods that occupy less or no land, helping to achieve the strategic objective of sustainable development. Thus cemetery construction in China is only a transitional operation and not the direction of funeral reform, (Civil Affair Code 132, 1998). Item 2 of the Decree gives guideline of Chinese funeral and interment management as spreading cremation actively and gradually as reform to inhumation; saving burial grounds, demolishing undesirable customs and advocating civilized and economical bereavement.

In South Africa, municipalities have employed different strategies in a bid to curb challenges associated with cemeteries. For example, City of Cape Town has kept cremation charges very low (Kshs. 9,000 per cremation (2011 price)) while Buffalo City Municipality encourages cremation than traditional burial. However, in Kenya, Cremation has for a long time been restricted to Hindu Communities and few other religion as revealed in the study findings.

Cremation (using fire and heat) is the process by which the body of the deceased is reduced to its basic elements. Cremation is permitted for Christians as long as it is not chosen in denial of Christian teaching on the resurrection and the sacredness of the human body and as long as the deceased left a will to be cremated. However, cremation is prohibited in Islamic faith. Cremation is increasingly becoming popular in Kenya, especially amongst the younger generation. Among the many reasons for this growing trend is the breadth of options cremation provides for a final memorial service as it gives people the flexibility to search for types of tributes that reflect the life being honored.

This disposal method will require a policy change, wide public consultations and incentives for its success. The social cultural dynamics of Nairobi County that comprise different ethnic groups, various religious and traditional inclinations as well as political affiliations that are based on ethnic foundation only complicate the success of adopting cremation as main interment method. However, the option provides the long-term solution to the current interment challenges as it requires minimal land resources, subsequent maintenance costs, operation costs and environmental factors which are the main challenges facing interment in Nairobi County. Through successful adoption of this interment option, Nairobi County will realize sustainable community development.

In justifying the rationale for cemetery planning and management, Chapin and Kaiser 1979 provide nine factors identified with land use planning. Through cremation method, the county government will address the public interest through; health and safety by ensuring good sanitation standards, convenience by providing readily available interment options at an affordable costs, environmental quality, and efficiency. However, the method will not address energy conservation, social equity and social choice, the later being key human rights.

6.2.3 Adoption of Integrated Interment Method

The demerits of the above two options as discussed above, requires an integrated method that will put into consideration the importance of social cultural factors, environmental issues, social equity and social choice. London Planning Advisory Council, 1997 noted that a clear cultural, religious, humanitarian, social, economic and environmental value governs the process of land use planning. Therefore, planning and management of cemeteries or any policy relating to interment of the dead should address the following strategic responses; choice for burial space, cost of disposing the dead by whatever means, proximity to places of memorials, open space for green chains and natural habitats, historic features and biodiversity.

According to Auckland Council, 2013, cemeteries planning and management must address the concept of sustainability by ensuring that burial grounds are sustainable across all aspects of well-being. The concept of sustainability in cemeteries planning and management entail; social sustainability which is the ability of a social system to function at a high level of well-being and harmony, cultural sustainability which will include social equity and the protection of cultural values, environmental sustainability through providing large swaths of green

space, and economic sustainability through contribution to the local economy and improving local skills base.

For the attainment of sustainable development, Nairobi County will require to adopt an integrated interment option that addresses the concept of sustainability by ensuring social equity and social choice, cultural values, environmental protection and economic well being of the urban area. The integrated option will therefore entail the combination of the current interment practices i.e. traditional burial and encouragement of cremation method as alternative through wide public participation. Through this option, both the national and county governments will require to adopt the various policies, legal and regulatory framework suggested for the success of the current option as well as adoption of the cremation method. This method will therefore ensure, the process of land acquisition for cemetery is guided by strict legal framework and planning and management of land is anchored in law.

6.3 Synthesis of the Findings

Based on the analysis of the findings, the study attempts to critically analyze the dynamics behind the findings to synthesis the study and establish the key underlying issues. The following key issues can be deduced from the findings;

6.3.1 Roles of Planning Institutions

Effectiveness in planning and management depends greatly on the efficacy of planning and development control institutions. The weaknesses in development control provide the right institutional environment for informality to thrive. The case in Lang'ata Cemetery displays the weakness in enforcement of planning and management standards applied within the cemetery for varied reasons. The lack of control and enforcement has seen the cemetery gradually degenerate, as more bodies are interred on an already full cemetery in utter disregard to the generally set burial standards. This scenario is exhibited across all cemeteries planned and managed by the Nairobi County Government. Conversely, the special and private cemeteries exhibit a higher degree of order in terms of planning and management and have remained highly organized with little deviation from the initial plans, courtesy of strong institutions that have managed to put in place checks and balances to control activities within the cemeteries.

6.3.2 Role of Society's Cultural Beliefs

Culture lies at the heart of human development and civilization. Culture is what makes people hope and dream, by stimulating our senses and offering new ways of looking at reality. It is what brings people together, by stirring dialogue and arousing passions, in a way that unites rather than divides. Culture should be regarded as a set of distinctive spiritual and material traits that characterize a society and social group. (CEC 2007, 2). In the context of the planning and management of cemeteries in Nairobi, and with regard to the Nairobi Metropolitan Strategy and Vision 2030 objectives of a balanced, polycentric, sustainable and competitive city, this requires knowledge of the specific cultural characteristics of the county to promote a professional discourse of knowledge and opinions on these issues. This will consist of more than planning instruments and procedures but the aggregate of the social, environmental and historical perspectives of the society.

Knowledge on the roles of cultural beliefs in planning and management, contribute to achieving a better understanding of the relationship between the cultural context (including the specific socio-economic patterns and related cultural norms, values, traditions, and attitudes) and spatial planning as an operative instrument of territorial policy. By combining cultural studies, social sciences and planning theory it is also intended to enrich the discussion about the use and the application of theories in planning research.

6.3.3 Social Aspects in Cemetery Planning and Management

(a) Public Space

Nairobi County could make full use of space in public cemeteries by making them accessible green areas. This would provide people with another alternative for recreational activities as demonstrated in Nairobi War Cemetery. It is commonly understood that a cemetery is a place to dispose of dead bodies and this primary role is incompatible with its concomitant usage as public parkland. Yet, this step should be promoted in order to provide more open spaces for Kenyan.

Urban cemeteries possess their own unique biodiversity within the city. They are contributing to the ecological diversity of urban ecosystems. Moreover, urban cemeteries could also become a part of urban green network. Wong et al. (2008) stated that large green areas

definitely have positive effect on the temperature of the city. It is important for people to acknowledge public cemeteries as unique urban sanctuaries.

(b) Cemetery and Religion Relations

Each religion has a different tenor. According to Islamic burial, the deceased is taken for burial (Uslu et al., 2009). The style of the grave and the burial may vary from place to place due to different methodologies surrounding funeral procedures. The Islamic directive is restricted to respectful burial ground. It is requested not to construct buildings over the graves (e-fatwa, 2013). No pesticide or insecticide is used on the soil and the dead body must be buried directly to the ground without casket for decomposition to occur at a faster rate (SALGA, 2012). Therefore, it is a necessity for burial space for the Muslim community in Nairobi.

Worldwide, religion provides important tenets for social attitudes and protective approaches of the communities towards environment as noted by Uslu et al. (2009). It is claimed that attitudes of different religions all over the world with respect to environment are important instrument in solving the environmental problems. Attitudes and views of the religion with respect to cosmos and environment determine, in a sense, the shape of the cemeteries as well as the form and ceremonies of burial.

6.3.4 Maintenance and Regulation

The urban migration to Nairobi is progressive. Hence, the numbers of cemeteries will continuously add up along with the size area. At present, authority's back-up plan constitutes cemetery reuse which is currently creating sanitation challenges. Even though this seems to be a logical step in handling the issue of land shortage for burial, it is important for authorities to reassess the impacts and consequences. If the county government opts to increasing the total area of new cemeteries there will be more burial grounds to manage. This definitely demands a higher level of maintenance and supervision especially for a public cemetery with a huge scale area such as Lang'ata Cemetery. By learning from the county government cemeteries compared with Nairobi War Cemetery, the authorities have found it is challenging to maintain the quality of the surroundings. The physical conditions in public cemeteries are usually found to be poor.

Even with the involvement of deceased family members taking care of the burial grounds, it would be very difficult to ensure the cleanliness of public cemeteries, as this communal activity is not normally carried out on a regular basis. Besides, it is hard to get family members to take part in this voluntary work, as some people do not perceive it to be necessary. They strongly feel that maintaining public cemeteries should be the responsibility of the authorities.

6.3.5 Projecting Demand for Burial Space

Through prevailing cultural and religious beliefs structure and overall picture of death in Kenya, local conditions can strongly influence after death practices. While planners regularly make land use projections based on existing conditions, information about burial space is frequently unavailable. The number of cemeteries gives no indication of the actual amount of land devoted to interment. Information about population of existing facilities, the dimensions of cemeteries, and whether they are filled to capacity or not, are fragmented and are rarely publicly available. With no central source from which to obtain burial information, no standardized format for reporting, and widely mixed ownership patterns, planners will typically left to cobble together data and generate projections of land use needs as best as they can.

6.4 Recommendations

Establishing efficiently and functionally operated cemeteries is not just about a sufficient supply of land; the type and form of what we build is every bit as important. The study has shown that the needs of the Nairobi City cemetery users are not the primary consideration for government, planners and policy makers. Without intervention, our urban renewal areas and urban planning are unlikely to successfully create a positive legacy of city living for future generations. The needs of Nairobi residents have to be the top priority to ensure that our cemeteries are well planned, designed, adaptive to meet changing circumstances, managed and provides a good quality of life.

The *Future of Nairobi City County*, in terms of cemetery planning and management, should sets the visions for a bold, inspirational and sustainable city. This would be achieved by setting six high level goals which includes; a city for people; a creative city; a prosperous city; a city of knowledge; an eco-city; and a connected city. The planning and management of

our cemeteries can contribute to or hinder the realization of these goals and objectives. Specifically, interment objectives including:

- a) To increase the number and variety of affordable interment opportunities and ensure that cemetery establishment responds to demand.
- b) Cemetery management to keep pace with demand, social economic factors and environmental requirements to ensure a ready supply of varied services and facilities.
- c) Optimal development of infrastructures to provide diverse interment types catering to a range of needs.
- d) A planning system that ensures development contributes to and supports community betterment including affordable interment options and infrastructure provision.

6.4.1 Recognition of the Existing Cemeteries

If the concept of sustainable burial process is to have any degree of success in Nairobi and Kenya in general, burial operators, land managers and planning authorities cannot simply transplant the practices employed in special and private cemeteries into the public cemetery context. For the planning and management to become successful in Nairobi as it has already become globally and in special cemeteries, planners and policy makers will need to understand the cemeteries current status, challenges faced by planning authorities in cemetery planning, implications of the current status on the use of land and the urban fabric and the projected urban deaths. To address the challenges of cemeteries planning and management, the county and national government should appoint a team to investigate the current status of the cemeteries and recommend the best approach to address those challenges.

After the investigations of the current status of the cemeteries, those found to be full like Lang'ata Cemetery should be immediately closed from further interment except for the reserved graves. Further, the national and county government should allocate funds to improve the conditions of the existing cemeteries grounds, provide necessary infrastructures, fence them to enhance security for them to become part of urban green space. A wide public participation and public private partnership should be fostered to ensure stream flow of income for the continuous maintenance of the grounds. Educational awareness and resource centres should be established within the cemeteries especially Lang'ata Cemetery in

partnership with learning institutions to promote the exchange of ideas, experiences and resources.

6.4.2 Introduction of Cemetery Management Plan Guidelines

The objective of these guidelines is to ensure cemeteries are managed in a way which will preserve and enhance their cultural and natural heritage values while, where appropriate, allowing them to continue to function as operational burial places. The guidelines should be prepared under the auspices of the national and international guidelines in order to;

- a) Clearly identify all statutory requirements in the management of cemeteries and to achieve the provisions of all relevant codes of practice and standards
- b) Respond to increasing community pressure to actively participate in and support cultural and environmental heritage protection
- c) Better address the management of community assets
- d) Meet the requirements of the Public Health
- e) Promote cultural development for all Kenyans through an awareness raising process

A Management Plan overcomes the problem of changes in staff and loss of corporate memory. It formalizes the approach to management of a cemetery and provides guidance for all of those who need to undertake any activities in the cemetery or close by. It provides consistency of information. The following list covers the major issues to be included in a management plan for cemeteries;

- a) Introduction to Management Plan. This entail; Location and Title details (using standard Cemetery Record Sheet), Functional Status, Current Heritage Listing, Cemetery Management and Current Operating Policies, Legislative Requirements and Relevant Standards
- b) Historical Summary of the Cemetery. This entail; Historical Development of the Cemetery, Main or Notable Periods of Use, Any Other Historical Information Relating to the Cemetery
- c) Survey of Condition and Elements of the Cemetery. It Comprise; Current Description of the Cemetery and Its Plan, Grave Types and Condition, Alterations and Adaptations to the Cemetery, Mapping, and Recording
- d) Survey of Landscape and Vegetation in and around the Cemetery: This entail; Landscape Plan and Planting within the Cemetery, Context and Setting, Indigenous and Endemic Vegetation, Identification and Classification, Invasive Vegetation and

- Animal Pests, Landscape and Vegetation Management Systems already in place and their effectiveness
- e) Conservation. This include; Comprehensive Conservation Policies for the Cemetery as a Whole, Specific Policies for Special Areas, Policies for the Retention of the Original Plan or Layout of the Cemetery, Conservation Techniques for Historic Graves and Monuments, New Monumentation/Memorialisation on Existing Graves and within Historic Areas
 - f) Development of Infrastructure and Buildings. This entail; Lighting and Electrical Supply, Water Supply and Use within the Cemetery Including Conservation and Irrigation, Storm Water Control and Drainage of the Cemetery Site, Storage, Sheds and Rubbish Areas, User Facilities - Toilets, Shelters, Seats, Bins, Mausoleums and Commemorative Sites, and Signs and Markers
 - g) Traffic and Circulation. This include; Internal Roads and Paving - Surface and Maintenance, Access, Vehicle and Pedestrian Circulation and Parking for Visitors, Size and Type of Vehicles, Including Excavators, Allowable on Various Surfaces and in Specific Areas
 - h) Maintenance. This comprise; General Maintenance, Removal of Rubbish, Special Procedures for Particular Types of Grave Surrounds, Maintenance or Reinstatement of Original Ground Levels, Landscape Maintenance and Mowing, Weed and Animal Pest Control, Fencing, Control of Floral and Other Tributes on Graves, Care of War Graves, Responsibility and Contacts
 - i) General Management Issues. This include; New Graves in Historic Areas, Reuse of Areas and Grave Plots, Opportunities for Expansion and Types of Burials to be Allowed, Security, Staff Training, Risk Assessment - in/of Various Areas - Safety, Fire, Volunteers and Others, Writing Operating Policy for the Cemetery
 - j) Financial Operations. It entail; Income and Expenditure, Budgets and Funding, Financial Viability and Financial Management Strategies, Insurance and Liability / Risk Management, Continuing Use Policy, Development Priorities and Staging, Records Management Systems
 - k) Interpretation and Community Involvement. This include; Friends Groups/Volunteers - Management, Briefing and Supervision, Tourism Potential, Marketing and Cultural Development, Methods of Interpretation, Development of Educational Units for Use in Local Schools, Consultation and Communication with All Stakeholders
 - l) Distribution and Review of Cemetery Management Plan

6.4.3 Human Resource Capacity and Development

The finding of the study has become clear that human resources are not adequate and possessing requisite knowledge to handle planning and management of cemeteries in public facilities and this has impacted negatively on service delivery. In the special cemetery, high calibres of staff have been employed providing good services. It is important to note that even the planning authority officials need more incentives in order to perform better thus improving service delivery. The provision of incentives can only be achieved if it is linked to a performance management system which will enable the government to monitor performance of the staffs. If the system can be monitored very well it can surely yield positive results thereby improving service delivery.

In order to comply with health and safety legislation, and to provide a professional level of service, staff training is an essential investment. The scope of the training will depend on, amongst other things, the nature of the burial ground, the services offered, and the extent of outsourcing of, for example, responsibility for grave-digging and ground maintenance. While 'on-the-job' training has its place, burial managers need to consider whether skills and knowledge are up to date. Some training external to the burial authority is largely unavoidable. Where training has not previously been provided to any great extent, managers should first consider conducting a needs analysis to ascertain what skills may be in place and what additional needs there may be. Training is likely to be needed in respect of; health and safety; machinery operation; horticulture and landscaping; historic and natural environmental conservation; grave digging; building maintenance; record management; customer care and bereavement issues; burial law and practice; faith, customs and practice.

6.4.4 Policy and Regulatory Intervention

At both the national and the county levels, government must continue creating the supportive and enabling environments by reviewing and updating existing legislation with respect to urban planning, infrastructure, and environmental regulations in order to make them more realistic, attainable and compatible with local conditions. Research has shown that the path to urban sustainability lies in greater realism in building and managing more inclusive and socially equitable cities. This would involve continuously reviewing legislative and administrative activity in order to allow planning to be more responsive. Regular updating of plans should also be undertaken to respond to the dynamic nature of the urban environments.

This also calls for efforts to strengthen urban local governance through broad based partnerships that takes the needs and participation of the residents fully into account while professional association such as Kenya Institute of Planners, Institution of Surveyors of Kenya and Architectural Association of Kenya should act more forcefully as intermediaries in policy dialogue and through networking to promote the exchange of ideas, experiences and resources.

For proper planning and management, the process should be anchored in an Act of Parliament, Funeral, Burial and Cremation Services Act. However, there are various Acts of Parliament that would require amendment to give effect to proper planning and management of cemeteries as discussed above. They includes; Public Health Act, Cap 242; Environmental Management and Coordination Act Cap 387; Physical Planning Act Cap 286; Urban Areas and Cities Act, No. 13 of 2011; and Intergovernmental Relation Act No. 2 of 2012.

6.4.5 Inclusion of Cemeteries During Land Use Policy Formulation

The study has demonstrated that cemeteries represent an important cultural and social component of the structure of the urban areas. Because cemeteries are physically manifest, (i.e. they are 'there', they exist as a use of land, etc.) they represent a use of land that must be addressed in the land use policy that is intended to articulate the county vision for the growth and development of the urban areas. Growth requirements are typically determined through demographic projections. These in turn influence land use policy with respect to the provision of adequate land and resources for residential, commercial, industrial, institutional, transportation, parks and open spaces land uses. Along with these uses, the provision of adequate land to accommodate a community's needs for the burial of the dead is required. In considering this issue, below is an outline of the matters that should be considered in the formulation of appropriate land use policy. Specifically, the following matters should be considered;

- a) Are growth and mortality projections in line with each other and recognized in policy?
- b) Will the county be able to accommodate the projected mortality level and are suitable options available, not only in terms of the amount of land that will be required to accommodate future deaths, but in terms of the appropriateness of cemetery land to address cultural and societal values.

- c) Does the land use planning horizon accommodate cemetery development such that the need for cemetery space can be accurately considered?
- d) Are there suitable locations available for the provision of appropriate cemetery space and is it appropriately sited such that it will not limit future growth options unnecessarily?
- e) Are cemeteries permitted within the non-urban areas of the municipality where sufficient land might be assembled for the use?
- f) Has the amount of land that will be required to address the projected need for cemetery land been appropriately identified?
- g) Have provisions been made to facilitate the intensification of existing and new cemetery land as may be appropriate?
- h) Are there land use compatibility issues identified that might affect the location of new cemetery space?
- i) Are appropriate policies in place to ensure the suitable protection of the environment and water supply?
- j) Has the permanency of the land use been considered in assessing its location?
- k) Will the location of the proposed use become problematic for the future growth of the community because the use must be considered to be permanent?

The above has provided an overview of the planning process associated with the planning and management of new cemeteries in terms of how they need to be accommodated through land use policy. Various elements and characteristics of cemetery development need to be considered in this process. In order for the formulation of effective land use policy, these matters must be considered. The problem is that although cemeteries have been part of the social environment throughout history, they continue to be either ignored or misunderstood in the context of land use policy.

CHAPTER SEVEN

SUMMARY AND CONCLUSION

7.1 Appraisal of the Research

The research was prompted by the understanding that cemeteries are an integral part of urban space and like other public space, effective planning and management is a necessity. Until this is done, avoiding incompatibility of land uses and chaos in the urban space is inevitable. Further, socio-cultural issues that revolve around matters of the living and the dead, religion and related beliefs automatically become disharmonized if planning and management is ignored. In particular, cemeteries in Nairobi manifest different challenges which include lack of clear policy guidelines and legislations, little or no funds allocated within the city's annual budget, demand for burial space outstrip the supply, neglect of the development infrastructure and public facilities, and not environmentally sustainable.

The study objectives were to undertake an in-depth analysis of planning and management issues employed in the operation of the cemeteries and to identify comparative lessons learned within the dynamic cultural changes in Nairobi. Further, the study was to establish planning and management practices and requirements for cemeteries and to propose policy and planning interventions.

In order to articulate the above objectives, the study examined the existing policy and legal framework, cemetery plans and records, institutional framework and operations, socio-economic factors, as well as physical and environmental requirements in the planning and management of cemeteries.

Based on the study of objectives, the research has established that cemetery planning and management has been neglected in Nairobi especially the public cemeteries. The urban planners have regarded cemeteries as an encumbrance to urban planning, so that the prevailing attitude towards them is an underlying contributory factor to their improper location, planning and management. The awareness and knowledge about cemetery is weak or imprecise to county residents, regulatory bodies and the government agencies. Comprehensive planning and management for cemeteries relates to many aspects and both spatial and non-spatial data and information are needed in the planning and management

process. Thus selecting the effective factors, which can reflect the sustainability on planning and management, is very important.

Generally, the institutional, environmental, social and cultural perspectives should be considered in planning and management of cemeteries. From them, policy, economic, physical and ecological environment, social impact and cultural heritage are reviewed for defining the element. The different stakeholders may have their own preference and priority on these elements. At the same time, the local burial needs should be assessed as they could have great regional characters.

It is realized that the element of cemetery planning and management should correspond to its specific character other than ordinary land use plan. It has relative stable location compared with urbanization process. It could pose pollution and hygienic threat to living people. It should concern many practical planning issues as well as peoples shifting values on death. Cemetery planning and management is complex and difficult to model or evaluate.

The study faced numerous limitations that include lack of local studies on the matter, none cooperation from the County Government officials, lack of original plans for the cemeteries, and myths related to burials. The lack of previous work is one of the major limitations foreseen at the beginning. Because not many literatures could be found on cemetery planning and management for Kenya and Africa in general, the comparative review is difficult to carry out so that there should be unsureness on how unbiased and reliable these studies are. In this way, the author has to devote himself to a lot of basic information from the studies from the developed countries. Notwithstanding this, there are always gaps from those studies to the intention of this research, for the basic interest of them is not toward African set up. Along with this, the county and national policies and regulatory framework disregard cemetery planning and management largely and the performance for the planning practices is poor. Because death is such a taboo topic in Kenya, to collect data about the dead is no more difficult than from the dead. There is no former project or investigation on cemetery planning and management in the study area before either.

This study has brought out the dynamics of the planning and management in Nairobi and has illustrated the associated challenges, in a more enlightened, more participatory, and more holistic approach to planning and management interventions. These interventions should be

curved towards provision of more appropriate and flexible regulatory framework that is compatible with society cultural beliefs and local conditions and yet reasonably efficient and environmentally sustainable.

7.1.1 Summary of Main Recommendations

The study has revealed that a clear connection to the past helped make the future bearable. It lent shape and meaning to the present. However, for some time now this basic human continuity has been under threat due to neglect in planning and management of cemeteries which are repository for human history. In order to address this often overlooked land use, the study has recommended various interventions which includes amongst others;

It should be clear that cemeteries represent an important cultural and social component of the structure of the urban areas. Because cemeteries are physically manifest they represent a use of land that must be addressed in the land use policy that is intended to articulate the county vision for the growth and development of the urban areas.

Human resources within the county government are inadequate and do not possess the requisite knowledge to handle planning and management of cemeteries and this has impacted negatively on service delivery. Training of the staff and provision of incentives should be introduced and linked to a performance management system which will enable the government to monitor performance of the staffs.

There is urgent need for the introduction of cemetery management plan guidelines. The objective of these guidelines is to ensure cemeteries are managed in a way which will preserve and enhance their cultural and natural heritage values while, where appropriate, allowing them to continue to function as operational burial places.

Environmental and legislative framework on planning should be considered during planning and management of cemeteries. The lack of available space for the disposal of human remains in cemeteries is a concerning issue for city authorities and local health authorities, especially in medium-large cities like Nairobi which are encountering difficulties in providing burial sites. The delay between the increasing demand for burial, arising from

population which generally refuses cremation and the supply of available burial sites may lead to serious conditions, also from a hygienic and sanitary point of view. Therefore, a need to re-examine all the systems of disposal of human remains and all the parameters involved in the process of the bodies' decomposition became essential.

Policy and regulatory intervention will include; establishment of an integrated policy approach to cemetery planning and management; cultural and societal roles; reviewing and updating existing legislations with respect to urban planning, infrastructure, and environmental regulations, inhumation process, burial of dead bodies in place of death, use of land conservation burial methods amongst others.

Assessment of all cemeteries in Nairobi County as well as the entire country is important to establish their current state and intervention requirement. For Lang'ata Cemetery, the facility should be immediately closed. The key factors in planning for cemeteries include;

- a) The planning horizon for cemeteries should relate to multi-generational planning
- b) Population projections are important and must be related to mortality rates and projections
- c) The location for cemeteries is an important consideration in the context of efficient and appropriate use of land and municipal services
- d) The size of the cemetery is important and is dependent on the composition of the client base
- e) New cemeteries should be planned to be flexible and responsive to potential societal and cultural challenges
- f) Potential environmental impacts must be considered in the land use approvals process for cemeteries. This should be done through environmental evaluation of the proposed cemetery which must include completion of hydrological and hydro-geological studies

7.2 Conclusions

Cemeteries remain one of the sectors faced with challenges yet not much attention has been paid to it on a national scale. Although the demand for more land for cemetery is high, it is important to note that the cultural and religious belief attached to cemeteries and burial method to communities cannot be undermine. This balance can only be achieved if burial methods used are not a threat to development of sustainable communities. With the expansion of suburban area outside the cities, it is important to take notice of the impacts that it has in accommodating for burial facilities as a whole.

The disposal of dead bodies' options is only available in the adoption of environmental friendly interment, space intensive methods, the multiple uses of cemetery spaces and cremation. However, the above recommendations require political willingness and community buy-in for them to have an impact on the sustainable development in Nairobi.

The devolved governance system offers a window of opportunity in planning and management of cemeteries. The constitution has given the people more power and authority to participate in decision making process for matters touching on their lives. The county governments which are currently in charge of planning therefore have an opportunity to mobilize support and resources, taking everybody's needs and views into account in formulating and implementing development agencies and programs. The county government should therefore need to take advantage of devolution to achieve improved technical administrative and financial capacity through genuine decentralization of functions. They have a chance to increase the level of local participation by allowing the poor more scope for their own initiatives and greater influence on public policies and services provision.

Based on the result of this research, the following should be considered when undertaking planning and management of cemeteries.

Cemeteries should be taken into account when carrying out land use master plan to ensure well-balanced urban development, because its characters of static location and pollution generation may cause conflict with other land use within urbanization process.

More detailed and pragmatic legislation is needed for cemetery planning and management. The cemetery planning and management has great regional characters, so that comprehensive local policy measure should be carried out based on local knowledge and conditions to regulate and facilitate the planning process.

Government should be involved in the whole planning and management process. As we can see from the stakeholder analysis, spatial-temporal analysis and sensitivity analysis, much information generated during the course are useful for better decisions on cemetery and future urban development.

7.3 Recommendation for Further Research

In order to increase understanding of the sector and therefore enhance the development of a better policy mix for the sector, the study proposes comprehensive studies on the following; evolution of burial system in Kenya in relation to religion and culture, critical assessment of environmental degradation in cemeteries due to conventional burial methods, emerging new burial methods. Because of the importance of education, training and technology in success of planning and management, research on society cultural beliefs Kenya is singled out.

BIBLIOGRAPHY

Bhardwaj, S. M. (1987) Geography and the "Hereafter". In V. S. Datye, J. Diddee, S. R. Jog, & C. Patil, Explorations in the tropics (pp. 321 ff.) Pune: K.R. Dikshit Felicitation Volume Committee

Brennan, J. R., & Burton, A. (2007) The Emerging Metropolis: A history of Dar es Salaam, circa 1862–2000. In J. R. Brennan, A. Burton, & Y. Lawi (Eds.), Dar es Salaam: Histories from an Emerging African Metropolis (pp. 13–75) Dar es Salaam: Mkuki na Nyota

Brockman, N. C. (1997) Encyclopedia of Sacred Places. Santa Barbara: ABC-CLIO. Brown, A. (2006) Urban public space in the developing world – a resource for the poor. In A. Brown (Ed.), Contested Space: Street Trading, Public Space, and Livelihoods in Developing Cities (pp. 17–36) Rugby: ITDG Publishing

Bender, T. (1974). The rural cemetery movement: Urban travail and the appeal of nature. *The New England Quarterly*, 47(2), 196-211

Bloch, M, & Parry, J. (Eds.). (1982). *Death and the regeneration of life*. Cambridge, UK: Cambridge University Press

Bowman, L. (1959). *The American funeral: A study in guilt*. Washington DC: Public Affairs Press

Dent, B., Forbes, S., and Stuart, B. (2004). Review of human decomposition processes in soil. *Environmental Geology*, 45(4), 576-585

Feagans, B. (2004, January 24). Muslim cemetery opens: High-profile site's dedication set for February. *The Atlanta Journal-Constitution*

Federal Trade Commission (2000). *Funerals: A consumer guide*. Washington DC: Federal Trade Commission Francaviglia, R. (1971). The cemetery as an evolving cultural landscape. *Annals of the Association of American Geographers*, 61(3), 501-509

Habenstein, R., & Lamers, W. (1963). *Funeral customs the world over*. Milwaukee: Bulfin Press

Harrington, D., & Krynski, K. (2002). The effect of state funeral regulations on cremation rates: testing for demand inducement in funeral markets. *Journal of Law and Economics*, XLV, 199-225

Harris, M. (2007). *Grave matters: A journey through the modern funeral industry to a natural way of burial*. New York: Scribner

Kenya, Government of, (2012). *National Land Commission Act*, Government printers, Nairobi

Kenya, Government of, (2011). *Urban Areas and Cities Act*, Government printers, Nairobi

- Kenya, Government of, KNBS (2010). The 2009 Population and Housing Census: Counting out People for the implementation of Vision 2030, Volume 1C; Population Distribution by Age, Sex and Administrative units. Nairobi, Government Printer.
- Kenya, Government of, KNBS (2010). The 2009 Population and Housing Census: Counting out People for the implementation of Vision 2030, Volume II; Population and Household Distribution by Administrative Units, Nairobi, Government Printer.
- Kenya, Government of, (2010). The Constitution, Government printers, Nairobi
- Kenya, Government of, (1999). Environmental Management and Coordination Act, Government printers, Nairobi
- Kenya, Government of, (1996). Physical planning Act, Government Printers, Nairobi
- Kenya, Government of, (1994). Welfare Monitoring Survey II: Basic Report. Office of the Vice President and Ministry of Planning and National Development, KNBS Kenya National Bureau of Statistics. Nairobi: Government Printer.
- Kenya, Government of, (1965). Local Government Act, Government printers, Nairobi
- Mbiba, B. (2006). Death and the City in East and Southern Africa. London: Peri-NET
- O'Brien, R. T. & Newman, J.S. Inactivation of polioviruses and coxsackieviruses in surface water. *Applied and environmental microbiology*, 33: 334–341 (1977)
- Lewin, K. et al. (1997), Management of the environmental impacts of land filling on the Sherwood Sandstone. Proceedings of the XXVII IAH Congress on Groundwater in the Urban Environment, Nottingham, 21–27 September 1997. Rotterdam, A.A. Balkema, 1997, pp. 611–617
- Bender, T. (1974) The “Rural” Cemetery Movement: Urban Travail and the Appeal of Nature. *The New England Quarterly*, 47 (2), 196–211.
- Bhardwaj, S. M. (1987) Geography and the „Hereafter“. In V. S. Datye, J. Diddee, S. R. Jog, & C. Patil, *Explorations in the tropics* (pp. 321 ff.) Pune: K.R. Dikshit Felicitation Volume Committee.
- Brennan, J. R., & Burton, A. (2007) The Emerging Metropolis: A history of Dar es Salaam, circa 1862–2000. In J. R. Brennan, A. Burton, & Y. Lawi (Eds.), *Dar es Salaam: Histories from an Emerging African Metropolis* (pp. 13–75) Dar es Salaam: Mkuki na Nyota.
- Brown, A. (2006) Urban public space in the developing world – a resource for the poor. In A. Brown (Ed.), *Contested Space: Street Trading, Public Space, and Livelihoods in Developing Cities* (pp. 17–36) Rugby: ITDG Publishing.
- Cronin, Xavier. 1996. *Grave Exodus: Tending to Our Dead in the 21st Century*. Fort Lee, NJ: Barricade.

- Curl, J. S. (2000). *The Victorian Celebration of Death*. Phoenix Mill: Sutton Publishing Limited
- Etlin, Richard A. *The Architecture of Death: The Transformation of the Cemetery in Eighteenth-Century Paris*. Cambridge: MIT Press, 1984.
- Francaviglia, R. V. (1971). The Cemetery as an Evolving Cultural Landscape. *Annals of the Association of American Geographers*, 61 (3), 501–509.
- Geho, M. L. (2006) Land Management Tensions in Urban Grave Removals and Relocations in Tanzania. In B. Mbiba (Ed.), *Death and The City in East and Southern Africa* (pp. 54–61) London: Peri-NET.
- Keister, D. (2004) *Stories in Stone: A Field Guide to Cemetery Symbolism and Iconography*. Salt Lake City: Gibbs Smith.
- Kerrigan, M. (2007). *The History of Death: Burial Customs and Funeral Rites, from the Ancient World to Modern Times*. London: Amber Books Ltd.
- Kironde, J. M. (2007) Race, Class and Housing in Dar es Salaam: The colonial impact on land use structure 1891–1961. In J. R. Brennan, A. Burton, & Y. Lawi (Eds.), *Dar es Salaam: Histories from an Emerging African Metropolis* (pp. 97–117) Dar es Salaam: Mkuki na Nyota Publishers.
- Kombe W. J. (2005) Land use dynamics in peri-urban areas and their implications on the urban growth and form: the case of Dar es Salaam, Tanzania. *Habitat International*, 29 113–135

APPENDICES

Appendix 1: Cemetery Manager/Workers Survey Questionnaires

Cemetery Manager/Worker Survey

Disclaimer: The information collected during this survey is purely for academic purposes and will be confidential.

Questionnaire NumberDate.....

Name of the respondent (optional)

Position of the Respondent:.....

Section A: General Cemetery Information

1. How long have you been working in this cemetery?.....
2. What is the size of the cemetery?(Hectares/acres)
3. Does the cemetery have a land use allocation plan?
 Yes No
4. In allocating the cemetery land, do you consider cultural and religious requirements?
 Yes No
5. If yes, what is the allocation in terms of sizes, burial capacity and utilized burial space?

Allocation	Acres/Hectares	Burial Capacity/Graves	Utilized Graves
Christian/general public			
Muslims			
Hindus			
Others (Specify).....			

6. Does the cemetery have a record keeping system to enable locating those buried within the facility?
 Yes No
7. If no, what system is used to keep records for those buried and corresponding graveside?.....
8. What are the sizes of the grave and their prices

No	Size	Prices	Remarks
1			

9. On a monthly basis how many burials are carried out in this facility? Kindly specify.....

Section B: Physical Facilities Provision and Management

10. (i) Does this cemetery have a land use plan?

Yes No

(ii) If no, how do you control space use within the cemetery?

(a)
 (b)

11. Do you have the following facilities within this cemetery?

Facility	Yes	No	Provider (specify)	Remarks on adequacy	Remarks on conditions
Perimeter wall					
Access Roads					
Signage					
Chapel					
Assembly Area					
Benches					
Gardens					
Trash Receptors					
Gravesite locator stand					
Public information center					
Parking facilities					
Public rest rooms					
Administration complex					
Security facilities					
Interment area					
Memorial walkways					
Drainage system					
Irrigation systems					
Lighting and communication facilities					
Any other (Specify).....					

For the providers of the above facilities, insert numbers as follows:-

- 1-Nairobi County Government
- 2-Commonwealth War Cemetery Commission
- 3-NGOs (specify)
- 4-Private individuals
- 5- National Government
- 6- Others (specify)

For the capacity/adequacy of the facilities, insert numbers as follows:-

- 1- Well provided
- 2- Moderate
- 3- Inadequately provided

For the conditions of the facilities, insert numbers as follows:-

- A- poor B- Poor C) Fair D) Good E) Very good

Section C: Financial & Human Resource Management

12. What is the annual budget for the management of this cemetery?

Particular	Amount (Kshs)
Staff Costs	
Statutory charges	
Utilities (Water, electricity, phone etc)	
Insurance	
Marketing & cultural development	
Maintenance	
Security	
Others (specify).....	
Total (Kshs).	

13. What is the source(s) of funds for management of this cemetery?

Source	Annual Contribution (Kshs.)
National Government allocation	
County Government allocation	
Sales of graves	
Annual visitors charges	
Others (specify).....	
Total (Kshs)	

14. How many staff are assigned for the operation and management of this cemetery?

Staff Titles	Posts/No.
(i)	
(ii)	
(iii)	
(iv)	

15. Do you have a staff training policy on cemetery management?

Yes No.

16. If yes, what does it entail?

- (a)
- (b)

17. What are the major challenges you face in terms of financial and human recourse management in the cemetery?

- (a)
- (b)

18. What measures do you have in place to adequately meet the demand for burial space?

- (a)
- (b)

19. How, in your opinion can these challenges be solved?

- (a)
- (b)

Section D: Policy & Regulatory Framework

20. (i) Are you aware of any national policy on cemetery provision, planning and management?

Yes No

(ii) If yes which ones?

- (a)
- (b)

(ii) What are some of the guidelines offered in the policies and regulatory framework regarding cemetery planning and management?

	Policy	Guidelines on cemetery provision, planning and management
1.		(a) (b)
2.		(a) (b)
3.		(a) (b)

21. (i) Do you have your own institutional policy or strategic plan on planning and management of cemeteries under your custody?

Yes No

(ii) If no, how do you control and coordinate the activities taking place here?

- (a)
- (b)

22. What other general comments can you make about planning and management of cemeteries in Nairobi?

- (a)
- (b)

23. What are the challenges experienced in planning and managing this facility? Specify

- (a)
- (b)

24. How is the relationship with the cemetery neighbours?
 A) Very good B) good C) fair D) poor E) very poor
25. How often do you involve the neighbouring communities/stakeholders to discuss matters affecting them?
 a) Very Often b) Often c) Rarely d) Not at all
26. What do you think can be done to improve social interactions with cemetery user?
 (a)
 (b)
27. On a scale of 1-5, how would you rate the overall planning and management of this cemetery? (1-very poor, 2- Poor, 3- Fair, 4- Good, 5- Excellent)
28. What are the planning and management guidelines when the cemetery land is full?
 (a)
 (b)
29. How is the cemetery expansion catered for?
 (a)
 (b)
30. In your opinion what should be done to improve planning and management of cemeteries in Nairobi?
 (a)
 (b)

Age group (years)	Males	Females	Total
Pre-school population (0-5)			
Primary school (6-13)			
Secondary school (14-17)			
20-24 years (18-24)			
Adult population (Over 25)			

Appendix 2: Cemetery Users Survey Questionnaires
Key Informant Survey

Disclaimer: The information collected during this survey is purely for academic purposes and will be confidential.

Questionnaire NumberDate.....
 Name of the respondent (optional)
 Position of the Respondent:

Section A: Social-Demographic Characteristics

1. Gender: Male Female
2. Are you the household head?
 Yes No
3. If No, what is your position in the household?
 Husband Son Relative
 Wife Daughter Employee
4. How many people are in the household?

Age group (years)	Males	Females	Total
Pre-school population (0-5)			
Primary school age (6-13)			
Secondary school (14-17)			
Labor force (18-64)			
Aged population (Over 65)			

5. What is the main source of income for the house hold

- Source of Income**
- Salaried employment
- Business
- Wage employment
- Others (specify..)

6. What category does the household's total monthly income (Kshs) fall under?

Monthly Income

0-7,500

7,500-15,000

15,000-22,500

22,500-30,000

Above 30,000

When did you come to Nairobi County (year).....

Section B: General Cemetery Information

7. Which cemeteries in Nairobi have you ever visited?

(a)

(b)

8. For what purposes did you visit these cemeteries?

Bury a loved one Memorial service Visit a worker

Take a stroll/walk Study Others (specify).....

9. What are some of the positive and negative characteristics you noticed within the cemeteries?

No	Cemetery name	Positive things	Negative things
1.		(a) (b)	(a) (b)
2.		(a) (b)	(a) (b)

10. In your opinion,

(i) What causes the negative characteristics you have identified above?

(a)

(b)

(ii) What are the factors that have contributed to the positive characteristics

(a)

(b)

How can the problems be solved in your opinion?

(a)

(b)

11. Have you buried a loved one within the cemeteries situated in Nairobi?

Yes No

12. If yes, could you name the cemeteries and the reason for choosing them?

(a) Reason.....

13. How much did you pay for the grave space and size? Kshs.....

Size, specify.....

Section C: Service Delivery Rating

14. How would you rate the following services and facilities within the cemetery you visited?

Particulars	Excellent	Good	Poor	Very Poor
Facilities				
How did you find the standards of grounds maintenance at the cemetery?				
How would you rate the presentation of the grave and burial area				
Access to the Services				
How would you describe communication with the cemetery management?				
How would you describe the ease with which you could identify and contact staff?				
What are the standards of additional services provided other than the graveside by the management?				
Staff				
How did you find the attitude of the staff, in terms of respect, helpfulness and understanding of your feeling?				
Overall Satisfaction				
How do you rate the value for money you paid during the visit?				
Please rate overall how satisfied you were with standards of service you have received from the cemetery department?				

15. (i) Are you allowed to visit the grave of your loved one after the burial?

Yes No

(ii) If yes, how often?

Frequency	
Daily	
Weekly	
Monthly	
Quarterly	
Annually	
Others (specify)	

(iii) What are conditions to gain access?

- (a)
- (b)

16. (i) Have you ever visited the grave of your loved one again after the burial?

Yes No

After how long? (Specify).....

(ii) What changes if any did you notice regarding the conditions of the grave?

(a)

(b)

Section D: Physical Facilities Provision

17. Did the cemetery you visited had the following facilities?

Facility	Yes	No	Provider (specify)	Remarks on adequacy	Remarks on conditions
Perimeter wall					
Access Roads					
Signage					
Chapel					
Assembly Area					
Benches					
Gardens					
Trash Receptors					
Gravesite locator stand					
Public information center					
Parking facilities					
Public rest rooms					
Administration complex					
Security facilities					
Interment area					
Memorial walkways					
Drainage system					
Irrigation systems					
Lighting and communication facilities					
Any other (Specify).....					

For the providers of the above facilities, insert numbers as follows:-

- 1-Nairobi County Government
- 2-Commonwealth War Cemetery Commission
- 3-NGOs (specify)
- 4-Private individuals
- 5- National Government
- 6- Others (specify)

For the capacity/adequacy of the facilities, insert numbers as follows:-

1. Well provided
2. Moderate
3. Inadequately provided

For the conditions of the facilities, insert numbers as follows:-

A) Very poor B) Poor C) Fair D) Good E) Very good

Section E: Public Participation

18. Do you participate fully in the planning and management of cemetery within your area?

19. If yes, how?

- (a)
- (b)

20. If no, why?

- (a)
- (b)

21. Which system of cemetery management would you prefer?.....

22. What do you think can be done to improve social interactions with cemetery user?

- (a)
- (b)

23. (i) Are you aware of any national policy and legislation on cemetery provision, planning and management?

Yes No

(ii) If yes which ones?

- (a)
- (b)

24. In your opinion what should be done to improve planning and management of cemeteries in Nairobi?

Appendix 3: Key Informants' Questionnaires

Key Informant Survey

Disclaimer: The information collected during this survey is purely for academic purposes and will be confidential.

Questionnaire NumberDate.....

Name of the respondent (optional)

Position of the Respondent:

Responsibilities of the Respondent:

a)

b)

1. What criteria do you use to determine where and when to establish a cemetery, its planning and management?
2. How and when do you determine when the cemetery is full? What procedures are followed to establish a new cemetery?
3. What are the policies and regulatory frameworks that control the planning and management of cemetery?
4. Is there a framework of ensuring that cemetery establishment, planning and management are identified from the grassroots by the community?
5. What programs/strategies are there to ensure community participation in the planning, implementation and management of cemetery?
6. What is the policy on funding the planning and management of cemeteries in Kenya and county governments?
7. What is the guideline on staff training, assignment in the operation and management of cemeteries?
 - (a) in Kenya?
 - (b) In the county governments?
8. What are the major challenges you face in terms of financial and human recourse management in the cemetery?
9. What measures do you have in place to adequately meet the demand for burial space?
10. What are some of the guidelines offered in the policies and regulatory framework regarding cemetery planning and management?
11. What other general comments can you make about planning and management of cemeteries in Nairobi?
12. On a scale of 1-5, how would you rate the overall planning and management of this cemetery? (1-very poor, 2- Poor, 3- Fair, 4- Good, 5- Excellent)
13. In your opinion what should be done to improve planning and management of cemeteries in Nairobi?

Appendix 4: Research Authorization Permits- NACOSTI

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No.

Date:

13th February, 2015

NACOSTI/P/15/2746/4881

Joseph Karanja Ndungu
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “*A comparative analysis of planning and management of cemeteries in Nairobi*” I am pleased to inform you that you have been authorized to undertake research in Nairobi County for a period ending 31st December, 2015.

You are advised to report to the County Commissioner and the County Director of Education, Nairobi County before embarking on the research project.

On completion of the research, you are required to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

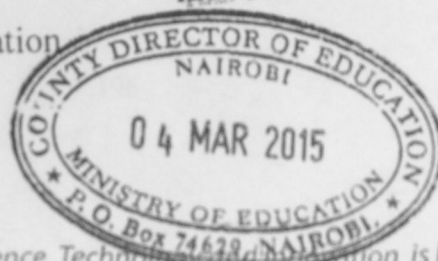
Said Hussein
SAID HUSSEIN
FOR: DIRECTOR GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

COUNTY COMMISSIONER
NAIROBI COUNTY
P. O. Box 30124-00100, NBSI
TEL: 341686



Appendix 5: Research Authorization- Nairobi City County Government

NAIROBI CITY COUNTY

Telegrams: "PRO-MINHEALTH", Nairobi
Telephone: Nairobi 217131/313481
Fax: 217148
E-mail: pmonairobi@yahoo.com



COUNTY HEALTH OFFICE
NAIROBI COUNTY
NYAYO HOUSE
P.O. Box 34349, GPO
NAIROBI

When replying please quote

CMO/NRB/OPR/VOL1-2/136
Ref. No.

COUNTY HEALTH SERVICES OFFICE

12th March, 2015

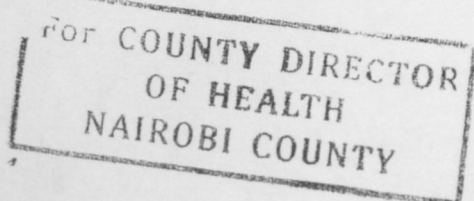
Joseph Karanja
Department of Urban & Regional Planning
University of Nairobi

RE: RESEARCH AUTHORIZATION

Following your letter dated 12th March, 2015 for conducting research on "**A comparative analysis of planning and management of cemeteries in Nairobi**", I am pleased to inform you that you have the support of the County Health Operational Research Technical working group to undertake research in Nairobi County Health Facilities.

On completion of your study, we request that you submit **one hard copy and one copy in PDF** of the research dissertation to our operational research technical working group.

A handwritten signature in black ink, appearing to read 'R. Muli'.



MR. RAPHAEL K. MULI
FOR: COUNTY DIRECTOR MEDICAL SERVICES - NAIROBI CITY COUNTY

C.c.

All Sub County MOHs
Nairobi County

UNIVERSITY OF NAIROBI
ADD LIBRARY