Investigation of the challenges facing provision of Housing in Nakuru Town, Nakuru County: The Case of Bondeni Neighbourhood

By

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DECLARATION

This project is my original work and it has not been presented for a degree award in any university or any institution.

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The report has been submitted for examination with our approval as the student’s supervisors

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Signature……………………………Date…………………………..
DEDICATION

This work is dedicated to my family for its unwavering support throughout my studies.
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I extend my acknowledgement to those institutions and individuals who took their time to provide me with information. I will confess that this project report would not have been realized without their useful contributions.

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Finally I would like to appreciate my family for keeping me company every step of the way towards realization of this report.
ABBREVIATIONS/ACRONYMS
AHURI - Australian Housing and Urban Research Institute
CAHF - Centre for Affordable Housing Finance Africa
CBO- Community Based Organization
CBD-Central Business District
CSHSF - Civil Servants Housing Scheme Fund
DRC Congo-Democratic Republic of Congo
ECDE- Early Childhood Development Education
EPM - Environmental Planning and Management
FSI – Floor Space Index
GOK - Government of Kenya
HFCK - Housing Finance Company of Kenya
ICLEI - International Council of Local Environmental Initiatives
IDP - Internally Displaced People
IEC - International Economic Council
IPPR - Institute for Public Policy Research
ISWM - Integrated Solid Waste Management
JICA - Japan International Cooperation Agency
KENHA - Kenya National Highways Authority
KNBS - Kenya National Bureau of Standards
KPLC - Kenya Power and Lighting Company
KURA - Kenya Urban Roads Authority
KWS - Kenya Wildlife Services
LA21 - Localizing Agenda 21
LAPPSET - Lamu Port Project and South Sudan Ethiopia Transport Corridor
LATF - Local Authority Transfer Fund
MLH & UD - Ministry of Land, Housing & Urban Development
NAWASCCO – Nakuru Water and Sewerage Company
NGO - Non Governmental Organization
NHC - National Housing Corporation
PPP - Public Private Partnership
SEA - Sustainable Energy Africa
UK - United Kingdom
UN - United Nations
UNGA - United Nations General Assembly
USA - United States of America
USD – United States of America Dollar
WCED - World Commission on Environment and Development
ABSTRACT
The study aimed at investigating the challenges facing provision of housing in Nakuru town, an urban settlement within Nakuru County. The study objectives sought to establish the extent to which housing provision is being met in light of changing governance regimes over the years. This study was both qualitative and quantitative in nature. It adopted a case study survey design of Bondeni Neighbourhood. The sample size comprised 100 respondents. The number of respondents per estate was determined by its number of households, with those with a higher number having a proportionately higher number of respondents. The estates comprise Paul Machanga, Abong Lo Weye, Shauri Yako, Kivumbini, Kaloleni, Old Ojuka, New Ojuka and Nakuru Press. Most of the estates accommodation is single roomed units with no defined cooking space and with households having to use either shared or public ablution facilities. The Neighbourhood is home to more than 50% of the households occupying the Municipal Council rental Houses, borders Lake Nakuru Game Park and has structures constructed during the colonial era. Due to those reasons, the neighbourhood stood out as an ideal case for the study.

The study established that 87% of the households lived in single rooms despite the minimum acceptable accommodation for a household being two rooms with a cooking area, a toilet and a bathroom. Acceptable housing in addition should provide open spaces, support facilities and physical infrastructure. Those provisions were found to be in a state of disrepair.

With respect to socio-economic status, the households suffered from low levels of access to education, employment, health and security. Majority of households earned less than 6,264 shillings a month. According to African Development Bank criteria (April 20, 2011, Market brief www.afdb.org downloaded on 4th May, 2014) the majority of households (78% ) are in the poor and floating class with incomes ranging from Ksh. 6,254 to Ksh. 13,572. These households spend virtually all their incomes on food and can hardly afford to meet the cost of house rent, medical care and education.

The legislative, policy and institutional framework pertaining to housing provision are encumbered by the County Government’s low capacity for interpretation, implementation and enforcement. Requisite manpower and resource-base needs to be developed for sustainable housing development and maintenance.
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CHAPTER ONE: INTRODUCTION

1.0 Background to the Study

1.1 Urban Housing Concept
Housing is both a product and a process. As a product it provides the housing fabric which comes with dignity, privacy and security and, according to the Kenya National Housing Policy (2004), prevents social frustrations and unrest. It is also a process through which adequate shelter and a supportive and healthy living environment is created for all socio-economic groups for sustainable human settlements. The Universal declaration of Human Rights (1948) considers housing and an adequate standard of living a human right.

In the year 1800, only 2% of the world’s population was urbanized. This rose to 30% in 1950, 47% in 2000 and more than 50% by the year 2008. It is projected that by 2030, 60% of the world’s population will be living in urban areas. The current daily urban population increase is estimated at 180,000 people. It is also estimated that of the almost one billion poor people in the world, over 750 million live in urban areas without adequate shelter and basic services (UN Habitat, 2000).

Urban areas in the third world are characterized by rapidly increasing populations which result from internally generated population growth and from rural-urban migrants who move to towns in search of comparatively better socio-economic alternatives and opportunities. Since the rate of housing development has not marched the population growth, urban areas have experienced housing gaps which in turn have led to high house rents being charged by landlords and overcrowding and overstretching of support services and infrastructure. Shortage of housing and the low financial capabilities of the urban citizens have led to unplanned neighbourhoods and the emergence of slums and squatter settlements characterized by substandard housing fabric and lack of basic physical and social infrastructure, water and sanitation, power and security.

The United Nations General Assembly in its forty third session adopted the Global Shelter Strategy to the year 2000. The strategy’s main objective was to facilitate adequate shelter for all by the year 2000 with the main focus being the improvement of the situation of the disadvantaged and poor. Governments were given the responsibility of developing appropriate
institutional frameworks for strategy implementation; development of administrative, institutional and legislative tasks (dealing with among others, land legislation and construction); developing and implementing measures for national shelter policies; and creation of an enabling environment for other sector players. Governments were also required to develop arrangements for the continuous monitoring, review and revision of the strategy. Governments in Third World countries have little resources with which to meet the housing demands of the urban population which leads to serious housing gaps.

Africa has experienced an unprecedented rate of urban growth with the most pronounced growth being in Sub-Saharan Africa. The urban population is currently estimated at 40% of total population and is poised to rise and even surpass 50% by 2030. The sizeable migration flows from rural areas present daunting challenges for development, in terms of access to housing, infrastructure and basic services. As a consequence of the rapidly rising population, Africa faces enormous development challenges in urban areas manifested in proliferation of unplanned housing, low access to essential services, rising insecurity and growing poverty. Housing policies have focused on slum upgrading and provision of serviced plots for the urban poor.

The Kenya Government officially recognizes housing as a basic human right (Constitution of Kenya, 2010). The Government formulated Sessional Paper No. 5 in 1966/67 and Sessional Paper No. 3 of 2004 on National Housing Policy for Kenya both of whose focus was improvement of the housing situation in the country. Sessional Paper No. 5 was developed at a time when the Kenyan population was about nine million people with an annual housing requirement in urban areas of 7,600 units. The policy required the Government to provide access to adequate shelter and a healthy environment at the lowest possible cost to the maximum number of people.

The National Housing Policy (Sessional Paper No. 3 of 2004) was formulated to guide development in the housing sector up to 2014. The policy was intended to arrest the deteriorating housing conditions and to bridge the shortfall in housing stock arising from demand which surpassed supply by far. By the time the policy was developed the country’s annual urban housing requirement stood at 150,000 units while the market was only able to deliver 30,000 units leaving a deficit of 120,000 units.
The urban population in Kenya has continued to grow in absolute terms and as a proportion of the country’s total population. The United Nations Population Division in 2010 estimated that the urban population stood at 9.1 million out of an estimated total population of 40.9 million people. The urban population represented 22.24 per cent of the country’s total population having risen from 20.2% in 2005 (UNPD, 2008). According to the same source, the Kenyan urban population is projected to rise by 24.1% by 2015 and 26.6% by 2020.

According to the Kenya National Bureau of Statistics statistical abstract of 2012 and the Nakuru District Development Plan (2008-2012) the town’s population grew from 231,262 in 1999 to 307,990 in 2009 and was projected to rise to 395,291 by 2012. This represents a population growth of 71% in 23 years. According to UN-habitat, Nakuru’s population was in 2010 growing at an annual rate of 13% and was ranked the fastest growing town in Africa. To date the provision of housing in Nakuru remains minimal and sporadic with demand outstripping supply. The problem of high rates of urbanization has been compounded by increasing poverty and escalation of housing provision costs.

1.2 Problem statement
Nakuru town started as a railway outpost along the Mombasa – Nairobi - Kisumu Railway line in 1904. In the zoning plan of 1929, Nakuru’s plan was set out using the then relevant ‘principal of functional zoning’ i.e. with an industrial zone, residential districts for the various social classes, a suitable location for a hospital and cemetery, recreation facilities, an airport etc. One of the special residential districts located to the south east of the original grid, was Bondeni, meant for the Asian community. Nakuru town has been the headquarters of Nakuru County since March 2013 with the advent of the implementation of Constitution of Kenya 2010. Before then it had served as the administrative centre of Nakuru district and the Rift province. The town is an important economic, political and administrative centre in the country by virtue of its central location; its being a gateway to the economically important western parts of the country and Uganda, Rwanda, Burundi and Sudan; its rich hinterland and its new status as a county headquarters. The town continues to attract people in search of both investment and employment opportunities.
In 1948 the town’s population stood at 17,625 people. In 1962 (just before attainment of independence), the population stood at 38,181 persons. After independence, the town was opened up to all and it experienced a sudden influx of people who required to be provided with services. The town’s population stood at 231, 262 people in 1999 (1999 census report) and it rose to 307,990 people in 2009 (2009 census report). The population was projected to rise to 395,291 in 2012 (District Statistics Office, Nakuru, 2008). It has also been a safe haven for persons displaced from their locations of domicile by political strife, a phenomenon which reached its apex during the 2007 post-election violence. The rapid change in population has not been matched by a corresponding growth in the number of houses. According to the statistical abstracts prepared by the Kenya National Bureau of Statistics between 2000 and 2012, the number of new residential housing units in Nakuru were constructed as follows: year 1999 (90 units), 2000 (389 units), 2001 (63 units), 2002 (61 units), 2003 (65 units), 2004 (311 units), 2005 (27 units), 2006 (458 units), 2007 (487 units, derived from extrapolation), 2008 (516 units), 2009 (426 units), 2010 (435 units) and in 2011, 435 units, giving a total of 3,858 units. The increase in population from 1999 to 2009 was 76,728 persons while the housing stock grew by 2,893 units. At the rate of 4 persons per household (Nakuru Strategic Structure Plan, 1999) the increased housing stock could only accommodate 11,572 leaving 65,156 persons (equivalent to 16,289 households) without formal housing. The rising population has led to an increase in demand for basic services and infrastructure such as housing, water, sanitation and roads, among many others. This in turn has put a strain on the available resources, and increased challenges to the Municipal Council to meet the needs of the town’s inhabitants. Despite the rapidly increasing urban population, no study has been carried out to determine the extent to which the town is meeting the housing needs of its residents. This study seeks to establish the extent to which housing provision is being met in light of changing governance regimes over the years.

1.3 Research questions

The study was based on the following research questions:

i. What are the existing policy and legislative frameworks for planning, financing and management of urban areas and how do they relate to Bondeni Neighbourhood?

ii. What are the residents’ socio-economic characteristics and what potential do they provide in planning for housing development?
iii. What are the existing land uses in Bondeni Neighbourhood and to what extent do they comply with the local physical planning requirements?
iv. What is the existing institutional framework for planning and management of Bondeni Neighbourhood and how effective is it?

1.4 Research objectives

The objectives of the study were as follows;

i. To analyse the existing policy and legislative framework on housing in Kenya and how it relates to planning and management of Bondeni Neighbourhood.

ii. To establish the socio-economic characteristics of the residents and their capacity for housing development planning.

iii. Assess the Housing demand and supply in Nakuru Town.

iv. To prepare a development plan for improving Bondeni Residential Neighbourhood.

1.5 Research premises

The Research premises were as follows:

- Residents of Bondeni neighbourhood would opt for better accommodation if provided with an alternative.
- The residents are dissatisfied with the individual and family space, level of privacy and security provided by the housing configuration.
- The housing configuration in the neighbourhood is wasteful in terms of space usage.
- Inadequate social amenities and personal and community open spaces leads to lack of sense of ownership leading to non-sustainability of the neighbourhood.
- The Nakuru County Government’s institutional framework for maintenance of Bondeni neighbourhood housing is ineffective
- The Neighbourhood character enhances social and economic segregation
1.6 Justification of the study

Man has always made attempts to provide himself and his dependants with shelter. Shelter to him has not only meant the housing fabric but has gone further to include associated social amenities and outdoor spaces that has not only provided him and his family with protection from weather elements and from injury by animals and other human beings but also accorded him privacy, sense of place and pride. The right to housing was recognized as an important component of the right standard of living by The Universal Declaration of Human Rights of 1948. This right has been reaffirmed by various international instruments including the Istanbul Declaration and Habitat Agenda of 1996 and the Declaration of Cities and Other Human Settlements in the New Millennium of 2001.

At the local level, through the National Shelter strategy which was formulated following the International year of Shelter for the Homeless in 1987, the government undertook to provide facilitation to other actors to invest in shelter. Sessional Paper No. 3 of 2004 (National Housing Policy for Kenya) recognized that there was a housing need in urban areas of 150,000 units per year while the market was only able to provide 20,000 to 30,000. The policy indicated that the housing situation was so critical that institutional houses for sections of the uniformed forces that were meant for one family ended up being shared by four. The Kenya Vision 2030 progress report for the First Medium Term Report for 2010-2011 indicated that the then demand for new housing units in urban areas stood at 150,000 units annually while only an estimated 35,000 units (23 per cent) were being produced. This implies that there is an acute shortage of housing. The Constitution of Kenya 2010 in the Bill of Rights recognizes the right of every person to accessible and adequate housing.

1.7 Significance of the study

The study was intended to:

- Provide information on the challenges facing urban housing development in environmentally sensitive areas.
- Generate an improved development plan for Bondeni Neighbourhood, which can be rolled out to cover similarly decayed urban neighbourhoods in Nakuru town and the rest of Kenya’s urban areas.
• Inform decision and policy makers on the need for putting in place effective policy, regulatory and institutional frameworks for effective delivery of housing in urban areas.

1.8 Scope and delimitations of the study

• The study area was limited to Bondeni Residential Neighbourhood
• The study was intended to establish the typology of the residents and their actual housing needs and to provide proposals on how to meet them. The study therefore confined itself to:
  • Establishing the various household sizes, their income levels and the actual housing demands.
  • Establishing the availability of land for housing the low and middle income groups.
  • Evaluating existing Policy, legislative and institutional frameworks for provision of housing.
  • Establishing the construction financing options for housing the low and middle income groups and the abjectly poor.
CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction
Shelter (housing) alongside food and clothing has been a basic need for mankind. The United Nations in the Universal Declaration of Human Rights made it official that mankind had a right to access adequate housing (United Nations Habitat, 1948). The United Nations Habitat in its forums of 1996, 1997, 1998 and 2001 reinforced this right by formulating strategies for its achievement. This right is recognized by all governments of the member states of the United Nations and many of them have made significant strides towards achieving this goal. The realization of this right however faces many challenges, since, according to UN Habitat, 2013, by the year 2008, among the 3.3 billion (half the world’s population) living in urban areas, one billion lacked decent housing and lived in slums and squatter settlements. The future of this vulnerable group depends on strategies that address issues of access to decent, quality and affordable housing.

2.2 Review of past studies

2.2.1 Housing Policies
Housing policies have to be designed to not only address the right of vulnerable groups but to constantly review standards to ensure adequate shelter for all. The developed world has to a large extent realized this objective but the third world countries, Kenya included have not achieved acceptable targets as yet. The Government of the United States of America (USA) recognized the issue of adequate provision of housing in 1948 during the presidency of President Harry Truman. This led to the formulation of a housing policy which has been reviewed by successive regimes with the aim of tackling the challenges of provision of adequate housing to vulnerable groups (Weiss, 2002). As recorded by Quigley JM and O’Regan, (2000), USA developed a policy that focused on offering selective subsidies that facilitated access to decent and affordable housing to low income groups including federal government employees.

In the early 1900s majority of the citizens of the United Kingdom (UK) lived in privately rented accommodation developed by philanthropic associations with a limited number owning their own homes. The Social Housing concept came in the wake of World War II and ended with the enactment of the Housing Act, 1980 (Hull, 2012). The Act advocated for protection of provision
of lifelong security of tenure and discounted house prices. The end of the 1980s came with the abolition of rent controls and security of tenure making social housing much more challenging to access. The current housing policy focuses on reduced capital expenditure on housing, reduced awards on housing benefits and changes to social housing. The reduced investment in social housing ideally should occur after the government has ensured an improved social economic environment for its vulnerable citizens to the extent that no more subsidized housing is necessary, which in a free market economy is hardly ever the case.

According to Abdullahi and Azziz, (2011), Malaysia, one of the fastest growing economies in East and South East Asia has over the years redefined the country’s housing policy and gone into partnership with the private sector by providing incentives. The incentives include faster development approvals, relaxed planning standards, faster licensing procedures and a facilitative regulatory regime. These incentives have considerably facilitated delivery of more units of decent and affordable housing to vulnerable groups.

In Kenya, the government has since independence in 1963 put in place several initiatives to address challenges of provision of adequate housing which include Sessional Paper No. 5 on Housing Policy (Republic of Kenya 1967), the National Strategy for Shelter to the year 2000 (Republic of Kenya, 2004b) and Legal Notice No. 98 on the establishment of Civil Servants Housing Scheme Fund (Republic of Kenya 2004a). The government also established the National Housing Corporation in 1967 with the mandate of providing low cost housing for its citizens. According to the National Housing Corporation report of 2013, the corporation has since its inception delivered 43,000 units against an annual urban target of 150,000 units (Housing policy, 2004). The Housing Finance Company which was founded in 1965 has been offering mortgage facilities for prospective house owners albeit at repayment rates that are out of reach to most citizens.

Most governments all over the world have continuously reviewed housing policies in an attempt to provide access to quality and decent housing to meet the demands of growing populations through promotion of an efficient and sustainable housing industry. In order to effectively address these needs the governments and the private sector are required to make concerted
efforts to fulfill their social obligations to the lower and middle income groups to enable them access adequate housing.

2.2.2 Affordability
The Oxford English Dictionary refers to affordability as ‘being able to undertake something without risk of adverse consequences’. It therefore follows that affordable housing to individuals and households is their ability to pay for their housing without foregoing other basic requirements in the process.

The Republic of United Kingdom (2012) refers to affordable housing as the social rented and intermediate housing to eligible households whose needs are not met by the market. According to Johnson (2006), affordable housing refers to owner or renter occupied housing that is targeted for low, moderate and middle income earners whereby income levels are at or below 20% of the area median income. The US Department of Housing and Urban Development (2012), Family and Community Services (2013) Shwartze and Wilsine (2006) and Disney (2007) all agree that the general definition should be an expenditure on housing based on 30% of gross household income. Housing can therefore be stated to be affordable if the gross housing rent or mortgage payments cost is not beyond 30% of the household’s income. The US Department of Housing and Urban Development (2012) identifies other costs that goes with rent or mortgage as basic utilities, taxation, insurance and legal costs and goes further to caution that rent or mortgage costs of more than 30% of a households income is a burden that destabilizes household budgets. When rent or mortgage becomes a burden, a household may be forced to forego basic requirements such as food, clothing, medical care and transport.

McCarill and Griffin (2012) identifies cost and affordability as critical factors for owning decent and affordable homes. Ndubueze (2009) cites the enormous role played by housing affordability to the transformation of the housing policy for low and middle class citizens in Nigeria. According to Ndubueze (2009), there is no convergence of a single method of measuring housing affordability agreed by scholars and housing experts. He explains that the methods of measuring affordability are varied and include housing cost, non-housing cost, quality adjusted and affordability mismatch/gap approaches. Depending on the comparative advantages and disadvantages, the most appropriate measure in specific circumstances would be adopted to
guide policy decisions for the implementation of housing programmes for given specific social economic groups.

A measure of housing affordability is the housing cost approach also known as expenditure-to-income ratio approach. It is a measure of the ratio of what a household spends on rent or mortgage against its gross income. The US Department of Housing and Urban Development (2012), Family and Community Services (2013) Shwartze and Wilsine (2006) and Disney (2007) explains that the measuring model originated from North America and relies on the rule of thumb that the appropriate and affordable amount should be no more than 30% of household monthly income being spent on housing costs. According to Mulliner, Smallbone and Maliene (2013) this approach is extensively applied in the United Kingdom and other European countries, USA, Canada, Australia, New Zealand and China.

Hulchanski (1995) highlights critical elements of measuring housing expenditure-to-income ratio. These elements are as follows:

i) Description of Household Expenditure

ii) Analysis of trends

iii) Administration of Public housing by defining eligibility criteria and definition of housing needs for public policy purposes

iv) Prediction of the ability of a household to pay rent or mortgage

v) Selection criteria in the decision to rent or provide mortgage

This approach is used extensively in both developed and developing countries because of its simplicity and convenience due to readily available data ensuring that the ratio is easily computed. Its setback is that it may also lead to inaccurate affordability ratios due to the following reasons:

i) Inability to control changes in housing quality and impact of appreciation in housing cost over time.

ii) It ignores other components of housing costs such as mortgage interest costs and down payments.
iii) It does not take cognizance of variations in incomes and variety of home types available within the same location.

A second method of measuring housing affordability is the non-housing cost approach. This approach is also known as residual income based approach, shelter poverty approach, after housing poverty approach or market basket approach. According to Ndumbueze (2009) the model, crafted by Stone (1993) addresses some of the shortfalls of the expenditure–to- household income model and in particular assesses the ability of the household to operate within minimum standards of living. It can therefore be argued that housing affordability should not only be derived from income alone but also housing costs which determine the overall standards of living. Unlike the expenditure to income model which is concerned with what is actually paid, this approach focuses more on the capacity of the household to cater for essential non housing cost needs. MacLennan and William (1990) in support of the concept observes that a single ratio of housing costs to incomes across all tenures, locations, and house types simplifies actual housing costs which depends on tenure, location, socio-economic strata and household incomes. The implication is that this approach models the measure of housing affordability along the definition of poverty line with ratios expressed in residue income terms relative to the line. The major advantage of this model is that it addresses the issue of the rule of thumb as advanced by the non-housing approach by building upon more explicit judgments and assumptions thus making the approach a more realistic and accurate affordability measure. Additionally it works better with limited catchments than the housing expenditure-to-income ratio. The positive attributes notwithstanding, the approach is still riddled with some of the challenges associated with the housing expenditure-to-income model approach for its inability to control housing quality or location preference. The other challenge is that the approach relies on subjective judgment as to what amounts to household expenditure and in addition relies on a wider range of variables for which data is scantily available thus making it a more complex approach to apply.

The third method for measuring housing affordability is the quality adjusted approach, a model which is based on the cost of the appropriate housing that is decent, safe and with acceptable sanitary conditions through use of hedonic market cost rather than actual rents. The model, developed by Lerman and Reeder (1987) seeks to segregate the households without sufficient
incomes to pay rent or mortgage for minimally adequate but decent safe housing for less than the 30% rule of thumb thresholds for households whose income is enough to bear the costs. This approach is therefore an alternative to poverty income thresholds as it involves determining the income levels that distinguish households able to maintain acceptable standards of living from those who are unable to. Although the quality adjustment approach has advantages over the expenditure-to-household income model, its weakness is that it does not take into account the actual financial constraints faced by the low income households, a number of which are unable to spend 30% of their income on housing. The other limitation with the model is that it does not take into account neighborhood quality and location and transitory incomes in place of permanent ones.

The last model is the housing affordability gap/mismatch approach which is based on both housing demand and supply through consideration of housing shortage or gaps in the housing market within specific groups of housing consumers. The model is premised on what the housing consumers can afford to pay not in relation to the housing they currently occupy but in relation to the entire housing stock under consideration (Dolbeare 1991; Nelso, 1994). In this model the households are categorized into groups based on income while the housing units are grouped into various categories based on affordability levels. The assumption is that the housing units of a specific size would be occupied by corresponding households who would pay no more than 30% of their incomes for rent or mortgage. The model is based on the fact that households and housing unit categories when matched to provide an affordability measure with a ratio of less than 1.0, there is the implication that there are fewer housing units in a given income group than there are households in the group and vice versa. The models limitations include:

i) Being based on a fixed percentage of 30% rule of thumb, it shares similar challenges with expenditure to household income approach.

ii) Existing housing units potentially affordable by specific households may be occupied by households of higher income contributing to its methodological weakness in the reallocation techniques.

iii) The model is best suited for a small local housing scheme rather than expansive schemes.
From the foregoing, each approach has its inherent positive attributes and limitations depending on prevailing circumstances. Such circumstances include the size of the housing scheme, non-housing costs, variations incomes, poverty levels, ability to control changes in housing quality, impact of appreciation on cost of housing and variations of home types. The housing stakeholders and policy makers need to conduct an evaluation of these variables in order to arrive at the most appropriate model for a given situation.

2.2.2.1 Factors affecting Housing affordability
Provision of affordable housing is a major challenge globally and affects particularly the low and middle income groups. According to Choguill (2007) the 50 years of housing development in the developing world has not addressed the numerous setbacks with housing affordability. This then brings about the necessity to both identify affordability factors and to mitigate issues that deny the housing to the needy.

According to Sivam and Karuppannan (2011), Housing affordability is a multidimensional subject impacted on by a number of factors that include interest rates, income levels, construction costs, land availability, design and housing prices. Quigley and O’Regan (2000) on the other hand supports adoption of the non-profit housing organization to play a key role in affordable housing with the governments providing incentives that include conducive legislation, tax waivers, provision of government land and other subsidies. The World Bank study on the housing sector in Malaysia highlights in its findings the use of land use standards, design standards, supply/demand, government policies and cost of delivery as major determinants of housing affordability (World Bank, 1989). However, Idrus and Siong (2008) and Shuid (2004) state that the solution to achieving quality, decent and affordable housing for all Malaysians lies with reforming the National Housing Policy to give the government a greater role to enable it spearhead the implementation of housing programmes with special attention given to the low and middle class housing. The objective was to be met through provision of necessary subsidies including tax relief, free government land etc. UN Habitat (1996) and Iben and Azuh (2011) reinforces this way of thinking by arguing that governments should provide subsidized housing for citizens who cannot access affordable housing from the free market. Bakhtyar et al (2013) however reasons that the best option for tackling housing affordability problem for low income
earners in Malaysia is a case of balancing between household’s incomes and developer profits. Quigley (2011) views lack of political support for subsidies and high mortgage rates as major constraints to affordable housing. Manikela (2008) cites the high cost of land in urban centres in response to market forces as leading to the pushing to the periphery of low and middle level housing; a situation that is getting worse in major urban centres in South Africa and most other developing nations.

In conclusion, the studies reviewed has brought to the fore the main factors that impact on housing affordability. These factors include national housing policies, taxation, fiscal policies, land availability and price, design standards, land use standards, demand/supply, private sector incentives, Government subsidies, mortgage rates, and cost of delivery. Some of the factors are interdependent to the extent that one cannot be discussed without reference to the other: Subsidies, taxation, design, fiscal policies, and demand/supply are determinants of the cost of delivering housing units. The identification and mitigation of these factors will determine to a large extent the level of access to adequate housing. These factors are referred to broadly as social, economic, environmental and political factors.

2.2.3 Sustainability
Sustainability concept in development is fast gaining acceptance in both the developed and developing countries. The origin of sustainable development can be traced to the UN General Assembly in Stockholm, Sweden in 1972. The conference came up with the resolution to safeguard the environment for the present and future generations. This meant that the need to address the issues of depleting natural resources, climate change, pollution and unsustainable developments were to remain priority topics. The UN Conference on Environment and Development (Earth Summit) held in Rio De Janeiro, Brazil in 1992 reinforced this concept through a resolution of an action plan referred to as “Agenda 21” for poverty reduction, provision of clean water and healthcare and protection of the environment (UN Habitat 1992). In view of the resolutions of these conferences, it is evident that the world is keen on development that is socially, economically and environmentally sustainable.

The Bruntland Commission report defines sustainability as development that meets the needs of the present generation without compromising the ability of the future generations to meet their
own needs (WCED, 1987). The International Council for Local Environmental Initiatives (ICLEI) of 1996 defines sustainable development as “development that delivers basic environment, social and economic services to all residents of a community without threatening the ability of natural, built and social systems” (ICLEI, 1996). This not only reinforces the definition by the Bruntland Commission but also widens its scope. The definition of sustainable development therefore needs to integrate social, economic and environmental factors in a manner that seeks mutual supportive benefits through tradeoffs of the elements that form the factors.

2.2.3.1 Application of Sustainability Concept to Adequate Housing

The ever increasing relevance of sustainability in the transformation of global social, economic and environmental agenda must be embraced by all. Walker (2007) views the emerging phenomenon as a powerful environmental force that is needed to revitalize the construction industry to keep abreast of global trends. Smith (2001) argues that the concept can go a long way in significantly reducing building costs through adoption of efficient designs, appropriate construction technology and local affordable building materials. The fact that the construction industry consumes more raw materials than any other industrial sector, generates large volumes of waste and uses conventional unsustainable practices, justifies the emergence of sustainable concepts to guarantee availability of resources for both the present and future generations (Myers 2006). A number of construction related projects in the developed world have embraced the concept while their developing counterparts are following suite thus indicating the concepts global significance. The increasing interest in the concept in research and policy frame works has been emerging since the 1980’s. Rees (2001) and Capello and Nijkamp (2002) propagate the view that this interest is in response to the intensity of deflation of resources and environmental degradation.

The green technology and climate change as well as research in appropriate technology are major components of this concept and are attempts to make buildings efficient in water and energy consumption in addition to being cost effective and responsive to the immediate environment (UN Habitat, 2013). According to Dale (2007), the green technology incorporates the following features:

i) Carbon neutral construction materials and methods.
ii) Water conservation
iii) Energy conservation
iv) Affordability of design
v) Low operation and maintenance costs
vi) Construction technology and efficiency in use of raw materials
vii) Appropriate siting of housing units and design
viii) Waste reduction
ix) Waste recycling
x) Appropriate waste management systems
xi) Indoor environmental quality
xii) Mitigating on negative impacts within the immediate environment.

These parameters of sustainable building concept are aligned to the definition of sustainability as contained in the Bruntland Commission report. Sustainable building concept addresses social, economic and environmental considerations in a construction project and more significantly affordable housing for the low and middle income groups given the cost reduction parameters.

The United Nations Habitat conference on promotion of the green technology in Africa held between 4th and 6th May in Nairobi, Kenya was the latest attempt to rally Kenya and other African nations to emulate the developed world and adopt green technologies in order to achieve sustainable development (UN Habitat, 2010). The justification for going green in line with the conference proceedings include reduced emission of carbon gases, lower consumption of energy and water, lower construction costs, healthier and sustainable environments. The keen interest developed by world nations towards sustainable concepts has prompted investigations into ways of evaluating sustainability programmes. Ibem and Azuh (2011) modeled evaluation framework that is anchored in sustainability parameters that include economic, social, environmental and cultural factors. The framework supports Choguill (2007)’s view point that for housing to be sustainable; it must be economically viable, socially acceptable, technically feasible and environmentally compatible. Although treated separately, these components of adequate housing are interrelated entities. The inadequacies of the affordability concept in addressing acceptability to adequate, quality and decent housing to low and middle income groups is derived from the fact that its assessment is based only on economic viability overlooking other equally critical
components such as environmental, social and political viability that are the hall mark of sustainability (Mulliner, Smallbone and Maliene 2013). The underlying implication of this viewpoint is that the provision of adequate, decent and quality housing cannot only be achieved through adoption of affordable concepts but through an integrated approach where sustainability and affordability coexists side by side.

Most of the cost reduction parameters for sustainable buildings established are more or less similar to those established for affordable housing for low and middle income groups. According to Abdullahi and Aziz (2011), the bigger picture of the definition of sustainability by the Bruntland Commission holds that the basic needs of mankind must be met and with priority being given to the poor. In line with this interpretation the basic need is to provide economically feasible housing to the poor (Choquilla, 2007). As much as the concept takes cognizance of all income groups, it is tailored to give preference to the low and middle income groups who are the society’s most vulnerable.

The approach to providing affordable housing for the poor is synonymous with social housing whose aim is to improve accessibility to quality and decent housing to the less fortunate members of society. Oyebanji, Akintoye and Liyanage (2013) explains that social sustainable housing that is made affordable by governments or non-profit organizations through various assisted programmes and built with environmentally friendly materials, have long time economic, environmental and social benefits without an increased life cycle cost while allowing future generations to meet their housing needs. The growing housing shortage for the low and middle income groups is one of the reasons most governments are developing housing policies to address the lingering challenges. In view of the housing challenges a number of researchers have studied the strengths and weaknesses of housing policies in developing nations to fulfill the dream of housing the middle and low income earners (Choguilla, 2007 and Goebel 2007). Consequently, the literature on sustainable housing is slowly picking up in the developing world implying that there is keen interest to integrate sustainability with affordable housing. Sivam and Karuppanan (2011) through their comprehensive study on the integrated approach concluded that the majority of the objectives of affordable housing are aligned with the objectives of sustainability such as proximity to transport, need for social/community facilities, compact
design, consideration of climate and solar orientation. Pivo (2013) backs this view point by establishing a strong link between sustainability and the success of housing mortgage repayments. An in-separable link between sustainability and affordability is recognized by a study conducted by Mulliner, Smallbone and Maliene (2012) who remarked that “affordable housing ought to be located within sustainable mixed communities and sustainable communities must provide affordable housing products”.

The benefits and advantages in subjecting affordable housing to sustainability are vast and include safeguarding the interest of future generations. It would therefore be prudent to identify the sustainability parameters that align with the objectives of affordable housing in order to achieve the required integration. Supporting this line of thought, Oyebanji, Akintoye, and Linayage (2013) reveal that in order of ranking, the barriers to sustainable affordable housing provision include governance, public awareness, public perception, funding, skills, technology, planning, supply, safety, and social cohesion strategies. The major barriers that require to be mitigated for the concept of sustainable affordable housing provision to be demystified are therefore governance, public awareness, public perception, funding, skills and technology. One of the objectives of this study is to identify the parameters of sustainability which are compatible with the objectives of affordable housing so that a model of affordable housing for low and middle income groups is also sustainable is realized in Nakuru.

2.2.4 Overview of the situation of low and middle income groups housing in Kenya

Kenya, just like any other developing nation is facing serious challenges in provision of housing for her low and middle income groups who are vulnerable to the extent of being unable to access adequate, decent and affordable housing. Crowley (2003) argues that housing that costs more than a household can afford threatens stability, exposing households to eviction and in the worst case inability to pay for other basic obligations. The efforts towards the achievement of provision for adequate, decent and affordable housing is a basic right guaranteed by the Humans rights declaration through a United Nations General Assembly held on 10th December, 1984 in New York (U N Habitat, 1984). Sessional paper No.3 on the National Housing Policy for Kenya (Republic of Kenya, 2004), an initiative by the Kenyan government decrees serious housing shortage and estimates national housing supply and demand for 1997-2001 period as 112,000
and 560,000 respectively. The sessional paper identifies low level investment, rapid urbanization, inaccessibility to land and finance, stringent planning regulations, restrictive building standards, high cost of infrastructure, poor economic performance and increased poverty as the major contributors to the situation (Republic of Kenya, 2013). The implication of the serious housing shortage is that the government must craft appropriate strategies in order that her citizens especially the vulnerable groups are able to access adequate, decent and affordable housing. Housing finance (2012) argues that despite the strong re-emergence of the public sector as a key player in housing provision, the high demand for affordable housing is not matched by production leading to a serious shortfall with the implication that fewer Kenyans are able to access decent and affordable housing.

In pursuit of reversing this status, non-bank financial institutions affiliated to World Bank have emerged with a broad objective to build sustainable and efficient housing finance system to boost the social housing concept through subsidies to broaden access to housing (World Bank/IEC 2012). Practical examples of such programmes are in Tanzania, India and Egypt where the World Bank has extended mortgage finance to support accessibility of affordable housing.

The government and the private sector being the major players in the housing sector have little choice but to partner together to tackle the huge shortage. Other than the government and private sector, the other key affordable housing providers that need to be brought on board include community development organizations and non-governmental organizations all referred to as non-profit housing organizations (Johnson, 2006). Bonyo (2010) argues that the situation of accessibility to housing is not getting any better with the supply in urban areas standing at a mere 35,000 while the corresponding demand is 150,000 meaning that there is need for concerted efforts by all key players in the industry rather than being left to private developers whose main drive in the scenario is to make huge profits. Macharia (2011) and Republic of Kenya (2013b) in response to this state of affairs recommend sustainable development of social housing whereby a predictable and consistent financial arrangement is established as proposed in Housing bill 2013 (Republic of Kenya, 2013c). This arrangement, also known as social housing could easily make accessibility of housing by the low and middle income groups guaranteed as it could also increase affordability if implemented. Although this approach has succeeded in many of the
developing nations it remains to be seen whether developed countries like Kenya have the capacity to shoulder huge costs for subsidies associated with social housing. Despite this challenge, Arvanitis (2013) and Centre for Affordable Housing in Africa (2011) still feel that affordable housing be considered a basic need to be provided as part of social welfare. The other alternative arrangement is for the government to provide optimal subsidies and enact policies that facilitate substantial reduction in costs for housing provision.

The demand for affordable housing in urban areas in Kenya outstrips supply by a huge margin. This is complicated further by the high rate of population growth which currently stands at 4.2 percent (Republic of Kenya 2012). The latest population census conducted in 2009 indicates that 30% of the population cannot access decent housing and are therefore living in poor unsanitary conditions in the slums mostly in the urban areas (Republic of Kenya, 2009). The high population growth rate coupled with increased migration to urban centres is reflected in the large number of citizens who cannot access decent housing thus calling for strategic review of the existing housing policy. Arvanitis (2013) identifies high costs, financial constraints and low capacity of developers as factors that contribute to the current demand/supply equation and consequently argues that any success in resolving the housing situation is tied up to mitigating these factors. Sharp increases in house prices witnessed over the last decade indicate that housing prices have doubled. Hassconsult (2012) indicates that the average price for 1-3 bedroom housing units rose from Kshs 5 million in 2001 to 10 million in 2012 representing a 100% increase. The high demand and high prices means that the majority of the low and middle income groups cannot access most of the available houses which are consequently left to the high income groups. The other bottleneck is the high interest rate charged by the local commercial banks making the initiative of providing affordable housing a big challenge. The entry of housing finance institutions including Housing Finance- Kenya, Jamii Bora and other housing finance credit organizations has not gone far enough in solving the housing problem due to stringent loaning conditions which the majority of the low and middle income groups cannot meet (Mbaka 2013). The shelter for all principle will remain a pipe dream in Kenya for a long time unless urgent reforms in housing policy are initiated.
2.3 Theoretical Framework

The conceptual framework will be informed by two theories namely the Housing Adjustment Theory and the Housing Cycle Theory.

2.3.1 Housing Adjustment Theory

The housing adjustment theory is a framework for understanding the process by which households seek to maintain equilibrium, the causes of disequilibrium, and the consequences of existing in a state of disequilibrium. In this sense, equilibrium refers to a state in which the household’s current housing is in accordance with the norms of both society and the household itself, and it fits the needs of the household. Housing norms include space, tenure and structure type, quality, expenditure and neighbourhood. When one or more of these norms is not met by the household’s current housing, the household experiences a housing deficit.

The theory was advanced by Morris and Winter in 1975 (Morris and Winter 1996). The theory looks at a households felt needs and its aspirations to assess how it evaluates its current dwelling situation. The theory advances the argument that if in the opinion of a household it is living below the norms of the society, it feels dissatisfied and seeks to change its situation. For example, a typical space norm is the expectation that the dwelling will have enough rooms so that opposite sex children will not have to share a bedroom once they reach a certain age. However, if a dwelling does not have enough rooms for this norm to be upheld, the household will experience a deficit. Deficits lead to feelings of dissatisfaction with one’s current housing, and chronic dissatisfaction may cause the household to engage in change behavior in the form of adjustment, adaptation, or regeneration. On the other hand, a deficit in one area, such as the bedroom example may be offset by a positive deficit in another area, for example a really large backyard. Thus, the household will have to determine which deficit is more dissatisfactory to them and make their changes based on that decision.

The cognitive construct of satisfaction is a judgment that individuals or households make when they consider the extent to which their actual situation compares with the ideal situation they imagine for housing. The satisfaction a household feels is determined by the following factors:
• Objective characteristics of the household which include social-economic and personal characteristics.
• Objective characteristic of the environment which include the dwelling unit and the environment surrounding it.
• Subjective wellbeing which is defined by perceptions, values and aspirations.

The comparison between what a household perceives as its ideal or aspired to housing situation and their actual lived in situation, leads to its manifesting satisfaction or not doing so. In case there is dissatisfaction, the household may do the following:

i) either redefine its needs or change its evaluation of subjective measures,
ii) Failing (i) above, either change the household characteristic or those of the dwelling.

The theory states explicitly that the attributes of the household is central to understanding the household characteristics as well as understanding the ideal housing situation to which it aspires.

The Housing Adjustment Theory has some weaknesses though. The theory attempts to explain the way households balance satisfactory situations with unsatisfactory ones within their dwellings. The balancing act takes multiple evaluation factors: existing environment, individual responses, perceived deficits, and presumed housing norms. The many variables and conditions leads to a situation where the same set of data could be approached from a different angle with each study and the results would vary each time.

The other weakness of the Housing Adjustment Theory is that it does not exhaustively explain why people adjust or, why they do not adjust to cultural norms. While cultural norms are a powerful driving force in housing design, many people (for a variety of reasons) chose not to follow the dominant trends. Some people have different aesthetic tastes...while others either lack the means or ability to make changes. Thus, from this perspective, HAT is somewhat limited because it lacks the ability to explain (or predict) how individuals will adjust their individual housing choices or preferences.


2.3.2 Housing Cycle Theory

The housing cycle theory states that the consecutive stages of the housing market tend to be cyclic in nature (Needleman, L. 1965). Needleman illustrated the relationship between the number of vacancies and the level of house prices in a way that demonstrated what he called “the housing cycle”.

In the first stage of the cycle, the house prices are low and the vacancies are high signifying a housing surplus. As the number of households increase, there occurs a corresponding rise in demand for housing leading to a decrease in the percentage of vacant housing units. Consequently there will be a slight rise in prices. In the second stage, the decreasing number of vacancies in the face of increasing demand becomes so marked that it eventually leads to higher housing prices. In the third stage, following sustained demand for houses, the housing prices rise to more than the cost of building new houses from start up, leading to buyers delaying the buying of houses which in turn lead to more vacancies and consequent drop in house prices.

The high housing prices would stimulate more active house supply, due to the involvement of investors in the apparently profitable field of housing supply. In the fourth stage, the increasing housing supply would lead to a significant drop in housing prices. This led Newman to argue that the situation would tend to return to the starting point of the cycle i.e. stage one.

One of the weaknesses of the Housing Cycle Theory is that it makes assumptions on the ability of the market to control the forces of demand and supply. In the case of a rapid increase in demand the private sector may not have the technical, equipment and capital capacity to respond effectively. On the other hand governments have the resources to undertake huge projects which do not target just the perceived market but also seek to influence growth in other sectors.

The other weakness with the theory is that it looks broadly at houses without appreciating the fact that there exists a high percentage of the population who, by virtue of their incomes, cannot afford the decent housing provided by the free market. The increased housing prices are likely to push households to the periphery of slums and squatter settlements. The theory does not incorporate government interventions such as supportive housing policies including provision of
subsidized housing. The theory would have been more encompassing if it had included explanations on how to handle supply and demand for housing targeting the low and middle income groups who are vulnerable to fluctuations of commodity prices.

Figure 2.1: Consecutive Stages of the Housing Cycle

*Source: Needleman L. The Economics of Housing, 1965*
2.4 Conceptual Framework

**Housing Adjustment Theory**
Households felt needs for dwelling, Support facilities and Open Spaces

**Housing Cycle Theory**
Market forces of Housing Demand and Supply

**Inadequate Housing Provision**

### Figure 2.2 Housing Delivery Model

*Source: Author modification 2014*

The conceptual framework is informed by the Housing Adjustment Theory and the Housing Cycle Theory. The concept seeks to explain the relationship between development planning and the resident households to be able to understand the character of the neighbourhood. At the household level the concept addresses the way households cope with space challenges while at the neighbourhood level it seeks to explain and provide solutions to the quality of support services provided. The concept also helps explain alternative ways of sustainable housing provision through community involvement in line with Constitution of Kenya, 2010.
CHAPTER THREE: STUDY AREA

3.0 Introduction
In this chapter, the historical, geographical and administrative aspects of Nakuru Municipality are described. The chapter provides the basis and characteristics of the town’s growth and its present day character. The housing provision section provides the reasons for the selection of Bondeni Neighbourhood as the case study. The chapter provides sector profiles and a fact sheet detailing the status of key socio-economic indicators as at the time of the study.

3.1 Background Information
The name Nakuru originates from Maasai language meaning a dusty place. Nakuru Town is located approximately 160km northwest of the capital city of Nairobi, and is linked to the west of the country by the Nakuru-Kisumu highway and the Mombasa Kisumu Railway line and to the North by the Nakuru-Nyeri-Nanyuki-Isiolo Moyale road system. It covers an area of 290Km². The town borders Menengai crater to the north, Lake Nakuru to the south, the prehistoric Hyrax Hill to the east and Mau ridges to the west. It lies at an altitude of 1859 meters above sea level. It is probably the only town in the world that boasts of a crater and a lake which are barely 10km apart. These geo-physical characteristics and the proximity between the town and the lake result in a beautiful but fragile urban and natural environment.

According to the Nakuru Strategic Structure Plan (1999), Nakuru town was established in the 1900s and became a township in 1904, as a railway outpost. It was granted municipality status in 1952. Its boundaries have extended from 52 km2 in 1952, to 78 km2 in 1978, and to 290 km2 in 1992. Lake Nakuru National Park occupies 188 km2 of the 290 km2. The lake within the park has a surface area fluctuating between approximately 40 and 50 square kilometers and a depth varying between approximately one and two meters.

It is one of the oldest municipalities and the fourth largest town in Kenya. It used to be the headquarters of the vast but now defunct Rift Valley Province and is currently the headquarters of the County Government of Nakuru. The Municipal Council of Nakuru’s (MCN) vision is to make the town a sustainable green town through socio economic and environmental planning initiatives. Its mission is to provide quality services and become the best service facilitator in
socio economic infrastructure development and environmental management, through transparency, accountability and stakeholder participation.

Bonden Neighbourhood borders Lake Nakuru, which is one of the town’s most prominent features being home to thousands of flamingoes, over 450 species of other birds, big game animals (except for the elephant), and over 50 species of mammals, including the rare white rhino. It is a closed and shallow lake located at the base of a spectacular and picturesque Gregorian portion of the eastern rift valley in Kenya.

The lake catchment is approximately 1600 sq km and is defined by the Menengai crater to the north, the Bahati hills to the north east, the lion hill ranges to the east, the Eburu crater to the south and the Mau escarpment to the west. The lake has no out flowing river and its water level is mainly controlled by the balance between inflows from rivers, groundwater (springs) and precipitation and outflows by evaporation and infiltration.

Due to the accumulation of salts and nutrients, it is distinguished as an alkaline soda lake and is characterized by a naturally-occurring eutrophic condition. The foundation of the park’s food chains is the cyanophyte ‘Spirulina platensis’, which can support large numbers of the lesser flamingoes. The lake was designated a Ramsar site in 1990.

Nakuru is one of the fastest growing towns in Kenya partly because of its central location. The town has several industries, mainly agro-based raw material secondary processing which provide employment to its residents. There are approximately 60 - 70 factories with many of them being located within either of the two industrial estates in the western and eastern parts of the town. The major industries are textile, food processing, pyrethrum, chemical, battery, tanning, seed coating, and paint. The town also is host to petrol stations and small scale manufacturing industries.

Nakuru was once dubbed the cleanest town in East Africa, but this has changed due to rapid urbanization coupled with high population growth, among others. The pressures on the environment from the anthropogenic activities in the town have increased due to pollution. These pressures have further challenged the MCN in meeting the needs of the residents, such as waste
water and solid waste control, as well as protection of the ecosystem. Figure 3.1 provides the location of Nakuru in the national context

Source: www.maps of the world.com, 2012

Figure 3.1 Location of Nakuru in the context of Kenya
The town’s population growth rate which is estimated at 5.68 per cent continues to create a high demand for housing. Some of the characteristics on Nakuru’s housing situation are as follows

- There are two major categories of housing - public and private. Public housing comprises of housing stock for the government, its corporations and municipal authorities and is used for staff accommodation and as council rental housing. The private housing comprises housing stock developed by individuals for rental purposes or for their own habitation. The private sector is the largest provider of housing in Nakuru town.
- It estimated that the majority (87%), of Nakuru residents are tenants while a significant 13%, own and occupy their own units. Owner occupied housing is prevalent in Naka, Lanet, Kiamunyi and Section 58, which are middle and high income housing areas.
- Private housing offers a wide range of accommodation types including informal housing (Ronda, Kaptembwa, and Mwariki), bungalows (Milimani), Maisonettes (Kiamunyi) and flats. The formal private housing for high and middle incomes is well served with water, sewer, septic tanks, and so on.
- The areas where private informal housing takes place face a number of problems such as poor planning, inadequate support infrastructure such as, roads, drainage, garbage collection, water, security lights and, inadequate public spaces.
- Since most of the land ownership is primarily private, the restructuring options get limited in scope for implementation, e.g. provision of infrastructure, improvement of inter-linkages between neighborhoods, etc.
- There are at least 6956 public housing units within the town, 5434 of which are owned by the Municipal Council of Nakuru and 1522 by central government departments and corporations. The rate of growth in the public housing sector is minimal. Of the 5434 council units 2846 are found in Bondeni Neighbourhood.
- Council rental housing is well serviced and is close to social halls and council health facilities. Space accommodation ranges from one room unit to three bedroom houses. The densities of development on this prime land are very low with a lot of open spaces.

From the foregoing, restructuring options on private land is actually limited. Secondly, as noted in the Nakuru Strategic Structure Plan (Volume 1), the formal private housing for high and middle income groups is well served with water, sewer, septic tanks, and so on and hence the
group has no housing challenges. Thirdly, the County Government has not set aside land for further development of housing and hence has to rely on existing estates if it has to provide additional housing. In addition to those two reasons, Bondeni Neighbourhood has a clear fabric representing housing that is colonial and essentially meant for bachelors but which today accommodates low income households. Accommodating more than half the council rental units and bordering the environmentally sensitive Lake National Park, the implementation of the study recommendations would have the highest impact per capita in Nakuru - And hence the selection of Bondeni Neighbourhood for the case study.

Source: County Government of Nakuru, 2014
Figure 3.2: Bondeni Neighbourhood in the Context of Nakuru Town
The neighbourhood, delimited by Lake Nakuru Game Park to the South, Flamingo Road to the South West, Mburu Gichua Road to the West, Shadrack Kimalel Road to the North and Kipkellion Road to the East covers a land area of approximately 1.7km². Shuleni Road bisects the neighbourhood from Shadrack Kimalel Road to the North to Flamingo Primary School to the South. The neighbourhood boasts 2846 County Government rental units, a police station, hospital, juvenile home, a market, a cemetery, social hall, public library, community playground, access to 9 primary schools, 3 ECDE centres, 2 secondary schools, the County Government Housing offices, 5 churches and a mosque among others. Figure 3.3 is a map of the neighbourhood showing the distribution of the residential estates, service institutions and support infrastructure including the road network.
Source: Generated from Existing Maps of Nakuru, Author 2014

Figure 3.3 Housing Estates and Institutions within the neighbourhood
3.2 Natural Conditions

3.2.1 Physical Setting
Nakuru town is located at the base of the Kenyan rift valley, a tectonic structure that makes up the main feature of central eastern Africa. Around Nakuru, the rift valley floor is approximately 40 km wide, and it is confined to the east by the Bahati escarpment/Nyandarua Mountains and to the west and south by the Mau escarpment.

Nakuru municipality covers an area of 290sq km, extending over the southern slope of the Menengai crater and bordering Lake Nakuru National Park on the south. Lake Nakuru is the lowest point at 1750 m above sea level while Menengai crater is the highest point to at 2,100 metres above sea level.

The crater and the lake together form the key landmarks of the municipality. Lake Nakuru is a shallow pan with saline water that is fed from several streams and surface runoff during the wet season, major natural rivers in the catchment are Njoro River and Lamudiak River draining from the northern Mau escarpment, Makalia River and Nderit River from the southern Mau escarpment and Ngosorr River from the Bahati forest. In addition, there is a natural spring on the northeast shore of the lake. There are many small streams that originate from Menengai crater to the north and the Ebururu forest to the south. However; these rivers disappear underground due to the porous nature of volcanic soils in the region.

3.2.2 Soil and Geology
In general the topography of the Nakuru area was formed by volcanic activities and faulting that created the great rift valley. Thus volcanic soils are the dominant soil type within the municipality. The volcanic rocks of the Bahati escarpment are thought to be the oldest volcanic rocks within the area.

There are numerous faults, both major and minor, scattered throughout the area. The formations that can be identified within Nakuru include:

i. Trachyte flows issued coming from the Menengai crater. They are glassy, ropy and blocky (upper Menengai series)
ii. a series of tuffs and pyroclastics, with very few rock exposures in flat areas, except in stream valleys, road cuttings and on the scarps; few of them are on the slope of the crater

iii. a thick overburden of grey volcanic soils and tuff

The last two form the soil formations in the Bondeni Neighbourhood.

3.2.3 Climate

The climate of Nakuru is influenced by altitude and physical features. There are two distinct rainy seasons; the long rainy season falling between March and May and the short rainy season falling between July and September. Hot and dry weather is prevalent between December and February. The hot dry season is characterized by whirl winds and dust clouds particularly in residential areas along the lake.

Mean annual rainfall is approximately 1000mm with the mean maximum and minimum temperature being between 19 and 17 degrees centigrade respectively.

Source: World-Climate.com 2013

Figure 3.4: Rainfall and Temperature Graph for Nakuru
3.2.4 Hydrology
Lake Nakuru has a drainage system that extends beyond the municipality especially into the Mau escarpment, with minor river basins like the Menengai crater and the lake area. The lake acts as a receptacle for runoff from the general drainage area, including the municipality. In addition, the lake pan is fed by rainfall and recharge from streams like the Njoro, Makalia and Nderi. Groundwater may occur in fractured zones and weathered layers. These layers are erosion layers formed between successive lava flows; sometimes including alluvial deposits which are not permeable as fractured zones. Basically most of the rocks in the geological succession in the area are impermeable or poorly permeable, the aquifers being extensive but discontinuous with borehole yields being generally variable.

3.2.5 Population Profiles
This section examines the various population characteristics of Nakuru namely; size, structure, density and the size of urban population. These variables determine the labour-force, the level of resource exploitation and utilization of facilities. Table 3.1 provides the population projections by age cohorts from 1999 to 2012 while table 3.2 shows the population projections by selected age-groups, including primary school going age (6-13 years), secondary school going age (14-17 years) and the labour force (15-64 years). These age groups are of great importance because of their potential contribution and impact on socio-economic development of the district.

Table 3.1: Population Projection by Gender and Age Cohorts

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>T</td>
<td>M</td>
</tr>
<tr>
<td>0-4</td>
<td>29,652</td>
<td>27,840</td>
<td>57,492</td>
<td>41,601</td>
</tr>
<tr>
<td>5-9</td>
<td>24,993</td>
<td>23,674</td>
<td>48,666</td>
<td>35,064</td>
</tr>
<tr>
<td>10-14</td>
<td>24,318</td>
<td>23,581</td>
<td>47,899</td>
<td>34,118</td>
</tr>
<tr>
<td>15-19</td>
<td>20,340</td>
<td>20,324</td>
<td>40,664</td>
<td>28,537</td>
</tr>
<tr>
<td>20-24</td>
<td>18,821</td>
<td>19,785</td>
<td>38,606</td>
<td>26,405</td>
</tr>
<tr>
<td>30-34</td>
<td>12,024</td>
<td>10,554</td>
<td>22,579</td>
<td>16,870</td>
</tr>
<tr>
<td>35-39</td>
<td>9,571</td>
<td>8,761</td>
<td>18,332</td>
<td>13,428</td>
</tr>
<tr>
<td>Age-Group</td>
<td>1999</td>
<td>2008</td>
<td>2010</td>
<td>2012</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>T</td>
<td>M</td>
</tr>
<tr>
<td>&lt; 1 Year</td>
<td>7,075</td>
<td>6,628</td>
<td>13,703</td>
<td>9,927</td>
</tr>
<tr>
<td>&lt; 5 Years</td>
<td>29,652</td>
<td>27,840</td>
<td>57,492</td>
<td>41,601</td>
</tr>
<tr>
<td>6-13 (Primary)</td>
<td>14,400</td>
<td>39,762</td>
<td>54,162</td>
<td>55,970</td>
</tr>
<tr>
<td>14-17 (Secondary)</td>
<td>17,873</td>
<td>17,392</td>
<td>35,265</td>
<td>24,163</td>
</tr>
<tr>
<td>15-64 (Labour Force)</td>
<td>101,413</td>
<td>96,585</td>
<td>197,998</td>
<td>137,104</td>
</tr>
<tr>
<td>Reproductive Age – Female (15-49)</td>
<td>100,051</td>
<td>100,051</td>
<td>200,102</td>
<td>135,263</td>
</tr>
<tr>
<td>65 Year +</td>
<td>4,648</td>
<td>4,836</td>
<td>9,484</td>
<td>6,522</td>
</tr>
</tbody>
</table>

Age group 0-4 (Under 5): The population of this age group is vulnerable to malaria which causes “under five” mortality rate of 84/1000. This calls for strategies to increase malaria campaign coverage by increasing the numbers of nets distributed and promotion of hygiene, sanitation and good nutrition to reduce ‘under five’ mortality rates.

Primary School Going Age Group (6-13 years): The population of primary school going age was expected to increase from 109,725 pupils at the start of 2008 to 125,461 at the end of 2012. This represented an increase of 15,736 pupils (14.34% increment). This influx of learners is attributed to the introduction of free primary education programme in 2003. The increase in enrolment of primary going age pupils by 14.34% necessitates need for increased investments in education facilities and services.

Secondary School Going Age Group (14-17 years): With the government initiating free secondary education programme in 2008, an impressive transition and retention rates in secondary schools was witnessed. The population of secondary school age students stood at 47,676 and was expected to rise to 54,513 by 2012, a growth rate of 3.4 per cent per annum. The implication for development is that more economic resources should be committed to expanding secondary educational infrastructure, equipments/facilities and personnel. There will be need for the construction and equipping more youth polytechnics. This will ensure that that those who don’t get access to secondary schools will be able to continue with their education.

Female Reproductive Age Group (15-49 years): Females in the reproductive age were projected to increase from 135,263 in 2008 to 155,662 in 2012. This large number of women in their child–bearing age calls for the provision of adequate health infrastructure, equipments/facilities and personnel to ensure healthy reproductive life for the women and good health for the children they are expected to bear. This will exert pressure on maternal and child health facilities. and services unless measures are taken to control the high fertility rate.

Labour Force Age Group (15-64 years): The town’s labour force was projected to rise to 306,069 persons in 2012 from 267,681 persons in 2008. Given a labour force population which is more than half of the total population, measures will need to be put in place during planning to provide adequate employment opportunities.
CHAPTER 4 - RESEARCH DESIGN AND METHODOLOGY

4.1. Introduction
This chapter discusses the research design as well as the type and sources of data, methods used in data collection, the sample size and frame, sampling procedures, analysis and presentation of data.

4.2 Research Design
A research design is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004). The study used a case study design and pursued an exploratory and descriptive approach consisting of Pre field work, Field work, Review of relevant documents, Data collection, analysis and interpretation. The study aimed at investigating the challenges in the provision of adequate housing in Nakuru Town, Nakuru County with a case study of Bondeni Neighbourhood.

4.3 Nature and Sources of Data

4.3.1 Nature of Data
The nature of data collected and analyzed sought to address the stated objectives of the study as provided in Table 4.1

Table 4.1: Nature of Data Collected Under Each Objective

<table>
<thead>
<tr>
<th>S/No</th>
<th>Objective</th>
<th>Nature of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To analyse the existing policy and legislative framework on housing</td>
<td>• Capacity building</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Awareness creation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Financial, technical and material support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Labour provision</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Strategy implementation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Monitoring and evaluation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Policy formulation</td>
</tr>
<tr>
<td>2</td>
<td>Establish the socio-economic characteristics of the residents and their capacity for housing development planning.</td>
<td><strong>Physical impacts</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Soil erosion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Blockage of storm water drains</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Blockage of sewerage pipes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Water, air and soil pollution</td>
</tr>
</tbody>
</table>
Biological impacts
- Loss of Vegetation
- Loss of Micro-Organisms
- Habitat Destruction

Social impacts
- Disease prevalence
- Education
- Loss of life and property
- Hunger
- Loss of livelihood
- Relief dependency
- Infrastructure - transport, education facilities, power supply

| 3 | Assess the Housing demand and supply in Nakuru Town. | Population trends over the years
- Approved new building over the years |

| 4 | To prepare a development plan for improving Bondeni Residential Neighbourhood | Impacts of initiatives
- Employment
- Investment
- Improved education
- Stable settlements |

Source: Field Data, 2014

4.4 Sources of Data

4.4.1 Primary Sources of Data
Primary data sources include households and County Government officials and resource persons including the County Housing Officer; County Physical Planner; County Director of Public Health; County Director of Environment, Natural Resources, Water and Energy; County Chief Officer for Transport, Infrastructure and Roads; and Deputy County Secretary and Head of Public Service among others.
4.4.2 Secondary Sources of Data
The secondary data sources consisted of all the information that was retrieved from already existing literature for the purposes of this study. This information was contained in publications, books, annual/quarterly reports, journals, Development plans, periodicals and existing spatial information like maps of the study area.

4.5 Methods and Instruments for Data Collection
Various methods and instruments of data collection were used and these included the following;

4.5.1 Observation
Physical aspects that were relevant to the study were obtained through observation to verify verbal claims by respondents. An observation guide as the instrument was used to capture such elements. This method was also used in verifying information as data collection using the questionnaires preceded observations. Observation as a method of data collection also served to increase the range of relevance and reliability of data. Checklists were used to gather data based on the study’s premises and assumptions made on various aspects of the research variables were confirmed or disapproved by use of the above method.

4.5.2 Interviews

4.5.2.1 Oral Interview guide
This method involved collection of data through face to face interaction with residents of the study area and relevant institutions within the County Government of Nakuru and other stakeholders.
Data collected using this method included: role of stakeholders in provision of adequate housing, socio-economic and bio-physical impacts arising out of the tenancy, possibilities for improvement of existing infrastructure to meet the needs of an ever rising population and the possibilities of enhancing institutional capacity for better response to the housing needs of the residents of Nakuru.

4.5.2.2 Questionnaires
This method involved collection of data through pre-determined questions based on the study objectives. A total of 100 household questionnaires were administered during the field work. The
household questionnaires were administered randomly. A sample of this questionnaire is presented in the appendix section.

4.5.3 Photography
Photographs were used to capture information such as existing state of the houses, Sewerage conditions, waste management and sanitation. This method provided evidence of the state of services and infrastructure on the ground. Digital cameras were used to capture real on-site images during the field study.

4.5.4 Literature Review
Documents such as legislative and policy documents, departmental reports, projects reports, books and journals were reviewed and relevant information regarding provision of adequate housing was gathered. This allowed for comparison between the primary data collected and existing information.

4.5.5 Field Notes
Notes were taken during the course of the field study. These recorded socio-economic activities and the perception of the people on the provision of housing, infrastructure and services and the institutional frameworks governing those provisions.

4.6. Target Population
The study population consisted of the Nakuru Municipality housing estates within Bondeni Neighbourhood (Block 13), and relevant National and County government agencies.

According to Mugenda and Mugenda, (1999) population is a complete set of individuals or objects with common observable characteristics. Therefore target population is the population for which the researcher wants to generalize the results of the study. The targeted population in this study was the low income and middle income households occupying 2,844 rental units provided by the municipal council of Nakuru. The total no of households is as tabulated in Table 4.2 below:
Table 4.2 Total No of Households

<table>
<thead>
<tr>
<th>S/No</th>
<th>Estate/Settlements</th>
<th>Number of Units/ Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kivumbini</td>
<td>624</td>
</tr>
<tr>
<td>2</td>
<td>Shauri Yako</td>
<td>294</td>
</tr>
<tr>
<td>3</td>
<td>Kaloleni</td>
<td>712</td>
</tr>
<tr>
<td>4</td>
<td>Old Ojuka</td>
<td>17</td>
</tr>
<tr>
<td>5</td>
<td>New Ojuka</td>
<td>27</td>
</tr>
<tr>
<td>6</td>
<td>Lumumba</td>
<td>192</td>
</tr>
<tr>
<td>7</td>
<td>Paul Machanga/Abong Loweye</td>
<td>384</td>
</tr>
<tr>
<td>8</td>
<td>Baharini</td>
<td>512</td>
</tr>
<tr>
<td>9</td>
<td>Nakuru Press</td>
<td>84</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2,846</td>
</tr>
</tbody>
</table>

Source: Department of Housing Municipal Council of Nakuru, March 2014

4.7 Sampling Techniques and Procedures
The study integrated the following sampling techniques:

4.7.1 Probability Sampling Technique
- **Stratified Random Sampling**
  The population was stratified to cover all the residential estates. The following constituted the Bondeni Neighbourhood residential Estates that were sampled:
  Kivumbini, Shauri Yako, Kaloleni, Old Ojuka, New Ojuka, Lumumba, Paul Machanga/Abong Loweye, Baharini and Nakuru Press
  For each residential unit, simple random sampling techniques were employed.
- **Systematic Simple Random Sampling**
  In administration of household questionnaires, transects were identified and an appropriate number of questionnaires were administered. The first household was chosen randomly while subsequent households were selected through use of the systematic sampling formula $N/n$ where
N represents the total number of households along the transect while n represent the number of questionnaires to be administered.

4.7.2 Non Probability Sampling Technique

The study employed purposive/judgemental and convenience non random sampling methods. These methods were employed particularly when administering questionnaires to businesses and institutions.

- **Convenient Sampling**
  This method, also known as accidental sampling involves the selection of cases and or units of observation as they became available. This method was useful in instances where one was directed to other places within the municipality for information.

- **Purposive Judgmental Sampling**
  The main goal of purposive sampling is to focus on particular characteristics of a population that are of interest, which would best enable one to answer the research questions. This method was employed in administering questionnaires to various groups such as institutions that were identified as having useful information. Such groups included interest groups associations, local business associations, housing research units, financiers and service providers.

- **Snow Ball Sampling**
  Snowball sampling (or chain sampling, chain-referral sampling or referral sampling) is a non-probability sampling technique where existing study subjects recruit future subjects from among their acquaintances. Thus the sample group appears to grow like a rolling snowball. As sample members are not selected from a sampling frame, snowball samples, are subject to numerous biases. For example, people who have many friends are more likely to be recruited into the sample. This method was used in identifying key informants such as water engineers and community workers with the help of community members.

4.8 Sample Size

The sample was determined using the formula recommended by Nassiuma (2000) as follows:

\[ n = \frac{NCv^2}{(Cv^2 + (N-1)e^2)} \]
Where \( n = \) sample size

\[ N = \text{population (2,846)} \]

\( Cv = \text{Coefficient of variation (take 0.5)} \)

\( e = \text{Tolerance of desired level of confidence, take 0.05\% at 95\% confidence level} \)

\[
\frac{2846 \times 0.5 \times 0.5}{((0.5 \times 0.5) + (2846-1) \times (0.05 \times 0.05))}
\]

\[ = \frac{711}{7.35} \]

\[ = 96.6 \]

Say, 100 to the nearest 10th.

Based on the formula above, the sample size was 96.6 rounded off to 100. The study therefore gathered field data from 100 households.

The cluster sampling technique was employed as the sampling procedure for the study with each estate constituting a cluster. The number of respondents per estate was derived from dividing 100 with the total number of household and multiplying the result with the number of households per estate. The respective household information sampling per estate/cluster was as contained in table 4.3 below:

**Table 4.3 Respondent questionnaire administration numbers**

<table>
<thead>
<tr>
<th>Estate/Settlements</th>
<th>Number of Units/Households (N)</th>
<th>Number of respondents (n)</th>
<th>Interval between respondents (N)/(n) units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kivumbini</td>
<td>624</td>
<td>21</td>
<td>29</td>
</tr>
<tr>
<td>Shauri Yako</td>
<td>294</td>
<td>10</td>
<td>29</td>
</tr>
<tr>
<td>Kaloleni</td>
<td>712</td>
<td>25</td>
<td>29</td>
</tr>
<tr>
<td>Old Ojuka</td>
<td>17</td>
<td>1</td>
<td>N/A</td>
</tr>
<tr>
<td>New Ojuka</td>
<td>27</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Lumumba</td>
<td>192</td>
<td>7</td>
<td>27</td>
</tr>
<tr>
<td>Paul Machanga/Abong Loweye</td>
<td>384</td>
<td>13</td>
<td>29</td>
</tr>
<tr>
<td>Baharini</td>
<td>512</td>
<td>18</td>
<td>28</td>
</tr>
<tr>
<td>Nakuru Press</td>
<td>84</td>
<td>3</td>
<td>28</td>
</tr>
<tr>
<td>Total</td>
<td>2,846</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Source: Field Survey, March 2014

4.9 Methods of Data Analysis and presentation
Both SPSS and Excel spreadsheet software were used for the analysis. After obtaining the raw data set, it was sorted and coded. The open-ended questions were manually analyzed by grouping responses into similar themes and tallying them. Frequencies were determined using excel spreadsheet. The closed-ended responses were appropriately labeled and entered into the statistical package for social sciences software (SPSS). The data was then presented using pie charts, bar graphs, percentages and frequency tables among others.

4.10 Limitations
The challenges included:

- **Respondents’ biasness** – institutions appeared to give only the positive side of the story even as observations revealed a different situation.
- **Prejudice** – This may have arisen out of suspicion from respondents on the interviewers and the actual use of information that was being gathered.
- **Inadequate time and Financial resources** – Time and money were limited since the study was undertaken within the university calendar. There was inadequate financing for the field survey.
- **Illiteracy** – Respondents found it difficult to interpret the questions in the questionnaires since the majority of the heads of households had limited formal education.
- **Language barrier** - The questionnaires were designed in the English language and therefore many respondents had interpretation challenges.
CHAPTER FIVE: RESULTS AND DISCUSSIONS

5.0 Introduction
The provision of adequate housing for the ever-increasing urban population is a necessary input into the orderly and sustainable growth of urban centers. The provision of land for housing and the production of adequate and appropriate housing stock have a direct link to the well-being of the town’s inhabitants and the growth of the other sectors of the economy such as industry and commerce. Nakuru town’s population growth rate is estimated at 5.68 per cent. This growth rate is expected to lead to a population of approximately one million people by 2030 having risen from 307,990 in 2009. Such rapid population growth has far-reaching implications on the fabric of the town in relation to the town’s growth patterns and the development of key sectors of its economy (housing, infrastructure, industry, commerce, etc).

There are at least 6956 public housing units within the town, 5434 of which are owned by the Municipal Council of Nakuru and 1522 by central government departments and corporations. Of the 5434 units owned by the municipality, 2846 (more than 50%) are in Bondeni Neighbourhood which is also referred to as Block 13 or the Housing Triangle. The rate of growth in municipal council housing in Nakuru is negligible.

In Bondeni neighbourhood, household living space accommodation ranges from one roomed unit to two bedroom houses. The densities of development are very low with a lot of open spaces. The units are mostly blocks of eight rooms although New Ojuka Estate has detached houses. The water closet and bathroom facilities range from private to semidetached and communal (public) for the two and one bedroom units and the one room units respectively. The middle-income groups are also beneficiaries of public housing. The rents paid for single room units are inclusive of water. The issues in council rental housing include under-utilization of existing land, high electricity bills due to communal use in the single room units and poor maintenance of the units and support infrastructure. The very low rents coupled with high rent default rates make sustainability difficult. A positive characteristic of the neighbourhood is that it is well provided with support infrastructure including a social hall, police station, library, sports field, cemetery, educational and council health facilities. Plate 5.1 is an illustration of the general character of the neighbourhood showing the relation between units and between the units and the open grounds.
This chapter contains results and discussions. The research was undertaken with the purpose of investigating the challenges in provision of adequate housing in Nakuru Town. The case study was in Bondeni Neighbourhood and was guided by the following research objectives:

- To analyze the existing policy and legislative framework on housing and how it relates to planning and management of Bondeni Residential Neighbourhood and to provide proposals for revitalizing their application towards efficient and effective housing delivery.
- To establish the socio-economic characteristics of the residents and their capacity for housing development planning.
- Assess the Housing demand and supply in Nakuru Town.
- To prepare a development plan for improving Bondeni Residential Neighbourhood.
5.1 Objective 1: Evaluation of Legal, Policy and Institutional Framework

5.1.1 Evaluation of Legal Framework

5.1.1.1 Constitution of Kenya, 2010

According to the Constitution of Kenya (2010), the right to housing is a constitutional right provided for in the Bill of Rights. Section 43 (1) (b) of the constitution provides that every person has the right to accessible and adequate housing and reasonable standard of sanitation. Legislation on strategies of achieving this right are however not clearly spelt out and one has to rely on sectoral pieces of legislation in order to provide housing. The housing gap is an indicator of inadequate policy, legal and programme interventions necessary to achieve access to adequate shelter.

5.1.1.2 Urban Areas and Cities Act

Urban areas and cities act (2011) gives criteria for classifying areas as city, municipal or town status. It also gives principles of governance and management of urban areas and cities. It dictates that every city and municipality operates within the framework of integrated development planning. Urban areas are to prepare an integrated urban area municipal development plan in accordance with the Third Schedule of the Act of which this plan is prepared to meet this legal standard. Of particular importance the act makes it mandatory that the people who would be affected by a physical development plan be involved in its preparation in order to address local realities and to ensure ownership implementation which would then avoid apathy of residents during implementation.

The Cities and Urban Areas Act, 2010 require that urban areas are able to sustain service delivery by demonstrating capacity to generate sufficient revenue to sustain their operations. The Act stipulates that Municipalities and other towns must have infrastructural facilities, including but not limited to roads, street lighting, markets and fire stations, and an adequate capacity for disaster management and an adequate capacity for functional and effective waste disposal. It also requires that there be an integrated urban area or a city development plan, Waste and a capacity for functional and effective waste disposal and the promotion of a safe and healthy environment.
5.1.1.3 The Physical Planning Act

The physical planning act (Physical planning act, 2010) provides for the preparation of local physical development plans under section 16. The plans are supposed to coordinate the development of regions for the purpose of proper physical development of land, securing suitable provision for transportation, public purposes, utilities and services, commercial, industrial, residential and recreational areas, including parks, open spaces and reserves. A development plan is thus prepared in accordance with the act to promote orderly development of Nakuru municipality. There is evidence that the relevant provisions of the law, particularly section 29 of the Local Government Act Cap 265 and section 24(1) of the physical planning Act Cap 286 are not being enforced.

The Physical Planning Act empowers the Director of Physical planning under section 24(1) to prepare physical development plans in city, municipal, town or urban councils. Section 29 of this Act gives authority to local authorities to prohibit or control the use and development of land and buildings in the interests of proper and orderly development of its area; and to consider and approve all development applications and grant all development permissions. Section 33 (1) grants the local authority powers to grant permission for development, or refuse to grant permission to an application under Section 31, depending on whether the application of the development satisfies the regulations set for development or not. The above cited provisions of the physical planning Act have not been fully enforced in the case of Nakuru Municipality. The authority conferred to the municipality has not been effectively exercised leading to the emergence of unauthorized dwellings and business premises along road reserves and other places.

Plate 5.2 illustrates an illegal market stall in Shauri Yako Estate and irregular fencing in New Ojuka Estates
Additionally, Section 36 of the Physical planning Act requires developers to submit together with the development application, an environmental impact assessment report, if the responsible local authority feels that proposals for industrial location, dumping sites, sewerage treatment, quarries or any other development activity will have injurious impact on the environment. It is clear that if the provisions of existing laws were effectively enforced, there would be orderly development in terms of urban land use planning and practices.

### 5.1.1.4 Environmental Management and Coordination Act 1999.

Section 58 of EMCA, 1999 requires that every development project likely to have impacts on the environment to undergo an environmental impact assessment before commencement of any works. According to the Act’s second schedule, preparation of local physical development plans fall under the projects required to undergo environmental impacts assessment. The linkages between the above provision of the Physical Planning Act (Section 36) and that of EMCA, 1999
(section 58) is not clearly indicated. For instance, the County Government may not have the requisite skill to determine if a proposed development is likely to have injurious impact on the environment. This may result in conflict.

EMCA (1999) also requires annual environmental audits to address impacts identified during the environmental impact assessment and all emerging issues. The County Government has not been effective in mitigating arising issues. Lack of maintenance of public open spaces and service lines is a pointer to the problem of non-compliance with the act.

5.1.1.5 The Housing Act (1990 Revised 2012)
The Act makes the operations of the National Housing Corporation (NHC) acquire legal mandate to provide affordable housing to households. In particular section 6 article 1 establishes the Housing Fund and Section 7 article 1 (b) mandates NHC to, from the Housing Fund, make loans to any company, society or individual person for the purposes of enabling that company, society or individual individual to acquire land and construct thereon approved dwellings or to carry out approved schemes. NHC is also empowered by the same article to construct dwellings, carry out approved schemes and layout and provide services for approved schemes. Nakuru has benefitted from houses constructed by the housing corporation but was unable to fulfill the terms of their provision. This led to selling of two National Housing Corporation estates to offset debts. Kabachia and Pangani Estates, meant for the middle and low income earners were thus disposed of to private individuals who could afford to purchase them and who were not necessarily the previous occupants. To attract NHC the County Government would need to organize its financial department to ensure efficiency in rent collection which would in turn lead to prompt servicing of financial obligations.

5.1.2 Evaluation of Policy framework

5.1.2.1 Vision 2030
The Kenya vision 2030 is Kenya’s development blueprint covering the period 2008-2030 with the aim of transforming Kenya into a newly industrializing middle income country. The vision 2030 blueprint was to be implemented through five year medium term plans with the first medium term plan covering the period 2008 to 2012. The Social Pillar for Vision 2030 for housing is a safely, adequately and decently housed nation in a sustainable all inclusive environment. The vision envisages better development of and access to affordable and adequate
housing and enhanced access to adequate finance for developers and buyers. It pursues targeted key reforms to unlock the potential of the housing sector. Vision 2030’s Political Pillar provides for public participation in the governance process. The development of Vision 2030 constitutes an important framework for the government’s commitment to improve the welfare of her people especially in urban areas where planning for the high population on scarce land amidst high costs of housing is a big challenge (Republic of Kenya, 2008).

One of the sectoral visions was provision of shelter in a sustainable manner with the medium term goal of increasing the provision of shelter from 35,000 to 200,000 units per year. Effective capacity for regional and urban development planning was be provided starting with provision of shelter for slum dwellers and provision of adequate finances and promulgation of key reforms in the housing sector to provide for public private partnerships. One of the flagship projects proposed include Metropolitan and investment plans requiring the preparation of metropolitan plans for 11 regions including Nakuru.

5.1.2.2 Medium Term Plan 2008 - 2012

The plan took over from the Economic Recovery Strategy for Wealth and Employment Creation, 2003-2007. The plan recognized that rapid urbanization mainly due to rural-urban migration and high urban growth rate were significant dynamics impacting on the socioeconomic development of the society resulting from limited capacity of planning agencies in terms of the requisite technology, human resources and financial outlay to prepare timely and sustainable physical development plans. Consequently this has led to constraints in provision of water, sanitation, security, infrastructure, housing and transportation.

An evaluation of the policy and institutional framework influencing the development of housing in Nakuru Town reveals a number of issues which include: (i) Institutional conflicts, (ii) Failure of past policies to yield desired outputs, (iii) Poor enforcement of existing laws, (iv) Poor implementation of policies and (v) General lack of proper coordination. Institutional conflicts are manifested by the lack of clear mandates resulting in duplication of responsibility or abdication of duty. The emergence of unauthorized structures indicate a failure of the Municipal council in effectively controlling use and development of land as provided for in the Physical planning Act Cap 286 section 29 as well as the County Government Act 2012.
5.1.2.3 National Housing Policy for Kenya (Sessional Paper No.3 of 2004)
The Government of Kenya through the policy targeted an annual output of 150,000 housing units in urban Areas and 300,000 units in rural areas. The defined urban middle cost housing as housing accommodation comprising a minimum of three habitable rooms, a kitchen, bathroom and toilet covering a minimum gross floor area of 60 square metres for each household. It also defined urban low cost housing as housing accommodation comprising a minimum of two habitable rooms, a cooking area, and sanitary facilities covering a minimum gross floor area of 40 square metres for each household. The policy aims are

- Enabling the poor to access housing and basic services and infrastructure necessary for a healthy living environment especially in urban areas.
- Encouraging integrated, participatory approaches to slum upgrading include income generating activities that effectively combat poverty.
- Promoting and funding of research on the development of low cost materials and construction techniques
- Harmonizing existing laws governing urban development and electric power to facilitate more cost effective housing development.
- Facilitating increased investment by the formal and informal private sector in the production of housing for low and middle income dwellers.
- Creating a Housing Development Fund to be financed through budgetary allocations and financial support from development partners and other sources.

5.1.2.3.1 Provision of Adequate Housing Space
The policy has provided a working definition of adequate housing which not only includes the housing fabric but also a clean living environment. In terms of the actual units then, only 356 of the 2846 units in Bondeni meet the threshold of adequate housing space provision. The fact that tenants have constructed additional rooms where units have compounds and partitioned the single rooms to create privacy levels is a clear indication that though the policy correctly attempts to set minimum acceptable standards of housing space, the County Government has not lived up to those requirements.
Healthy living as required by the policy is a big challenge. The housing has fallen into a state of disrepair although according to the Deputy County Secretary and Head of Public Service for Nakuru County, some funds have already been approved by the County Assembly for repair of leaking roofs in Paul Mchanga Estate. Garbage piles, blocked storm water drains, burst sewerage overflowing into storm water drains and open grounds are a common site in Bondeni Neighbourhood and are an indictment of the quality of maintenance management within the neighbourhood.

Promoting research and funding of low cost building materials and construction techniques may have at the county level not been very effective. The County Housing Officer has established a demonstration unit for the manufacture of Stabilized Soil Blocks for use as a low cost and environmentally responsive walling alternative material for houses. This initiative may have minimal impact in lowering construction costs until the Building Code is formally reviewed. As the byelaws now stands, construction materials for walls are limited to stone and concrete blocks. Research on feasible building materials needs to be enhanced to reduce housing costs since, based on conventional building practices, household will be unable to either own or rent housing at market rates. The intended permanent Building By-laws Review Board should be put in place to review and update housing standards to make housing affordable. This would be coupled with other initiatives proposed by the policy such as reducing professional input costs and approval levies by the council. The implementation of the proposal for charging economic rent without a corresponding increase in household incomes will only relocate the present occupants to more peripheral areas considering the current rent default rate with a rent which is less than half the market rents.

5.1.2.3.2 Role of Financing Institutions on Provision of Housing
The policy requires County Governments to undertake land-use planning and administration, and provide infrastructure for low-cost housing for sale or rent at economic rates. The governments are also required to set up and manage site and service schemes with the support of the National Housing Corporation by providing infrastructure and services to enable developers and individuals to construct houses. They are also expected to set aside properly secured land bank for housing development purposes. So far Nakuru County Government has not been able to achieve the requirements. With proper planning however, this may not be an expensive
undertaking since some basic infrastructural components are in the process of being upgraded and even at present the current sewerage capacity is only half utilized. Secondly the old estates, including those in Bondeni Neighbourhood occupy land that can be redeveloped to provide adequate housing to even greater numbers.

The policy also employs strategies incorporating the National Housing Corporation and the Housing Finance Company of Kenya. The government established the National Housing Corporation in 1967 with the mandate of providing low cost housing for its citizens. According to the National Housing Corporation report of 2013, the corporation has since its inception delivered 43,000 units against an annual urban target of 150,000 units (Housing policy, 2004). The Housing Finance Company which was founded in 1965 has been offering mortgage facilities for prospective house owners albeit at repayment rates that are out of reach to most citizens.

5.1.2.3.3 Level of success in Provision of Housing

The concept of access has not been adequately addressed by the Housing Policy. According to the National Housing Policy of 2004, the estimated urban housing production stood at between 20,000-30,000 units annually against an urban housing demand of 150,000 units. There appears to be contradictions at the moment, where in one case the policy calls for charges of market rates as house rent and the policy on the other hand states that housing is a right. The cost of constructing a modest but decent low cost house (subject to land not being factored in cost) is between Kenya shillings (Ksh.) 1,000,000.00 and Ksh. 2,000,000.00 depending on availability of materials. The current mortgage repayment rates for the amount of money involved is between Ksh.13,260.00 and Ksh 15,130. According to Susilvati and Miller (2013) monthly rent or mortgage repayment should not exceed 30% of a household’s gross income. Thus to qualify for such housing units the household incomes should range between Ksh 39,780 and Ksh. 45, 400.00 This effectively means that the majority of households in Bondeni (97%) cannot afford the rents or mortgages. The policy should therefore have gone a step further to propose conditions for housing subsidies so that deserving cases do not find themselves shelter less.

It is now 10 years since the promulgation of the Housing Policy. There has been successes although the benefits have not been spread out evenly throughout the country. For instance the Housing Development Fund (Legal Notice No. 98 on the establishment of Civil Servants Housing Scheme Fund (Republic of Kenya 2004a) has been created which in the first stage has
targeted the housing of civil servants through the actual construction of units through mortgage purchase or through cheap housing loans for construction of houses by individuals. So far 2,272 residential units for civil servants have been procured in Nairobi and mortgage loans have been issued to 558 civil servants to procure their own houses. Additional houses are to be constructed in Nairobi, Mombasa, Kisumu and Nyeri. Nakuru has as yet to benefit. The Housing Department in the Ministry of Land Housing and Urban Development is in the process of partnering with other stakeholders to upscale the initiative.

5.1.3 Evaluation of Institutional Framework
The institutional linkages between the County Government and National Government are yet to be streamlined. There are issues related to performance of duties and reporting structures. For instance for development planning of Nakuru Town, the study established that the County Planner (formerly employed by the Central Government) and the Town Planner (Formerly employed by the Municipal Council) are both not clear on what their roles under the County Government should be. Secondly, the officer with the higher title, having been employed under the terms of the National Government earns less than his subordinates who are formerly employees of the Nakuru Municipal Council. This has affected planning services leading to the late approval of the CIDP.

Conflicts of responsibility and accountability involving the County Government and service providers are also prevalent. For instance, the study has revealed that the water supply related institutions such as NAWASSCO, are not functionally answerable to the Nakuru County Government, yet the county government has the mandate to provide water and sewerage services to the town’s residents. This perhaps explains the observed inefficiencies in decision making processes and poor management of water supply and sewerage services. It was difficult to establish, for example, where essential documents like those pertaining to the old sewer and proposed new sewer line could be found. In such circumstances, it is difficult to apportion responsibilities and accountabilities. In situations where there is multiple line responsibilities there ought to be definite reporting structures if services are to be provided efficiently.
5.2 Objective 2: Evaluation of Socio-Economic Characteristics of Neighbourhood

5.2.1 Demographic profile
From the finding involving 100 respondents that were sampled for the study, the following characteristics were observed:

- The inhabitants were virtually representatives of all nationalities in the country.
- The household heads in 63% of the cases was female with only 37% being male. The majority of the people had acquired both Primary and Secondary education (77%) while a majority was within the working age bracket of 16-60 years (72%). Lack of post primary and post secondary education might have contributed to low incomes among the households.

The education levels and age brackets are as illustrated in table 5.1 and 5.2 below.

<table>
<thead>
<tr>
<th>Education Level</th>
<th>% of population</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECDE</td>
<td>9</td>
</tr>
<tr>
<td>Primary</td>
<td>41</td>
</tr>
<tr>
<td>Secondary</td>
<td>36</td>
</tr>
<tr>
<td>Tertiary</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source: Field Survey, 2014*

The household age profiles are as illustrated in table 5.7.

<table>
<thead>
<tr>
<th>Age Bracket</th>
<th>% of population</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 15</td>
<td>26</td>
</tr>
<tr>
<td>16 - 30</td>
<td>15</td>
</tr>
<tr>
<td>31 - 45</td>
<td>39</td>
</tr>
<tr>
<td>46 - 60</td>
<td>18</td>
</tr>
<tr>
<td>Above 60</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source: Field Survey, 2014*

5.2.2 Income profile
An overwhelming majority of the households derived their incomes from informal jobs which they refered to as business. The businesses comprise selling of second hand clothes and other body wears, selling of charcoal, selling vegetables etc in temporary shelters attached to their
rental houses, hawking and metal fabrication. A few people were employed in government offices, private offices, factories, retail markets, wholesale markets and in shops. A comparison between the average municipality wage earnings in 2011 (KNBS, 2012) and the Neighbourhoods income show that the 80% of the households earn what the bottom 16 % of the town’s employed workers earn as wages. The low earnings might serve to explain the high rent default rate in the neighbourhood.

Table 5.3 illustrates the percentage income distribution and compares it with the town’s average earnings wage.

Table 5.3 Comparison of Distribution of monthly incomes

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Income (Ksh)</th>
<th>Neighbourhood Average income %</th>
<th>Municipality average wage income % (2011)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0 – 9,999</td>
<td>53</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>10,000 – 14,999</td>
<td>25</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>15,000 – 19,999</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
<td>20,000 – 24,999</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>5</td>
<td>25,000 – 29,999</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>6</td>
<td>30,000 – 49,999</td>
<td>2</td>
<td>28</td>
</tr>
<tr>
<td>7</td>
<td>50,000 – 99,999</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td>8</td>
<td>100,000 +</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Field Survey, March 2014

In terms of income classes based on African Development Bank criteria (April 20, 2011, Market brief www.afdb.org downloaded on 4th May, 2014) the neighbourhood income characteristics can be presented as in Table 5.4 below and figure 5.1 on following page:

Table 5.4 Distribution of per capita household consumption levels (monthly)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Income (Ksh)</th>
<th>Households %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6,254 – 13,572: Floating and poor class</td>
<td>78</td>
</tr>
<tr>
<td>3</td>
<td>13,573, – 26,100: Lower Middle class</td>
<td>18</td>
</tr>
<tr>
<td>5</td>
<td>26,100 – 52,200: Upper middle class</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>52,400 +: Upper class</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Author, March 2014
5.2.3 Open Spaces and Recreation Facilities

According to the physical planning handbook (2008) recreation is the sum total of all human, social-cultural and economic activities that enhances the therapeutic status of the mind. It brings a relaxation of the body and mind. Nakuru has a variety of sports and recreation facilities including social halls and libraries, parks, gardens, open spaces and stadiums. These include; four social halls, a library, the Nyayo gardens, Lions park, Shabab Square, the 8,200 capacity Afraha Stadium, the Rift Valley Sports Club, a golf course and the Nakuru Athletic Club. The latter three are privately run, well developed, but are inaccessible to the majority due to costs. Bondeni Neighbourhood boasts a social hall and a library; sports field (Kamukunji stadium), neighbours the world famous Lake Nakuru Game Park and is about a kilometer away from the Afraha Stadium. It can therefore be concluded that the neighbourhood is well served in terms of social facilities.

5.2.4 Religious Institutions

The distribution of religious institutions (churches, mosques, temples, etc.) is widely spread but generally they tend to be located within residential areas. There are several churches and a mosque in the Bondeni residential neighbourhood. Some of the churches are for the following denominations: PCEA, AIPCA, SDA, Friends Quakers and Salvation Army. For an area of approximately 1.7 square kilometers the neighbourhood is well served.
5.2.5 Education Institutions
Nakuru is a major education Centre being the headquarters of Nakuru County. The County Director of Education is in charge of education in the municipality. The mandate of the education office involves the coordination and management of all education programs and co-curriculum activities in the municipality. There are several institutions of learning which provide Early Childhood Development Education (ECDE), Primary, Secondary and Tertiary Education. Bondeni Neighbourhood has three ECDE centres, 9 Primary schools, 2 Secondary Schools and 2 Tertiary institutions. Most of the schools in the neighbourhood are funded by the National Government other than the ECDE centres which are supported fully by the County Government. The County Government not only directly provides bursary but has also partnered with sponsors including the private sector to help needy students within the municipality pursue education.

5.2.6 Cemeteries
Nakuru town has three main cemeteries and a crematorium namely, the Nakuru North Cemetery, Mohammedan Cemetery, Nakuru South Cemetery and Hindu Crematorium. The Mohammedan Cemetery is within the neighbourhood while the South Cemetery is hardly a kilometer away. The neighbourhood is therefore well served with cemetery facilities. The challenge, however is that the cemeteries are not well managed and are filling up rapidly.

5.2.7 Transport
The physical planning handbook (2008) states that transportation is the process of moving persons, goods and services from one point to another using various modes and means. The study area is served by access roads and streets. The majority of households use public vehicles to and from the Commercial Business District. Vehicles driving from the town Centre use Mburu Gichua Road, then turn to Kalewa Road before joining Shuleni Road. Once on Shuleni Road, vehicles drive up to Flamingo Primary School after which they return to the town centre following the same route. This route provides equity of access to all estates within the neighbourhood. The routes for other means of transport are much more flexible since they are not bound by regulations of the public transport cooperatives.
Households when moving to and from their homes to places of work, markets, school or other functions use public vehicles, motorcycles, bicycles or walk as their predominant means of transport. The relative use of these means of transport was established to be as follows:
Public Vehicles: 39%, Motor Cycle taxis: 11%, Bicycle taxis: 18% and Walking: 32%.

Figure 5.5 is an illustration of the distribution of various means of transport

Source: Field Survey, 2014

Figure 5.2 Distribution of households using various forms of transport

5.2.8 Energy
The main sources of energy for households within Nakuru municipality include Charcoal, firewood, LPG, paraffin, solar energy and electricity. Households in a block of 8 units jointly applying to Kenya Power and Lighting Company for a single meter after which they install submeters for each unit. The shared electricity bill is a challenge because some households are unable to meet their part of contribution in good time leading to frequent disconnections.

Charcoal is the major source of cooking energy due to its affordability and ease of availability within the estates. In Bondeni Neighbourhood all the respondents used charcoal for cooking. LPG was used by 20% of the respondents while Kerosene was used for lighting and cooking by 80%. Electricity was used by 83% of the households mostly for lighting and running electronic gadgets. Only 1% of the respondents used solar power and that for lighting. The respondents appeared to give more consideration to the cost of the type of energy than to its pollution effects. Firewood, charcoal and LPG are available in retail outlets within the town. The sources of
energy for the households are illustrated in table 5.5 while figure 5.3 indicates the percentage of persons using each form of energy.

**Table 5.5 Sources of Energy for Household**

<table>
<thead>
<tr>
<th>S/No</th>
<th>Type of Energy</th>
<th>Percentage of Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Charcoal</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>Kerosene</td>
<td>87</td>
</tr>
<tr>
<td>3</td>
<td>LPG</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>Solar</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Electricity</td>
<td>83</td>
</tr>
</tbody>
</table>

Source: Field Survey 2014

**Figure. 5.3 Percentage Distribution of Households use of various energy sources**

Table 5.6 contains the percentage of households facing various types of problems.

**Table 5.6: Problems in Accessing Energy Sources**

<table>
<thead>
<tr>
<th>S/No</th>
<th>Issue</th>
<th>Percentage of Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Blackouts</td>
<td>83</td>
</tr>
<tr>
<td>2</td>
<td>Transportation</td>
<td>57</td>
</tr>
<tr>
<td>3</td>
<td>Price fluctuations</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>Shortage</td>
<td>45</td>
</tr>
<tr>
<td>5</td>
<td>Pollution</td>
<td>20</td>
</tr>
</tbody>
</table>

Source: Field Survey 2014
5.2.9 Solution to Problems in Energy

The respondents appreciated that most of their energy sources were not environmentally safe and were too costly in the long run. They also appreciated that electricity had also improved security in the area through street lighting projects. The respondents suggested the following solutions to their energy problems: That incomes are increased, that electricity meters be for individuals and not for groups, that KPLC stop rationing supply, that the government intervenes in pricing and facilitate introduction of alternative energy sources. Some of the energy problem solutions suggested by the respondents are indicated in table 5.7 below.

Table 5.7: Suggested Solutions to Problems in Energy provision

<table>
<thead>
<tr>
<th>S/No</th>
<th>Intervention to Problem</th>
<th>Number of Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Better incomes</td>
<td>25</td>
</tr>
<tr>
<td>2</td>
<td>Individual meters</td>
<td>40</td>
</tr>
<tr>
<td>3</td>
<td>Constant supply of energy source</td>
<td>81</td>
</tr>
<tr>
<td>4</td>
<td>Government intervention</td>
<td>77</td>
</tr>
<tr>
<td>5</td>
<td>Alternative energy sources</td>
<td>21</td>
</tr>
<tr>
<td>6</td>
<td>Reduction in energy cost</td>
<td>36</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2014

5.2.10 Solid Waste Management

Solid waste management is the collection, transportation, processing, recycling and/or disposal of solid waste. Solid waste is the material arising from various human activities normally solids or semi-solids – considered as useless or unwanted. Solid waste management is a fundamental prerequisite in ensuring sustainable environment. It is a major problem world-over and in Bondeni offers several challenges including clogged drainage and sewers, waterborne diseases, increased upper respiratory diseases from open burning of the garbage to malaria.

Waste management has been the responsibility of local authorities but the scenario is changing with the realization that local authorities on their own are not capable of managing waste. Like other cities in the world, solid waste management is an expensive venture using up 30% to 50% of revenues. This is unsustainable and Kenyan cities and towns end up with endless heaps of garbage dotting the landscape. Most municipal councils and city councils who are trusted with waste disposal in Kenya dispose their waste at a disposal site (usually former quarry pits). Waste is emptied into the pit without compaction (Nyokabi, 2011).
Nakuru municipality is one of the towns that use the open dump field as the primary means of disposing garbage. According to the County Director of Environment, the site is being enclosed to prevent spill over of waste and associated pollution to the Nakuru-Kabarnet Road and the adjacent London Estate. The enclosure will also prevent marauding animals from disturbing the wastes and limit the extent to which the wastes will be blown away by the winds.

Source; Field Survey 2014

**Plate 5.3: Gioto Dump Site**

Nakuru Municipal Council has partnered with the private sector in solid waste management. According to the County Director of Environment, the town has been zoned into 25 refuse management zones, and youth and women groups introduced to manage waste in their residential estates. These groups have developed interest in solid waste management and are now registered as private companies by the municipality through Public Private Partnership to manage solid waste in their specific zones. In Bondeni Neighbourhood the companies are allowed to charge 100 shillings per household to supply 1 plastic waste bag weekly and collect waste once a week. The collection is not always efficient and some residents end up dumping waste outside their compounds including the storm drains and roads.
5.2.11 Liquid Waste Management
Excreta waste disposal in Bondeni neighbourhood is effected through sewer reticulation NAWASCO is in charge of liquid waste management. Access to sanitation refers to sanitation facilities being physically accessible to everyone in times of need within or in the immediate vicinity of each household, health/educational/public institutions and other places. Unfortunately there is widespread vandalism of the sewerage furniture particularly the theft of cast iron manhole covers leading to garbage finding its way and clogging the sewer line.

According to Mangat (1999) one aspect that contributes to water pollution in Nakuru town is the possibility of liquid content from filled pit latrines leaking to the underground and getting transported along geological fault lines to the lake causing contamination of ground and surface water. While this is obviously applicable to the Bondeni slums, what may not be so obvious is that in the other neighbourhood estates there is frequent sewer line failure and overflow through manholes which end up creating the same problems for the lake.

Some of the other challenges facing Nakuru municipality include Treatment and management of domestic and industrial waste, discharge of effluence to Lake Nakuru National Park, an
overwhelmed sewer line leading to regular bursts and pollution though the line is currently being upgraded by NAWASSCO.

Source: Field Survey 2014

Plate 5.5: Burst sewer flowing through a storm water drain to L. Nakuru National Park

5.2.12 Health Issues
The Public Health Office in Nakuru Municipality draws its mandate from the Public Health Act (Cap 242) and the Food, Drugs and Chemical Substances Act (Cap 254). Its roles include but are not limited to disaster management, health care management in the municipality, monitoring water and sanitation, maintenance of public hygiene, issuance of food licenses, inspection of institutions, food and water control, and prevention and suppression of diseases within the municipal. The Public Health Office has reported an increase in illegal food kiosks in Bondeni. With the increase in unemployment in the town some people have resorted to opening unlicensed food kiosks as a means of make a living.
A major management issue facing the public health department is enforcement of the law against illegal food kiosks. The health department has noted that that people would prefer to break the law in order to make a living for themselves. Though these illegal food kiosks present a significant health risk to the public, the council recognizes the dire need for a source of income for the high number of the unemployed and those living in poverty, and has therefore found it difficult to fully enforce this law.

Bondeni Neighbourhood has 1 public and 2 private health facilities all of which are within walking distances

5.2.13 Roads
The sector has a vision of having a cost effective, world class infrastructure facilities and services in support of Vision 2030 and Mission to provide efficient, affordable and reliable infrastructure for sustainable economic growth and development through construction, modernization, rehabilitation and effective management of all infrastructure facilities.

The Nakuru District Development Plan 2008 -2012, had identified the constraints to achieving the mission of the plan as inadequate funding, destruction of roads by rain water, destruction of roads by overloaded vehicles and heavy traffic flows, blockage of drainage systems including culverts and poor storm water drainage systems.

The Kenya Urban Roads Authority (KURA) together with the Municipal Engineer’s Department is in charge of the other roads within the municipality. The total road network covers a distance of 323 kilometers, 96 of which is tarmacked, 50 graveled and the rest earth. Out of the 96 kilometers of tarmacked roads, 12.8 cover the town center and main accesses to the various residential estates. The tarmacked roads in Bondeni Neighbourhood are the main spine road, Shuleni Road and the ones feeding to it namely Kalewa Road, Market Road, Alms House Road Kahawa Road and Mumias Road. The tarmac roads are in a state of disrepair due to poor maintenance. The other roads are finished in gravel and are fairly motorable. Plate 5.4 is a picture of Market Road illustrating the surface condition and the blocked side drains.
Currently, roads that are managed by the KENHA and KURA are funded by the National Government through the Kenya Roads Authority. Other roads which are managed by the Municipal Engineer are funded through the Local Authorities Transfer Fund (LATF) and donor programmes.

5.2.14 Commercial activities
The major commercial activities occur in Burma market. The market accommodates cottage industries dealing in leather trades, shoe making, tailoring and metal fabrication. There are also various shops dealing in shoes, meat products, eateries and confectioneries. The majority of these commercial outlets are run by family members from the neighbourhood.

Outside the market and spilling onto Shuleni road there are fabrication activities (Jua Kali) dealing in charcoal stoves, rain water goods, metal doors and windows and farming implements.
Unauthorized commercial structures have also been constructed on the road reserve to complement the formal ones in the market.

Other commercial premises comprise unauthorized stalls which are sell groceries, raw vegetables and other foodstuffs.

Source: Field Survey, 2014

Plate 5.7: Jua Kali Business and unauthorized structures spill on Shuleni Road reserve from Burma Market Notice raw sewage flowing from Bondeni Slums to Lake Nakuru

5.3 Objective 3: Evaluation of the Housing Demand and Supply

The table below (5.7) provides a summary of characteristics of the various house types in Bondeni Neighbourhood

<table>
<thead>
<tr>
<th>S/No</th>
<th>Estate/Settlement In neighbourhood</th>
<th>Number of Units</th>
<th>Type of Unit (Description)</th>
<th>Access to Sanitation (Facility Description)</th>
<th>Monthly Rent Ksh</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kivumbini</td>
<td>624</td>
<td>Single Rooms</td>
<td>8 units sharing toilets and</td>
<td>600</td>
</tr>
<tr>
<td>No.</td>
<td>Location</td>
<td>Category</td>
<td>Unit Type</td>
<td>Description</td>
<td>Rent</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------------</td>
<td>----------</td>
<td>-----------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>2</td>
<td>Shauri Yako</td>
<td>Category 1</td>
<td>Single Rooms</td>
<td>2 units sharing attached toilet and bathroom</td>
<td>800</td>
</tr>
<tr>
<td>3</td>
<td>Shauri Yako</td>
<td>Category 2</td>
<td>Large Single Rooms with Kitchen</td>
<td>Unit contains toilet and bathroom</td>
<td>1,200</td>
</tr>
<tr>
<td>4</td>
<td>Shauri Yako</td>
<td>Category 3</td>
<td>Single Rooms with Kitchen</td>
<td>2 units sharing attached toilet and Bathoom</td>
<td>1,000</td>
</tr>
<tr>
<td>5</td>
<td>Kaloleni Type A</td>
<td></td>
<td>Single Rooms</td>
<td>2 units sharing attached toilet and bathroom</td>
<td>600</td>
</tr>
<tr>
<td>6</td>
<td>Kaloleni Type B</td>
<td></td>
<td>Single Rooms with cooking corner</td>
<td>2 units sharing attached toilet and bathroom</td>
<td>1,200</td>
</tr>
<tr>
<td>7</td>
<td>Kaloleni Type C</td>
<td></td>
<td>Living Room, 1 Bedroom and Kitchen</td>
<td>Unit contains toilet and bathroom</td>
<td>1,200</td>
</tr>
<tr>
<td>8</td>
<td>Old Ojuka</td>
<td></td>
<td>Living Room, 1 Bedroom, Kitchen and own compound</td>
<td>Unit contains toilet and bathroom</td>
<td>3,000</td>
</tr>
<tr>
<td>9</td>
<td>New Ojuka Type 1</td>
<td></td>
<td>Living Room, 1 Bedroom, Kitchen and own compound</td>
<td>Unit contains toilet and bathroom</td>
<td>3,400</td>
</tr>
<tr>
<td>10</td>
<td>New Ojuka Type 2</td>
<td></td>
<td>Living Room, 2 Bedrooms, Kitchen and own compound</td>
<td>Unit contains toilet and bathroom</td>
<td>4,000</td>
</tr>
<tr>
<td>11</td>
<td>Lumumba</td>
<td></td>
<td>Single Rooms</td>
<td>8 units sharing toilets and bathroom (public block)</td>
<td>600</td>
</tr>
<tr>
<td>12</td>
<td>Baharini</td>
<td></td>
<td>Single Rooms</td>
<td>8 units sharing toilets and bathroom (public block)</td>
<td>600</td>
</tr>
<tr>
<td>13</td>
<td>Paul Machanga/Abong Loweye</td>
<td></td>
<td>Single Rooms</td>
<td>8 units sharing toilets and bathroom (public block)</td>
<td>600</td>
</tr>
<tr>
<td>14</td>
<td>Nakuru Press</td>
<td></td>
<td>Single Rooms</td>
<td>2 units sharing attached toilets and bathroom</td>
<td>600</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>2,846</td>
</tr>
</tbody>
</table>

*Source: Field Survey 2014*

### 5.3.1 Housing Typology:

The Bondeni Neighbourhood units are all at ground floor level. The construction is of permanent materials with roof cover being either galvanized iron sheets or asbestos supported on timber framework. The walling material is stone while the floor is a concrete slab finished with a cement/sand screed. The foundations are of a permanent nature with stone sub structural walling and a concrete strip foundation. Other than Old Ojuka, New Ojuka and Kaloleni Estates, all other residential units are one roomed and are part of a block of eight (8) units.
Based on the unit characteristics the typology is as represented in table 5.8 below:

**Table 5.9 Housing Typology**

<table>
<thead>
<tr>
<th>S/No</th>
<th>Description of House Type</th>
<th>No. of Units</th>
<th>% of total No. of units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Single room Unit with 8 units sharing a toilet and bathroom cubicles (public toilets)</td>
<td>1712</td>
<td>60</td>
</tr>
<tr>
<td>2</td>
<td>Single room Unit with 2 units sharing an attached toilet and bathroom cubicles</td>
<td>556</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>Single Rooms with cooking corner with 2 units sharing attached toilet and bathroom cubicles</td>
<td>200</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>Single Rooms with Kitchen with toilet and bathroom cubicles</td>
<td>16</td>
<td>0.6</td>
</tr>
<tr>
<td>5</td>
<td>Large Single Rooms with Kitchen and toilet and bathroom cubicles</td>
<td>6</td>
<td>0.0</td>
</tr>
<tr>
<td>6</td>
<td>Living Room, 1 Bedroom, Kitchen, toilet and bathroom</td>
<td>312</td>
<td>11</td>
</tr>
<tr>
<td>7</td>
<td>Living Room, 1 Bedroom, Kitchen, toilet and bathroom with own compound</td>
<td>40</td>
<td>1.4</td>
</tr>
<tr>
<td>8</td>
<td>Living Room, 2 Bedrooms, Kitchen, toilet and bathroom with own compound</td>
<td>4</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>2846</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Survey, March 2014

Observations revealed that the occupants of the one roomed units were dissatisfied with the space provided since 100% of the occupants of affected units had partitioned the rooms using clothed curtains. The rooms now have a cooking corner, a sitting area and an enclosed sleeping space. The households who have been able to acquire two adjacent rooms have introduced an interconnecting door to create a bigger sleeping unit implying there is need to have more than one room for a household. Within the compounds with one bedroom houses, the occupants have constructed additional semi-permanent structures where the household grown up children sleep.

5.3.2 Rent Typology

The housing rents range between Kenya shillings six hundred for the single rooms and Kenya shillings four thousand for the two bed roomed units. According to the County Housing officer the greatest challenge is rent collection in that about 80% of the households occupying the single roomed units do not pay their rents regularly. This has led to the estate being neglected in the provision of services including infrastructure. Table 5.9 is a tabulation of rents charged for different units while figure 5.4 shows the percentage distribution of rent among the households.
Table 5.10 Rent payable per month

<table>
<thead>
<tr>
<th>S/No</th>
<th>Amount of Rent per month (Ksh)</th>
<th>No. of Units</th>
<th>% of total No. of units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>600</td>
<td>1996</td>
<td>70</td>
</tr>
<tr>
<td>2</td>
<td>800</td>
<td>272</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>1,000</td>
<td>16</td>
<td>0.5</td>
</tr>
<tr>
<td>4</td>
<td>1,200</td>
<td>518</td>
<td>18</td>
</tr>
<tr>
<td>5</td>
<td>3,000</td>
<td>17</td>
<td>0.6</td>
</tr>
<tr>
<td>6</td>
<td>3,400</td>
<td>23</td>
<td>0.8</td>
</tr>
<tr>
<td>7</td>
<td>4000</td>
<td>4</td>
<td>0.1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>2846</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source: Field Survey, March 2014*

Figure 5.4 Percentage Distribution of Household monthly rents

5.3.3 Access to Water and Waterborne Sanitation

Water for house use is provided by the Nakuru Water and Sewerage Company (NAWASSCO) which also maintains the sewer lines. NAWASSCO is a limited liability company that manages water services and sanitation in the jurisdiction of Nakuru and its environs.
All the units have access to piped water and waterborne sanitation but the convenience of access varies. Currently only 44 residential units access water on a daily basis while the other 2802 units access water four days in a week.

1712 one-roomed units have neither water taps nor waterborne sanitation within them. They use shared public facilities. Most of the shared facilities have been vandalized extensively and they lack water taps, shower heads and flushing cisterns. 100% of the households using public facilities complained of the inconvenience of use during the night and rainy weather conditions.

756 units share sanitation facilities which are shared between two units. The households complained of problems similar to those of the 1712 units. In both cases water supply is rationed to four days in a week.

378 units have inbuilt kitchens and bathroom facilities and have running water every day of the week. It is noteworthy to mention that the households who share sanitation facilities are not charged for water use by NAWASSCO. Table 5.10 illustrates the distribution of waterborne sanitation while figure 5.5 shows the percentage distribution.

**Table 5.11 Housing Access to waterborne sanitation**

<table>
<thead>
<tr>
<th>S/No</th>
<th>Description of House access Type</th>
<th>No. of Units</th>
<th>% of total No. of units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Units sharing public toilet and bathroom cubicles.</td>
<td>1712</td>
<td>60</td>
</tr>
<tr>
<td>2</td>
<td>Units with each 2 sharing an attached toilet and bathroom cubicle</td>
<td>756</td>
<td>27</td>
</tr>
<tr>
<td>3</td>
<td>Units with inbuilt toilet and bathroom cubicles</td>
<td>378</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>2846</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source: Field Survey, March 2014*
5.3.4 Cooking space profiles

Of the total 2846 units, 2268 single rooms have no defined cooking area while another 200 have a defined cooking corner. The remaining 378 units have a kitchen with water tap and sink. 88% of the respondents who had no kitchen disposed of used water and fluids directly onto the public spaces outside their doors thus polluting the grounds. Table 5.11 illustrates the frequencies of provision of cooking spaces while figure 5.6 illustrates the distribution.

Table 5.12 Housing Access to Cooking space

<table>
<thead>
<tr>
<th>S/No</th>
<th>Description of House access Type</th>
<th>No. of Units</th>
<th>% of total No. of units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Units without defined cooking space for cooking.</td>
<td>2268</td>
<td>80</td>
</tr>
<tr>
<td>2</td>
<td>Units with a cooking corner (No water tap or sink)</td>
<td>200</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>Units with a kitchen with water tap and sink</td>
<td>378</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>2846</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Survey, March 2014
5.3.5 Outdoor spaces provision
Only 44 units (representing 1.5%) had enclosed compounds with a gate and fence. The other 2802 units (representing 98.5%) had no defined outdoor spaces and as a consequence the entrance doors opened directly into public spaces. The households occupying units without their own compounds reported that there were increasing incidences of insecurity and vandalism which affected them.

5.4 Objective 4: Development plan for improving the Neighbourhood

5.4.1 Decay of housing fabric and Overcrowding in housing units
The units show signs of decay from lack of maintenance. 78% of the units were meant for single person occupancy. The average number of occupants is on average four times the design capacity. The rooms are therefore overcrowded leading to lack of privacy and susceptibility to diseases. The solution is to provide new housing and establish estate management systems

5.4.2 Overstretched service Infrastructure and support facilities
The water supply, sewerage system, roads and social amenities currently supports four times the design load. This has resulted in water rationing, bursting of sewer lines and overcrowding in the library, social hall, hospital and open spaces. To support the new population there is need to construct modern service lines and buildings. The neighbourhood is ripe for redevelopment.
CHAPTER SIX: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1 Summary of Findings

6.1.1 Objective 1: Evaluation of Legal, Policy and Institutional Framework

According to the Constitution of Kenya (2010), the right to housing is a constitutional right provided for in the Bill of Rights. Section 43 (1) (b) of the constitution provides that every person has the right to accessible and adequate housing and reasonable standard of sanitation. The state of the neighbourhood is an indication that the constitutional right has as yet to be met. The situation at the moment conforms more to the Marxist definition, where housing is a product whose consumption can only be realized by those with a housing need and who can afford to purchase it. The market requires government intervention if the right is to be realized.

Urban areas and cities act (2011) requires that the people who would be affected by a physical development plan be involved in its preparation in order to address local realities and to ensure ownership. It also requires that towns have requisite infrastructure to ensure a healthy and safe environment. The county government has as yet to meet these requirements.

EMCA (1999) requires annual environmental audits to address impacts identified during the environmental impact assessment and all emerging issues. Lack of maintenance of public buildings, open spaces and service lines was a pointer to the problem of non-compliance with the act painting the picture that either the audit was not being undertaken or the results were not being implemented. The National Environmental Management Authority needs to be empowered to effectively play its oversight and enforcement role.

On Policy and institutional framework, the study found that the municipality is experiencing institutional conflicts resulting in lack of clear mandates within the county government leading to duplication of responsibility and/or abdication of duty. The lack of adherence to the physical planning Act cap 286 is evidenced in the emergence of unauthorized structures, poor implementation of policies and poor coordination by the planning institutions.

Vision 2030 and the National Housing policy are designed to facilitate provision of 150,000 housing units in urban areas per year. The increase in population from 1999 to 2009 was 76,728
persons while the housing stock grew by 2,893 units. At the rate of 4 persons per household (Nakuru Strategic Structure Plan, 1999) the increased housing stock could only accommodate 11,572 leaving 65,156 persons (equivalent to 16, 289 households) without formal housing. The policies have therefore not been effective in provision of housing in Nakuru. This policy confirms Abddullah Mohammed Alghamdi’s finding that free market conditions alone would not be able to satisfy an exceptionally increased demand for housing but would, on the contrary bring about unfavourable conditions such as increased housing price and rent levels and squatting (The Housing Cycle Theory with regard to Housing Development in Saudi Arabia, Journal of King Abdulaziz University: Eng. Sci. Vol. 7) (1995).

The Housing Act empowers NHC to construct dwellings; carryout approved schemes; and layout and provide services for approved schemes. Nakuru has benefitted from houses constructed by the housing corporation in the past but due to inability to comply with the terms of provision of housing ended up selling two housing estates (Pangani and Kabachia) to offset debts. There is therefore need to enhance the county governments ability to meet the criteria for attracting NHC support.

6.1.2 Objective 2: Socio-Economic Characteristics of Neighbourhood

The majority of the households derive their income from informal jobs. This could be attributed to the general economic state of the town and also to the low education levels considering that 77% of the people had no post secondary qualifications. 78% of the households belong to the poor and floating class. It is apparent from the rent default rate and frequent electricity disconnections that this group cannot spare 30% of their incomes on rent (Rule of thumb) thus making it difficult to include them in the development process of their neighbourhood.

In terms of recreation and social facilities the neighbourhood has a social hall, a library, sports field (Kamukunji stadium), health care, educational and recreational amenities. It neighbours the world famous Lake Nakuru Game Park and is a kilometer away from the Afraha Stadium. For an area of approximately 1.7km² the neighbourhood is well served with facilities. However, their capacity and level of maintenance need to be improved.

The neighbourhood is well served with an efficient road network. The quality of roads is low due to poor maintenance of the carriage and drains. The market activities overflow onto the roads.
creating pedestrian and vehicular conflict. Households use public vehicles, motorcycles, bicycles or walk as their predominant means of transport. There is need for an integrated transportation system to address such conflicts and the emerging means of transport.

The main sources of energy for households within Nakuru municipality include charcoal, firewood, LPG, paraffin, solar energy and electricity. Electricity is expensive for the households leading to shared electricity connections and billing. Charcoal, the cheapest source of energy, causes pollution and environmental degradation. There is need for the county government to assist the households access clean but affordable energy.

There is endless heaps of garbage dotting the landscape. Nakuru municipality uses the open dump field system as the primary means of disposing garbage. The County Government has partnered with the private sector in solid waste management. The collection of solid waste is not always efficient and many households end up dumping waste outside their compounds including in the storm drains and roads.

Liquid waste disposal in Bondeni neighbourhood is effected through sewer reticulation. The sewerage system is poorly managed leading to leaking and burst pipes which cause contamination of ground and surface water and which may affect Lake Nakuru Park. Poor waste management has had serious health effects on the population.

6.1.3 Objective 3: Housing demand and supply.

Nakuru town’s population growth rate is estimated at 5.68 per cent. The rate of increase in housing is almost stagnant with construction being 458 units in 2006, 487 units in 2007, 516 units in 2008, 426 units in 2009, 435 units in 2010 and 435 units in 2011. There has been no recorded growth in municipal council housing in Nakuru Town since independence. The actual housing provision can be illustrated as follows:

Population growth between 1999 and 2009 (census reports) = 76,128 people
Number of housing units required for additional population = 19,148 (i.e. 76,124/4 persons)
Actual authorized houses developed within period (KNBS) =2,893 units
Housing gap (i.e. 19, 148 – 2,893) = 16,289 units
% households lacking recognized shelter = 85%
The 87% of the neighbourhood households living in one roomed units without kitchen and toilets improvise the space use by curtaining to provide spaces for sleeping, cooking hosting of visitors. For such households cooking and storage occasionally took place outdoors in the shared grounds. For those units with compounds, some households had constructed additional rooms for their children to sleep in and had cultivated to supplement the food from the market. Due to poverty levels the households are unable to relocate to better neighbourhoods. This arrangement is in line with Morris and Winters of housing adjustment theory, in which households improvise so that available housing can suit their social norms.

The housing fabric has deteriorated appreciably with roofs leaking and walling crumbling in a good number of cases. Due to poverty levels the rent default rates are high leading to availability of low amounts of money with which to undertake house and compound maintenance which in turn leads to unsustainability.

On issues of individual open spaces, only 44 units (representing 1.5%) had enclosed compounds with a gate and fence. The other 2,802 units (representing 98.5%) had no defined outdoor spaces and as a consequence the entrance doors opened directly into public spaces. Incidences of crime resulting from non secured housing were frequently reported. This finding agrees with Alexandra M. Curley’s finding in the article ‘Theories of Urban Poverty and implications for Public Housing Policy’, where the claim is that the increase in poverty concentration coincides with a dramatic increase in joblessness, female headed households, welfare dependency, out of wedlock births, segregation and crime (Journal of Sociology and Social Welfare, June, 2005, VolXXXII, number 2).

6.1.4 Objective 4: Development Planning

The infrastructure having been constructed for a smaller population is no longer able to support the growing population as manifested by rationing of water supply and failing solid waste and liquid waste management. The housing fails the test of the constitution of Kenya 2010 and the National Housing Policy.

The neighbourhood land is under-utilized and therefore provides scope for redevelopment.
6.2 Conclusion

Nakuru town has been the seat of Nakuru District and the now defunct Rift valley Province and is now Nakuru County headquarters and the fourth largest town in Kenya. For the last three decades, the population has been increasing steadily. The national census reports have shown the following population trends: 1989-163,927, 1999-231,000, and 2009-307,990 persons respectively. The town’s population growth rate is estimated at 5.68% (CBS 1999). According to KNBS (2009) the population density is 1041 persons per square kilometer. Despite the rapid increase in population, there has been no corresponding increase in the provision of housing and associated services.

Due to increased population without a corresponding increase in facilities, there is evident strain on the existing infrastructure and services and urgent measures are required to cope with the situation. Some of the interventions taken by the County Government in response to the ever rising challenges include review of the building by-laws, a sewer line expansion project, a strong public private partnership especially in the area of solid waste management, and development of Itale dam in Mau forest for enhanced water supply among others. Still much more needs to be done in the areas of water and sanitation, solid waste management, education, transport, health and energy sectors to support the current service and infrastructure demands.

The study found out that Bondeni Neighbourhood households’ incomes are low in relation to the average earnings from wages in the rest of the municipality. The majority of the neighbourhood occupants depended on casual jobs and informal businesses for their subsistence. The livelihood to the residents to a large extent depend on unlicensed activities like hawking, selling charcoal and vegetables and fabrication of consumer items (jua kali) either on the streets or in unauthorized structures despite the prevailing regulations forbidding such. These households can neither afford to pay economic rent nor to service mortgages.

Further studies are required to establish the factors that can be considered to review the legislative, policy and institutional framework to ensure that the 85% of the population living in unauthorized housing units are factored in the planning process of both the National and County Governments.
6.3 Recommendations

6.3.1 Recommendations on Legislative, Policy and Institutional Framework (objective1)

6.3.1.1 Improvements on legislative and Policy framework

- A law is just as good as the level of its compliance, implementation and enforcement. There is therefore need to build capacity in terms of education, awareness and staffing. The enforcement staff should be trained, the number enhanced and resources provided to carry out their duties. The citizenry should through education be educated of their responsibilities and their rights in law. For example the Constitution of Kenya, 2010, gives all citizens the responsibility of ensuring a clean and sustainable environment even as the Bill of Rights makes it their right to live in that kind of environment. The Cities and other Areas Act and the County Government Act require citizen participation in issues that affect them. On the one hand, an enlightened citizenry would ensure the cleaning of drains and careful disposal of both solid and liquid waste while on the other hand a capacitated enforcement staff would ensure orderliness in plan implementation, compliance with laws and a clean environment.

- The laws affecting housing need review. Access to credit is usually based on collateral. The laws should be repealed to embrace structures of lower quality which meet certain standards such as structural stability, safety and health. That way, owners of unauthorized structures (which the study found out to more than the authorised ones), can also access credit to improve dwellings and create better rental units for the households. In this respect the building code must be reviewed in the short term.

- The National Housing Policy’s strategy for affordable housing includes provision of pro bono services by housing professionals. The fees charged by such professionals are statutory charges. Secondly, there are statutory charges for approval of drawings and project reports such as Environment Impact Assessment reports. The Laws need to be reviewed to allow for modification of statutory charges.

- The Housing Act needs to be repealed to make it more embracing of issues affecting housing. Currently housing is covered under sectoral laws with the Housing Act covering only the National Housing Corporation.

6.3.1.2 Improvements on Institutional framework

- The County Government should put up administrative structures giving clear directions on offices and their responsibilities and provide a clear reporting structure. In the short term, the duties of the former employees of the municipality and those of the central government must be synchronised to avoid overlaps. The salaries must be rationalised to prevent disenchantment among certain categories of staff. A clear formula must be
established to determine how the available county funding will be used to ensure that staff salaries, operational activities and development are all equitably funded.

- The planning office must urgently be streamlined to not only deal with development control but to also handle town planning. It is difficult to have coordinated development without effective planning. The current CIDP covering the duration 2012 to 2017 is reported to have been prepared without a spatial plan, a reflection of the lack of effectiveness of the planning office.

6.3.2 Recommendations on Socio Economic character of Neighbourhood (objective 2)

6.3.2.1 Improvement on Revenue base for maintenance of neighbourhood

- The County Government should not only rely on revenue collection but should go further and put in place systems that will ensure efficient, accountable and transparent use of the available resources. The public must, in line with the requirements of Constitution of Kenya (2010) be involved in planning and budgeting, implementation and evaluation of the resources.

- The County Government should expand its revenue base to improve housing services through increased investments. The Municipality owned residential estates occupied by the higher income groups should be rented at just below market rates. Outlier cases of persons earning way above the neighbourhood were identified. Such persons can be able to pay more in order to raise enough money to support the provision of services to the neighbours who are vulnerable. The County Government could also borrow from international partners such as World Bank, DFID, and USAID to support construction of more houses and improve existing ones. Private/Public participation can be encouraged an example being the provision of cheap sanitary facilities by Iko Toilet (a private venture referred to as social entrepreneurship), which has provided a sanitation block at Kenyatta Grounds in the CBD.

- The County Government can encourage investment in industrial and commercial undertakings by providing incentives to private investors. This would increase productivity leading to more employment and better incomes for households. Investors can be invited to manage solid waste which would not only remove a financial burden on
the council but would also reduce the risk of diseases, ground pollution and contamination of the game park including the lake.

6.3.2.2 Improvement on Solid Waste Management
Nakuru municipality experiences serious challenges on solid waste management following lack of a proper disposal site. According to the County Director of Environmental, the Municipal Council of Nakuru generates 300 tons of waste with more than 200 tons (60%) being collected and disposed of at Giotto (a disused quarry neighbouring London Estate). Of the waste disposed by the council, slightly more than 15% is recycled. This study is proposing the following strategies to address the issues of solid waste management:

- The council should hold awareness campaigns to sensitize households on aspects of better solid waste management and incorporate them in decisions making. Besides, the council should embrace other techniques of waste management such as sanitary landfills to reduce negative environmental impacts.

- Waste management should start from the source of generation through consumption to disposal. This should encourage an effective Integrated Solid Waste Management system whose main activities are waste prevention, recycling and composting, combustion and disposal in properly designated sites and well managed landfills. The households should embrace separation mechanisms to collect their left overs for the purposes of recycling or decomposing based on best ISWM practices.

- Nakuru county government should institutionalize private-public participation in waste management through financial support, education and empowerment. Waste reclaimers should be included in this initiative. Nakuru municipality has developed an environmental by-law embracing community based organizations in solid waste management which should be encouraged.

6.3.2.3 Improvements on Liquid Waste Management
The sewer lines are being upgraded by NAWASSCO in conjunction with Japanese International Corporation Agency. Within the upgrading project there will be construction of additional lagoons and filtration chambers. Through KISP, the County Government is managing storm
water runoff thus reducing erosion and controlling destination points. It is also recommended that to better manage the surface run-off/storm water, the County Government should consider constructing filtration chambers or buffers along the boundary of Bondeni Neighbourhood and Lake Nakuru National Park to protect the park and lake from run-off pollution. More private, public partnerships should be encouraged.

6.3.2.4 Improvements on Water Services
The demand for water in Nakuru town per day is about 70,000m$^3$ but only about 40,000m$^3$ is supplied hence the challenge of supplying water to all people in Nakuru town.

Once NAWASSCO completes the development of the 100,000m$^3$ Itale Dam in the water towers of Mau forest, the demand will have been substantially addressed.

To reduce on water wastage, NAWASSCO should extend the use of Pre-paid meters whereby consumers are required to pay for water before its use. This would essentially mean that the County Government introduces connections to each unit. If well embraced, this technology will help to resolve problems of billing and collection of revenue. Since it is the mandate of the County Government to supply water and in view of its vital nature, it is necessary that the government plays an oversight role in supply management.

6.3.2.5. Improvements on Transport (Roads)
The roads and associated storm drains need urgent attention. The tarmacked sections have big potholes which need to be filled and sealed. Currently the storm drains running along the roads that flow through the Bondeni slums carry raw sewerage. Others are clogged with soil, garbage and growing vegetation. Rehabilitation of the road and associated works must be addressed urgently. It is recommended that:

- Public vehicle picking and dropping stages be created at appropriate centers so that each estate is easily served. Secondly pedestrian movement along the roads should be defined to separate people from vehicles.

- Construction of Southern bypass be anticipated and planning must take into account the benefits that can be tapped by the Bondeni Neighbourhood. Such benefits could include stop over shops, eating houses and a market.
6.3.2.6 Improvements on Transport (Walkways)

Since the estate has no defined footpaths there is need to design and construct them to both ease movement and to direct human traffic.

6.3.2.7 Improvements on Education

To improve learning and associated outcomes the following recommendations are made:

- Hiring of more staff for the schools and procurement of more learning resource materials to improve teacher: pupil ratio and book: pupil ratio. Currently the ratios are wanting.
- Introducing the school feeding programme to forestall drop out by the children who come from poor households and some of whom are in essence household providers.
- Construction/procurement and rehabilitation of class rooms, sanitary facilities, libraries/book stores, laboratories and furniture needed to accommodate the increasing number of students.
- Encouraging and facilitating enhanced participation of the private sector, religious institutions and other stakeholders in the provision of education facilities and services.
- Issuing of development guidelines to schools for effective use of community-based development resources such as CDF and LATF allocations.

6.3.2.8 Improvements on Energy

The following recommendations are made:

- Exploration of alternative sources of energy such as solar energy and geothermal energy given that the town is located in a geothermal energy zone. The connection prices to be subsidized.
- Household education on energy to be encouraged as part of conservation initiatives to minimise energy losses.
- Use of bio digesters from human excreta instead of or in addition to LPG to lower the cost of cooking with gas.
- As a long term measure allow other players in electricity provision to create competition, increase efficiency and consequently lower the cost of electricity to make it more affordable for cooking purposes.
6.3.2.9 Improvements on Economic base of Households

To improve the socio economic character of households the following recommendations are made:

- The County Government should provide incentives for doing business by making it easy to start businesses, reducing cost of doing business through tax waivers, cheap and accessible credit and minimized bureaucracy.
- The County Government to improve conditions in the existing markets through paving of open-air markets, reorganization of spaces and activities and provision of support infrastructure and services such as water, electricity, public toilets, and solid waste management.
- The County Government to support small scale business operators. The Youth and Women empowerment fund and procurement regulations favouring the same group should be strictly monitored to ensure equitable access and compliance. The empowerment is likely to greatly promote entrepreneurship in the municipality.
- The County Government should expand Burma market to accommodate the traders now operating between the market and the roads.
- The County Government should plan for the proposed bypass. The proposed 35 km length bypass from Lanet through the Lake Nakuru game park to the Njoro turnoff will pass along Bondeni neighbourhood to the south. The bypass will create business opportunities to the lower side of town and thus effectively drive development.

6.3.3 Recommendations addressing Housing Demand and Supply (objective 3)

6.3.3.1 Re-development of Housing Units

There are about 6956 public housing units within the town, 5434 of which are owned by the municipal council and 1522 by central government departments and corporations. Out of the houses owned by the Council, 2846 are within the neighbourhood. The rate of growth of the formal housing sector is minimal despite the high population growth. All the occupants of the neighbourhood are tenants. To address the planning issues this study advances the following proposals:

- Increase the housing stock through development of new units and redevelopment of existing ones.
• Use of the Floor Space Index (FSI) to allow for higher buildings (apartments) in stable areas to increase the housing provision.

• The County Government should create an enabling environment for private sector participation in housing production.

• The County Government should articulate the national housing policy at local level to spell out the roles of various actors in housing provision. Research on locally available, environmentally sensitive and cost effective materials and technology must be enhanced.

• The County Government should make available cost effective building designs and standards to make it easy for developers and investors to engage with the council and the people. The plan approval process should be made less complicated and cheaper.

• Encourage participatory land use planning process to educate the communities on the need for environmental conservation.

The housing delivery mechanism in urban areas for the low income section of the society involves redevelopment of housing schemes through government interventions. A low income household wanting to get an affordable house would usually consider being a part of the redevelopment process in which it would get a new house in exchange for its old one without any new expenditure (Mukhija, 2003). The process ends up failing because of the following reasons:

6.3.3.2 Recommended Housing Delivery System

Housing infrastructure does not only consists of the individual dwelling units that the households occupy but also other factors that make the housing facilities complete, which includes utility infrastructure like roads, drainage, water supply, sewerage, waste management, public facilities like schools, hospitals, parks etc. The other aspects to housing that form part of the production process includes the authorisation, planning, design, construction, land rights and financing for both the demand and supply sides of housing. Housing delivery as envisaged in the Housing Policy for Kenya (2004), comprises seven components, namely: labour, infrastructure, financing, land, building materials, authorisations and public facilities. Table 6.1 below provides an illustration of the contents of each of the components as they relate to redevelopment of a Neighbourhood:
### Table 6.1 Housing delivery system

<table>
<thead>
<tr>
<th>labour, machinery</th>
<th>Infrastructure</th>
<th>authorisations</th>
<th>financing, land, building materials, Public facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professionals (Planning, design, supervision), Skilled (craftsmen) Non skilled, Plant and Equipment</td>
<td>Roads, water supply, sewerage, drainage electricity, garbage collection</td>
<td>Planning/Zoning Permission, Land subdivision permit, Change of User Certificate, occupation certificates, environmental license, Building permit,</td>
<td>Loans for land acquisition and construction, Government Subsidies, personal savings, mortgage loan</td>
</tr>
</tbody>
</table>

*Source: Adaptation from IHS 2011*

### 6.3.3.3 Self-Help Housing Approach

There are various housing delivery options which governments all over the world follow to respond to the varying community needs for their financial assistance and other support linked to housing.

Self-help housing is defined as housing built by an individual or community with the support of the government. The community could include their own financial contributions, manage the project, or even construct it themselves (Coit 1994.) During the welfare state that existed during the 1940s till 1980s, the government provided housing for the low income groups and considered it their responsibility to provide the entire supportive infrastructure along with it (Stein 1991). But according to Mukhija (2001), end-users could manage their own housing more efficiently as compared to public institutions and hence the argument for self help.

The “Ladder of Citizens’ Participation” by Arnstein reveals that citizen participation is an equivalent of citizen power. It is the redistribution of power enabling the have-not citizens to be a part of the political and economic processes and to share in the benefit of the affluent society. When a development program proposes for community participation there could be various extents of power actually given to the have-nots within it. The degree of power is the highest when citizens take control through delegated power or partnerships rather than just being merely consulted or informed. When the participation is of the highest degree, it also brings about
accountability of the citizens towards their decisions within the program (Arnstein, 1967). Turner proposes that self-help may not necessarily mean self-construction only but also delegation and devolution of responsibility to the people and the power of participation in development process with legal rights (Turner, 1986)

The National Housing Policy (2004) proposes capacitating households to take control of their own housing needs. Self Help initiatives can be achieved through creating of cooperatives which then become vehicles through which institutions to implement housing delivery can be effected. Once the households are provided with serviced land in line with the policy proposals, they can, with the support of the National and County Governments make inroads in providing themselves with shelter. Table 6.2 below illustrates the savings that can be made if the community, through the self-help initiative, becomes its own developer.

| Table 6.2: Proposed measures to bring down building costs |
|-----------------------------------------------|-----------------|--------------------------|-----------------|
| Aspects of Production Process | % of total cost (in free market) | Interventions as in Housing policy | Strategy for achieving intervention | Approx. Savings as % of total cost |
| Land | Government Subsidy |
| Public Land, Leasehold, Trust land, Community land | | |
| Professional Fees | Services provided by National and County Governments civil servants |
| Services of Architects, Quantity Surveyors, Structural and Services Engineers, Planners, EIA Consultants | 20 (Statutory charges) | Pro-Bono Services |
| Authorisations | Government Subsidies |
| Council Approvals | Pro-Bono |
| NEMA Approvals | |
| National Construction Authority | 1.5 (statutory) | |
| 0.05 (statutory) | |
| 1 (statutory) | |
| Overheads | Households provide 50% support |
| 10 (Rule of Thumb) | Engage only skilled staff |
| Developers Profits | Households form |
| 10 (Rule of Thumb) | No developer |
| | | | 5 |
| | | | 10 |
From table above, 50% of construction costs associated with formal building sector can be shelved off the building costs. To assist the households better afford the units, the following strategies are proposed:

- The units are partially completed. Fittings and elaborate finishes can be fitted and fixed incrementally. Roads and footpath paving and furniture can be finished incrementally.

- The community to construct extra units for sale to private individuals at market price. The money realized can be used for maintenance (to pay administrative staff, for materials and labour). Secondly the better endowed neighbours will provide a market for commercial activities undertaken by the households thus improving their social economic status.

- The community to establish a materials production unit for the manufacturing and fabrication of windows, doors, wall blocks etc for use at discounted prices during construction and for sale at market prices to other parties. This will lead to skills development and also provide employment.
6.3.3.4 Housing Model

The model borrows heavily from Clarence Perry’s Neighborhood Unit Concept. Perry (1929) was a sociologist planner. Perry’s concept of the neighbourhood unit employed a variety of institutional, social and physical design principles, influenced by such popular notions in the 1920s as the separation of vehicular and pedestrian traffic, and arterial boundaries demarcating the inwardly focused neighbourhood cell from the greater urban lattice. The cellular nature of the neighbourhood unit allowed it to be utilized as a building block in the development of neighbourhood arrays, leading to its systematic modular usage during periods of rapid residential expansion in many countries across the globe.

Perry’s idea on neighbourhood consisted of four elements which included housing and service functions in schools, parks and playgrounds, and shopping. In addition, the Neighborhood Unit was geared specifically for the family that is, a household unit with children. The Neighborhood Unit concept is primarily concerned with a residential environment, including all those elements that support it. In his concept, work and industry spaces are left out with the assumption that workers would travel elsewhere to their jobs. In this model, the neighbourhood has a materials factory due to the need to control building costs and to provide employment to the households.

Perry intended to create face-to-face interaction between residents (social concept) providing an avenue for social interaction in order to build a cohesive community. This concept has been achieved through the use of courtyards for every four blocks. Fig 6.1 below is a proposal for redevelopment of Kivumbini Estate. Successful implementation would lead to replication in other estates within the neighbourhood as a process of urban renewal and redevelopment.
Original Provisions: 624 single rooms with no cooking area and using public sanitation facilities.

1. Gate off Shuleni Road. Parking, commercial centre, Materials production Centre and Solid Waste bins next to the Estate entrance.
   Residential Units, play areas and park separated from vehicles and trading activities.

2. Proposed densification: 816 2-Bedroom units with lounge, kitchen, water closet, shower room and balcony. Each unit with sub-lettable rooms.

3. Layout plan where 4 Blocks with 48 Units share a courtyard hence defining space for the households.

4. Open spaces for community activities provided.

5. Community Primary school to be renovated.


Source: Author, 2014

Figure 6.1 Proposed spatial plan for Kivumbini Estate in Bondeni Neighbourhood
6.4 Recommendations for preparation of a development plan (objective 4)
This chapter provides an analysis of the planning issues identified during the study and outlines the preferred solutions in form of a planning matrix.

6.4.1 Proposed Spatial Plan
While taking cognizance of the major challenges that face various sectors, sections and aspects of the neighbourhood, the plan attempts to build on potentials identified in the development of a social economic base for the households and the strengthening of institutions that oversee the housing aspects. The section uses mainly spatial concepts as a means by which the neighbourhood’s structure could be organized to achieve a more logical, efficient and sustainable existence. The underlying assumption is that this re-organization will have an overriding impact on both spatial and non-spatial aspects of the neighbourhood.

6.4.2 The Spatial Concept
A concept is a brief description of the structuring principles in spatial terms. The concept is a proposal to redevelop the neighbourhood to ensure that adequate housing is provided for the low and middle income groups through construction of low-cost and middle-cost houses in line with the requirements of Sessional paper No. 10 of 2004 (The Housing Policy for Kenya). A spatial plan for Kivumbini Estate is proposed as a pilot project which will thereafter be rolled out to the other estates. It will entail the development of 824 units, each with 2 bedrooms, a living room, a kitchen, a bathroom and a water closet having an overall floor area of 60m² per unit. The housing units will be arranged on four floors in compliance with the building code which requires a lift for five or more floors. This condition can been relaxed in line with the National Housing Corporation designs which has led to the construction of residential blocks in urban areas of five floors without the benefit of a lift. This effectively means that with requisite approvals, an additional 206 units can be constructed, making a total of 1,030 housing units. This would be about twice the number of units (616) that currently make up the estate.

6.4.3 Planning Issues on Housing and Community Facilities
- The housing units are poorly maintained and in a state of disrepair. The one roomed units are inadequate for families. Basic supply of water, power and sanitation is missing. Many
of the health problems facing residents are due to unsanitary environment: poor methods of waste disposal and ineffective storm water drainage.

- The outdoor spaces are not defined; there are no designed pedestrian paths, parks and play areas for children for each estate and insecurity is rampant
- The County Director of Housing lacks adequately trained staff, equipment and workshops to provide maintenance services to houses, grounds, services and social amenity facilities.
- There is lack of coordinated effort among the various institutions involved in provision of housing leading to deterioration of the estates
- Though the social amenity facilities have been provided they are poorly maintained, ill-equipped and understaffed.
- Burma market is congested leading to spill over into the open space and service roads. It is poorly maintained and services are run down. It is congested and not equipped for fire fighting, and lacks adequate water supply and sanitation services
- There is inadequate maintenance of physical facilities and equipment in public (municipal and government) health facilities. The one public health facility has been converted to a maternity hospital. A public health facility is required to serve the densely populated, low-income neighbourhood.
- Schools are poorly managed and lack acceptable teacher/book to pupil ratios. The physical infrastructure, sanitation facilities, furniture and grounds are inadequate and in a state of neglect
- There are no defined stages leading to public vehicles picking and dropping passengers at unregulated points along the roads. Secondly, alternative means of transport using bicycles have grown within the last few years thus creating a bicycle vehicular conflict since there was no design for bicycle use. The growing population has overstretched the pedestrian pavements and there is visible pedestrian/vehicular conflict. The roads are poorly maintained with the pavement dilapidated and drainage channels clogged.
- There is inadequate funding to develop and run required services.

The planning matrix in appendix 3 is a strategy for addressing the planning issues identified in the study.
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## APPENDICES

### APPENDIX 1: PLANNING MATRIX

**PLANNING MATRIX FOR RE-DEVELOPMENT OF BONDENI NEIGHBOURHOOD, NAKURU TOWN, NAKURU COUNTY**

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Planning Issues</th>
<th>Strategies</th>
<th>Activities</th>
<th>Timeframe</th>
<th>Actor</th>
</tr>
</thead>
</table>
| Evaluate policies and institutional framework governing Nakuru town        | • Implementation of new constitution (devolved government), Vision 2030, Urban and Cities Act, Physical Planning Act | • Re-align development of the town to meet the development goals in the strategic plans | • Asses the existing institutional framework  
• Strengthen capacity building  
• Carry out recruitment to increase skilled personnel  
• Increase budgetary allocation to promote capacity building  
• Sensitize and enlighten the public on decision making to promote good governance  
• Involve public in the policy formulation process  
• Updating and revision of different policies to suit changes in different sectors | ✓         | Governor, Municipal Board, Urban Manager and Officers in charge of Physical Planning Environment, Survey of Land, Education, Health, Public Works, Enforcement |

<p>| Examine the social-economic characteristics of the town | • Limited expansion of the neighbourhood due to sensitive natural boundaries i.e. National Park to the South and Settlement on the four other sides | • To optimize utilization of available land while conserving the Game Park | • Decentralization of economic activities such as markets in upcoming urban areas in and around Nakuru Municipality such as Lanet | • Re-planning and re-zoning of Bondeni neighbourhood | • Initiate systematic urban renewal | • Enforce development control regulations such as land subdivision | • Slum upgrading programme in Bondeni slum | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Governor, Municipal Board, Urban Manager and Officers in charge of Physical Planning Environment, Survey of Land | Governor and respective Heads in County Government Physical planning department Private investors |</p>
<table>
<thead>
<tr>
<th>Environmental degradation and pollution</th>
<th>Promote sustainable environmental management</th>
<th>Carry out an assessment on positive environmental impacts and the extent of environmental damages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define and delineate the crater and extent of the fault to ensure proper conservation</td>
<td>Carry out awareness campaigns on environmental issues</td>
<td>Streamlining the policies, by-laws to ensure clear penalties for environment polluters and other defaulters</td>
</tr>
</tbody>
</table>

**Governor, Municipal Board, Urban Manager and Officers in charge of Physical Planning Environment, Survey of Land**

Kenya Wildlife Service
NGO’s
World Wildlife Funding Organizations

<table>
<thead>
<tr>
<th>Ongoing devolution of government</th>
<th>To harness opportunities created by devolved governance structure</th>
<th>Provision of infrastructure such as access roads</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capacity building to ensure economic growth</td>
<td></td>
</tr>
</tbody>
</table>

**Governor and respective Heads in County Government**
<table>
<thead>
<tr>
<th>Issue</th>
<th>Action</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate water supply</td>
<td>To improve water supply from current 4 to 7 days in a week</td>
<td>Governor, Municipal Board, Urban Manager and Officers in charge of Physical Planning Environment, Survey of Land</td>
</tr>
<tr>
<td></td>
<td>To rehabilitate and expand existing water supply network</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Identify potential areas to expand water network</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Improve the policy and institutional framework on water management and development so as to enhance sectors performance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Conduct enlightening campaign on efficient use of water</td>
<td></td>
</tr>
<tr>
<td>Poor solid waste management</td>
<td>Promote integrated solid waste management</td>
<td>Governor and respective Heads in County Government Department of Environment</td>
</tr>
<tr>
<td></td>
<td>Design and implement an integrated solid waste management programme for Nakuru Municipality i.e. solid waste collection, segregation, transportation, storage, resource recovery and disposal of residues</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Creating of waste disposal landfills in a site outside town and in low density land</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Sensitization to general public and educating/training CBOs and private waste collectors • Create incentives for returnable and recyclable packaging • Increase taxes for material causing pollution such as polythene bags</td>
</tr>
<tr>
<td>Issue</td>
<td>Actions</td>
<td>Responsibilities</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------</td>
</tr>
<tr>
<td>Poor sanitation services such as sewer line coverage</td>
<td>• Promote the development of high quality sanitation infrastructure and services</td>
<td>County Government, Municipal Board, Urban Manager and Officers in charge of NAWASSCO,</td>
</tr>
<tr>
<td></td>
<td>• Rehabilitate the existing sewer line managed and regulated by NAWASSCO to cover</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• re-planning, redesigning and expansion of sanitation services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Monitoring storm water quality entering Lake Nakuru</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Expansion of lagoon and filtration chambers along Lake Nakuru</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Urban renewal programme through re-planning and re-zoning to allow for expansion of storm water drainage system</td>
<td></td>
</tr>
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<td></td>
<td>• Slum upgrading programs for Bondeni slum</td>
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<td>Insufficient and poor housing stock</td>
<td>Promote the development of good and affordable housing</td>
<td>Governor and respective Heads in County Government, Ministry of Housing,</td>
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<td>• Redesign and improve existing stock, through densification</td>
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<td>• streamline the use of revised building by-laws to increase housing supply</td>
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<td>• Deteriorating state of buildings</td>
<td>• Initiate urban redevelopment and renewal</td>
<td>• Initiate urban renewal development</td>
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<td>• Carry out beautification campaign</td>
<td>• Step up the periodic inspection</td>
<td>• Upgrade low income municipal housing</td>
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<td>• Facilitate affordable financing for land acquisition and construction and mortgage loans</td>
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<td>• Facilitate affordable financing for land acquisition and construction and mortgage loans</td>
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<td>• Provide Government Subsidies to materials manufacturers, developers and buyers</td>
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<td>• Encourage personal savings,</td>
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<td>• Provide pro bono professional inputs by using government employees. Use Government Equipment and Labour for construction</td>
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County Government, Municipal Board, Urban Manager, County Director Physical Planning, County Director Housing
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<th>Problem Area</th>
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<td>Poor health care</td>
<td>Increasing funding and infrastructure to Bondeni health facility</td>
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<td>• Policy framework to allow access to free medical care</td>
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<td>• Training of staff in the health facilities</td>
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<td>• Streamline the public health act to address issues on the ground</td>
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<td>• Increase the number of public facilities and densification of existing ones</td>
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<td>• Awareness campaign and public education</td>
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<td>Poor infrastructural provision in schools</td>
<td>Streamline policy on free education provision, facilities and amenities</td>
<td>County Government, County Director of education</td>
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<td>• Extra funding to educational facilities to facilitate provision of</td>
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<td>• Promote construction of high rise school blocks</td>
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<td>• Increase the teaching staff in public schools</td>
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<td>• Rundown condition of library and social hall</td>
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<td>• Rehabilitation of Library and Social Hall</td>
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<td>• Rehabilitate and expand existing social amenities</td>
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<td>• Give incentives to private developers and CBOs</td>
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<td>• Construction of new public facilities and densification of existing facilities</td>
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<td>• Increase capacity for private-public partnership</td>
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<td>• Streamline policy framework to ensure cost of production is lowered</td>
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<td>• Establishment of light industries for building materials production</td>
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<td>• Remodel to high rise the Burma markets to accommodate more traders</td>
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**County government, Municipal Council of Nakuru,**

**respective Heads in County Government**
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APPENDIX 2: HOUSEHOLD QUESTIONNAIRE

Project Proposal: Investigation of the challenges facing provision of housing in Nakuru Town, Nakuru County: The Case of Bondeni Neighbourhood.

Master of Environmental Planning and Management
Dept of Environmental Planning & Management
Kenyatta University

Household Questionnaire
(The information and data provided will be confidential and is intended for academic purposes only)

Name of the Interviewer ------------------------
Name of Estate --------------------------------
Date of interview -----------------------------

A. Household Information
1. What are your household characteristics? (Please fill in the table below)

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<th>S/No</th>
<th>Household member</th>
<th>Gender</th>
<th>Age</th>
<th>Educational level</th>
<th>Occupation</th>
<th>Source of income</th>
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B. Housing information
2. Do you own the house you live in? .........................Yes / No
3. What is the mode of housing occupancy? ......a) Municipal/Railway/Government house  b) Company house c) Rental house d) Owner occupier  e) others (specify)
4. If renting, how much rent do you pay per month (exclusive of water and electricity)?
   KSH---------
5. What type of house do you live in? a) Bungalow b) Maisonette c) Single room, d) one roomed with kitchen and bathroom e) Two roomed with kitchen and bathroom f) others (specify)
6. What type of land tenure is this housing occupying? ----------------------------------------
7. What are the problems associated with this type of land tenure?
   -----------------------------------------------------------------------------------------------
   -----------------------------------------------------------------------------------------------
8. Which housing problems do you encounter?
   -----------------------------------------------------------------------------------------------
   -----------------------------------------------------------------------------------------------
9. In your opinion, how can these problems be solved?

C Energy Supply
10. What is your main sources and uses of energy (Please fill in the table below)

<table>
<thead>
<tr>
<th>Energy sources</th>
<th>Types used</th>
<th>Amount used/month(Ksh)</th>
<th>Distance from source</th>
<th>Affordability/cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Charcoal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Firewood</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Paraffin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Electricity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Solar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. LPG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Others</td>
<td>(specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
11. What problems do you encounter in accessing and using the above mentioned energy sources?

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------------------------------------------------------------------------------------------------------------

12. How can the above mentioned problems be solved?)

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------------------------------------------------------------------------------------------------------------

D) Water, sanitation and solid waste management

13. What are your sources, quality and uses of water? (Please fill in the table below)

<table>
<thead>
<tr>
<th>Water Sources</th>
<th>Types available</th>
<th>Quality</th>
<th>Uses</th>
<th>Frequency of supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piped</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public stand pipe</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communal water kiosk</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water vendors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roof catchments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any other, specify</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13 i What facility do you use for cooking? a) own kitchen b) communal kitchen c) others (specify)

13 ii What facility do you use for a toilet? a) own waterborne toilet b) public water borne toilet c) own pit latrine d) public pit latrine e) bio latrine f) others (specify)

13 iii What facility do you use for bathing a) own bathing cubicle b) public bathing cubicle c) others (specify)

14. What are the main mechanisms for disposal of wastes generated by your household? 

-----------------------------------------------------------------------------------------------
14i) How do you dispose of Liquid waste? a) Sewer connection b) Septic tank c) conservancy tank g) others (specify)
14ii) How do you dispose of Solid waste a) collected by Municipal Council b) Collected by garbage collection company c) Collected by NGO/CBO d) Burning e) Thrown in the nearest open space f) compositing g) Others specify

15. What problems do you encounter in liquid waste management?

16. How can liquid waste management problems be solved?

17. Which problems do you face with solid waste management?

18. How can solid waste management problems be solved?

E. facilities, Amenities and Services Analysis

19. What is the adequacy and condition of the following facilities? (Please fill in the table below)
<table>
<thead>
<tr>
<th>Facility</th>
<th>Condition</th>
<th>Distance from house (Km)</th>
<th>Affordability</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECDE school</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tertiary institution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Institution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shopping Center</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worship Center</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social hall</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open spaces</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sports</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post office</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Banking</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**F) Transportation**

20. What are the dominant means of transport used by members of your household to work/services?

a) Public vehicle b) Personal vehicle c) Motor cycle d) Bicycle e) Walking 8) Others (specify)

21. What are the main problems associated with the means of transport that you use?

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APPENDIX 3: INSTITUTION INTERVIEW SCHEDULE

Project Proposal: Investigation of the challenges facing provision of housing in Nakuru Town, Nakuru County: The Case of Bondeni Neighbourhood.

Master of Environmental Planning and Management
Dept of Environmental Planning & Management
Kenyatta University

The information and data provided will be confidential and is intended for academic purposes only

Name of the Interviewer  

Name of Institution  

Services provided by Institution  

Date of interview  

1. What is your institution’s role and mandate in the provision of housing? 

2. What are the specific roles of your department in housing delivery?

3. What are the legislative and policy guidelines guiding your performance of duties and how have they been applied in Bondeni neighbourhood?

4. In your opinion, what are the issues influencing the quality of maintenance of the neighbourhood infrastructure and services and how can your department play an enhanced role
5. How is your department responding to the proposed bypass and the environmental impacts (if any) of the interaction of the neighbourhood and Lake Nakuru Game Park?

6. In your opinion, are the mandates of the various housing provision departments collectively adequate to provide adequate housing?

If yes, how can their mandate be better applied to provide effective housing delivery

If No, what are the existing gaps and how can they be addressed.

7. How are your vision, mission and service charter aligned to vision 2030 blueprint on bridging the gap between the current housing provision levels and the targeted number of new housing units in the neighbourhood and the larger Nakuru?