

**INSTITUTIONAL PROBLEMS AND CONSTRAINTS IN LAND UTILIZATION IN
THE PERI-URBAN AREAS OF MAVOKO MUNICIPALITY: A CASE OF
NAMANGA ROAD -STONY ATHI CORRIDOR**

DUP

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B.A (ARTS) HON. (NBI), 1995

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN PLANNING**



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**SCHOOL OF THE BUILT ENVIRONMENT
DEPARTMENT OF URBAN AND REGIONAL PLANNING
UNIVERSITY OF NAIROBI
AUGUST 2008**

DECLARATION

This Research Project is my original work and has not been presented for examination in any other university.

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DEDICATION

With special appreciation to:

Charlene Ong'era

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ABSTRACT

Planning for peri-urban areas has always posed many problems such as loss of agricultural land, lack of control, inadequate facilities, development pressures, lack of adequate data for land use changes, conflicting land tenure systems and institutional weaknesses. Planners and policy makers have responded to these problems with a variety of regulatory approaches, institutional arrangements and policies with little success. The study critically examined the roles of various institutions involved in land use planning and management in the study area and the statutory structure for their operations and their performance. Lack of a clear institutional framework for land use planning and management has led to haphazard development in the peri-urban areas as these areas experience rapid urbanization.

The institutional problems and constraints in land utilization in the study area manifest themselves in the form of unprocedural conversion of freehold land into urban uses, illegal invasion and subdivision of private land, informal subdivision of uncontrolled land, the emergence of informal settlements, inadequate provision of infrastructural facilities such as sewage and solid waste disposal systems and environmental degradation. The study has established that the land use planning and management institutions are faced with a number of problems such as lack of enough skilled manpower, equipments, resources, lack of organizational coordination, lack of a local physical development plan to guide and coordinate land use activities, fragmented land laws, conflicting jurisdictional powers and lack of local community's involvement in the planning and management process. The present institutional arrangements in the area have problems of coordination and functional definition. Therefore, the research recommended the need to establish clear roles of each of the institutions involved in land use planning and management in the area.

Further, the study recommended that there was need to coordinate all the planning institutions in the study area under one umbrella peri-urban body that would oversee and coordinate all land use planning and management activities both in the Namanga Road -Stony Athi corridor and other peri-urban areas of our cities and urban centres. This will involve devolving planning powers fully to the Local Authorities and equipping them with adequate skilled professional personnel. The study also recommended that human resource development, establishment of an integrated land management database and community participation in development control enforcement would be key to effective utilization and management of land resources in peri-urban areas for sustainable development.

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List of Abbreviations and Acronyms

Abbreviation	Meaning
CA	Central Authority
CBS	Central Bureau Statistics
COL	Commissioner of Lands
EIA	Environmental Impact Assessment
EPZ	Export Processing Zone
GLA	Government Lands Act
GMU	Gichimu and Muchiri
LA	Local Authority
LASDAP	Local Authority Service Delivery Action Plans
LATF	Local Authority Fund Transfer
LCB	Land Control Board
MOLG	Ministry of Local Government
MOLs	Ministry of Lands
NEMA	National Environment Management Agency
PHA	Public Health Act
PPA	Physical Planning Act
PPD	Physical Planning Department

CHAPTER ONE

INTRODUCTION

1.0 Background

Urban population in both developed and developing countries has been forecast to double from 2.3 billion in 1990 to some 4.6 billion in 2020 by which time more than half of the population in the developing world will be living in urban areas (United Nations, 1989) These increases translate into an enormous mushrooming of city growth with cities such as Mexico city, Sao Paulo, Jakarta, Bangkok and Bombay converting 3000 - 5000 hectares of rural land to urban uses annually, enough to double their built up areas over the next 20 years (Dowall and Clarke 1991). Nairobi has rapidly grown and is currently hosting over 3 million residents. This growth has leapfrogged the city's boundary, encompassing major vibrant human settlements nodes around the city.

In the process of urban growth and city expansion land is the essential ingredient as demand for residential, industrial and commercial land increases. Cities all over the world experience acute problems in providing land at the right place, and at the right time. As pressure for urban development increases, rural and agricultural land on the edges of the city is urbanized. The pressures of urbanization intensify the demand for land to accommodate the expanding population and urban functions. This has put urban land markets under pressure such that options previously available to low-income urban population such as that of settling in unused public land and low-density central city neighborhoods are rapidly disappearing due to growing demand for land. The emerging trend has been that the growth of cities and towns has, on most occasions, overshoot the jurisdictional boundaries of the same cities and towns firmly extending themselves in the Peri-urban fringe in order to satisfy the increasing demand for land for development.

This unprecedented urban growth is more pronounced in the peri-urban interface of the urban centres. The situation is further aggravated by the complexities of accessing land within the city boundaries where land values are influenced by the dictates of market forces and are often exorbitant making it difficult for most residents to have access to the same (Simiyu 2002). This situation increases demand for land on the peri-urban fringe and distorts patterns of urban growth and development. However, there is little evidence that there exists an effective institutional framework to deal with the current land use planning needs of the peri-urban areas. For example, within the Namanga Road - Stony Athi corridor the pressure for land development is great but the pattern is disjointed with no clear sense of planned expansion from a central point.

In Kenya many policies of the government emphasize the importance of land use planning in urban areas. The peri-urban area is neither purely urban nor rural yet much of public policy is designed to apply either to the urban areas or to rural areas. However, as the world becomes more and more urbanized effective land use planning and institutional legal framework will be necessary for the proper utilization of the land resources in these areas.

Managing peri-urban areas requires an integrated view of all activities and land uses occurring within them. As cities expand and show increasing complex interrelationships between activities in the urban area and between the urban area and its hinterland, and as the need to promote sustainable development issues e.g. integrating development and conservation, reduction of urban poverty, improved public governance etc. grows, so a pressing need arises for more appropriate institutional legal framework and land use planning processes/techniques to manage the physical development of peri-urban growth.

There is no effective land use planning approach and policy on how to manage peri-urban areas' development needs around our major cities and urban centres. A land use policy specifically dealing with the development needs of peri-urban areas, is also lacking. Consequently, these peri-urban areas have evolved clusters of urban settlements with diffuse boundaries and weak official planning controls leading to haphazard developments. This is due to institutional conflicts between city and rural authorities. Further, the rural local authorities lack the requisite capacity to manage and control development which affects the land use planning process.

These development characteristics of peri-urban areas are directly manifested in the Namanga Road -Stony Athi corridor of Mavoko municipality. The establishment of appropriate and effective institutions for land use planning and management will be important to the proper development of these peri-urban areas. This study therefore seeks to examine the institutional problems and constraints that prevail in the land use planning and management process in the planning and management of land use within this corridor area.

1.1 Problem statement

The haphazard development of peri-urban settlements is one of the major problems in Kenya. The growth of these areas needs to be controlled following the enactment of the Physical Planning Act (Cap 286) in 1996 to ensure orderly development and urban growth takes place in all regions of the country. This is because institutions managing land in urban settlements are many and varied. This structure has performed poorly, is not accessible to the poor, has a poor information system and uses a complex legal process.

The government of Kenya has a wide array of instruments for regulating land utilization both in urban areas and rural areas. These range from the detailed application of such devices as building codes, the Physical Planning legislation and other relevant land administration Acts. These instruments operate within a complex institutional arrangement sometimes resulting in the disconnect between plan preparation, implementation and development control.

The key to effective land use planning for peri-urban fringe areas like the Namanga Road-Stony Athi Corridor, lies in the existence of requisite institutional capacity and governance structures for judicious implementation and enforcement of approved plans, policies and strategies. Development control is a regulatory function of the state. However, this functional responsibility has been largely the domain of Local Authorities which operate under both the Local Government Act (cap 265), the physical Planning Act (Cap 286) and other relevant statutory legislations governing land use planning and management in Kenya.

Due to weak and inadequate capacity of our local authorities and lack of harmony and conflicts among the principal statutes that govern land use planning and enforcement, effective planning of peri-urban fringe areas such as the Namanga Road-Stony Athi Corridor has been wanting. Weak and inadequate capacity for development control enforcement has encouraged land investors to informally subdivide and convert freehold land into urban uses e.g. residential and industrial without complying with stringent land use planning requirements as the land is directly under the administration of the Mavoko land control board which lack enough trained personnel for the management of land.

The statutory planning system for the area has been further undermined by the increasing use of informal plans, part development plans, illegal invasions of private land and informal subdivisions of private land which is disposed off to the public without adequate infrastructure service provisions such as roads, water, open spaces etc. due to poor and inadequate institutional capacity. The number of institutions involved in urban land management in the area does not help either. In the Namanga Road- Stony Athi corridor area alone, we have the Land Control Board, the Mavoko Municipal Council, Ministry of Agriculture, the Physical Planning Department and the Ministry of Health. The complexity of institutional agencies and responsibilities results in overlapping powers and conflicts hence the ineffective utilization of land resources in the corridor.

Therefore the study seeks to provide a better understanding of the institutional problems and constraints affecting land use planning and management and recommend a system of urban land use planning policies and regulations for effective management of the growth of peri-urban fringe areas such as the Namanga Road-Stony Athi Corridor. In addition, outdated planning standards

and regulations, the absence of a coordinating framework between and amongst the public sector agencies and the private sector agencies has aggravated the ineffective planning of peri-urban fringe areas. Consequently, the study seeks to suggest an appropriate institutional framework for incorporating the community in the planning of our cities and towns.

Development control is a critical component of land administration and land use planning. Development control is used as a tool to regulate and manage land development activities. However, this study assumes that outdated legal institutional frameworks and inadequate capacity for planning and control of development and land use in peri-urban fringe areas has contributed to the disorderly developments taking place.

The development of Peri-urban areas is inevitable consequences of urbanization. Mavoko Municipal areas are experiencing rapid urban growth and development due to the processes of urbanization. This rapid urban growth is reflected spatially and through the municipality's population trends. The municipality's boundaries were extended from an area of 18km² to include 957km² in 1985. The boundary extension brought into the municipality's large tracts of agricultural land, most of which have been undergoing informal subdivision and conversion into urban uses like residential and others without supportive urban basic services like water, electricity and sewerage disposal systems leading to poor quality settlement environment in the municipality.

Availability of cheap agricultural and leasehold land and good transport facilities has attracted major housing and industrial investments into the municipality in the recent past. This has further encouraged the informal subdivision of agricultural land into urban uses as the demand for public land for development increases. The municipality also has no deferred public land which can be harnessed for public development and investments. This has forced investors to acquire and develop the formerly agricultural land in the municipality into urban uses. However, there are no effective land use planning and management measures put in place to control and coordinate these new urban developments by planning institutions.

This arises because of the multiplicity of institutions operating in the area within varying mandates and capacities for planning, controlling and management of land use and development activities. This had led to duplication of roles and poor coordination of their activities in the land use planning and management system. This has resulted in uncontrolled and unplanned urban growth in most of the municipal areas and in the Namanga Road –Stony Athi Corridor.

Presently, the main section of the Mavoko Municipal areas experiencing rapid urbanization

processes is the Namanga Road –Stony Athi Corridor. This area has attracted major industrial and housing investments like Hillcrest, Budget Housing and others. These residential estates are not supported by adequate basic services like water, electricity and sewerage disposal systems despite the growing population which is settling in the corridor due to ineffective development control by planning institutions. The study thus aims at making contributions towards the establishment of an efficient institutional legal framework for the planning and management of development and urban growth in the Namanga Road - Stony Athi Corridor. This may be relevant and applicable in other peri-urban areas in general.

The Namanga Road- Stony Athi Corridor boasts of large portions of land which have not been developed in spite of the rapid development activities taking place within the municipality. The land was allocated by the Government to private developers in 1992 who have been hoarding it for future capital gains. The land is currently used for peri-urban agriculture by the urban poor to ensure food security at the household level. This study assumes further that failure to regulate the use of this land will lead to the growing number of informal settlements in the area due to squatting and subsequent informal subdivisions of land thus resulting in haphazard development. This requires Mavoko Municipal Council to develop a viable policy approach for land utilization in the area and the entire municipality to avoid the area's developing into a slum-like settlement such as Mlolongo and Kyurnbi trading centres within the municipality.

The study will therefore seek to answer the following research questions:

1. What is the level of urbanization in the Mavoko area and what forces are underlying it?
2. What is the structure of land ownership systems in Mavoko and the Namanga Road - Stony Athi corridor?
3. Which institutions and agencies are responsible for planning, control and management of development and land use in the Namanga Road -Stony Athi corridor? How have they performed their development functions in this area so far?
4. What planning problems, challenges and constraints are posed by the land use changes taking place in the Namanga Road -Stony Athi corridor?
5. What institutional and policy framework would be desirable for the sustainable and efficient planning and management of development in the area?

1.2 Objectives of the Study

The objectives of the study are to:

1. To examine the level of urbanization and the forces behind it in Mavoko and the study area;

2. To examine the structure of land ownership, nature, pattern and rates of land use changes and factors behind them along the corridor;
3. To identify the institutions and agencies responsible for planning and control of development and land use in the corridor and their performance and the statutory structure and regulations under which the current development changes are being managed;
4. To identify challenges and problems experienced in the planning and land use management process; and
5. To propose possible measures for improved and more effective planning, management and control of land use within the corridor.

1.3 Assumptions of the Study

1. The pressure for urbanization in peri-urban areas of Mavoko Municipality will continue.
2. The state of control and pattern of development will continue to get worse.
3. The state of environment and service provision will continue deteriorating thus necessitating the need for urgent intervention through planning.

1.4 Justification of the Study

The Namanga Road -Stony Athi corridor is an area experiencing rapid commercial, industrial and residential development activities due to its suitable location along Nairobi – Mombasa highway. The new residential, commercial and industrial developments have boosted land values in the area leading to speculative land trading. This has encouraged the subdivision and conversion of use of both leasehold and agricultural land in the area for more intensive developments without complying with stringent planning requirements.

The immediate impact of the land development activities in the area is the wasteful utilization of land and urban sprawl along the major transportation routes such as the Nairobi-Mombasa and Namanga-Arusha highways. The emerging developments in the area have resulted in serious community infrastructure deficiencies, expansion of squatter settlements, invasion of private land, less health and safety standards, amenity, environmental pollution and reduction in economic efficiency. This requires effective measures to be taken to regulate land use and development activities in the area to ensure the common good of the local community.

The corridor has attracted major housing and industrial investments in the recent past. Major housing, commercial and industrial developments, subdivisions and conversion of use of freehold land into urban uses are being undertaken without an approved Physical Development Plan to guide, coordinate and control land use and development activities. This has resulted in sporadic haphazard development with no clear sense of planned expansion from a central point. Mavoko Municipal council should have an approved Physical Development Plan to guide development in

the area. This is a good case study which can be used to demonstrate how institutional constraints affect land utilization in the peri-urban areas of major cities and urban centres in the country.

The institutions managing land in the corridor are many and varied. These institutions include; Mavoko Land Control Board, Mavoko Municipal council, Departments of Lands, Physical Planning, Survey, Public Health, Roads and Agriculture. These institutions lack adequate equipments, manpower, financial resources for planning and control of land use and development activities in the area. The aforementioned institutions also operate under multiple legislative laws which govern their operations and duties. Some of the legislative laws give conflicting powers to different agencies resulting in a situation whereby none of the agencies can take sole responsibility for not having performed their duties effectively. For example, the Physical Planning Act Cap 286 empowers local authorities to control development activities in their areas of jurisdiction. However, under the Government Lands Act Cap 280 section 18(1) the Commissioner of Lands is assigned the same duties according to the restrictions given in the development leases. This results in duplication of authority and ineffective development control enforcement. Therefore this case study provides the researcher with an opportunity to evaluate how to minimize institutional constraints in the land development process.

The area was also chosen for the study as it is sparsely developed in comparison to other areas such as Mlolongo, and Kyumbi within the same municipality which have evolved into unplanned settlements. This is one factor which justified the selection of the area as a case study in order to develop a viable approach for land utilization and management in the area.

1.5 Scope of the Study

This study is limited to the Namanga Road -Stony Athi corridor of Mavoko municipality. The data will mainly be collected in the area enclosed between the Namanga Road -Stony Athi corridor covering London Distiller Industry, Harvest Horticultural farm, Gichimu and Muchiri residential Area, Athi River Steel Plant Industry, Kenya Meat Commission factory, Devki Steel Mill Industry and Senior Staff residential Estate of Mavoko Municipality (see map 4).

The main focus of the study is to evaluate institutional problems and constraints that affect land utilization in the Namanga Road- Stony Athi Corridor peri-urban fringe area, focusing on the structure of land ownership, nature, pattern and rate of land use changes taking place and the planning challenges posed by these land use changes. The study will also examine the level of urbanization and the forces underlying it in the study area and how it affects the use and development of land in the corridor. The study will also identify the institutions and agencies responsible for planning and control of development and land use in the Corridor and propose an alternative institutional legal framework for effective planning and management of development and

growth in the corridor.

1.6 Organization of the Study

The study is organized into the following chapters:- Chapter One covers introduction to the study, objectives and research methodology. Chapter Two covers literature review and the conceptual framework for the study. Chapter Three covers the background to the study area and how it impacts on land use planning and management. It also covers policy background. Chapter four covers institutions for land use planning and management of the study area.

Chapter Five presents planning challenges in the study area in terms of findings and analysis of data collected from the field related to the specific research objectives. The chapter gives a detailed examination of the structure of land ownership, nature, pattern and rate of land use changes in the study area and the planning challenges posed by these changes. A detailed analysis of their conformity or non-conformity to planning standards is discussed too. Visual, aids such as photographs, maps, pie charts, tables and other appropriate tools, have been utilized to illustrate the findings. Chapter Six discusses summary, conclusions and policy recommendations for adoption by relevant government institutions and other stakeholders concerned with land utilization and management in the Namanga Road- Stony Athi corridor of Mavoko Municipality. The last part of the thesis covers the Bibliography and Appendices.

1.7 Research Methodology

In order to critically investigate the stated problems and specific objectives, the following methodology was used. The first step of the study was to do a thorough literature review of past studies on peri-urban fringe areas' growth, planning, development control, policy administration and the institutional arrangements created to oversee the management of these areas. This literature review formed the basis on which the study proceeds. The second step involved making a familiarization tour of the study area in order to have good background knowledge of the area. This familiarization tour involved making observations and taking photographs and it influenced the sample design of the study. It also influenced identification of data needs, sources, designing of data collection instruments and methods.

The third step was the administration of the pre-survey questionnaires with the aim of testing their suitability in the field. This was to enable amendments to be made to the questionnaires in order to make them workable. The fourth step was the administration of the data collection instruments with the aim of collecting desired data. The data collection instruments used included questionnaires, Focused group discussions, Informal discussion, Key informants and direct observations. The fifth and last step was data analysis using appropriate techniques. It involved

lack of relevant documented data and/or literature materials on the area. Mavoko Municipal Council, which administers the area, has no Physical Development Plan for the area which would be used to shed light on how the various land uses were zoned before the new land uses emerged. The only documented history about the area's growth and expansion was contained in the individual plot files and records which council officials were not willing to allow the researcher to access. The bulk of the information available on peri-urban settlements is external and may not be applicable to the planning problems facing Mavoko Municipality.

In addition the data collection period was short (1 month). This was not adequate for comprehensive and detailed information gathering. Poor mapping of the area and poor land information system was a limitation to the study. Financial constraints proved to be another major limitation of the study. Finally most of the industrial establishments and other respondents were uncooperative in providing information relevant to the study due to wrong perception about the motive of the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Throughout the developing world, the largest rural-urban migration in human history is currently underway. At present about 43 per cent of the world's population lives in urban areas that is about 2.5 billion urban dwellers. Projections are that by 2005 about half of the world's population will live in urban areas, and by 2025 more than 60 per cent will. Almost all population growth over this period will go into urban growth (Swaziland Draft peri-urban growth policy for 1997:1). This will put urban land markets under pressure such that options previously available to low income urban population such as that of settling in unused public land and low density central city neighbourhoods will rapidly disappear while demand for land will grow.

According to the 1995 United Nation Report, it is projected that rapid urbanization is likely to lead to doubling in size of built up urban areas in most developing countries over the next 15-20 years. Land being the most essential ingredient in all forms of urban growth, devising equitable and efficient land development policies is one of the major challenges facing planners and policy makers in most developing countries. In order for a nation to ameliorate the negative effects of rapid urbanization it would have to formulate in advance policies and programmes for coping with problems of urban growth. This will ensure an orderly and balanced use of land and ultimately ensure that land is put into its highest and best use.

2.1 Peri-urban

Carter (1981) proposed a definition of the rural urban fringe as the space into which the town extends as the process of dispersion operates,... an area with distinctive characteristics which is only partly assimilated into the urban complex, which is still partly rural and where many of the residents live in the country but are not socially and economically of it (Carter, 1981:316) (Adell, 1999:9).

Peri-urban is a concept referring to a zone or area where urban and rural development processes meet, mix and inter-react on the edge of the cities. It is often not a discrete area, but rather a diffuse territory identified by combinations of features and phenomenon, generated largely by activities within the urban proper. The main characteristics of peri-urban areas are conflicting land property ownership, pressures from squatters, private developers or speculators and large land tenants etc. Different land market conditions feature dual systems (informal and formal) and various property and tenancy arrangements such as rental or customary right systems (Adell, 1999:11).

There is no universally accepted definition of the peri-urban fringe. The definition of an urban fringe depends on the country and the field of specialization of the researcher. What constitutes an urban fringe in one country may not be so in another country. In developing countries peri-urban fringe areas are associated with disorder and service deficiencies as well as areas of the low income earners. This is not true in the Western world where suburbanization has led to the high income earners occupying the fringe areas of cities (Herrington, 1984). Johnson (1974) describes the peri-urban fringe as "the zone at the edge of the city into which urban growth of various kinds is extending" and 'the area in which suburban growth is taking place and where rural and urban land uses are mixed together to form a transitional zone between town and country'.

According to the Swaziland Draft peri-urban growth policy for 1997, peri-urban areas can be defined as having all or some of the following interrelated characteristics:

1. Fast and unplanned growth resulting in negative environmental health and environmental degradation.
2. Jurisdiction is unclear or duplicated in matters of planning, land tenure and transfer.
3. Tenure of residents is not always based on clearly defined and enforceable title
4. Planning and building guidelines and regulations, rating Act, and provision of urban services are not applied.
5. Service infrastructure is inadequate to meet basic needs.
6. Social infrastructure does not meet basic ends.
7. A significant proportion of residents are in lower income categories.
8. Unplanned informal settlements to cater to the growing rental market, the rental market alone catering to demand.

In this study we shall adopt Carter's definition of the urban fringe, thus "the space into which the town extends as a result of the process of urbanization". This will be so because the transitional area around the outer edge of the city is the result of forces which operate in a variety of ways throughout the whole urban area. For example, in the study area urbanization pressure and rising land values within Mavoko Municipality's town centre and the neighbouring Nairobi city has pushed people to spread out and acquire cheap land for development in the corridor. Conflicting land property ownership issues typical of peri-urban areas such as organized land invasion, speculative subdivision and illegal conversion of agricultural land to urban land use are manifested in the area, hence the definition adopted.

The area is also attracting new urban oriented activities like industries, residential estates and commercial activities resulting in the increase of the population of the area as more people settle in the area. The study will therefore focus on establishing the degree of urbanization in

the study area and the forces behind these processes of urbanization. It will also examine the existing institutional structure and systems and their capacity for guiding and controlling the planning and management of land use and development activities in the study area.

2.2 The Urbanization Process

Urbanization is the process by which human settlement systems in a country changes from predominantly rural to urban so that more and more people live and work in cities and towns with their livelihoods relying on off-farm forms of employment. Urbanization is thus an increase in population of an urban area or the rate at which such rural population moves into urban areas (Mwangi, 2006). Some countries define any place with a population of 2,500 or more as urban, others set a minimum of 20,000. There are no universal standards and generally each country develops its own set of criteria for distinguishing urban areas. The United States defines urban as a city, town, or village with a minimum population of 2,500 people. In Kenya a settlement with 2,000 or more people is defined as urban (Ministry of Lands and Settlements Kenya, 1978).

In Japan, settlements with a population of more than 50,000 or more people are counted as urban. Therefore the level and conditions of urbanization may differ from country to country. The world has experienced unprecedented urban growth in recent decades. In 2000, about 47 percent of the world's population lived in urban areas, about 2.8 billion. More developed nations are about 75 percent urban while 40 percent of residents of less developed countries live in urban areas (see table 2). However, urbanization is occurring rapidly in less developed countries. It is expected that 57 percent of the world population will be urban by 2020, and that most of the urban growth will occur in less developed countries. According to UN Habitat 2004, 95 percent of population increase expected during the period 2000 to 2030 will be absorbed in urban areas of less developed countries whose population will rise from approximately 2 billion to 3.5 billion in 2030.

Africa has the world's highest urbanization rates with an annual average growth of 4 percent (UN Habitat, 2004). In the last two decades, the population of Africa has been growing within the range of 4 to 5 percent, twice the rates of the most developed countries and the world's average. Whereas urban growth rates have been falling secularly both in the world as a whole and in less developed countries in general, this is not the case in Africa. The urban population increased from 33 million (14.8 percent) in 1950 to 176 million (35.0 percent) in 1990, and it's likely to reach 903 million (58.6 percent) by 2005 (Obudho and Juma 2002).

In spite of the high rates of urbanization in Africa, Africa is the world's least urbanized region, with only 30 percent of its population living in urban centres. Compared with other

parts of the continent, East Africa has a recent history of urbanization which has developed as a result of colonialism. Kenya has one of the highest rates of urbanization in East Africa (Obudho R.A 1975). In 1962, 6.9 percent of Kenya's population lived in urban areas while Tanzania had 3.8 percent followed by Uganda at 3 percent. In 1948 only 5 percent lived in urban areas, increasing to 10 percent in 1969, 18 percent in 1989 and 35 percent in 1999. Therefore, Kenya's population indicates remarkable trends in rates of urbanization.

According to the 1969 and 1979 population census, there were 47 and 90 urban centres, respectively. During the 1962 and 1969 intercensal period, the urban population doubled. In 1969, urban dwellers represented 9.9 percent of the total population (see table 3). Both the 1989 and 1999 population census indicated that the levels of urbanization had risen to 14.6 percent, representing more than a doubling of the total urban population in about 10 years. The urban population grew at a rate of 7.9 percent per annum during the 1969 to 1979 intercensal period (Obudho and Juma 2002).

Much of the urban growth in the country's cities and towns has been attributed to the high natural population growth rates, increased rates of rural-urban migration and the extension of urban boundaries. Mavoko town has not been spared from this phenomenon. Mavoko Township has experienced a rapid increase in both Physical expansion and population growth. The geographical area has been increased through boundary extension from 18 km² to 957 KM² and the population from 9760 in 1979 to 48,936 in 1999 (CBS 1999).

The population grew to 52,379 persons in 2003 (CBS 2003) which is a 7 percent increase. However, this is attributed to both rural-urban migration into the area, natural increase and the boundary extension for the municipal areas. Narman and Dangalle (2006) have noted that peri-urban development is characterized with the rapid increase in the size, density and change in the composition of the population and the spatial expansion of urbanization related economic activities in the form of industries and services into the urban fringe. Similarly, in Mavoko town the process of urbanization has led to the increased population settling in the study area, changes in land uses and expansion of investments in industries, residential housing and commercial activities thus increasing its built up area. This has led to the rapid physical growth and expansion of the study area. However, the rapid urbanization of the Mavoko municipal areas has led to the informal subdivision and conversion of formerly agricultural land into urban uses without effective controls. This has led to the poor use of land, uncontrolled development and expansion of unplanned settlements like Kazito slum in the study area.

Though urbanization is good and infact desirable when well planned for, without effective land use planning and management it leads to haphazard and disjointed developments in most of our cities and urban centres. These characteristics of urbanization are well manifested in the Namanga Road – Stony Athi Corridor. As more people migrate into the Mavoko town, there has been haphazard conversion and development of agricultural land into urban development in its peri-urban areas like in the Namanga Road –Stony Athi corridor. This has led to the expansion of informal settlements, uncontrolled developments, environmental degradation and lack of basic services in the study area and the municipality in general.

Table 2:- Urban Population and Level of Urbanization, by Region (1980 – 2020)

Region	1980	2000	2020	1980	2000	2020
Industrial countries	803	946	1,054	70.3	74.7	79.8
High income countries	574	667	747	75.5	78.3	82.9
Transitional economies	229	279	307	59.9	67.1	73.4
Developing countries	951	1,944	3,293	28.8	40.3	51.8
Latin America and Caribbean	233	388	534	64.9	75.4	81.0
Sub-Sahara Africa	84	217	487	23.3	34.3	46.2
North Africa & Middle East	93	211	357	44.1	59.9	69.8
Asia & Pacific	541	1,128	1,916	22.8	33.9	46.4
India	159	286	499	23.1	28.4	39.2
China	201	445	719	20.0	34.7	49.4
Rest of Asia & Pacific	181	397	698	26.6	38.4	49.9
Word Total	1,754	2,890	4,347	39.4	47.4	56.7

Source:- United Nations, 1996c.

Table 3:-Kenya Rural and Urban Population 1948 – 1989 (Population in thousands)

Year	Total	Rural	Urban	Urban as % of Total	No. of Urban Centres
1948	5,406	5121	285	5.2	17
1962	8,636	7,965	671	7.8	34
1969	10,943	9,861	1,082	9.9	47
1979	15,327	13,020	2,307	15.0	90
1989	24,000	20,120	3,880	16.5	215

Source:- Based on Kenya's Population Census of 1948, 1962, 1969, 1979 and 1989

2.3 Institutional Constraints in Land Management in Peri-urban Areas

Various scholars have looked at the institutional problems and constraints which affect the capacity of land use planning and management agencies from effectively discharging their responsibilities in land use planning and management of peri-urban areas. In Kenya, the local Government which is one of the key institutions involved in land use planning and development control and management has been a subject of research since the 1960s. Much of the analysis of Kenya's urban authority system during the 1990s has focused on managerial efficiency and its inhibitive subordination to the central government. Yahya (1976) in his study of Nairobi's peripheral areas saw land use differences in the form of intermixture of agricultural,

industrial, recreational and commercial uses in these fringe areas. This intermixture of private land and public land made development control difficult for the local authorities. This phenomenon of mixed land uses is also found in the study area where there is both leasehold and freehold ownership systems, making development control problematic as much of the land is privately owned.

Yahya (1976) in his study of urban land policy in Kenya had further noted that several policy measures or instruments were used to regulate the use and the development of urban land. These includes instruments such as land banking, rating, development levy, land use zoning, density zoning, building control, development control, subdivision control and physical planning. These instruments provide a wide spectrum of measures taken to rectify urban land problems in Kenya.

Yahya went on to observe that in spite of meticulous and complex administrative and legal machinery, the intricacies of the urban land market are such that corruption plays an important part as councilors instigate private land invasion, low morals and lack of motivation in the civil service (Ministry of lands) leads to ineffective land management. Thus land use planning and management in the peri-urban areas will entail an institutional setup that is capable of coordinating and guiding activities of all planning agencies to execute the existing various land policy provisions in order to regulate and control land use.

Shibira(1978) in his study of land use planning policies for the Physical Development of Peri-urban areas in Shirere – Kakamega had noted that peri-urban areas had shown considerable inconsistency with the orderly planned development of the town in which they are found. Shibira attributed their haphazard developments to poor land management, ineffective development control, the mixed land tenure system in the areas and lack of resources to deploy the needed manpower for policing of these areas by local authorities.

Shibira further observed that although land control legislations existed in the form of Local Authority Regulations, Town Planning Act and Land Planning Act (1968), there was overwhelming evidence that there was no execution of the appropriate provision to ensure coordinated development. Shibira did not however address the failure of the development control in the context of institutional constraints such as lack of enough personnel, equipments, information data bank, and finances to control the situation. The gap in his work is who is to execute these provisions and how and at what level of planning.

Kanthukya (1979) in his study of the problems facing Machakos Township Authority in the preparation and implementation of physical development plans, noted that land use development posed a challenge to local authorities which were inadequately equipped

politically, financially, administratively and technically to perform their planning obligations efficiently and effectively. The root causes of its planning incapacity were due to lack of skilled manpower, equipments, resources, low academic standard of councilors and lack of coordination between the various institutions involved in land use planning, control and management. In the study area the multiple institutions (Lands, Physical Planning etc.) involved in land use planning and management process have led to ineffective control of land use and development activities in the area.

Agevi (1981) in his study of problems of urban boundary extension in Kitale municipality had noted that mere extension, which was not followed by proper policy machinery created a conducive sphere for speculative developments that would outstrip the ill equipped development control machinery of municipal councils due to the lack of structural and zoning plans to guide development and lack of resources to deploy the required manpower for enforcing regulations in these areas. Agevi concluded that planning institutions did not have adequate resources; finances, technical manpower and managerial ability to tackle effectively the colossal problems of development control in the peri-urban areas covered by the boundary extensions.

Therefore there was need to impress upon the authorities concerned with urban development that the express objective of meeting demands for urban land was not just a matter of getting raw land in the required quantities but of developing and servicing the land so as to render it fit for the desired urban uses. This is true in the area of study as it was incorporated into the Mavoko Municipality through a boundary extension without a proper Local Physical Development Plan having been prepared to zone various land uses and segregate incompatible land uses as industries from residential areas and/or guide land use and development activities.

Mureithi (1990), in his study of Ongata Rongai had noted the development control problems experienced by Olkejuado County Council. Mureithi attributed the development control problems to the relatively lower position which Olkejuado County Council occupies in the organizational hierarchy of urban authorities in Kenya. Thus it is accorded minimal political, administrative and planning powers and functions. It also had limited access to financial and legal resources necessary for planning and implementing plans. Mureithi concluded that the existence of much formal legislation did not result in coordinated development unless supported by effective development control enforcement by Local Authorities. However lack of enough manpower, resources and equipments prevents the local authorities from effectively enforcing development control and implementing development plans.

Ngeti (1997) in his study of An Assessment of the impact of land use Regulations and Policies on land utilization in Mombasa municipality had noted that land use regulations in developing countries, often fail to achieve greater efficiency and equity in the use of urban land and this was evident in many Kenyan towns. Ngeti attributed this to the use of Physical Planners by Local Authorities and the Central Government as rubber stamps to development proposals, lack of effective link between planning and implementing agencies, multiple land planning laws and deficiencies of skilled personnel in principal development control agencies such as Physical Planning Department, the local authority and the land control boards resulting in misinterpretation and misapplication of the laws concerned with land use control issues. Ngeti concluded that there was need to amend the existing regulatory policies and planning legislation for effective land use control.

Simiyu (2002) in her study of the effects of urbanization on the use and control of land within Ngong fringe area noted that the multiplicity of planning institutions coupled with their institutional inadequacies made it impossible to control expansion of urban settlements within peri-urban areas without strict development control enforcement. Simiyu concluded that there were many planning bodies involved in the use and control of land without an overall coordinating authority making them non answerable to ordinary Mwananchi. Therefore there was need to establish a special planning body to deal with peri-urban areas. In the study area the same situation of multiple planning institutions such as the Mavoko Land Control Board, Mavoko Municipal Council, District Physical Planning Office and District Lands Office etc. are involved in the regulation of land use and development activities but there is little coordination of their activities making development control ineffective.

The literature analyzed above shows how developments on peri-urban fringe areas would pose problems in a town's growth and efficient utilization of their land resources. Since these developments are not planned in line with other developments in the urban areas a problem comes when they are supposed to be integrated into urban development. The inability of planning institutions to apply the necessary land use planning and management instruments to guide land development as provided in various government legislations indicates the incapacity of these institutions to perform their planning functions.

These dysfunctions contribute to the failure of the formal urban management system to implement the various urban policies leading to ineffective land use planning and management. It is from this background of institutional dys-functionality and stifling of local government that institutional problems and constraints in land utilization have emerged leading to haphazard urban developments in the peri-urban areas. This is one of the knowledge gap which

the study intends to fill through findings. Therefore the study aims at examining the institutional problems and constraints experienced by our planning agencies in land use planning and management of peri-urban areas' land resources, more especially the Namanga Road -Stony Athi corridor.

2.4 Land in the Peri-Urban Fringe Areas

The Demand for land has always exceeded supply due to the fixed nature of land and its immobility. To maximize satisfaction on the available land, there is need to put land into highest and best use. This requires planning for urban land use and this is especially so in the peri-urban fringe areas where there are different competing land use interests. Land and natural environment are limited resources that are often strained by growing population and poor land use planning in the peri-urban fringe areas. Their proper management is therefore important for their sustainability.

According to Browder et al (1995), as quoted by Adell (1999:10), peri-urban areas have a diversity of land uses that vary in relation with their urban and rural linkages. The peri-urban areas depict a transitional nature with a patterned sequence of uses that become progressively more agrarian in orientation as one recedes from the urban centers. Inversely agricultural land uses, employment and rural linkages give way to urban oriented activities as distance to the city centre diminishes. Thus peri-urban areas have heterogeneous land uses such as existing farmlands and villages, residential estates, sewerages disposal works, forestry and industries etc.

Scargill (1979:13) had observed that certain land uses are typical of the city fringe, for example sewerage disposal works, golf courses, cemeteries, obnoxious industries and others. Scargill further observed that a recent phenomenon on the peri-urban areas is the development of the country parks, hypermarkets, leisure sports and drive in garden centers in most developed countries. However in developing countries peri-urban areas are usually used for agriculture, horticulture, sand excavation, informal squatter settlements, low cost residential housing, leisure sports, forestry, obnoxious industries and public facilities like airports and roads. This is due to the sub urbanization processes which encourage urban dwellers to move to the fringe areas in search for advantages in land rent, or to capitalize opportunities for land acquisition, speculation and informal enterprises such as building of kiosks. Therefore peri-urban areas support important informal economic activities reflected in the proliferation of petty commodity production such as maize and vegetables and self help housing through co-operative land ownership etc.

Land developments in the peri-urban areas is characterized by organized land invasion,

unplanned expansion, land speculation, informal subdivisions of farmland near the city and settlement of squatters on public and private land within the urban fringe areas. Within the peri-urban areas also feature large tracts of undeveloped land attributed to the lack of infrastructure such as sewer drainage systems, security posts, water, electricity and roads in the areas.

Njoroge (2005) had concurred with these observations of the peri-urban areas and went on to describe them as areas which contains substantial discontinuous areas of urban development mixed with stretches of more extensive and traditionally rural uses like agriculture and forestry. Other assortment of urban uses which require a location near the populations they serve located in peri-urban areas are hospitals, prisons, sewerage disposal works, slaughter houses, sports ground and leisure sports etc. Thus the peri-urban fringe is characterized by a mixture of rural and urban land uses.

Much of the land in the peri-urban areas is under private ownership. This system of land tenures does not render itself easily to development control measures (Agevi, 1981). Municipal council officials have found themselves unable to exercise any effective control over the use of land in these areas. This is because local authorities lack resources to deploy the required manpower for enforcing development regulation in these areas. The local authorities also lack structural and zoning plans which can guide development activities in the peri-urban areas. This gives private developers the momentum to utilize their land in such a manner as to ensure maximum returns without any regard to set a side land for community public facilities such as recreational facilities. Speculative development is rife where land transactions are based on informal land ownership documents.

Conflicting land property ownership issues are typical in the peri-urban fringe, because of pressures from squatters, private developers, or speculators, large tenants etc. Different land market conditions feature dual systems (informal or formal) and various property and tenancy arrangements such as rental or customary right systems (Adell, 1999). Due to lack of development control, the peripheral areas of the city or town grow in haphazard and undesirable manner. This leads to premature development of the peripheral areas where land which has no infrastructure (water, roads, sewer,) is developed through informal subdivision schemes without a Physical Development plan having been prepared first to guide and coordinate land use and development activities. It is therefore necessary to apply zoning not only to the city but also to the city region.

The urban authorities also ignore the problems of the fringe as it falls outside their jurisdiction. Even when the administrative limits of the city are outdated and

anomalous, having been overtaken by sub-urban growth, the fringe may still be crossed by the boundaries of several rural local authorities (Scargill, 1979). Irregularity of urban development in the fringe is mainly attributed in part to differences in the planning policies of local authorities whose boundaries meet in this zone due to jurisdictional conflicts. Thus the city and the fringe, although administratively fall in different areas for the residents of the fringe there is hardly any difference between the two and their movement is unrestricted and they use the municipal services without paying for it.

Peri-urban land cover mosaic thus usually straddles city, municipal and rural administrative boundaries. Ribbon development may extend fingers of juxtaposed rural and urban activities and land uses several kilometers into the surrounding countryside. Due to this, land and land use are a major source of local authority conflicts in the peri-urban areas. The fundamental principle underlying this is the continuity of land extending across and beyond jurisdictional boundaries. For effective land use planning and management cross jurisdictional coordination among the various local authorities located in the peri-urban areas is important. For example in the study area jurisdictional conflicts arise between Olkejuado and Masaku county councils and Nairobi city council and Mavoko municipality and often hinders effective action or gives rise to gaps in prevention and control efforts.

2.5 Structure of Land Ownership in the Peri-Urban Fringe

The patterns of land ownership are important but poorly understood aspects of urban development. Land tenure refers to the right to hold, use, and possess land as defined and protected within a legal framework. There are different systems of land tenure in the peri-urban areas. These systems determine the availability of land for urban use. Agevi (1981) has noted that the prevalent forms of land tenure in any given area have a profound effect on physical urban patterns and the flexibility of adapting to the pressure of rapid urban growth. The land tenure affects not only the land use or land acquisition but also the way the land uses respond to growing urban pressures created among different competing uses. Even more important is that various forms of tenure systems will determine the amount of control that municipal authorities can assert over a given piece of land.

In Kenya land ownership is individualized and exchange takes place within the framework of a formal market and comprehensive land title registration system (Mark Swilling, 1997). In spite of this there is an informal land market and large squatter settlements illegally established on private and public land on the periphery of urban settlements due to mixed land tenure systems and weak development control by municipal authorities who lack requisite personnel to enforce land regulations.

According to Ratcliffe (1976:21) 'systems of land tenure embody those legal contractual or customary arrangements, whereby individuals or organizations gain access to social or economic opportunity through land... Land without the dimension of tenure is a meaningless concept'.

Kivell (1993) stated that the notion of land ownership has implications of great importance for urban development, which include:-

- The size and configuration of landholdings profoundly affects urban morphology. The layout and scale of urban development owes much to the nature of original land ownership boundaries.
- The timing of land sales affects the nature of urban development.
- Land ownership confers power to individuals in society e.g. in Kenya big land owners are the economic and political leaders of society.
- Land owners may exert considerable influence over urban planning policies especially if they act in concert. This comes about through their decisions on whether, or when, to sell land and participate in different kinds of development. In addition, land owners have influence over the preparation and execution of land use plans.
- Land ownership is an integral part of both national and local economies and it can be seen as a part of the relationship between the production sector and the consumption sector. The former sector views land as a commodity and comprises developers, farmers and speculative owners whose main interest is to maximize the exchange value of land. The latter sector consists of those who occupy land for a specific purpose, e.g. industrialists, home-owners and farmers, whose main interest is to maximize the use value of the land.
- Land ownership is important for what it reveals about the nature of society, given that ownership is a social construct. Across the spectrum from market economies such as those of Japan and U.S.A through the mixed economies of much of Western Europe to the centrally planned economies of former Eastern Block, it is the ownership and trading of land which is a key characteristic of differing societies.

In Kenya just like most countries, there exists a strong legal and social right for individuals, companies and other private sector bodies to own land. These rights are jealously guarded, but they are rarely absolute, being constrained by a variety of state legislation. In general, private property rights may be limited by:- the exclusion of certain social groups from ownership, restrictions on the use and development of land according to planning or zoning laws, taxation of land itself/ its beneficial use or betterment and expropriation of land by the state.

2.6 Land Use and Development in the Peri-urban Areas

As urban areas grow and evolve, naturally many land use changes take place. From time to time the growth of urban land in general and the rate at which it is being converted from agricultural uses gives rise to concern. The focus of concern is over maintaining food supplies and limiting urban growth in order to maintain environmental and social qualities of life (Kivell, 1993: 70).

Bourne (1976) identified four main processes controlling urban land use change

- Extension of the urban edge, or sub urbanization.
- The renewal of the central area.
- The expansion of the infrastructure, especially transport and;
- The growth and decline of nucleations such as the removal of industrial areas from the inner city and the growth of institutional and recreational centers in the suburbs.

Although it is to some extent implicit in Bourne's findings, one might wish today to pay more attention to the broadly social and environmental issues which affect the quality of urban lifestyles. Though the environment and economics exert strong influences on land use, these influences are mediated through the land use and they do not operate in a direct fashion. In this respect the question of control and occupancy of land becomes vital (Kivell, 1993).

The process of development starts when urban growth stimulates the need to develop land to a more intensive use. This leads to the expression of interest by developers, the preparation of proposals and plans and possible changes in the ownership of land. The duration of the development process may vary from a few months to decades depending on the existing ruling land policy. The main participants are the original land owners, developers, professionals such as planners, surveyors and architects, builders, financiers, central and local government officials and the eventual occupier of the development.

Most owners of undeveloped land are not professionals. They are not concerned with efficient development of land. The result of this is that a wide variety of unpredictable, sometimes irrational, even perverse behavior takes place such as irregular subdivision and conversion of agricultural land into urban use without provision of basic facilities such as water and sewerage disposal systems (Kivell, 1993:128). Thus land use planning and management institutions are created to regulate the activities of land owners and developers to ensure orderly urban growth. In Kenya, without a clear land policy, developers and speculative brokers may begin to show interest in land on the urban fringe before it is actually needed for development (Simiyu, 2002). This may lead to land subdivisions, change of user and illegal invasion of private or

public land leading to incompatible land uses.

However, Kivell (1993: 127) noted that in developed countries with strong tradition of public ownership of urban land, for example Sweden and the Netherlands, such behavior by private owners may not hold ground because municipalities have effective pre-emption rights. In Britain there is a compromise between the two positions. Speculative behavior on the fringe is minimized by planning guidelines which provides for two separate land markets for agricultural and urban land which entails development permission and development control compliance for developments which may be incompatible with existing developments.

Within the fringe areas, pressures for land for development are great but the pattern of development is a fragmented one without a clear sense of urban expansion from a central point. Most of the land use decisions are essentially local resulting in haphazard land use changes and development activities. There is thus little evidence that there exist effective institutions to deal with the larger land use planning and management needs of peri-urban areas. In Britain, much reliance has been placed upon the green belt to regulate land within such cases, but even this can be claimed to be an anachronism because it is drawn too close to major cities to have any real effect upon growth in the outer fringes (Herington, 1991).

A distinctive characteristic of the peri-urban fringe is that land is often under intensive pressure due to different processes of use, conversion and increased commercialization (Allen, 2006). This is as a result of rural – urban migration, the urban poor moving toward the outskirts where rents and land prices are lower and the rich building new houses in the less congested areas of the urban fringe. This result in the loss of agricultural land due to the physical expansion of the city, speculative land subdivisions and land use changes prompted by development of industries and large scale infrastructures such as roads, airports, sewerage disposal works in the peri-urban areas.

Thus, peri-urban fringe land use changes respond to the relatively 'spontaneous; strategies of the poor (both from rural and urban areas) to access land in proximity to diversified livelihood opportunities, to market forces, or to public policies aimed at restraining urban sprawl, dispersing industrial development or locating special physical infrastructure with high potential environmental impacts away from densely populated areas (Davila, 2003). As a result, the peri-urban fringe areas are often characterized by a patch work' of different developments, including residential settlements interspersed with vacant land (often held for speculative purposes) and agricultural land shifting from subsistence to commercial uses.

Peri-urban fringe areas suffer from uncontrolled urban expansion characterized by low-density development and vacant or derelict land which imposes several disadvantages such as higher

infrastructure costs, a wasteful use of land resources and environmental pollution (Mcgregor et al, 2006). According to Frumkin (2001) as quoted by Njoroge (2005), the development of peri-urban areas is characterized by urban sprawl which has been associated with rapid geographical expansion of urban areas in "leap frog", low density pattern, segregation of distinct land uses, heavy dependence on automobile travel with extensive construction from the centre to the periphery and relatively weak regional planning. Peri-urban urban sprawl has been attributed to urban population growth, public investment in infrastructure such as roads, public buildings, water, sewer etc. This is common in developed countries whereas development in developing countries occurs in the periphery without provision of infrastructure.

Therefore peri-urban land use and development is characterized by the following processes:- Land loss to housing, economic transformation away from agriculture, agricultural intensification and commercialization, environmental degradation, rapid land use changes, illegal invasion of private and public land and speculative land subdivisions. All these activities have serious implications on land use planning and management and are well manifested in the Namanga Road – Stony Athi Corridor. The main challenges facing institutions managing land use planning and management in the corridor is the uncontrolled land development activities which do not meet safety and health standards, economy and efficiency and amenity in land utilization.

2.7 The Role of the Private Sector and Local Community in Peri-Urban Land Use Changes

The support of the private sector and the local community is important in ensuring efficient utilization and management of peri-urban land resources. The private sector that is corporations, community groups, Non governmental organizations (NGOs), Community based organizations (CBOs) should be considered and given local responsibility for tasks in plan formulation and land use regulations.

Community participation may be a natural part of the city planning process in developed countries but in developing countries this is almost non existence. However, the private sector and the local community own a large percentage of the land found in the peri-urban areas of developing countries.

In developed countries where municipal ownership is favoured such as Sweden and the Netherlands, development and/or redevelopment of land in the peri-urban areas is usually the lead role of the municipality (Kivell, 1993). It is therefore important for planning agencies to enlist the direct support of the private sector in guiding and controlling land uses and development activities within the peri-urban areas.

As explained by Njoroge in his study of Nairobi/Kiambu corridor, the peri-urban fringe is characterized by the emergence of formal and informal land markets which results in land use

changes. The allocation of land to certain broad categories of desirable uses even with protection from most kinds of building development is no guarantee either of continued viability, or of retention of the wider environmental values of the fringe land. Thus strategic policies for managing the peri-urban fringe areas should involve land owners, farmers and the private sectors who are the key land development actors in these areas. He went on to observe that, experiments have shown that the involvement of land owners and farmers in management reduces uncertainty about the future so that land managers can plan. The role of planners in this scenario is to help by producing phased long term policies e.g. farmers would be helped by at least 10 years advance warning of changes in land use proposed by local authorities.

To achieve the desired results, the Local Authorities and Central Government should provide an enabling environment for the private sector and the local community to regulate themselves when undertaking developments in the peri-urban areas in order to ensure orderly and coordinated development activities. This may include making land transactions cheaper and providing realistic standards which will benefit the local communities living within the peri-urban areas by ensuring their safety and health, convenience and amenity of their environment.

2.8 Development Control

Development control is an important element in the planning system and is the point at which development plans interact directly with the physical environment (Simiyu, 2002). It is through the control of development that individuals and actors/developers can be prevented from doing certain things or in certain places and implicitly encouraged to do other things or in other places in accordance with a planned scheme of land use. Thus Keeble (1968) in his famous text book defines development control as the 'art and science of ordering the use of land and the character and siting of buildings and communication routes so as to secure maximum practicable degree of economy, convenience and beauty'.

Planners have traditionally used the instrument of development control to restrain the location of land uses and land users which would impose heavy external diseconomies on adjoining activities and people, grouping together those activities which are not particularly vulnerable to the types of harm caused by one another and separating them from activities which would be significantly injured. Thus development control has been used to restrict the location of industrial land use in residential areas and it has been applied to resist the development of buildings, which appear out of character in areas of outstanding architectural quality (Simiyu, 2002). Therefore, development control is the arbiter and reconciler of competing claims for the use of limited land so as to provide consistent, balanced and orderly

arrangement of land uses (Healey, 1983).

The main characteristic of the development control system of regulations is that prior approval has to be obtained from a public authority, acting in a semi judicial manner, for any use of development rights by those persons wishing to undertake development and to benefit from it (Pearce, 1980). Its administration is within the context of a development plan, which forms the most important factor that may be taken into account by a local authority in deciding whether or not to approve an application for development (Simiyu, 2002).

McAuslan (1980) had observed that development control is used to stop and restrain private property owners from doing what they want to do with their land thereby setting the stage for conflicts between two planning ideologies that is private vis-a-vis public interest. Thus the action of development control is complex because powerful individual factors such as social, economic and locational in the private interest, often act independently of what are formally prescribed as public interests. Any action of development control will be inadequate if it has regard only to administrative procedures and to have meaning it must take into consideration the whole planning process but not only the development control aspects (Simiyu, 2002).

Development control is a set of measures to deal with land use and development. It is a useful tool to assist the implementation of planning policy as it acts as an early warning system for processing land development applications as detailed local knowledge of the area is tapped to make decisions (Simiyu, 2002). This system involves establishment of appropriate institutions to enforce land use regulations which constitute the most visible elements of central and local government intervention in land, its ownership, allocation, use and development. However due to meager resources: financial, equipments, personnel etc. allocated to planning institutions there has been extensive deterioration of land around urban fringes due to the process of sub-urbanization which is uncontrolled.

2.9 Challenges of Development Control Applications in the Management and Development of Land in the Peri-urban Areas of Cities

The urban fringe is an area in which substantial development is being realized by converting open land into developed land. Larger towns and cities in developed countries such as in Britain have long standing policies and plans regulating development activities in such urban fringe areas. Some of the containment policies utilized is the use of green belts (Healey, 1983). The green belts were important in managing the effects of the continuing decentralization of people and firms from conurbation cores to the urban fringe areas. These decentralizing processes and the development pressures they created were responsible for

generation of local development plans by local authorities to control development. The other instruments utilized to control land use and development activities in the urban fringe included development briefs, zoning, subdivision regulations, building regulations and approval by government agencies.

The development plans acted as a framework of proposed land use in the form of a coherent set of proposals for the use of land against which day to day development were to be considered. This provided a basis for guiding, controlling or initiating development. It was expected that the development plans would provide a basis of steering development in accordance with it to minimize the ill effects of uncoordinated development.

The peri-urban land cover mosaic usually straddles different municipal and rural administrative boundaries. This leads to irregularity of urban development in the urban fringe areas which may be attributed in part to differences in the planning policies of local authorities whose boundaries meet in this zone. This means that the land-cover in the peri-urban areas extend across and beyond local authorities' jurisdictional boundaries. This give rise to local authority conflicts in regards to their jurisdictional responsibilities over these peri-urban areas. This results in lack of clarity of planning and development jurisdiction in the peri-urban areas leading to highly inefficient development due to ineffective development control enforcement in the urban fringe areas.

This emanates from the multiplicity of agencies involved in land use planning and management in the peri-urban areas which give rise to overlaps, and uncoordinated roles in planning by various agencies. For instance, in the United States there had been some grouping of cities and counties into new 'city-region' units of local government, as at Jacksonville, Florida in 1968, to deal with a particular range of problems in the city's urban fringe (Scargill, 1979). But progress with such schemes had been noted to be slow as it encountered many vested interests. Thus, the fringe of most American Cities has remained a zone of conflicting pressures. However some degree of unity is given to planning policies in the urban fringe when that zone is designated as a green belt. The green belts were used to check the growth of large build up areas into the peri-urban areas.

The land in the peri-urban areas is also under private ownership. The land is often held by speculators or by farmers whose intention is to sell it as soon as a favourable offer is obtained. Much of the peri-urban land is private held agricultural land. In developing countries such as Kenya where land use planning is weak, freehold land owners have had the freedom to develop their land in whatever way they liked and wished. Olima and Obala pointed out that freehold title prior to promulgation of the Physical Planning Act Cap 286

created more complications and problems for planners (Olima and Kreibich, 2002).

This is because freehold land had no limitation on the use of land and there was lack of a binding authority to obey any regulation or planning requirements. These coupled with the perception of land owners made development control to appear as a nuisance. As a result there have been lots of illegal subdivisions and the growth of unplanned settlements causing severe strain on services, which are often not compatible in the peri-urban areas. The failure of the Central and Local Governments to inspect and enforce development control had further encouraged the use of land for incompatible uses. This is one of the challenges facing development control agencies in the study area of the Namanga Road -Stony Athi Corridor. Conflicts between planned and new uses have arisen. For example, Hillcrest residential estate is located next to London distiller factory. This situation will worsen as more residential estates move into the area thus leading to haphazard and less optimal urban development activities.

Harte (1985) noted that public control of land and its use takes two main forms; outright control and regulation of land left in private hands. Harte explained that the land use system for the control of peripherally developing land is composed of a general guide or master plan and its specific controlling mechanisms are the zoning ordinance and subdivision regulations. The zoning ordinance governs both the use to which land may be put and the buildings (Size, type, number etc) which may be placed upon it. Therefore, zoning is an attempt to organize and systematize the growth of urban areas by setting up categories, classes or districts of land in the community. This is aimed at improving efficiency, promoting agglomeration benefits, specifying minimum health and safety standards and providing land for public goods and services during the process of developing urban and peri-urban land.

In the peri-urban areas, the use of zoning as a tool for development control in most developing countries is limited as planning authorities lack zoning plans to regulate the use of land and development activities. However in developed countries such as in U.S.A, there is a wide spread use of zoning, a notion which partly reflects a distrust of the powers of a completely free market to allocate land effectively (Kivell, 1993). As explained by Ngeti in his study of Mombasa Municipality, zoning function best when it is one of the several tools employed in the planning process.

It cannot effectively outlaw existing uses as it is resisted by owners and often limits desirable changes in land use. Its strict application in land use has resulted in illegal development, incompatible land uses and environmental problems in the peri-urban areas.

Subdivision regulation on the other hand control the initial development of land by prescribing standards for lot sizes and layout, street improvements, procedures for dedicating private land to public purposes and other requirements. Subdivision regulations have proved a powerful tool in assisting and controlling suburbanization in developed countries such as the USA where public control over detailed plan have existed for many years. However, in many developing countries detailed plans for the peri-urban areas are yet to be prepared and where they exist most of them have expired and are outdated.

Kombe (2002) in his study of land use planning challenges in the peri-urban areas of Dar es saalam city noted that the disregard of the existing land rights in land use planning was on of the root causes of the eminent failure of urban planning in the peri-urban areas of Dar es salaam city. Kombe attributed this to the extension of the city's administrative boundaries to cover vast peri-urban land held under subsisting land tenure systems into urban areas. Subjecting peri-urban land held under customary, private leasehold and quasi-customary tenure arrangements to urban land use development control regulations becomes difficult.

Therefore, development control enforcement in the peri-urban areas of towns and cities demand plenty of skills in order to be able to effectively guide and control the numerous physical developments taking place in the peri-urban areas. This is because the peri-urban areas are characterized by heterogeneous land uses such as industrial, forestry, agriculture residential and commercial held under different land tenure systems.

2.10 Development Control Practices in Kenya

According to Simiyu (2002), the government of Kenya uses the following state powers to effect development control.

1. Eminent domain power

The power of eminent domain is an essential governmental power used for the purpose of taking private property needed for a public use. Under the power of eminent domain, the sovereign state may take any private property within its jurisdiction for public use without the consent of the owner subject to the condition of payment of just compensation in accordance with the method prescribe by law. Its exercise is necessary for the orderly acquisition of sites needed for highways, streets, utilities and other public improvements. Without this individual property owners would block the will of the majority simply by refusing to sell land needed for desired public developments.

This power is guaranteed under section 75 of the constitution of Kenya 1969 and is exercised under the Land Acquisition Act Cap 295 that ensures that prompt and accurate compensation is paid to the dispossessed owner. It is also exercised under section 117 and 118 of the

constitution for the purposes of setting apart of trust land.

2. Police power

This is the single most important power that the government has over land use. It is the power for governments to establish the social order, to protect the life and health of persons, to secure their existence and comfort, and safeguard them in the enjoyment of private and social life and the beneficial use of their property. It includes the power of government to regulate the conduct of individuals subject to its jurisdiction in their relations toward each other and the manner in which each shall use his property when regulation becomes necessary in the public interest. The police power embraces regulations designed to promote the public-convenience and general prosperity as well as the public health, morals, safety, and welfare. The police power may take different forms to influence and direct land use namely;

Planning/Zoning regulations under the physical planning Act Cap 286 and Local Government Act Cap 265:- Zoning is one of the community's "police powers", probably the most powerful device because it permits the community to exclude many uses altogether. Zoning is the segregation of an urban area by ordinances and the establishment of regulations to govern the use of the zoned land (Courtney, 1983). It is a device employed in land use planning to ensure the separation of land use and hence avoid mixed development. It may be defined as the physical division of an urban community into zones/areas for the purpose of regulating the use of land and buildings, height and bulk of buildings, plot coverage, and density of population. It is a legal instrument which deals principally with the use and development of privately owned land and buildings and therefore enforceable.

Over a period of time, the concept of zoning has widened into a larger framework. It is now seen as an important instrument and system to ensure proper spatial relationship between uses within a city and channel the development effort for the present and foreseeable future. It is an attempt to organize and systematize the growth of urban areas by setting up categories, classes, or districts of land in the community. It also includes general rules about location, bulk, height, and thus plot ratios, shape, use and coverage of structures within each zone.

Subdivision regulations under the Government Land Act Cap 280 and Land control Act cap 302:- The uncontrolled or improperly planned subdivision of land is the cause of many serious suburban and fringe area problems in Kenya today. Failure to observe the rules of good land use planning has had serious economic consequences for both the public and the landowner. Subdivisions which are poorly located or improperly planned, add materially to the costs of providing municipal services. Furthermore, improperly designed subdivisions means

that streets are too narrow, subplots are too small and no recreational facilities are provided for leading to slums developments.

Almost every large city/urban center today in Kenya is paying high costs for its failure to establish adequate public controls over the subdivision of land for residential and other purposes. Subdivision regulations, along with zoning provide the community with one of its most effective methods for developing an appropriate pattern of land use. Subdivision regulations govern the development of land for residential and other purposes and prescribe standards for lot sizes, layout, street improvements, and procedures for dedicating private land for public use. Their importance lies in the fact that they enable the community to force developers to pay for some of the community infrastructure occasioned by development. They have been powerful tools in Europe, but have not found an equally successful application in most countries. In Kenya, and more so in the study area, the subdivision regulations are all but on paper, while on the ground, the individual interest prevails,

Building regulations under the local Government Act cap 265 and public health Act cap 242:- These limit or define the way structures are to be built and the materials to be used. Building regulations are one of the oldest and most common methods for controlling land development. In Kenya these control regulations exercised through development applications for use and consent to develop land depends on tenure of land and its locality. For example in the case of freehold land applications are made to the approving authority as laid down in the relevant Acts and local Authority by-laws. For leasehold land the development is determined by clauses stipulated in the leases so that all applications must be submitted to the granting authority as well as the planning authority.

The principal form of land holding in the study area are freehold, with private individuals and companies possessing outright ownership and leasehold land allocated to private individuals and companies for a fixed period (usually 99 years). The use of freehold land in the corridor is regulated by the Land Control Act Cap 302, the Physical Planning Act Cap 286 and the Local Authority Act Cap 265. Freehold land in the area has been and still is, subdivided and converted informally into urban uses. This change in the use of land is being done without following the stipulated regulations of converting land into urban uses. This has resulted in the construction of substandard residential and commercial houses such as Carton city squatter settlement. On the other hand, leasehold land in the corridor was granted by the government in respect of government land for a period of 99 years subject to certain implied covenants. The restrictive covenants of the titles give wide powers to the Commissioner of Lands, the Director of Physical Planning and the

Local Authorities to control the type, quality of development, subdivision, change of user and transfer of the land.

In the context of the building regulations, the agencies involved in development approval such as the Local Authority, the Commissioner of Lands and the Director of Physical Planning ensure that approved development activities comply with specified planning standards. Such planning standards include the design of the structures, material used, style of architecture, density of development, position of the building on the plot and the distance from the street, its height and depth. It also includes controlling the use to which buildings may be put as well as ensuring minimum conditions which buildings must meet to be regarded as fit for human habitation.

Rent controls under Rent Restriction Act and Land Lord and Tenant Act.

Rent controls represent an important use of police power to regulate private practices affecting the leasing of real property, largely to protect tenants from possible landlord exploitation. They assume that landlord's possess an unwarranted bargaining power in their dealings with tenants and that public constraints are needed to ensure a measure of quality and distributive justice for tenants. Rent Restrictions Act and the Landlord and Tenant (Shops, Hotels, and Catering Establishments) Act provide an institutional legal framework for managing developments which are already complete.

The acts are used to control the subleasing of premises and to protect the tenants of premises by regulating the rent payable, maintenance and the general cleanliness of the premises. In the study area the subletting of buildings built on alienated government land is restricted in accordance with the special conditions of the titles issued by the department of lands. The restrictive condition on transfer, and subletting or any other disposal of land ensures that land is developed before it is transferred or sublet to a third party. In so doing it ensures that lessees do not apply for land for speculative purposes when they had no intention of developing it. However the application of the two acts in the study area is limited as much of the land is being held undeveloped. For example plot LR No. 337/617 was allocated in 1974 but it was not developed up to 2006 when it was invaded by people purporting to be squatters and subdivided into Kazito slum settlement.

2.11 The Key Systems Affecting Land Use

According to Chapin and Kaiser (1979), the key systems affecting land use are the activity systems, land development systems and the environmental systems. The interactions of the three urban activity systems play an important role in determining the spatial form of the urban and peri-urban settlements. The activity systems concern the way man and his institutions such as households, firms, governments, and other institutional entities organize their affairs on a

day to day basis in the pursuit of human needs and interact with one another in time and space. Thus the activity systems involves how man interact with one another and the subsystems which facilitates his movements such as transportation networks giving rise to certain land use patterns. For instance, in the study area, good transport network in the form of Nairobi – Mombasa highway has encouraged the development of industries and residential houses in the area. This has resulted in land use conflicts between industries and residential areas giving rise to serious environmental degradation due to the release of industrial effluents into river Athi, obnoxious smoke to the atmosphere and waste water into undeveloped plots.

The land development systems focuses on processes that convert or reconvert space and adapt it for human use in the pursuit of activities defined in the activity systems. The principal agents of land development include the pre-development land owners, developers, consumers, financial intermediaries and public agencies (Chapin and Kaiser, 1979).

The land development systems thus reflect the aspect of land using behaviour that is concerned with the supply side and the need to create institutions to regulate their activities. In the study area, public institutions such as Mavoko Municipal Council, the Directors of Physical Planning, Public Health, Survey, Roads and the Commissioner of Lands are required to review and approve land use and development activities for the common good of the community. However, land developers have been developing their land without complying with stringent land use and development regulations leading to haphazard developments. This is due to the failure to inspect and enforce planning regulations during the plan implementation process by the above cited planning agencies.

The third system of concern in land use planning is collectively referred to as environmental systems. These have to do with biotic and abiotic states generated by natural processes, and they focus on plant and animal life and the fundamental processes relating to water, air and matter. These systems provide the niche for human existence and the habitat and resources to sustain man. From the land use vantage point, environmental systems functions both to constrain and to enhance the functioning of the other two systems. When the three land use systems are left to interact on their own, some elements of inequity arise because they are basically market-driven. More often than not conflicts arise between them, which in turn impact negatively on the environment. For instance, in the study area physiographic factors such as availability of well drained sandy soils and a relatively flat land terrain suitable for development activities has tended to encourage residential, industrial and horticulture land uses in the area.

However, the misuse, abuse and disuse of land has seen in the emergence of slum

settlements, informal subdivisions and the discharge of industrial effluents into natural water courses and the release of obnoxious industrial smoke to the atmosphere in the area provides a basis for the use of controls to guide land use and development activities within the area. There is therefore need for intervention, which takes the form of public interest elements hence the creation of institutions to manage land utilization.

2.12 The Purposes of Government Intervention in Land and Development

According to Healey (1983), the general purpose of land use planning and management is to serve the general community interest meeting "social needs" which the unfettered market does not do. Direct control of urban land markets is no longer possible. However, it is possible to guide the process of land development and land use change by creating an enabling environment for effective land utilization. The essential reason for government intervention in land use regulation is the failure of the market mechanism to provide an outcome that is satisfactory to society as a whole. The land market may offer substantial benefits as an economic system, but it fails to offer a socially desirable outcome if not regulated. However public sector influence over land development and land use change is through institutional regulatory mechanisms. Regulatory frameworks are used to ensure the systematic growth of cities and towns that meet the development needs of different parts of the economy and different sections of the society.

According to Majale and Payne (2004:36), the main objectives for Government intervention in land development include:

1. **Resource Allocation:-** The view is that market resource allocation is inherently unequal and must be compensated for. Thus the major role of the government is to redress these inequalities. In the land market government intervention is needed to redress the market's incapacity to value adequately long term resources and environmental heritage.
2. **Minimize Harmful Externalities:-** Many land uses generate externalities or spill over effects which can affect whole neighbourhoods. Public authorities regulation is needed to minimize such harmful effects as pollution, congestion, overcrowding, noise, smell and to prevent the growth of in appropriate urban forms. The other harmful externality which may occur in land utilization is the expansion of a town which raises the value of undeveloped land around it and local authorities are obliged to pay high land costs in order to provide public housing, schools and playgrounds. Thus the role of government is to put the collective interest before individual interest when dealing with external effects which arise in the process of land development.

3. **Maximize Public Resources:-** If governments, at both central and local levels, are to meet the expectations of citizens and deliver on their socio-economic development mandates, they must have a sound revenue base. This is especially so in urban areas, where service provision is a primary responsibility of local authorities. Regulatory frameworks that enable governments to effectively manage urban development can facilitate the use of land based and other forms of taxation in mobilizing financial resources for service delivery and other essential functions by local authorities.
4. **Facilitate Effective Land Management:-** Urban land is a valuable and finite resource which is becoming increasingly scarce in most developing countries. Efficient land management makes for the optimum use of land and is therefore of paramount importance for a continued supply of land at affordable cost. Appropriate regulatory mechanism help ensure efficient land management and the environmentally sound use of land.
5. **Allow for Common Land Use:-** It is observable that where there is a lack of regulation, individual households tend to maximize private interests, ignoring land uses necessary for the community such as roads, open spaces and land for social services. In the study area for instance the subdivision of freehold land such as within Gichimu and Muchiri Estate does not make adequate provisions for public utilities e.g. schools, playgrounds etc.
6. **Distribution of Income and Wealth:-** Wealth is un equitably distributed in all societies. Government taxation on land is used to transfer resources to poor sections of the society. For example, land taxation can be used to generate funds to construct roads, supply water and electricity to poor neighbourhoods e.g. the supply of electricity to Mathare valley slum by Nairobi city council.

There are two broad rationales for government intervention in land use and development. First, all governments intervene in the land market, and in the process of development, although to varying degrees. Generally, the justification for this is twofold, being, based upon the belief that it reduces inefficiency and improves equity.

The argument that the free market would allocate land to the most desirable use without intervention is true only under conditions of a perfect market and entirely equitable income distribution. In reality, neither conditions obtains and governments feel obliged to intervene to provide a satisfactory mechanism to guide the allocative and distributive effects of land use in pursuance of public interest. According to Hallet (1988), whatever the ideological arguments, the practical reality is that laissez-faire urban development does not produce

satisfactory results, and some degree of intervention becomes necessary.

Secondly, land supply is inelastic, so it is essentially demand which sets the price. This implies that urban land use in most societies is determined by the decisions made by individual firms, households and other bodies with regard to jobs, housing, shopping and many other urban activities. Each of these requires land and the activity which can outbid all others will acquire the site. There is thus a presumption that land will always go to the most profitable use. Because of the market's emphasis upon the price mechanism, it is not good at providing for socially necessary uses such as schools, hospitals or parks etc to serve the common public good (Kivell, 1993). Thus, the market cannot be trusted to produce a rational efficient land use system on its own. Government intervention is necessary to minimize the haphazard and predictable way in which land is released to the market for development.

The other rationale for Government intervention in land use and development has been justified for reasons of the common good or the public interest. Public interest entails utilizing government power to restrain and direct land use and development activities. It involves the use of restrictive land use regulations and control mechanisms such as zoning, subdivision regulations, building regulations and approval by Government institutions for public ends. Public interest is aimed at promoting health, safety, convenience, economy, efficiency and social equity in the use and development of land. In most peri-urban areas such as in the study area these important features of the urban environment have been compromised by the inefficient use and development of land leading to haphazard development activities.

2.13. The Public Interest as a Determinant of Land Use

According to Chapin and Kaiser (1979), the scope of the public interest is broad, the health, safety and general welfare encompassing many things about the conduct of the people in urban society. To the planner, concern with the public interest in land development, is more particularly with public action that seeks to assure livability and sound development in the city as land is put to urban use. This involves the notion of control for public ends as they may be distinguished from private economic or social ends. These public ends are associated with public interest values and they involve the legalistic actions taken by formal governmental institutions in the public interest. The public interest is aimed at achieving livability in the urban setting and unity and efficiency in the overall land use pattern in the process of land use and development. Public interest therefore, involves the use of controls by government institutions to regulate and direct land use and development activities undertaken by individuals and private companies in order to achieve an efficient unity and harmony in

the way in which land is utilized. Thus as urban and peri-urban areas expand and develop controls are necessary to ensure sound development for the community as a whole.

2.14 Elements of the Public Interest Prompting the use of Controls

In land use planning, the purposes usually identified with the public interest are:- health, safety, convenience, economy, amenity, environmental quality, efficiency and energy conservation, social equity and social choice (Chapin and Kaiser (1979). Chapin and Kaiser (1979) emphasize the relevance and importance of these elements in guiding physical land use development. The key principles relating to the elements of public interest and how they guide land use and development activities in the study area are discussed below:-

Health and Safety:- Land use controls in the interest of health and safety take the form of regulatory measures such as zoning, subdivision regulation, and the reservation of lands for public uses through official map procedures. The other forms of control exercised in the public interest relate to the broad patterns of land use as opposed to the individual structures such as control of day time and nighttime population densities, control over use and development of hazardous areas, control of exposure to accidents, noise, and atmosphere pollution.

The principles can be used to guide land use and development activities in the peri-urban areas of Mavoko Municipality. Land use controls such as zoning and subdivision regulations can be used to control the intensity of land use and the occupancy of structures to ensure that designed capacity of land is not exceeded such as in the informal settlements. Controls over hazardous areas can also be applied to restrict land use and development activities within the riparian reserve of River Athi. The most effective means for controlling the use of the riparian reserves would be public acquisition and developing them as an integral part of the permanent public open space system for the community.

Convenience:- It constitutes a major basis for the exercise of control over land use and development activities for the public interest. Public convenience guides the construction of streets and roads as public purposes and is a function of the circulatory system. It is derivative of the local arrangements of land use and the relationship that each functional use area bears to every other one. Convenience is also related to the intensity of land development, that is, the density and coverage of development. As a public interest, convenience is very vital in the planning of land uses. During land development the intensity of development in an urban area is usually influenced by considerations such as terrain and drainage features, the pattern of land values, amenities of the area, and the whims of the land owners in the subdivision of land. In this process of land development, the land use plans

and subdivision plans may be viewed as developmental control devices aimed at achieving maximum convenience in the location and arrangement of land uses.

Therefore, regulatory controls such as zoning and subdivision regulations become the means for building convenience into the patterns of land development. These principles can be utilized to guide land subdivisions, development activities in the study area and ensure adequate provisions are made of open spaces, playgrounds and shopping centres within a reasonable distance of the existing population.

Efficiency and Energy Conservation:- It looks at what is economical to provide expressed in the form of streets, schools, recreational areas and other community facilities in terms of efficient land use arrangement. The location of land use and the intensity of development are key considerations in both cost and energy efficiency. The intensity in the way land is put to use affects the public cost aspects of land development. For example, a spread out pattern of development involves a greater mileage of streets, sewer lines etc than a more compact and densely developed settlement patterns.

The key objective here is to reduce energy that is required to supply basic services like water, electricity and sewer lines to such neighbourhoods and reduce the costs involved. In the study area, regulatory measures such as subdivision regulations, building regulations and zoning can be used to regulate land use and the intensity of development by specifying plot layouts, plot sizes, subdivision set backs, surface lanes, coverage of development, densities and siting of public facilities like schools, hospitals, roads, sewer lines etc. This will ensure that it is economical to provide for roads, streets, recreational areas, and other community facilities in relation to existing facilities in an efficient way. The locations of these facilities play an important role in maximizing ease of movement and energy efficiency and conservation hence becomes a control factor in the planning of urban land uses.

Environmental Quality:- The Earth Summit (Rio de Janeiro, 1992) and the Habitat Agenda(1996) recognized the importance of integrating environmental consideration in national programmes as pre-requisite for sustainable development. This intervention has necessitated the incorporation of environmental issues in land use planning in the areas of land carrying capacities, water protection and air quality as a matter of public interest. The lack of sustainable integration of environmental considerations in land use planning, development and management has resulted in loss of environmental quality in the Namanga Road –Stony Athi Corridor.

Environmental problems are manifested in the area through informal settlements, poor sewerage disposal systems, proliferation of garbage and conflicting land uses. Regulatory

measures such as preparation of Local Physical Development Plans, Zoning, Subdivision Regulation, have not been used to control mixed incompatible land uses like industry, horticulture, quarrying and residential developments leading to land degradation, water and atmospheric pollution.

Amenity:- This refers to the pleasantness, aesthetic appearances, comfort and enjoyment of the urban environment as a place which to live, work and spend one's leisure time. However control exercised to achieve attractive and pleasant growth and development is difficult to narrow into codes and laws. This is because what is attractive and pleasant tends to vary among individuals and it is thus difficult to subject tastes to a consensus. Therefore amenity has to be balanced against the other elements of public interest such as health and safety, convenience, efficiency and energy conservation, environmental quality and social equity and social choice in order to achieve its desired results in the planning of urban land uses. In the study area the principle of amenity should be used to control poor plot layouts during land subdivisions, growth of informal settlements, garbage collection and landscaping of disused quarry mines for the common good of residents.

2.15 Gap to be Filled by the Study

Regional, urbanization and national urban policies of the Government of Kenya emphasize the importance of land use planning in urban areas. However, the haphazard development of towns throughout the 1960s, the 1970s, the 1980's show that these urbanization and national urban policies have not been effective so far (Obudho, 1984). The main cause of the failure of the land use planning system is assumed to be the inefficiency and incapacity of our planning institutions and the sectoral approach to planning at local and regional planning levels.

According to (Olima and Kreibich, 2002:54), the rationale of land use planning as public function is to ensure economic efficiency in the use of space and to ensure that the health, safety and general security of the citizens of a country is promoted and secured. This is of particular importance because the market place cannot be trusted to produce a rational and efficient land use system, a system that can accommodate the immediate and future households' requirements for space at a given time. Thus as a scarce resource, land especially in the urban areas requires guided stewardship by public bodies who are able to balance both, short and long term land needs of different groups. The government therefore sets rules and regulations regarding the use and development of land to avoid economic, social and physical chaos concerned with land development.

Therefore even in societies where free enterprise is a major value and a mode of operation, a certain amount of public control over the use of land becomes necessary through the creation

of a variety of institutions and legal instruments for overseeing land use and development activities. For instance in Britain the first attempt to control land use and development activities was through the public health legislation and building by-laws introduced to prevent the worst excesses of rapid and haphazard urbanization that accompanied industrialization.

The main focus of the controls over the use of development of land was to safeguard the environment, promote good design, promote suitable land use and ensure the use of national resources efficiently. As explained by (Healey, 1983), the regulation and control of land use and development activities in Britain is the principal functions of the Local Authorities under the Local Government Reform Act of 1972. British Local Authorities have powers to undertake and coordinate strategic planning on regional scale, prepare development plans and carry out comprehensive surveys, review development plans, and ensure that development control is achieved through a system of planning permissions, whereby local authorities approve or reject development applications. However, there are other bodies which share with the local authorities in Britain the powers to control and regulate land use and development activities such as the ministry of Housing and Local Government, Ministry of transport, Board of Trade and Public bodies engaged in land ownership and investments.

In Kenya the main bodies with the responsibilities to regulate and control the use and development of land are the commissioner of lands, the Director of Physical Planning, Director of Land Adjudication and Settlement, the Director of Public Health and the Local Authorities. The departments of land and physical planning are the two key sectoral agencies directly involved in the planning and management of land. The department of lands is involved in approval of subdivision plans, building plans, change of user, lease extension, land transfers, valuation of land and registration of land documents. The department of lands also has powers to approve subdivision plans for agricultural land whose transactions are controlled under the Land Control Act cap 302. In this case, Divisional Land Control Boards (DLCBs) give initial approval for the proposed subdivision before forwarding the plans to the surveyors and land registration office to issue ownership documents. The department of Physical Planning is responsible for the preparation and implementation of Physical development plans while the Local Authorities enforce development control and approve land Developments in their areas of jurisdiction.

The aforementioned agencies utilize various Governmental powers to restrain and/or direct land use and development activities. The main tools used to restrict and control land use and development activities by the agencies include land use zoning, density zoning, building regulations, development control, subdivision regulations, physical planning and

development approvals. To realize effective utilization of urban and peri-urban land resources, institutions such as the departments of lands, physical planning, roads, and the local authority need to work mutually in support of each other and failure of one to operate effectively would result in poor land use planning and management of our peri-urban areas. As urbanization and an increase in the number of urban areas continues to be a dominant feature in social economic transformation, urban land use planning and regulations of land development will draw more policy attention and more practical planning interventions and requisite institutions for implementation and/or enforcement are needed.

2.16 Conceptual Framework

The literature reviewed has shown that the main characteristics of the peri-urban areas are conflicting land property ownership, pressure from squatters, private developers, land speculators and large land tenants. Much of the land in the peri-urban areas is under private ownership. It is held either under freehold tenure and/or leasehold tenure giving rise to different sets of systems for controlling land use and approving development activities.

The different land tenure systems affects not only the land use or land acquisition process but also the way the land uses respond to growing urban pressures such as land subdivisions and change of user. The various forms of land tenure systems also determine the amount of control that planning agencies can exert over land use and development activities in the peri-urban areas. Consequently, peri-urban areas suffer from uncontrolled subdivisions, informal conversion of agricultural land into urban use, urban sprawl, environmental degradation, inadequate community facilities and conflicting land tenure systems.

The main causes of the peri-urban areas' land utilization problems are assumed to be, lack of skilled manpower, conflicting land laws, lack of peri-urban land use policy, lack of coordination among planning agencies and the mixed land tenure systems prevailing in the peri-urban areas. This has resulted in development effects such as ineffective development control and enforcement, delays in development approval, uncontrolled subdivisions, invasion of private land and the illegal conversion of agricultural land into urban uses such as residential and industrial purposes leading to incompatible land uses.

In order to control and direct land use and development activities in the peri-urban areas, Central and Local Governments institutions intervene through land use planning and guidance systems. The intervention of the Central and Local Governments agencies such as the Local Authority, the Director of Physical Planning and the Commissioner of Lands is meant to enforce development control through instruments such as subdivision regulations, building standards, zoning, formulation of land use policies and community participation.

The activities of the above cited agencies are geared towards reinforcing the public interest during land use and development activities' approval. Public interest in this context covers broad land use planning and management objectives such as ensuring health and safety, convenience, efficiency and energy conservation, environmental quality, social choice and social equity and preservation of amenity during land use and development activities. Therefore, the essential objective of land use planning is to ensure that land use and development activities conform as closely as possible to land use and public objectives. However, the main components for effective and efficient utilization of peri-urban land resources are planning institutions, development control institutions, legal and policy environment that they operate in. For this study the critical institutions for this purpose have been identified to be the Local Authorities, the Director of Physical Planning, the Commissioner of Lands and the local community. The effectiveness of these institutions in ensuring proper land utilization is further influenced by their financial and human resource capacities.

The effectiveness of these institutions influence the pattern of land use changes taking place in a locality based on the existing land tenure system in place. The interactions of the planning institutions provide a strategy for land use planning and management by which the physical, economic and social conditions can be rationally improved for the betterment of the well being of the people. It is for this reason that governments intervene in land use planning and management to ensure properly planned, guided and regulated developments in accordance with approved physical development plans. In the absence of approved physical plans, planning instruments such as development control, subdivision regulations, building standards and zoning are applied to direct and coordinate land use and development activities.

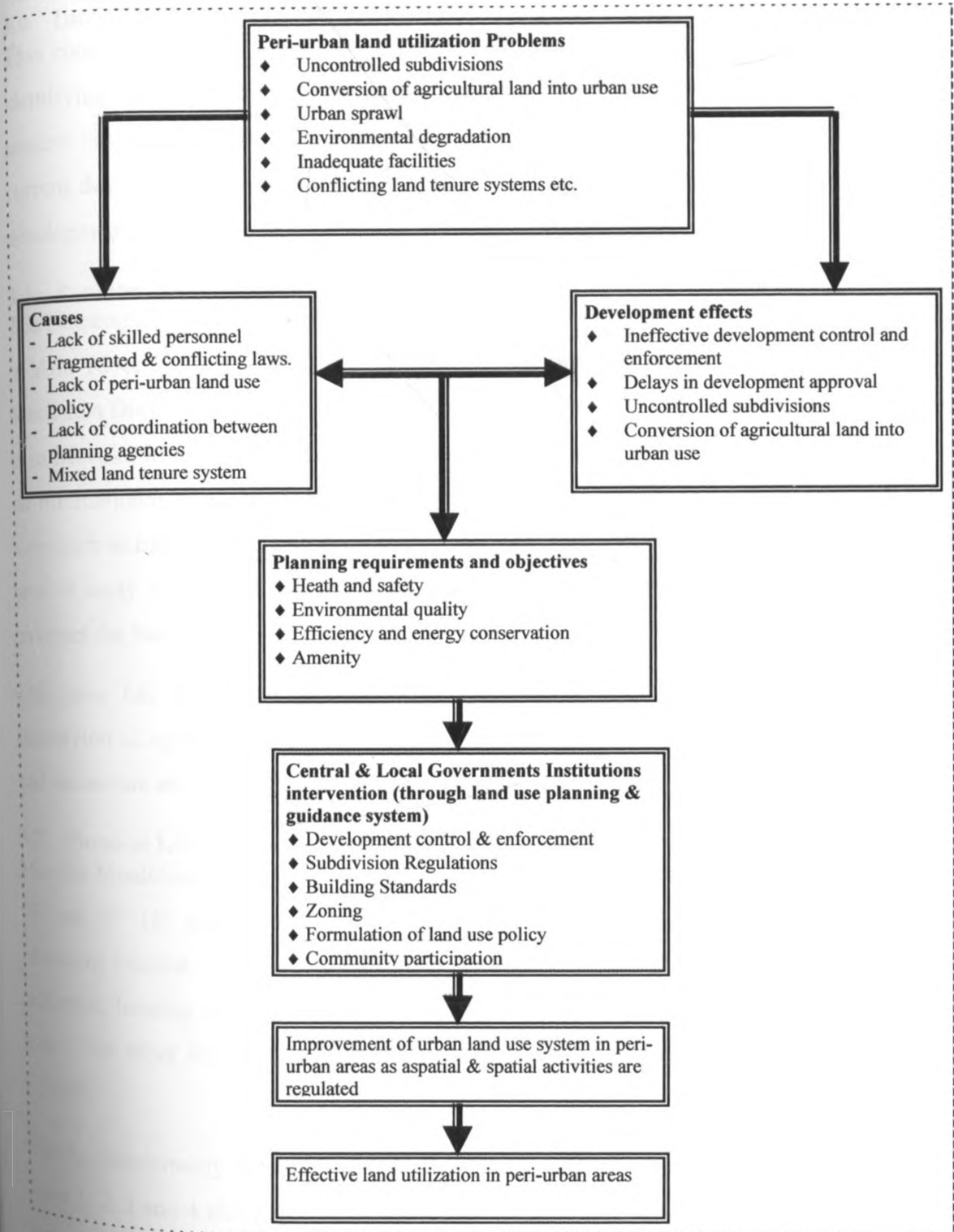
The application of such instruments is aimed at minimizing the effects of uncontrolled land subdivisions, informal conversion of agricultural land into urban use, urban sprawl, environmental degradation, inadequate facilities and conflicting land tenure systems in the peri-urban areas. The control of land use and development activities in the peri-urban areas leads to improved spatial and spatial conditions which satisfy the broader public interest objectives.

Therefore, the key elements in land use planning and management is the public interest that is, health and safety, convenience, efficiency and energy conservation, social choice and equity and amenity which demand regulation and control of land use in urban and peri-urban fringe areas. The land use planning and guidance systems represent government intervention in urban and uses which also reflect further economic, social and political processes.

The interaction between the public interest and the economic, social and political systems is used to explain how well land use processes serve the public interest (Simiyu 2002). The study

therefore aims at finding out how these principles have guided planning institutions in the study area and other peri-urban areas of our cities and towns in land use planning and management.

Figure 2: Conceptual Model



Source:- Slightly Adapted from Chapin and Kaiser, 1979

CHAPTER THREE

BACKGROUND TO THE STUDY AND POLICY REVIEW

3.0 Introduction

This chapter gives a profile of the historical development of the study area with a view to identifying the various factors that have shaped the development of the area over years to its present situation. However, it would only highlight those factors which have shaped the current development of the corridor and which should be borne in mind when planning for development and when approving development applications.

3.1 Position of the study area

The Namanga Road –Stony Athi Corridor is situated approximately 30 km south east of Nairobi, in Athi River Division, Machakos District, in Eastern Province of Kenya. The location of Machakos District in Kenya is shown on Map 1. The Namanga Road –Stony Athi Corridor is in Mavoko Municipality (Map 2) and is located along the Nairobi- Mombasa road which is an international trunk road. The area is predominantly urban in character with mixed land uses such as industries, residential estates, petrol service stations, and urban horticulture. The area of study covers about 1 km along both sides of the Mombasa-Nairobi Highway which traverses the Namanga Road –Stony Athi corridor.

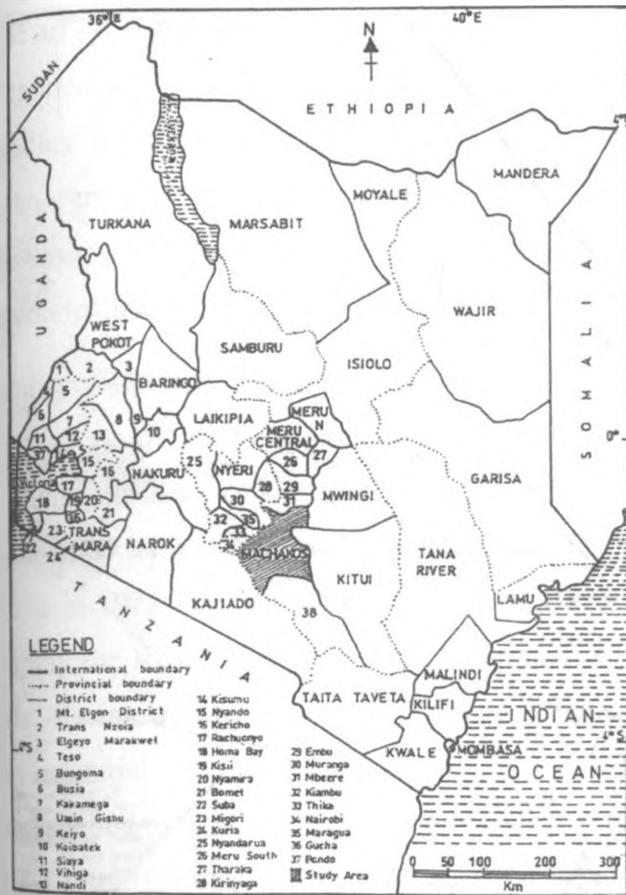
This area has been experiencing rapid land developments through land subdivisions, conversion of agricultural land into urban use, organized invasion of private land by squatters and councilors and non compliance with planning regulations.

3.2 Physical Location of Mavoko Municipal Council

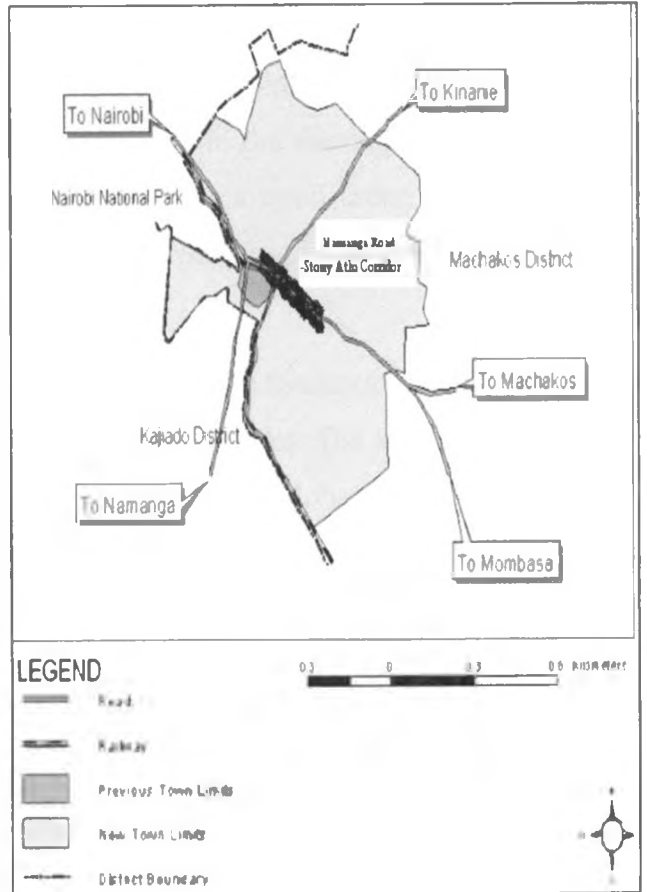
Mavoko Municipality covers an area of about 957 KM². It lies roughly between longitudes 36° 53' and 37° 15' and latitudes 1° 44' and 37° 13'. Mavoko Municipality is located within Machakos District. Athi river town is its main trading centre. It's main economic activities are industries, housing construction and horticulture which have attracted a big population to the area. The other important settlements within the Mavoko Municipality are Mlolongo and Kyumbi.

Mavoko Municipality borders the Districts of Kajiado to the South and Nairobi to the West. Maps 1, 2, 3 and 4 show the Namanga Road –Stony Athi Corridor in its national, district and local context.

Map 1:- National context of Machakos District



Map 2:- Local context of Mavoko Municipality



Source:- Adapted from Survey of Kenya, 2007

3.3 Historical Background

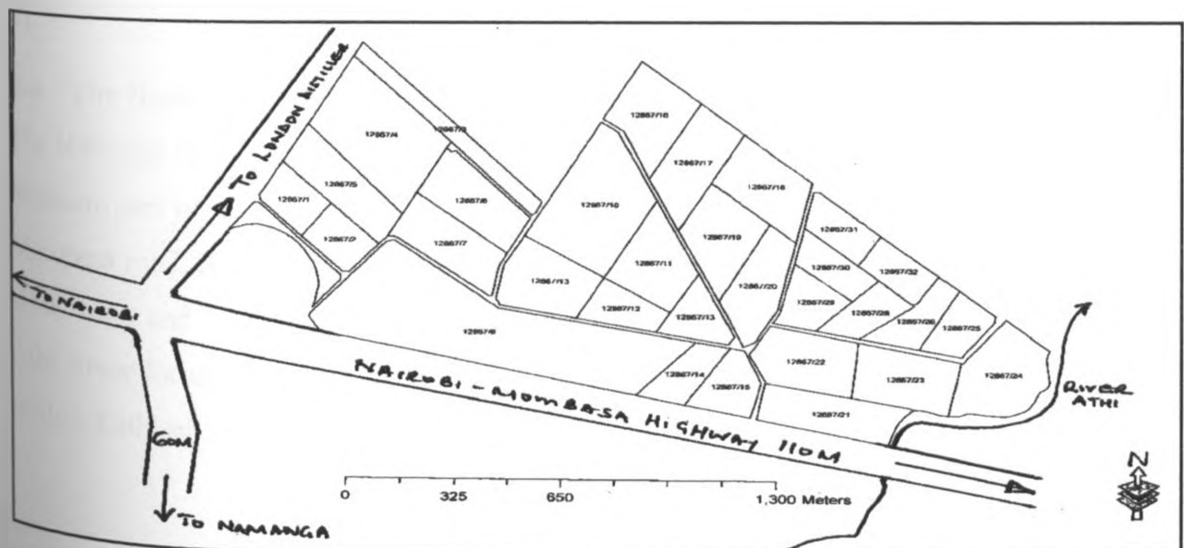
Mavoko town came into existence as a result of the presence of the Athi River railway station in the area. The railway station was established as a good resting place for the railway builders after a torturous climb from the coast during the construction of the Kenya-Uganda railway by the British colonial rulers. Mavoko town was also a resting place for the Akamba tribesmen who engaged in poultry trade and had to transport their birds on foot from the surrounding Machakos District to Nairobi in the early 19th century. This led to the establishment of the first shops in the town in 1919. From that time, onwards, Mavoko town grew under the auspices of the former Nairobi County Council which was subsequently dissolved in 1923 paving the way for Mavoko town to become an autonomous urban council.

The first industry was established at Mavoko in 1953 and this was the Kenya Meat Commission. This was followed by the East Africa Portland Cement factory which was established in 1957. Most of the other industries were established fairly recently in 1970s and 1980s when Mavoko town was designated as one of the intermediate growth centres in Machakos District in the 1980s and Export Processing zones established within the town.

Since then, the number of industrial establishments in the town has increased rapidly. This has encouraged more people to migrate to the town to seek employment. In the recent past due to good transport facilities in the area and government industrial location policies has attracted more industrial, commercial and residential investments into the municipality leading to its rapid urbanization. This is particularly manifested in the municipality's peri-urban areas of Katani, kapa, kyumbi, Mlolongo and kitengela. This rapid urban growth is however uncontrolled and uncoordinated leading to the haphazard development of the municipality.

The present Namanga Road -Stony Athi corridor used to consist of a livestock grazing area and private ranch farms before people started developing it into other uses. The area covering, London distiller, Tuffoam, and Carton city was formerly owned by Mohan Meakin. Mr. Mohan Meakin had purchased the land parcels known as land reference numbers 1337 and 1338 in 1972 from the Kenya Government to establish a ranch farm. This was intended to supply the Kenya Meat Commission located within the neighbourhood with cattle. In 1979 Mr. Meakin transferred the ranch to Galot Industries. Following the growth of Athi River as an industrial town, Galot industries consolidated the two land parcels (LR 1337 and 1338) and applied to the Commissioner of Lands for change of user and subdivision of the ranch in 1981 into 31 industrial sub plots(see Map 3) for the development of an Export Processing Zone (EPZ). The subdivision scheme plan proposed the subdivision of the ranch into 31 sub plots whose sizes ranged between 4 ha and 16 ha. The sub plots were accessed by roads of 12 metres width. However the plan lacked open spaces, dumping sites, sewerage trunk lines and storm water drainage channels. All the sub plots were served with water and access roads and were constructed and tarmacked.

Map 3 Subdivision Plan for Galot Industry Land (LR NOs. 1337&1338)



Source:- Adapted from Survey of Kenya, 2007

However, Galot industries went under in 1990 and the ownership of the industrial sub plots was taken over by Kenya Commercial Bank as part of their guaranty for money loaned to the industries. In order to recover its money, Kenya Commercial Bank passed a board resolution to sell the sub plots to members of the public through auctioning. This approach failed to attract purchasers for the land and the bank decided to sell it to people on individual negotiation basis. Thus when a successful deal was sealed the purchasers were not conditioned to develop their land parcels as industrial. Majority of them were keen on residential investments due to the increasing housing demand in the area.

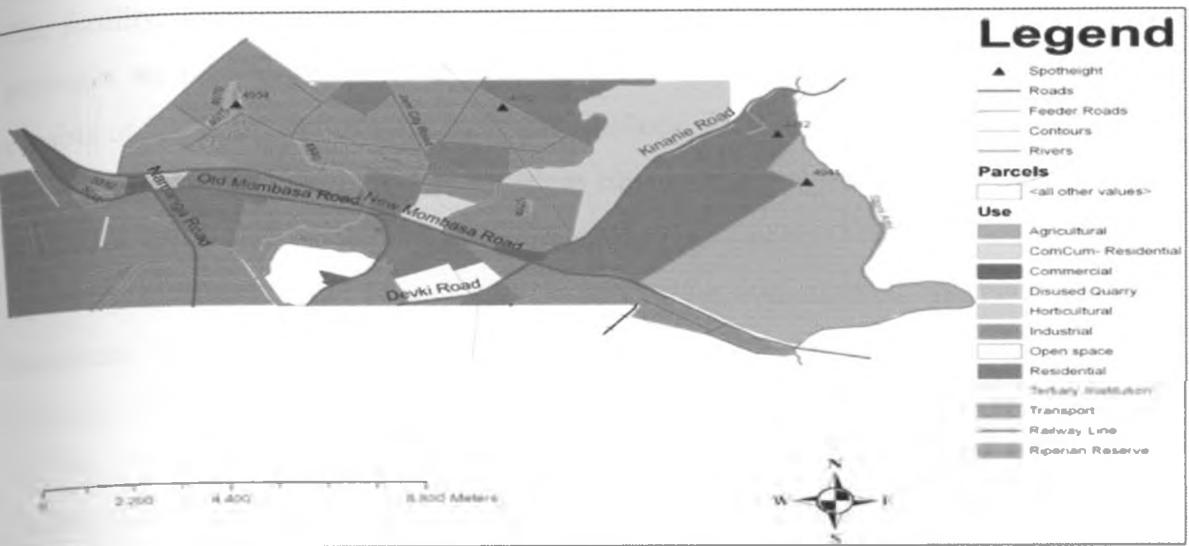
This has led to the mixed land uses found in the area where industries and residential developments are located next to each other. The main industrial establishments found in the area are London Distiller (LR Nos. 12867/4/8) and Tuffoam (LR No. 12867/1) which had bought their land parcels from Galot industries before it went under. The other industries were established in the area as follows:- Barber tannery (1988), Sigma feeds (1990), TSS Tannery (1992) and Athi River Steel Plant and Devki Steel Mill (1995). All these industries are located within Government alienated land which was not part of Galot industries' land. Currently all the tanneries are closed due to environmental concerns from the local community. The rapid acquisition of the land for residential purposes from Kenya Commercial Bank by private companies/individuals started in 2000. At present the area has prime residential estates such as Hillcrest (LR No. 12867/10) and Budget housing (LR No. 12867/22).

The remaining Section of the Namanga Road –Stony Athi Corridor covers Senior Staff Estate, Athi River Steel Plant, Kenya Meat Commission, Gichimu and Muchiri residential estate, Devki Steel Mill and Harvest Horticultural farm. Senior Staff Estate, Devki Steel Mills and the Kenya Meat Commission Industries are located on alienated Government Land while Gichimu and Muchiri Estates and Harvest horticultural farm are located on freehold land (see map 4).

3.4 The Namanga Road -Stony Athi Corridor (Study Area)

The Namanga Road -Stony Athi corridor, which is the area under study, is situated on the North Western part of Machakos District at about 40 km from Machakos town along Nairobi-Mombasa road. It is bordered on the Northern part by Athi River West ward, on the South by KMC ward and Mlolongo/Katani ward on the Eastern part. It is in Athi River Sub location, Athi River location, Athi River division, Machakos district in Eastern province and it falls within Kathiani constituency (See Map 2).

Map 4: Existing Land Use patterns in the Study Area in 2007



Source:- Adapted from Survey of Kenya, 2007

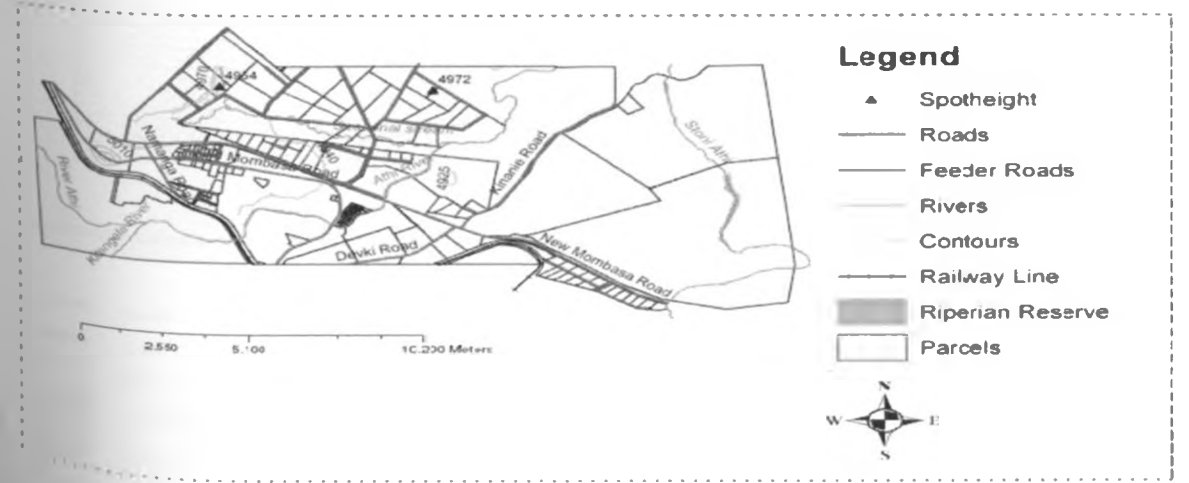
3.5 Topography

Athi River division and the area of study by extension, has an altitude that varies from 1500 to 1600 meters above sea level. The Corridor falls on the Kaputiei and Kapiti plains, a kind of bluff above the Athi River plain. The Corridor generally slopes towards the Athi River and Stony Athi River into which the area drains. Generally the area is flat making it suitable for residential, commercial and industrial developments.

3.6 Drainage

The Namanga Road –Stony Athi Corridor lies within the upper Athi catchment drainage basin. The main rivers that drain the area are Athi River and Stony Athi. The rivers have their origins in the Ngong Hills. However, Stony Athi River admits additional water from seasonal and permanent streams from the foot of the Lukenya Hills.

Map 5:- Drainage Map for the Study Area

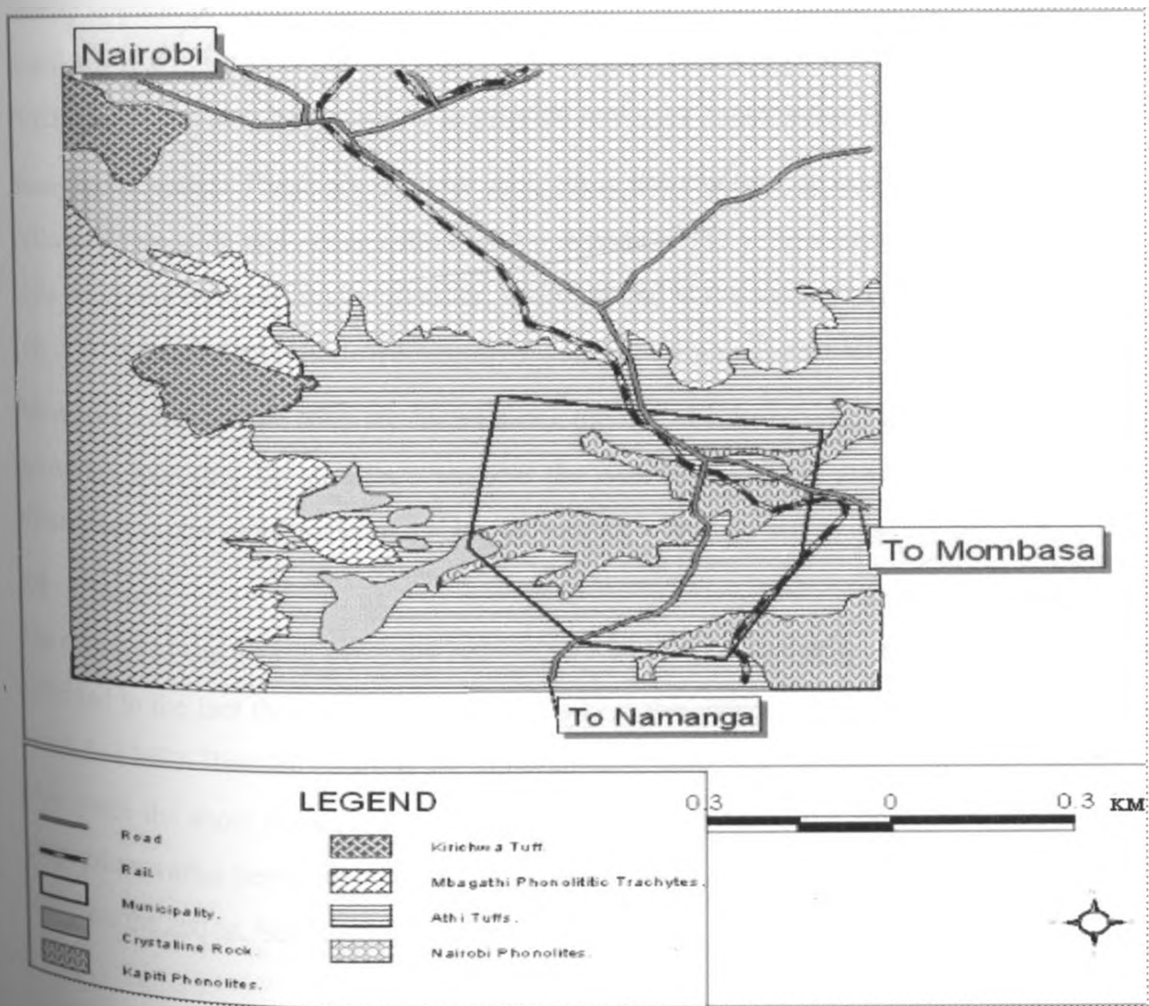


Source:- Adapted from survey of Kenya, 2007

3.7 Geology

The fertility, drainage and stability of land has its fundamental basis in geological processes set in place millions of years ago. Exposed geological material on the area consists of Kapiti phonolite, Athi tuffs and lakebeds. These are underlain by other tuffs, and the Nairobi phonolite. In the North, from Nairobi National park underlies the Nairobi phonolites, in the West are the Mbagathi phonolitic trachytes and to the East are Athi tuffs (See Map 6). The Nairobi Phonolite rocks are strong, well drained and have a rocky basements. These characteristics make the rocks suitable for quarrying activities for building stones. The characteristics also enable them to provide strong foundations for buildings. For this reason the area is suitable for residential and industrial developments as excavation for building foundations is not expensive. Quarrying activities are also done within the municipality's areas of Katani, Kenani and Lukenya Hills which provides cheap materials for construction of houses and industries. This tends to encourage the conversion of agricultural land into urban use in order to supply adequate land to meet the rising demand for housing as the population of the area increases.

Map 6:- Geological Map for the study area



Source:- Adapted from Kvalo P.K (1985), 2007

3.8 Soils

The area is characterized by red-brown soils, stony sand soils, yellow-brown soils, black cotton clay soils and alluvium soils. Each of the soil type is discussed below:-

Black Cotton soils:- These are classified as dark gray brown calcareous clays with light textured top soil. When dry the clay fractures to form deep cracks while when wet the soil is very sticky plastic and has very poor drainage qualities. This type of soil is dominant in the areas around Sinai and Carton city slums, Kinani Road, some parts of senior staff estate and the Kenya Meat Commission areas. These areas are experiencing rapid industrial and residential development activities. However, the soil type does not provide a strong basement for building foundation. Thus to put up a strong building involves a lot of scooping of the top soil.

Red-brown soils:- This soil is loamy clay in nature. The soils are poorly drained when wet as it cracks when dry. It is mainly found around harvest horticultural farm and it is used to produce rose flowers and French beans for export.

Yellow-brown soils:- This is a shallow yellow-brown to red friable clay overlaying the laterite horizon or rock. The soil is well drained. This soil is found around tuffoam, London distiller and within some parts of senior staff estate. This soil provides a strong foundation for buildings. It can also be excavated to provide rocks for construction of building foundations.

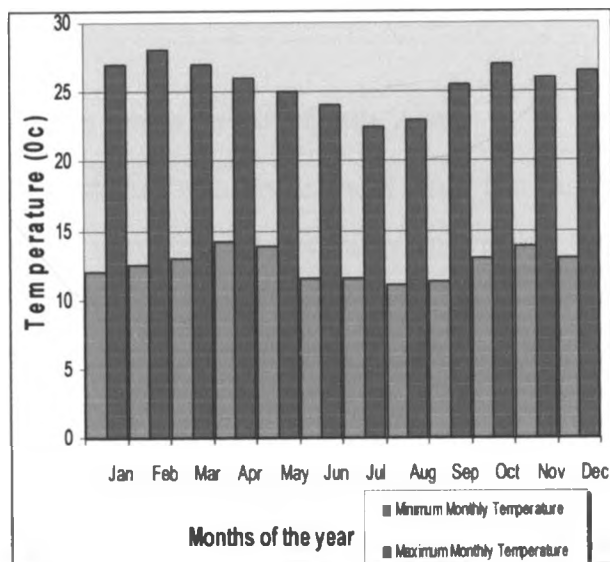
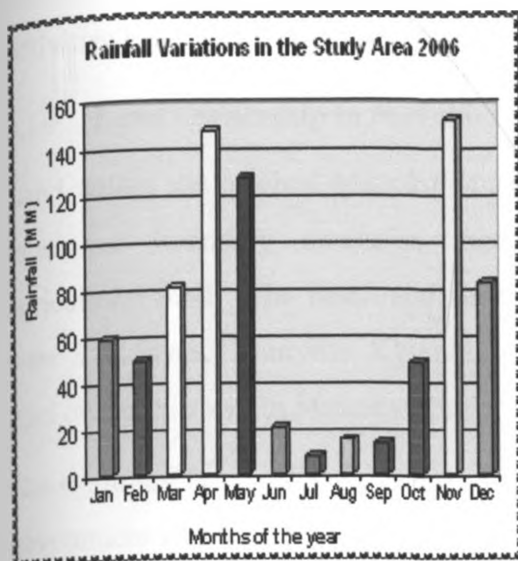
Stony sand soils:- These are shallow sand stony soils with rock outcrops which underlie the yellow-brown soils and occur within the same zone as the yellow-brown soils. These types of soils are found around London distiller, Tuffoam and at the section near Stony Athi River. The soil is well drained and has low humidity making it suitable for buildings.

Alluvium soils:- These soils are found along the river banks of Athi and Stony Athi. The soils have high humidity because they are near the river banks. They are used for the growing of subsistence crops such as maize, cabbages, onions, tomatoes etc.

3.9 Climate

The climate of the area is generally hot and dry with annual rainfall of about 620mm. This is attributed to the fact that Athi River division where the corridor falls lie in the rain shadow of Machakos hills. Rainfall patterns are bimodal with long rains occurring between March and May while the short rains start at the end of October and lasts till December. Mean monthly temperature varies between 18°C and 25°C. The coldest month being July while October and March are the hottest. See Graphs Below:-

Graphs 1 and 2:- Temperature and Rainfall Records for The study area (2006)



Source:- Meteorological Department of Kenya, 2006

3.10 Wind

The wind speed for the study area is highest in the Months of January, February and March. The calmest months in the study area are June, July and August. The speed of wind is an important aspect in land use planning as it determines the plot layouts, street orientation and location of smoke creating and obnoxious industries from the point of view of amenity of residential areas.

3.11 Humidity

Humidity is an important aspect in land use planning in a given locality. Humidity is highest in the study area during the months of December, January and February and lowest in the Months of June, July and August.

3.12 Vegetation

The vegetation in the corridor comprises a variety of grass, shrubs and tall deciduous plants which are mainly dominant along River Athi. The most dominant vegetation along the river valley includes acacia, range land Masai grass and a variety of plant species.

3.13 Agro-Ecological Zones

Agro-ecological zones provide information about ecological potentials of the land. The Namanga Road-Stony Athi Corridor lies in Zone VI which is the lower midland zone with low fertility soils and poorly distributed rainfall(See appendix 8). The low rainfall, poor distribution patterns of the rain and low fertility soils makes the area un economical for the production of crops like maize, beans and coffee save with the aid of irrigation systems. The mid land zone is

characterized by sandy and clay soils. The sandy soils are well drained and do not crack during the dry season. This makes the area suitable for residential, industrial and commercial activities hence the land use changes taking place.

3.14 Land Ownership in Mavoko Peri-Urban Areas and the Study Area

Land within the original Mavoko Municipal boundary was government land. But the 1985 municipal boundary extension incorporated into the Municipality privately owned agricultural land. The ranch and sisal agricultural areas incorporated into the municipality were Syokimau, Drumville, Kyumbi, Lukenya, Kinanie, Katani and Githunguri. The present land ownership within Mavoko Municipality can be categorized as follows:

Government land:- These include land already in use or reserved for future use by the government and land for public use. It is administered by the Commissioner of Lands as the custodian of all government land. It constitutes land located within Mavoko old town and Athi River North. Much of this land has been alienated and allocated to private companies and individuals as leasehold tenure land. A large portion of the land has not been developed and it is assumed to be held for speculative purposes.

Council land:- This covers a small portion of the total land in the municipality. It includes developed and undeveloped land earmarked for public utilities like health facilities and schools owned by the Municipal Council.

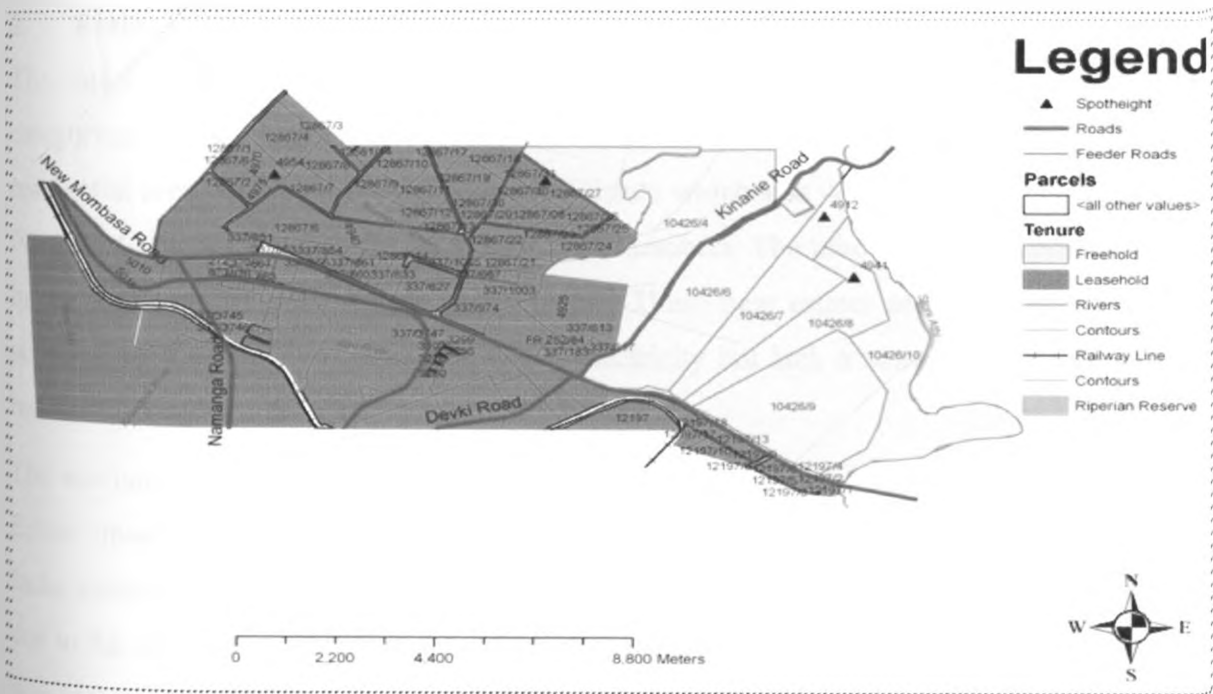
Leasehold:-This form of land tenure includes land that is privately leased from the government for specified lease term usually 99 years. This category of land constitutes land located in Athi River old town, Athi River North and Export Processing Zone areas. The unplanned settlements located within this leasehold land are Mlolongo trading centre, Sinai and Kazito slums.

Freehold land:-This category of land ownership covers much of the municipality and it is found in most of the peri-urban areas of Mavoko municipality like at Syokimau, Githunguri, Katani, kyumbi, Kapa, Kinanie and Drumville. The land in these peri-urban areas is increasingly being subdivided and converted into residential and commercial uses without effective development control measures. The residential developments located within these peri-urban areas includes, among others, the fast growing informal/unplanned settlements at Syokimau, Githunguri, Kyumbi, Drumville, katani and Kinanie. These residential developments have inadequate basic services and community facilities.

The main land ownership tenure systems in the study area are private freehold land held under 999 year lease and private leasehold land held under 99 years leases (see map 7). The

freehold land was formerly used for ranching and sisal farming. The freehold land covers areas like Gichimu and Muchiri residential estates, Agricultural Syndicate Farms (LR Nos. 10426/7 – 10) and Harvest Horticultural Farm. This land has been subdivided and converted informally and/or formally into urban land uses such as residential, commercial and industrial purposes due to the urbanization of the corridor. On the other hand, leasehold land in the study area was Government land alienated to private individuals and companies. In the study area, leasehold land covers Senior Staff estate, Devki Steel Mill, Kenya Meat Commission, Zahra petrol service station, Sigma feed and Alframa tannery area. Much of the leasehold land in the study area is undeveloped and is assumed to be hoarded for future capital gains. The present land use pattern in the area is dominated by residential houses followed by industrial and horticultural farms (minority). In most cases the three land uses exist side by side due to the mixed land tenure systems in the area. With the rising demand for land in the area agricultural land is informally/formally converted into urban land uses like residential, commercial, industrial etc without any effort being made to control the order, nature and direction of development in the area.

Map7:-Land Tenure Systems in the Study area



Source: Adapted from Survey of Kenya Records, 2007

3.15 Land uses

A mixture of land uses characterize the study area with the general land use pattern comprising of industries, residential houses, horticultural farms and informal settlements.

Each of the landuse type is discussed below:

1. Agriculture

The corridor falls under a semi-arid zone of low average annual rainfall of about 620 mm. However, the area supports important agricultural activities such as horticultural farming which is carried out through irrigation systems. The water for irrigating the horticultural farms is drawn from river Athi and from bore holes. Horticultural production relies more heavily on proximity to transport networks and urban markets than traditional or plantation crops. The main horticultural farms in the area are situated along Kinani road and they produce French beans and Rose flower for export. This is done by farms like Harvest and Sosiani. These farms are a source of employment for the locals and migrants from outside the area. Walls (2004) as quoted by Kinyanjui (2006), has noted that in Kenya peri-urban horticulture for export has grown rapidly since the mid 1970's to become one of the top three foreign exchange earners in 2001. Also within the same corridor subsistence maize and vegetable production is carried out along the river Athi river banks. These activities are carried out by the urban poor living in the informal settlements in the area to augment their household food supply. This has led to the destruction of the riparian reserve along river Athi and pollution of the River's water due to application of fertilizer inputs on the farms.

2. Residential

The main types of residential houses found in the area can be classified into 3 broad categories, that is, high, medium and low class residential houses. The main high class residential areas in the area are Senior Staff Estate which was developed by the East Africa Portland Cement Company for its Senior Staff members. The other prime residential estates in the area are Hillcrest, Budget and Vulcota. These new estates are well developed and supplied with essential services like water, electricity but lack a sewerage disposal system hence the use of septic tanks.

The medium class residential houses in the corridor are mainly within Gichimu and Muchiri Estate situated within the freehold land opposite the Kenya Meat Commission. The estate lacks essential services like electricity, water (served by a communal tap), open spaces etc due to the informal subdivision of the freehold land occupied by the estate. The freehold land was incorporated into the municipality through a boundary extension. The privately owned freehold land is being subdivided and converted into commercial and residential uses due to the urbanization of the area.

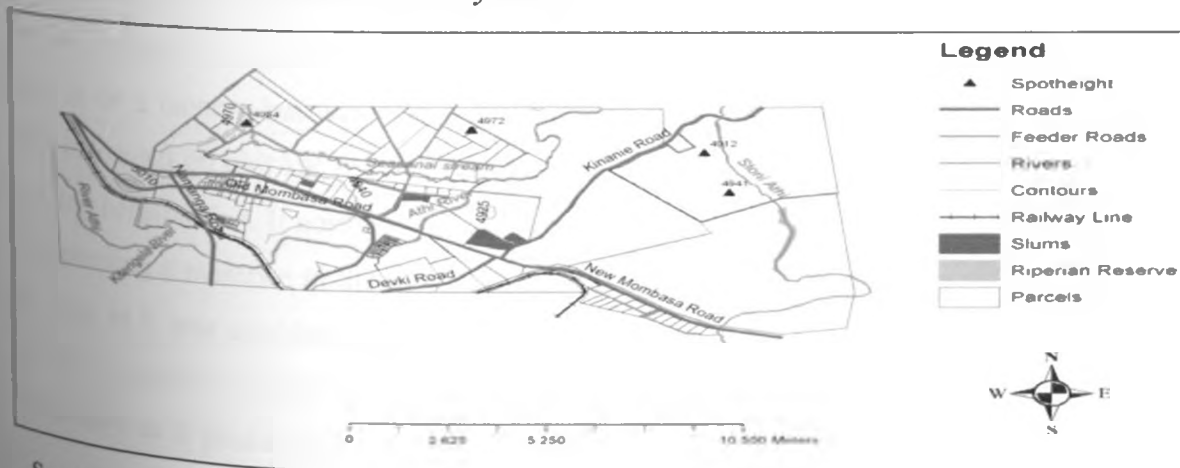
The low class residential houses in the area mainly comprises of slum settlements such as Kazito, Carton city and Jam city. These have come up through squatting, organized invasion of private land and its subdivision informally into plots measuring 10 by 10m. These slum

settlements lack all the essential services save for communal water supply. The problem of squatter and slum settlements is spread within the corridor. In 2003 there was only one slum settlement in the corridor but by 2006 there were three new slum settlements due to politically instigated invasion of private leasehold land by Mavoko Municipal Council councilors and the rapid urbanization of the study area. Rapid urbanization of the area has led to the development of new industries and housing estates in the area. These new investments and the presence of Export Processing Zones within Mavoko town has pulled more people into the corridor. This has encouraged the expansion of squatter settlements in the area as casual workers in the industries located in the area live in such settlements. The Councilors have also raised the issue that the land owners have not been paying rates to the Council.

The councilors have incited the Locals to demand for land from the Government to settle squatters located in the area. This has resulted in the invasion of private land and its subdivision into uneconomical units for squatting purposes. The illegal subdivisions of private land is characterized by non-compliance with land use planning guidelines as the invaded land is usually demarcated using chains and allocated to people purported to be squatters. The illegal invasion and subdivision of private land has given rise to slum settlements such as Sinai, and Carton City. The slum settlements are characterized with informal subdivision of land into irregular shapes and tiny uneconomical plots making servicing of these settlements by the Mavoko Municipal Council impossible. The settlements are characterized by inadequate housing, deficient facilities, overcrowding, congestion, poorly arranged structures, lack of sanitary facilities and inadequate light and circulation.

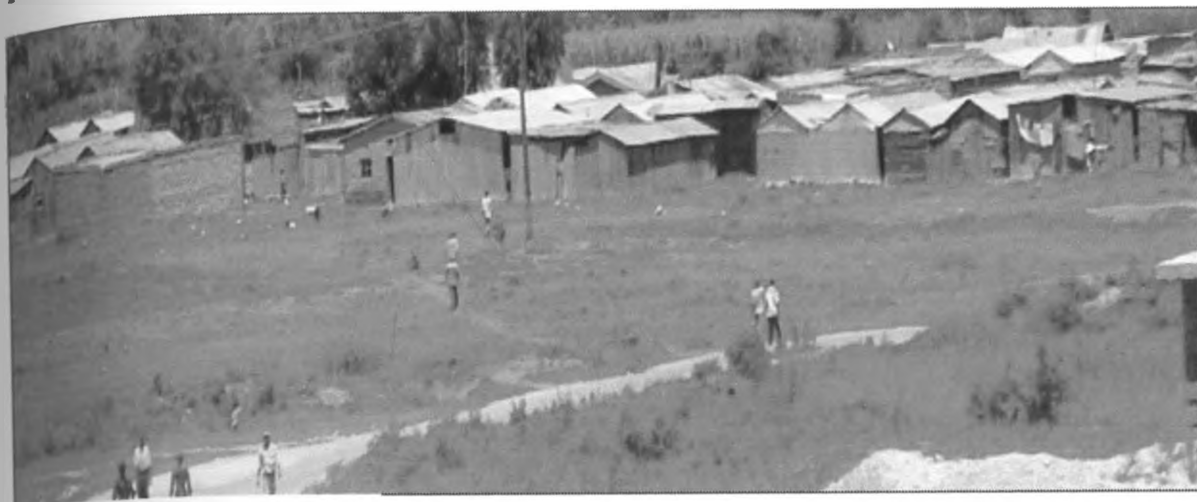
The slum settlements are built on private land hence there is no security of tenure from forced eviction and/or relocation. Therefore, ownership rights for the slum dwellers are limited as they have no documents to their land, hence the failure to develop their land since they can't secure credit from banking institutions.

Map 8:- Slum Settlements in the Study Area



Source:- Adapted from Survey of Kenya, 2007

Plate 1:-Housing Units in Carton City slum settlement



Source:- Field survey, 2007

3. Industrial Land Use

Athi River is a fast growing industrial town and has its landmark features such as Chimneys of cement giants; Bamburi, Portland and Blue triangle. But within the study area we have industries such as London distillers, Tuffoam, Barber Tannery, Devki Steel Mill, Kenya Meat Commission and Athi River Steel Plant. London Distillers and Tuffoam industries are located at the junction of Namanga Road on the left hand side of the Mombasa- Nairobi highway on your way to Mombasa. London distillers comprises of two land parcels LR No. 12867/4 (16.46 ha) and LR No. 12867/8 (8.05 ha). The industry specializes in alcoholic beverage production. The factory is served by a well maintained 12m width road which is tarmacked. However, the industry is not served with sewerage disposal system leading to discharge of bad smelling effluents to the neighbouring undeveloped plots (see plate2). The location of a Hillcrest residential estate next to this factory has led to land use conflicts (bad smell, high noise) between the two types of land uses.

Tuffoam industry is located on plot LR no. 12867/1 (8.05 ha) and it specializes in mattress production. It is served with electricity and water but has no sewerage disposal system. Barber Tannery is located on plot LR no. 337/612 (4.25 ha) which is along the Kinani road. It used to be a tannery but was closed down due to its environmental pollution. Devki Steel Mill is located on plot LR no. 337/1651(2.04 ha) and it produces heavy steel metal bars for housing construction. It normally produces heavy smoke and high noise during its operations thus creating a nuisance to the locals. The Kenya Meat Commission is the oldest industry in the area as it was established in 1953. It is located on plot LR no. 12197 measuring about 40.5 ha. It processes meat and related byproducts for the local market and foreign export. It is a nuisance as it produces obnoxious smell during its activities leading to land use conflicts

between the industry and the residential areas nearby. Athi river steel plant is located on plot LR no. 12197/10 (5.25 ha) along Mombasa -Nairobi Highway. It produces heavy steel metal bars for housing construction. The industry is a nuisance as it produces foggy smoke and high noise during its operations. Alframa is located near the cheetah gate of Nairobi National Park. This is a tannery which produces bad smell and discharges industrial effluents into the surrounding land surface and River Athi. This has been a source of complaint from Senior Staff estate residents.

These industries are a source of employment for local people and migrants into the area. However, these industries are a source of environmental pollution through release of obnoxious emissions and effluents into the open land surface and the neighbouring River Athi natural water course. There are no buffer zones created to separate these industries from residential areas hence the land use conflicts experienced in the area.

Plate 2: Discharge of Industrial Effluent on the Open Land Surface in the Study Area



Source: Field Survey, 2007

3.16 Infrastructure services

1. Water

The Namanga Road – Stony Athi corridor gets its water from boreholes, rivers and piped connections. The main rivers where water is drawn from in the area are Athi and stony Athi. The water from the rivers is used for subsistence farming irrigation along the riparian reserves of the rivers. Major industrial developments such as the Kenya Meat Commission and London distillers have sunk boreholes to provide water to their premises. The supply of piped water to the area is undertaken by the Nairobi water and sewerage company. The Mavoko Municipal council working in liaison with the company has provided communal piped water to the Sinai, Kazito and Carton city slums and the Gichimu and Muchiri residential Estates.

The company also supplies piped water to the Senior Staff Estate and the Kenya Meat

commission industry which also has dug its own borehole to supplement its water requirements. In overall the water supply to the Namanga Road-Stony Athi Corridor is inadequate for the growing population in the area. This has resulted in frequent water shortages and rationing according to sources at Mavoko Municipal Council. The field findings also confirms the inadequacy as it reveals that 39.3% of the residents interviewed in the study area, accessed their water from piped communal supplies while 5.4% buy their water from private individuals.

Table 4: Level of Water Service in the Study Area

TYPE OF SUPPLY	% COVERAGE
Communal Piped	39.3%
House Tap	42.9%
Purchase	5.4%
Others Boreholes ,Rivers	12.3%

Source: Filed Survey, 2007

2. Sewerage System

The Namanga Road-Stony Athi Corridor depends on septic tanks, pit latrines and conventional sewer to disposal of its human waste and industrial effluents. The main industries in the area which use septic tanks to dispose their waste are London distiller, Alframa, Tuffoam and Barber Tannery, Athi River steel plant. The main sections where pit latrines are used to dispose off human waste are Sinai, Carton city and Kazito slums, and Gichimu and Muchiri residential Estate.

The areas served with a sewerage system in the study area are senior staff Estate, Devki Steel Mill and the Kenya Meat Commission Factory. The Mavoko Municipal has no immediate plans to extend the sewer trunk line to cover many parts of the study area. Therefore there is increased use of septic tanks and pit latrines to dispose both human and industrial liquid waste. The use of septic tanks involves regular emptying thus making their use rather costly. Private exhauster cost Kshs. 15,000/= while the council lacks an exhauster.

The use of septic tanks by industrial establishments and residential housing units has sometimes led to the disposal of human and industrial wastes on the open land surface. Industrial effluents from industries such as Alframa and London distillers are disposed into the surrounding plots thus making its way into river Athi leading to pollution of the river. With in the slum settlements such as Carton, Sinai and Kazito, human waste is disposed on the open land surface as the pit latrines in the areas are inadequate for the increasing population. The other problem is that these slum settlements are located very close to the banks of river Athi. During the rain seasons the area floods and the human waste is released

into river.

Plate 3: Private Treatment Plant to serve Hillcrest Estate under construction



Source- Field Survey, 2007

The cost of connecting to the Export Processing zone sewerage truck line located about 2km away from the study area is prohibitive for private developers.

3. Solid Waste management

Solid waste management is mainly concerned with the handling of solid wastes, its storage, collection, processing and disposal. The management of solid waste in the study area is the responsibility of Mavoko Municipal Council. The Municipal council has two tractors which collect refuse from residential and industrial premises on a rotational basis once a week. However the capacity of Mavoko Municipal Council to manage the solid waste generated in the study area is limited as it has only two tractors and six personnel to handle the collection of refuse from the entire municipality's areas.

The main solid wastes found in the study area are construction excavation soils, broken glass, ceramics, metal, plastics and wood from households, commercial, institutional and industrial premises. Industrial solid waste's management requires specialized equipments and personnel to dispose but Mavoko has none at the moment. The Municipal council is yet to develop a dump site for the harmful industrial wastes generated by the industries located in the corridor. Mavoko Municipal council also has no permanent dumpsite for disposing household solid wastes generated within its areas of jurisdiction. The waste is usually damped at undeveloped land located in the quarry zone near Katani. With the rapid developments taking place in the study area such as the expansion of housing and industrial investments, the council needs to improve its capacity to manage its solid wastes. The population of the Namanga Road -Stony Athi corridor has increased as more housing investments are completed and sold to the general public.

This has led to uncollected refuse being damped on the open land and open spaces within

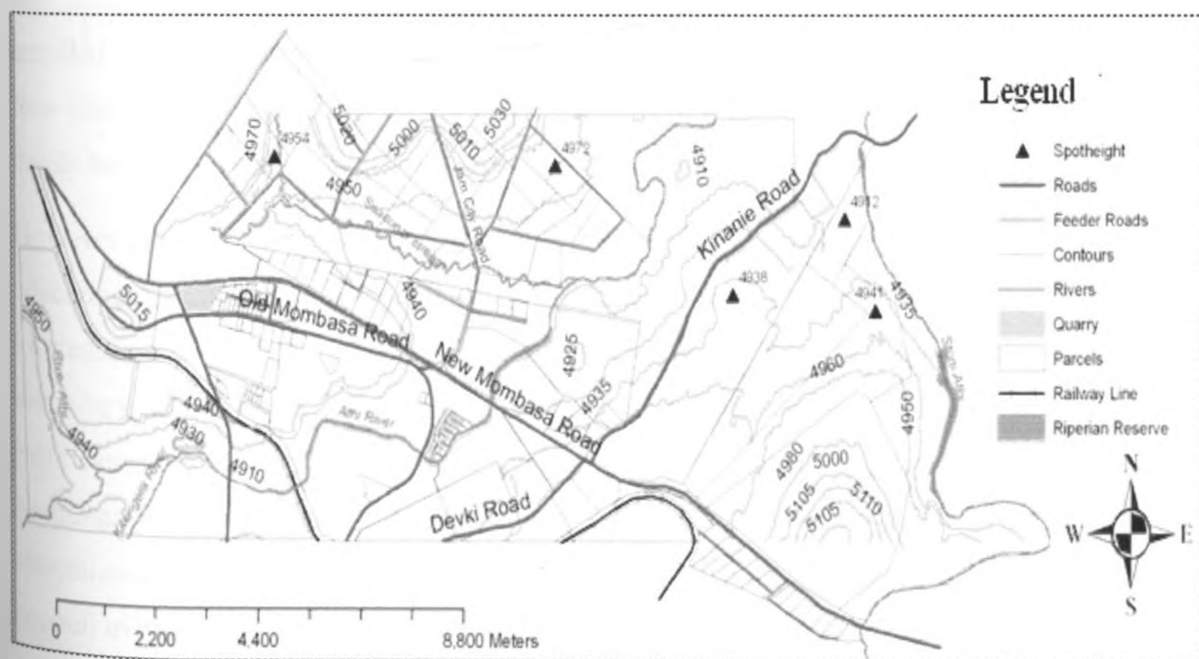
residential areas and into storm water drains. Large moulds of uncollected refuse are noticeable in the Sinai, Kazito and Carton slums. This provides a breeding area for disease vectors. According to the study findings it was revealed that the council collects only 10.7% of the solid waste generated in the study area.

4. Roads

The corridor is linked to Nairobi via the Great North Road (Nairobi-Namanga road), Nairobi-Mombasa highway and the Kenya-Uganda railway line. The Nairobi-Mombasa highway passes through the study area and is classified as A109. It is well maintained and is in good physical conditions. It links the area with important centres such as Nairobi, Machakos and Mombasa.

The Great North Road which goes to Namanga also passes through the study area and is classified as A104. It links the area with important centres such as Kitengela, Kajiado and Namanga. The Kenya – Uganda Railway line from Nairobi to Mombasa passes through the area and has a main stopping point at Athi River station which is about 2km away from the study area. The railway line is utilized to transport raw materials and finished products into and from the industries located in the area such as the Kenya Meat Commission and Devki steel Mills. Therefore in terms of communication, the Namanga Road – stony Athi corridor is well served a factor which makes it more attractive for industrial and housing development.

Map 9:- Transport Infrastructure in the Study Area



Source:- Adapted From Survey of Kenya, 2007

5. Electricity

Electricity is provided to the study area by the Kenya Power and Lighting Company which is a public enterprise with a monopoly in the distribution of electric power to industries, commercial, public institution and residential premises. In the study area, electricity is provided to all the industrial premises such as Devki steel mill, Athi River steel plant, the Kenya meat commission, London distiller and Tuffoam. Prime residential areas such as Senior Staff Estate are also provided with electric power.

However there is a glaring inequality between the industrial establishments, the high class residential estates and the Middle and Low class residential areas which are not provided with electricity. For instance the Kazito, Carton city and Sinai Slums and Gichimu and Muchiri residential Estate have no electricity but majority of the people live in these areas. This observation was supported by the field survey which showed that 46.4% of the people interviewed are provided with electricity while the remaining 53.6% are not provided at all.

3.17 Community facilities

1. Education

Educational facilities are important for human resource development in a given area. In the study area most of the educational facilities are in private hands. These are normally low level educational facilities such as private Nursery schools located in Kazito and Carton city slums and in private premises within Senior Staff Estate. The Nursery schools in the Kazito and carton city slums charge Kshs. 2,000/= per a month as fees. The number of pupils enrolled in the private nursery schools is small as most of the slum dwellers cannot afford the fees charged. The nursery school located at the senior staff estate has a high enrollment of pupils but the amount charged as fees was not disclosed by the owner.

However higher level educational facilities such as primary, secondary and tertiary educational facilities are provided elsewhere save for the Meat Inspectorate Training College located near Devki Steel Mill. Majority of the residents in the study area access primary and secondary school services at the Mavoko main town centre which is about 3 km away. The main cause of this problem is the lack of public utility land to develop such facilities in the Namanga Road –Stony Athi Corridor. The utility plots were not provided for during land allocation and subdivisions due to the informal subdivisions. Therefore, it is necessary for the council to reconsider the overall layout for the study area in order to designate sites for public amenities. There is otherwise the risk that individual owners will subdivide their plots independently and the opportunity will be missed to provide the whole range of required community facilities in the area.

2 Health

The main public health facility serving the study area is the Athi river health centre next to Mavoko municipal council offices about 3 Km away from the corridor. Other health facilities in the study area are private clinics. The private clinics charge a fee for their services. They operate on a daily basis and they are manned by people whose professional medical backgrounds are questionable. The total number of private clinics located in the study area is three. Two clinics are located in the Gichimu and Muchiri residential estates. The other remaining clinic is owned by Tuffoam Industry and it only attends to its staff personnel. The clinic is located within the industry's premises. The capacity and coverage of the three privately owned clinics is limited. High level Medical Services are obtained at the Athi River Health Centre next to Mavoko Municipal Council, Kenyatta National Hospital in Nairobi and at the Machakos District hospital.

The other community facilities in the area of study is the District Divisional Officers office located at the main entrance to the Kenya Meat Commission and a minor police post located at senior staff river view estate. Religious activities in the area are mainly located within the informal settlements where temporary structures are used as worshipping places for catholic and African inland church goers. The Kazito slum has one African Inland Church and in the Gichimu and Muchiri estate there is one Catholic Church. However the main religious facilities are located at the Mavoko Municipal Council Central Business District such as African Inland Church, the Baptist Church and the Catholic church near Mavoko Municipal offices.

3.18 Urbanization Trends in Mavoko and the Study Area

Urbanization as a process manifests itself in many ways. The degree of urbanization in Mavoko and the Namanga Road -Stony Athi Corridor is analyzed below by looking at the following variables:-

General Urbanization Trends in Mavoko Municipal Areas

Mavoko is a rapidly growing secondary town in Machakos District. The town is home to many industrial, residential, commercial and horticultural investments. These investments have encouraged an influx of people into the Municipality to seek employment and housing. The increasing number of industrial, residential, commercial and horticultural investments in the Municipality have pushed land values upwards thereby encouraging big land owners to sell, subdivide and convert their agricultural land into urban uses in most of the peri-urban areas of the municipality. This has led to the rapid urbanization of Mavoko municipal areas of Katani, Syokimau, Mlolongo, Kyumbi, Kitengela and Drumville. These areas were formerly

agricultural ranches and sisal estates but are currently experiencing high rates of formal/informal land subdivisions and conversion into urban uses. This has resulted in the rapid increase of the municipality's population as more people settle in the formerly agricultural land in the municipality's peri-urban areas. However, the new residential, commercial and industrial land uses and developments are not supported with essential urban basic services and infrastructure like water, roads, sewerage disposal systems and community facilities such as schools due to ineffective development control by planning agencies hence the haphazard development of the municipality.

Population size and growth

Kenya's urban population has grown from 3.8 million in 1989 to 9.9 million in 1999, constituting 34% of the total population and is projected to grow to 16 million by 2005 (CBS, 1999). Mavoko Municipality in the 1989 population census had a total population of 21,789 persons with 6651 households. The density was 30 persons per Km². By the 1999 population census the population of the municipality had increased to 48,936 persons with 15,569 households. The density was 51 persons per Km². This was 124.5% increase from the 1989 population census (see table 6).

This tremendous population growth is attributed to the boundary extension of the municipal areas, natural increase and rural-urban migration into the area. In 2003, the central bureau of statistics recorded the population of the municipality to be 52,379 persons. This was a growth rate of 7 %, a rate higher than the national growth rate of 2.9%. The projected population of the municipality will be 67,002 by the year 2020. The table below shows this trend over years.

Table 5:-Population Growth Trends and Projections in the Study Area

Year	Population of Mavoko	% Increase in population
1948	548	-
1969	5,348	-
1979	9,760	82.4
1989	21,789	123.2
1999	48,936	124.5
2003	52,379	7.0
2006	59,531	13.6
2010	61,317	3
2020	67,002	9.3

Source: CBS Population Census 1969, 1979, 1989, and 1999. * Population Figures are based on projections.

Table 6: Population Densities in Selected Areas of Athi River/Mavoko Division in 2006

Sub-Location Name	Area/km sq ²	Total population	Household	Density
Athi River Town	38.1	26, 393	7,533	693
Athi River North *	37.8	1,657	152	44
Ngelani	94.7	5,000	1,411	53
Syokimau	38.5	7,280	2,518	189
Katani	41.7	1,704	373	41
Kinanie	130	5,375	1,074	41
Muthwani	179.1	5,272	981	29
Mathatani	397.1	6,850	1,570	17

Source:- Machakos Statistics Office, 2007 * Centre within the study area

Urban population

Machakos District under which the study area falls is a fairly urbanized district. According to the 1999 population census Machakos District had 179,500 persons living in its urban centres. Most of the urban population in the district is concentrated within two major centres namely Machakos and Mavoko where over 90 percent of the urban population is found (see table 7).

Table 7:- Distribution of Urban Population by Urban Centres

Centre	1999	2002	2004	2006	2008	%Total urban population
Machakos	143,274	150,771	155,985	161,379	166,961	82.4
Mavoko *	27,168	28,989	29,578	30,600	31,660	15.6
Kathiani	1,823	1,918	1,985	2,053	2,122	1.04
Masii	1,702	1,791	1,853	1,917	1,984	0.97
Mwala	652	686	710	734	760	0.37
Total	174,619	184,155	190,111	196,683	203,487	100

Source:- Machakos District Statistic Office, 2007 * Centre within the study area

From the table it is clear that Machakos and Mavoko Towns are the leading in terms of urban population sizes in the District. The planning challenge is that as the two main centres grow we expect a myriad of problems to crop up. The main one is over subdivision of agricultural land for speculative purposes due to the pressures of urbanization. This is already visible around Machakos and Mavoko towns as they expand physically. This has led to the peri-urbanization of the formerly agricultural ranches and farms around Mavoko town and in the municipality in general. However, this expansion is unplanned leading to the sporadic and haphazard development of the municipality. Though it is not possible to determine the degree of urbanization of the Namanga Road –Stony Athi Corridor due to lack of disaggregate population data for the area, the urbanization trends of Mavoko municipality attests to the rapid urbanization of the municipal areas and the study area in general.

Migration Patterns

According to the 1999 population census 45.6 percent of the people residing in the Municipality are in-migrants into the area. The main areas of the municipality where the in-migrants have settled are Athi River township, Syokimau, Katani and Athi River North. The main factors which have pulled people into the Mavoko municipality are the presence of Export Processing Zones industries within the municipality, cheap housing and land and commercial horticultural farms. The field survey had revealed that 76.8% of those interviewed in the study area had migrated into the area. The main reason for the in-migrations as identified by those interviewed were employment opportunities (55.4%), cheap land (19.6%) and availability of cheap housing (16.1%). The high in migration rates into the municipality have resulted in the rapid urbanization of the Mavoko Municipal areas as more people settle in the municipality. The increasing number of people settling in the area and investments in industry, housing and commercial businesses has contributed to the rapid urban growth of the area.

3.19 Policy Background

1. Urbanization Policies in Kenya

Obudho and Juma (2002) have noted that urbanization policies for Kenya started in a rudimentary form in the first half of the twentieth century, when the colonial government decided to locate periodic markets, trading centres, and towns in various parts of the colony. Their plans required that two-level system of periodic market centres and trading centres be created in attempt to organize the spatial structure.

In the 1950s, four plans were introduced that altered the cultural and economic landscape of the nation. The first Major policy formulation was 'Troupe Report', which focused on the problems of farming in the white highlands. Its major recommendation was to increase European Immigration and settlement. The second report by F.W Carpenter was concerned primarily with urban wages, although it included a section on rural wages. It proposed a policy of stabilizing urban labour through increased wages and collective bargaining. The third report was the Swynnerton Plan that dealt with the problems of agriculture in Africa areas, especially the introduction of individual land tenure and the cultivation of export crops hitherto prohibited to the Africans. The plan also focused on increasing agricultural productivity and environmental resource conservation within the African Native Reserves of Nyanza and Central provinces.

The other major report to set a National Urban Policy for all three East African Countries was the "Royal East African Commission", whose aim was to identify the causes, conditions and

trends of overpopulation in the urban areas and to suggest measures for economic development in East Africa. One of its important recommendations was the abolition of racial distinctions in land holdings (Obudho and Juma, 2002).

However, the initial concerns of Town Planning in Kenya were in health and hygiene and the laying out of well demarcated areas of different land uses. These concerns are still enshrined in a large portion of the existing planning legislation. As explained by Obudho and Juma (2002) during the colonial era, most Physical Planning in Kenya was done within the statutory boundaries of the urban centres and most was ad hoc, with the plans usually in the form of fully developed land use maps. Comprehensive National, regional development and urban planning that took account of strategic elements for promoting urban growth was not adopted until 1964.

The land use Maps did not incorporate the spontaneous developments that were taking place within the peri-urban areas of our cities and urban centres hence the uncontrolled use and development of land being experienced in these peri-urban areas like in the Mavoko Municipal areas of Namanga Road –Stony Corridor.

In the post independence period, various National Development Plans have recognized the role of urbanization in National Development. For instance the National Development Plan of 1970 – 74 recognized that urban growth should be dispersed among the intermediate growth centres. The plan emphasized selective concentration as opposed to concentrated urban development in the country. The 1974 – 78 National Development Plan emphasized on slowing down the rate of rural - urban migration by encouraging the development of rural areas through expansion of small and intermediate urban centres. This was followed by the Human Settlement Strategy of 1978 which suggested the growth of hierarchical growth centres in various regions of the country to promote balanced development. In Machakos District, in which the study area falls, Mavoko town was one of the centres designated as an urban centre under this plan.

The 1989 – 1993 National Development plan aimed at ensuring the need for rural – urban balance by guiding urbanization of bigger urban centres and ensuring that growth occurred in small urban centres. Currently, vision 2030 is aimed at ensuring the rapid urbanization of the country by 2030. The development and urban growth of Mavoko Municipality should be seen under this context as in 1980 it was identified as one of the intermediate industrial growth poles in the country, hence its rapid urbanization rates.

The first Physical Development plan for the town was prepared in 1971 by the then Town Planning Section in the department of lands in the Ministry of Lands and Settlements. The

Physical Development Plan only covered the gazetted township areas which were about 18 km². It covered areas like the Kenya Meat Commission, Makadara, Sofia, Portland Cement Factory, Senior Staff Estate and Athi Old Town. It showed existing broad land uses in the trading centre such as residential, industrial, educational, recreational, public purposes and deferred zones for future investment and development. The Physical Development Plan only covered a small section of the study area. In 1985, the township's boundary was extended to cover 957 Km² (See map 2). This boundary extension brought into the municipality large tracts of agricultural land most of which have been undergoing subdivision, either formerly or informally.

This land is now being urbanized without effective controls over the use and development of land resulting in the town's haphazard and disjointed development pattern. The other important Physical development plan which was prepared to guide land use and development activities within the Mavoko Municipal areas was the Export Processing Zone Plan (EPZ) of 1990. The Physical Development Plan was prepared to guide and coordinate the development of industries in the Export Processing Zones located within the Municipality's areas in order to create employment opportunities for the locals.

The Export Processing Zones industries have pulled more people and investments into Mavoko trading centre. The investments include residential housing, new industries and commercial businesses. The investments have boosted land values in the municipal areas and in the corridor leading to speculative land trading. This has also led to the rapid suburbanization of the peri-urban areas of Mavoko Municipal areas such as the Namanga Road – Stony Athi Corridor. This occurs as rural agricultural land is subdivided and converted into urban uses and more population moves into the study area.

2. Land Policy

Kivell (1993: 124) define land policy as "a wide set of activities whereby governments seek to influence the use, planning, ownership, price and benefits of land especially within the process of development". Central to this is the question of allocating the enhanced value which accrues from development. The sole objective of a land policy is to control land development either in the sense of shaping land use patterns, or in the broader sense of ensuring a degree of fairness and redistribution of the gains to be made. However, the current emphasis of land policy has been upon guiding or restricting new developments. For example, in the USA, there has been considerable pressure for new policies in areas of rapid urban growth.

In this sense, land policy evolves as a response to issues raised by the process of development

and it may originate from narrow land use concerns or from broader fiscal, social or ideological consideration (Kivell, 1993:124). Hall (1973) noted that the main objectives of British land use policy from 1947 onwards has been the containment of urban development, protection of the countryside and natural resources, the creation of self-contained and balanced communities, supplemented by the prevention of scattered development, building up strong service centres, improving accessibility and providing a high quality social and physical environment.

Simiyu (2002) noted that bureaucratic processes of land policy and legal development have a long history in Kenya and that the overriding concern in contemporary land policy appears to be the need to formulate a macro-level policy framework and complementary programmes about land, its ownership, distribution, utilization, alienability, management and control.

However since then the ministry of lands has drafted a national land policy for the country which is a waiting cabinet approval before its enactment. The draft National Land Policy is based on broader principles unlike those expressed by Simiyu in 2002 which saw National Land Policy as emphasizing on land ownership, distribution, utilization, alienability, management and control. The Draft National land policy has been formulated to provide an overall framework and define the key measures required to address the critical issues of land administration, access to land, land use planning, restitution of historical injustices, environmental degradation, land use conflicts, unplanned proliferation of informal urban settlements, outdated legal framework, institutional framework and information management. It also addresses constitutional issues, such as compulsory acquisition and development control as well as land tenure.

Simiyu went on to explain that existing land policy is currently found in various sections of the constitution of Kenya, Presidential decrees, Land acts, Administrative Circulars, Commission papers and Various National Development plans. She also noted that commissions, task forces and investigations have been used in land policy development on many occasions in the country. The various Commissions, Task Forces and investigations had undertaken periodic reviews of land issues in the country such as squatting, absentee landlords, informal settlements, restitution of historical injustices, inequitable land distribution, irregular public land allocation, inefficient institutional frameworks, environmental concerns and conflict resolution during the process of land utilization and management.

Simiyu had noted that the country lacked a clearly defined National Land Policy to address the cited land problems. They had suggested ways that would provide policies and laws that will ensure proper practices in the ownership, control, use and management of land and

land markets. The strategies suggested had been gathered from the public, civil society, private sector, academic and professional bodies through stakeholders' consultation meetings. In 1999 the *Njonjo-led Presidential Commission on Land Law System* in the country was established. The objective of the commission was to review the whole system of land policy and laws in the country and suggest key principles which could be used to formulate a National Land Policy and institutional arrangement for land management and planning for adoption by the country.

The key findings of the *Njonjo Commission* was that the principles of a National Land Policy framework for Kenya need to be developed into a National Land Policy for the country. It is the formulated policy that would give direction for continuous Land Reform in the county. In order to effect the policy formulated, an appropriate institution mechanism was to be established. This is because the current land administration system in the country had proved unreliable and inadequate.

Therefore the commission recommended that a National Land Authority should be established by legislation and entrenched in the constitution so that it can implement a National Land Policy for the country in the future and maintain a continuous review process. In order to involve Local Community in the management of land, to enhance efficiency and to avoid the bureaucracy associated with a centralized administrative system, it proposed that District Land Authorities should be established by legislation and entrenched in the constitution to administer land at the District level in accordance with the National Policy Guidelines set and monitored by the National Land Authority. It was clear from the findings and recommendations that the country lacked a coordinated National Land Policy for land use planning and management of either urban or rural land. This is what has contributed to the failure of planning institutions to effectively control the informal subdivision and conversion of agricultural land into urban uses like residential, commercial and industrial purposes in the study area.

The *Njonjo Commission* was followed by the *Ndungu Land Commission* which was established on 30th June 2003. Its objectives were to help the Government to determine the extent to which lands dedicated or reserved for public purposes had been irregularly or unlawfully allocated. The Commission was then required to recommend measures for the recovery and restoration of this land to its proper title or purpose. It was also expected to suggest the measures for the prevention of such illegal or irregular allocations in the future.

The *Ndungu Land Commission's* findings established that land allocation procedures in the

country have been amended severally since the colonial period which tended to give the President and the Commissioner of Lands unlimited powers to allocate public land. During the colonial period and the early days of post independence, the procedure for allocating public land was through public auction as provided for in section 12 of the Government Lands Act Cap 280. However, new regulations were introduced by the Ministry of Lands to allow direct public land allocations by the President and the Commissioner of Lands to cater for special interests such as private and public investments. Direct allocation of public land meant that there was no scrutiny of how public land was being allocated. This created room for irregular allocation of public land. The other finding of *the Ndungu Commission* was that letters of allotment were not transferable to a third party during the colonial times and in the early years of independence. This is due to the fact that such a letter was not in itself an interest in land which is capable of being transferred.

However, under the Commissioner of Lands the allotments have been institutionalized as representing an interest in land capable of being bought and sold. The authority for the transactions involving letters of allotment was contained in legal notice No. 305 of 1994 published by the then Minister of Lands and Settlements titled **The Government Lands (Consent fees) Amendment Rules**. This allowed original allottee who held letters of allotment to transfer the letters of allotment by paying a consent fees equivalent to 2% of the selling price or the capital value of the plot whichever is greater. The notice was itself illegal since it was contrary to section 18 (1) of the Government Lands Act. A ministry legal Notice could not purport to amend the said section. Only parliament can amend an Act. By charging consent fees for informal transfers, the Government had recognized illicit land market and ignored the illegitimate dealing with land. This is one of the reasons which explain why much of the leasehold land in the study area is still undeveloped as the basis for its allocation as industrial land was meant to facilitate speculative land trading.

The *Ndungu Commission* provided for an implementation framework required to execute, oversee and steer its recommendations. It provided for a readdress policy to ameliorate the crisis resulting from the illegal allocation of public land particularly public utility land. The important recommendations of the *Ndungu Commission* included:- *Legislation enactment, Revocation and Rectification, Lustration, Prosecution, Prevention, Monitoring and Divestment.*

Legislation enactment was provided for in order to provide a forum to enable the revocation and rectification of irregularly issued titles to become practicable by modifying any existing obstructive laws which may hinder the process. The legislation enactment process was to

involve the enactment of an amendment to the Government Lands Act Cap 280 by insertion of a new section 147(A) to establish and operate, the land titles tribunal which was to handle the issue of irregularly allocated public land.

Revocation and Rectification was provided for by the commission in order to revoke or rectify registered titles to land as necessary in conformity with the law. It was also to examine and verify the validity of registered titles to land. This was to obtain restitution of land and property held under revoked titles and obtain restitution from those unjustly enriched under the equitable doctrine of restitution by the return of property or its monetary value.

The objective of lustration as was provided for by the commission was to purify the public service by removal from employment of officials for gross abuse of office and complicity in illegal allocation of public land. The commission also provided for prosecution which was to involve investigation with a view to prosecute criminal offenders and offences suspected or disclosed in the illegal allocation of public land. The process of prosecution was also aimed at obtaining restitution of land and property under the criminal procedure Act. The objective of prevention which was provided for by the commission's recommendations was to diminish opportunity for corruption, fraudulent practices and deviational Acts. It was also to use deterrence to bring about correctness and compliance with legal and administrative procedures.

The objective of divestment was to reconstitute as a corrective measure land intended to settle the landless but was diverted to ineligible persons as in the case in settlement schemes. This was to facilitate the allocation of such lands to eligible persons in compliance with the initial distribution policy. For implementation of the cited recommendations of the commission, new structures were to be established. The new structures that were to be established and operated as recommended by the commission include The Land Titles Tribunal, a Task Force to advise and assist the Ministry of lands and steering system and strategic unit. These new structures and existing structures that would be involved were to constitute the set of implementers of such programme activities as revocation and rectification, prosecution, prevention, lustration, monitoring and divestment. The new structures are yet to be established and the illegal allocation of public land continues.

The analysis shows the concerns of the commission was limited to enquiring into the illegal allocation of public land. Its main focus was on the issue of land administration, existing legal framework for allocating public land, the institutional framework and the information

management system under the disposal of the Ministry of lands for storing land records. However, it did not comprehensively address issues essential to effective land utilization and management that is, the capacity of the institutions managing land and development control such as the Local Authorities, the Commissioner of Lands, the Director of Physical Planning, etc. Overall, the commission's findings greatly contributed to enhancing the understanding of land problems facing the nation and the need for formulating a National Land Policy for the country.

The other attempt to address the land problems facing the country was through the *Bomas Draft Constitutional Review of 2005*. The *Bomas Draft Constitutional Review of 2005*, recognized land as Kenya's primary source and basis of livelihood for the people. It emphasized that land should be used and managed in a manner which was equitable, efficient, productive and sustainable. The *Bomas Draft* vest and classify all land in Kenya as either public or community or private. Public land was to cover un-alienated Government Land as defined by various Acts of parliament, land lawfully held, used or occupied by the Government, proposed District Government and other agencies of such governments. Public land such as un alienated Government land and that held by Government agencies was vested in and was to be held by a District Government in trust for the people residents in the relevant district and was to be administered on their behalf by the National Land Commission.

Community land was vest in and was to be held by communities identified on the basis of ethnicity, culture or community interest. Community land included all land lawfully held as Trust Land by the proposed District Governments, land registered in the name of group representatives, and land held and managed or used by specific communities as community forests, grazing areas or shrines and ancestral land traditionally occupied by hunter-gatherer communities. Private land was to include any registered land held by one person under freehold or leasehold tenure and any other land that may be declared private land under an Act of parliament. The above classification of land attempted to Nationalize land ownership and regulated its use and development.

The *Bomas Draft* recognized that the state had the power to regulate the use of any land, interest or right in land in the interest of defense, public safety, public order, public morality, public health, land use planning or the development or utilization of property. It also proposed the establishment of a National Land Commission to oversee land issues in the country. The *Bomas Draft Constitutional Review of 2005* made a bold attempt to suggest more radical proposals to manage and control land ownership rights and land use activities in the country. However, it did not specify what would be the functions and duties of the

Ministry of Lands and the Commissioner of Lands office. Its recommendations have not been acted as it was rejected during the 2005 referendum hence the continued unsustainable utilization of land resources in the study area.

Since the rejection of the *Bomas Draft Constitutional Review* in 2005, the Ministry of Lands has been able to formulate a National Land Policy which is awaiting cabinet approval before it could be enacted into law. Stakeholders from public, private and civil society contributed towards the policy formulation through thematic groups based discussions, regional workshops and written submissions, past initiatives such as The Presidential Commission Of Inquiry Into The Land Law System of Kenya, The Constitution of Kenya Review Commission and The Presidential Commission of Inquiry into the illegal/irregular allocation of public land also informed the formulation process. The draft National Land Policy defines Land Policy as “a vision that sets out goals and direction for the present and the future. It consists of measures and the guidelines which the government implements to achieve its objectives of attaining the optimal utilization and management of land, and from which laws governing land administration and management are drawn” (National Land Policy: 8 May 2007).

The National Land Policy was formulated to provide an overall framework and define the key measures required to address the critical issues of land administration, access to land, land use planning, restitution of historical injustices, environmental degradation, land use conflicts, unplanned proliferation of informal urban settlements, outdated legal framework, institutional framework and information management. The National Land Policy view land as representing multiple values which should be protected by both policy and law. Some of the multiple values of land according to the Draft National Land Policy include:

1. Land is an economic resource that should be managed productively;
2. Land is a significant resource to which members of society should have equitable access;
3. Land is a finite resource that should be utilized sustainably, and
4. Land is a cultural heritage which should be conserved for future generations

However, existing policies and laws on land in Kenya pursue economic productivity at the expense of other equally important values. The policies and laws assume that only individual tenure can ensure economic productivity. Accordingly, the thrust of previous laws and policies had been to individualize all modes of tenure, especially customary tenure. As a result, customary tenure has been neglected and treated as an inferior tenure system. The consequences of the policy of individualization of tenure are the deprivation of many Kenyans of access to land and the disruption of indigenous culture and conservations. The

draft National Land Policy recognizes the value of economic productivity, equity, environmental sustainability and the conservation of culture, and seeks to facilitate their protection. This will ensure that individual tenure and customary tenure co-exist and benefit from equal guarantees of tenure security. This will facilitate the reconciliation and realization of the critical values which land represents.

The Draft National Land Policy acknowledges that the current constitution does not provide an adequate framework for the taxation of land rights, as a result of which the problem of idle land has in particular emerged. This has led to unproductive and speculative land hoarding. It suggested the taxation of idle land in order to provide revenue for development of infrastructure and to discourage speculative land trading. The National Land Policy designates all land in Kenya as public, community or private. Under this classification public land comprises all land that is not private land or community land and any other land declared to be public land by an Act of parliament. Community land refers to land lawfully held, managed and used by a specific community as shall be defined in the Land Act. Families and individuals within the community will be allocated rights to use the land in perpetuity, subject to effective utilization.

The ultimate ownership vests in the community. Private land on the other hand will refer to land lawfully held, managed and used by an individual or other entity under statutory tenure. For effective management of land under the proposed classification, the National Land Policy recognizes and protects customary rights to land. It also recognizes and protects private land rights and provides for derivative rights from all categories of land rights holding.

According to the National Land Policy, development of land in urban and peri-urban areas has been inhibited by poor planning, rapid growth of human settlements and activities, urban sprawl and inadequate provision of infrastructure. The National Land Policy has acknowledged that proper planning will provide for well coordinated development of urban and peri-urban areas in terms of housing, commercial, industrial and infrastructure development to accommodate changes in life style and economic activities. The National Land Policy has suggested that the Government shall prepare and implement local area development plans for all urban and peri-urban areas in the country in a participatory manner. It will also establish an effective coordinating mechanism for the preparation, implementation of plans and development control in the peri-urban areas.

The National Land Policy recognizes that the key to effective land use planning lies in the existence of requisite institutional capacity and governance structures for judicious

implementation and enforcement of approved plans, policies and strategies. The problems associated with development control in the country include:-*Weak and inadequate institutional capacity, lack of harmony among the principal statutes, outdated planning standards and regulations, the absence of a coordinating framework between and amongst the public sector agencies and the private sector; and a disconnect between plan preparation, implementation and development control.*

To ensure that land use plans are applied as tools for effective land use management, the national land policy has suggested that review of planning and development control legislation to harmonize the governance structures, decision-making processes, planning standards and regulations. The National Land Policy has also suggested the enhancement of institutional and human resource capacity of planning institutions. This will address the emergence of land use conflicts a result of competing land uses and reduce uncontrolled subdivision of land.

Kenya faces a number of environmental problems including the degradation of natural resources such as forests, wildlife, water, marine and costal resources as well as soil erosion and the pollution of air, water and land. The National land policy has suggested that measures on conservation and sustainable management, ecosystem protection and urban environment management and environmental assessment and audits should be undertaken to ensure the proper management of land based natural resources.

Further to that, the National Land Policy has noted that poor management of solid and liquid waste, gaseous emissions and unsafe quarries are some of the common urban environmental problems experienced in the country. To address such urban environmental problems the policy suggests that measures should be taken to prohibit discharge of untreated solid and liquid waste into rivers, lakes and the oceans by individuals and local authorities by providing appropriate waste management methods. The policy also recommended the encouragement of urban waste re-use and recycling to improve urban environmental management.

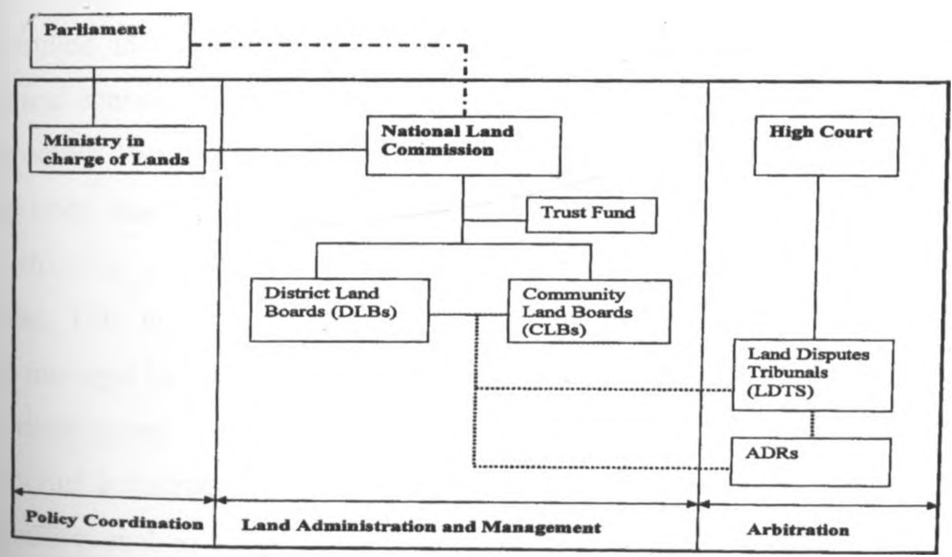
Kenya lacks up to date information on different land uses such as agriculture, forestry, wildlife, water and infrastructure, among others. Lack of this vital information complicates effective planning, zoning and overall management of land. The National land policy has suggested that a comprehensive, efficient, user friendly, accessible, affordable, transparent and gender sensitive land information management system shall be established.

The National Land Policy argued that the existing institutional framework for land administration and management is highly centralized, and exceedingly bureaucratic as a

result it is perceived to be corrupt and has not been able to provide efficient services. In addition it does not involve the public in decision making with respect to land administration and management and is thus unaccountable. Therefore the National land policy has recommended the complete overhaul of the existing land use planning and management system and related institutional structures to ensure efficient and effective utilization and management of land resources.

The key principles to guide institutional structural reforms will be devolution of power and authority, stakeholder participation and operational autonomy. For realization of its broad objectives the National land policy has proposed the establishment of these key land management institutions; the National Land Commission (NLC), the District Land Boards (DLBS) and Community Land Boards (CLBS). The other important institutions in the land sector would include the Ministry in charge of lands, Local Authorities, Land Property Tribunals, District Land Tribunals, Land Courts and Land Reform Transformation Unit. The proposed organizational structure as proposed by the National Land Policy is outlined as follows:-

Figure 3:- Organizational structure of institutions in the land sector as provided for by the new national land policy



KEY
 — Direct Linkage Consultation Linkage - - - - Operation Linkage

Source:- National Land Policy Draft May, 2007 (pp 52)

However the main shortcoming of the Draft National Land Policy is that it does not have a specific clause to deal with peri-urban planning needs. The draft National Land Policy only states that "Development of land in urban areas has been inhibited by poor planning, rapid growth of peri-urban areas, urban sprawl and inadequate provision of infrastructure. The

government shall undertake to prepare and implement local area development plans for all urban and peri-urban areas in the country” (National Land Policy May, 2007). This clause is not explicit on how this will be achieved and which institutions will be responsible for the planning and management of peri-urban areas.

Summary

The background information has shown that the corridor has physiographic conditions which are suitable for urban development. It has a low flat relief with clay and stony soils which can easily be excavated for development. The availability of good transport networks such as the Mombasa – Nairobi Highway, the Great North (Nairobi – Arusha) road which are classified as A109 and A104 respectively, in the area has also tended to attract development in industry, housing, and horticulture into the study area. The famous Kenya- Uganda Railway line also passes through the corridor which makes the transportation of raw materials and finished products into and out of the corridor efficient.

Mavoko Municipal areas have been experiencing rapid urbanization. This is particularly more pronounced in the peri-urban areas of the municipality like Katani, Mlolongo, Kyumbi, Drumville and Kinanie. The rapid urbanization of the Mavoko municipal areas has attracted many industrial, commercial, horticultural and residential investments into the municipality. This has resulted in the rapid increase in the population of the area and the informal subdivision and conversion of agricultural land into urban uses without basic urban services and infrastructure like water, sewerage disposal systems and community facilities like schools and open spaces. The Mavoko municipal areas are characterized by a mixed land ownership structure comprising of government and council owned land, leasehold and freehold land. This mixed land ownership structure has greatly influenced how land is utilized and managed by planning institutions in the municipality and the study area hence the haphazard development of the municipality. The study area is characterized by mixed developments of industrial, residential, commercial and horticulture which has resulted in land use conflicts such as the discharge of industrial effluents on open land surface and the location of residential estates next to industries. It was observed that the country has not had a single and clearly defined National Land Policy since independence. This could have been essential in guiding Land Use Planning and Management in the country more especially in the fast growing peri-urban areas of our cities and urban centres. Without a progressive and coherent national land policy, land management at any level is challenging. Urban land use policy should aim at controlling development in urban areas. The Draft National Land Policy is an important and timely Government intervention if enacted.

CHAPTER FOUR

INSTITUTIONAL SYSTEMS AND THEIR PERFORMANCE IN THE STUDY AREA

4.0 Introduction

The statutory body for land use planning in the country is the Physical Planning Department but it shares its functions with other stakeholders such as Local Authorities, Departments of Lands, Survey, Public Health, Land Adjudication and Settlements among others. The Physical Planning Department's role is to ensure that human settlements are well planned in the country against existing land policy and laws. This is done by providing an appropriate spatial framework within which the environmental and socio-economic development activities can harmoniously take place through preparation of relevant policy guidelines and physical development plans. For effective plan formulation and implementation enabling statutory regulations and supportive institutions are needed for execution of key provisions. This chapter gives an account of the legal and institutional set up as it operates in the study area.

4.1 Historical Perspectives

Before the arrival of the colonial settlers, land in Kenya was held by various ethnic communities in accordance with their individual customary laws. With the arrival of colonial settlers various legislations were enacted to bring about certainty and order to land ownership and transactions relating thereto. A series of Ordinances and Acts were enacted to serve the interest of the colonial settlers as well as change irreversibly the existing customary tenure arrangements.

As explained by Simiyu in her study of the Ngong area, Registration of Documents Ordinance of 1901 was the first legislation that introduced in Kenya a system of controlling transactions in land by documenting the transactions. This was followed by the Crown Lands Ordinance of 1902 which provided the legal basis for control of land that had not been claimed by anybody. In 1903 the East Africa Protectorate Ordinance was enacted as a land use statute in Kenya barely two years after the completion of the Uganda Railway line. This was followed by the Land Use Proclamation of 1911. This applied to the towns of Nyeri, Embu and Meru whose territorial jurisdictions were limited to 1 mile from the administrative flag post. It however, coincided with the Simpson Committee Report of 1911-1912 which gave Local Authorities (LA's) powers to make by-laws that were to be approved by the governor in council. The Simpson Committee recommended zoning of Nairobi albeit on the basis of racial segregation (Simiyu, 2002).

Simiyu went on to observe that the government notice No. 911 of 1914 leaned towards development control in that it gave the definition of a plot in an urban area and specified desired types of building materials, occupancy, accessibility and other provision related to sizes of structure. In 1915 the Government Land Ordinance was enacted to “make further and better provisions for regulating the leasing and other disposal of government lands for other purposes”. This provided for surveying of land. In 1919 the Town Planning Ordinance was enacted and remained the only planning legislation for twelve years until the Town Planning Act was enacted in 1931 (Simiyu, 2002).

The Town Planning Act Cap 134

The Act was enacted in 1931 as Town Planning Ordinance to govern urban land use planning and management processes in Kenya. In 1948, the Town Planning ordinance was revised to become the Town Planning Act (Cap 134). The Act and the Regulations made thereof provided for the preparation and adoption of Town Planning Schemes. It set the procedures to be followed in preparation and approval of the schemes. They provided for the following:-

- *Appointment of the Preparatory Authority*:- Preparatory authority was vested in the Government’s Town Planning Advisory Section of the Commissioner of Lands Department.
- *Approving Authority*:- The Governor in Council was the approving authority.
- *Executive Authority*:- The agency responsible for enforcing the observance of the whole or part of the scheme was normally the Local Authority.
- Setting of procedures for scheme preparation and approval was vested in the Commissioner of Lands.
- Compulsory acquisition of land to further the objectives of the scheme was vested in the Commissioner of Lands.
- Subdivision of land and preparation of land pooling schemes was vested in the Commissioner of Lands.

The Act also provided for the subdivision of land within Townships and Municipalities in Kenya under its Section 24. The relevant Section of the Act reads as follows:- “*No land within any Municipality or Township shall, save with the express permission of the commissioner of lands to be obtained in every case and upon such conditions as he may impose, be divided or subdivided into lots except in accordance with the provisions of the Town Planning scheme as approved under this Act*”.

This made it mandatory for any such development actions to be based on an approved plan.

As explained by Maleche in his paper entitled *Concept and Process of Strategic Urban*

Planning presented at a Consultative Workshop on Metropolitan Development and Management Strategy for Nairobi held at Safari Park in 2001, under the Town Planning Act Cap 134, comprehensive land use plans were to be prepared to cover the whole area of Jurisdiction of Gazetted Township Council and Municipal Councils.

The plans were to show the pattern of land use development in those towns over a period of 15 to 20 years, divided into specific land use zones such as residential, commercial, industrial, public purpose, public utilities, transportation, open spaces, recreation and deferred areas for future development expansion which were to remain under non-urban use. This formed the main basis for the development of guidance and control in such towns throughout the planning period until new plans were prepared and approved. This planning system led to the preparation of the first master plan for Nairobi City in 1948.

The Town Planning Act's inherent weaknesses were that it was not comprehensive and it did not specify the content of the schemes and did not treat a town in its totality. The other major shortcoming of the Act is that section 8 provided for public participation in plan making while section 52 allowed secret planning. The plans prepared under this Act were to be approved through a public participatory process. However, with the secret planning clause which gave public officers powers to use their discretion or judgment to approve development plans and land use activities, private developers could obtain development approvals from local authorities without complying with stringent development regulations. This was done by attaching conditions to plans approved by Local Authorities and the Commissioner of Lands. These were usually ignored by developers because local authorities lacked skilled manpower for Development Control enforcement. This provision was misused to allow poorly planned land Developments by Local Authorities and the Commissioner of Lands resulting in the proliferation of informal settlements in many towns and peri-urban areas.

Maleche went on to observe that, the Act was used in the validation of the Mombasa 1926 Town Planning Scheme and the Land Pooling exercise in the Ronald Ngala Street area in Nairobi. In 1968 the Kenya Government passed the Land Planning Act, cap 303, which re-enacted and amended the Development and use of land (planning) regulations of 1961. Under this new law, only few significant changes were made in the planning approach regarding the making or preparation and the approval and implementation of plans. The main objective was to control the development of urban land. Its use in the rural areas was severely limited as its application was restricted to the control of development activities within planned gazetted urban areas. This meant that land use and development activities

within the boundaries of the townships went on uncontrolled in spite of the massive developments taking place in the peri-urban areas of these urban centres.

The Land Planning Act was meant to supersede the Town Planning Act (Cap 134) but the latter was never repealed until 1996 when the Physical Planning Act was enacted. This gave rise to a situation where the two acts operated parallel with each other and this led to land planning and management confusion and conflicts between various land use planning and administration agencies such as the Commissioner of Lands, the Director of Physical Planning and Local Authorities. This is one of the reasons why land use planning and management of peri-urban areas has been problematic as no single specific act is applicable to the prevailing land development processes situation in these areas.

In the study area the Commissioner of Lands has been approving land use changes, subdivisions and allocating land without consulting other relevant institutions. This has been one of the reasons why private land such as LR NO.337/613 in the corridor area had to be invaded by the local people who feel that land resources are not distributed equitably to cater for their local needs during land allocations. This has led to the emergence of illegal squatter settlements in the corridor like Kazito.

The Land Planning Act (Cap 303) of 1968

The Act provided for the preparation of town plans, area plans and subdivision scheme plans. Such plans prepared by the Town Planning Advisory Section of the Commissioner of Lands Department were subject to the approval of the minister. This is because the Local Authorities lacked skilled manpower to prepare, approve and control development or enforce its implementation. The owners of the land were to be consulted before the plan is submitted to the minister for approval. On approval, the plan was to be published and an opportunity offered for its inspection. The content of the plan was not spelt out clearly and the machinery for the plan preparation was not clear.

The Act was also cumbersome to apply and its use was limited to 5 miles radius outside municipal boundaries as well as 400 feet from the centerline of trunk roads. This clause provided for the effective planning and management of peri-urban areas. With the enactment of the physical planning Act Cap 286, peri-urban planning needs are taken care of by section 23 (1) which provides for declaration of special planning areas by the Director of Physical Planning. However lack of enough financial resources and personnel capacity within the Director of Physical planning's office has limited the application of this clause to the planning of peri-urban fringe areas.

The Act also provided for the establishment of bodies such as the Interim Planning Authorities (IPA) and the Central Authority (CA). The Interim Planning Authority's role was to control and approve land use and development activities in areas where a town plan had been prepared and approved for a Local Authority area. The Central Authority's role was that of controlling and approving non-agricultural development in rural areas where the Interim Planning Authority (IPA) had not been established.

The non agricultural development in the rural areas which were to be approved by the Central Authority (CA) include:-

- The subdivision of farms into portions of less than 20 acres (8.1) hectares
- Change of user from Agricultural to non-agricultural purposes e.g. commercial, residential, industrial etc.
- Any development within a radius of 5 miles (8 km) from the boundaries of townships, and municipalities.
- Any development within 400 ft or 122 metres from the centerline of trunk roads or classified roads.
- Display of any advertisement
- Deposit of refuse, scrap, and waste material on land

The Act was dependent on the Central Authority (CA) based in Nairobi to monitor and control development activities such as the subdivision of farms into portions of less than 20 acres(8ha) and change of user from agricultural to non agricultural purposes e.g. residential, commercial, industrial, etc in respect of land in all rural areas in Kenya after consulting the Area Local Authority, the Area Divisional Land Control Boards and other relevant authorities and their consent given in accordance with sections 9A and 12(1) of the Act.

However, the Central Authority met on a quarterly basis thus resulting in development approval delays and extra costs in pursuing the authority based in the Lands Department in Nairobi. This was an ineffective institutional arrangement. As explained by Simiyu in her study of the Ngong area, the major plans carried out under this framework include the Nairobi Metropolitan Growth Strategy (NMGS) of 1973, Structure Plans for most of the municipalities like Thika, Nakuru, Eldoret, Mombasa and Kakamega and the Human Settlement Strategy(HSS).

The other shortcoming of the Act was that it was the Commissioner of Lands who was delegated the minister's functions and responsibilities of approving Physical Development Plans. However, the role of enforcing compliance of the plans was left to the Local

Authorities. These powers were misused by the commissioner and his/her officers to allocate public land irregularly without proper planning.

Simiyu went on to observe that the Central Authority, Interim Planning Authority and Local Authorities could issue an enforcement notice where a developer has developed without their consent, through the powers delegated to them by the Minister through the Commissioner of Lands. However due to lack of adequate personnel and clearly established institutional arrangements to articulate local authorities' interventions, the enforcement notices were rarely executed. For example in the study area, planning institutions have failed to develop an integrated system for land use planning and management, the system established prior to 1996 still prevails.

The Physical Planning Act (Cap 286)

The Physical Planning Act Cap 286 was enacted in 1996 but became operational in October 1998. The Act repealed the Town Planning Act Cap 134 and Land Planning Act Cap 303. The Act outlines the functions of the Director of Physical Planning, provides for the preparation and implementation of Physical Development Plans, the strengthening of Local Authority in the planning and control of developments in their areas of jurisdiction. The planner's role is advisory and ensuring that development activities comply with the plan for the area.

Under section 24(1) of the Act the Director of Physical Planning has the powers to prepare Local Physical Development Plans with reference to any Government land, Trust land or Private land within the area of authority of a city, Municipal, town or urban council or with reference to any trading or marketing centre. Section 29 of the Act gives Local Authorities enormous powers to prohibit or control the use and development of land and buildings in the interest of proper and orderly development of its area.

The Act requires that development permission should be obtained for any development from the Local Authorities. This is well stated in section 31(1) of the Act. The planning statute under this section gives very wide powers and discretionary powers to the Local Authorities to regulate and control physical development. For instance the development application are supposed to be submitted to the local authorities i.e. county councils or municipal councils who may or may not circulate the same to other relevant departments except the physical planning department whose comments are mandatory before approval. This is clearly stated in section 32(2) of the Act. Under section 30(2), the local authority may charge fines to ensure compliance with this planning requirement.

The Act also provides for a legally institutionalized system of conflict resolution through the various liaison Committees established both at National and local levels under its sections 7-15. The liaison committees act as replacement of the Central Authority (now repealed), but mainly acts as appellant bodies to deal with cases brought before them by aggrieved development or stakeholders. The main shortcomings of the Physical Planning Act is that, while the mandate to prepare Physical Development Plans has been vested on the Director of Physical Planning the implementation of the plans is left to the Local Authorities through Development Control Enforcement.

This means that the sense of owning the plans prepared by the Director of Physical Planning by the Local Authorities is lacking. This leads to misinterpretation and disowning of the plans prepared by the Director of Physical Planning by the Local Authorities during their implementation process. This is because the Local Authorities are denied the right to plan as empowered by section 166 of the Local Government Act Cap 265.

The other shortcoming of the Physical Planning Act is that the mandate to prepare Physical Development Plans has been vested on the Director of Physical Planning but the department is not adequately staffed and equipped. It is therefore unable to prepare Physical Development Plans on time for all Local Authority areas and/or towns due to the lack of adequate skilled manpower, equipments, and finances to carry out its plan preparation mandates. This limits the capacity of the Local Authorities to control developments without a guiding plan. This is because lack of a physical development plan which would have acted as the basis upon which to guide and coordinate land use and development activities denies the Local Authorities an indispensable source of information for controlling development. Consequently this results in piecemeal development of an uncontrolled and uncoordinated nature in the urban and peri-urban areas. For example currently the department of physical planning is represented in 60 Districts out of a total of over 140 districts in Kenya. Most of these offices have no vehicles and are manned by one physical planner who is required to undertake all planning duties at the District level.

The Act requires that all Regional Physical Development Plans should be prepared on the basis of the National Physical Development Plan and all local Physical Development plans should be based on the Regional Physical Development Plans. Currently most of our towns and local authorities have expired physical development plans. Therefore most of our towns are experiencing rapid developments such as speculative land subdivisions and conversion of agricultural land into urban uses in their peri-urban areas without proper Local Physical Development Plans having been prepared to guide the development activities to ensure safety

and health, convenience, efficiency and energy conservation, environmental quality and amenities for their growing population.

There is therefore a need for the Physical Planning Department to prepare Local Physical Development plans for all towns to cover the extended areas of the towns which were not covered by the expired plans such that haphazard development activities can be controlled through local authorities' Development Control enforcement. The plans will form a basis for guiding and controlling developments in the towns and also indicate the location of the main corridors of traffic, institutions and broad land uses and zones. This will lead to improved urban growth management and change which meets the aspirations and expectations of the local communities living in the peri-urban areas.

The Physical Planning Act also fails to explain how the management of peri-urban areas that had been provided for in the Land Planning Act Cap 303 would be undertaken. The act had stated that in the case of development taking place within 8 miles from the municipal or township boundaries, the central government had the power of controlling and approving the development and the next municipality will be consulted where an Interim Planning Authority was lacking. Interim Planning Authorities were bodies established under section 4(1) of the Land Planning Act to secure proper control of development in areas where a plan or a town plan had been prepared and approved for a local authority area in accordance with section 6 of the Act. These were usually the local authorities for the area which had been constituted to take over the functions of the Plan Preparatory Authority.

This clause was removed and replaced with section 23 (1) which gives the Director of Physical Planning powers to declare an area as a special planning area. This was to be followed by the suspension of any development activities deemed necessary in the area for a period of not more than two years to facilitate the preparation and approval of a physical development plan in respect of such area by the minister. This new clause has not been utilized to manage the land use changes taking place in the peri-urban areas in spite of the fact that the changes have a major impact on existing towns or cities. This is because the department of Physical Planning lacks adequate skilled manpower and finances to prepare physical development plans on time for the peri-urban areas

The Act does not make provisions on the management of development activities within 400ft radius of major highways in the country. In the Land Planning Act Cap 303, it was mandatory to seek approvals for development activities located within 400ft radius of our major highways like the Mombasa-Nairobi highway. This was meant to control speculative land

subdivisions, the illegal conversion of agricultural land into urban uses and urban sprawl within this radius. This has resulted in haphazard development activities and urban sprawl along the Mombasa-Nairobi highway in the study area.

The Act also provides mild punishment for contravening development control measures. This makes it easier for developers to undertake illegal developments and pay the minimal fines. For example, under section 30 (2) of the Act it is stated that “ any person who carries out development within the area of a local authority without a development permission shall be guilty of an offence and shall be liable to a fine not exceeding one hundred thousand shillings or to an imprisonment not exceeding five years or both”. The monetary fine is not severe enough to deter wealthy developers who are keen on maximizing profits from uncontrolled land subdivisions. There is need to have the fine raised to properly 2 million shillings in order to make un procedural subdivision of land uneconomical.

The other anomaly of the Act is the duplication of authority for land use planning and management. For instance, the approving Authority for development according to the Government Lands Act Cap 280 was the Commissioner of Lands while under the Physical Planning Act Cap 286 this is the role of the Local Authority. This has led to overlaps and conflicts between the department of lands and the Local Authorities. This lack of separation and definition of planning, administration and development control roles are not clearly clarified by the Physical Planning Act. This implies that the source of confusion in the land use planning and management processes is attributed to the multiplicity of legislations which sometimes give similar roles to two different agencies to perform. This has led to ineffective control of land use and development activities as none of these agencies wants to take responsibility for its actions.

The Physical Planning Act should have repealed section 9 of the Government Lands Act before giving local authorities the powers to approve developments in their areas. This has resulted in a situation whereby the department of lands continues to approve developments such as building plans, changes of user, subdivision etc for leasehold land while the Local Authorities are doing the same. This has led to duplication of roles and ineffective policing, and control of land use and development activities in the study area.

However, some notable achievements of the physical planning Act have to do with the making of planning a multi-sectoral responsibility. Prior to the enactment and subsequent operationalization of the Physical Planning Act Cap 286, planning activities were guided by various Acts. These acts included Town Planning Act Cap 134, Land Acquisition Act Cap

295. Government Lands Act Cap 280 and the Local Government Act Cap 265. The Acts were not administered by the physical planning department. However with the enactment of the Physical Planning Act, the preparation of physical development plans is the responsibility of the Director of Planning.

The approval of the Physical Development Plans is the responsibility of the minister of lands but upon consulting the various relevant stakeholders such as the Local Authorities, the Local Communities, the Commissioner of Lands and the Director of Physical Planning. The implementation of the physical development plans and development control to ensure compliance with the approved plans is the responsibility of the Local Authorities. The office of the Commissioner of Lands (COL) ceases to prepare and enforce development control. It takes the role of land administration encompassing preparation of inventory of public land allocation, allocation of public land, registration and documentation of land transactions.

Therefore, the Act establishes checks and balances in the planning and management of land use and development activities. Under the Act, the subdivision and change of user of agricultural land to urban uses in rural and urban areas should comply with the Land Control Board regulations section 2 (2) and the Physical Planning Act Cap 286 section 41 (2). Under section 37 (1) of the Act, uses that are no longer agricultural should be registered as leases for ease of planning and development control. This is aimed at controlling informal speculative subdivision of private land in the urban and peri-urban areas and developing the resultant sub-plots as residential, commercial, industrial etc without basic community facilities.

Local Government Act Cap 265

The Local Government Act enacted in 1963 provides for the establishment of authorities for local governments; to define their functions and provide for matters connected therewith and incidental thereto. Section 5 (1) (a) gives the Minister, powers to cause any area to be or cease to be a Municipality, County or Township Council. Section 5(1)(d) gives the Minister, powers to alter the boundaries of a Municipality, County or Township Council by adding or subtracting from its area or otherwise. This clause was used to extend the boundaries of Mavoko Municipality in 1985. This process of expansion brought into the municipality's jurisdiction privately owned land based on 999 years leasehold. Hence the Municipal areas have no uniform land tenure system. This land is being subdivided and converted informally into urban uses like industrial and residential. Legally, the Municipal Council of Mavoko has at its disposal the means to regulate and control the use of land that falls within its areas of jurisdiction. However, this is not the case in the study area as freehold land is being subdivided informally giving rise to residential estates such as Vulcota located within Harvest

Horticultural Farm.

Under section 166 of the Act every Municipal Council, County Council or Town Council may subject to any other written law relating thereto, prohibit and control the development and use of land and buildings in the interest of proper and orderly development of its areas. Section 201 (1) of the Local Government Act empowers Local Authorities to make by-laws in respect of all such matters as are necessary or desirable for the maintenance of the health, safety and well-being of the inhabitants of its area. Section 201 (3) of the Local Government Act confers on officers of local authority the powers of inspection, inquiry and execution of works for the proper enforcement of their by-laws.

The Local Authority may impose penalties for breach of any by-law made under the Act to ensure compliance. Mavoko Municipal council has no approved by-laws to guide land subdivisions and related developments hence the haphazard developments in the study area. Section 162 (g) of the Act gives Local Authorities the power to control the subdivision of land into smaller areas by demanding that such subdivision should not be transferred until the issuance of approval certificates by the clerk of the Local Authority or such other person the Local Authority may appoint for the purpose has been produced to the land registration officer. The clause also prevents the alteration of any sub-divisional plan which has been approved by the local authority without its consent. In spite of these stringent requirements controlling land subdivisions, private companies normally use informal documents such as share certificates to dispose off resultant subplots emanating from informal land subdivisions. Mavoko Municipal Council should make by-laws to criminalize development activities based on informal documents such as share certificates. This will stop private companies from irregularly subdividing their land and using informal documents such as the share certificates to dispose it off for residential use.

The Public Health Act Cap 242

The Public Health Act enacted in 1921 makes provision for securing and maintaining health. Part IX of the Act deals with the sanitation and housing conditions. Under section 126(a) of the Act the Minister may make rules and may offer powers and impose duties in connection thereof on Local Authorities, magistrates, owners and others, as to inspection of land, dwelling, buildings, factories and trade premises for the sake of keeping them clean and free from nuisance, provision of proper lighting and ventilation and prevention of overcrowding. The Public Health Act Cap 242 does not have actual planning standards. However it gives immense discretionary power to the Local Authorities to approve or reject plans for buildings on the ground of health reasons based on the quality and sanitary conditions of the shelters.

Due to this the Act is important in Land use Planning as it defines the quality of structures and essential facilities that are needed to support such structures. It relies more on building codes and local authority by laws. The Act has been used to control the sanitation conditions in the slum settlements of Sinai, Carton city and Kazito by providing communal piped water collection points and communal garbage dumping grounds by the Local Authority. The Act has been used to control unhygienic public hawking of food stuffs at the Devki terminus. It is also used in approving building plans for residential, industrial and commercial developments in the Namanga Road –Stony Athi Corridor. However, inspite of the provisions of the Act, Mavoko Municipal Council has been approving building plans for residential estates such as Gichimu and Muchiri located on agricultural land without enforcing public health standards.

The Land Control Act Cap 302

Operations of Land Control Boards are governed by the Land Control Act Cap (302), laws of Kenya which commenced on 12th December, 1967. The purpose of the Act is to control land transactions on agricultural land. Some of the reasons for controlling transactions on agricultural land according to Section 9(1) of the Act are to ensure:-

- That land is sold to a person who can farm it properly to improve the general economy
- That nobody buys too much land at the expense of others.
- That the division of land into two or more parcels would not reduce the productivity of the land.
- That the terms and conditions of the transaction including the price to be paid are not disadvantageous to one of the parties to the transaction.

From the above reasons for controlling land transactions it can be deduced that the key objectives of the controls were social, political and economic. The social objectives include the prevention of indebtedness and landlessness. The economic objectives include ensuring efficient land use and development activities within agricultural farms by regulating land subdivisions which lead to uneconomical land sizes for agricultural purposes. This was in line with the broad focus of land use planning and management which is to ensure rational efficient land use and development. This is aimed at promoting social choice and social equity in the process of land use and development.

Section 5(1) of the Act gives the Minister in charge of lands the powers to establish Land Control Boards for every land control area. There are three types of land control boards which can be established under the Act, namely:- *Area Land Control Boards/Divisional Land Control Boards, Provincial Land Control Appeals Board, Central Land Control Appeals Board.*

The organization of the boards shows that the process of guiding and controlling land transactions was structured along three levels, that is National, Regional and Local levels. At the Local/District Level, the Area Land Control/Divisional Land Control Boards had the powers to give or refuse consent to controlled land transactions and the aggrieved party has the right to appeal to the next level Land Control Appeals Boards for readdress within 30 days of the decision.

However, a notable feature of all the types of Land Control Boards was that the decisions reached by the boards were final and could not be challenged in any court. This was a bit harsh and punitive to the general public. The main shortcoming of the organizational arrangement of the appeals Land Control Boards is that they were located at the provincial headquarters of the provinces save for the Central Land Control Appeals Board which was under the Commissioner of Lands' office. This removed the boards far away from the local people who needed their services. This system of organizing the Land Control Boards also led to the accumulation of unattended cases at the provincial and Central Land Control Appeals Board levels. This hindered effective control of land transactions as members of the public resorted to other means to subdivide and transfer agricultural land by using informal documents such as share certificates and written agreements.

The dealings in agricultural land which needs to be controlled by the Act according to Section 6(1) of the Act includes:-

- The sale, transfer, lease, mortgage, exchange, partition or the disposal of or dealing with any agricultural land which is situated within a land control area.
- The division of any agricultural land into two or more parcels to be held under separate titles.
- The issue, sale, transfer, mortgage or any other disposal of or dealing with any share in a private company or cooperative society, which for the time being owns agricultural land situated within a land control area.

The Land Control Act (Cap 302) was augmented by the Land Planning Act Cap 303 when the Central Authority had planning powers over agricultural land within 400 feet or 122 metres of the centre of major trunk roads and five miles (8 Km) from the boundaries of Municipalities, Townships and big centers. Section 12 (1) of the Land Planning Act Cap 303 empowered the Central Authority established under Section 9A of the Act to approve land developments such as subdivision of farms into portions of less than 20 acres and change of user from agricultural to non agricultural purposes e.g. commercial, industrial, residential etc, only after consulting with the Area Local Authority, the Area Divisional Land Control Board

and other relevant authorities and their concurrence given.

This provision in the Land Planning Act Cap 303 augmented the Land Control Act (Cap 302) as most of the land development activities covered by the Act were located within rural agricultural land which the Land Control Act was designed to control. This section of the Act was repealed when the Physical Planning Act Cap 286 was enacted in 1996 and replaced with section 23(1) which gives the Director of Physical Planning powers to declare an area with unique development potential or problems as a special planning area for the purpose of preparation of a physical development plan irrespective of whether such an area lies within or outside the area of a Local Authority.

The reasons for this new change was the realization that the provisions contained in the Land Planning Act Cap 303 and other legislations to manage urban and peri-urban land use planning and management were grossly ineffective. The implication of the new clause is that the Director of Physical Planning is required to prepare and implement Local Physical Development Plans for the peri-urban areas. This is to establish an effective coordinating mechanism for development control by planning agencies such as the Local Authorities, the Commissioner of Lands and the Department of Physical Planning in the peri-urban areas. This was to reduce uncontrolled subdivision of land, land use conflicts, environmental degradation and the expansion of informal settlements and slums in the peri-urban areas.

The new clause has not been invoked to cater for the planning needs of peri-urban areas of our cities and towns hence their haphazard development. This is because the Director of Physical Planning lacks adequate human resources, finances, equipments and materials for the preparation and implementation of Local Physical Development Plans for most of the peri-urban areas. The local communities have also not been supportive of such exercises to be undertaken by the Director of Physical Planning as much of the land in the peri-urban areas is freehold land which is privately held. Further to that, any Government regulation over the use and development of private land is always viewed negatively by land owners due to lack of planning awareness hence the haphazard development of the peri-urban areas.

The Registered Land Act Cap 300

The legislation was enacted in 1963 in an effort to unifying the existing laws relating to registration of interests in land, simplifying transfers of interests and providing security and proof of title. The Act is used to administer both Government and Trust land. It is used for the purpose of land use planning, control and development monitoring. Under this Act the leasehold titles have restrictive special conditions which specify how the grantee/lessee is to utilize her/his piece of land. The restrictions include:-*The building condition, The user*

condition, The subdivision condition, Restrictive condition on transfer, sale, subletting or any other disposal of land, Site coverage condition, Re-entry condition.

The restrictions are meant to control and regulate how land is utilized in order to ensure orderly urban development. In practice the restrictions ensure that individual land holders are subject to legislative and planning control by the state. Through this system, the state is able to have direct control of the use and development of land as the proprietor of the land through special conditions of the lease than through legislative measures like Land Control Act and Physical Planning Act. This is possible because the conditions of the lease are contractual arrangements between the state and the individual land holder and when an individual commits a breach of any of the conditions the state has access to the high court to enforce the condition of the lease or to request that the court forfeit the land to the state if the lessee persists on breaking the development conditions. However this regulatory devise does not provide for the effective measures of controlling land use and development activities.

This is because the Government does not have powers to re-possess the land even though a breach of conditions has been committed. This can only be done through court action and if the courts are satisfied they could declare the land forfeited to the government. But in deciding whether to forfeit the land to the Government on breach of conditions, courts are guided by the principles of equity which is generally favourable to grantees. Section 77 (2) of the Government Lands Act Cap 280 provides for this provision. Land property is also strongly safeguarded under section 75 of the constitution of Kenya 1969 against arbitrary expropriation.

The other shortcoming of the regulatory devise is that the enforcement of the special conditions which define the user of the land, density of the development, subdivision regulations, and building standards and requirements is left to the Local Authorities through their Development Control Machinery. The Commissioner of Lands who issues the leases does not have enough officers and equipments to inspect buildings and development sites to enforce compliance of the special conditions. On the other hand, the Local Authorities lack adequate personnel, technical land administrators and equipments for carrying out inspections and enforcing the special conditions of the leases.

These limitations have reduced the capacity of this regulatory devise to achieve its desired objectives. Consequently conflicts between planned and new uses have arisen in Mavoko Municipality and in the study area of Namanga Road –Stony Athi Corridor. The land use conflicts manifest themselves in various ways in circumstances where land uses do not

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conform to the special zonal use. The conflicts include non conforming plots, uses of land and uses of structures, and non conforming structures among others.

The non-conforming plots in the area have arisen through informal subdivision of land which has given rise to plots that are too small and too narrow to meet land use requirements for the zone. A good example in the study area is the illegal subdivision of plot LR. No 337/613 behind Zahra petrol service station which forms the Kazito slum settlement. The non conforming uses of land in the study area include activities like the disposal of industrial refuse at a disused quarry at the junction to Namanga. At the municipal level most of the residential estates in the nearby Makadara estate have been converted into commercial, industrial and bars without any permission from the Mavoko Municipal Council, the Commissioner of Lands and the Director of Physical Planning.

The Government Lands Act (Cap 280)

The Act came into force on 18th May, 1915. The preamble of the Act states that " An Act of parliament to make further and better provision for regulating the leasing and other disposal of Government Land, and for other purposes". The act provides for the establishment of the office of the commissioner of lands and subordinate officers for the administration of the Act. Under section 9 of the Government lands Act the Commissioner of Lands may cause any portion of Government land in a Township or Municipality which is not required for public purposes to be divided into plots for alienation purposes.

According to section (12) of the Act the leases of the town plots were to be sold by auction unless the president otherwise ordered. This was to ensure transparency, fairness and equity in the system for disposing of Government land for the erection of buildings for business and residential purposes in urban areas. In practice section 9 of the Act gave the Commissioner of Lands and officers working under the commissioner in Nairobi and in the District the legal basis for subdivision planning and the allocation of Government Land.

The role of the Physical Planning Department was strictly to advise and prepare Part Development Plans for the alienation of Government and Trust land before allocation to developers. The provision gave officers in the department of lands and those of Local Authorities immense powers over land use planning, land use, land allocation and development approval. However, increasing demand for urban land for development in the face of diminishing land resources in most of our urban centers led to the emergence of the social mood of corruption in both at the Local Authorities and the department of Lands in the period after 1990. This led to the failure of the land allocation system and advertisements for vacant land by the government which was previously published in the media become no-

existent. This resulted in grabbing of public land, public utility land, open spaces and double allocations in the study area. This has given rise to inequitable land ownership structure in the study area where the minority own large chunks of land for speculative purposes while the majority are landless.

This is one of the reasons why private land e.g. LR No. 337/613 & 856 in the Namanga Road- Stony Athi corridor were illegally invaded and subdivided into plots for squatting purposes as the local people feel that the Commissioner of Lands has been unfair in allocating public land without considering them. Under section 18 of the Government Lands Act, the Commissioner of Land governs the subdivision of leasehold Government land within Townships and Municipalities in Kenya. Every lease of a town plot under the Government Lands Act has an implied covenant by the lessee not to subdivide the plot except with the previous consent of the Commissioner of Lands in writing. In practice the restriction on subdivision of land is to ensure that land is not subdivided into plots of an economic sizes and that proper provision of roads of access, sewage disposal system, water, parking facilitate and open space will be available when subdivision are carried out.

The implementation of this requirement is done during development approval process like when a developer submits a subdivision scheme plan to the Local Authority and the Commissioner of Lands for approval. The officers working under the commissioner of lands check the subdivision scheme plan in consultation with the Director of physical planning and the Local Authority to ensure their compliance with planning standards before approving them. Further to that no consent should be entertained to subdivide, sublet and or transfer land allocated under this Act according to Section 18(1) of the Act unless the building conditions has been complied. This means that land subdivision and the transfer of resultant sub plots are pegged on the compliance of the earlier stipulated building conditions. This ensures that no land should be allocated for speculative purposes in order to ensure controlled and planned development. The land located in the study area is classified as Government Land whose administration is vested in the Commissioner of Lands office save for the sections where there is freehold land.

The Commissioner of Lands has been using the powers given to the department under section 18 of the Government Lands Act to approve development activities without consulting the Mavoko Municipal council. A good example is the subdivision of the Numerical machine complex land next to Tuffoam industry. The subdivision of the land was secretly done after consultation with the Director of Physical Planning and the Commissioner of Lands and most of the public utilities plots were allocated to senior officers in the Ministry of Lands. The

resultant subplots have been disposed off to cooperative societies such as Afya and Railways and others without essential public utility plots to cater for the anticipated population growth in the area.

4.2 Institutions for Land use Planning and Management in the Study Area

In the Namanga Road -Stony Athi corridor regulation of land use planning and development control is overseen by the following planning agencies:-

The Mavoko Municipal Council

In Kenya, the organization of Local Authorities is into 3 levels, that is Cities or Municipalities, Town Councils and County Councils and the status of a particular Local Authority in this hierarchy determine the specific planning jurisdictional powers and resources of the Local Authorities. The Local Authorities have got tremendous powers to control and direct land use planning in their areas of jurisdiction according to section 166 of the Local Government Act. However, the effectiveness of land use planning and management system is dependent on the internal organizational structure and decision making procedures of various Local Authorities. To analyze the impact of the internal organizational structure and decision making procedures of approving land developments, the study will examine how land use planning decisions are made within the Mavoko Municipal Council.

Internal Organization Structure of Mavoko Municipal Council

Mavoko Municipal Council is a body corporate with perpetual succession and a common seal and is capable in law to sue and being sued and able to acquire, hold and alienate land in accordance with section 12 (1) of the Local Government Act Cap 265. Mavoko Municipal Council being a large town is governed by an all purpose single tier authority which discharges all the statutory functions of the local government within its areas of jurisdiction. Such functions include provision of services like garbage collection, street lighting and naming, construction of footways, fire brigades, building for public purposes, public lavatories, slaughter houses, cemeteries, road maintenance and sewerage systems, plan implementation, land use planning, development control and approval of developments etc. The powers of Mavoko Municipal Council according to the Local Government Act Cap 265 include the powers:-

1. To control or prohibit all businesses, factories and workshops which, by reason of smoke, fumes, chemicals, gases, dust, smell, noise, vibration or other cause.
2. To prohibit and control the development and use of land and buildings in the interest of the proper and orderly development of its area.
3. To establish and maintain sewerage and drainage works within or without its area.

4. To make by-laws desirable for the maintenance of health, safety and well being of the inhabitants of its areas.
5. To prohibit the cultivation by unauthorized persons of any unenclosed and unoccupied land in private ownership and of any Government Land and land reserved for any public road.

Therefore, from the powers and functions stated above Mavoko Municipal Council has unlimited powers to guide and manage development activities within its areas of jurisdiction for orderly, co-coordinated and harmonious development in order to promote health, safety, amenity, convenience and efficiency for the general welfare of its inhabitants. The Council has 6 elected councilors and two nominated. The academic qualifications of the councilors includes three councilors who are Form 4 leavers, two are Form 2 leavers, one is a college graduate, and the other remaining two have no academic background and or qualifications.

From these academic qualification backgrounds it can be assumed that most of the Mavoko Municipal council councilors are not trained in relevant aspect of land use planning and management. Therefore, the councilors running the affairs of the municipality, lack the requisite training, knowledge and skills to enable them to participate effectively on land use planning and management.

To carry out its jurisdictional functions, Mavoko Municipal Council is organized into two functionally interconnected sections. The civic arm which comprise elected and nominated councilors, who form the deliberative and governing body of the council. The Mayor chairs the Full Council meetings which transacts all the major policy business of the Council. The other section of the Council is the executive arm comprising the Town Clerk, Town Treasurer, Town Engineer, and other officers appointed to the Council by the Public Service Commission according to sections (107) and (112) of the Local Government Act Cap 265.

Mavoko Municipal Council has 5 main Standing Committees namely;

1. Finance , Staff, and General Purposes Committee
2. Town Planning, Housing and Markets Committee
3. Education and Social Services Committee
4. Environment Committee
5. Public Health Committee

Each of the committees has a chairman and his worship the mayor and deputy mayor as ex-officials. The committees are vested with authority to discharge specified duties and services.

Every councilor is elected by the council to serve on at least one committee. A committee

may also include persons who are not members of the Local Authority as provided for in Section 91 (5) of the Local Government Act Cap 265. In this regard Mavoko Municipal Council usually co-opts the District Physical Planning Officer, the District Lands Officer and the District Public Health officer into its Town Planning, Housing and Markets committee.

The Town Planning, Housing and Markets committee is the most important unit for making planning decisions related to land use planning and management. It has the mandate to decide and advice the council on all matters related to land use planning and management. The committee handles all land use planning and management matters such as;

1. Initiating decisions to causing the preparation of either short term or long-term physical development plans depending on the need and purpose for them.
2. Proposing development projects to be undertaken.
3. Advising the council on proposed development projects.
4. Recommending land use development applications.
5. Initiating land use development control regulations and by-laws and formulation of land use policies.

In undertaking its activities, the Town Planning, Housing and Markets Committee carry out its business through subcommittees which are set up depending on the need for detailed working on specific issues brought before it. The sub committees are headed by elected chairmen who chair their meetings. Their main function is to make decisions on issues and matters pertaining to their areas of duties and services that they are assigned by the Town Planning, Housing and Markets Committee on behalf of the council. The subcommittees are required to present their findings to the Town Planning, Housing and Markets standing committee upon completion for presentation to the Full Council for adoption. The regularity of the meetings of each committee and sub committee depends on the nature, urgency and frequency, at which matters requiring their attention are raised. The councilors serve in more than one committee to ensure integration in the decision making process at the various committee stages.

According to sources at the Mavoko Municipal Council, the main shortcomings of the Committee and Subcommittee systems is that development approval and other planning issues take long to be handled. The Committees and Sub-committees normally require a quorum to proceed with meetings. However, most of the councilors fail to attend these meetings leading to postponement thus delaying development approvals forcing developers to incur extra costs when undertaking developments. This should not be so because the Physical Planning Act Cap 286, require Local Authorities to process land development, such as

change of user, subdivisions within a month. However this is not the case because the Director of Physical Planning has no powers to regulate the activities of development approval in the councils.

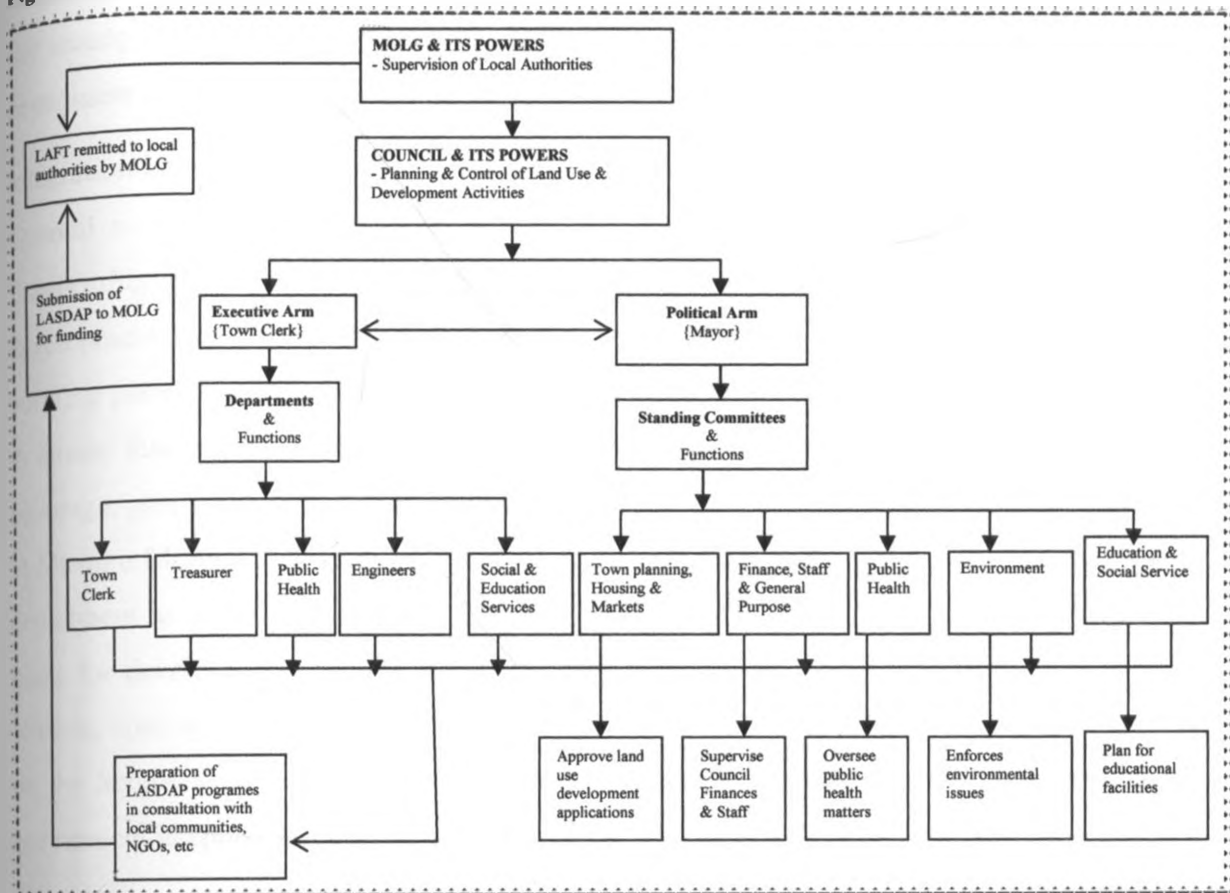
The other short coming of the Committee and Sub-Committee Systems is that they have powers under section (28) of the Second Schedule of the Local Government Act Cap 265, to ignore the recommendations and or opinion of the officers attending their meetings whether a chief officer or an officer seconded by the chief officer to the meetings. The officer's only role is to require his opinion to be recorded in the minutes of the committee if the committee arrives at a decision which is contrary to his advice. This in practice means that the technical officers from the council and the Central Government departments such as Physical Planning, Lands, Public Health and Survey have no much power to influence and direct planning decisions deliberated by the council's committees and sub-committees.

The executive arm of the council is headed by the Town Clerk as the Chief Executive Officer. The executive arm of the council has a total number of 185 permanent employees. Mavoko Municipal Council like most large Local Authorities in the country is organized into a departmental structure. The council has five main departments namely; Town Clerk's Department, Treasurer's Department, Engineer's Department, Public Health Department, and Environmental Department. Therefore, Mavoko Municipal Council's elected councilors and permanent employees are divided into committees and departments which are closely related to a specific function of the local Government.

The clerk's department comprises the clerk's office, and the physical planning section. The department is headed by the Town Clerk who is a lawyer by profession and the Planning section has one Cartographer who is a diploma holder who serves as a Planner. Within the clerk's department there is also one surveyor who is a diploma holder. The Treasurer's department is headed by the council treasurer who is a professional accountant. Under the treasurer there are cashiers, clerical officers, secretaries and office cleaners. The engineer's department is headed by one engineer who is a graduate. The engineer is assisted in his work by a clerical officer as there was no works superintendent in the council.

The public health department is yet to be fully operational and it is manned by one clerical officer in liaison with the Divisional Public Health Officer located at the nearby Mavoko dispensary. The environmental department is yet to be fully operational too and it is manned by one clerical officer seconded to this department by the Town Clerk (See Figure 4 below).

Figure 4:- Mavoko Municipal Council Management Structure



Source:- Mavoko Municipal Council Administration file, 2007

The various departments are headed by different officers coordinated by the Town Clerk who is the chief administration and executive officer of the council. The clerk is the principal officer involved in making and carrying out a wide range of decisions relating to day to day management of Land use and development in the council. He advises the Town Planning, Housing and Markets committee on land use policy in general and also coordinates and manages the planning and implementation processes in the council.

The Town Clerk liaises with external agencies such as lands office, physical planning and Survey who have representatives in the Town Planning, Housing and Markets committee. Decisions reached in the Full Council Meetings are passed on to the Town Clerk who delegates to the relevant department for action. The departments and committees of the Mavoko Municipal council do not always have a one to one relationship in performing their assigned duties. It is common to find one department reporting to several committees. For instance the Clerk's department reports to all the councils standing committees. The internal organization of the various departments tends to hinder co-ordination in the formulation and management of land use planning policies because of their bureaucratic arrangements. Each of the departments works independently from the other. It was established that the only forms

of coordination between the various departments are monthly meetings of the chief officers. For example there is no coordination between the activities undertaken by the engineering department and the section handling physical planning.

Integration between the engineering and spatial planning section of the Mavoko Municipal Council is important for effective control of land use and development activities. The Engineering department has the mandate to approve building plans for all types of development e.g. residential, commercial and industrial. However before approving the building plans it is important that the input of the Physical Planning Department is obtained to ensure that the proposed development complies with planning standards such as plot site coverage, plot sizes, subdivision regulations, user, density and setbacks. This is not the case at Mavoko Municipal Council. The failure of the Mavoko Municipal Council's Engineering department to consult the Physical Planning section has resulted in the approval of building plans for developments located on public road reserves and on public utility plots such as schools, open spaces etc. For examples in 2007 all the residential, and hotels (Kraal) located on the Senior Staff section of the Nairobi - Mombasa Highway were demolished by the government in spite having been approved by the Mavoko Municipal Council.

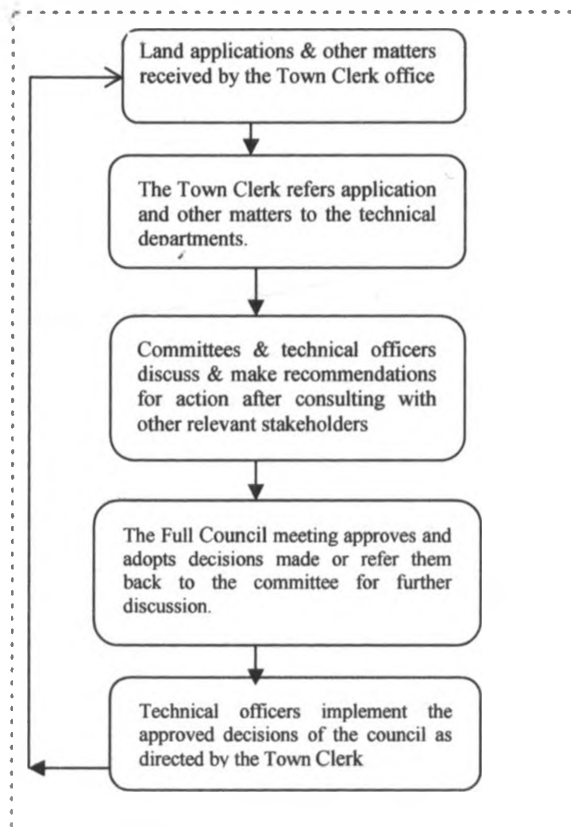
The Decision Making Process in the Council

The main focus of this section is to provide a detailed account of the formal procedures which governs all kinds of decisions made in the council whether or not they relate to planning. Land applications and other matters which require the action of the council go through several sequential stages before action is taken. The sequence follows the formal machinery of decision making which includes the Town Clerk's stage, Technical departments, the Committee or Sub committee stage, the Full Council and Technical officers. The Town Clerk discusses the matter raised with the Technical Departments and decides the appropriate committee to whom each of the matters should be referred (See Figure 5).

It is at the committee stage that much of the decision making is thoroughly scrutinized in great detail. The committees work with the technical officers but they have powers to overrule them on decisions made in accordance with section (28) of the Second Schedule of the Local Government Act Cap 265 as stated earlier. This clause was meant to provide checks and balances between the political and executive arms of the councils but the powers have been misused by the councilors who are politicians to accord approvals to poorly planned development activities. For example in the study area the Gichimu and Muchiri residential Estate located on a freehold land was approved by the Council after serious lobbying by a former Mayor of the Council in spite of the contrary advice given by the technical officers of

the Council. Another prime residential Estate known as Jolpa Villas (LR.No. 7149/8) was approved within a freehold land without obtaining the mandatory change of user approval as required by law. However this case is outside the area of study but within the jurisdiction of Mavoko Municipal Council. This arrangement is unsuitable and ideally the technical officers should work separately from the committees and refer the matters to the committees after ensuring that they have met essential planning requirements. The committees are required to consult with other committees such as the Environment, Public Health, Education and Social Services committees and other relevant persons and agencies outside the Council such as the Commissioner of Lands, the Director of Physical Planning, Survey, Public Health and Roads whenever necessary. The consultation process is to ensure that all the essential agencies such as the Commissioner of Lands, the Directors of physical planning, survey, Roads who are crucial in directing, guiding and controlling land use and development activities gives their views on the proposed development. This is to ensure compliance with the planning regulations for utilizing land. The local community also needs to be consulted to ensure that injurious developments such as industries are separated from residential areas.

Figure 5: Decision making process related to land development application in the Mavoko Municipal Council



Source:-
Mavoko Municipal Council
Administration File, 2007

The Town Clerk and other chief officers of the executive arm, sit in the committees as ex-officio members. The role of the Town clerk and other chief officers of the executive arm is to give general advice to the committees and the Local Authority on questions arising with regard to their official duties and obligations. The role of the committees is to recommend to

the council the suitable and possible action to be taken with regard to particular matters. The Committees are guided in their work by underlying salient issues such as historical, cultural practices, local knowledge, environmental conditions and the desire to conserve public utility land such as schools, open spaces and playground roads. The committees are also guided in their work by the powers and the duties delegated to them. In performing their duties at least one quarter of the whole number of the Committee members must be present.

The decisions and proposals arrived at by the committees are referred to the council for approval. The Full Council of all councilors, is the authoritative decision making body of the council, and all the decisions made by the committees require its approval and adoption before implementation by the council. The recommendations of the various committees are tabled in form of minutes for approval or debating or adoption depending on the nature of the matter considered. The Full Council meeting may at this stage approve and/or adopt the recommendations or matters for action or refer them to various committees for further consideration and scrutiny. This may occur when a proposed development does not comply with planning requirements such as zoning regulations, building regulations and density regulations. A development proposal may also be rejected if it is located within an environmentally fragile area for conservation and preservation such as ethno-cultural, archeological and historical sites in order to promote natural heritage. If a matter is adopted it is passed over to the Town Clerk for action. The Town Clerk in turn delegates to the appropriate department for actual implementation.

The introduction of Local Authority Service Delivery Action Plan (LASDAP) in 2002 by the Ministry of Local Government has created an entry point for Local Authorities to constructively engage with their citizens on matters of development. The LASDAPS are programmes which are meant to improve local service delivery with the aim of enhancing economic governance and alleviating poverty. Their priority areas are in health, education, infrastructure and upgrading of informal settlements. .

Mavoko Municipal council engages local communities in the Wards in its planning activities through preparation of LASDAP plans. This is normally done through popular participatory consultative meetings at the Wards level between the Locals, Council officials, Councilors, Non-governmental organizations (NGOs) and staff from other government agencies such as the Director of Physical Planning, the Constituency Development Committees, District Roads Board and Community Social Organizations (CSOs). The preparation of LASDAP through a participatory process provides the technical officers of the Council with an opportunity to integrate Municipal projects plans into the overall land use planning system. Thus spatial and

environmental processes of urban development and growth are coordinated. It also provides strategies for harmonization of the Local Authority plans and District plans to minimize duplications of resources and efforts.

4.3 The Process of Plan Approval – A Selected Case Study

According to the Physical Planning Act Cap 286, these are the guiding provisions for seeking permission for development under the Act:-

- (a) All development applications should be made and submitted in triplicate on Form PPA1 and submitted to the relevant local authority.
- (b) Development Applications on subdivision/change of user must be:
 - (i) Accompanied by a plan duly prepared as provided by the Land Control Board (LCB) Regulations section 2(2) and the Physical Planning Act 1996 section 41(2) that the plan be prepared by a registered Physical Planner.
 - (ii) Development applications on building plans should have the drawings and specifications prepared by a Registered Architect.
- (c) The Local Authority on receipt of development application shall immediately or within 30 days send a copy of the development application Form PPA1 to the Director of physical Planning/District Physical Planner and other relevant authorities in the District for comments, among them the District Land Officer, district surveyor etc.
- (d) Physical Planner on receipt of the said copy (Form PPA1) shall collect Appropriation in Aid (A.L.A.) and consider and process the application and enter the required information in the Subdivision Register. The physical Planner shall then send it back to the Local Authority with his comments. Other authorities are to do likewise.
- (e) The Local Authority shall process the form by making the decision whether to approve or not to approve the development through Form PPA 2. This decision should be communicated in writing to the applicant within 30 days of the decision being made after considering comments from the District Physical Planning Officer and other relevant authorities.
- (f) One of the conditions to be attached to approval of any application for permission to develop is the issuance of Form PPA 5 (Certificate of Compliance) by the District Physical Planning Officer. This certificate will only be issued when the applicant has fulfilled all the conditions attached to the approval as indicated on Form PPA 2 and/or when the applicant has carried his development in accordance with the approved

development proposal. The certificate of compliance will be considered the final approval for any application for development permission.

- (g) On approval of any application for development permission the local authority will issue notification to the effect on Form PPA2 addressed to the applicant and copied to all relevant authorities and other stakeholders.
- (h) In the case of subdivisions/amalgamations, the applicant will furnish the Surveyor with the Land Control Board consent and Form PPA 2 together with approved scheme, who will then prepare the mutations/survey plans. The District Physical Planning Officer will issue Form PPA 5 (Certificate of Compliance) if satisfied that the survey plan/mutations are in accordance with the proved scheme.
- (i) The Land Registrar shall be furnished with (i) Land Control Board consent, (ii) Form PPA 2, (iii) Form PPA 5 and (iv) copy of approved subdivision/amalgamation scheme before he can register any document related to subdivision/amalgamation of freehold land.
- (j) All applications for development permission relating to leasehold land be it for subdivision/amalgamation, extension of lease, change of user or building plans should be circulated to the Commissioner of Lands/District Lands Officer for consent before approval by the local authority. Once approval for such applications is granted, the local authority will communicate this decision to the Commissioner of Lands/District Lands officer through Form PPA 2 and Form PPA 5 to enable the Commissioner of Lands effect the necessary documentation as required under the relevant laws.

These elaborate guiding provisions under the Physical Planning Act are meant to ensure proper implementation and monitoring of compliance with physical development plan provisions, regulations, policies and strategies through development control enforcement.

Case Study - Mavoko Flats (Senior Staff Estate)

The case study was selected to highlight the different sets of institutional problems and constraints that affect land use control and regulation. The case is used to illustrate some of the problems that result from inadequate controls on land use and development activities in the study area due to institutional incapacity, incompetence and how they affect the larger public or individual citizen.

In this case study, Mr. Pesa is the owner of plot LR 337/3055, within the high class low density residential estate of Senior Staff, Mavoko Municipality(see plate 4). He approaches Mavoko Municipal Council to have the council's approval to extend the use of his plot from a single dwelling unit to multiple dwelling units. Mr. Pesa was attended by a clerical officer

within the Town Clerk's Department which handles land use planning and development application matters. On receiving a change of user application, the Mavoko Municipal council officials are required to check whether the applicant has complied with the following conditions:

- a) The development application should be submitted in triplicate on Form PPA 1
- b) Development application on change of user must be accompanied by a planning brief prepared by a registered physical planner in accordance with sections 31 (2) and 41 (2) of the Physical Planning Act Cap 286.
- c) One receipt of the change of user application, the Mavoko Municipal council sends a copy of the development application Form PPA1 to the Director of Physical Planning/District Physical Planner and other relevant authorities in the District for comments among them the District Land officer, District Surveyor, etc.
- d) The application is then processed by the above cited central government agencies in accordance with the Physical Planning Act guidelines stated earlier in the subsection and then send back to the Council for processing and finalization.

The role of the Mavoko Municipal Council officials in this process is to ensure that the proposed change of user is not likely to affect adversely any land in the area or create or attract traffic which will result in a material increase in the volume of traffic entering the area. This may be done through site inspections and by referring to existing Physical Development plans of the area. He then recommends the change of user application to be approved or rejected by the Town Planning, Housing and Markets Committee of the council after receiving the recommendations of the relevant departments such as the Director of Physical Planning, the Commissioner of Lands and the Director of surveys.

In the case of Mr. Pesa, he had just prepared a letter addressed to the Town clerk requesting his authority to convert his one private dwelling unit plot located at Senior Staff estate into a multiple dwelling unit flat. According to his letter the ground floor of the multiple dwelling flats was to be used for parking while the other remaining floors were to be two bed roomed residential units. Mr. Pesa personally took the letter to Mavoko Municipal Council and on seeing the Town Clerk, he was referred to a council official to attend him and or advice him. The change of user application was filed in the individual plot file and the official statutory fees of Kshs. 25,000/= paid to the Municipal Council. The officer then proceeded to fill in a Notification Of Approval Of Development Permission Form PPA2 dated 19/10/2005 indicating that the change of user application had been approved and gave it to Mr. Pesa. This was against the elaborate physical planning guidelines provided for in the Physical Planning

Act Cap 286. A Registered Consultant Physical planner is required to prepare a change of user application planning brief for the development.

This was also against Mavoko Municipal council's specified development application requirements cited above. The Change of user application was approved without the Council seeking the views of the Director of Physical Planning, Director of surveys, the Commissioner of Lands and the Public as stipulated in sections 31 (1-2) of the Physical Planning Act Cap 286.

On the basis of the council's approval Mr. Pesa submitted building plans to the council for his multiple dwelling units for approval. The plans showed that the ground floor of the multiple dwelling unit flats was to be occupied by a parking facility while the other floors were to comprise of two bed-roomed residential units(see appendix7). The building plans were approved and a letter circulated to the District Physical Planning officer, Land officer and the District Public Health officer simultaneously. The letters were released to Mr. Pesa to deliver them to the above cited officers but none of the copies reached the said officers.

Ideally, the building plans to carryout any development is lodged with the Mavoko Municipal Council for approval. The plans are then circulated to the District Land officer, Physical Planning Officer and the District public health officer for consideration. The said officials collect Appropriation In Aid (A.I.A) and consider and process the building plans and then send them back to the Mavoko Municipal Council. The Municipal Council Engineering department then processes them and recommends the building plans to be approved or rejected by the Town Planning, Housing and Markets committee. Before the Engineering department recommends the building plans to be approved and /or rejected by the Town Planning, Housing and Markets Committee, he ensures that the building plans must indicate;

- i. The purposes for which the building will be used.
- ii. The number of dwellings or separate tenancies to be provided in the building.
- iii. The water supply and the mode of drainage and means of disposal of waste water.

The planning grounds for refusal of building plans include:-

1. The proposal is not in conformity with approved development plans.
2. The structure is to be used for any purposes which might be calculated to depreciate the value of the neighboring property or interfere with the convenience or comfort of neighboring occupants.

3. The building or its land use is unsuitable, injurious to amenities or detrimental in respect of appearance or fails to comply with physical planning requirements in regards to siting, design, height, size shape, structure or appearance.

In spite of the elaborate guidelines Mr. Pesa's building plans were approved without following the laid down procedures. The laid down procedures at the Mavoko Municipal council requires that all building plans be circulated and the recommendation of the Commissioner of Lands, the Director of Physical Planning and the District Public Health officer received, should be approved or rejected by the Town Planning, Housing and Markets committee meeting of the council. The decision of the Town Planning, Housing and Markets Committee is then communicated to the developer by the Town Clerk by issuing a Notification of Approval of Development Permission to the developer in accordance with section 33(2) of the Physical Planning Act Cap 286. By stamping the building plans as approved and circulating them, defeats the purpose of regulating and controlling land use and development activities. The loopholes are exploited by developers to built buildings that contravene the user and density zoning regulations of the Council and approved Local Physical Development Plans.

The due process of approving development activities by the council was not followed as the building plans were not tabled in the Town Planning, Housing and Markets Committee's meeting of the council for approval and or rejection. Using the council's approved building plan, Mr. Pesa developed his multiple dwelling units into a five storey building. The process of the building's construction was supervised by the Municipal Council's Engineer. The foundation of the building was done and all the floors built under the close supervision of the Council Engineer.

The residents of the Estate took note of the development and petitioned the Council to stop the construction and have the building demolished as it interfered with the character of their neighbourhood and their privacy. The Municipal Council fearing public repercussions issued a stop Notice to the developer to stop the development which they had already approved without consulting the Director of Physical Planning, the Commissioner of Lands and Director of Public Health. Mr Pesa realizing this threatened to sue the Council arguing that he had complied with the Physical Planning and Local Government Acts' requirements for undertaking development activities within a Local Authority's areas of jurisdiction. The claim was valid as far as the role of the Local Authority of approving development activities by issuing development permission was concerned.

However the due process which ensures that development activities comply with key

planning regulations was violated thus making the approval of the Council invalid. This was because the Director of physical planning, the Commissioner of Lands and other relevant departments were not consulted in accordance with section 32 (2) of the Physical Planning Act Cap 286. The Municipal Council's approval also violated section 29 (1) of the Physical Planning Act which empowers Local Authorities to control the use and development of land and building in the interest of proper and orderly development of its area. In the case of this kind of development the law requires the Local Community to be consulted and their opinion taken into consideration before any development activity within the areas of a Local Authority are approved by the Local Authority. The council also failed to have regard to the health, amenities and conveniences of the community by failing to ensure proper planning and density of development and land use in the area in accordance to section 32 (3)(b) of the Physical Planning Act CAP 286.

The Mavoko Municipal Council, fearing legal litigations advised Mr. Pesa to apply for the regularization of the change of user and have it circulated to all the relevant departments. This was necessary as Mr. Pesa's development had not fully complied with important planning requirements as provided for in the Local Government Act and the Physical Planning Act. However the development was fully developed with the Council's Authority making it difficult for the Council to demolish it. This would have been costly to the Council. This was meant to ensure that Mr. Pesa's development was procedurally approved in accordance with the existing laws and stop any future litigation from the residents of Senior Staff estate which may embarrass the Municipal Council. This was also to ensure that in case of any future litigation which may lead to Mr. Pesa's development being declared illegal by a competent authority, the Municipal Council will not be forced to compensate him. This was a clever way by the Council to get out of the mess.

Mr. Pesa was advised by the Council to consult a registered physical planner and let him prepare justification brief for his development for the council's adoption. Consequently a private registered planner prepared a planning brief for the development and this was submitted to Mavoko Municipal Council for adoption. The Justification brief sought to have the change user from one private dwelling unit to a multiple dwelling unit approved by the council together with the building plans. The proposal was circulated to the District Physical Planning officer, Land officer and Surveyor for their recommendations. The building plans were also circulated to the District Physical Planning office, Lands office and the Director of Public Health for consideration. The proposals were considered and then returned to the Municipal Council by the above cited stakeholders after collection of Appropriation in Aid

(AIA).

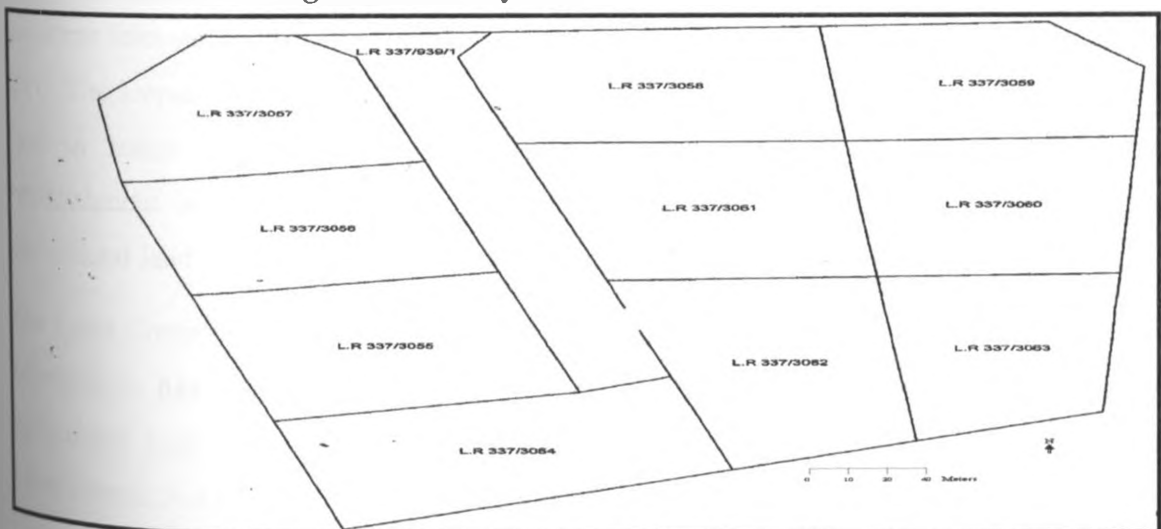
The change of user and the building plans were then tabled in the Mavoko Municipal Council's Town planning, Housing and Markets Committee meeting for adoption. The development's proposals were finally approved in September 2007 to regularize the council's approval of the multiple dwelling units. The decision of the Council was communicated by the Town Clerk by issuing a new Notification of Approval of Development Permission. On the strength of the approval of the Council the District Physical Planning officer issued a Certificate of Compliance for the development thus completing the regularization process.

Evaluation of the Project

It is clear from the case study that several planning challenges arises, reflecting on the weaknesses of the council and other land use planning agencies. These include:

- 1) The technical competence of the council's officials is questionable when it comes to land use planning regulations.
- 2) Failure to circulate the application for change of user to other stakeholders as stipulated in law raises questions.
- 3) The public does not give planning issues priority since they did not raise any objections to the project until it was substantially developed.
- 4) There is no smooth coordination of planning activities between the local authorities and the central government agencies.

Map 10: Sketch showing the case study site



Source:- Mavoko Municipal Council Plot File for LR No. 337/3055, 2007

Plate 4: Multiple dwelling units under construction within a low-density zone(Senior Staff estate).



Source:- Field Survey, 2007

In carrying out its land use planning functions, Mavoko Municipal Council shares its responsibilities with various central government departments (National level Planning institutions). These includes:-

1. Department of lands.

This department is under the Ministry of Lands and Settlement headed by the Commissioner of Lands. The Department of Lands is responsible for the administration of land in Kenya, allocation of Government land; approval of subdivision scheme plans; preparation and registration of land titles; administration of trust lands on behalf of all Local Authorities and formulation of policy on Government and Trust Lands in consultation with relevant authorities.

The Commissioner of Lands Department handles the expropriation of private land for public purposes through compulsory acquisition as provided for under the Land Acquisition Act Cap 295. The Department of Lands is also mandated to manage transactions within agricultural land in terms of subdivisions. The Land Control Board Act Cap 302 provides for establishment of various types of Land Control Boards to manage land transactions in agricultural land as the Minister may specify in a gazette notice.

The Land Control Boards are established under the Land Control Act in areas where land adjudication has been completed. They are established to control the dealings relating to agricultural land within a land control area, an area to which the Minister has applied the Land Control Act Cap 302 by notice in a gazette as stated in earlier subsections.

The major objectives of the Land Control Boards are social, political and economic in nature. The board in theory provides a public check with a view of controlling land accumulation for speculative purposes. This is supposed to control landlessness and effect even distribution of

land (Simiyu 2002). In the study area, due to the mixed land tenure system, all agricultural land transactions are handled by the Athi River Divisional Land Control Land Board. In practice the Land Control Boards are supposed to work in liaison with the Local Authority and other land use planning agencies such as the Physical Planning Department as provided for in the Physical Planning Act Cap (286). However, in the study area the Land Control Boards have been working in isolation from the Local Authorities and the Physical Planning Department. It normally receives applications in respect of agricultural land subdivisions and approves them and forwards the approvals to the commissioner of lands for issuance of titles without consulting with the Physical Planning Department and the Mavoko Municipal Council.

The Land Control Boards have been receiving applications for subdivision and conversion of agricultural land into urban uses such as residential, industrial and commercial and approving them without complying with stringent planning standards. The subdivision and conversion of agricultural land into urban use is done without following the stipulated regulations which requires a change of user to be effected by the office of the Commissioner of Lands in close consultation with the Local Authority, the Director of Physical Planning and other stakeholders. The subdivision plans for the agricultural land are then forwarded to the surveyors and the land registration officers to be issued with ownership documents. Consequently, they are registered as agricultural plots without reflecting their new uses and the intensity of their developments. This has led to the growth of unplanned settlements which lack basic facilities such as water, roads, electricity etc.

In spite of the massive powers given to the department of lands as a planning institution, the department has not been able to effectively manage the land use changes taking place in the Namanga Road -Stony Athi corridor due to lack of enough personnel to enforce the special conditions of the grants issued by the department. The ministry has got one officer based in Machakos who runs the district and Makueni thus making it impossible for him to discharge his duties effectively. The department also lacks a transparent system of approving land transactions such as allocation of public land, subdivisions, change of user, amalgamations due to lack of a computerized data bank system to show violations when they occur. In performing its functions, the department works with different agencies to have its sectoral urban land use planning and management obligations met. For example the department of lands has no funding role and does not fund implementation of the subdivision scheme plans it approves on company, cooperative and individual land. The Department of Lands coordinates its work with the Physical Planning Department in subdivision and Part Development Plan preparation for Government and Trust Land and in allocation with the

Department of survey and District land officers in the survey and subdivision of land.

The department of lands also relies on the Local Authorities to enforce the restrictions attached to the titles issued by the department to ensure proper and coordinated land use and development. It also relies on the Local Authorities to supervise and ensure proper implementation of the subdivision scheme plans approved by the department. This arrangement provides room for failure to enforce development control rules on plot level by the owners as most Local Authorities lack adequate personnel and equipments for policing their areas of jurisdiction to control land use and development activities.

In overall, the Commissioner of Lands Department plays an important role in guiding, coordinating, and controlling land use and development activities in the Namanga Road – Stony Athi Corridor. The powers of the Commissioner of Lands in this process are contained in his authority to administer use of Government Land according to Sections 5, 6, 9, 11, and 18 of the Government Lands Act Cap 280. Therefore, the Commissioner of Lands Department requires that land be planned, subdivision scheme plans, building plans and land transfers be approved by the department before commencement of development activities to ensure proper and coordinated land use and development. However, the Department has encountered various constraints such as lack of adequate manpower etc which makes its performance of managing land use and development activities in the Namanga Road –Stony Athi corridor wanting. While ideally approval of building plans should precede actual developments, numerous developments are taking place before approval of such plans in the study area, leading to unplanned settlements without essential services like water, electricity etc. This has also resulted in land use conflicts, translation of road reserves into commercial sites, and environmental pollution.

2. Physical Planning Department (PPD)

The Department of Physical Planning is responsible for the preparation of physical development plans (both long term and short term) for all towns in the country, advising the central government, local authorities, public and private land developers on the most appropriate use of both public and private land and assisting in the operation of development control, preservation orders and enforcement action against contravention of planning controls.

The department has officers working at the District and Provincial levels. The department draws its legal powers from section 24 (3) of the Physical Planning Act which states that "The Director may prepare a local physical development plan for the general purpose of guiding and coordinating development of infrastructural facilities and services- and for the

specific control of the use and development of land or for the provision of any land in such area for public purposes". In Mavoko, a Physical development plan has not been prepared for the Municipality and the one that exist for the town is dated way back to 1971. This is due to the glaring functional disconnect between the plan preparatory authorities and implementing agencies, lack of appropriate technical and institutional capacity of local authorities, inadequate human resource establishment in the ministry responsible for Physical Planning, absence of broad based consultation and the lack of effective coordinating framework for preparation and implementation of Physical Development Plans.

The failure to prepare a new Local Physical Development Plan to cover Mavoko Municipality's extended boundaries means that there is no suitable framework for guiding and coordinating land use and development activities within the municipality and in the Namanga Road –Stony Athi Corridor. The Physical Planning Act cap 286 makes it mandatory for the Director of Physical Planning to prepare National, Regional and Local Physical Development to guide and coordinate land use and development activities. Hence once approved no development should take place unless it is in conformity with the approved plan. Lack of a new Local Physical Development Plan covering Mavoko Municipality's areas of jurisdiction has led to the increase in land use conflicts, particularly as the boundaries of the town have expanded to include hitherto agricultural freehold properties. The trouble with this expansion has been the less control that planning agencies have had over such land. This is because, freehold land has no limitation on its use and there is lack of binding authority to obey any regulations or planning requirements during its development. These coupled with the perception of land owners make development control to appear as a nuisance.

The Act in section 37(1) states that "The registrar shall refuse to register a document relating to the development of land unless a development permission has been granted as required under this Act in respect of such development or unless the appropriate conditions relating to such development permission have been complied with." In the Namanga Road –Stony Athi Corridor, subdivision and conversion of freehold land into urban uses e.g. residential, industrial, etc is being approved by the Athi Divisional Land Control Board and then forwarded to the Director of surveys to be issued with survey numbers. Once the survey numbers have been assigned to the sub plots, the registrar registers them as agricultural plots in spite of their use as residential, industrial commercial plots. Ideally the Director of Physical Planning is required to give a compliance certificate to the subdivision scheme plans before the registrar can register the subdivisions but this requirement is mostly ignored by the

registrars.

This implies that freehold land is un procedurally converted into urban uses such as residential, commercial, and industrial without its tenure being changed to reflect its enhanced value and the intensity of development as required by statutory laws. The registration of commercial, residential and industrial plots as freehold land makes it difficult for the Local Authorities to enforce development control in the areas affected by this anomalous registration.

In practice the Department of Physical Planning is mandated to manage spatial planning issues in the country. In carrying out its functions it works together with the Local Authorities and other departments in approving developments such as building plans, subdivisions and change of user. The Local Authorities are required to circulate all development applications to the Director of Physical Planning, the Commissioner Lands and other relevant stakeholders and have regards to their recommendations before approving any land use and development applications. The Local Authorities are empowered in Section 38(1) of the Physical Planning Act to issue enforcement notices and impose fines in the case where development commences without a development permission having been obtained. However this elaborate system of ensuring compliance with land use planning standards becomes defeatist as Mavoko Municipal Council approves development applications before circulating them and seeking the recommendations of the various stakeholders as required by the law.

3. The medical department

The department is under the Ministry of Health and is headed by the Director of Medical Services. Under Public Health Act Cap 242 section 126, the Minister on advice of the Central Board of Health may make rules and may confer powers and impose duties in connection with the carrying out and enforcement thereof on Local Authorities, magistrates, owners and others as to inspection of land, dwelling, buildings, factories and trade premises for the sake of keeping them clean and free from nuisance, provision of proper lighting and ventilation and prevention of overcrowding.

Section 124 of the Act provides that the health authorities shall demolish unfit dwellings, having given notice to the owner or occupier to vacate the premises. However, despite all these powers the institution has been unable to play its role of maintaining the health, safety and well being of the inhabitants of the Namanga Road- Stony Athi Corridor as poorly designed slum settlements characterized by poor sanitation and housing conditions have been expanding in the study area. The slum settlements in the area such as Sinai, Carton city lack basic services like water and sewerage disposal systems resulting in poor sanitation

conditions within the settlements and release of human waste into the nearby River Athi natural water course. This is due to lack of adequate personnel, low funding, corruption, political interferences and poor linkages with other relevant departments such as the Mavoko Municipal Council, the Commissioner of Lands and the Director of Physical Planning.

In approving building plans the local authorities normally seeks the recommendations of the medical department on issues concerning ventilation, space and density occupancy of the buildings. This department doesn't have trained building engineers who can evaluate the submitted building plans. This has led to the building plans being approved by clerks within the department who don't have adequate knowledge on planning issues leading to haphazard developments which are a risk to human safety and health.

For example, the medical department had approved building plans for Alframa Tannery which is very close to Senior Staff Estate. The tannery has been discharging effluents with bad smell into the neighboring vacant plots and into river Athi natural water course thus causing a nuisance to the residents of Senior Staff. The public health department in conjunction with the Mavoko Municipal Council should have advised against the development of the heavy industry within the neighbourhood of a residential estate due to its pollution.

4. Ministry of Environment and Natural Resources

The Ministry normally works through the National Environment Management Authority (NEMA) which is mandated to approve land development projects by demanding that developers submit an Environmental Impact Assessment report (EIA) to them before commencement of projects. The National Environment Management Authority (NEMA) is a body established under Section 7(1) of the Environment Management and Coordination Act of 1999. Some of the functions of the National Environment Management Authority (NEMA) as it relates to land utilization and management include:-

- To promote the integration of environmental considerations into development policies, plans, programmes and projects with a view to ensuring proper management and rational utilization of environmental resources on a sustainable yield basis for the improvement of the quality of human life in Kenya.
- To establish and review in consultation with the relevant agencies, land use guidelines.
- Examine land use patterns to determine their impact on the quality and quantity of natural resources.
- To consider and approve or reject all Environmental Impact Assessment, study reports for

development projects applications to its office before commencement of the projects intended.

The cited functions are geared towards ensuring effective urban land use planning and management in the country. For example the National Environment Management Authority is empowered under section 74 (1) of Environmental Management and Coordination Act of 1999 to ensure proper discharge of effluents originating from industrial undertakings. The National Environment Management Authority and the Local Authority are yet to enforce the law to ensure sustainable land utilization in the Namanga Road –Stony Athi Corridor to ensure the residents' amenities. Sources at the council attribute this to the lack of skilled environmental experts at the council level and the inability of the National Environment Management Authority to undertake site inspections to ensure compliance with environmental standards during the land development process.

The Municipal Council relies on the District Physical Planning office to interpret and implement the Environmental Impact Assessment Reports. However, even the District Physical Planning Officer is not an environmental expert by training, thus making the implementation of the environmental Reports a challenging task.

5. Ministry of Public Works and Housing (MOPWH)

The Ministry's roads branch is responsible for planning, designing, construction and maintenance of Kenya's National Road Network in rural and urban areas. The ministry defines standards for the planning and construction of roads. In performing its functions, the Ministry of Public Works has established the Kenya National Highways Authority, the Kenya Urban Roads Authority and the Kenya Rural Roads Authority as provided for in the Kenya Roads Act of 2007. The functions of the Kenya National Highways Authority are the management, development, rehabilitation and maintenance of national roads. The important National roads traversing the study area are the Nairobi-Mombasa Highway A109 and the Namanga - Arusha Highway A104. The rehabilitation and maintenance of these two national roads is the responsibility of the Kenya National Highways Authority. It also has the responsibility of controlling National Roads and road reserves and access to roadside developments in the study area.

In the study area lack of planning coordination with other agencies had resulted in approved developments encroaching on the national road reserve due to lack of technical competence on some departments such as the departments of Physical Planning, Lands and the Local Authority. For instance, the Commissioner of Lands, the Director of Physical Planning and

the Mavoko Municipal Council have approved the construction of residential houses and hotels on the Nariobi - Mombasa Highway road reserve based on outdated plans which indicated the width of the highway was 80 Metres while the actual width is 110 Metres. This is what led to the recent demolition of houses and hotel located on the road reserve to make room for its dualing.

The Ministry has powers to approve all developments which are likely to affect the road infrastructure through public encroachment into the road reserves according to section 49 (1) of the Roads Act of 2007. It also has powers under Section 49(4) of the Roads Act of 2007 to issue Notices in writing directing any person to remove unauthorized structures located on road reserves or within restricted areas. The Ministry has the powers to remove such structures if one fails to remove the structures and recover the cost of the removal from that person according to Section 49 (5) of the Roads Act of 2007. The Local Authorities who are required to seek the recommendations of this department before approving land developments near the roads have not been seeking its recommendation. For instance, in Mavoko Municipality all land development applications are only circulated to the departments of Physical Planning, Survey, and the Commissioner of Lands in the case of change of user, subdivisions, etc. In the case of building plans, circulation is only done to the Commissioner of Lands, the Director of Physical Planning and the Director of Public Health. This system is inadequate as the roads department is left out, hence the construction of buildings on the road reserve near Devki Steel Mill in the study area.

The Ministry has also failed to protect road reserves in the corridor from being grabbed and converted into residential and commercial plots. A road reserve at the junction of the Namanga -Arusha road marked as LR NO.1388/1 has been subdivided and allocated. However, the ministry has moved in to reclaim the road reserve by marking it as a Government property not alienable for individual use.

6. Ad hoc bodies

The other indirect participants who can contribute to effective and efficient land utilization in the Namanga Road -Stony Athi corridor are ad hoc bodies. These are bodies that are formed to achieve certain goals and objectives and once these have been achieved they are dissolved. Such bodies may be seen in form of neighbourhood associations, social pressure groups (Operation Firimbi), church organizations and private sector development control mechanisms. Local Authorities in Kenya are charged with development control functions.

Informal and formal discussions conducted in the study area have shown that there are no

neighbourhood associations and pressure groups which can assist to enforce development control within residential areas like those found in Kahawa Sukari estate of Nairobi. Even though this is not the role of Local Authorities to establish neighbourhood associations at the community level, Local Authority officials can use their powers of persuasion and negotiation to influence public opinion to secure compliance with land development requirements. For instance, in the Senior Staff Estate within the Namanga Road -Stony Athi Corridor, developers have taken it upon themselves to ensure that all developments on individual plots strictly conform to the agreed plans and the approval conditions. This is a bottom up development control approach which has led to a pleasant and orderly development in Senior Staff Estate unlike the other parts of the study area like Sinai slum in the study area. This should be encouraged by the Mavoko Municipal Council to ensure compliance with planning requirements in other parts of the study area. The neighbourhood associations would be handy in controlling invasion of private and public land in the study area.

Summary

The following issues were discussed on institutional systems in the study area.

- a. Planning institutions are provided with legal powers to enable them to do certain tasks where development control is essential to guide urban development. Most of these legal provisions and powers are contained in the various land use planning and management acts. Some of these powers include compulsory acquisition of land, enforcement of development control like withholding of planning permissions, enforcement notices, stop notices and imposition of fines. However, planning institutions in the study area experience certain problems and constraints in carrying out their planning functions. One of these is lack of coordination between all agencies and institutions involved in one way or another in land use planning and management issues.
- b. The local authorities which are planning and development control agencies in their areas of jurisdiction are not fully autonomous from the central government. They lack adequate financial resources, highly qualified skilled manpower and equipments to enable them carry out their planning tasks effectively. This also leaves the councils vulnerable to central government interference in their operations
- c. Planning institutions such as the Land Control Boards are defined by legislation, which limit their powers and authorities and no cogent planning guidelines are offered making development control problematic in areas with mixed land tenure systems. Consequently,

this result in the illegal conversion of agricultural land into urban use as development control is difficult to undertake in private land. There exist multiple laws in the planning and management of land use which had made the management of land uses a challenging task in the study area. The legislations have been uncoordinated because the country lacks a comprehensive land use policy which is in the process of enactment.

- d. Effective applications of land use planning and management laws, requires effective institutions to carry out development approval and control and enforce the laws. 'There are multiple institutions in central and local government levels which lacks coordination. This has resulted in the haphazard development because it is not clear on the roles and responsibilities of the various institutions.

Therefore there is an urgent need to harmonize the numerous land use planning and administration laws in the country and enact a national land policy to deal specifically with the land use planning and management needs of the peri-urban areas.

CHAPTER FIVE

INSTITUTIONAL PROBLEMS AND CONSTRAINTS TO LAND UTILIZATION

5.0 Introduction

The focus of the study was to examine the institutional problems and constraints in land utilization in the Namanga Road –Stony Athi Corridor. This chapter evaluates the research findings against the study objectives. The relationship between these research findings and the study objectives is critically examined. It is assumed that institutional problems and constraints have influenced the way land is being used and controlled in the study area. The research findings are presented below with emphasis being placed on the field findings and observations made. An analysis of these findings is presented in form of graphics, photographs, maps, pie charts and general discussions.

5.1 Existing land ownership and use patterns

The study area is characterized by mixed land ownership patterns like private owned freehold and leasehold land and developments comprising agricultural, industrial, residential, commercial and informal settlements giving the area an intermixture of land uses (see Map below 4). The overall pattern of land use is influenced by the rapid land developments being experienced in the area in the form of land subdivisions, conversion of agricultural land into urban use, organized invasion of private land and non-compliance with planning regulations portraying a disjointed and isolated development pattern. The emerging development pattern poses many planning challenges which are discussed here below.

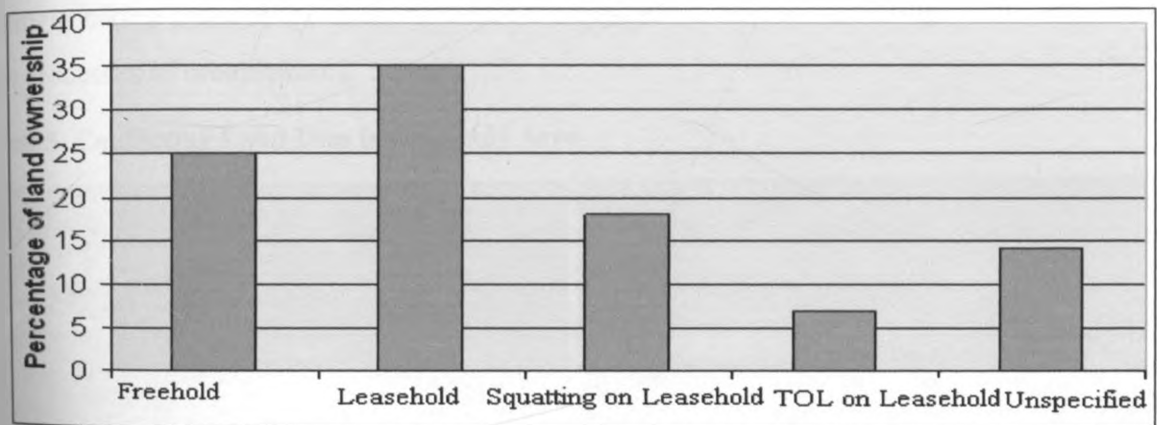
Land ownership structure

Land ownership is important to understanding of land use and development as it profoundly affects the urban development pattern. The field survey showed that 25% of those interviewed, owned freehold land while 35% were leaseholders and 18% is leasehold land which has been occupied by squatters. Almost a quarter of the land in the Namanga Road - Stony Athi corridor is held under freehold interest under the Registered Land Act (RLA cap 300). The remaining 61% is alienated Government leasehold land either privately owned, occupied by squatters and/or temporary occupation licences have been issued for its use. The planning challenge in the study area is that freehold land interests in land are perpetual. Freehold land titles have no binding authority on their planning and development. This factor makes development control enforcement by the Mavoko Municipal Council difficult, giving rise to the illegal subdivisions and conversion of the land into urban uses like residential and industrial purposes. The new land uses are registered as freehold thus making it impossible to

subject them to stringent development control requirements. The Physical Planning Act is supposed to control freehold land use and development activities in accordance with section 2 of the Act.

However, the conditions existing before its enactment appear to prevail in the study area. Leasehold land in the study area has also largely remained undeveloped due to speculative land allocations. This has encouraged the expansion of slum settlements in the area giving rise to settlements like Sinai, Carton city and Kazito as the vacant land provides accessible land for squatting. The failure to intervene by the Mavoko Municipal Council, the Commissioner of Lands and the Director of Physical Planning and the Locals will lead to the expansion of the illegal slum settlements. This will result in land use conflicts between the slum settlements and the well developed residential estates in the area thus affecting property values.

Figure 6: Structure of land ownership in the corridor



Source: Field Survey, 2007

Conversion of agricultural land into urban land use

As land is converted to new developments such as industrial, residential and commercial purposes etc, agricultural land is lost. The role of freehold land in the study area becomes increasingly marginalized, despite its potential for horticultural and ranching production. This results in the conversion of freehold land into urban uses such as industrial, residential and commercial purposes, therefore leading to its change in land tenure status. For instance, the conversion of freehold tenure land into urban uses such as residential, etc attracts its conversion into a leasehold tenure, which is an interest in land for a fixed period (usually 99 years). This is usually accompanied with the payment of rent and restrictive covenants which restricts the development of the land without submission of building plans to the Local Authority, the Commissioner of Lands, the Director of Physical Planning and the Director of Public Health for approval within a period of six months from the date the title was issued.

The other restrictions include the restriction of the land's subdivision, transfer, site coverage and its use. The controls are meant to ensure that the public retains the power to guard against the powerful consequences of the growth of individual rights in land while at the same time not completely impeding the development of such rights, under proper control by the community to the extent that they are a concomitant of economic and social progress. The main areas where freehold land tenure is being converted into leasehold tenure land is along Kinanie Road, Harvest Horticulture Farm and opposite the Kenya Meat Commission Factory where there is Gichimu and Muchiri residential estate. Horticulture farms and ranches are under pressure from the emerging new land developments such as residential estates leading to land conflicts. The land conflicts noted in the area include non conforming plots, uses of land, and uses of structures and nonconforming structures.

The plate below shows some of the residential houses put up at Kinani road in the corridor, flower farms can still be seen in the background. This gives a clear indication of the land use changes taking place in the study area and the land use conflicts emanating from them due to the processes of urbanization.

Plate 5- Conflicting Land Uses in the Study Area



Gichimu and Muchiri estate



Vulcota Estate

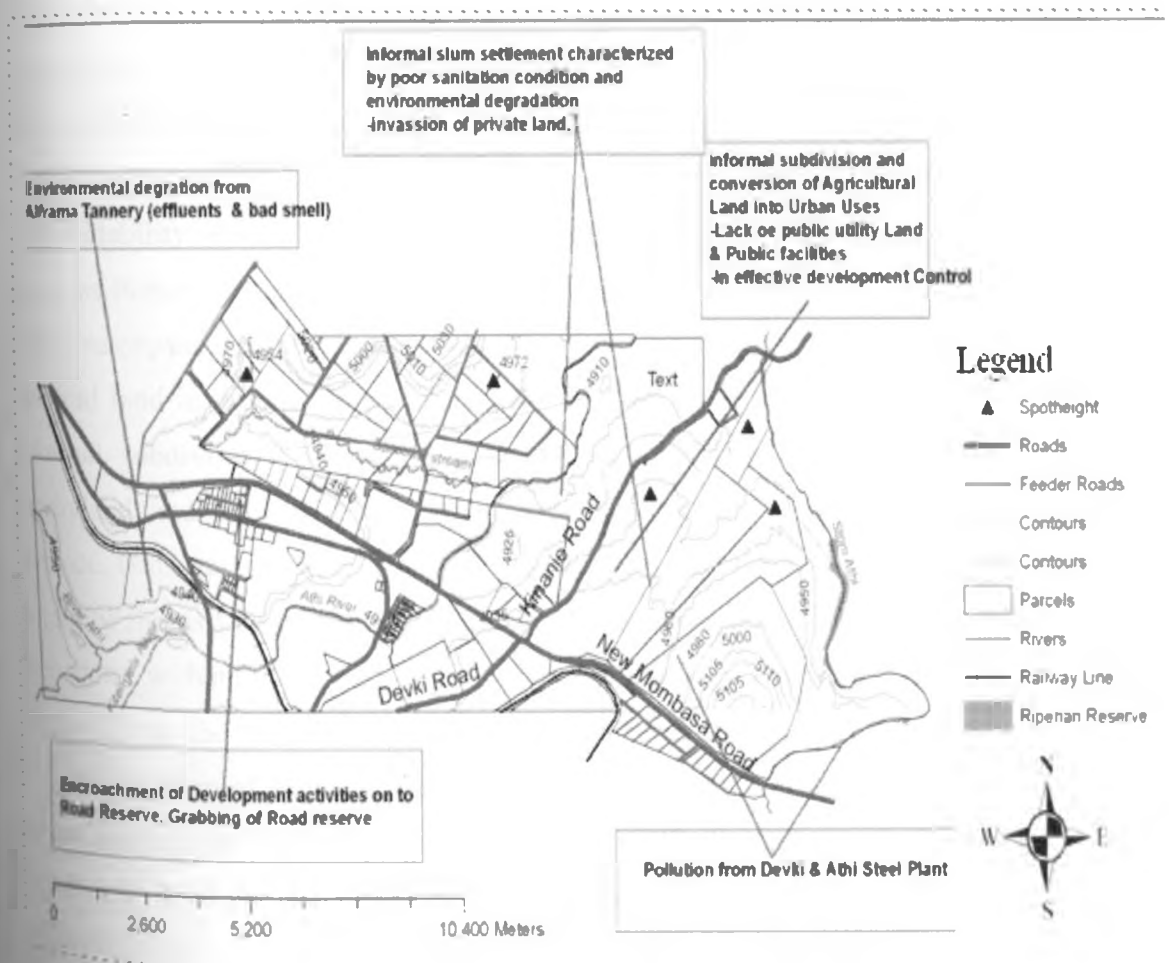
Source:- Field Survey, 2007

Increased demand for land for residential, industrial, commercial activities has exerted pressure on the valuable horticultural and ranch land as illegal conversions and subdivisions are being undertaken to satisfy the demand for urban land. For example the informal conversion of Gichimu and Muchiri freehold land (LR NO. 10426/6) and Harvest Horticulture farm into residential and commercial urban use. The conversion of agricultural land into urban uses like residential etc is not supported with necessary services such as water, electricity, roads of access, open spaces, drainage channels, garbage collection

facilities and human waste disposal systems leading to poor sanitation conditions and congestion in the settlements, such as within Gichimu and Muchiri residential estate. The estate has over 800 subplots sharing a single communal piped water, and it does not have a sewerage disposal system. A comprehensive development of such magnitude required to be served by a sewerage disposal system.

This has resulted in land degradation, poor quality of settlement environment and poor waste disposal systems within the emerging residential areas. Non-intervention by planning agencies would lead to wasteful land utilization and the expansion of informal and slum settlements in the study area, leading to poor health and safety, convenience, efficiency and energy conservation. There is need for planning institutions both central and local Governments planning agencies to enforce development control regulations in this area to ensure proper urban growth and settlement conditions.

Map 11 :- Illustration of Key Land Use Planning Problems Affecting the Study Area



Source:- Adapted from Survey of Kenya, 2007

Uncontrolled land subdivisions and change of user

Due to its strategic position in terms of communication facilities, the Namanga Road –Stony

Athi corridor is experiencing rapid urban development such as housing, commercial and industrial investments. This has resulted in major housing, commercial and industrial investments being attracted into the area. The developments have boosted land values in the area leading to speculative land trading which has encouraged informal subdivision and conversion of agricultural land into urban uses like residential, commercial and industrial purposes. The conversion of agricultural land into urban uses leads into the change of land tenure status of the land, thus enhancing the value of the land giving rise to high land prices and taxation rates by the Central Government and the area Local Authority. The subdivision of large leasehold land parcels in the area has also given rise to more intensive developments such as comprehensive housing developments. The developments are not served by proper systems of sewerage disposal, street lighting and access roads, leading to environmental problems and high insecurity risks to the residents.

The numerous land subdivisions and change of user activities in the Namanga Road-Stony Athi corridor are caused by the rapid urbanization and suburbanization of Mavoko Municipal area due to its growing employment opportunities in industries, housing sector and the growing demand for cheap land for private individual housing. The corridor has a mixed land tenure system of leasehold and freehold land. The different land tenure systems determine the availability of land for urban uses, its use and the controls to be applied by planning agencies during its development processes. In the study area, as land use and development activities expand, they begin to reflect the various land tenure systems found in the area. The freehold land in the area is privately owned based on 999 years leasehold and most of the informal subdivisions are taking place within such land. The land is being informally subdivided and converted into urban uses like residential and industrial purposes. For instance, Gichimu and Muchiri and Vulcota residential estates are located on freehold land in spite of the two being urban settlements. The conversion of the land into urban uses has been done without following the stipulated regulations requiring a change of user to be obtained from the Commissioner of Lands' office in consultation with the Local Authority and the Director of Physical Planning. This is due to the assumption that freehold land owners have about the use of their land and lack of binding rules in freehold titles to control its use and development. This assumption is wrong as the Physical Planning Act of 1996 regulates its use.

Private leasehold land tenure found in the study area is characterized by informal settlements (Carton City, Kazito, Sinai slums) due to the failure of the council and other relevant authorities to enforce development control and the illegal invasion and subdivision of private

land. Leasehold land's development is determined by the special conditions of the titles which give wide power to planning agencies to control its use, subdivision, transfer and density of development. This is meant to ensure proper provisions of services and amenities like roads, sewerage disposal systems, open spaces etc. Legally, Mavoko Municipal Council has at its disposal, the means to regulate and control the use of land that falls within the Namanga Road –Stony Athi Corridor. However, due to the existence of different land tenure systems in the area, the Council is not able to effectively and uniformly enforce development control in the areas covered by different land tenure systems. This has arisen due to the fact that the use and development of the different land tenure forms of land holding are governed and controlled by different statutory regulations.

The statutory regulations are also overseen by different agencies some of which have limited manpower capacity and resources. For instance, while the Commissioner of Lands, the Director of Physical Planning and the Local Authority have much control over leasehold private land under the terms and conditions of the leases, they have little control over freehold land except in terms of the Land Control Act Cap 302 in the cases of subdivisions and transfers. Although the Physical Planning Act was enacted to oversee the planning of both leasehold and freehold land, its impact is yet to be felt as the situation existing before its enactment still prevails in the study area.

On the other hand, the Land Control Board which is meant to control subdivision in agricultural freehold land, among other transactions, allows for subdivisions of up to 50 by 100 ft ($\frac{1}{8}$ of an acre) sub plots within the freehold land area without ensuring that proper facilities are provided for to support the new urban land uses. This is due to the failure of section 9 of the Land Control Act Cap 302 to specify the minimum agricultural subdivision plot sizes. Even though the assumption of the law was that the Land Control Boards would exercise discretion on the minimum agricultural subdivision plot sizes, this is not the case as there are no clear guidelines by the Government on how the Land Control Boards were to determine such standards. The subdivisions of freehold land are approved and titles for the resultant sub-plots issued as freehold, yet they are used for either residential, commercial or industrial purposes. For example, titles for Vulcota residential estate located on Harvest Horticultural Farm were acquired as freehold titles. The freehold titles do not attract high taxation and the use of the land is unrestricted as the titles have no binding authority to obey regulations or planning requirements.

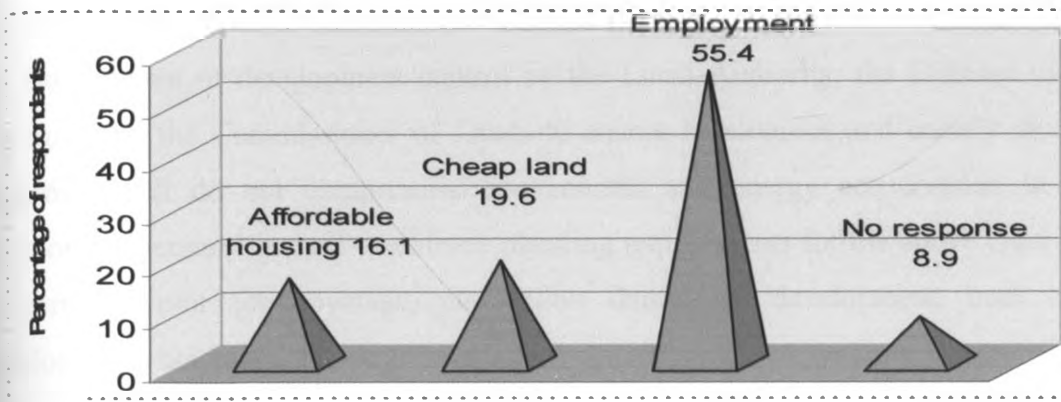
The subdivisions are deemed to constitute a development process on land, which causes material change in its use. The resultant plots vary in size, shape and form, thus not

portraying planned and coordinated development, hence compromising the amenity of the area. For example the subdivision of Gichimu and Muchiri residential estate has given rise to plot of various sizes, shapes and forms leading to disjointed development activities. The planning challenges are in the irregular plot shapes. The plot shapes compromise the efficiency and convenience of providing services to such plots due to their spatial characteristics. This makes provision of estate services such as street lights, power, water, sewerage disposal system costly. Planning institutions like the Commissioner of Lands, the Director of Physical Planning, the Local Authority, etc in the area lack technical and professional capacities to control the developments.

For instance the Mavoko Municipal Council had no Physical Planner up to mid 2007. Development applications and Land Use Planning issues were handled by a Cartographer. The Machakos District Lands and Physical Planning Offices were inadequately staffed and equipped to inspect land use and development activities and enforce planning standards during implementation of approved subdivision schemes. The role of development control is left entirely to the Mavoko Municipal Council which lacks adequate manpower and equipments for policing and enforcing development control.

From the field survey, it was established that 19.6% of those interviewed, had come to the corridor because they had bought land in the area while 55.4% had the corridor as their working place. It is assumed that the reason for rampant land subdivisions in the area is the increased demand for land for development. While planning is dynamic, the Mavoko Municipal Council, the Commissioner of lands, and the Director of Physical Planning have failed to take cognizance of the changes taking place in the study area. For instance, the informal subdivision and conversion of freehold land into residential developments such as Gichimu and Muchiri and Vulcota residential estates was not and is yet to be detected. This is assumed to be caused by the failure by the Mavoko Municipal Council, the Commissioner of Lands and the Director of Physical Planning to inspect and enforce planning requirements during the process of developing land. The other problem is that development control is entirely left to the Mavoko Municipal Council by the Central Government agencies cited above. The Council's development control unit has five personnel and one vehicle for operations. Therefore, development control in the study area has largely remained unattended hence the disjointed and haphazard development activities taking place. There is need for intervention by the more specialized agencies like the Departments of Lands and Physical Planning to assist the council to enforce development control in order to control the order, nature and direction of development in the area.

Figure 7: Reasons for migration into the Namanga Road -Stony Athi Corridor



Source:- Field Survey, 2007

Small land sizes and increase in land values

The demand for land in the study area has resulted in the rapid subdivision of both freehold and leasehold land for speculative motives. The resultant subplots within freehold land subdivisions measure about 15 by 30m (1/8 of an acre) and are usually treated as agricultural plots while in essence they are residential plots. Map 12 shows the changing trends in land subdivisions and land use patterns over the years in the study area. The field survey revealed that the prevalent plot sizes in the corridor were 15 by 30m (1/8of an acre) with an occurrence of 28.8%, while 19.6% represented those less than ¼ of an acre and others represented 10 by 10 m (0.07acre).The registering of the 15 by 30m, size plots as agricultural plots has several implications on land use planning as the use and control of the land is problematic.

The main constraint is that agricultural land has no limitation on the use of land and there is lack of binding authority to obey any planning requirements. These coupled with the perception of land holders made development control appear as a nuisance. As a result the 15 by 30m, size plots registered as agricultural plots are utilized for either residential, commercial and industrial purposes leading to conflicting land uses such as industrial and residential establishments being located side by side.

This means that the new urban land uses like residential, industrial, commercial etc escape stringent land use planning controls demanded for urban land uses as the 15 by30m size plots are registered as agricultural plots. The planning procedures, development control and approval requirements for the new urban land uses such as residential, commercial and industrial purposes changes as the law requires prior approval for such land use and development activities from the Local Authority, the Director of Physical Planning and the Commissioner of Lands unlike agricultural land uses.

The implementation of the plans allowing residential, commercial and industrial land use and development activities is more elaborate than the one for agricultural activities. It involves the enforcement of development control by the Local Authority, the Director of Physical Planning and the Commissioner of Lands to ensure harmonious and orderly development patterns which do not compromise convenience and energy conservation in an area. Development control is used to enforce planning requirements for the above cited land uses in terms of plot site coverage, plot ratios, density of development, back lanes and developments height.

However, the registration of urban uses like residential, industrial and commercial as agricultural land means that these stringent planning standards are not enforced resulting in haphazard development activities in the study area. The area was sparsely developed before 2000 save for few industries. Currently the area is experiencing rapid industrial, residential and commercial development activities. This has resulted in the rapid subdivision of land and its subsequent use for intensive development activities like comprehensive residential estates such as Hillcrest, Budget and Vulcota.

This has led to the increase of land values as land is subdivided and converted into urban land uses such as residential, commercial and industrial whose value appreciates upwards. This is caused by the rising demand for land for urban development activities in the area. In the case of leasehold land, subdivision of large land parcels like LR NO. 12867/10 where Hillcrest residential estate is located has resulted in the intensive utilization of the land into a high density residential estate. The value of the neighboring un developed plots which measures about 8 hectares, which were being sold at ksh 5 million in 2002 has increased to over ksh 30 million by 2007 after only a period of four years.

In 2000, a plot of 50 by 100 ft (1/8acre) was trading at ksh 100,000/- only. This has increased to ksh 150,000 in 2002 and ksh, 450,000 in 2006. The increase in land values has been attributed to the land use changes taking place in the corridor where land is being converted from low value land uses like agriculture and ranching into high value land uses like residential, commercial and industrial purposes. There is also a growing demand for housing, industrial and commercial development activities as several other service industries emerge to service the cited development activities.

This has given rise to increased demand for land to accommodate residential, industrial and commercial development activities hence the increase in land values. To satisfy the increased demand for land, more land is being subdivided and converted into residential and commercial uses. The failure by the Local Authority, the Director of Physical Planning and

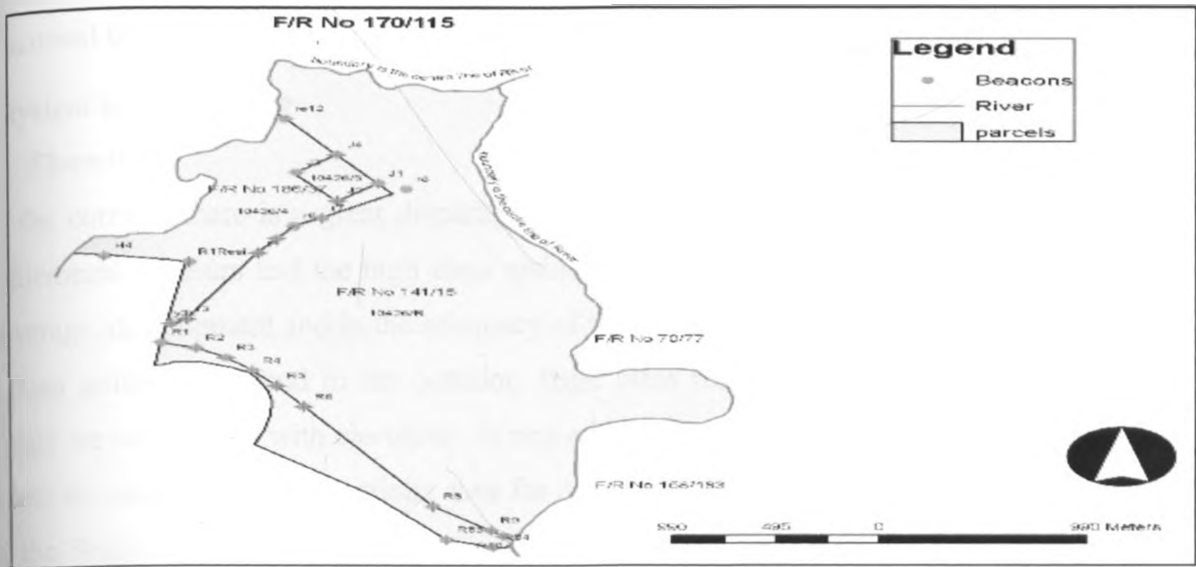
the Commissioner of Lands to supervise the implementation of these land use and development activities has resulted in disjointed and haphazard development. While recognizing that land has a tendency to appreciate in value, with the rapid urbanization of the Peri-urban fringe areas, the land values in the corridors show unique sharp rise in the periods covering 2000-2006. From the field survey 53.5% of those interviewed came to the study area between 2001 and 2006. The field survey had further shown that 19.6% and 55.4% of the respondents interviewed come to the corridor due to availability of cheap land and employment opportunities respectively.

The Planning challenge has been the speculative nature of land transactions, which have tended to increase and or raise land values. Speculative land transactions tend to increase land values as land for development is removed from the market to await its appreciation in value. Speculative land trading in the area has made it difficult for the locals to acquire and own land. This has led to the invasion of private land for example plot LR NOs. 337/183,613 & 617 and their subdivision into tiny plots which had resulted in the expansion of slum settlements in the study area like Kazito and Sinai. This has reduced the amenity and environmental quality of the area as slum settlements with serious poor housing and sanitation conditions have emerged.

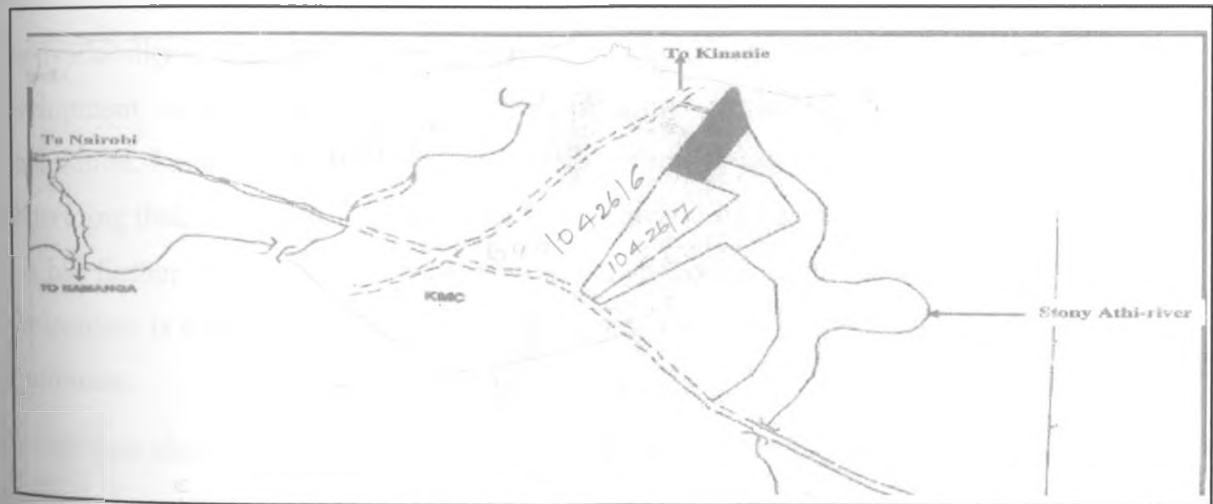
The phenomenon of speculative land trading if not checked cannot promote sustainable development. It encourages land hoarding for future capital gains as there is no tax regime to control the rising land values. For instance plot LR NO. 337/860 (2.25 HA) which is a leasehold plot was allocated to a private developer in 1999 for industrial development with subsidized stand premium of ksh 144,000/= .This plot was sold in 2005 without any improvements for kshs 8 million after a period of six years. There is no tax which was paid to the government as the plot was sold informally with a Lawyer's agreement. The same plot has been subdivided into several commercial and residential plots measuring about on 1/8 of an acre which are being sold for kshs 800,000/= for those fronting the main Nairobi-Mombasa highway while the other remaining subplots goes for ksh400,000/=. However the developer is implementing the subdivision plan using an un approved subdivision scheme.

Land Subdivision Trends and Changes Over Time In The Study Area

Plot LR.No. 10426/R in 1970 and its Parcellation upto 2006



Subdivision of Plot LRNo. 10426/R into Plots LR Nos. 10426/6-10 after 1970



Subdivision of Plots LR Nos. 10426/6 & 7 into Plots of 1/8 of an acre in 2006



Source:- Survey of Kenya FR, 2007

5.2 Services and Infrastructure

A summary of the level and type of infrastructure services provided in the study area is discussed below.

Physical infrastructure

1. Electricity

In the corridor there is a great disparity in the distribution of electricity between the slum settlements, medium and the high class residential sections. The disparity is in the levels of coverage, development and in the adequacy of the electricity provided to the various types of human settlements found in the corridor. High class residential areas such as Senior Staff Estate are well served with electricity. It was established that most of the housing units in the estate are connected with electricity save for newly completed units. These are mainly located in the Senior Staff River View estate. The field survey had established that 60% of those interviewed in the high class residential areas were connected to electricity while 40% were yet to be connected because the units were under construction.

The availability of electricity in the High class residential areas has tended to encourage more development activities in the study area in terms of land subdivisions and housing construction. Land owners in the Senior Staff estate who have big land parcels have started subdividing their land and disposing it off to new buyers while retaining a substantial portion. This has further encouraged the construction of new houses in the area. However, the area's development is controlled and therefore all the new land subdivisions must comply with this requirement.

The medium class residential estates like Hillcrest and Vulcota were built as housing units and then disposed off to the members of the public. These two medium class residential estates are connected with electricity but have no street lights. On the other hand, in the medium class residential estates like Gichimu and Muchiri where members of the public have bought land and built their homes is not served with electricity. To have their homes connected with electricity individual members have to meet the statutory costs for the connections. The individual costs ranges between kshs. 20,000/= to kshs 60,000/= depending on how far their houses are located from the main electricity line which passes along the Nairobi-Mombasa road. Due to the costs involved to have one's house connected with electricity, it is only a few houses fronting the Nairobi-Mombasa road of the estate are connected.

The inability to have individual homes connected with electricity in the area has tended to discourage the fast development of the Gichimu and Muchiri residential estates in comparison to the other medium class residential estates like Hillcrest and Vulcota. This is due to the fact that the residents of the estate are apprehensive of their safety and security during night time. Consequently they have formed a security vigilante group to patrol the estate during the night thus increasing the costs of ensuring their security.

The slum settlements in the study area such as, Sinai, Carton city and Kazito have no electricity connection. Lack of electricity in the slum settlements cited has discouraged the rapid development of this area. The settlements have no established informal activities such as carpentry, welding and small kiosks which are common in most slum settlements in the country. This has contributed to high poverty levels in the settlements. This has also increased the distance and costs involved in accessing these services from the Mavoko Central Business District area. The field survey has established that 60% of the people interviewed in the High class residential estates found in the study area are connected to electricity while 46.4% of those in both the medium and low class residential areas were not connected at all.

It is thus possible to notice that differences in the provision of electricity in the study area follows along the three social classes that is high class, medium and slum settlements found in the area. The provision of electricity has tended to influence the physical developments found in the various types of settlements found in the study area. The other noticeable feature of the electricity distribution in the corridor is that all industrial establishments that is London Distiller, the Kenya Meat Commission, Athi River Steel plant, Devki steel mill etc are adequately provided with electricity. This has attracted more factories into the corridor. For example Associated Steel Limited (ASL) is being built next to Athi River Steel Plant factory.

2. Water

The Namanga Road -Stony Athi Corridor gets its water from Nairobi Water and Sewerage Company. However, the supply is not adequate and the water is rationed amongst the existing estates and slum settlements. With the increased population, the situation has been deteriorating. The field findings indicated that only 39.3% of those interviewed in the slum settlements get communal piped water while the remaining 60.7% do not access the communal piped water. The Nairobi Water and Sewerage Company supplies water to all the settlement categories found in the corridor once a week. However Senior Staff gets its water twice a week on Mondays and Thursdays. On Tuesdays water is supplied to all the slum settlements such as Sinai, Kazito and Carton city. All these slum settlements have a

communal piped water collection point (see plate 8). The medium class residential estate such as Hillcrest and Vulcota gets their water on Wednesday. The two estates have individual water connections for the various housing units. On Friday the water is supplied to the Gichimu and Muchiri residential estate. However this estate has one communal piped water point where the various individual housing units draws their water from. The industrial establishments found in the area like London Distiller, the Kenya Meat Commission, Devki Steel Mill, Athi Steel Plant, etc are provided with water throughout the week. However London distiller has a borehole which augments its water supply needs. The Kenya Meat Commission also has a permanent dam along the Stony Athi River which it uses to supplement its water needs.

Plate 6 :- A Water collection point in Carton city slum settlement



Source:- Field Survey, 2007

The challenges associated with water rationing in the study area is that most of the households within the slum settlements that is Sinai, Carton City, Kazito etc lack clean water for their domestic use. This arises due the fact the people are required to buy drums and tanks to store water when it is supplied. Most of the households cannot afford the tanks and drums needed. The Mavoko Municipal Council should construct tanks within the various slums settlements where the water can be stored and utilized by the people according to their personal needs. The process of storing water within the slums settlements is also prone to the use of unhygienic ways to collect and store water which leads to spread of water borne diseases such as dysentery. This is because several hundred people share one water tap so to keep the water clean when it is carried long distances and kept for hours or days in exposed drums and cans is impossible.

The salient feature of the corridor is that river Athi drains the area but it experiences a lot of pollution from human activities along its riparian reserve and the existing industries. This makes its water non potable for domestic purposes. Pollution is generated during subsistence

farming along the river banks of river Athi. Subsistence farming involves the growing of maize, cabbages and tomatoes along the river banks. To protect these crops there is extensive use of agrochemicals which eventually end up in the natural water course of river Athi. The other source of pollution is release of industrial effluents from Alframa tannery and London Distiller into the river's natural water course without its treatment first to remove poisonous matter. This is contrary to Regulations 72-75 of the Water Act which ensures that effluents discharged into natural water bodies do not contain poisonous matter. This has forced Mavoko Municipal Council to source water from external sources like Nairobi hence incurring high cost to provide water to its inhabitants.

3. Roads

The Nairobi-Mombasa highway (A109) and the Great North Road (A104) to Namanga pass through the corridor. These are national class A roads which links the country and the study area to centres of international importance such as Nairobi, Mombasa and Arusha in Tanzania. They are tarmacked roads and are maintained by the Kenya National Highway Authority. Currently the Nairobi -Mombasa Highway is being dualised and when completed it will open up the area for further development. The Great North (A104) road is well maintained and it is in good physical conditions within the sections covered by the study area.

The other important roads which pass through the study area are kinani road, Devki road and Jam-city road. Kinani road is a class D secondary road which links the surrounding centers to the study area and the higher class A Mombasa –Nairobi highway. The road is murramed. The road is maintained by the Kenya Rural Roads Authority. Currently the road is poorly maintained and it is in poor physical conditions. Devki road is a class UA urban arterial which links Mavoko Central Business District to the Mombasa –Nairobi highway. The road is tarmacked and is well maintained by the Mavoko Municipal Council and is in good physical conditions. Jam-City road is a minor distributor which links the study area with Katani quarries. It is murramed and maintained by the Mavoko Municipal Council and is in good physical conditions.

The main challenges related to the provision of roads facilities in the study area is that most roads lack essential storm water drains to collect and carry rain or surface water to some natural water courses in such way as to prevent flooding. This has resulted in regular flooding of roads located in low-lying areas of the Senior Staff River View estate, Carton city and Sinai slum settlements. This has discouraged the development of the land parcels located within this zone. The land parcels have been invaded and occupied by squatters who move out when the area floods. This has resulted in land use conflicts in the area between the slum

settlements and the prime residential estates due to their poor structures and poor sanitation conditions. Also, some of the roads have been grabbed and developed as residential houses. This situation is experienced along Senior Staff estate where the old Mombasa –Nairobi road pass through. This in particular had resulted in numerous land disputes in the area as the new buildings had blocked access roads into the Mombasa –Nairobi highway. For instance the allocation of plots LR NOs. 337/2189-3001 in the area had interfered with the access road situated along the Mombasa-Nairobi road. However, the developments located on the above cited plots were demolished when dualing of the Mombasa –Nairobi road commenced.

Good access roads are essential for industrial development. In the study area industries have tended to be concentrated in areas where there are good road facilities. As a result, industrial developments have been concentrated along the Mombasa-Nairobi highway in order to benefit from good transportation. Some of these industries are the *Kenya Meat Commission, Devki Steel Mill, Athi River Steel Plant and Sigma feeds*. This has given rise to ribbon development along the highway. From the field survey, 19.6% of those who were interviewed in the study area on the main problems experienced in the area identified impassable roads as a major problem in the corridor when it rains.

Environmental infrastructure

1. Sewerage disposal

The conventional sewer systems only cover the Senior Staff area and some few factories like, Devki Steel Mill and the Kenya Meat Commission. This system was developed to cater for the Senior Staff of Port Land Cement factory whose houses are in the area. It served a small population in comparison to the present increased population of the estate. The Mavoko Municipal Council is yet to extend the sewer reticulation system. Currently the facility is managed and maintained by the newly established Mavoko Municipal Council Water and Sewerage Company. Its maintenance is poor and frequent blockages of the system leads to the discharge of sewer sullage on the open land surface in the Senior Staff River View Estate areas, forcing some residents of Senior Staff Estate to built pit latrines to serve them.

Septic tanks and pit latrines are the most predominant facilities used to dispose human waste in the middle class and low class sections of the Namanga Road-Stony Athi Corridor. Septic tanks are in greater use in the middle class residential Estates like Hillcrest, Vulcota, Gichimu and Muchiri Estate and Senior Staff River View Estate and also in the industrial establishments. The Septic tanks requires regular emptying making them expensive to use. The Mavoko Municipal Council Water and Sewerage company has no exhauster, the services are provided by private companies at a cost of Kshs 15,000/=. Low class residential areas

like Sinai, Kazito and City Slum settlements are served by pit latrines. The pit latrines are poorly constructed, hence poor sanitation conditions in the settlements. In slum settlements like Carton city the pit latrines are built very close to river Athi leading to pollution of the natural water course as human waste is washed into the river(see plate 7)

The field Survey revealed that the most common method of waste disposal in the middle class residential areas was the septic tank at 50% while the remaining 50% used both pit latrines and septic tanks. In the informal settlement it was established that 66.1% used pit latrines while the remaining 33.9% gave no response. In the high class residential areas it was revealed that 50% used flush toilets while the remaining 45.5% used septic tanks and the remaining 4.5% combined flush toilets and pit latrines.

Plate 7: Pit Latrines located Along the Banks of River Athi



Plate 8: Council Tractor Collecting Refuse in the Namanga Road –Stony Athi Corridor



Source:- Field Survev. 2007

2. Solid waste management

In the study area, solid waste collection is the responsibility of Mavoko Municipal Council. The Municipal Council has two tractors manned by six officers which collect solid wastes from the various estates of the Municipality once a week (see plate8). In the study area, the estates which benefit from the Council's solid waste collection services are Senior Staff, Senior Staff River View Estate, and Gichimu and Muchiri residential estates. Each individual household uses a plastic container to collect and store the solid wastes which is then placed outside the main entrance where it is collected by the Council officials and put into the tractor. The solid waste is then transported to an undeveloped quarry plot near Katani where it is damped. The problem with this system is that the solid waste is transported using an open tractor which spills it on the way. It also creates a nuisance of bad smell when being transported to the damping site.

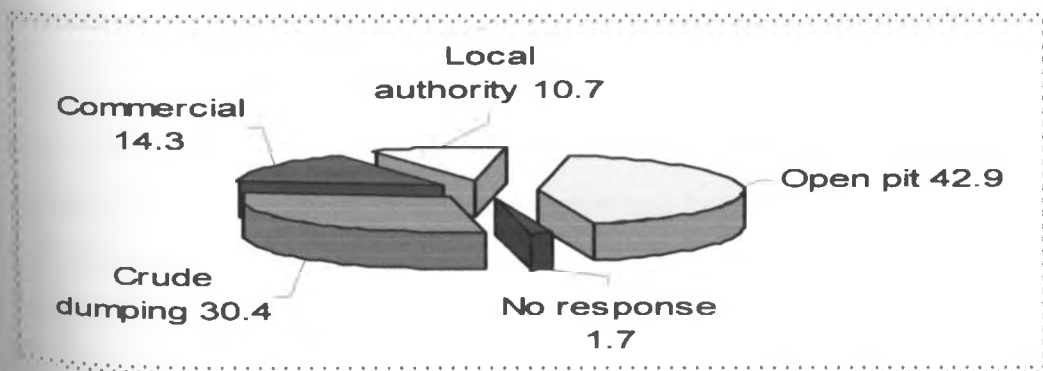
The other challenge is that the Council has not developed a damping site of its own save for the one located on a private quarry land which may be repossessed anytime. The council also

lacks enough tractors and personnel to manage its solid waste. With the rapid developments being witnessed in the area and the anticipated population increase of the area, there is need for the Council to improve its solid waste management capacity. As a matter of urgency it should acquire land and develop a dumping site of its own to cater for the growing population of the municipality areas and the study area. New modern trucks to collect and process the solid waste are needed too. This will encourage the re-use of some of the solid wastes to make industrial products such as bottles and cartons.

In the informal settlements such as Sinai, Jam City and Kazito and industrial establishments like Athi River steel plant, the Kenya Meat Commission, Devki Steel Mill, Tuffoam and London Distiller, solid waste is mainly left to the individual household and companies who contact its collection to private companies. However all the households in the slum settlement of Sinai, Jam City and Kazito dispose it off through crude dumping leading to the pollution of natural water courses in the area, as the solid waste is washed into River Athi during heavy rain season.

The research findings indicate that 42.9% of those interviewed in the three categories of settlement (high class, medium and lower class) use open pit to dispose their solid waste, which they either burn or bury while the municipal council collects 10.7% and 14.3% is collected commercially. The other remaining 30.4% use crude dumping while 1.7% gave no response.

Figure 8: Means of Refuse Disposal in the Study Area



Source:- Field survey, 2007

Community Facilities

In the Namanga Road- Stony Athi corridor, provision of community facilities was dominated by the private sector. Private schools and clinics are the most predominant in the corridor. Even though they serve the purpose, planning standards are not adhered to during their construction. This is because the private clinics are located in residential houses found in the

Gichimu and Muchiri residential estate which is located on an agricultural land. A change of user for the new land uses had not been obtained from the Commissioner of Lands, the Director of Physical Planning and the Mavoko Municipal Council. The private clinics lack essential supportive facilities like adequate occupancy space, open spaces and accessible roads. They are also not served with essential services like water, electricity and garbage collection. This had led to the poor sanitation conditions of the private clinics situated in the area.

There are two private nursery schools located in the study area. One school is located in the Carton city slum settlement. The other school is located in Kazito slum settlement and it is built by Fanaka Integrated Association which is a Non-Governmental Organization. The Non Governmental Organization has also built a semi permanent primary school within its premises. It enrolls its pupils from the Kazito slum settlement and the surrounding neighborhood. It had a total number of one hundred pupils. The school is built on a small plot and it has no adequate open spaces and playground. By their nature young children like playing in scattered groups and adequate land is needed to cater for their needs. The Mavoko Municipal Council has connected piped water to the school.

The Mavoko Municipal Council has attributed the domination of the private sector in the provision of community facilities like schools and clinics in the study area to lack of public utility land. Land allocations and subdivisions had been undertaken without adequate land being set a side for public facility provision. The council had argued that it lacks enough funds to acquire land from the private sector to build schools and hospitals in the area.

This had contributed to high individual household costs for obtaining such services from far away places. This is supported by the field findings which established that 78% of the children of those interviewed in the middle class and low class and/or slum settlement in the study area, attended primary schools located at the Mavoko Municipal Central Business District which is about 3 kilometers away from the study area. This meant that parents had to incur more costs to have their children transported to and from school. In spite that most of them were living in the slum settlement due to their poverty status. Further to that 69.6% of those interviewed in the high class, middle and low class settlements in the study area felt that they lacked essential community facilities like Schools, Hospitals, clinics, Police Post and others.

5.3 Lack of Harmony in Existing Legislations

Land use Planning and management in the Namanga Road-Stony Athi Corridor is

characterized by the use of Multiple legislations to guide and control land use and development activities in the in area. Many conflicting land laws and multiple planning agencies enforcing land development without an overall supervisory Authority to co-ordinate their activities has made the management of land use and development activities a challenging task in the study area. The various statutes dealing with land utilization and management in the Study area include the Government Lands Act Cap 280, the Registered Land Act Cap 300, the Land Control Act Cap302, the Physical Planning Act Cap 286, the Local Government Act Cap 265 and others.

Though there existed well laid-down planning and development regulations under the above cited legislations to deal with land use and development activities, there was inadequate legal machinery to enforce them. For instance, under the Land Planning Act Cap303 there was no provision for prosecution of a developer who contravened planning regulations. This made the Local Authorities powerless in their attempt to control land use and development activities in their areas of jurisdiction. With the enactment of the Physical Planning Act Cap 286 this was expected to improve but this has not been the case. This is because the fines for non compliance with the planning laws and regulations as provided for in the Physical Planning Act section 30(2) are not deterrent enough. With the current levels of fines most developers can afford to disregard the law and pay the fines and still continue to develop the property.

The land laws that govern land use and development activities in the study area have serious limitations due their inherent weaknesses and sometimes the duplicative roles that they give to different planning agencies. For example in accordance with sections (5) and (16) of the Physical Planning Act, the Director of Physical Planning has the mandate to prepare National, Regional, and Local Physical Development plans with reference to any Government, Trust land or Private land within the areas of Local Authorities for the purpose of improving the land and for the proper physical development of such land. However according to section 166 of the Local Government Act Cap 265, the Local Authorities have similar responsibilities to undertake planning in order to control the use and development of land and buildings in the interest of proper and orderly development of their areas.

While the Local Government Act Cap 265 gives the Local Authorities the responsibilities to make plans in their areas of jurisdiction, the Physical Planning Act mandates them only to control development. This denies the Local Authorities the powers to plan their areas in accordance with the felt needs of the locals. The implementation of the plans prepared by the Director of Physical Planning is also compromised as lack of sense of ownership of the plans

by the Local Authorities leads to poor understanding and misinterpretation of the plans during the process of implementation. This leads to ineffective development control enforcement by the Local Authorities as they feel dominated by the Director of Physical Planning office.

There is duplication of authority between the Commissioner of Lands office and the Local Authorities. The approving authority for development in accordance with section (18) of the Government Land Act Cap 280 was the Commissioner of Lands while the Physical Planning Act Cap 286, this role is carried out by the Local Authorities. This has led to overlaps and conflicts between the Department of lands and the Local Authorities. This has created a loophole where both the Mavoko Municipal Council and the Commissioner of Lands had approved developments in the study area without consulting each other and other stakeholders e.g. the approval of multiple flats in a controlled low density estate of Senior Staff by Mavoko Municipal Council and the sub-division of Numerical Machine Land by the Commissioner of Lands and the Director of Physical Planning. This had resulted in the failure to secure public utility plots in the area for public facilities. The duplication of Development Control roles between the Commissioner of Lands and the Local Authorities has created confusion in the process of controlling and approving land use and development activities. This has led to the disjointed and haphazard developments in the Namanga Road – Stony Athi Corridor.

There has been consistent failure to repeal or amend certain conflicting legislations or clauses within various statutes leading to conflicts and confusion in the land use planning system. For instance, before the enactment of the Physical Planning Act of 1996, the Land Planning Act Cap 303 which was to supersede the Town Planning Act Cap 134 when it was enacted in 1968 was not repealed. This gave rise to a situation where the two acts operated parallel with each other leading to confusion as to which of the two acts was to be used to manage land use and development activities. This led to conflicts between various land use planning and administration agencies such as the Commissioner of Lands, the Director of Physical Planning and Local Authorities. This is one of the reasons which account for the haphazard development activities in the study area and most of the peri-urban areas.

The Physical Planning Act also has certain serious deficiencies including the failure to make provisions for the proper management and planning of development activities located near road reserves. It was mandatory to seek approvals for development activities located within 400 ft radius of major road networks under the Land Planning Act. This was to control and regulate urban sprawl, speculative informal subdivision and conversion of agricultural land

into urban uses along major transportation routes such as the Mombasa – Nairobi highway which passes through the study area.

In accordance with section (2) of the Physical Planning Act, the act was to apply to the planning of all areas of the country. However, the Physical Planning Act did not go further to elaborate how this clause will marry with the Land Control Act Cap 302. For instance, the Land Control Act Cap 302 is used to control the subdivision and subsequent transfer of agricultural land in the country. However, its section (9) does not specify the minimum plot sizes for subdivision within the agricultural lands. This has led to conflicts between the Land Control Boards, the Local Authorities and the Director of Physical Planning over the minimum standards for agricultural land subdivisions. This has led to haphazard developments in the study area as agricultural ranches and farms are informally subdivided and converted into residential estates like Vulcota and Gichimu and Muchiri without essential supportive services.

5.4 Lack of Institutional Coordination

In the study area, the institutional machinery for Land Use Planning and Management is not organized to facilitate a direct and active consultation among the respective institutions overseeing developments e.g. Lands, Physical Planning, Roads, Public Health and the Local Authority. These institutions are not organized to facilitate an effective integrated approach throughout the development approval process. Thus, the cited institutions involved in Land Use Planning and Management in the corridor have not realized much improvement in land utilization and management. This relates to both the capacity of the Area Local Authority to effectively plan and manage urban development and the legal instruments so far available to facilitate effective planning and control and guidance of development. The Local Government Act Cap 265 is inadequate for this purpose because it gives the Minister for Local Authorities, enormous powers to control and direct the operations of the Local Authorities.

The recent enactment of the Physical Planning Act Cap 286 has introduced far-reaching changes in the types and levels of plans to be prepared and empowered the Local Authorities to enforce development control in their areas of jurisdiction. However, its operation is not properly coordinated with the Local Government Act, and other pertinent Acts like the Government Lands Act cap 280, the Registered Land Act Cap 300 and the Land Control Act Cap 302 that directly deal with planning and administration and control of land and development in towns and rural areas. There exist a wide range of conflicts such as the duplication of roles in the operation of the planning legislations. For instance, the Approving Authority for development

according to the Government Lands Act Cap 280 was the commissioner of lands while the Physical Planning Act in its section 29 (a-e) this role is carried out by the Local Authority. This has led to overlaps and conflicts between the Department of Lands and the Local Authorities.

Under the Physical Act Cap 286 Sections (2) the Act Apply to all parts of the country both urban and rural areas while under sections 6 and 9 of the Land Control Act Cap 302 the control of the subdivision, partition and transfer of agricultural land is the responsibility of the Land Control Boards. The Physical Planning Act does not explain clearly how its operations marries with these clauses of the Land Control Act Cap 302 save for Section 41(2) which empowers the Director of Physical Planning to control the subdivision of private land. This means that the Land Control Boards can legally approve the subdivision of agricultural land without involving the Local Authorities, and the Director of Physical Planning. This has led to the Movoko Land Control Board approving agricultural land subdivisions without consulting the District Physical Planning office and the Mavoko Municipal Council.

It was also noted that there exist a multiplicity of agencies dealing with land use planning and management in the study area. Various institutions (the Commissioner of Lands, the Area Land Control Board, the Director of Physical Planning and the Mavoko Municipal Council) are involved in land use development control. At the National Level, the Commissioner of Lands and the Director of Physical Planning advise the Government and statutory bodies while the Local Authorities are the main development control agencies at the Local Level. While the Central Government agencies like the Director of Physical Planning, the Commissioner of Lands are responsible for decision making on land planning matters, in the area, the Mavoko Municipal Council is responsible for plan implementation. Therefore there are no clear cut definitions of roles and responsibilities of each of the agencies. Hence there is very little coordination amongst the numerous agencies resulting into conflicts and duplication of responsibilities.

5.5 Failure to Prepare a Local Physical Development Plan.

The study established that the study area had an expired physical development plan dating back to 1971. The boundaries of Mavoko Municipality were extended in 1985 and they introduced privately owned agricultural land into the control of the council. However no proper physical development plan was prepared to control the use and development of land in the extended boundaries of the municipal areas which are part of the study area. It is the responsibility of the Director of Physical Planning to prepare a Local Physical Development Plan for the area in accordance with section 24(1-4) of the Physical Planning Act Cap 286.

However lack of adequate finances, manpower and equipments in the Machakos District Physical Planning Office had led to the failure to prepare a Local Physical Development Plan for the entire Mavoko Municipal areas. Consequently there is no basis for development Control as the subdivision and conversion of agricultural land into urban uses like residential, industrial and commercial purposes increases in the study area. This had resulted in haphazard residential, industrial, horticulture and commercial development activities in the Namanga Road-Stony Athi corridor.

Mavoko Municipal Council is yet to formulate by laws to regulate zoning with respect to the use and density of development in the Municipality in general and in the Namanga Road-Stony Athi Corridor. Apart from the expired Physical Development Plan of 1971 there are no zoning bylaws which have been prepared to determine the areas which should fall under certain broad land uses and the minimum land sizes that should be allowed during land development activities.

There are efforts to prepare a Local Physical Development plan for the area. However it is being hampered by lack of adequate funds from the treasury for undertaking the preparation of the physical development plan according the sources at the Mavoko Municipal Council. The council had promised to include the proposal in its Local Authority Service Delivery Action Plans (LASDAP) for funding by the ministry of local authority.

The other problem facing the planning function within the Namanga Road- Stony Athi corridor is the acute shortage of land information data in the area. The Director of Physical Planning, the Commissioner of Lands and the Mavoko Municipal Council have no well kept and maintained cadastral, registration and tenure records of the study area. This has made it difficult for the above cited agencies to control land subdivisions and the conversion of agricultural land into high value urban uses like residential and commercial purposes in the study area.

For instance, the Commissioner of Lands is responsible for registering all land transactions like transfers, change of users and subdivisions in the study area. However, the District Lands Office and the Land Control Boards overseen by the department of lands use manual filing to record land transactions. The filings are prone to tear and wear leading to loss of essential information. The department of lands also does not share information on various land transactions like change of user, subdivision, tenure status and transfers with the Mavoko Municipal Council.

The council only relies on the submitted development applications to generate its own land management data records meaning that the council is only able to control development activities of the parcels on which it had enough data. This is one of the reasons explaining the inability of the council to control informal subdivisions and conversions of agricultural land into urban uses like residential which have given rise to informal settlements like Gichimu and Muchiri Estate.

5.6 Institutional Capacity

1. Lack of Powers to Employ Professional Skilled Personnel by Local Authorities

It was established that Mavoko Municipal Council was responsible for controlling the use and development of land in its areas of jurisdiction. It had 185 employees who the majority were low cadre staffs. The majority of those at the low cadre staff levels lacked requisite training and skills to perform specialized tasks like development control enforcement. The middle and senior staff levels were seriously understaffed.

The Council had no Physical Planner, environmental and public health experts in spite of the rapid development of the Municipal areas. The Town Planning, Housing and Markets Committee was responsible for advising the Council on all matters related to plan preparation, proposed development projects, recommend land use development applications and initiating land development control regulations and formulation of land use policies.

However, the Committee was dominated by councilors who had no requisite training and skills on land use planning and management matters. The District Physical Planner, Land Officer, Public Health officer and Surveyor were key resources members of the committee on matters of land use planning and management. However, the role of these resource officers was only to advise the committee but the committee could over rule them on important land use and development control matters in accordance with the provisions of the Local Government Act Cap 265.

The other major problem is that the Mavoko Municipal Council heavily relied on the specialized Central Government Departments of Physical Planning, the Commissioner of Lands and Public Health in order to perform its statutory roles of controlling the use and development of land and ensuring good sanitation conditions of habitable structures. For example Physical Planning and Land administration has remained a Central Government responsibility even though the Local Authorities are empowered to implement plans and control development in their areas of jurisdiction. The Central Government has not made any effort to review the Local Authorities' needs for skilled personnel to enable them perform their planning responsibilities effectively.

The majority of the Local Authorities in Kenya including the Mavoko Municipal Council experience insufficiency of trained manpower due to lack of attractive incentives and their inability to recruit skilled personnel like Physical Planners, Environmental and Public Health experts, without the approval of the Minister in charge of Local Authorities. The cause of the inability of Mavoko Municipal Council to employ professional skilled personnel arises from the organizational structure of Local Authorities in the country. The constitutional framework within which Local Authorities are instituted, administered and controlled in the country is responsible for Mavoko Municipal Council's failure to recruit and improve its personnel capacity to discharge its planning functions.

An analysis of the provisions of the Local Government Act Cap 265 had shown that Minister for Local Authorities had huge powers to administratively control Local Authorities in the way they execute the powers vested in them. This means that Local Authorities which are corporate bodies with the mandate to implement plans and control development activities in their areas of jurisdiction are forced to remain highly dependent on the Central Government in order to perform their statutory functions of planning and development control in their areas of jurisdiction.

The Local Authorities are thus obliged to seek the approval of the minister before they can recruit technical personnel like physical planners; medical and environment experts which are not provided to them by the public service commission but are essential in discharging their planning functions. This administrative policy does not take into consideration the personnel requirements of the various local authorities in order to ensure that they have adequate established personnel capacity to monitor and enforce development control within their areas of jurisdiction. Thus a local authority like Mavoko Municipal Council experiencing rapid developments such as industrial, residential, and commercial purposes, informal subdivision and conversion of agricultural land into urban uses and expansion of informal settlements is not allowed to develop its technical capacities to meet its planning challenges.

2. Poor Resource Allocation to the local Authorities

Although they are given huge socio-economic tasks to perform, Local Authorities are denied accessibility to adequate resources to perform their planning functions. Subsequently Local Authorities such as Mavoko Municipal Council lack adequate appropriate equipments for land use planning, skilled manpower, land management data base, and local physical development plans to guide and control land use and development activities in its areas of jurisdiction. It relies on the central Government departments of Lands, Survey, Public Health and Physical Planning on technical guidance and management of its planning responsibilities

over whom it has no control. This leads to delays in operations and lack of commitment as the council has no control and command over their services.

If they fail to comply with the decisions of the Mavoko Municipal Council then there was little that the Mavoko Municipal Council could do. The departments cited above which are required to assist the Mavoko Municipal Council to carry out its planning responsibilities are handicapped as they lack adequate manpower, resources and equipments to perform their planning roles effectively. This is because the departments of Lands, Physical Planning, Survey and Public Health also rely on the treasury in the Ministry of finance to fund their operations. As the analysis of the Mavoko Municipal Council had shown it also relies on the Central Government to finance its Local Authority Service Delivery Action Plans(LASDAP). Sources at the council have hinted that the amount allocated to the council each financial year ranges between 6-10 million and is inadequate for the Municipal Council's expanding operations. The money is also tied to the programmes prioritized by the local residents of the Wards and the Municipal Council and lack of planning awareness among the people has meant that planning issues are not identified as priority for funding by the Ministry of Local Authority. The council also lacks technical experts to prepare its LASDAP programmes hence its programmes are based on weak information base and hence the low funds received. Without strong financial resources the Mavoko Municipal Council lack the capacity to recruit adequate skilled manpower, acquire equipments and formulate its bylaws, control land use and development activities in the study area hence the haphazard development of the area.

3. Jurisdictional Conflicts Among Land use Planning and Management Agencies

Mavoko Municipal Council is the main public institution responsible for the control of land use in the corridor in consultation with other Central Government agencies. The other public institutions which shares planning responsibilities with Mavoko Municipal Council are the Commissioner of Lands, the Director of Physical Planning, National Environment Management Authority (NEMA) and the Land Control Boards. Each of these institutions has different responsibilities in the planning, regulation and management of land use. Moreover, each of these institutions are allocated resources sectorally independent from one another. Further to this, various local authorities' jurisdictional powers overlap at this peri-urban fringe such as Mavoko Municipal Council, Masaku County Council, Olkejuado County Council and Nairobi City Council.

Jurisdictional conflicts arise among these multiple institutions thus hindering effective land use control. In some cases overlaps occurs such as in the Kitengela area resulting in jurisdictional conflicts. For instance the jurisdictional boundary of the Goat and Sheep Farm

in Kitengela Township has been and is still contested by both the Mavoko Municipal and Olkejuado County Councils. This is because different boundary plans prepared in different periods in the past have either placed the Farm under the jurisdictional boundary of either of the two Councils. This has created a situation where each of the two councils uses different plans to claim and assert its jurisdictional control over the Farm which is part of the fast developing Kitengela Township. This is because the Kitengela Township and its surroundings are fast developing into an industrial zone. This means high revenue collection returns for either of the Councils if it were to have undisputed jurisdictional control over the area. This jurisdictional overlap has led to poor policing and development control in the area as the Councils fight over its control hence the failure to regulate land subdivisions and development activities in the area as urbanization spreads into the area.

In the study area there is also a multiplicity of organizations that converge in the decision making process of land use planning and management. These organizations lack clear established institutional set up to articulate their interventions. For example in the study area development control within leasehold land is overseen by the Commissioner of Lands who has delegated the role to the Local Authority. The Land Control Boards under the Commissioner of Lands are also responsible for approving land subdivisions and transfers in respect of agricultural land in the area while according to the Physical Planning Act, the planning and management of land in the whole country that is both leasehold and freehold tenure land is the responsibility of the Director of Physical Planning.

Under the Roads Act of 2007, the Ministry of roads had powers to approve all developments which are likely to affect the roads infrastructure through public encroachment into the road reserves. While the Physical Planning Act empower the Local Authorities to control all development activities in their areas of jurisdiction. The Act does not make it mandatory for the Local Authorities to seek the recommendations of the Roads Department when handling developments which are close to the National, Urban and Rural Roads in its section 32(2) save for the Director Physical Planning.

The similar conflicting roles assigned to more than one agency in the process of controlling and approving the use and development of land has led to jurisdictional conflicts among the agencies cited above. For instance in the study area road management is overseen by the Director of Roads, Physical Planning and the Local Authority .But due to lack of clear mandates between the agencies development activities have encroached onto the Nairobi-Mombasa road reserve leading to high capital losses after they were demolished.

4. Inadequate skilled professional personnel and resources allocation in national agencies

The main national agencies involved in land use planning and management in the Namanga Road-Stony Athi Corridor are the Commissioner of Lands, the Directors of Physical Planning, and Roads. The powers of the Commissioner of Lands in the process of land management are contained in the Government Lands Act Cap280. A large portion of the land in the study area is Government land administered by Commissioner of Lands through the District Land office and or through the Athi River Divisional Land Control Board. The Divisional Land Control Board oversees transactions in agricultural land in the study area. The Secretary of the Land Control Board had confessed that the board members are elders hand picked by local politicians to buy their support and have no requisite training in land use planning and management matters. Secondly, when applications involving transactions such as change of user, subdivisions, etc were received no attempt was made to refer them to the Local Authority and the District Physical Planning office.

This was because the Physical Planning Act is not explicit on this requirement even though it provides for consultation in the process of plan approval. The Commissioner of Lands is empowered under Section (12) of the Government Lands Act cap 280 to dispose Government land through auctions and to ensure its proper development in accordance with section 18(1). However, the Commissioner of Lands has delegated the powers given to his office under Section 18(1) of the Government Lands Act to the Local Authorities. The Local Authorities lack skilled manpower for enforcing the development conditions of the leases. It was established that the Commissioner of Lands had one officer based in Machakos who oversees land use in the District and Makueni District. This made it impossible for the office to discharge its statutory functions in the Namanga Road –Stony Athi Corridor.

The department of lands also lacks a computerized land management data system to record and retrieve land transactions when needed. This makes it impossible to Monitor and control land subdivisions, change of user and expansion of slum settlements in the study area leading to disjointed and haphazard developments. On the other hand, the Director of Physical Planning has the power to prepare local, regional and national Physical Development Plans to guide and direct land use and development activities in the study area. The department is yet to prepare a Physical Development Plan for the area due to lack of adequate skilled personnel and financial resources according to sources in the department of physical planning.

The Machakos District Physical Planning office is short of staff to oversee land use and development activities in the study area. The District Physical Planning office has five staff

members that is the District Physical Planner, a draughtsman, a secretary, a substaff and a messenger. The office has no vehicle and its annual financial allocations are about Kshs 360,000. The District physical Planning office has the responsibility of ensuring proper land use planning and development control in the district and the former expansive old Machakos District. However, the District Physical Planner relies on public transport and a Government vehicle sometimes borrowed from the District Lands office for inspections in order to perform her planning duties. This has made it difficult to inspect development activities in the fast growing Mavoko Municipality and the study area.

The field survey also established that the Director of Roads whose department has the mandate to control the use and development of land along major roads was rarely involved in the approval of such development activities. This is because the Mavoko Municipal Council did not seek the department's recommendations when such applications were submitted to the Council. In spite of the numerous developments encroaching on the Mombasa – Nairobi Highway Road Reserve, the Roads Department had not raised any complaint over the manner in which the Council was processing development activities in the area outside the existing legal framework.

5.7 Environmental Degradation

Urban development dispersal into peri-urban areas leads to conflict where pressure is put on the natural and physical environment by human activities such as industrial, residential and commercial developments which adversely affect the quality of the natural environment. In the Namanga Road-Stony Athi Corridor industrial establishment like Alframa tannary and London Distiller had adversely affected the quality of human settlements due to the disposal of their industrial effluents on the open land surface. This had polluted the natural water course of river Athi making its water non potable. The effluents had created a nuisance in terms of bad smell to the neighbouring residential estates of Senior Staff and Hillcrest thus reducing the amenity of the settlements. The industrial establishments had tended to discourage the development of plots neighbouring them due to their environmental conditions which is not conducive to other human activities.

Field finding indicated that, 39.3% of the respondents interviewed in the study area experienced air pollution/bad smell from the industries within the corridor. This is contrary to the Environmental Management and Co-ordination Act of 1999 section 75(1) which required operators of industrial undertakings to discharge effluents or other pollutants into the environment on obtaining an effluent discharge licence from the National Environment Management Authority (NEMA). Section 80(1) also required industrial undertaking which

emit a substance which is likely to cause air pollution to obtain from the authority an emission licence. This enables the National Environment Management Authority (NEMA) to consider the possible effects of the emissions on the quality of the ambient air and protect the public by denial or approval of licences.

The other problem is the encroachment of Riparian reserves of Stony Athi and River Athi rivers in the study area. Due to urban poverty most households have been forced to carry out farming activities along the River banks of rivers Athi and Stony Athi which passes through the area without complying with planning requirements of keeping three metres from the water body. Industrial activities in the area and Nairobi have also polluted the river by releasing their effluents and solid wastes into it.

5.8 Lack of Planning Awareness

Public awareness of planning issues is minimal and non participation by members of the public in the planning and land development approval process has made efficient utilization of land resources in the study area impossible to achieve. For example, it was found out during the research that most of the residents of the corridor have no permission for their developments because they are not aware that they need permission for development of their private plots. The field findings revealed that 58.5% of the respondent households who were interviewed, who own land in the study area cited lack of awareness of the requirement to consult the Local Authority and Central Government agencies before implementing their development units. Those who consulted Government planners were paltry 3.8% of the respondents interviewed. It is this knowledge gap that has contributed even more significantly to the planning anomalies in the area of study rather than the failure of the planning function.

Figure 9: Professionals Consulted When Developing Land in the Corridor



Source :- Field Survey, 2007

With the exception of some few, majority of the Kenyan people are not aware of the

requirement to obtain approval from the Local Authorities, the Commissioner of Lands, the Director of Physical Planning before commencing developments within Local Authority's areas of jurisdiction. This is assumed to be caused by the weakness of the councilors in the Local Authorities to mobilize and encourage people to adopt the habit of participation as well as organize informal and private unions to disseminate land use planning and management information to the public. The other factors that contribute to this end are lack of charismatic and persuasive leaders and officials in the Local Authorities and an unwillingness of urban and peri-urban residents to avail themselves for public meetings. However, with the introduction of Local Authority Service Delivery Action Plans (LASDAP), the Local Authorities should use the consultation meetings in their wards to educate the public about planning issues. This can be done through informal and/or formal discussions of planning issues by councilors and council officials. The department of Physical Planning in conjunction with the Local Authorities should have some of the planning literature simplified and printed in local languages which can be disseminated to the Local people.

The Director of Physical Planning should also organize to disseminate planning issues through the use of various vernacular media outlets. This will encourage positive community participation in land use planning and management. Participatory planning will lead to local communities being fully and actively involved in the management of their land management problems. This would lead to improved public participation in the planning process in the urban and peri-urban areas.

Summary

The study area is characterized by mixed developments comprising agricultural, industrial, residential, commercial and informal settlements giving the area an intermixture of land uses. This pattern of development has been influenced by the prevailing structure of land ownership in the corridor. The study area also experience various land use planning and management challenges, constraints and problems as a result of the failure by planning agencies to effectively control and guide the use and development of land in the municipality and the study area as urbanization pressures spreads into the area. This has led to the uncontrolled subdivision and conversion of agricultural land into urban uses without essential urban basic services like water and sewerage disposal system. The corridor's development is characterized by inadequate infrastructure service provision such as water, sewerage disposal systems and community facilities leading to serious environmental degradation and high costs of accessing essential services from far away places like the Mavoko Central Business District and Nairobi.

There are many conflicting land laws and multiple planning agencies enforcing land development without an overall supervisory authority to coordinate their activities in the study area hence duplication of roles and confusion in the land use planning and management system. Institutional incapacities in both central and local government planning agencies has resulted in ineffective development control during the use and development of land hence the disjointed and haphazard development of the study area. Therefore there is need to enhance the capacity of planning institutions to effectively control and co-ordinate land use and development activities in our urban centres and in the study area by allocating them adequate financial resources and skilled professional personnel.

Community participation in the planning process is also lacking due to lack of sensitization. Therefore there is need to legislate a clause on the land use planning and management of the peri-urban areas as well as finding ways of harmonizing the land use management institutions so that all stakeholders are involved in a coordinated manner for effective utilization of land resources.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

In chapters 4 and 5 analysis of the problems and challenges facing the study area and planning institutions were presented. This chapter draws broad implications from the findings with a view to suggesting better alternatives for efficient utilization and management of land resources in the Namanga Road -Stony Athi corridor. The study only offers possible development strategies with the aim of improving land utilization in the area to realize planned orderly urban development. The chapter also recommends ways and means of enhancing and improving the capacity of planning institutions in the study area to ensure efficient land utilization and management.

6.1 Emerging issues from Analysis and Major Findings

The study has revealed that there are serious land use planning and management issues and challenges in the study area due to the problems and constraints facing planning institutions in the process of land utilization and management. The problems and constraints can be divided into two broad categories that is National and Local Authority based problems. The main problems and constraints facing planning institutions in the Namanga Road-Stony Athi Corridor include:-

6.1.1 National Based Problems

1. Dominance of National Agencies over the Local Authorities

The ineffectiveness of planning institutions in the study area should not simply be reduced to financial, material, personnel or equipment deficiencies. Without belittling this fact, it should be emphasized that the dominance of National agencies such as the Commissioner of Lands, the Directors of Physical Planning, Surveys, Roads and Public Health in land use planning and management has contributed to the failure of the Mavoko Municipal Council in delivering an efficient system of controlling land use and development activities in the Namanga Road –Stony Athi Corridor.

Local Authorities are the main responsible actors in guiding and controlling land use and development activities in their areas of jurisdiction. However, they are made incapable as a result of dominant National agencies such as the Ministry of Local Authorities, the Commissioner of Lands and the Director of Physical Planning. Analysis of the Local Authorities as the planning institutions in Kenya has indicated that these entities were and are

still politically and administratively treated as the extended arm of the Central Government.

According to the Local Government Act Cap 265, Local Authorities are not given a real autonomous status since they are centrally controlled by a powerful Ministry and through various linkages with other organs like the Director of Physical Planning and the Commissioner of Lands controlled by the Central Government. The Local Government Act Cap 265 which establishes Local Authorities has several stipulations that give the Minister responsible for Local Authorities huge powers over the Authorities. The minister may among other things do the following; approve or reject the deliberations, resolutions and proposals of the Local Authorities, dissolve the councils, vary the boundaries of the councils, impose his own by-laws, and appoint some members of the Local Authorities.

The Local Authorities are not also able to engage or discipline most of their staff that is, the Town Clerk, Treasurer, Engineer etc. because the majority of them are employed by the Public Service Commission, which is also an organ controlled by the Central Government. The mandate of Local Authorities is limited to the low level operative staff. The existence of multiple planning agencies such as the Directors of Physical Planning, Surveys, Public Health and Roads and the Commissioner of Lands who, apart from the Local Authorities, deal with land use planning and management, has created confusion in the land use planning and management system.

The above cited institutions are involved in the regulation and control of land and development activities. At the National Level, the Commissioner of Lands and the Director of Physical Planning advise the Government and the statutory bodies while Local Authorities are the main plan implementation and development control agencies at the local level. According to Sections 6-11 & 18 (1) of the Government Lands Act (Cap 280) the Commissioner of Lands has the statutory powers to guide and control land use and development activities at the National and Local levels. Section (5) specifically gives the Commissioner of Lands the powers to establish National and District land offices Nationwide to administer and allocate government land.

The Commissioner of Land's role in guiding and controlling land use involves the use of restrictive covenants, development routines like submission of building plans for his approval before commencement of development activities. The Director of Physical Planning has the statutory powers according to the Physical Planning Act Section 5(1) to prepare and approve Local, Regional and National Physical Development Plans for all areas of the country. The Director of Physical Planning also advises Local Authorities on the most appropriate use of

land including land management such as change of user, subdivision etc. The role of the Local Authorities in relation to these National agencies is to ensure that proper execution of Physical Development and preservation orders, approve all development applications and grant all development permissions and enforce development control through the restrictive covenants of the titles issued by the Commissioner of Lands.

This shows that while the National Government agencies are responsible for policy and decision making on land use and development activities matters, the Local Authorities are responsible for plan implementation and development control. The domination of National agencies like the Commissioner of Lands and the Director of Physical Planning over the Local Authorities has meant that there are no clear cut definitions of roles and responsibilities of each of the agencies. Hence there is very little autonomy for the Local Authorities, resulting in the poor performance at the local level. There are several policies that are intended to reinforce the supremacy of National Agencies at the expense of the Local Authorities. For instance the Physical Planning Act Cap 286 gives the Local Authorities like the Mavoko Municipal Council the powers to control the use and development of land in their areas of jurisdiction.

However, the Local Authorities have to rely on the Director of Physical Planning to prepare all Local Physical Development Plans to facilitate the Development Control Process. The Director of Physical Planning has the powers to declare areas under the jurisdiction of the Local Authorities as special planning areas. The Act does not make it mandatory for the Director of Physical Planning to consult the Local Authorities of the areas affected before undertaking such an exercise. Therefore Local Authorities have no decisive powers to planning their peri-urban areas without the concurrence of the Director of Physical Planning.

2. Multiplicity of legislations dealing with land use planning and management

The legal framework within which land use management in Kenya is carried out is varied and complex, being governed by a wide range of acts of parliament and subsidiary legislations. Though there exist well laid-down planning and development regulations, there are inadequate legal machineries to enforce them. Under the Land Planning Act Cap 303, now repealed there was no provision for the prosecution of a developer who contravened land use standards and regulations.

The Physical Planning Act Cap 286 which gives the statutory powers for physical planning in the country has a deficiency in conformance. It was clearly established that the law is not as effective as expected. Some of its provisions are good, however due to the slackness in

enforcement of development control by the Local Authorities they have failed to bring the desired results at both national and the local levels like in the Namanga Road -Stony Athi Corridor. The Physical Planning Act Cap 286 gives local authorities too much power to implement plans and enforce development control and approve and or reject land use and development applications without enhancing their resources allocations and improving their staff capacity in terms of skills and adequate numbers.

There are some provisions in the Physical Planning Act Cap 286 that tend to conflict with certain provisions in the Government Lands Act Cap 280 especially section 18 (1) which gives the Commissioner of Lands the powers to enforce development control through the restrictive covenants of the titles issued by his office. The Physical Planning Act gives the same role to the Local Authority without repealing this section. This has led to confusion as to who is responsible for development control within government land in the study area.

There are numerous land statutes in Kenya to administer land ownership and land use. Despite the existence of these legal instruments, there has not been proper and comprehensive land use/environmental planning and coordination in the study area. This is because some of the land laws that govern land use and management are conflicting and duplicative. This is a serious setback and constraint to effective land use planning and management of the peri-urban areas.

For instance the Local Government Act cap 265 empowers the Local Authorities to plan their areas of jurisdiction in accordance with section 166 of the act while the Director of Physical Planning is given similar responsibilities in sections (5) and 23 (1) of the Physical Planning Act Cap 286. This duplication of roles between the Director of physical planning and the Local Authorities has led to confusion and misinterpretation of their roles hence hindering the smooth utilization and management of land in the Namanga Road – Stony Athi Corridor.

3. Failure to enact a National Land Policy

The country lacks an explicit land policy to establish a framework of values and institutions that would ensure that land and associated resources are held, used and managed effectively, productively and sustainably. Lack of a clear land policy in the country hinders suitable land use planning and management in the peri-urban area which are characterized by conflicting land uses and expansion of slum settlements. At present government land use policies are little more than an aggregate of unrelated and often conflicting decisions made by single purpose agencies, local and regional government and private individuals. This leads to conflict of interests in the process of managing the use and development of land especially in the peri-urban areas. This had resulted in the informal subdivision and conversion of

agricultural land into urban uses like commercial and residential purposes in the peri-urban areas. It has also led to urban sprawl, the invasion of private land, expansion of informal slum settlements, lack of public facilities and environmental degradation in the peri-urban areas.

There has been a lot of good will in the formulation of the land use policy in Kenya which has led to the publication of a draft national land policy by the Ministry of Lands in 2007. However analysis of the proposed national land policy showed that it does not provide a clear mechanism for the planning and management of the peri-urban areas. This means that peri-urban development activities will continue to be unregulated in spite of the fact that much of the growth of our towns and cities is located in the peri-urban areas. This will lead to poor integration of the peri-urban areas into the large urban configuration system when fully development.

4. Inadequate skilled professional personnel and poor resource allocation in National agencies

The study had established that national planning agencies suffer from serious resource constraints in terms of equipments, skilled personnel and finances. For example the Machakos District physical planning office as stated in earlier chapters is poorly funded and relies on other departments and public means for transport. This is because the treasury has not allocated the Director of Physical Planning adequate funds for the purposes of purchasing equipments like vehicles to facilitate its operations in the Provincial and District based offices. Thus anticipating development problems, identifying possible strategies and implementing solutions is a monumental task for the department in the corridor. This is because the Director of Physical Planning has no authority to recruit essentially needed skilled personnel without the concurrence of the Public Service Commission. Since the 1990s the government has been retrenching non core staff members in many Ministry departments. There has also been a general freeze on the recruitment of Ministry technical personnel in order to cut down increasing operational costs of various government Ministries and Departments.

These constraints had hindered the capacity of the District physical planning officer to move and inspect the use and development of land in the District and the study area. This had resulted in the failure to enforce development control like the informal subdivision and conversion of agricultural land into urban land uses like residential purposes. This had further resulted in most development activities escaping planning controls hence the haphazard development of the study area like the construction of Vulcota residential Estate within an horticultural farm. This creates a nuisance to the residents of the estate when pesticides are

applied in the farms due to harmful gaseous emissions.

The District physical planning department is yet to computerize its land records to ensure that violation of land development requirements can be easily detected. This is because of the inadequate funds allocated to the Director of physical planning by the government for development activities. This has forced the Machakos District physical planning office to rely on manual files to record land transactions which are prone to destruction and loss of information through tearing, fires, rodents, hunts and water slippage. This means that the District Physical Planning officer has no reliable updated records to rely on when processing development applications like change of user and subdivision to ensure their compliance with planning requirements. The government needs to increase its budgetary allocations to Director of physical planning office to enable it to computerize its land records in order to be able to easily detect violation of land development requirements during the development process.

The main constraints facing the department in the study area is that once subdivisions and change of user have been accorded the necessary approvals, the enforcement of conditions given in the approvals is no longer the task of its officers. This is because the Local Authorities are empowered to control development activities in their areas of jurisdictions. However, most of the Local Authorities lack adequate skilled personnel to enforce development control due to their inability to recruit skilled technical personnel without the approval of the Minister of the Local Authorities. This has led to low controls in the use and development of land in the study area.

The other cause of the problem is that the Commissioner of Lands has no adequate skilled personnel and equipments to inspect development sites and enforce the conditions of the titles which govern how leasehold land is to be developed and used. This has forced the Commissioner of Lands to delegate the enforcement of the development conditions to the Local Authorities who also lack the necessary staff and equipments to enforce development control. This arises because the government has not recruited adequate technical officers and deployed them in the District offices like the Machakos District Lands office to enforce development control in accordance with the special conditions of the titles issued by the Department. This has resulted in the informal subdivision of plots like LR NOs 337/613, 617, 860 & 974 without adequate public utility land being surrendered to the Local Authority free of charge for public facilities. This has resulted in the expansion of slum settlements like Kazito in the study area.

The Land Control Board on the other hand, which is meant to regulate transactions in agricultural land, has been allowing the subdivision of agricultural land up to 1/8 acre. This is due to lack of cogent planning guidelines in the act on the subdivision of agricultural land. This is against the provisions of the Land Control Act section 6 (b) which requires such subdivisions not to be less than 20 acres. This means that the Land Control Boards have introduced a policy change in respect of the act without the necessary amendment being undertaken to legalize the shift in policy. This has led to the informal subdivision and conversion of agricultural land like in LR NOs. 10426/6,7,8,9&10 into urban uses such as residential and commercial purposes.

This is because section (14) of the Land Control Act does not specify the academic qualifications of the Land Control Board members. This has led to the poor composition of the board members where the majority of the members lack requisite training on land use planning matters. The Physical Planning Act also does not clearly indicate how the Land Control Boards are supposed to handle land applications like subdivision and change of user in respect of agricultural land.

The other problem is that most of the land officers' training is in economics and social sciences thus, managing land use changes in the study area is a big challenge. This is due to lack of clear guidelines on the recruitment requirements of such officers by the government. This has limited the capacity of the officers to perform their land management duties effectively. There is need to recruit more planners into the department in order to improve its capacity to manage land use and development activities in the country and the study area.

The study also recommends in the short term the Commissioner of Lands and Director of Physical Planning to formulate clear guidelines on how the Land Control Boards should process the subdivision of agricultural land in the country and in the peri-urban areas. In the long term the Land Control Act should be amended to provide clear guidelines on agricultural subdivisions and the qualifications of the people to manage their affairs.

Therefore it is evident that institutional problems and constraints in national planning agencies have great impact on how land is utilized and managed in the study area. Development precludes land use planning and management functions. The problem is not unique to the study area only but it is being felt in all the major urban centres of the country.

6.1.2 Local Authority Based Problems

1. Lack of autonomy for Local Authorities from the Central Government

The local authorities which are the planning and development control agencies in their areas

of jurisdiction are not fully autonomous from the central government. These institutions are politically and administratively treated as the extended arm of the Central Government. This is because the way the Local Authorities are constituted, administered and controlled in the country. According to the current legal framework, the local authorities are not given a real autonomous status since they are centrally controlled by a powerful minister and other central government organs like the treasury and the National Assembly which have powers to allot financial grants and legislations that affect them.

The local government Act Cap 265 empowers the minister of local authorities to dissolve the councils, vary the boundaries of the councils, impose by-laws and nominate councilors to the councils. The powers of the minister of local Authorities to vary the boundaries of the councils have been exercised to extend Mavoko Municipality's boundary area leading to the introduction of rural agricultural land into its jurisdiction. The agricultural land introduced to the municipality was not ripe for urban development as it lacked essential infrastructure like roads, electricity and others, hence the haphazard development of agricultural land like Gichimu and Muchiri residential Estate in the study area.

The minister of local authorities has also exercised the powers vested in him to nominate councilors to the Mavoko Municipal Council. However the local government act does not specify the qualifications of the councilors to be nominated by the minister. This had resulted in a situation where the Local Authorities like Municipal Councils are headed by untrained Mayors who cannot guide the political arm of the councils to effectively control the use and development of land. For example, the analysis had shown that one of the former mayors of the council was a land broker who had used his political connections to have informally subdivided land like LR No. 10426/6 developed into a residential estate. This has led to the growth of informal settlements without essential public utilities like schools, hospitals, open spaces etc.

The other constraint is that the local authorities are not able to engage or discipline most of their senior staff like the Town clerk, the treasurer and the engineer, because they are employed by the public service commission an organ controlled by the central government. The mandate of the councils is limited to the junior staff. The implication of this is that the councils as planning institutions have no powers to terminate the service of non-performing senior staff officers unless with the concurrence of the public service commission and the minister of local authorities. The institutional setup of the Local Authorities and their relationship with other organs of the central government has resulted in an intricate system of interacting with the planning institutions thus hindering their capacity to control and direct

the use and development of land. This has made the local authorities which are corporate bodies to act as if they are semi-autonomous institutions of the central government concerned with the planning, development and provision of services at the local level.

2. Lack of powers to employ professional skilled personnel by the Local Authorities

It was established that the local authorities like the Mavoko Municipal Council lack the powers to employ skilled professional personnel to discharge their land use planning and management responsibilities. This is because the minister of local authorities' approval is required in order to employ such professional personnel. This denies the local authorities the opportunity to recruit professional staff like, surveyors and planners required in order to perform their land use planning responsibilities effectively.

The majority of the Local Authorities in Kenya including Mavoko Municipal Council experience insufficiency of trained professional skilled personnel due to lack of attractive incentives and the legal frameworks which govern their operations. The shortage of professional skilled personnel in the local authorities, especially in the land use planning and management departments is severe in the Mavoko Municipal Council. This coupled with the council committee system in which many elected councilors had no adequate education needed to effectively control and direct land use and development activities had led to the haphazard development of many urban and peri-urban areas. This is because the Town Planning, Housing and Markets Committees are full of councilors who don't have any land planning background. Yet this people are supposed to advice the councils on land use planning and management.

3. Poor resources allocation to the Local Authorities

The Local Authorities which have the responsibility to over-see the planning and development control of their areas of jurisdiction suffer from serious resource inadequacies. They lack adequate financial resources, highly qualified skilled manpower and technical equipments to enable them carry out their planning tasks effectively. They therefore remain highly dependent on specialized national agencies like the Commissioner of Lands, the Director of Physical Planning and the Director of Public Health to perform most of their statutory functions of planning and development control in their areas of jurisdiction.

This coupled with multiplicity of scattered legislations dealing with land use planning and management enforced by different Central Government institutions like the Commissioner of Lands, the Directors of Physical Planning, Public Health, Survey, Roads etc. some of which have limited skilled personnel and equipments and land management information data base is

a big limitation to ensuring efficient utilization and management of land resources in the study area.

The Local Authorities also suffers from serious financial incapacities. This is because of the low funds allocated to them from the central Government and their inability to collect expected amount of revenues due to poor revenues collection strategy. Most of the Local Authorities do not have skilled personnel to formulate their LASDAP programmes to facilitate adequate funding from the Treasury. The LASDAP programmes are based on weak information base hence the low LATF funds allocated to most local authorities in the country including the Mavoko Municipal Councils. For instance despite Mavoko Municipal Council's rapid development its annual LATF allocations for its LASDAP programmes ranges between 6-10m. Therefore the money allocated to most local authorities in the country through LATF programmes is not adequate. Though they are supposed to be worked out through LASDAP with the involvement of the local community in the wards sector by sector there is lack of skilled personnel in the local authorities like Mavoko Municipal Council to formulate effective LASDAP which is the basis for estimating their funding allocations.

The LAFT allocations besides being used for development as expected tend to be used for recurrent expenditures, like salary payments and is never sufficient for purposes of development. This situation has been worsened because most of the Local Authorities are not able to expand their revenue base through effective collection and management of revenue from their existing revenue resources. This is due to lack of skilled manpower and equipments to facilitate efficient revenue collection strategies. Thus most of the Local Authorities have weak financial bases and their dependency on LATF weakness their planning capacity and autonomy.

The study therefore recommends that the local authorities' capacity be enhanced so as to enable them to perform their land use planning and Management responsibilities effectively. This will involve recruitment and deployment of more skilled personnel to the local authorities by the central government who can effectively prepare their LASDAP programmes for the purposes of securing adequate LATF allocations. In the long term the central Government should look at viable ways of increasing the budgetary allocations given to the local authorities. This can also involve designing efficient strategies for collecting revenues by the local authorities in their areas of jurisdictions. This will require the Local Government Act Cap 265 to be amended to provide for a better system of recruiting highly skilled professional personnel like accountants and auditors into the Local Authorities' management structures. This will reduce mismanagement and embezzlement of funds in the

local authorities.

4. Lack of a Local Physical Development Plan

This has given rise to unplanned and uncontrolled land use and development activities in the Namanga Road-Stony Athi Corridor. These development activities include the informal subdivision of leasehold land, subdivision and conversion of agricultural land into urban uses like residential and the illegal invasion and subdivision of private land into tiny plots for squatting purposes. This had resulted in the mixed land uses like residential, industrial, commercial and horticulture found in the corridor. Planning institutions have the powers to formulate by-laws and policies to regulate zoning in respect of the mixed land uses to reconcile the various uses and reduce land use conflicts in the study area. However the corridor has no approved physical development plan to guide and coordinate the mixed land uses leading to disjointed and haphazard development.

The existing physical development plan for the study area dates way back to 1971 and it covered a small section of the corridor. This is because the Director of Physical Planning has no adequate funds and manpower to prepare a physical development plan for the area. The sections not covered by the expired plan of 1971 are experiencing rapid housing, commercial, industrial and horticulture investments without an approved physical development plan to guide their proper development. Intensive developments and increasing population has led to unplanned and haphazard developments like informal residential estates and slum settlements.

Without strong planning interventions by planning institutions ineffective utilization of land resources in the corridor is likely to continue through the use of informal plans, illegal invasion and subdivision of private land and the subdivision and conversion of agricultural land into urban uses.

The mixed land uses will not automatically arrange themselves into a coherent urban configuration structure without planning interventions. Therefore there is need for planning agencies such as the Commissioner of Lands, the Director of Physical Planning and the Local Authority to intervene and ensure orderly and coordinated urban development of the corridor.

5. Lack of Community Participation in the Management of the Peri-urban fringe Areas

The study revealed that community participation on the management of land use and development activities was non existent in the study area. This has arisen due to the failure of the Director of Physical Planning and the Local Authorities to sensitize the public about

the role of Physical Planning in the development process. The existing legal framework also fails to provide for clear established channels for ensuring potential actors in the use and development of land like real estate developers, the informal sector, local land owners, local investors and local residents' participation in the planning process of the peri-urban areas. The main cause of this is assumed to be, the reliance by the Director of Physical Planning on the Liaison Committees to engage the public in land use planning and development process.

However, the organizational structure and composition of the liaison committees do not give the general public room to participate in their deliberations. The Director of Physical Planning and the Commissioner of Lands also have not taken the initiative to inform the public about their mandate due to lack of proactive managers in these departments and lack of adequate funds to sensitize the public. The Local Authorities on their part rarely take time to combine efforts in matters related to the community development with the exception of Local Authority Service Delivery Action Plans (LASDAP). In rare cases you will notice community based meetings to deliberate on land use planning and management issues by the Local Authorities. This is attributed to lack of skilled manpower and charismatic leaders in the Local Authorities due to the failure to regulate the caliber of councilors heading the councils. This has also led to low financial allocations from Treasury as the Local Authorities are incapable of preparing effective LASDAP programmes to facilitate adequate funding from treasury.

Lack of public participation in the planning process has a negative impact on the control of land use and development activities in the peri-urban areas. This is because most of the people resist public control over their land as much of the land in the peri-urban areas is under private ownership. This had resulted in the informal subdivision and conversion of agricultural land into urban uses like residential, industrial and commercial in the study area.

It should be realized that it is not easy to effectively control the use and development of land in the peri-urban areas unless there is adequate public participation in their planning and management. While peri-urban areas land management has to reconcile private interests in land ownership and public concerns about land utilization and management, the current practice tend to neglect the crucial role of land owners, investors, developers and local communities in their planning and management. The study therefore recommends that the roles of potential land actors like farmers, developers and local communities in the management of peri-urban areas' land resources should be recognized and emphasized. Despite the merits of the Physical Planning Act cap 286, as the analysis has shown that it does not effectively deal with the planning needs of the peri-urban areas.

To facilitate the changes, the Physical Planning Act should be amended to provide for effective community participation in the land use planning and management process. This can be done by introducing an amendment to section 23 (1) of the Act. The other alternative is to educate the public through media outlets, barazas and dissemination of relevant land use planning materials in local languages. This will bridge the wide communication gap between planning institutions and the local communities and the general public.

6.2 Recommendations

6.2.1 National Based Policy Recommendations

The study recommends the following measures to be adopted to help ease the situation.

1. Formulation and Enactment of A National Land Use Policy

The need for planning intervention arises from the social costs of unrestricted land use changes and development in the study area. This arises due to the incapacity of planning agencies to enforce development control and land use regulations in the peri-urban areas using the current existing land policies. The scenario has arisen because the peri-urban area is neither purely urban nor rural yet much of the public land policy used to manage these areas, apply to either the urban areas or the rural areas. There is no specifically designed land use policy and approach to oversee land utilization in the peri-urban areas of our cities and towns. The need also arises from the multiplicity of land use laws, the inefficient pattern of land development, the severe limitation of financial resources for further urban development and the ease of acquiring land on the fringe thereby pushing demand to the periphery from major cities and urban centers. All these factors have influenced and in turn been affected by patterns of land use and land ownership structure in the peri-urban areas.

It is hoped that the draft National Land Policy which is awaiting cabinet approval will propose possible measures for improved and effective planning and control of land use in the peri-urban areas. A peri-urban land use policy should provide clear direction on:-

- Set national minimum standards for services in these areas. This will ensure that land use and development activities like subdivision in the peri-urban areas are provided with essential services like water, electricity, roads and sewerage disposal systems This will reduce environmental degradation in the areas due to the mixed development activities found in the peri-urban areas.
- Establish new institutions and legal frameworks for land use planning in these areas. This will provide an effective coordinating mechanism for the preparation, approval, implementation of plans and development control by the Director of Physical Planning, the

Commissioner of Lands, the Director of Roads and the Local Authorities. This would reduce duplication of roles and ensure coordinated development approval processing and enforcement of development control.

- Define the role of the local community and the informal markets in the regulation of land use. This will set standards to be complied with by the local community and the informal land markets in availing land for development in the peri-urban areas through the subdivision and transfer of land. This will reduce the informal and illegal invasion and subdivision of private land in the peri-urban areas of the Local Authorities like in the study area.

2. Taxation of Vacant Land

The purpose of land taxation is to provide a stable fund for acquisition of land for banking, land servicing and facilitating efficient utilization of land. It was established in the earlier sections that Government land alienated in 1970s and 1990s in the study area was yet to be developed in accordance with the restrictions of the titles. This is assumed to be caused by the hoarding of land for future capital gains. The Commissioner of Lands and the Local Authority are yet to enforce the development conditions of the leases which specify that land should be developed within six months after registration of its title. This had resulted in the invasion and subdivision of the vacant land in the corridor into slum settlements like Kazito and Sinai.

Therefore it is recommended by the study that unimproved site value and improvement value taxation and levy on undeveloped land be introduced to ensure that large tracts of land owned for speculative purposes in the country and in the study area is released for productive use. This is because high taxation rates would make the hoarding of land uneconomical and force the land owners to dispose and or develop land to spur economic growth in the corridor. The Kenya Revenue Authority will collect the tax while the Mavoko Municipal Council will collect the rates accruing from the land. The tax collected by the central Government will lead to the improved financial base of the country's Treasury. The Mavoko Municipal Council can use this as a basis to negotiate for increased funding from the Treasury in the form of LATF money remitted to the council for its LASDAP programmes. This should be supported by efficient formulation of the Municipal Council's LASDAP plans. The LATF money remitted to the council can be used to acquire adequate vehicles and computers which can improve its capacity to effectively control land use and development activities in the study area and municipal areas in general.

3. Improve Land Information Data Base

In the study area planning agencies such as Mavoko Municipal Council, departments of Physical Planning, Lands and Roads lacks an up to date inventory of the amount of land under different uses such as industrial, residential, commercial, horticulture and infrastructure among others. Lack of this vital information has complicated effective planning and management of the area. Effective integrated spatial planning is largely dependent on availability of accurate, current, quality and reliable land information.

Therefore the study recommends that adequate funds be set aside by the government to enable planning agencies in the study area and the country as whole to adopt digital and or computerized data storage facilities to facilitate optimal land use planning and management. Proper storage of land use planning and management documents will ensure that there is accurate data for controlling the use and development of land in the country and in the study area. This will also require the agencies to adopt modern methods for land use planning and management like the use of digital mapping, GIS, Remote sensing and GPS to facilitate access to accurate, reliable and current land data. This information data base can be used to plan for essential facilities like schools, hospital and other utilities in the corridor.

6.2.2 Local Authority Based Policy Recommendations

1. Devolution of Planning Powers Fully to the Local Authorities

There is need to devolve planning powers fully to the Local Authorities. This will give them the powers to coordinate the activities of various institutions involved in land use planning and management of the peri-urban areas. The local authorities using their planning autonomous powers should ensure that all development initiatives, sectoral ministries, parastatals, the private sector, the non governmental organizations and other community based organizations and the community as individuals and groups are effectively coordinated and accommodated in the process of peri-urban planning and development implementation. To make the local authorities self accounting planning entities will involve devolution of planning powers fully to the local authorities and enhancing their human resource and financial capacity. This will require an amendment to the existing constitution and legislations. This will involve giving the local authorities full autonomy to manage their affairs. This will enable the local authorities to be the main planning institutions in their areas of jurisdiction. This will require central Government personnel like planners, surveys and others to be deployed to the local authorities to be under their supervision and control. This will reduce the conflicts between the local authorities and central government agencies in the process of land use planning and management.

The Local Authorities will also have the freedom to recognize their neighboring local authorities and where urban development activities overlaps like in their peri-urban areas, the councils can jointly formulate a working system for collaboration for managing development activities in their shared peri-urban areas. For instance local authorities like Mavoko Municipal Council, Olkejuado, Nairobi city council and central Government agencies like the Kenya wild life services and the National Environment Management Authority (NEMA) can enter into a joint collaboration frame work and jointly formulate a working system for managing development activities in their shared peri-urban areas of Mavoko Municipal areas. Each of the councils should retain their rights and powers and work together with the local community to control the informal subdivision and conversion of agricultural land into urban uses like industrial development in their shared peri-urban areas.

Therefore the study recommends that the Local Government Act Cap 265 and the Physical Planning Act should be amended to give local authorities full autonomy to plan and control development activities in their areas. The Physical Planning Act section 23 (1) should also be amended to provide for clear collaboration mechanisms among the different Local Authorities which share peri-urban boundaries. This will lead to the formulation of joint policy documents among the institutions to manage and control land use and development activities in the peri-urban area.

The Local Authorities should establish clear procedural guidelines and regulations governing the process of making and implementing plans for development of the peri-urban areas, programmes and projects. The procedures should in particular provide for the effective participation of the local community in the plan making process and land development approvals at each stage from initiation to final implementation. There must further be mechanisms for ensuring effective operation and adherence to the set procedures and effective enforcement of decisions at all levels of the system. The mechanism for resolving conflicts that may arise as a result of mass participation should be provided.

2. Effective Development Control and Land Acquisition

Much of the land in peri-urban areas is under freehold private ownership. This type of land tenure system does not render itself easily to development control measures because freehold land has no binding rules on its use like leasehold tenure land which has got clear restrictions on their use. The municipal councils and central government officials have found themselves unable to exercise any effective control over the use of land in these areas due to lack of proper guidelines on its use. While recognizing the limitation posed by this freehold tenure land, the study recommends that the Municipal Council of Mavoko should deploy the

required manpower to institute the desired control. Without this deployment uncontrolled development will continue leading to environmental degradation from the mixed developments.

Given the upward trend in land values together with unplanned urban development, it is evident that inflationary compensation costs will emerge. The study therefore recommends the acquisition of the land in the freehold zone of the study area by the Government and the Commissioner of Lands through compulsory acquisition to create a reserve for public purposes and land banking. This is because the study area has no deferred land for public purposes for future developments. Lack of public land in the study area for development will deter future investments and hence the need to reserve enough land for future public investments in the study area. This will also curb the informal speculative subdivision of land and ensure orderly development. The resources for the compulsory acquisition should come from the central government as the Mavoko Municipal Council has no adequate financial resources to undertake such an expensive investment venture. This will be recouped by the Central Government through licensing of future investments in the Land acquired through taxation.

A delay in acquiring the land caused by financial constraints of the Council and the government has two fold implications. Firstly, this only delays the time when control can be effected like in Mlolongo in the same Municipality, over the area in question with the possibilities of the situation becoming worse and thus increasing the cost of re-planning at future date which will require demolition of buildings like in Mlolongo within the same Municipality. Secondly, this delay in acquisition implies payment of higher compensation cost since land values increase when future planning need arises.

3. Efficient Management of the Industries

The failure to effectively control the use and development of land has led to land use conflicts in the study area. The conflicts take the form of incompatible uses of land which has resulted in nuisance where pollution occurs in terms of noise, smells, fumes and dust and mixed incompatible land uses like heavy industries, tanneries and residential areas which had reduced the quality of urban settlements in the study area. Land use conflicts are usually part of the land use and development process but they can be minimized with effective development control machinery. The Mavoko Municipal council has passed a council resolution to have the industries located in the study area relocated to the quarry zone near Katani. This is a good proposal but the council has not explained how land will be acquired in the quarry zone for such undertaking. Much of the land in the quarry zone is alienated

Government land which is privately owned by individuals and companies.

In view of this limitation the study recommends the activities of the industrial establishments should be regulated through Environmental audits to ensure that they comply with environmental standards. This can be done by advising the industries to improve their environmental management capacities by installation of smoke cleaners, sound proof walls and long chimneys to purify their smoke before being released into the atmosphere. The industries should also develop effective systems to manage their industrial effluents in the short term. But in the long term it is recommended that the Mavoko Municipal Council develop a modern sewerage disposal system for the entire municipality and have it connected to all the industries to check the discharge of effluents on the open land surface and onto the natural water courses. There is also need for the planning institutions in the area to ensure that there are clear buffer zones between the industries and the residential houses. This will reduce the noise and smoke pollution from the industries.

4. Provision of Adequate Personnel and Supportive Resources

Planning institutions do not have adequate resources e.g. financial, technical manpower and managerial ability to tackle effectively the colossal problems of land use planning in peri-urban areas. Lack of the required skilled personnel is thus one of the reasons that has made the problem of peri-urban areas to go unattended. It is therefore recommended that the local municipal council should have a well trained and equipped physical planning department independent from the clerk's office. It was also established that the local authorities like Mavoko Municipal Council had no powers to recruit professional skilled personnel to perform their planning responsibilities effectively. This was due to the way the local authorities are instituted, administered and controlled in the country. The minister of local authorities' approval is required before the local authorities can recruit essential required skilled personnel like planners, surveyors and environment experts. This is usually denied on the basis of lack of adequate funds from the central government to recruit and deploy such skilled personnel to the local authorities. This denies the local authorities the chance to recruit skilled personnel to discharge their planning responsibilities. The study therefore recommends that the Local Government Act Cap 265 should be amended to make the local authorities self accounting entities. This will give them the freedom to recruit highly skilled professional personnel to perform their planning responsibilities effectively. The local authorities will also have the powers to terminate the services of non-performing top managers.

5. Infrastructure Requirements

Water

The study established that there were serious deficiencies in the provision of water in the study area. This was characterized by the rationing of the water resources between the three clusters of human settlements in the study area. But the deficiency of the water resources was highest felt in the slum settlements (60.7%). The other critical issue of water resources in the corridor is that two rivers pass through the corridor but there has been serious pollution of their natural water courses thus rendering them non potable.

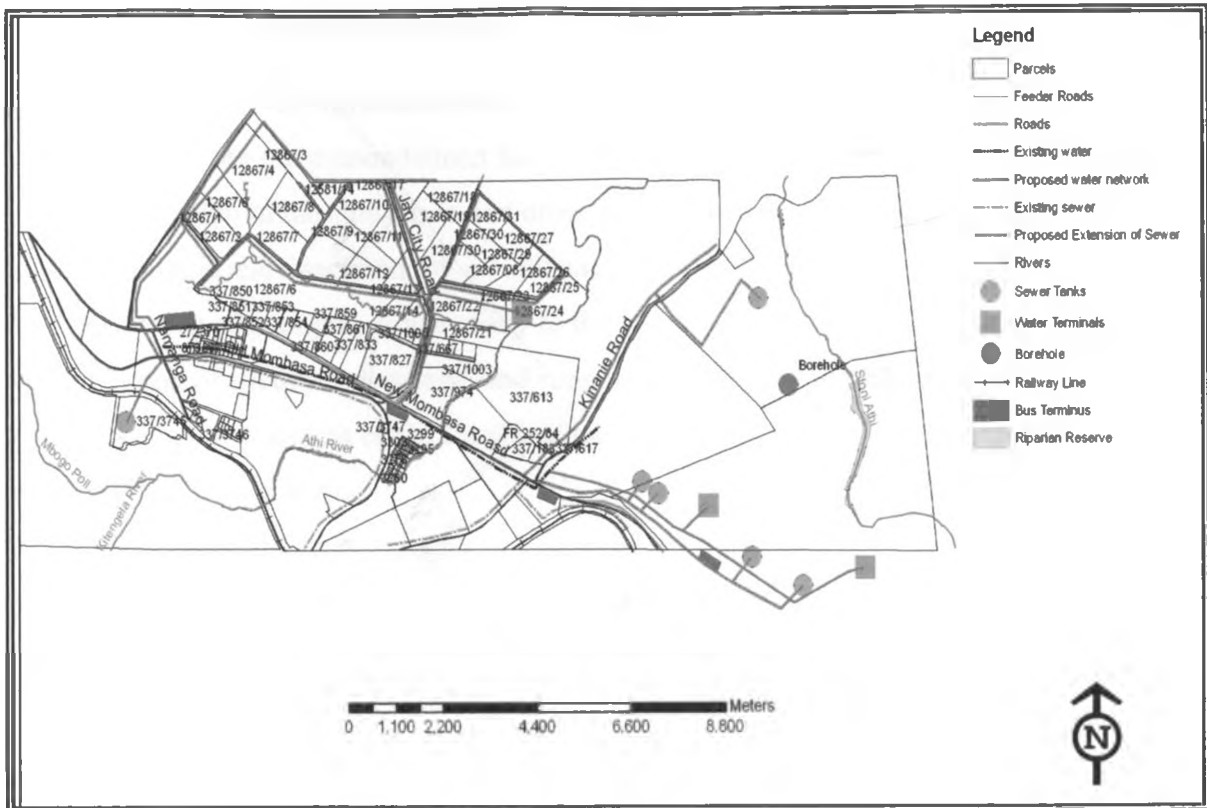
This has discouraged development activities within certain areas in the corridor while encouraging some activities to concentrate in the areas where the water resources are available. This has led to the ribbon development of industries along the Nairobi – Mombasa Highway. The study therefore recommends on the short term the Mavoko Municipal Council which gets its water from Nairobi to dig boreholes in the corridor to augment the water needs of the residents. In the Long term the Mavoko Municipal Council and other stakeholders should control the pollution of River Athi's natural water course through effective control of human activities along its river banks and harness the water for domestic use. This is because the Nairobi water and sewerage company's water resources are dwindling as the city's population is growing.

Sewerage

The study area has no adequate sewerage disposal system despite the rapid industrial, commercial and housing investments taking place in the area. This has led to the increased use of septic tanks and pit latrines to dispose both human and industrial wastes since the council has no resources to develop a sewerage disposal system for the entire municipality. In turn it had resulted to environmental degradation as harmful human and industrial waste is disposed on the open land surface and into the natural water course of River Athi.

Therefore, in the short term, the council should buy an exhauster vehicle and rent it at a subsidized rate to the residential, commercial and industrial premises to help in the management of septic sullage effectively. However, on the long term the rapid development of the area will require a comprehensive sewerage disposal system to be developed to secure proper disposal of both human and industrial waste. The council should give it a priority in its LASDAP programmes.

Map 13: Proposed Extension of Water and Sewerage Systems in the Study Area



Source:- Adapted from Survey of Kenya, 2007

6.3 Summary and Conclusions

6.3.1 Summary of Findings

The study acknowledges the failure by planning agencies like the Commissioner of Lands, the Director of Physical Planning and Mavoko Municipal Council to develop an efficient land use planning strategy that would encourage efficient utilization and management of land resources in the corridor as urbanization pressures spread into the area. The contention of the research is that as urbanization spread into the formerly agricultural land and into the undeveloped leasehold land, effective planning intervention are necessary to ensure orderly urban growth and development of the corridor.

A summary of the principal planning issues drawn from the study includes;

- i) Dominance of National Agencies over the Local Authorities.
- ii) Multiplicity of legislations dealing with land use planning and management.
- iii) Lack of coordination among land use planning and management institutions.
- iv) Failure to enact a national land use policy.
- v) Lack of capacity within the Central Government agencies.
- vi) Lack of autonomy for the Local authorities from the Central Government.
- vii) Lack of powers to employ skilled professional personnel by the Local Authorities.

- viii) Lack of a Local Physical Development Plan.
- ix) Lack of community participation in planning.

6.3.2 Summary of Recommendations

A Summary of the recommendations for solving institutional problems and constraints in land utilization in the study area and other peri-urban areas includes:-

- a) Formulation and enactment of a National Land Use Policy
- b) Devolution of planning powers fully to the Local Authorities
- c) Provision of adequate personnel and supportive resources to planning institutions
- d) Effective development control and Land acquisition.
- e) Taxation of vacant land
- f) Development of a land management database.
- g) Provision of adequate infrastructure services e.g. water, sewerage disposal system etc.

6.3.3 Conclusions

The research set out with the assumptions that:-

- 1. The pressure for urbanization in peri-urban areas of Mavoko Municipality will continue.
- 2. The state of control and pattern of development will continue to get worse.
- 3. The state of environment and service provision will continue deteriorating thus necessitating the need for urgent intervention through planning.

The conclusion of the study is that the haphazard development of the Namanga Road -Stony Athi corridor is as result of ineffective control of land use and development activities by the planning institutions overseeing land use planning and management in the corridor. The state of control and pattern of development will continue to worsen without an intervention by the planning institutions as urbanization pressures leads to the rapid urban growth and development of the study area.

6.3.4 Areas for Further Research

In view of the findings the study has not fully exhausted issues concerning institutional problems and constraints facing planning institutions undertaking land use planning and management of peri-urban areas. The study identifies the following areas for further research:-

- 1. The role of local physical development plans in sustainable development of the peri-urban areas.
- 2. The role of community based organizations in land use planning and management in the peri-urban areas.

3. Detailed study of the impact of the land ownership structure on development control within peri-urban areas.
4. The socio-economic impacts of peri-urban land use changes and development activities on the the livelihoods of peri –urban areas’ local communities.

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APPENDICES

APPENDIX 1

QUESTIONNAIRE FOR LAND CONTROL BOARD SECRETARY

(MAVOKO LAND CONTROL BOARD)

UNIVERSITY OF NAIROBI

Master of Arts Planning 2006/2007 Thesis field research

Institutional problems and constraints in land utilization in the peri-urban areas of Mavoko Municipality: A case of Namanga Road –Stony Athi Corridor.

Declaration; The information obtained will be used for academic purposes and will be treated with confidentiality.

Date of interview:-_____

1. As Secretary of Land Control Board, what are the key functions of the Land Control Board as provided in the Land Control Board Act (Cap 302)?
2. What is the composition and level of education of the board membership?
3. How often are the meetings of the board held?
4. Briefly describe how the Board handles the following transactions along the Namanga Road –Stony Athi Corridor.
 - (a) Subdivision
 - (b) Change of user
 - (c) Amalgamation
 - (d) Transfer
5. What challenges and difficulties does the Board face in carrying out its functions?
6. What is your opinion about the conversion of freehold agricultural land into urban land uses in the Namanga Road –Stony Athi Corridor?
7. In your view do you think the board has fostered or hindered land development in the Corridor?
8. Which legislations or regulations guide the board's decisions on the land transactions handled by it?
9. What are the linkages between your board and the following agencies?
 - (a) Department of Physical Planning
 - (b) Department of Public Health
 - (c) Department of Roads
 - (d) Local Authority
10. In your view do you have any suggestions/comments on how the board can be strengthened to effectively discharge their functions/duties?

Thank you.

APPENDIX 2
HOUSEHOLD QUESTIONNAIRE
UNIVERSITY OF NAIROBI

Master of Arts Planning 2006/2007 Thesis field research

Institutional problems and constraints in land utilization in the peri-urban areas of Mavoko Municipality: A case of Namanga Road –Stony Athi Corridor.

Declaration; The information obtained will be used for academic purposes and will be treated with confidentiality.

Questionnaire number: _____

Date of interview: _____

Name of interviewer: _____

Locality : _____

A: RESPONDENTS HOUSEHOLD DETAILS

1. Name and address of respondent (optional _____)
2. Personal details
 - (a) Household member
 - (b) Age
 - (c) Sex
 - (d) Level of Education
 - (e) Occupational status
 - (f) Marital status

MIGRATION TRENDS

3. Were you born in Mavoko? Yes/No
4. If not, where did you come from?
5. When did you come to the Namanga Road – Stony Athi Corridor?
6. What are your reasons for coming to the Namanga Road –Stony Athi Corridor?
 - (a) Availability of affordable housing
 - (b) Availability of cheap land for development
 - (c) In search of employment/or business opportunity
 - (d) Good transport facilities
 - (e) Others (Specify)
7. How long have you been a resident of the Namanga Road –Stony Athi Corridor?

B: LAND UTILIZATION ISSUES

8. Do you own this land you are currently occupying? Yes/No. If yes what is the nature of ownership
 - (a) Freehold/Agricultural
 - (b) Leasehold
 - (c) Customary inheritance
 - (d) Squatting
 - (e) TOL (Temporary occupation licence)

9. How did you acquire the land?
 - (a) Bought
 - (b) Gift
 - (c) Allocated
 - (d) Inherited
 - (e) Other (Specify).....
10. What is the size of your land?
 - (a) 15 x 30 m
 - (b) 50 x 100m
 - (c) Less than ¼ an acre
 - (d) ¼ acre – ½ acre
 - (e) 1-2 acres
11. If bought or allocated, how much did the land cost you? State the year bought
12. Do you own a title or a share certificate of your land? Yes/No
13. If you have a Government title deed for your land, which procedure did you follow to acquire it?
14. How long did it take to process the title for your land?
15. If your have a share certificate for your land, what has prevented you from acquiring a Government title deed?
16. Have your ever done the following on your land?
 - (a) Subdivided
 - (b) Effected change of user
17. If yes what procedures did you undertake before being granted an approval for the above?
18. In dealing with your land, whose professional services have your sought?
19. What in your opinion is the major set back of developing your land?
20. In your opinion, are your comfortable with the development taking place in the Namanga Road –Stony Athi Corridor

C: LEVEL OF SERVICES

21. Do you have access to the following services

- | | |
|--------------------|--------|
| 1. Water | Yes/No |
| If, so which type? | |
| (a) Piped | |
| (b) Borehole | |
| (c) Well | |
| (d) Roof catchment | |
| (e) Purchase | |
| 2. Electricity | Yes/No |
| 3. Sewer | Yes/No |

If Yes/No, what is the mode of Human waste disposal on your plot?

- (a) Pit latrine
- (b) Septic tank
- (c) Flush toilet

- (b) If no state why
- 29. State distance of building from
 - (a) The front plot boundary
 - (b) The back plot boundary
 - (c) The side plot boundary
- 30. At the construction stage, were you visited by the municipal council officials?
- 31. Type of buildings by
 - (a) Roofing materials
 - GCI
 - Tiles
 - Concrete Flat rood
 - Grass Tatch
 - (b) Wall materials
 - Mud
 - Timber
 - GCI
 - Concrete blocks
 - Natural stone
 - (c) Ventilation
 - Adequate
 - Small windows
 - No windows

G. GENERAL

- 32. In your opinion, what do you consider to be major planning problem in this area?
- 33. How could this be resolved?

Thank you.

APPENDIX 3

SCHEDULED QUESTIONNAIRE FOR THE MAVOKO MUNICIPAL COUNCIL TOWN CLERK UNIVERSITY OF NAIROBI

Master of Arts Planning 2006/2007 Thesis field research

Institutional problems and constraints in land utilization in the peri-urban areas of Mavoko Municipality: A case of Namanga Road –Stony Athi Corridor.

Declaration; The information obtained will be used for academic purposes and will be treated with confidentiality.

Date of interview: _____

1. Do you have a development control unit in your municipality? How is it structured?
2. Do you have adequate manpower and resources for effective operations of the unit?
3. What principles guide the operations of the unit?
4. How do you gather information on what is going on the ground?
5. How do you enforce the development control in your area?
6. What parameters do you use to declare a development sub standard or contrary to development control regulations?
7. At what point do you intervene? Is it during subdivisions, change of use, construction or after completion and why?
8. What factors have led to the growth of the Namanga Road –Stony Athi corridor?
9. What is the structure of land ownership in the Namanga Road – Stony Athi Corridor
10. What is the estimated number of applications handled by your office in respect of the itemized transactions in regards to land situated within Namanga Road –Stony Athi Corridor?
 - (a) Subdivision of leasehold land
 - (b) Subdivision of freehold land
 - (c) Change of user of leasehold land
 - (d) Change of user of freehold land
 - (e) Building plans approved within leasehold land
 - (f) Building plans approved within freehold land
11. What planning challenges are experienced by your council along the Namanga Road –Stony Athi Corridor?
12. How do you think these problems can be effectively addressed?
13. What do you consider to be your main challenges in effecting development control in your area of jurisdiction?
14. What are the linkages between your council and other land management agencies?
 - (i) District office
 - (ii) District Physical Planning office
 - (iii) District Public Health office
 - (iv) District Roads Engineer
 - (v) District surveyor
 - (vi) Land Control Board
 - (vii) NEMA

(viii) District Roads Engineer

15. Who coordinates your overall activities as planning and land management institution?
16. What problems or conflicts are experienced in the course of their practical operation and activities?
17. How could this be harmonized for effective land utilization and management in the corridor?
18. What do you think are the major limitations of land use regulations, control, institutional structure and legal framework setup with the present planning and management legislations?
19. In your views, what is the way forward for effective land use planning and growth management of peri-urban fringe areas in the country?.

Thank You.

**SCHEDULED QUESTIONNAIRE FOR THE DISTRICT PHYSICAL PLANNING OFFICER
MACHAKOS**

UNIVERSITY OF NAIROBI

Master of Arts Planning 2006/2007 Thesis field research

Institutional problems and constraints in land utilization in the peri-urban areas of Mavoko Municipality: A case of Namanga Road –Stony Athi Corridor.

Declaration; The information obtained will be used for academic purposes and will be treated with confidentiality.

Date of interview: _____

1. What is the role of your department as it regards to planning in the district?
2. What policy guidelines have guided your department in guiding developments in peri-urban fringe areas of cities and towns?
3. Does the department have land use planning policy and/or land use policy to cater for the development needs of peri-urban areas around major cities/towns?
4. What factors do you consider to be mandatory for approving developments in the prei-urban fringe areas in the district?
5. What is the capacity in terms of personnel and equipment do you think will ensure the implementation of policies in peri-urban fringe areas?
6. What has been your office's role in the land use changes and development taking place in the Namanga Road –Stony Athi Corridor?
7. What is the estimated number of applications handled by your office in respect of the itemized transactions in regard to land situated within the Namanga Road – Stony Athi Corridor?
 - (a) Subdivision of leasehold land
 - (b) Subdivision of freehold land
 - (c) Change of user of leasehold land
 - (d) Change of user of freehold land
8. What planning challenges are being experienced as a result of the emerging land use changes and developments occurring in the Namanga Road –Stony Athi Corridor?
9. How do you intend to resolve the planning challenges?
10. What problems do you experience when enforcing planning requirements in the Namanga Road –Stony Athi Corridor?
11. What do you think are the problems causing the haphazard developments in the Namanga Road –Stony Athi Corridor? Who is supposed to control the developments?
12. What do you think are the major limitations of the land use regulations and control with the present planning legislations?
13. Who else apart from the Physical planning department and the Mavoko Municipal Council provides planning services in the Namanga Road –Stony Athi Corridor?
14. How is the collaboration between your department, the council and other planning service agencies?
 - (i) District land office
 - (ii) Department of Physical Planning

(iii) District Public Health office

(iv) District Roads Engineer

(v) NEMA

(vi) District roads Engineer

(vii) Mavoko Land Control Board

(viii) Area Municipal Council

15. In your opinion, what is the way forward for effective planning of the Namanga Road –Stony Athi Corridor peri-urban fringe areas?

16. Any other comments

Thank you.

APPENDIX 5
QUESTIONNAIRE FOR INDUSTRIAL ESTABLISHMENTS
UNIVERSITY OF NAIROBI

Master of Arts Planning 2006/2007 Thesis field research

Institutional problems and constraints in land utilization in the peri-urban areas of Mavoko Municipality: A case of Namanga Road –Stony Athi Corridor.

Declaration; The information obtained will be used for academic purposes and will be treated with confidentiality.

Date of interview: _____

Name of industry _____

Officer interviewed _____ Rank/Position _____

1. How do you acquire the land occupied by your business or industry?
 - (i) Government allocation
 - (ii) Bought
2. What is the nature of ownership?
 - (a) Leasehold
 - (b) Freehold/Agricultural

If agricultural, which procedure did you follow to have the change of user approved?
3. How do you dispose your industrial waste?
 - (i) Sewerage
 - (ii) Septic tank
 - (iii) Others (specify)
4. What is the mode of human waste disposal in your factory
 - (i) Pit latrine
 - (ii) Septic tank
 - (iii) Flush toilet
5. How do you dispose your refuse?
 - (i) Open pit
 - (ii) Dust bin
 - (iii) Crude dumping
 - (iv) Collected by local authority
6. What environmental, social and economic problems do you encounter as an industry?
7. In your opinion what do you consider to be a major planning problem in this area?
8. In your opinion what do you think planning institutions managing land developments in the Namanga Road –Stony Athi Corridor have been effective?

Thank You.

**QUESTIONNAIRE FOR MAVOKO MUNICIPAL COUNCIL PLANNER
UNIVERSITY OF NAIROBI**

Master of Arts Planning 2006/2007 Thesis field research

Institutional problems and constraints in land utilization in the peri-urban areas of Mavoko Municipality: A case of Namanga Road –Stony Athi Corridor.

Declaration: The information obtained will be used for academic purposes and will be treated with confidentiality.

Date of interview: _____

1. How is the development control in your City/Municipal Structured?
2. Do you have any problems with manpower and resources for effective operation of the unit?
3. Do you have an approved plan for the municipality? Yes/No
What are its contributions towards land management and planning?
4. Is there a physical development plan/land plan that covers the Namanga Road –Stony Athi Corridor?
Yes/No

If yes, what are its objectives?

How does this plan contribute to land utilization and management in the corridor?

If no, how does it affect the growth & development of the corridor?

5. How do you monitor on what is going on the ground?
6. How do you enforce the development control in your area?
7. At what point to you intervene? Is it during ground breaking, during construction or after completion and why?
8. What parameters do you use to declare a development substandard or contrary to development control condition?
9. Do you have problems in enforcing the stop notices? Yes/No
10. What are the main land tenure systems in the Namanga Road –Stony Athi Corridor?
(a) Freehold(b) Leasehold
11. How do they affect the use, control and management of land in the Namanga Road –Stony Athi Corridor?
12. What is the estimated number of applications handled by your office in respect of the itemized transactions in regards to land situated within the Namanga Road – Stony Athi Corridor?
(a) Subdivision of leasehold land
(b) Subdivision of freehold land
(c) Change of user of leasehold land
(d) Change of user of freehold land
(e) Building plans approved within leasehold land
(f) Building plans approved within freehold land

13. Are the developments in the Namanga Road –Stony Athi Corridor approved? Yes/No.

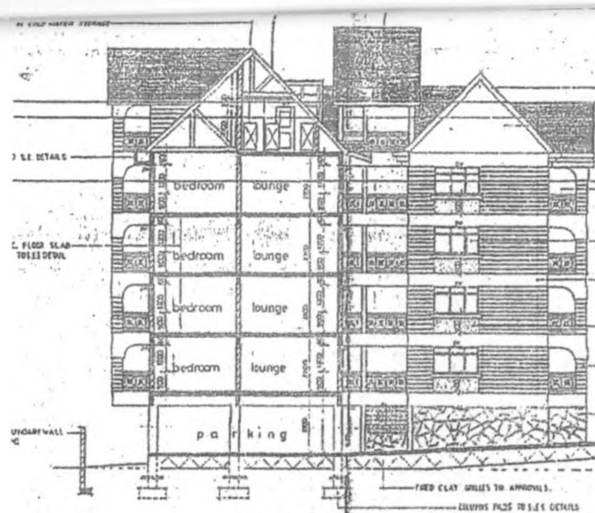
14. What are the zoning requirements for property development in this area?

15. What do you consider to be your main challenges in effecting development control in your area of

jurisdiction?

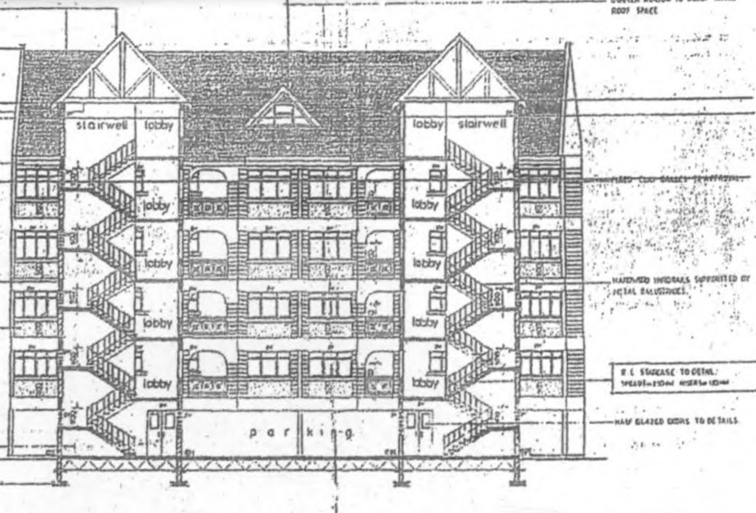
16. Are the following services and facilities adequately provided in the Namanga Road –Stony Athi Corridor?
 1. Water
 2. Sewerage disposal
 3. Refuse management
 4. Housing
 5. Health
 6. Education
 7. Recreational facilities
 8. Electricity
 9. Storm water drainage
 10. Street lighting
 11. Transport
17. Do the developers and the community in general recognize the legal land use control measures that affect them when they carryout developments Yes/No
18. Do you have community Neighbourhood association participating in development control in the Namanga Road –Stony Athi Corridor? Yes/No
If yes, what are its mandates?
19. What do you think are the major limitations of land use planning regulations and control within the present planning legislation?
20. Who else apart from the physical planning department and your council provide physical planning services within the Namanga Road –Stony Athi Corridor?
21. How does your council collaborate with other planning agencies involved in the planning of the Namanga Road Athi Corridor?
22. Please give recommendation on steps that can be taken to control and ensure harmony in growth and development of the Namanga Road Stony Athi Corridor with regard to:
 1. Environmental protection
 2. Proper building standards
 3. Proper service provision
 4. Proper land utilization
 5. Protection of community land public utilities and areas of circulation.
23. Any other comment of interest to the study?

Thank you.

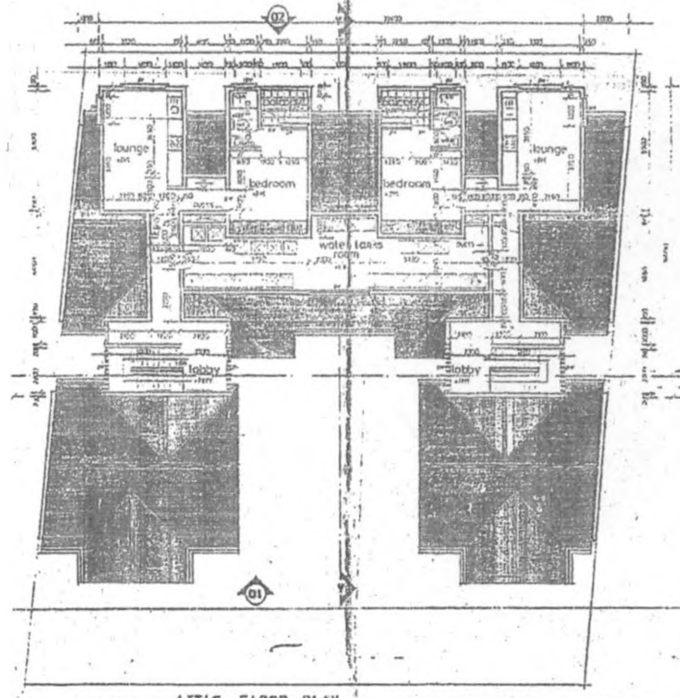


SECTIONAL ELEVATION Y-Y

- APPROVE EXTERIOR PAINT WORK ON UNFINISHED PORTIONS OF EXTERIOR WORKING SHEET SPAN OF EXTERIOR FINISH TRUSS RAFTERS AT ROOF EAVES AND UNRAISED ONE AT ROOF CENTRE LINE TO S.E. DETAIL.
- EXPOSED RIBBER FASSEL BOARD, PAINTED TO APPROVAL.
- 1/2" THICK CEILING CEILING TO APPROVAL.
- WALLS PLASTERED AND FINISHED TO APPROVAL.
- R.F. GUTTERS TO S.E. DETAIL.
- 100MM HIGH METAL RANGERS AND BALUSTRADES TO BE SILE.
- PURPOSE THREE BLADED STEEL CASSETTE WINDOW BRACKETS.
- 100MM HIGH R.F. RING NEAR FINISHED TO S.E. DETAIL.
- 50MM FEELER PANEL SYSTEM FINISHED TO APPROVAL.
- MEDIUM GRISED STONE WORK WITH WETTED POINTS AND FLUSH PERFORMS.
- 1/2" THICK F.F. BRICKS FINISH AS IN SPACING PARTIAL DETAIL ON OF SPAN TRUSS RANGERS BLEND ON WALL PROJECTED WINDOW FILLING TO S.E. DETAIL.
- MINI-METRIC STOP FINISHING TO S.E. DETAIL.
- 7.5mm CHALK FACING TO THE PLUMB.
- 100MM THICK F.F. BRICKS FINISH AS IN SPACING PARTIAL DETAIL ON OF SPAN TRUSS RANGERS BLEND ON WALL PROJECTED WINDOW FILLING TO S.E. DETAIL.
- MINI-METRIC STOP FINISHING TO S.E. DETAIL.



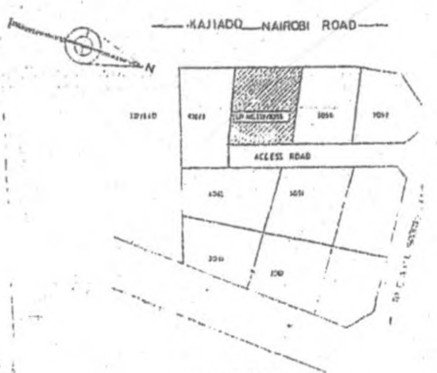
SECTIONAL ELEVATION X-X



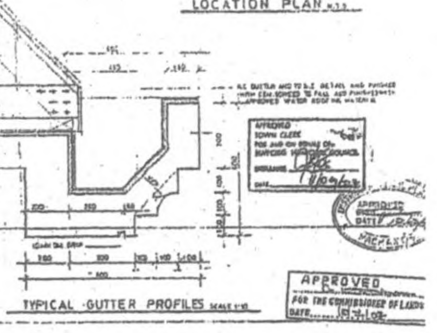
ATTIC FLOOR PLAN



SITE PLAN SCALE 1:100



LOCATION PLAN



TYPICAL GUTTER PROFILES SCALE 1:10

APPROVED
DATE: 15/05/2018

APPROVED
DATE: 15/05/2018

APPROVED
FOR THE CONSULTANT OF WORK
DATE: 15/05/2018

NOTE: GROUND FLOOR PARKING ONLY

