

**PLANNING FOR THE ECONOMIC POTENTIAL OF DONYO MARKET  
CENTRE, MACHAKOS COUNTY**

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**RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT FOR THE  
AWARD OF A MASTER OF ARTS DEGREE IN PLANNING**

**JULY, 2023**

## DECLARATION

The research project is my original work and it has never been presented/ submitted for examination for the award of a degree in any university.



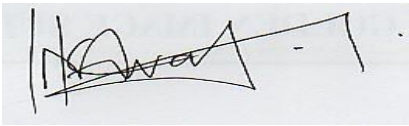
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## DEDICATION

I dedicate this work to God Almighty, who has been my pillar and inspiration throughout this journey. I also dedicate it to my family, friends and the residents of Donyo Market Centre who encouraged me, supported me and provided me with necessary assistance and information that I needed for this research.

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## ABSTRACT

Market centres play a crucial role in promoting the development of the areas they serve through social and economic activities that are carried out in the markets. These activities attract several land uses to the markets resulting in a mixed land use pattern characterised by public amenities, public utilities, residential, industrial and educational uses, with commercial use being the dominant land use. However, most centres, especially in the country, have been characterised by low economic growth, which is mainly associated with weak governance, informality and poor infrastructure. This has led to increased rural poverty due to the need for an enabling environment for economic activities, hindering the realisation of market centres as potential economic hubs for the rural population. The underperformance of rural markets has not been extensively studied while focusing on spatial planning and re-organisation of land uses as a solution to the underlying problem. This has led to the implementation of projects within the rural markets which lack a sense of land use planning leading to un-utilised space and land use conflict. The study focused on Donyo Market Centre, which is a rural market centre located within the Kiboko sub-location, Matungulu Sub-county, Machakos County. The main objectives of the study were to (1) determine the main economic activities at Donyo Market Centre, (2) to determine factors influencing economic productivity of the activities, (3) to appraise existing pattern of land uses in Donyo Market Centre and (4) to propose long-term land use planning model/strategy for suitable economic activities in Donyo Market Centre. The study explored concepts and principles in central place functions and territorial development, economic growth pole and circular cumulative causation processes, in which the market centre is viewed as a magnet that draws people, commodities, and services to itself and disperses them through "spread" and "backwash" effects to the rural surroundings. A sample of 109 respondents from the Donyo market centre, including buyers and sellers, was chosen. These respondents were mostly subjected to questionnaire administration using simple random sampling and the KoBo gather program. Key informants in county and national government offices, as well as participants in informal focus groups with stakeholders like motorbike (boda boda) riders and traders' representatives, served as sources of additional primary data. While GIS was used to analyse spatial data, SPSS and Excel were utilised to analyse statistical data. The data collection was done between 6th March 2023 and 10th March 2023 using the KoBo Collect application to administer questionnaires and other data collection instruments, including photography and observation.

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# CHAPTER 1

## INTRODUCTION

### 1.0 Introduction

Market centres are crucial in promoting social and economic development in the town and contiguous rural areas. The carrying out of economic activities at market centres, in particular, attract urban land uses to centres that over time, lead evolution of a pattern of mixed urban land uses as public amenities and utilities, residency, industrial and education as well as commercial uses among others; seek physical and spatial placement with and outside designated borders of the centre (Asif & Khan, 2018). The land use evolution process leads to the concentration of development of urban land use, which also translates to the densification of both urban population and buildings (Muwonge, 1973). This development at the market centres distinguishes the centres from rural development in the surrounding rural resource and human settlements, low population density and dominating farmland economies (Carnap, 2022).

However, the market centres and the hinterland they command are in ever-functional relations that in turn, bear a determining role in the growth and development that its economic potential underlines (Ombudo, 2019). Planning the growth and development of the economic potential of markets is the centerpiece of not only uplifting development of the centre alone. According to FAO (1995), the planning also facilitates the realization of urban-rural, regional and national development that is anchored on a strong urban-rural relations policy framework. This is because market centres act as service centres with social amenities and services as well as access to goods and services (Tracey-White, 1995).

### 1.1 Statement of the Problem

Market centers are seen as locations for both their own growth and development as well as that of the surrounding rural area. The primary commodity coming from the nearby rural hinterland is agricultural output, and these centers exhibit a higher level of people, goods, and services (Hodder, 1965). These centers experience an increase in physical and social infrastructure, new construction investments, a strong demand for and supply of goods and services, and other economic activities and services. This results in both the public and private sectors earning sufficient income and profits from investment operations.

Additionally, the centers direct physical growth in accordance with transportation corridors to facilitate effective connections between centers in the regional developmental network. According to the Physical Planning Department (1978), rural market centres were envisioned as service centres that hosted minor urban functions related to economic and administrative activities within the rural areas. Besides being economic nodes that guide rural development, these centres are supposed to be providing services like health facilities, education facilities, sports and cultural facilities and link rural hinterlands to urban areas.

However, most centres are perceived to have a downward trend regarding the provision of services to the rural hinterland and in promoting economic development within their areas of jurisdiction. Low-level economic activity primarily takes the shape of modestly sized retail stores that provide essential home goods. High-order commodities are hardly ever in demand or supply. The lack of fundamental infrastructure exacerbates the issues now present. They are no longer the hubs of development and growth they once were. Donyo market centre is characterised by:

- (1) Dilapidated commercial stalls,
- (2) Unmaintained and unpaved roads including Tala-Donyo Sabuk Road,
- (3) Inadequate water and sanitation facilities; and
- (4) Poor solid and liquid waste disposal management system

These negative attributes also translate to most market centres in Kenya, resulting in underperformance in the quality of goods and services sold in the markets. This makes it hard for the markets to serve as high-order goods centres instead of just small-scale retail centres (Otieno, 2020). Earlier, market centres were vibrant and attracted investment in building constructions and service provision by the local government. However, the investment gradually declined, and currently, centres like Donyo Market Centre are characterised by old buildings with no physical planning for land uses within the centres.

## **1.2 Research Questions**

The study explored one major question and three minor questions.

### **1.2.1 Major Question**

The major question of the study is:

How can the economy of Donyo Market Centre be improved?

### **1.2.2 Specific Questions**

The study seeks to answer the following three specific research questions about Donyo Market Centre.

1. What are the most dominant economic activities at market centres?
2. What are the causes of economic decline at market centres?
3. What interventions can be used to sustain economic market centres functions of Donyo?

## **1.3 Research Objectives**

The study has one overall objective and four specific objectives.

### **1.3.1 Overall Objective**

The overall objective is to propose spatial planning interventions for improved economic activities at Donyo Market Centre.

### **1.3.2 Specific Objectives**

The study will achieve the following four specific objectives:

- 1.To determine the main economic activities at Donyo Market Centre;
- 2.To determine factors influencing economic productivity of the activities;
- 3.To appraise existing pattern of land uses in Donyo Market Centre; and
4. To propose long-term land use planning model/strategy for suitable economic activities in Donyo Market Centre.

## **1.4 Study Assumptions**

The study assumes that continued lack of infrastructure and service facilities hinder economic activities by traders and buyers at the Donyo Market Centre. Secondly, there lacks a land use plan for the market to guide placement user economic activities for efficient economic

production functions. Finally, the continuing population increase in the surrounding areas will lead to increased import of economic activities, goods and services from the market.

## **1.5 Justification**

Studies on role of market centres and economic activities at the markets as engines of rural development remains main information sources on potentials as well as problems and challenges undermining activities. Specifically, studies focus beyond retail and wholesale economic activities to also cover traded goods, services as raw materials and products produced at the markets and contiguous rural hinterlands can go a long way in better understanding evolving problems and challenges under the economic potential. Moreover, market centers are considered the nodal points for economic activities in rural areas. They are essential in economic, ecological, and social performance about, economic growth, and social interactions. This is because the primary function of market centers is trading and providing different amenities for the rural hinterland. Several indicators can aid in determining the performance of a market center. This includes population growth, unemployment, start-up, worker productivity, and export and import rates between the market centers and neighboring urban centers (Beyer, 2015).

Second, this research aims to advance our understanding of rural economic nodes like Donyo Market Centre. A focus on elevation of market centres to more economically viable rural nodes would address the low level of economic activities, mainly in the form of small-scale retail shops that trade in basic household provisions. It would also boost the demand and supply of high-order goods and promote access to basic infrastructural provisions like roads and other public amenities.

Finally, the goal of this study is to provide a foundation for numerous recommendations that may be made to enhance growth and performance in the centers under review. Some of the suggestions might also be useful to other centers with circumstances akin to those in the study area.

## **1.6 Scope of the Research**

The scope of the study will explore the scope of market centres as well as the spatial scope of the study.

### **1.6.1 Scope of the Subject**

The study covers issues regarding the nodal development of rural market centres in the context of the basic and non-basic economic activities at the Donyo Market Centre. Consequently, the study



covers the role of Donyo Market Centre in serving the rural hinterland and how centre relates functionally and economically with Kiboko Sub-location and beyond. Land uses and the need for the spatial placement of economic activities is also covered. Economic activities, including sale and purchase of agricultural products and services, as well as the role of land use planning in promoting economic development of market centre are central to the study.

### **1.6.2 Geographical Scope of the Study**

The geographical scope of the study is limited to the Donyo market centre and its rural hinterland covering but not limited to Kiboko Sub-Location. The land area covered by the study area is 0.1379 km<sup>2</sup>, but functional economic area of the market centre covered by way of methods of data collection for the determination of the centre's economic reach stretched to Kiboko Sub-location and other parts in and Machakos County. This is because the majority of the consumers are from Kiboko Sub-Location. The demand for goods and services in the market is also boosted by the existence of neighbouring rural markets like Kwa Mwaura, Kitini and Kilimambogo, which get their products from Donyo market for retail purposes.

### **1.7 Operational Definition of Key Terms**

Key terms used in the study include;

**Market Centre:** this is a focal point that exists in order to satisfy the social and economic demands facing rural residents. It serves as a physical hub of economic activities and acts as a "minor urban services" to the rural population. A market centre is characterised by built up settlements, infrastructure and services facilities and administrative facilities that support the activities within the market centre.

**Rural Hinterland:** refers to the region or area surrounding and influenced by a larger urban center or a city. It represents the rural or non-urban areas that are economically, socially, and geographically connected to the urban center but are distinct from it in terms of characteristics and functions. It is mostly characterised by agricultural practices and is less developed than the urban areas.

**Economic Potential:** refers to the capacity or capability of a country, region, or area to generate economic growth and prosperity. It represents the possibilities and opportunities available for achieving higher levels of productivity, employment, and overall economic well-being.

**Land Use Planning:** refers to the process of organizing and regulating the use of land within a specific area, typically a city, town, or region, to achieve various social, economic, and environmental objectives. The primary goal of land use planning is to make efficient and sustainable use of available land resources, ensuring that land is allocated for different purposes in a manner that promotes orderly and balanced development.

**Sub-County:** this is a geographical administrative unit that is smaller than a county and larger than a ward (KNBS, 2019). The administrative structure of Kenya is organized into counties, and each county is further divided into sub-counties, wards, locations and sub-locations.

### **1.8 Organisation of the Research Proposal**

The research proposal is divided into four chapters, and each chapter deals with the different stages of the research project, from the selection of the research topic to the study area.

Chapter one introduces the study and covers the problem statement, research questions, research objectives, study assumptions, justification, the scope of the study and operational definition of terms.

Chapter two includes the techniques and procedures that are applied in the study to collect, process, interpret and present information on the study. It also includes the research approach, design, methods, data collection and sampling techniques, data processing, analysis and interpretation, together with the work plan.

Chapter three discusses past literature that is relevant to the study. These include research on both the study area and the concepts and theories applied in the study. Consequently, the chapter reviews the researchers' view on the relevant topics and concepts applied in the study, both from the global and local perspectives. This aids in presenting a critical understanding of the study. It contains the theoretical and conceptual framework, research questions, hypotheses, and statistical assumptions.

Chapter four covers the study area, Donyo market centre and describes the contextual analysis of the study area as well as the current site and neighbourhood's physiographic and natural characteristics.

Chapter five includes data analysis which includes of the economic and land use patterns of Donyo market centre, the existing infrastructural developments that support the economic activities in the market and problems faced in the market. Data presentation techniques like use of tables, use of photographs and graphical methods have been used to accurately present the data collected.

Finally, chapter six includes conclusions and recommendations where general conclusions and recommendations are made. Proposals to economic development of the market centre are developed. Finally, areas of further research are highlighted in this chapter.

## CHAPTER 2

### RESEARCH METHODOLOGY

#### 2.0 Introduction

This chapter covers scientific and systematic methods applied in the search for information related to the urban regeneration of rural markets. The chapter includes the techniques and procedures that are applied in the study to collect, process, interpret, and present information on the study (Williams, 2007). It includes research design, target population, sampling plan, data collection and sampling techniques, data processing, analysis, interpretation, presentation, and finally, ethical considerations (Salkind, 2010).

#### 2.1 Research Design

A research design is a systematic procedure of responding to research questions with the aim of integrating research methods with research objectives and goals. This is achieved by creating a pattern of flow of the different components of the project design (McCombes, 2021). The study applied several components in order to integrate research methods with the set objectives and goals. These included data sources, data collection methods and methods of data analysis. The design used sort to create minimum error and bias by ensuring high accuracy in the collection and analysis of data. Moreover, four phases of research development were used in order to come up with practical conclusions and recommendations based on data collected during the study. Phase one involved concept development which included a literature review on market centres, theoretical framework and conceptual framework. Phase two involved data collection by use of tools such as household questionnaires, business questionnaires, key informant questionnaires and checklist. Phase three included data analysis and synthesis and finally phase four covered conclusions and recommendations which included proposals for economic development of Donyo Market Centre and highlighting areas of further research.

#### 2.2 Target Population

The target population for the study included all residents of Kiboko Sub-Location and traders in the market. Several key informants who had an impact on the market or were mandated to be in charge of the market were also interviewed. These key informants included one market official and one government official who had direct interaction with the market operations, like the chief and county physical planner. Residents of the Kiboko sub-location had a total population of

16,135, the total population served by the market, while traders were approximately 500 (KNBS, 2019).

## **2.3 Sampling**

Sampling involved determining the procedure and sample size that would represent the population in the study area.

### **2.3.1 Sample Size**

A sample of 109 respondents was selected from Donyo Market, and questionnaires were administered by use of the Kobo collect application. The population targeted by the study consisted of 16,135 residents of the Kiboko sub-location and 500 traders in the Donyo market. Sellers, buyers, and the general Kiboko Sub-location population were included in this group (KNBS, 2019). It was decided to use a confidence level of 95% of the entire population and a 5% error margin. In addition, as shown in appendix 5, the standard deviation of 1.96 was chosen when estimating the sample size. As a result, the researcher used a sample size of 36 vendors from Donyo Market Centre and 73 people of the Kiboko Sub-location.

### **2.3.2 Sampling Unit**

A sampling unit includes any single subject for research; human, animal, plant, or product. (Hitzig, N. B, 2004). The sellers who conducted business in the market and the shoppers at Donyo Market served as the study's sampling unit. Locals in the Kiboko Sub-location were also included in the study because there were public services available there for the locals, such as a police station, a pharmacy, and schools.

### **2.3.3 Sampling method**

There were 109 respondents in all who were chosen for the study using a random sample technique. Simple random sampling is a type of probability sampling that involves choosing a sample of individuals at random from a population. Every person in the population has an equal chance of being selected, and as many members of this randomly chosen subset as feasible are used to collect data (Master Class, 2022). The study applied simple random sampling to draw conclusions about the population statistically. This is because randomization is the greatest way to lessen the impact of any confounding variables hence ensuring good internal validity. Additionally, a simple random sample with a sufficient sample size has high external validity since it accurately captures the features of the wider population (Robinson, 2014). By guaranteeing that each sample unit had an

equal and independent probability, this ensured minimum bias and led to an accurate representation of the population by the sample size.

## 2.4 Data Collection Techniques

The study used a variety of tools to gather qualitative and quantitative data from the site as well as secondary data. Among these instruments were;

### 2.4.1 Primary Data Collection Tools

This included gathering information directly on the spot. Various data collection instruments were used, including;

#### i. Observation Checklist

This involved choosing a set of questions the observer would use to gather information by watching the inhabitants and the location. As indicated in table 1, an observation checklist including themes like the natural environment, road network, infrastructure facilities, economy, and human settlement patterns was used.

**Table 1: Observation checklist sample**

SECTOR	ELEMENTS	NAME/DESCRIPTION/CONDITION	COMMENTS
A. LOCATION	1. local names of the sites visited		
	2. Major landmarks if any		
	3. Name of the main access road		

*Source: Author, 2023*

#### ii. Questionnaires

A questionnaire is composed of written or printed questions which aid in survey or statistical data collection. The questionnaires take two general forms; closed and open-ended questionnaires, and several media were used for data collection as well. This includes face-to-face, mail, or telephone. This tool is effective since its fast, cheap, and can collect large amounts of data (Jenn, 2006). While collecting data, three types of questionnaires were used; Household questionnaire, key informant questionnaire, and business questionnaire.

### iii. Photography

This involved capturing photos of the Donyo market center to establish the current state of the site. Photographs aided in visual representation of the site data hence clearly describing the current state of the site.

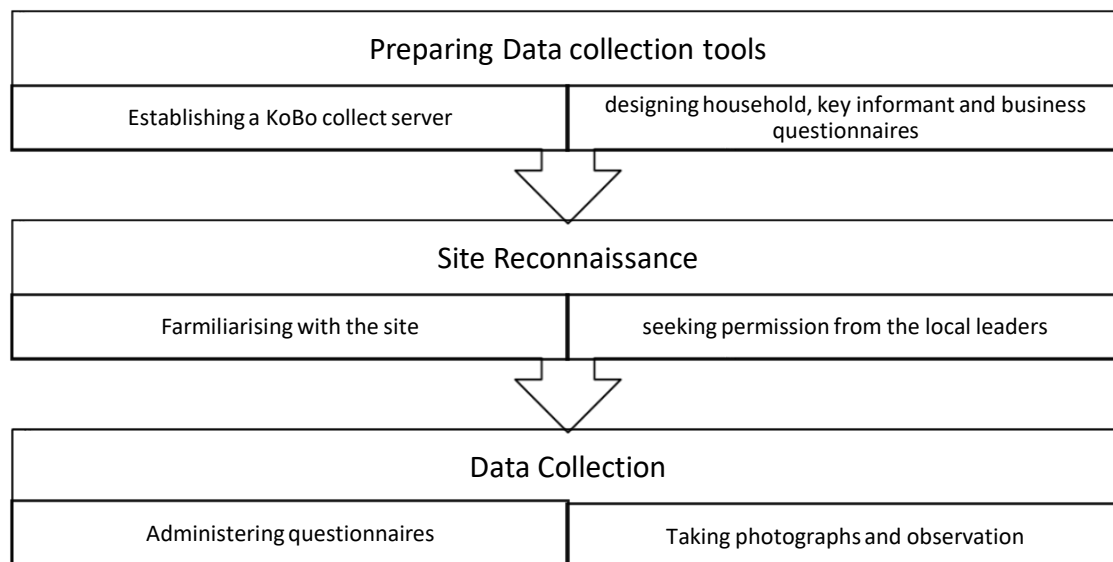
#### 2.4.2 Secondary Data

This includes data that is readily available and analyzed. The data is stored in media like books, journals, websites, government records, and newspapers (Johnston, 2014). Secondary data was mostly used in the literature review in chapter three, where data was sourced from books, websites, and journals. Previous research and theories on market centers and the functions of market centers in rural economic development reduced the manpower needed to collect and in analysis of the same data.

#### 2.5 Program for data collection

The site visit took 3 days, and as shown in figure 1, the following steps were followed to achieve the desired objective.

**Figure 1: Data Collection Programme**



*Source: Author, 2023*

## **2.6 Pre-tests and Pilot study**

This was the trial stage where the data collection application, KoBo collect, was tested to confirm its accuracy. The questionnaires used were also tested against some respondents to ensure their effectiveness in collecting the desired data. Communication barriers and the respondent's non-verbal cues were also assessed to check their effectiveness in responding to questions asked.

## **2.7 Data processing**

Data processing involve the conversion of data collected to meaningful and desired form. It includes editing, classifying, tabulating, charting and mapping data with the aim of separating suitable data from unsuitable data (Duggal, 2022). Software such as GIS, Microsoft Excel, and google earth were used in processing data collected from the field.

## **2.8 Data Analysis and Presentation**

Data analysis and presentation is the application of statistical and logical methods to process, evaluate, explain, compress, and illustrate collected data with the aim of informing decision-making and conclusions (Erdelyi, 2020). This process was aided by several software to ensure accuracy in analysis and interpretation of the data. Microsoft Excel was used to generate line and bar graphs, and pie charts. Microsoft Publisher was used for the presentation of posters, while Microsoft Word was used for report writing. Moreover, GIS was used for mapping of data for visual representation and Arcscene and sketchup for 3D modeling.

## **2.9 Research Ethics**

This refers to the values, arrangements, and norms that aid to regulate and guide scientific research (Bhandari, 2021). The guidelines that were followed during the research included norms that guided the researcher, for example, impartiality, accountability and integrity. Interaction between the researchers and respondents was based on confidentiality, respect, and human dignity and norms that described good scientific research, for example, originality, accuracy, adequacy, and academic freedom were applied.



## CHAPTER 3

### LITERATURE REVIEW

#### 3.0 Introduction

This chapter covers literature related to market centres, their functions as key economic nodes in rural areas, and growth concepts together with their social and economic function. The review of the literature's main aim is to identify principles and theories that guide the concept of performance of market centres. The literature review highlights various principles and concepts that are related to the performance of market centres and special development. The central place theory explains the reason for the pattern of economic growth, and it explains that the growth is attributed to particular poles or a cluster of poles. The concepts of growth poles also argue that growth centres attract economic activities due to their polarizing nature. This concentration of economic activities attracts other functions like administration, health and education.

The function, performance and growth of market centres are also keenly analyzed through literature that analyses the concepts. This also highlights the underlying problems of market centres which have resulted in a decline in economic activities due to their underperformance. The concepts of function and performance have therefore been extensively discussed in this chapter.

#### 3.1 Geographical Concepts and Principles in Territorial Development

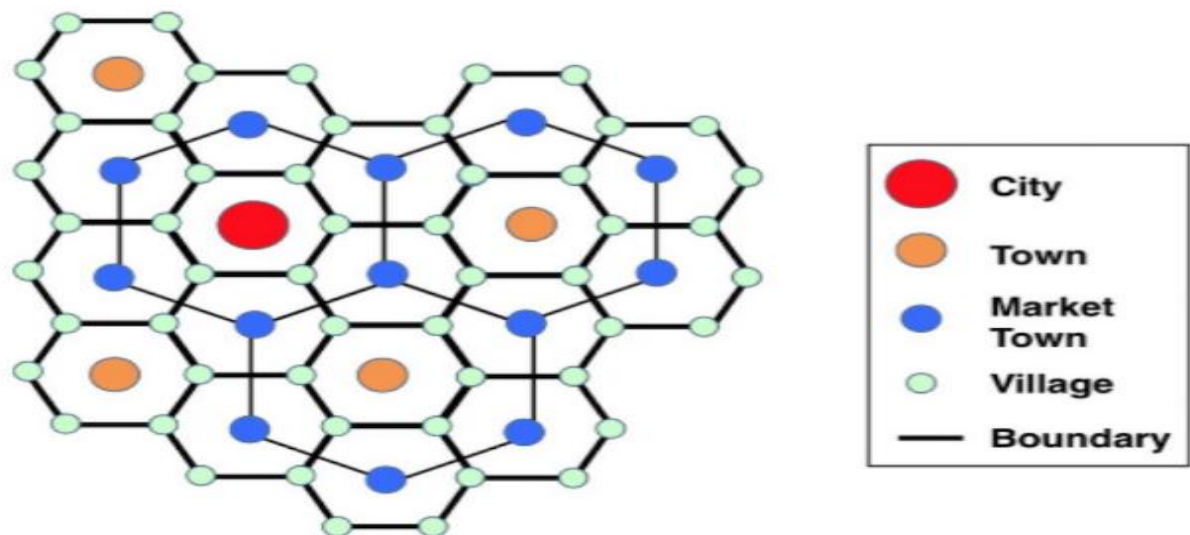
There are several concepts that guide the special development of spaces. These concepts include;

##### 3.1.1 Central Place Function and Territorial Development

Walter Christaller, in his book *Central Places in Southern Germany* (1933), introduced the concept of central place with an attempt to explain the size and distribution of settlements and the size of the market that they can control. King (2020) explains that there is a hierarchy of central places depending on their size and distribution. This results in cities being the largest central places with a concentration of a variety of activities. Cities are followed by urban centres, villages, and then hamlets. However, these classes of central places are interdependent, and activities within them are linked. Market centres are an example of central places as they have economic activities within them. They provide residents with goods and services hence serving both an economic and social function. These markets are strategically positioned along transport nodes, near factories or near an economic activity such as fishing. The distribution of these markets is greatly related to their performance and function, which can be trade function, transport function or service function. The

hierarchy of central places highly influences the performance of the centres. A network of these centres is characterised by a hierarchy that is determined by the threshold for the provision of goods and services (Jamal, 2017). The threshold, which stands for the maximum or minimum distance travelled to access goods or services, determines the location of the market, with the minimum threshold being the hamlet and the maximum threshold having the city, as illustrated in figure 2.

**Figure 2: Distribution and Interlinkage Between Hierarchies of Central Places**



*Source:* (Jamal, 2017)

### 3.1.2 Economic Growth Pole

François Perroux (1995) introduced the concept of the growth pole in an attempt to explain economic development. The main idea of the theory was that economic growth is greatly influenced by particular poles or a cluster of poles like the urban centres; hence economic development cannot be uniform (Thomas, 1975). The theory links the core (market centres), where a variety of activities take place, including agribusiness and the hinterland (rural areas), where the goods are produced, for example, plantations, coffee or pineapples. The core either purchase the products from the hinterland or supply goods and services to the hinterland hence the interlinkage between the two sectors. The core is also characterised by retailing, which requires produce from the hinterland hence the link. The growth pole theory has aided in identifying growth points with the rural setup, which reduces the overdependence of the rural areas on urban areas. (Parr, 1999).

The ideas of polarization and spread and backwash effect are arguments in favour of the growth poles and development centres theory. Large corporations that control other economic entities in an area are known as leading or propelling industries. The availability of a natural resource, transportation and communication network, labour, or services may influence where they are located. A dominant industry's explosive growth draws in other economic entities, resulting in economies of agglomeration that are frequently self-sustaining. Over time, the growth pole's dynamic propulsion properties spread outward into the surrounding area. Its "spreads" and "trickles down" into the immediate geographic area.

### **3.1.3 Circular Cumulative Causation Processes**

The Swedish economist Gunnar Myrdal developed the circular cumulative causation theory in 1956. In essence, it is a theory of economic development that looks at the differences between the world's more developed and less developed regions. The theory behind it holds that changes in one variable in an economic system unavoidably trigger subsequent changes in related variables. Such a move typically has a favourable impact on a mature economy with many resources and a negative impact on a developing country with limited resources (Hara, 2009). For the latter, poverty is a never-ending cycle.

According to the argument, the construction of an industrial facility in an area leads to the creation of additional jobs, in-migration of labour, wealth, greater government income, enhanced infrastructure, and the growth of more service-related companies. As a result, there is a gradual rise in demand for goods and services, increased buying and selling activity, and an increase in the infrastructure of economic transactions.

### **3.1.4 Implications of Selected Regional and global models of Development**

Regional and global models generally try to represent how urban centres function. This is important in decision-making on relevant approaches to use in the study. The models selected in this study, economic growth pole, central place and circular cumulative causation Processes, illustrate that economic growth is driven by the core, where most economic activities are concentrated. However, products and resources are mostly obtained from rural hinterland hence influencing development in the rural hinterland (Thomas, 1975). The rural hinterland is also an important source of market for goods and services from the core or urban centres.

Understanding the interlinkages between the core and hinterland is important in decision-making on the type of infrastructure to apply in these urban centres. The infrastructural and land use

development should be in conformity with the type of products and resources the hinterland offers to the core. This would ensure economic and social growth while preserving heritage as advocated by urban revitalization.

### **3.2. Core periphery Theory**

The core-periphery theory was developed by John Friedmann in an effort to explain the disparity between the political and economic prosperity of various nations or areas. The core of the market represents areas with robust economic activity and access to public facilities, such as those with stable economies, better health care, and cutting-edge technology. However, surrounding regions with less technological advancement and unstable economies are the periphery. The rural hinterland is represented by the periphery, which depends on market towns for infrastructure and space for commerce. These regions might be categorized based on local, regional, national, or international viewpoints. A semi-periphery zone is produced as peripheral regions move toward becoming core regions. Market hubs are in various phases of development. In the first stage, there is no hierarchy of market places and the economy is primarily agricultural. (Hryniewicz, 2014). Stage two is the transitional stage, during which a core center forms mostly as a result of location. Stage three is the industrial stage, during which satellite centers start to appear as a result of the decentralization of certain businesses or services. The rise in land rent in the central area encourages this. Post-industrial is the last stage. This stage is characterized by an integrated urban system with less economic and spatial disparity. Through the movement of people and goods between these places, rural markets largely interact with nearby core cities. As a result, a hybrid economic system is created between market centers and major economic hubs.

### **3.3 Concept of Local Economic Development**

Infrastructure development, which includes expanding public spaces and marketplaces as well as improving road access, must be a part of local economic growth. The growth of local markets in rural market towns benefits local economies since there is a strong positive correlation between excellent infrastructure, effective delivery of public amenities, and overall economic expansion. Economic expansion is indicated by increased investments, rising land values, and a higher degree of industrialization.

### **3.3.1 Small Towns and Rural Development**

Small towns are typically defined as settlements with a smaller population and less developed infrastructure compared to larger urban areas. They often serve as centers of commerce, administration, and social activities for the surrounding rural areas. They may have a central area with small businesses, shops, and services, along with public facilities such as schools, community centers, and healthcare facilities (Tacoli, 2017). Small towns are essential to rural development because they provide citizens with economic possibilities, protect cultural heritage, and uphold a high standard of living. This is achieved through infrastructural development including transportation networks, such as roads, bridges, and public transportation, as well as utilities like water supply, electricity, and broadband internet (EPA, 2023). Small towns also attract economic diversification through establishment of commercial spaces and markets for the sale of agricultural products.

### **3.3.2 Market Centres**

The concept of the market in the context of this study represents a designated area where services and economic activities are concentrated at the second lowest level of the hierarchy of service centres. Under the National Service Centres Policy, which sought to create a hierarchy of centers into four distinct categories of centers in order of priority, the hierarchy of service centers in Kenya was initially proposed. Urban designated centers, rural designated centers, market designated centers, and local designated centers are among them. According to the Physical Planning Department (1978), the move was aimed at rationalising the distribution of service centres to guide development and improve the efficient use of capital resources. A market centre compares and contrasts with a city, intermediate and town in that the centres serve a much lower population of approximately 15,000 and are designed to facilitate the population with services like education, which includes a primary and secondary school to the rural population. The market center is also earmarked for the construction of public services including water delivery, police stations, and medical facilities like a dispensary (Physical Planning Department, 1978). These centres are mostly accessed via minor roads, which link the centres to major traffic corridors and urban areas. The concept of market centres as the core areas for the development of rural areas and developing countries was widely used by policymakers and researchers in post-independence Africa to implement regional and national development strategies and policies to address inequality in spatial socio-economic patterns of development. (Hodder, 1965) highlighted the significance of

market places for the growth of rural areas referring to market centers as hubs for the purchase of manufactured goods in rural areas as well as locations for the transportation of agricultural products from rural to urban markets. More than sixty years of the colonial model of development have resulted in serious socio-economic disparities that the new African governments had to address and stem possible political and ethnic backlash from the newly independent population that looked forward to the fast transformation of their livelihoods (Kithuka, 2019). The zoning laws across the continent that encouraged segregation based on ethnicity, race, and color greatly contributed to the discrepancy in the delivery of services between rural and urban areas. Colonial policies like The Native Authority Ordinance of 1920 allowed selective access to amenities like urban services that resulted in a lack of development in rural areas (Njoh, 2008). However, policies set out by the transitioning African governments to promote infrastructural development, regional integration and good governance, like the establishment of ECOWAS and EAC, promoted trade and economic cooperation that kickstarted the development of African states. On a local level, the centres became spatial areas that hosted urban-based strategies, policies, strategies, programmes and projects for stimulating hinterland resource use, settlement development, as well as social programmes (K'akumu & Olima, 2007).

### **3.3.3 Market Centres-rural Hinterland Relations**

The relationship between market centres and the rural hinterland is quite significant in the growth of the rural economy, which is greatly characterised by agricultural production, scattered settlements and a very minimal urban footprint. Market centres are the core centres in rural areas surrounded by a rural hinterland (Gebre, 2019). This is where most activities relating to social and commercial development are conducted. These commercial nodes also perform special functions due to the presence of facilities and amenities that serve the rural hinterland. Market centres are the focal point for social, economic, religious and cultural activities. They also function as trade centres for the exchange of goods and services from urban centres as well as the linkage between the rural areas and urban areas through the trade of processed goods from the urban areas and the selling of agricultural products to the urban areas (Mylott, 2009). They also act as transportation nodes for the rural areas linking both urban and rural areas by road or rail through the provision of bus terminuses.

### **3.3.4 Rural Trade and Production Centres**

Rural trade and production centers are economic hubs located in rural areas that facilitate the exchange of goods and services, promote local production, and support the development of rural

economies (Gitau & T. Nzioki, 2005). These centers serve as focal points for economic activities, bringing together producers, suppliers, buyers, and service providers in a specific geographic area. They are essential in promoting economic expansion, generating job opportunities, and improving rural communities' standard of living. Gaile (1988) provided documentation of research on rural development in Kenya in connection to cyclical markets. In order to achieve the optimum marketing and job growth, he focused on the strategic location of small communities. He adds that rural market places are essential since large markets don't help small-scale farmers.

### **3.4 Economic Potential of Market Centres**

Market towns are essential to the economic growth of rural areas. In the nearby rural areas, they act as centers for trade, commerce, and economic activity (Gaile, 1988). Farmers and small-scale producers can offer their products and services at market centers. These hubs serve as a conduit for the flow of goods, knowledge, and capital between rural producers and urban consumers (Physical Planning Department, 1978). Additionally, manpower is needed at markets for maintenance, security, and a variety of other support services. Market centers also draw ancillary businesses like stores, eateries, and transportation services, which results in the development of more jobs. In order to connect rural producers with urban markets, market centers act as a bridge between rural and urban areas (Akkoyunlu, 2015). Through this connection, rural communities can reach a larger consumer base, expanding their market and possible revenue. Additionally, it makes it possible for metropolitan goods and services to reach rural areas, raising the standard of living and quality of life there.

### **3.5 Market Centres in the Kenya Development Process**

Market centres play a significant role in Kenya's economic development especially in rural areas. This is because these markets serve approximately 32.73 million Kenyans, which is 68.9 per cent of the total population and is mostly youthful (Gitogo, 2020). This necessitates the need for schools, public spaces, jobs, and public amenities needed for the growth and development of the youth. However, most centres in the country have been characterised by low economic growth, which is mainly associated with weak governance, informality and poor infrastructure (IFAD, 2014). This has led to increased rural poverty due to the lack of an enabling environment for economic activities, hindering the realisation of market centres as potential economic hubs for the rural population.

### **3.6 Devolved Framework of Planning for Market Centres**

Planning of market centres in Kenya typically falls under the jurisdiction of the county governments. County governments, as highlighted in Urban Areas and Cities (Amendment) Act, 2019, have the mandate to plan and manage urban and rural areas within their jurisdictions, including the development and regulation of market centres. The act defines market centres as areas designated for the sale of goods and services, including markets, trading centres, and shopping centres (GoK, 2019). It also establishes market management committees and gives them responsibilities to prepare market development plans and ensure the provision of necessary infrastructure, facilities, and services within the market centres. This is because according to the Food and Agriculture Organization of the United Nations (2009), rural retail markets not only function as commercial centers but also as social centers where they promote the culture and traditions of the rural population.

#### **3.6.1 Catalytic Role of Market Centres in Machakos County Economic Development**

County governments have attempted to develop strategies to boost and open up the rural areas within their boundaries. Most of the counties, such as Machakos, have established strategies to promote market centres in their County Integrated Development Plans. Machakos County has proposed strategies to address inadequate research and data on businesses as well as poor sanitation (MCG, 2018). This includes developing a business database, creating awareness of business management and establishing public amenities, including sanitation facilities in market centres. The county has successfully completed several projects in a number of rural centres, which include the installation of light masts within the market centres, such as Mulinga market and Kwa Akamba shopping centre. They have also tarmacked roads that link agricultural factories to the centres and construction of 40 modern markets, including Kathiani, Masii, Tala and Kyeleni (Cornelius, 2020).

#### **3.6.2 Donyo Market Centre in Machakos County**

Donyo Market Centre has benefitted from the county government's plans for market regeneration. The county has successfully erected a light mast, constructed the Donyo Sabuk dispensary and constructed toilets. However, several projects are yet to be implemented, like tarmacking of Tala–Oldonyo Sabuk Road and introducing street lights, drainages and culverts (KIPPRA, 2018). The lack of implementation has resulted in inadequacy in accessing public utilities like water and electricity, challenges in accessibility due to poorly maintained roads, lack of parking space for



vehicles and congestion within the centre. This has necessitated the need for an effective action plan to regenerate these centres.

### 3.7 Urban Economic base and non-economic base

Urban economic and non-economic base analysis has been a widely used method in urban and regional economics to identify the key sectors driving economic growth in a city or region. The economic base of a city or region encompasses industries and sectors that produce goods and services primarily for export or sale to markets outside the city's boundaries (Sirkin, 1959). These export-oriented industries are the drivers of economic growth, generating income from external sources and bringing money into the city. Examples of economic base activities include manufacturing, agriculture, mining, and technology-based industries. Conversely, the non-economic base of a city includes industries and sectors that primarily serve the local population and do not generate income from external markets (Ullman, 1960). These local-serving industries are commonly known as "non-basic" activities. Examples of non-economic base activities include local retail, healthcare services, education, hospitality, and various services catering to the needs of residents. Understanding the economic base and non-economic base of a city helps urban planners and policymakers develop strategies for economic development and identify areas for potential growth (Massey, 2014). A balanced mix of both economic base and non-economic base activities is essential for a vibrant and sustainable urban economy.

### 3.8 Classification of Urban Areas in Devolved Governance

Urban Areas and Cities Act (Amendment) (2019) categorically classify different classes of urban areas. The table 3 below highlights the various classes of urban area based on the act;

**Figure 3: Hierarchy of Urban Areas**

Class	Population
City	250,0000
Municipality	50,0000
Town	10,000
Market Centre	2,000

*Source:* UACA, 2019

This classification aids the national and county governments in adequately allocating resources depending on the demand and population.

### **3.9 Market Centres in National Government Policies and Strategies**

There are several global and national policies and laws that guide the process of development in market centers. These include;

#### **3.9.1 Sustainable Development Goals**

Sustainable development goals are a group of 17 goals set out by the United Nations in 2015 with a vision of having a standard global blueprint for prosperity and peace with a focus on sustainability. The goals were set to be achieved by 2030 through addressing social, economic, and environmental issues affecting the population globally. Goal 6 on clean water and sanitation, Goal 8 on decent work and economic growth, and Goal 11 on sustainable cities and communities are some objectives that are related to economic growth in rural markets (United Nations, 2015). The latter, target 11, attempts to ensure that links between urban, peri-urban, and rural communities are fostered and that appropriate infrastructure, such as good roads and maintained public spaces, is in place. This would promote growth in market centres within rural areas.

#### **3.9.2 Agenda 2063**

This is Africa's masterplan and strategic framework for remodeling Africa into an inclusive, sustainable, united, and prosperous continent. The policy was a 50-year development plan that ensured improved economic growth and social prosperity. The African Union-based policy has 7 main agendas, with the first being 'prosperous Africa'. The agenda is aimed at transforming the African economy by promoting modern agriculture, resilient economies, and high standards of living through initiatives like the African Integrated High-Speed Network, which connects economic zones, the creation of the continental free trade area, and African commodities strategy that would regulate prices of commodities (African Union, 2015). The agenda would promote local markets directly by providing easy access to regional markets and indirectly by uplifting local cities through an integrated network of roads, rail, and air transport.

#### **3.9.3 Vision 2030**

This long-term development strategy aims to further the nation's long-term objectives of being globally competitive and providing a high standard of living for its population by 2030. The vision is supported by three pillars, with the economic pillar emphasizing the provision of a sustainable economy with average GDP growth of 10% annually. Areas of focus include agriculture and trade, both wholesale and retail (GoK, 2008). This pillar greatly influences the growth of market centers

with the establishment of infrastructure to support trade, such as roads, dams, and modern markets. This is with the attempt to implement the economic pillar of Vision 2030.

### **3.9.4 The Constitution of Kenya, 2010**

The Kenyan Constitution 2010 offers provisions for market centres, including Donyo Market. Being the supreme law of the land, it guides in article 2(5) that international law, which includes that which relates to the economic growth of, centres forms part of the law of Kenya. Article 184(1) directs the national legislation in the management of urban areas and outlines standards for categorizing urban areas and cities. Under the fourth schedule (part 2), it directs that trade development and regulations, which includes markets, trade licenses, and cooperative societies in counties, be under the county governments (Kenya Law, 2010).

### **3.10 Market Centres in County Governments Policies and Strategies**

Policies that guide Machakos County development include;

#### **3.10.1 Machakos County Integrated Development Plan 2018-2022**

This plan is focused on improving and transforming institutions, structures, and transformation systems by identifying key policy programs, projects, actions, and reforms that Machakos County would implement from 2018-2022. Through the CIDP, on energy, infrastructure, and ICT, the county plans on introducing street lights, drainages, and tarmac (KIPPRA, 2018). Moreover, the Donyo Market, through the CIDP, was able to establish an open-air market and sheds for boda boda.

#### **3.10.2 County Government Act, 2012**

The County Government Act of 2012, a piece of legislation, gives county governments the authority and responsibility to offer services within their respective counties. The statute mandates the creation of the County Integrated Development Plan, which directs the distribution of revenues and development. The county governments in section 94(c) are also mandated to use media for advocacy on development issues, including those that relate to market centers in rural areas like water and sanitation and zoning (GoK, 2012); the county governments are also in charge of guiding development in the counties which includes land use allocation and zoning as elaborated in section 110 (2) on county spatial plans.

### **3.11 Opportunities and Challenges of Market Centres in Economic Development**

Market centers experience a mix of challenges and opportunities.

### **3.11.1 Opportunities**

Market centers serve as focal points for economic development, providing opportunities for trade, employment, investment, and infrastructure development (Akkoyunlu, 2015). Their role in promoting regional growth and fostering innovation makes them critical contributors to overall economic prosperity. To capitalize on these opportunities, effective urban planning and policies that support sustainable growth, innovation, and social inclusion are essential.

### **3.11.2 Challenges**

Challenges faced by market centers include unpaved poor roads that hinder transportation, unplanned open-air market with temporary structures, unmanaged solid and liquid waste disposal, lack of public utilities like drainage systems along the road and dilapidated commercial and residential buildings due to lack of maintenance (Horicon Engineering, 2021). These challenges hinder the performance of the market centres as economic nodal points of rural areas.

### **3.12 Conceptual Framework**

The dependent variable in this study is the performance of market centres in realising their economic potential. There are various independent variables that affect the market's performance if varied. Consequently, there are intervening variables, like laws, policies and governance, that are held constant by the researcher for the study. The dependent variable in the study is affected in various ways by the independent variable. This is illustrated in figure 4.

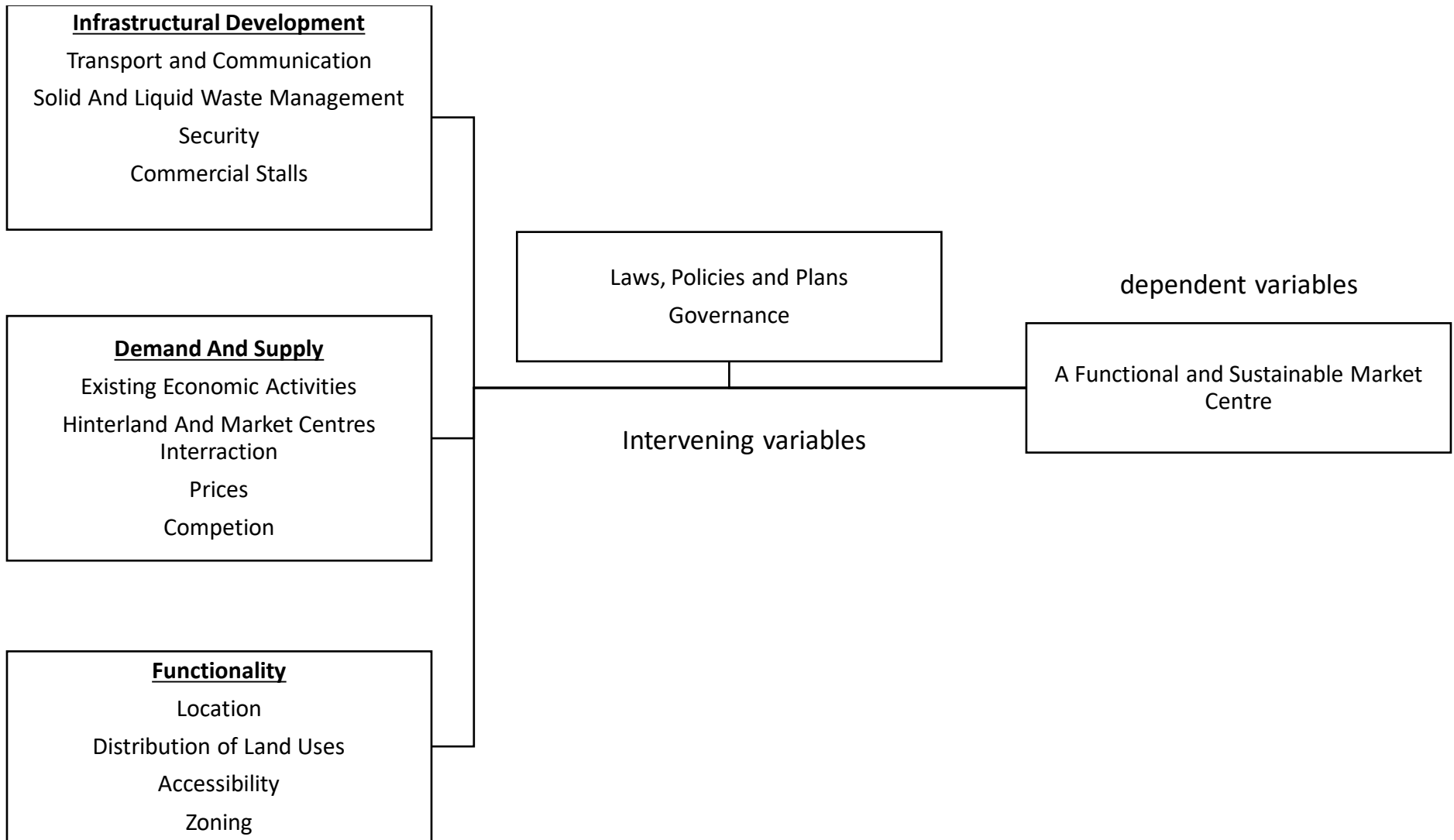
The performance of a market centre is influenced by the existing infrastructural development in the market which include transport and communication. Infrastructural development in roads promotes accessibility and connectivity of the market centre and the neighbouring rural hinterland. well-maintained roads, highways, and public transportation facilitates the efficient movement of goods and services in and out of the market center. This improves supply chain efficiency, reduces transaction costs, and enables businesses to operate more competitively. Other infrastructural developments that promote proper solid and liquid waste management, security, aesthetics and reduces vehicular conflict as well as reduced human-vehicular conflict boost the economic performance of market centres.

The demand and supply within market centres is greatly influenced by existing economic activities within a market centre. The interaction between various economic activities within a market centre can shape its dynamics, growth, and overall economic performance. These activities create a

demand and supply interplay creating a demand for goods from the hinterland as well as labour within the market. This demand, in turn, influences the supply of products and services offered by businesses operating in the market. The interplay between demand and supply impacts market prices, competition, and overall market performance.

Functionality of market centres is influenced by several geo-spatial indicators including location and spatial distribution of land uses. The latter influences the mix of economic activities within the market centre. Proper zoning can help ensure a balanced distribution of commercial, residential, and industrial areas, contributing to the market centre's overall functionality. The location of the market plays a crucial role in determining its accessibility to consumers, suppliers, and transportation networks. Market centres situated at strategic locations with good access to major roads, highways, and public transportation are more likely to attract a larger customer base and businesses, enhancing their functionality. Furthermore, market centres with a rich rural hinterland are able to access agricultural produce more reliably and at lower costs.

**Figure 4: Conceptual Framework**



*Source: Author, 2023*

### **3.13 Conclusion**

Market centres function as key economic nodes for the rural hinterland they serve linking the rural areas to urban centres. There are several principle and theories that guide economic development in rural economic nodes like market centres. These include geographical concepts and principles in territorial development like central place function and territorial development, economic growth pole concept and circular cumulative causation processes. These geographical concepts illustrate that economic growth is driven by the core, where most economic activities are concentrated. Consequently, there are concepts of local economic development that influence growth in these economic nodes including market centres-rural hinterland relations and rural trade and production centres. Urban economic base and non-economic base sectors also play a key role in driving economic growth through generation of income from external sources as well as serving the population through health services, education and local retail centres. Finally, economic growth is also influenced by local policies and laws that guide governance including sustainable development goals, agenda 2063, vision 2030, the constitution, 2010. County government act, 2012 and urban areas and cities act (amendment) 2019.

## CHAPTER 4

### THE STUDY AREA

#### 4.0 Introduction

The chapter covers the contextual analysis of the site with the aim of explaining the key contextualizing features like the roads and boundaries of Kenyan, regional, sub-county, and local context. The chapter also discusses the demographics of the study area with the goal of better knowing its residents' features so that planning and problem-solving may be done with a greater emphasis on their needs.

#### 4.1 Nairobi Industrial Area

Nairobi Industrial Area is a prominent industrial zone situated to the southeast of Nairobi's central business district. It is strategically positioned for commercial and industrial activity since it occupies a substantial piece of the city's southeast (Gichuke, 2013). Given that it is a significant source of employment and revenue generation for both Nairobi and Kenya as a whole, the industrial zone is essential to the growth of the economy of both places. Its strategic location, industrial concentration, and accessibility makes it an essential node for trade and commerce (Makori, 2013). The industrial zone houses a wide range of manufacturing and processing industries, including textiles, food and beverages, automotive, construction materials, printing, and more. The concentration of industries in the area contributes to the city's economic diversification and resilience. Sustainable planning and continuous support for its industrial activities will be essential to ensure its continued role as a key economic node for Nairobi's prosperity.

##### 4.1.1 National Context

The Donyo Market Center is situated in Machakos County, one of Kenya's forty- seven counties. The county is bordered to the west by Kiambu and Nairobi counties, the north by Murang'a and Embu counties, the east by Kitui County, and the south by Kajiado and Makueni counties. The neighbouring counties like Nairobi and Murang'a are a source of agricultural and processed goods for the market. Figure 5 shows the location of Machakos County within the Kenyan context.



**Figure 5: The Study Area in Kenyan Context**



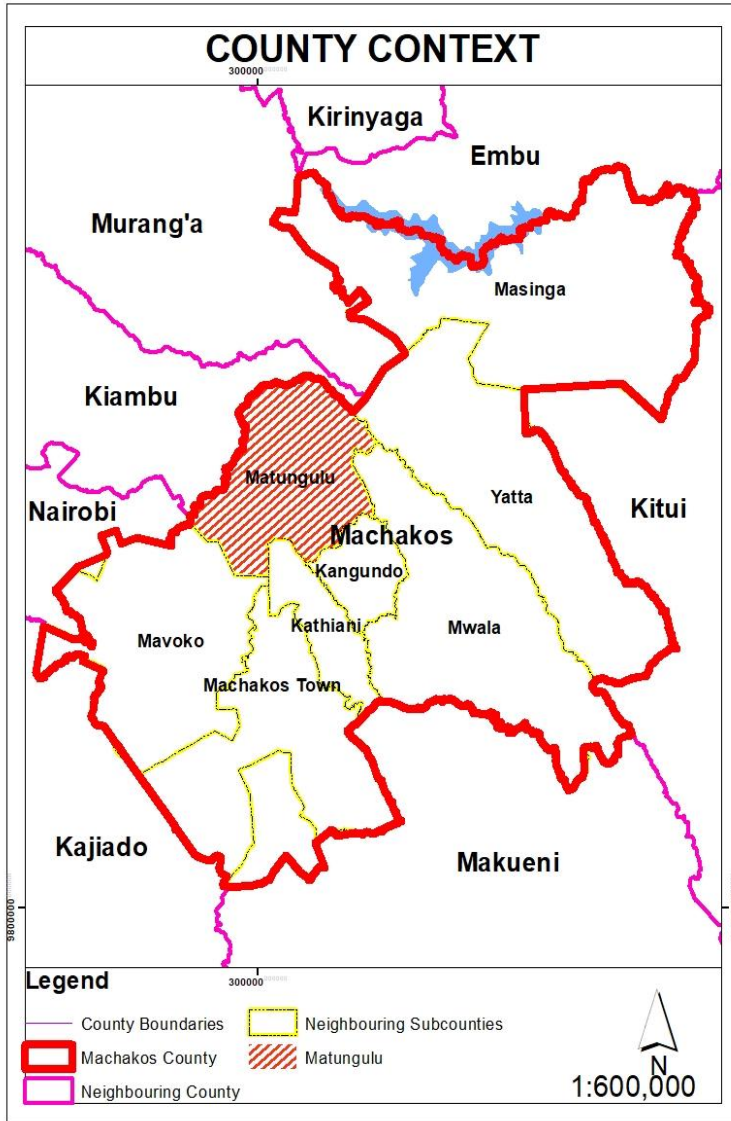
*Source: Author, 2023*

#### **4.1.2 County Context**

The study area is in Machakos County, which is a part of the Nairobi Metropolitan Region and is east of Nairobi City County. There are eight sub-counties that make up the county, including Mavoko, Machakos, Kathiani, Kangundo, Matungulu Mwala, Yatta, and Masinga. Donyo Market Centre is located in Matungulu Subcounty, and the market's growth is mainly influenced by its

proximity to Nairobi County, where processed goods for the market are sourced from and where wholesale products from the markets are transported for retail purposes. Figure 6 shows the location of Matungulu Sub-county within Machakos County.

**Figure 6: The study Area in County Context**



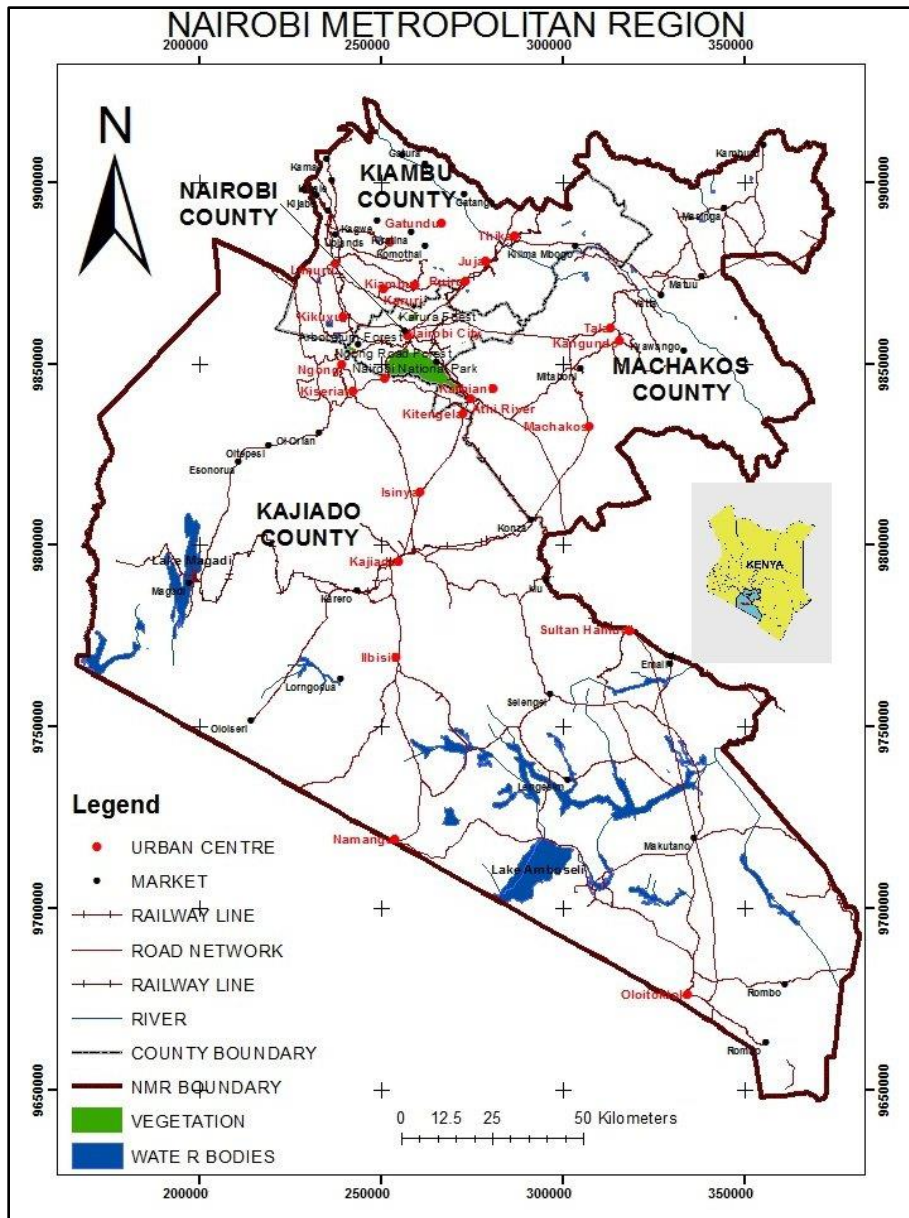
*Source: Author, 2023*

#### **4.1.3 Nairobi Metropolitan Region Context**

Nairobi Metropolitan Region (NMR) is made up of Nairobi, Kiambu, Machakos, and Kajiado, which are four of Kenya's forty-seven (47) counties as shown in figure 7. There are 24 urban centres in the rapidly urbanizing area including Thika, Ruiru, Machakos and Athi River. The

geographic and economic core of the metropolis is Nairobi City, which is a global economic hub of the country. The region, which covers an area of about 32514 km<sup>2</sup> and heavily relies on Nairobi city for social services and employment opportunities. Donyo market centre is within the NMR and is linked to major towns like Thika and Tala via Tala-Donyo Sabuk Road and Garissa Road. NMR offers a ready market for agricultural products from Donyo Market Centre while the centre accesses non-agricultural goods and services from major centres like Nairobi City and Thika.

**Figure 7: Nairobi Metropolitan Region**

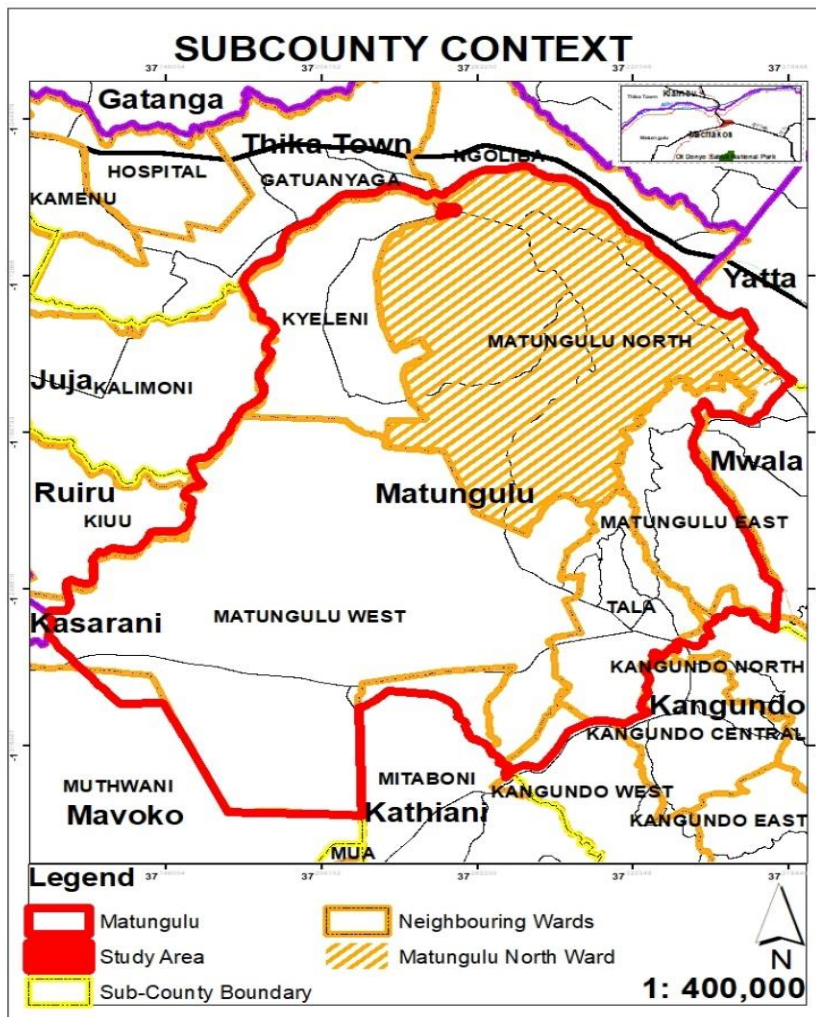


Source: (Katyambo & Ngigi, 2017)

#### 4.1.4 Matungulu Sub-county Context

The study area is located in Matungulu Sub-county. The sub county is bordered by the Thika town sub-county to the north, Juja and Ruiru sub counties to the west, and Mavoko, Machakos, Kathiani, and Kangundo Sub-counties to the south. This promotes demand for goods that promote economic growth in the market. Matungulu Subcounty has a population of 161,557, with the main economic activity being agricultural (KNBS, 2019). The Subcounty is also home to Ol Donyo Sabuk National Park and Fourteen Falls, which are major tourist attractions in the sub-county. Figure 8 shows the location of Matungulu North Ward and Donyo Market, which is the study area, within Matungulu Sub-county.

**Figure 8: The Study Area in Subcounty Context**



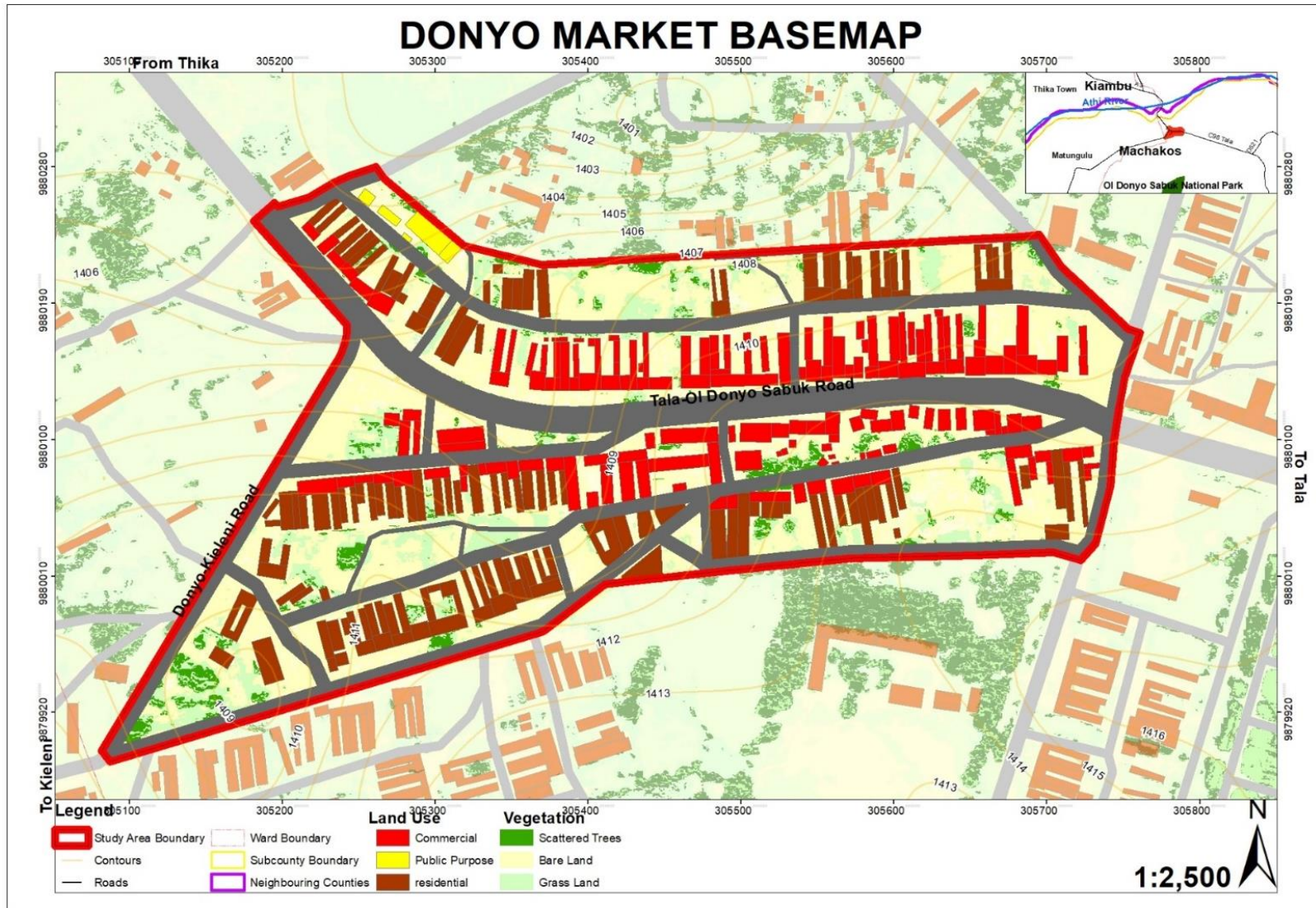
Source: Author, 2023

#### **4.1.5 Local Context**

The study area is located in the Kiboko sub-location, Matungulu North ward, Matungulu sub county, Machakos County. It is situated 1411m above sea level on GPS coordinates: latitude 305434.00 m E and longitude 9880033.00 m S. The area covered is approximately 0.14 km<sup>2</sup> and is about 22 km from Thika. Consequently, the market is located near Ol-Donyo Sabuk national park along Ol-Donyo Sabuk-Tala Road and Donyo- Kieleni Road. The market is strategically located at the entrance of the national park hence the potential for growth since the park attracts both domestic and foreign tourists. Figure 9 shows Donyo Market Centre Basemap.



Figure 9: Donyo Market Centre Basemap



Source: Author, 2023

## **4.2 Kiboko Sub-location and Other Contagious Rural Hinterlands**

Kiboko Sub-location is the rural hinterland that is served by Donyo Market Centre and is the rural region that is economically, socially, and geographically connected to the centre. However, the market centre also serves other rural hinterlands including Matungulu subcounty where the centre is geographically located. A wide range of economic activities in the market centre are linked to Kiboko Sub-location with the most dominant being agricultural activities.

### **4.2.1 Kiboko Sub-location Rural Hinterland.**

Kiboko Sub-location serves as Donyo Market's rural hinterland and directly relates to the centre in various ways. The sub-location hosts a variety of agricultural activities including growth of cash crops and foodcrops. This is done in small scale due to the arid and semi-arid climate within the ward. However, extensive farming is practiced in areas near water sources like Athi River where irrigation is practiced. This provides Donyo Market Centre with a source of agricultural products like fruits, vegetables and cereals including maize, greengrams, cow peas, beans, cabbages, kales and traditional vegetables. The rural hinterland also has pineapple plantations which are a source of employment for the residents within the market and the hinterland. Kiboko hinterland is accessed from the market centre via Tala-Ol Donyo Sabuk Road, Tala-Kieleni Road and other all-weather access roads. This eases movement of agricultural produce to and from the market centre. The existing population within the sublocation which is 16,135 according to KNBS (2019) offers labour in form of traders and employees within the market and is consumers of products and services sold within the market centre.

### **4.2.2 Other Contagious Rural Hinterlands**

Rural hinterlands that are interconnected with Kiboko Sub-location hinterland include other sub-locations within Matungulu Sub-county and Thika Sub-county. This sub-locations include Kayata, Katheka, Kianzavi, Kingoti, kalandini, ngoliba and Gatuanyaga. Ngoliba and Gatuanyaga are agricultural hubs for fruit plantations like mango and pineapple plantations and their increasingly high population due to their proximity to Thika Town offer labour and market for products from Donyo Market Centre. Kayata, Katheka, Kianzavi, Kingoti and kalandini are agricultural areas where cereals like peas, maize and beans are grown. Vegetables like kales and spinach are grown in irrigated areas along rivers like Athi River. These agricultural products are then transported to rural centres like Kwa Mwaura, Donyo Market and Kiboko.

### **4.3 Environmental Factors**

The land in Ol Donyo Sabuk market is gently sloping from southeast to northwest. This follows the general direction of the slope from Kilima Mbogo Hill, which is located on the southern part of the site, towards Athi River. The highest point is 1412m above sea level, while the lowest point is 1403m above sea level. The highest point is around Ol Donyo Sabuk Police Station, while the lowest point is around Christian Church International. The gently sloping terrain is suitable for construction of both commercial and residential developments in the market. The terrain also supports drainage of run-off water along Tala- Ol Donyo Sabuk road and Donyo- Kieleni Road.

Matungulu Subcounty, where Donyo Market is located, experiences three major climatic zones. These include;

1. Semi-arid zone, which covers about 59 percent of the Matungulu sub county and is the dominant type of agro-climate. This zone is suitable for agricultural farming for products like sisal.
2. Semi-humid zone, which covers about 10 percent of the sub county and is mainly located in high altitude areas like Kilima Mbogo Hill and Iveti Hills. This zone supports wildlife hence the presence of Ol Donyo Sabuk National Park.
4. Semi-humid to semi-arid zone, which covers about 31 percent of Matungulu Subcounty, is the transition zone between semi-humid and semi-arid zone. The study area, Ol Donyo Subuk Market, lies within this climatic zone. This zone supports small-scale farming and plantation farming of pineapples.

Kiboko Sub-location experiences low rainfall, with the highest being in April and November. January, February, July, and September experience low rainfall. Irrigation for pineapple plantations and small-scale farming is preferred.

The site mainly bears with few scattered trees and grassland cover. These trees include the Kassod tree and fever tree, while the couch grass type dominates the site. This is attributed to the clearing of vegetation due to the continued construction of commercial developments on the site. The climatic condition in the area, semi-humid to semi-arid climate, has also contributed to the low vegetation cover in the area.



#### **4.4 Economy of Donyo Market Centre**

The economy of Donyo Market Centre is driven by both basic and non-basic economic activities. These activities are the key sectors driving economic growth within the centre and the rural hinterland.

##### **4.4.1 Basic-Economic Activities**

Basic economic activities refer to the core or primary activities that are directly related to the production and exportation of goods and services. These activities are typically essential for the survival and sustenance of a community or economy. Donyo market centre hosts a number of basic economic activities including agricultural activities mainly in small scale. The centre and its hinterland produces cereals, fruits and vegetables that benefits the local community and neighbouring urban centres like Thika. Plantations of mangoes and pineapples are a source of employment for the local population increasing the centre's wealth.

The United Nations (2007) conducted a study on the role of industries in sustainable development and concluded that industries play a crucial role in economic growth for both the urban and rural areas. Currently, Donyo Market Centre has no major industry that can greatly impact the centre's economy and boost economic growth. Lack of industrial investments has caused the centers to underperform in terms of trade volume and intensity and physical infrastructure provision.

##### **4.4.2 Non-basic Urban Economic Activities**

Non-basic economic activities are secondary or support activities that do not involve direct production or exportation of goods and services. Instead, these activities provide services and support to the basic economic sectors, as well as the overall functioning of society. Donyo Market Centre has several non-basic economic activities including education and healthcare services like Kilimambogo Secondary School, Donyo Primary, Ol Donyo Sabuk Dispensary. Non-basic Economic activities in Donyo Market Centre also include retail shops within the market, local services such as restaurants and entertainment and hospitality such as hotels.

#### **4.5 Rural Hinterlands Economy**

Kiboko Sub-location hosts a number of economic activities that in turn support rural economic nodes like Donyo Market Centre. These activities include agricultural production, agro-industries, commerce and trade.

#### **4.5.1 Agriculture Production**

Agricultural production in Kiboko Sub-location is majorly in small scale where farmers mostly practice subsistence farming while 40 percent of the agricultural land being used for pineapple plantation by Del monte Plc. Most of the agricultural produce is transported to Donyo Market Centre where the traders sell to the local population or the produce is transported to urban centres like Thika where the demand is higher.

#### **4.5.2 Commerce and Trade**

Kiboko Sub-location hosts only small scale agro-processing industries that deal with milling of cereals especially maize, drying and packaging. The sub-location also has several mining sites for ballast and sand near Athi River which has become a source of employment for the local population. Tourism is also a thriving economic activity since Kiboko is the home to Ol Donyo Sabuk National Park. This natural resource attracts both domestic and foreign tourist who boost trade in the rural hinterland. Donyo Market Centre is situated at the entrance of the national park promoting trade and commerce within the centre and in the rural hinterland.

#### **4.6 Hinterland's Economic Opportunities and Challenges**

The rural hinterland of Donyo Market Centre experiences a mix of opportunities and challenges. These in turn affect the interlinkage between the hinterland and the market center. Economic prosperity of Donyo Market Centre is therefore impacted by the hinterland's challenges and opportunities.

##### **4.6.1 Economic opportunities**

Several economic opportunities in the rural hinterland of Kiboko Sub-location have promoted economic development of the hinterland and nodal development of Donyo Market Centre. The rural hinterland is rich with fertile land which has not been greatly affected by urban sprawl. This has encouraged farmers to apply intensive farming and also extensive farming with the evidence of plantation farming of mangoes and pineapples. This has created employment for the residents within the rural hinterland. Proximity of the rural hinterland to major urban centres like Thika, Tala and Nairobi and market centres like Donyo Market Centre and Kiboko has led to positive interactions with the urban centres and city providing market for produce from the rural hinterland and in turn the rural hinterland benefits on non-agricultural products from these major urban centres via the rural economic nodes like Donyo Market Centre.

#### **4.6.2 Economic Challenges**

The main challenge faced by the rural hinterland is the lack of adequate infrastructure that sustains economic activities within the rural hinterland. Insufficient infrastructure, including roads, transportation networks, and reliable electricity and water supply within kiboko sub location and Matungulu sub-county has hindered economic activities and investment in these areas. Production of agricultural products has declined due to these challenges. Limited connectivity to urban markets has also restricted the ability of rural producers to access larger Donyo Market Centre, resulting in lower prices for their products. Finally, extreme weather events, changing precipitation patterns, and shifting growing seasons due to climate change and the existing semi-humid and semi-arid agro-climatic zone has resulted to low agricultural yields affecting demand and supply in Donyo Market Centre.

#### **4.7 Regulatory Framework**

Donyo Market Centre acts as a market hub that offers auxiliary urban services to the populace in the countryside. Under the devolved system of government, the County Government is in charge of planning and administration services. This includes developing and implementing development plans, issuing business licenses, collecting market taxes, and providing public services like water supply, garbage collection, public health, and maintenance of feeder or access roads.

#### **4.8 Conclusion**

The geographical location of a rural centre plays a crucial role in determining its economic, social, and cultural significance. Economic nodes like Nairobi Industrial area have thrived due to their geographical location hence attracting investment in industries resulting to economic growth. Donyo Market Centre is situated along Tala -Ol Donyo Sabuk Road which is strategically located between Thika Town and Tala town where the demand for products in the market centre is high. The Rural hinterland also has a significant impact on the economic development of Donyo Market Centre with Kiboko Sub-location and other contiguous rural hinterlands like Katheka, Kalandini , Ngoliba and Gatuanyaga offering agricultural products for trade within the market centre. This provides opportunity for growth within the rural economic node.

## **CHAPTER 5**

### **RESULTS OF DATA ANALYSIS**

#### **5.0 Introduction**

The chapter includes the research findings that have been aligned with the study objectives. It discusses the market center's present performance level, how it operates, and the reasons that affect these two components of the study. This is because it includes both geospatial information about the research area and the socioeconomic characteristics of the population. The state of the center's facilities and the services they offer are of particular relevance. The chapter also discusses the current land use pattern in the Donyo market center and its effectiveness in the utilization of space and economic improvement of the market.

#### **5.1 Existing Economic Activities in Donyo Market Centre.**

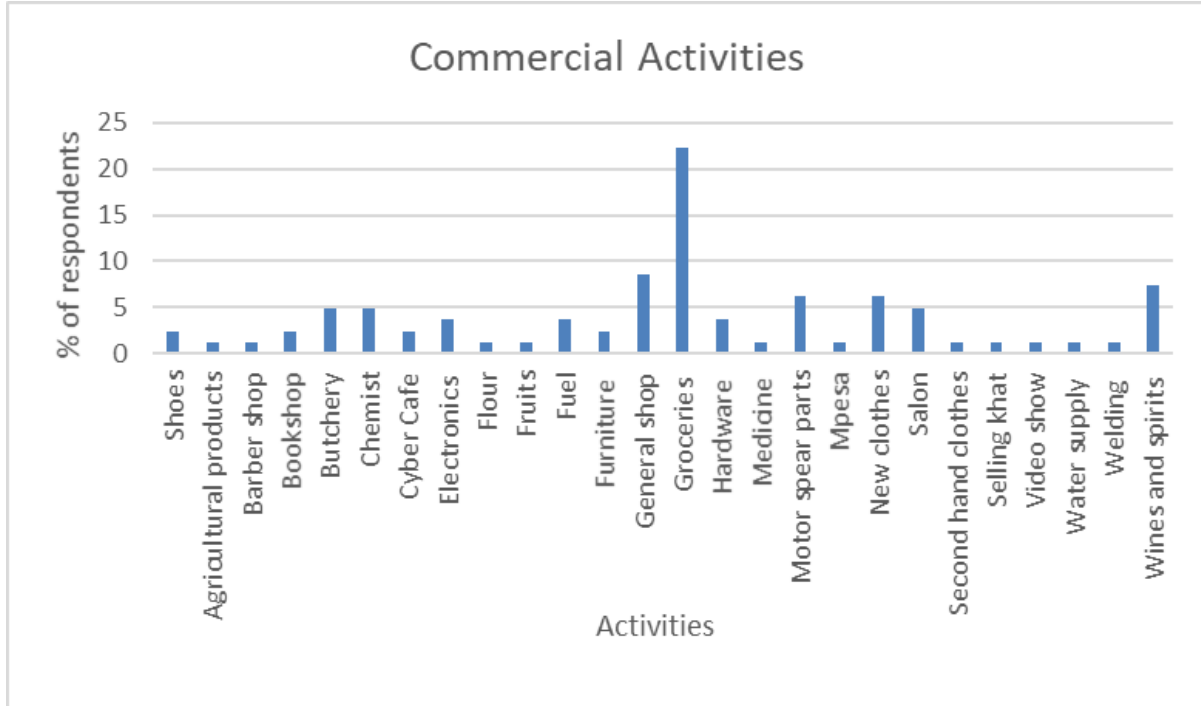
The existing economic activities of the centers was evaluated considering a variety of factors. The nature and type of business activities with a focus on base and non-base economic activities, the current nature of business premises within the market, the level of employment and incomes and economic linkages between the market centre and rural hinterland are the factors considered in the analysis. Local citizens' evaluations of the center's effectiveness have also been taken into consideration.

##### **5.1.1 Nature and Type of Business Activities**

The study found that all of the center's business activity is on a limited scale. The variety of goods offered in stores and at the public market are mostly low-order consumption products and for the basic economic activities since they generate profits through exportation to other towns like Thika and Tala. They include groceries, meat, fruits and vegetables. The market centre also offers non-basic economic activities including sale of shoes, electronics, furniture, motor spare parts, clothes both new and second hand, and alcoholic drinks. The products are purchased in wholesale from Nairobi, Thika, Machakos and Tala then sold in retail within the market centre. The market also offers services including cyber, m-pesa, hospital, salon and barber services. As illustrated in figure 10, the market being in a rural set up, groceries are the most sold products with about 22 percent of the shops selling groceries. General shops are about 8 percent while motor spare shops, boutiques and wines and spirits are each 6 percent of the total commercial shops in the market. These are frequently offered in small-scale. Similar to how sugar is marketed, instead of

one or two kg bags, it comes in quarter kilo increments. This demonstrates a low degree of consumption, which is not supportive to the expansion of businesses.

**Figure 10: Commercial Activities**



*Source: Author, 2023*

Grocery shops are the main business activities mainly within the open-air market but some are located in formal shops. The groceries are bought in whole sale from the small-scale farms in the rural hinterland which is a source of agricultural products like vegetables e.g. Sukuma wiki, spinach and traditional vegetables, fruits and cereals. Vegetables are mostly grown along Athi River where water for irrigation is sourced. Other agricultural products like tomatoes, fruits like water melons and cereals are sourced from other parts of Machakos County. Non-agricultural products sold within the market e.g clothes, electronics and products sold in general shops like detergents are sourced from neighbouring towns like Thika, Tala and Nairobi City where they are sold in wholesale.

**5.1.2 Business Premise**

The market offers two main establishments for commercial activities, the permanent shops and the open-air market. The main premise where most economic activities occur is the permanent shops,

as shown in plate 1. Both formal and informal businesses characterize them. Formal businesses practice merchandising and service, while informal businesses primarily practice merchandising. Seventy-four percent of the traders are situated in rented shops which are both along Tala-Ol Donyo Sabuk Road and along the access roads within the market.

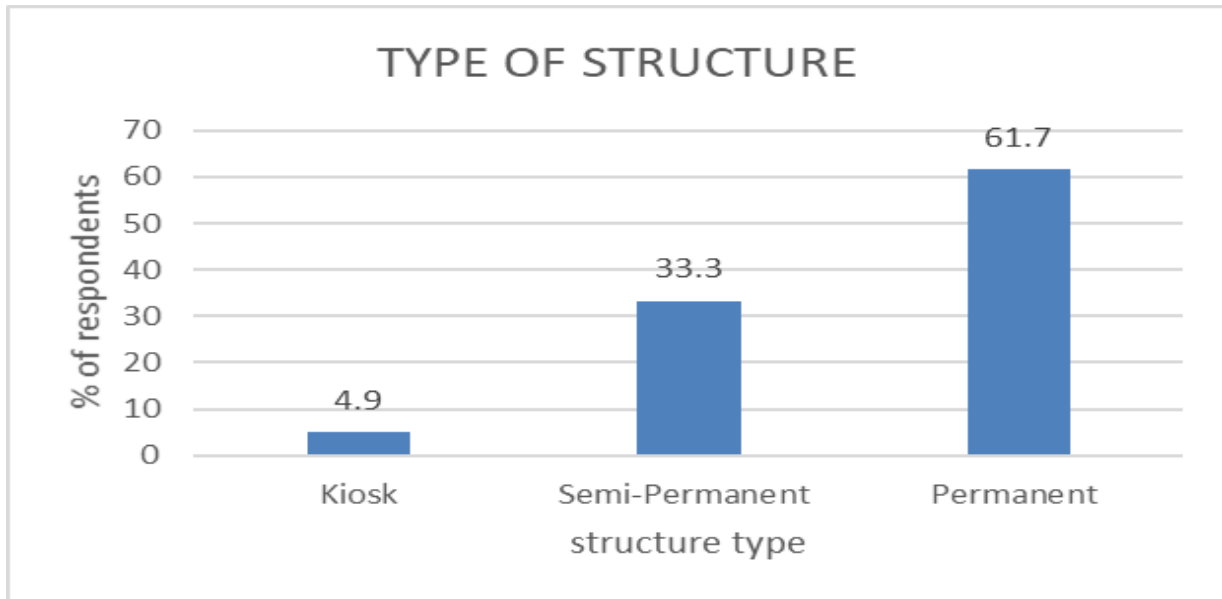
**Plate 1: Shops Along Tala-Ol Donyo Sabuk Road**



*Source: Author, 2023*

The market has 3 different types of stalls as shown in figure 11. The permanent shops, which are mostly along the main road and access roads, cover about 61.7 percent of Donyo Market, and businesses like fast food, general shops, and hardware are located in these stalls. Semi-permanent stalls, which are mostly built of wood and are 33.3 percent of the stalls, are located within the open-air market and along the road reserves. Products like vegetables, fruits, and second-hand clothes are sold in these stalls. Kiosks are mainly made of metal and iron sheets and are also within the open-air market. They are about 4.9 percent of the total structures within Donyo Market. This is illustrated in plate 2.

**Figure 11: Structure of Business Stalls**



*Source: Author, 2023*

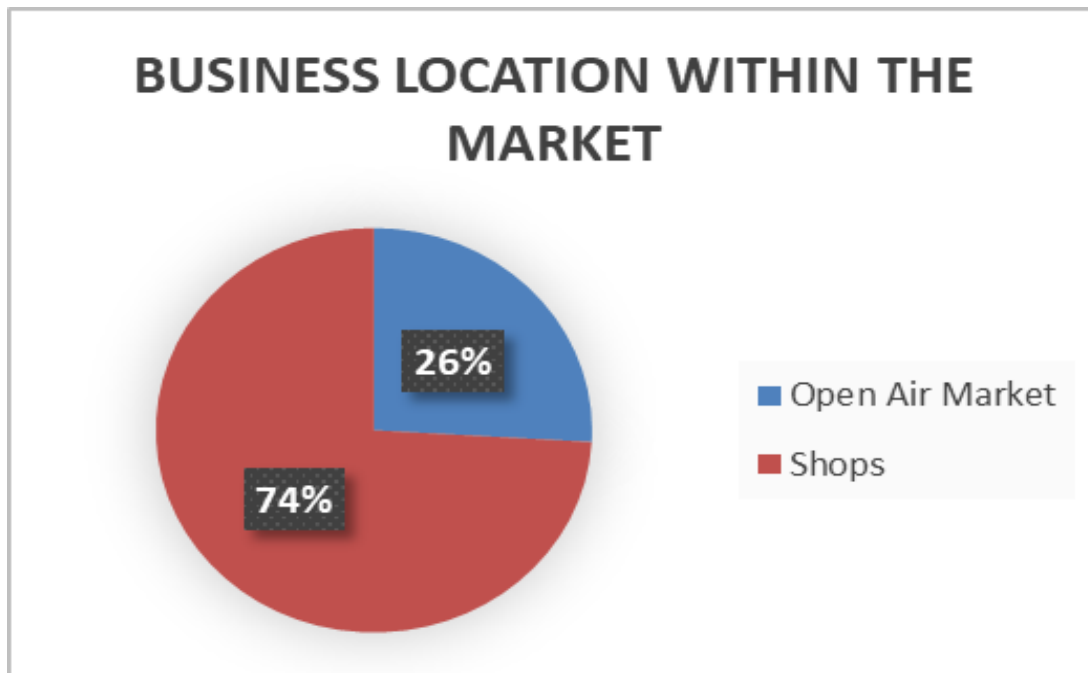
However, these shops are characterized by dilapidated walls and floors due to lack of maintenance and few investments in new shops. According to the chief of Kiboko location, most permanent buildings were established from 1980-2000.

**Plate 2: Stalls in Open Air Market**



*Source: Author, 2023*

**Figure 12: Business Location Within the Market**

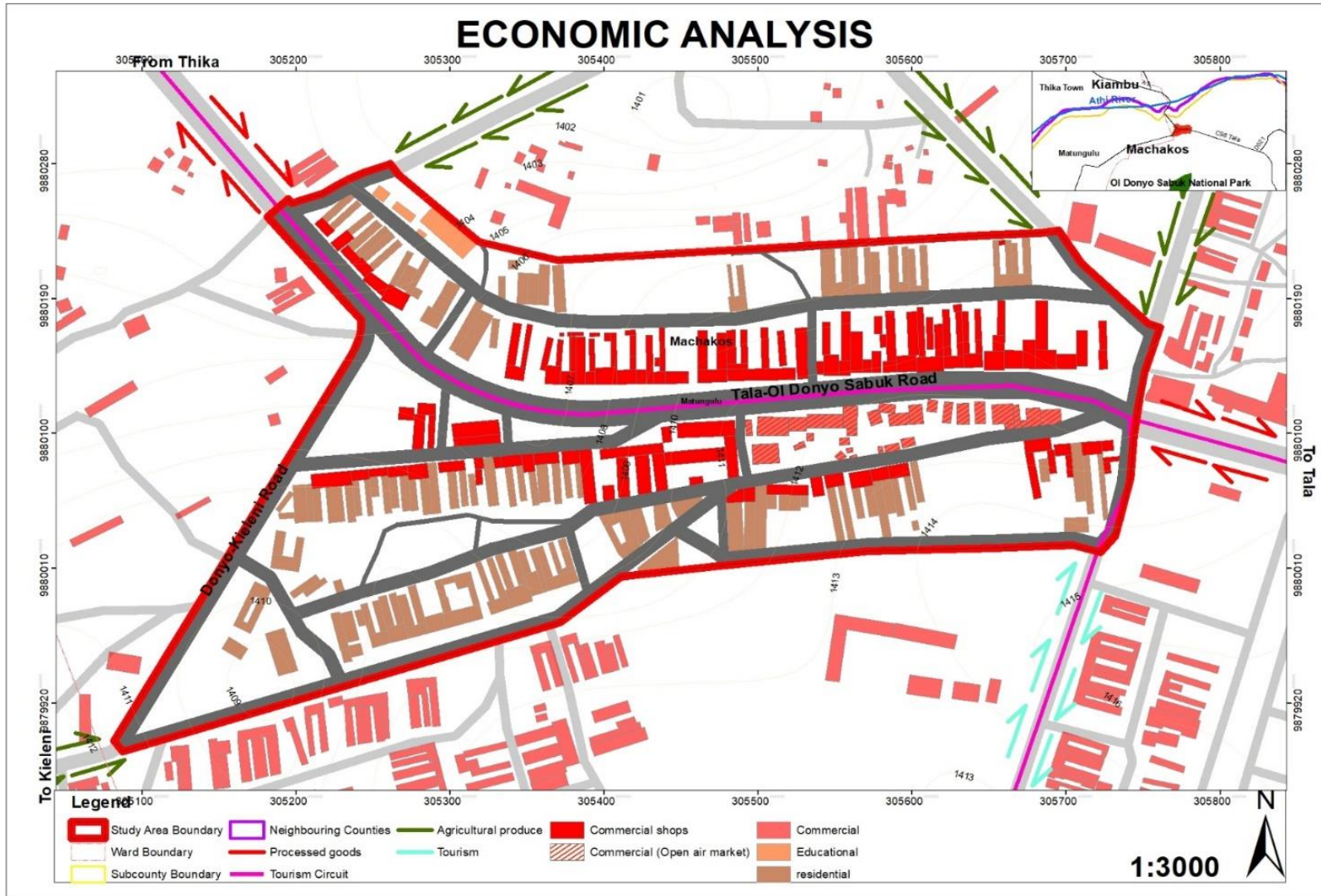


*Source: Author, 2023*

Most of the businesses within the market are located in permanent shops along the main road and access roads. They represent 74 percent of the total businesses in Donyo Market Centre as shown in figure 12. These shops sell house hold items, fast food, general shops and clothes. The permanent shops are located along the access roads to capture consumers who use the roads. The arrangement of the stalls is shown in figure 13.



Figure 13: Economic Analysis Map



Source: Author, 2023

### 5.1.3 Millennium Buildings

An interview with property owners was conducted to learn more about the developed space with permanent structures in the centre. The age of the structures was the first factor examined. It was determined that more than half of the structures date from the 1980s to the 1990s. Less than 1% of them were created between 2000 and 2023. This demonstrates that there hasn't been much physical development in the centres lately as illustrated in plates 3 and 4.

**Plate 3: Abandoned Construction Site**



Source: Author, 2023

**Plate 4: Twari House Built in 1997**

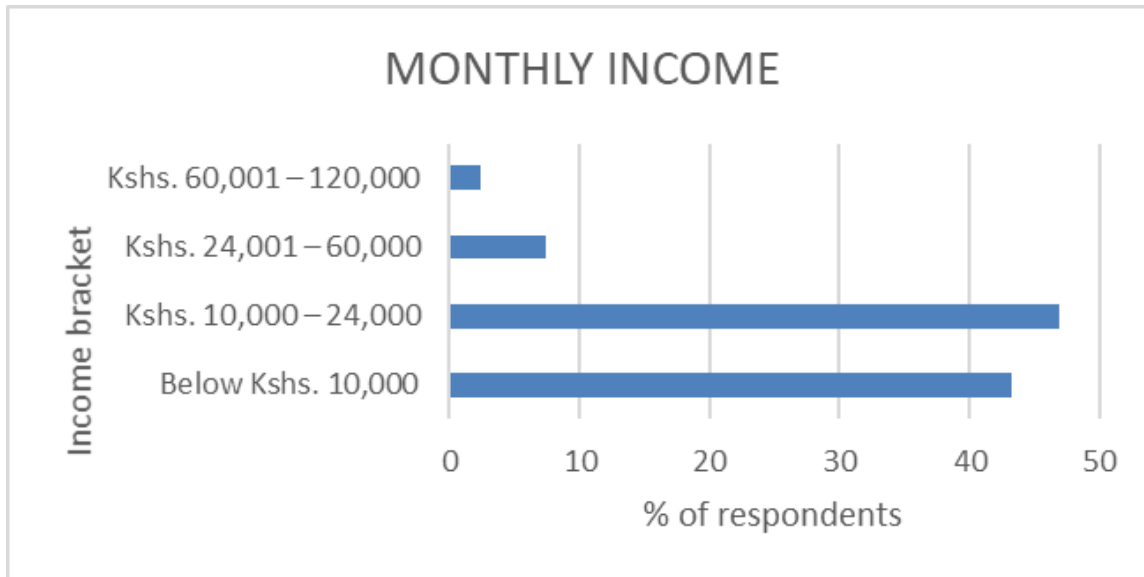


Source: Author, 2023

### 5.1.4 Level of Employment and Incomes

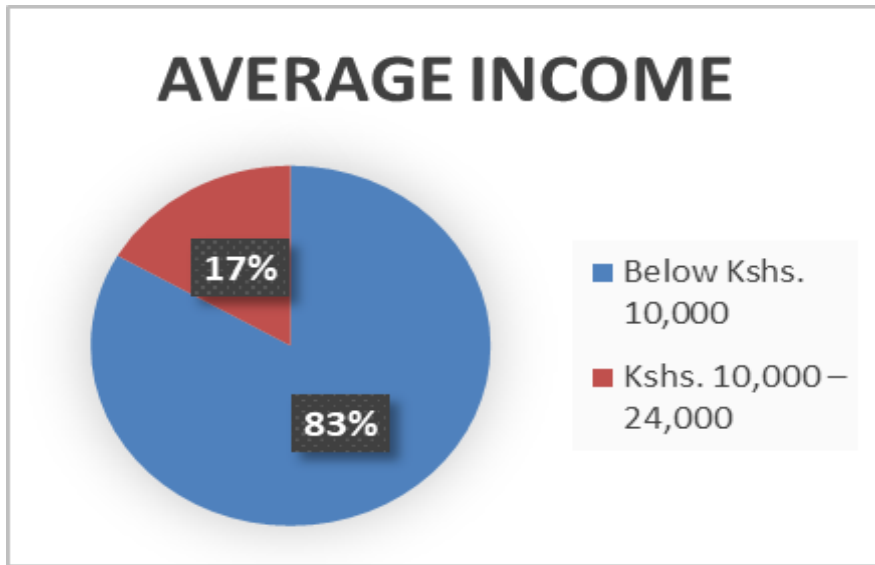
According to the report, about 24% of people work for themselves and own tiny retail firms, where they make noticeably meager salaries. Approximately 47 percent of the businesses generate between kshs. 10,000- 24,000 monthly while 43 percent of the businesses generate below ksh 10,000 a month. This is considerably low returns that do not support further growth and expansion of businesses in Donyo market. Only 7 percent of the businesses generate ksh 24,000-60,000 a month while 3 percent of the businesses manage to generate ksh 60,001-120,000 monthly as shown in figure 14. This indicates that the vast majority of business owners generate low earnings. Additionally, according to the information collected from the households, as highlighted in figure 15 below, up to 83% of the households have monthly incomes of less than Ksh. 10,000. Therefore, it is clear that the population rarely has extra money to invest in larger businesses. The low returns of the 90 percent of the businesses also hinders access to loans that aid in expansion of businesses hence the slow growth of businesses and investments in the market.

**Figure 14: Monthly Income Graph**



*Source: Author, 2023*

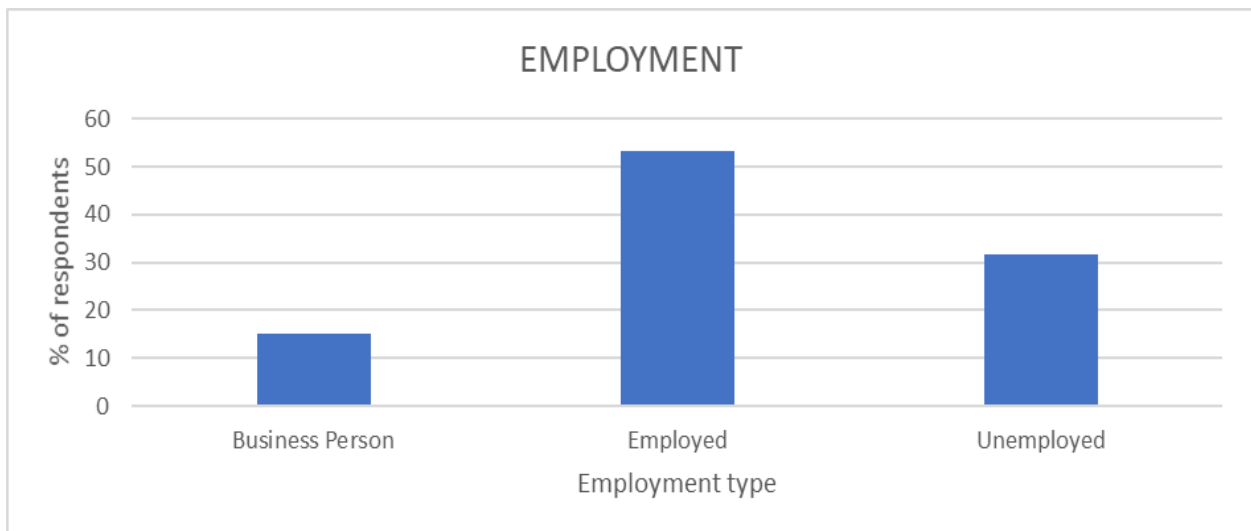
**Figure 15: Average Income in Households**



*Source: Author, 2023*

Additionally, as noted by the locals, the employment opportunities in the centers which are enjoyed by approximately 52 percent of the residents are primarily temporary domestic and business jobs. The unemployment rate of residents within the market is also high as it stands at 31 percent as shown in figure 16. This is yet another example of the centre’s poor performance.

**Figure 16: Employment Rate**



*Source: Author, 2023*



### **5.1.5 Economic Linkages Between the Donyo Market Centre and its Hinterland**

Ol Donyo Sabuk is surrounded by a rural hinterland, as shown in figure 17, where agricultural activities are practiced. This provides the market with a source of agricultural products like fruits, vegetables and cereals. Consequently, Athi River provides farmers with adequate water for irrigation of vegetables and fruits hence the presence of farms along the river as illustrated in plates 5 and 6. Moreover, the market is surrounded by pineapple plantation which is a source of employment for the residents within the market centre and a source of pineapples for sale within the market.

#### **Plate 5: Pineapple Plantation Offering Employment to Residents**



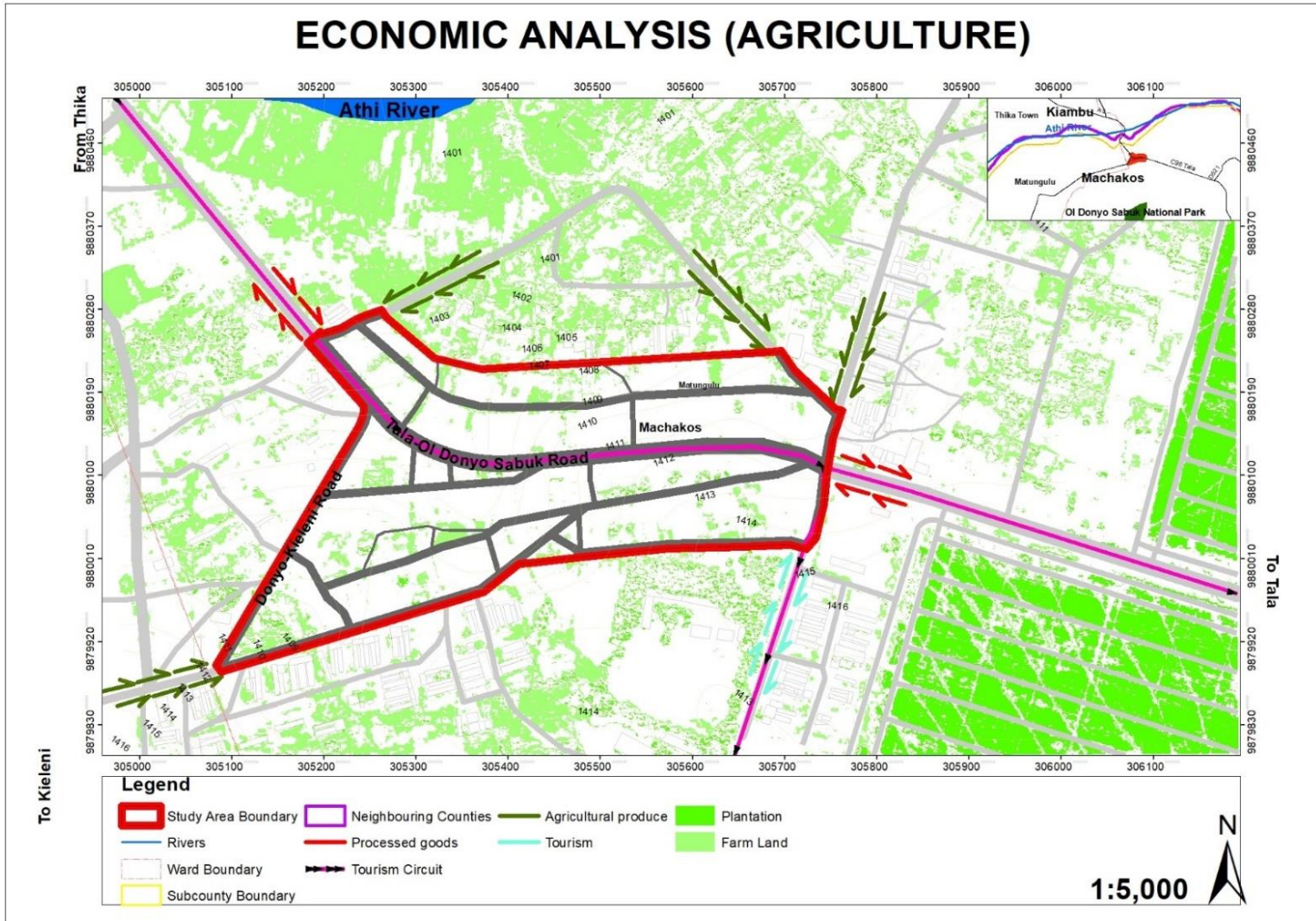
Source: Author, 2023

#### **Plate 6: Irrigation Along Athi River Which is a Source of Vegetables and Fruits**



Source: Author, 2023

Figure 17: Map showing Linkages Between the Donyo Market Centre and its Hinterland

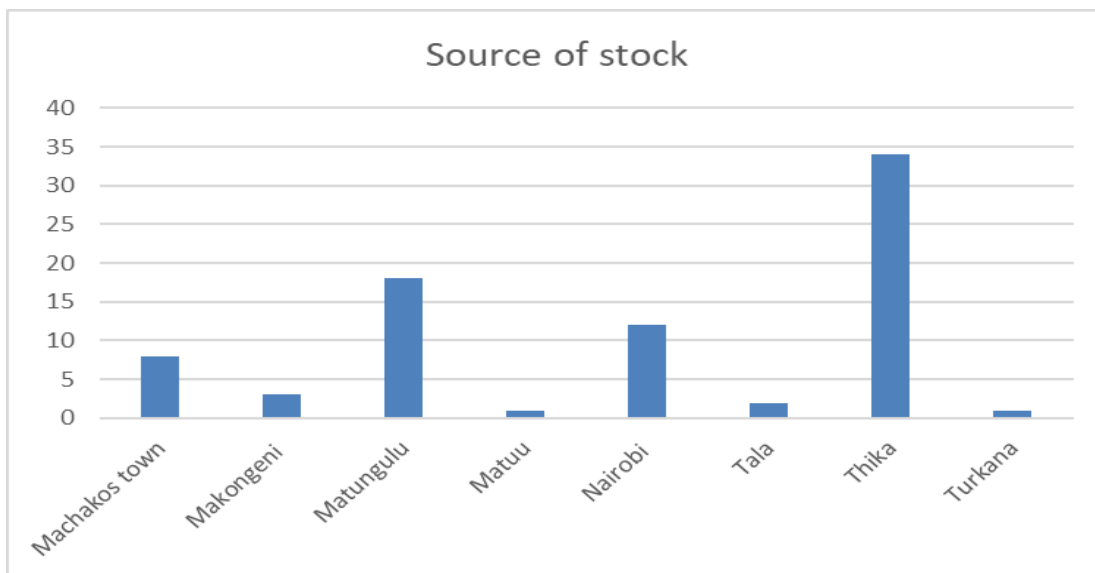


Source: Author, 2023

### 5.1.6 Economic Linkages Between Donyo Market Centre and Neighbouring Urban Centres

Economic linkages in Donyo market centre and the surrounding major urban centres is dependent on several factors. Depending on the type of goods, source of customers and patterns of travel of residents, from which the market has different levels of interlinkages with the market's hinterland and neighbouring towns. Goods sold in the market are sourced from different areas but the bulk of the non-agricultural goods sold are sourced from Thika with 34 percent of the businesses sourcing their stock from Thika. The main reason for this is the proximity of the town to Donyo market centre and availability of goods in wholesale especially in manufacturing factories within Thika Town. Other significant sources of goods include Nairobi with 11 percent of the businesses especially boutiques and second-hand clothes shops sourcing their goods from Eastleigh, Gikomba market and Machakos Town with 8 percent of the businesses especially grocery shops sourcing cereals from the county's capital. The market's interaction with rural hinterland, as shown in figure 18, is also significant with 18 percent of the businesses, especially within the open-air market, sourcing their agricultural produce like fruits, vegetables and cereals from the market's rural hinterland which is in Matungulu Subcounty. figure 18 shows the level of interaction between Donyo Market and other centres.

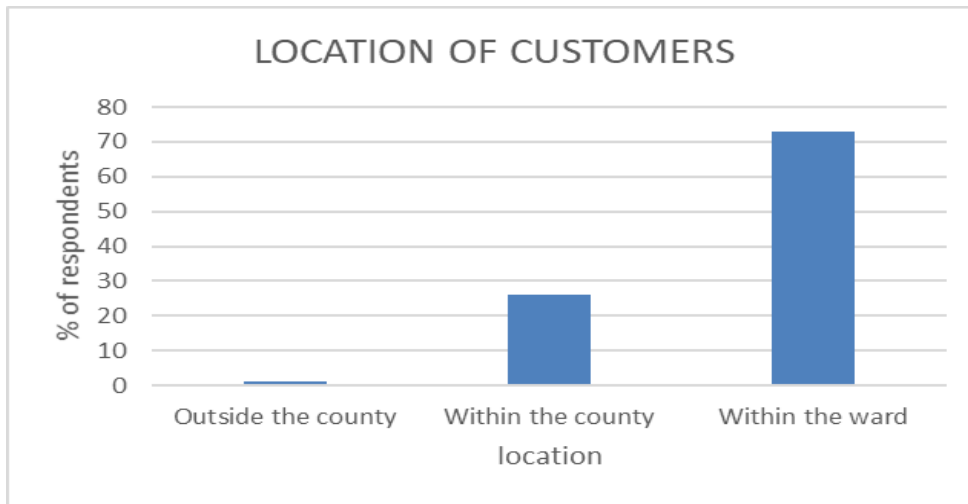
**Figure 18: Source of Stock**



*Source: Author, 2023*

An assessment on the origin of customers indicated that a majority of the consumers, approximately 73 percent, come from within the centre or within the ward while 26 percent of the consumers originate from other wards within the county as depicted in figure 19. This indicates that the market majorly serves the local community and contribute less to regional trade.

**Figure 19: Location of Customers**

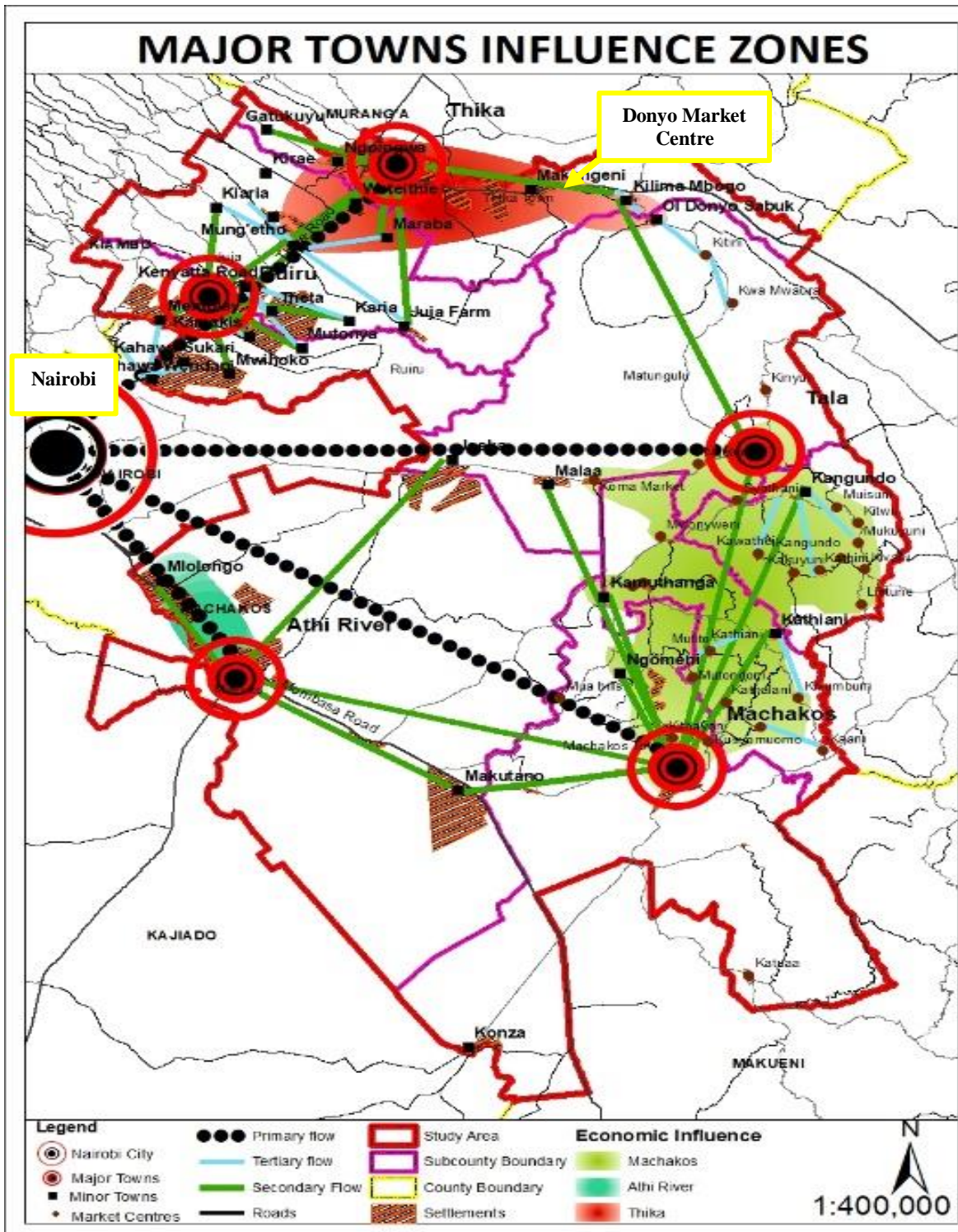


*Source: Author, 2023*

Figure 20 below shows the interlinkages between major towns, minor towns and market centres within part of the Nairobi Metropolitan Region and its relation to Donyo Market Centre. Donyo Market Centre is within Thika economic influence zone but also as linkages to Machakos and Nairobi zones through Tala-Ol Donyo Sabuk road and Garissa Road respectively. The major towns offer a market for products of basic economic activities from Donyo Market Centre and its rural hinterland hence promoting economic development within the study area. The major economic nodes are also a source of non-agricultural products like electronics, clothes and household items which are manufactured in major towns like Thika and Nairobi City.



Figure 20: Major Towns Influence Zones



Source: Author, 2023

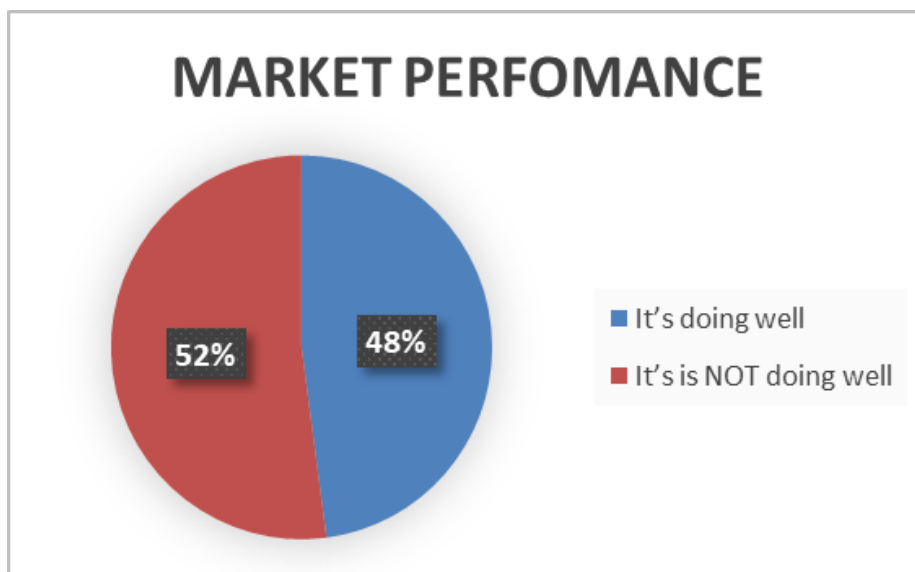
## 5.2 Factors Influencing Economic Productivity of Donyo Market Centre

In evaluating the factors contributing to the center's performance, a number of factors have been considered. These characteristics include a high crime rate, a lack of employment prospects, a low business potential that leads to low profitability, and pricey goods that are difficult to get. It has also been considered how the neighborhood inhabitants rate the performance of the centers.

### 5.2.1 Assessment of Centre Performance by Local Residents

The majority of respondents agreed that the market is struggling. This is according to the vendors, shoppers, and inhabitants of Donyo market center as shown in figure 21 below;

**Figure 21: Market Performance**

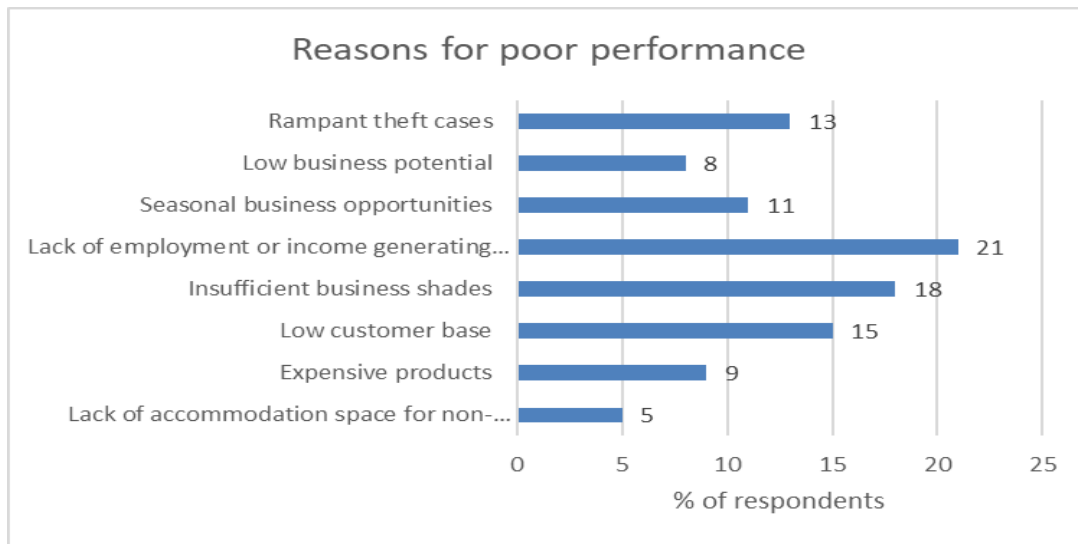


*Source: Author, 2023*

### 5.2.2 Factors that Influence Performance of Donyo Market Centre

Justifications given for the poor performance by the residents were high crime rate, low business potential that results to low profits, lack of employment opportunities, expensive products which was attributed by poor accessibility and low competition, insufficient permanent stalls and space at the open-air market and lack of a large customer base since most of the customers were from within the locality. Figures 22 and 23 are examples of reasons given for the poor performance.

**Figure 22: Reasons for Poor Performance**



*Source: Author, 2023*

**Figure 23: Unmaintained Open-Air Market**



*Source: Author, 2023*



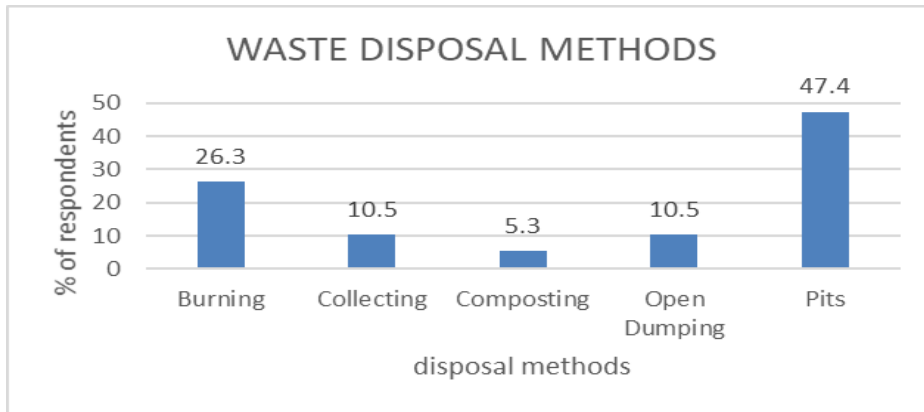
### 5.2.3 Challenges to Better Performance of Donyo Market Centre

Response from the residents indicated that there are several challenges that affect the performance of the market. They include the following;

#### a) Poor Waste Disposal methods

Majority of households in this area dispose their waste through pits. This was found to be 47.4 percent of the households as shown in figure 24. However, at the market centre, poor coordination with the county government has resulted to an overflow of garbage at the collection sites resulting to pollution as shown in plate 7.

**Figure 24: Waste disposal methods**



*Source: Author, 2023*

**Plate 7: Waste disposal pit**



*Source: Author, 2023*

## **b) Poor Roads**

Roads in the site are poorly maintained and are all weather roads as shown in plate 8 and 9. This has negatively affected transportation hence resulting to high transport cost. The roads also don't have storm water drainage resulting to potholes and damage during rainy season. Furthermore, access roads in the market area have been encroached by informal businesses hence hindering easy access to the site.

**Plate 8: All Weather Tala-Ol Donyo Sabuk Road**



*Source: Author, 2023*

**Plate 9: Encroachment Along the Roads**

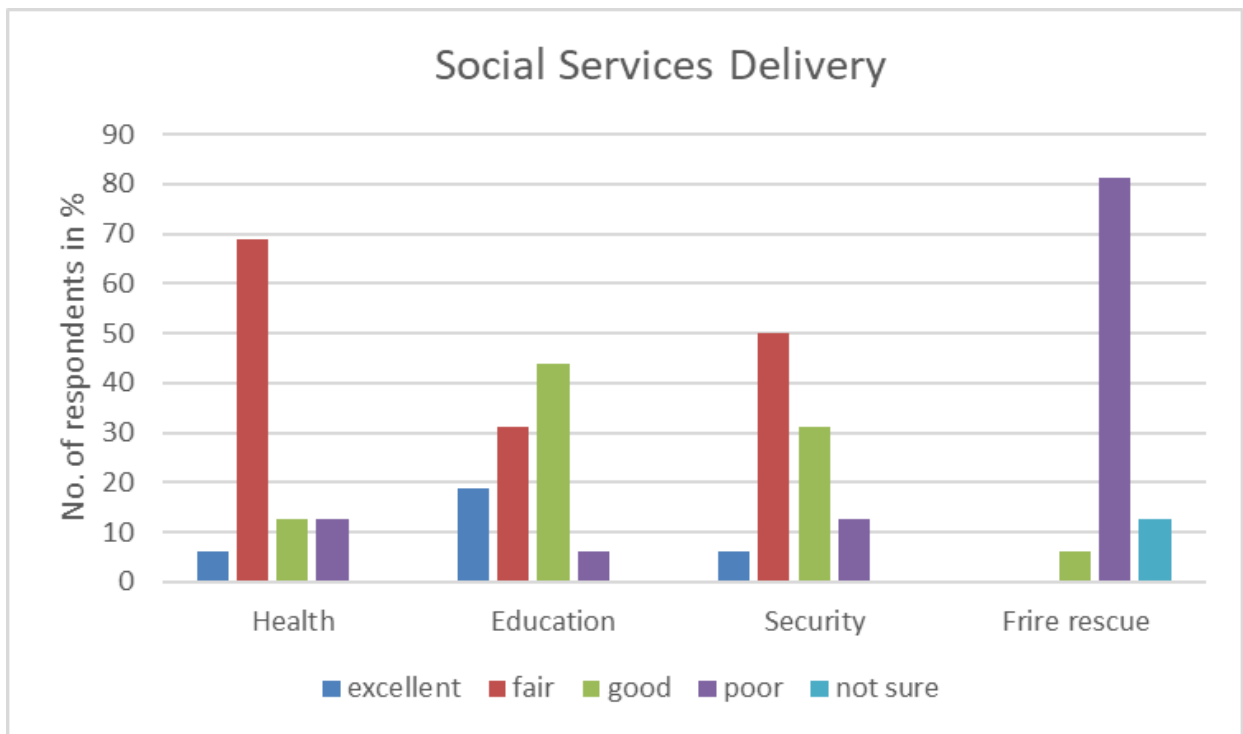


*Source: Author, 2023*

**c) Social Services**

As illustrated in figure 25, plate 10 to 11, 48 percent of the respondents agreed that the market was doing well citing improvements in availability of affordable goods and services, improved security due to existence of Donyo police post, improved health care, improved education and improved transportation with existence of motorbike services. Health, education and security are fairly accessible with approximately 70, 30 and 50 percent of the respondents acknowledging the ease of accessing these services respectively. However, fire rescue services are unavailable in the area. Figure 11 shows the distribution of different utilities within the market.

**Figure 25: Social Services Delivery**



Source: Author, 2023



**Plate 10: Kilima Mbogo Highschool**



Source: Author, 2023

**Plate 11: Ol Donyo Sabuk Police station**

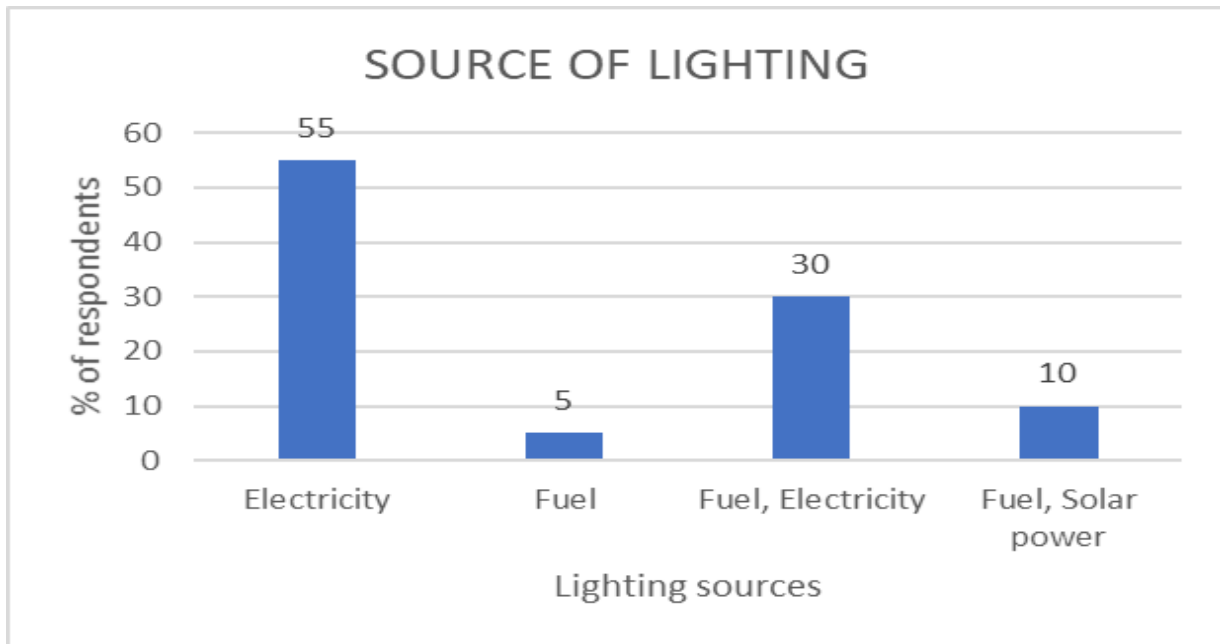


Source: Author, 2023

#### d) Electricity supply

Electricity is the main source of lighting in Donyo Market Centre with 55 percent of the stalls and households being connected to electricity as shown in figure 26. According to the area chief, rural electrification was the main boost for electrification in Donyo market. However, there are other alternative sources of lighting including fuel and solar. It was also noted that 30 percent of the residents have both electricity and fuel as sources of lighting while 10 percent of the residents are connected to fuel and solar. Availability of electricity in the area has boosted security in the area and promoted extension of business operations to late night with the introduction of light mast in the market centre. Even though rural electrification has connected most residences and stalls with electricity, 15 percent of the residents, who are majorly low-income earners of less than 10,000 ksh per month, still use fuel and solar as their only source of lighting.

**Figure 26: Source of Lighting**



*Source: Author, 2023*

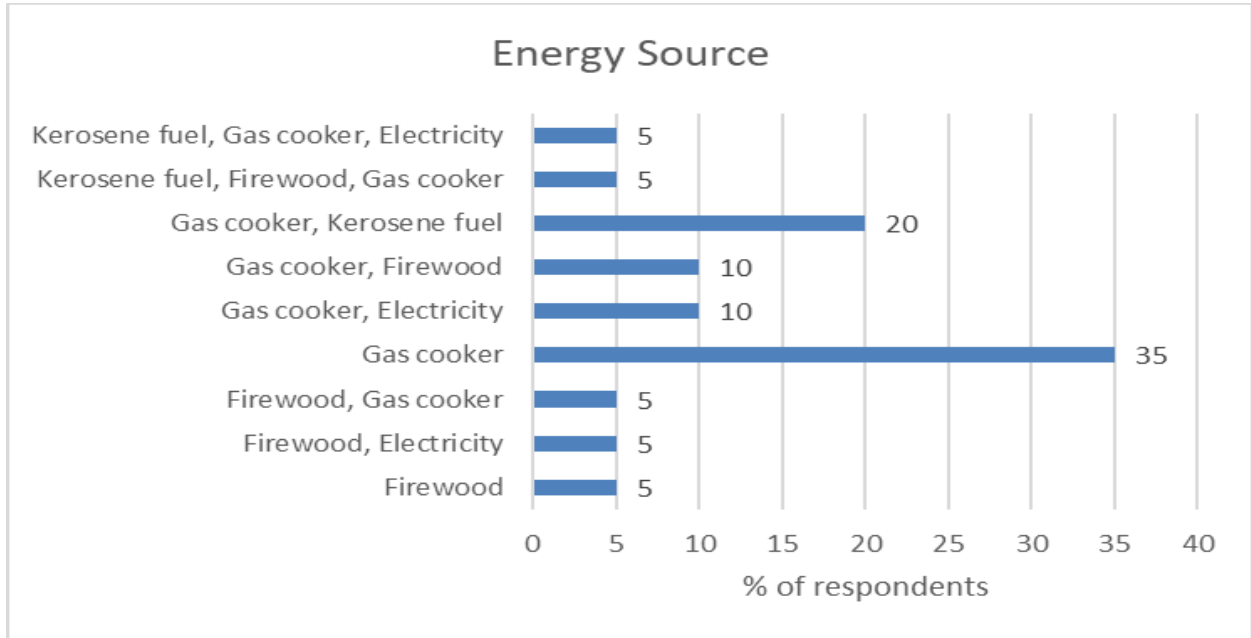
#### e) Source of Energy

Most households within the market centre use gas energy as the main source of cooking due to easy access of the product. This is mainly attributed to the market's proximity to Thika town where most of the distribution companies are located. However, 60 percent of the households have more than one source of energy with gas cooker and kerosene being the most preferred sources with 20



percent of the households having both. However, 5 percent of the low-income households still use firewood as their primary source of energy. This is illustrated in figure 27.

**Figure 27: Energy Sources**

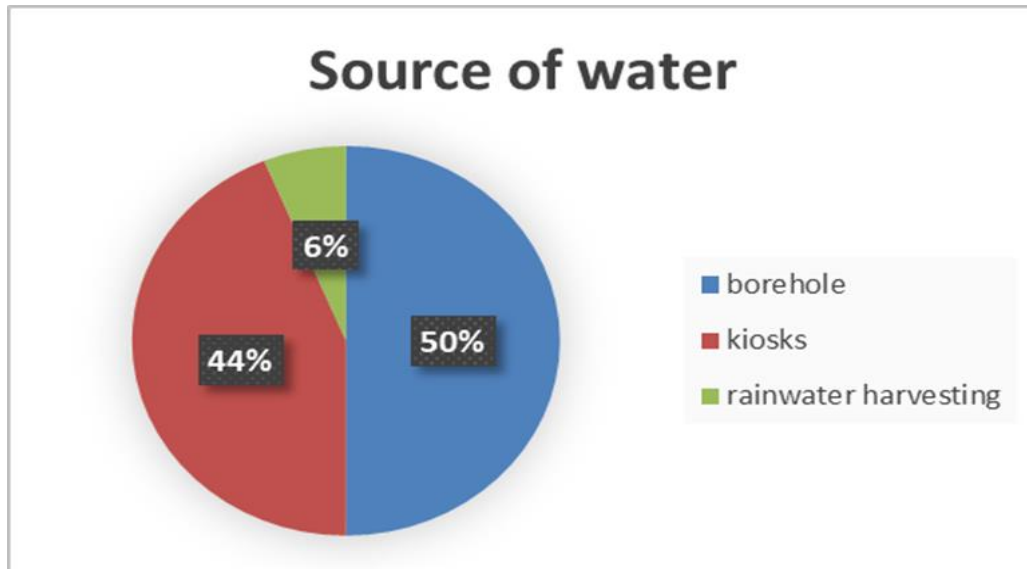


*Source: Author, 2023*

**e) Source of Water**

Water distribution in the area is poor with 50 percent of the businesses and households accessing water from the public borehole near Mt. Carmel Primary school. Public water kiosks are also a major source of water with 44 percent of the households and businesses accessing water from kiosks at relatively high prices due to lack of piped water. The problem is exacerbated by the heavy pollution of Athi River which was the main source of fresh water in the area. This is illustrated in figure 28 to plate 12 to 14.

**Figure 28 Source of Water**



*Source: Author, 2023*

**Plate 12: Polluted Athi River**



*Source: Author, 2023*

**Plate 13: Public Borehole Water Point**



*Source: Author, 2023*

**Plate 14: Water Distribution Via Cart**



*Source: Author, 2023*

#### 5.2.4 Condition of Trunk and Access roads

The study area is connected to Thika and Tala towns through Tala-Ol Donyo Sabuk Road which is the main primary road in Donyo Market. Donyo-Kieleni Road, which is a secondary road connects Ol Donyo Sabuk market to the rural hinterland areas like Kieleni.

##### a) Road Hierarchy

The study area typically is characterised by poorly endowed access, as shown in plate 15 and 16, which is known to promote trade. All roads including the main primary road is unpaved and lacks drainage, lighting or road marks hindering access to Donyo market centre. The table 2 below shows the different access roads and their conditions.

**Table 2: Hierarchy of Roads**

<b>Road Hierarchy</b>	<b>Surface Type</b>	<b>Condition</b>	<b>Reserve width</b>
Primary Road (Tala-Ol Donyo Sabuk Road)	Unpaved	Poor	18m
Secondary Road (Donyo-Kieleni Road)	Unpaved	Poor	12m
Tertiary Roads	Unpaved	Poor	9m
Access Roads	Unpaved	Poor	6m
Footpaths	Unpaved	Poor	3m

*Source: Author, 2023*



**Plate 15: Poorly Maintained Tala-Ol Donyo Sabuk Road**



*Source: Author, 2023*

**Plate 16: Unmaintained Access Road**



*Source: author, 2023*

**b) Road Condition**

All roads in the site are unpaved and generally all-weather road. This makes the roads impassable during the rainy season. Most roads in the site are unmaintained hence discouraging movement.



As shown in plate 17 and 18, liquid waste from residential and commercial areas is directed to the roads and solid waste along the roads resulting to air and surface runoff pollution.

**Plate 17: Solid waste disposal along Tala- Ol Donyo Sabuk Road**



*Source: author, 2023*

**Plate 18: Liquid Waste Disposal Along the Road**



*Source: author, 2023*



As illustrated in plates 19 and 20, the market lacks designated parking areas for onloading and offloading of goods as well as parking for both vendors and consumers. This results to parking along the roads hence blocking traffic and causing congestion especially during market days. The public service vehicles and motorbikes also do not have a designated stage or bus stop where customers can access the service. This results to public vehicles being parked along roads especially Tala-Ol Donyo Sabuk Road causing snarl-ups.

**Plate 19: Motorcycles Parking Along the Road**



*Source: Author, 2023*

**Plate 20: Parking of Vehicles Along the Road**



*Source: Author, 2023*

### **c) Influence of Transport Conditions on The Market**

The connectivity between major towns like Thika and Tala has boosted the economic activities in the area due to the flow of goods and people from the site and into the site. The existing layout of the roads has also led to development of a linear settlement pattern with mixed uses. This is represented in plate 21. However, the poor road condition in the site has discouraged smooth movement of people and goods to and from the site due to the high transport cost. Encroachment of the road by informal businesses has also led to conflict between different modes of transport which use the roads and promoted inaccessibility.

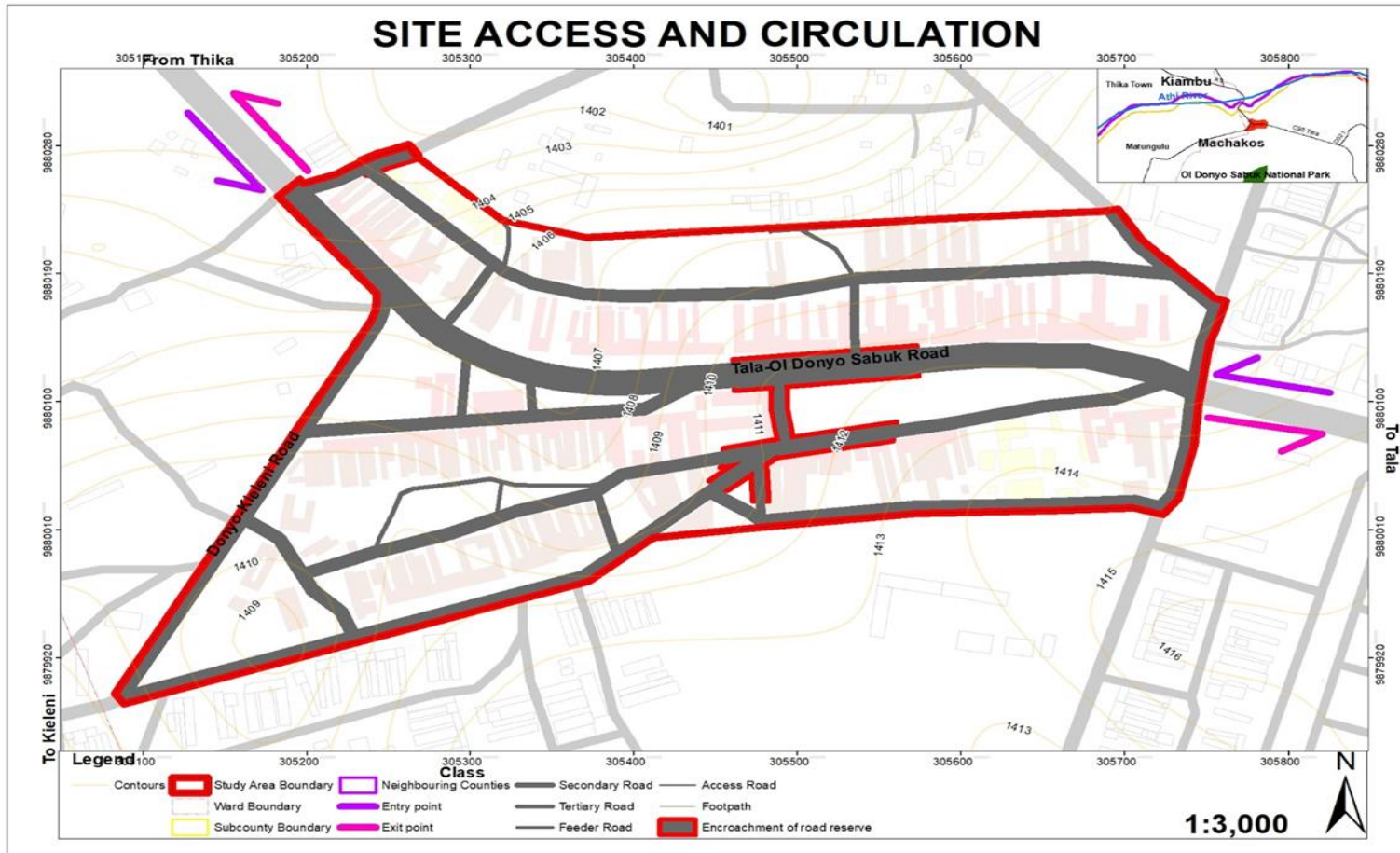
**Plate 21: Encroachment by Hawkers**



*Source: Author, 2023*



Figure 29: Site Access and Circulation Map

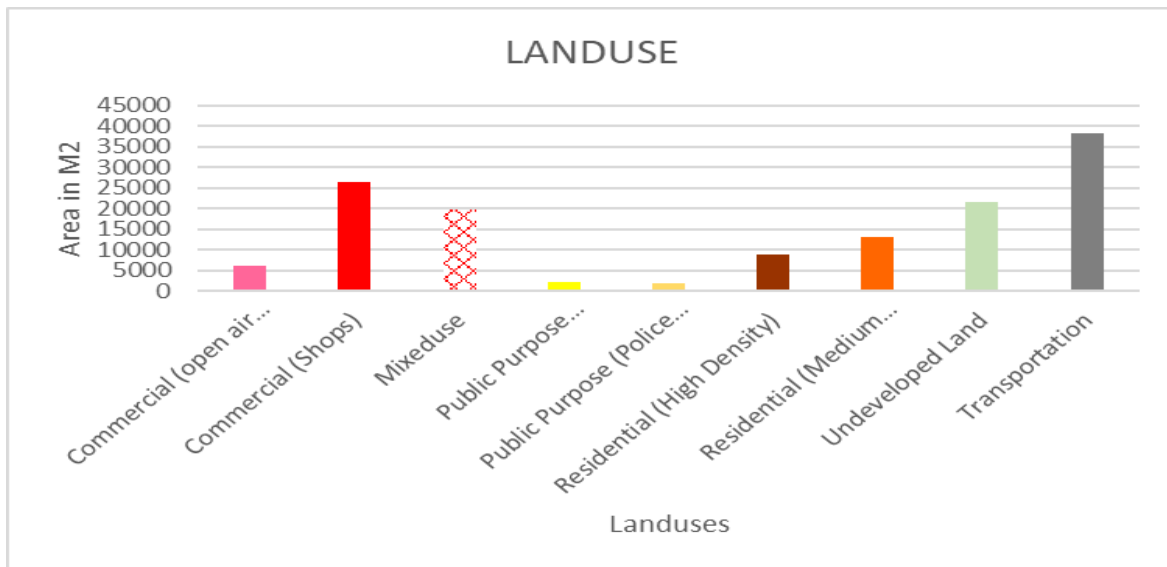


Source: Author, 2023

### 5.3 Existing Pattern of land Use in Donyo Market Centre

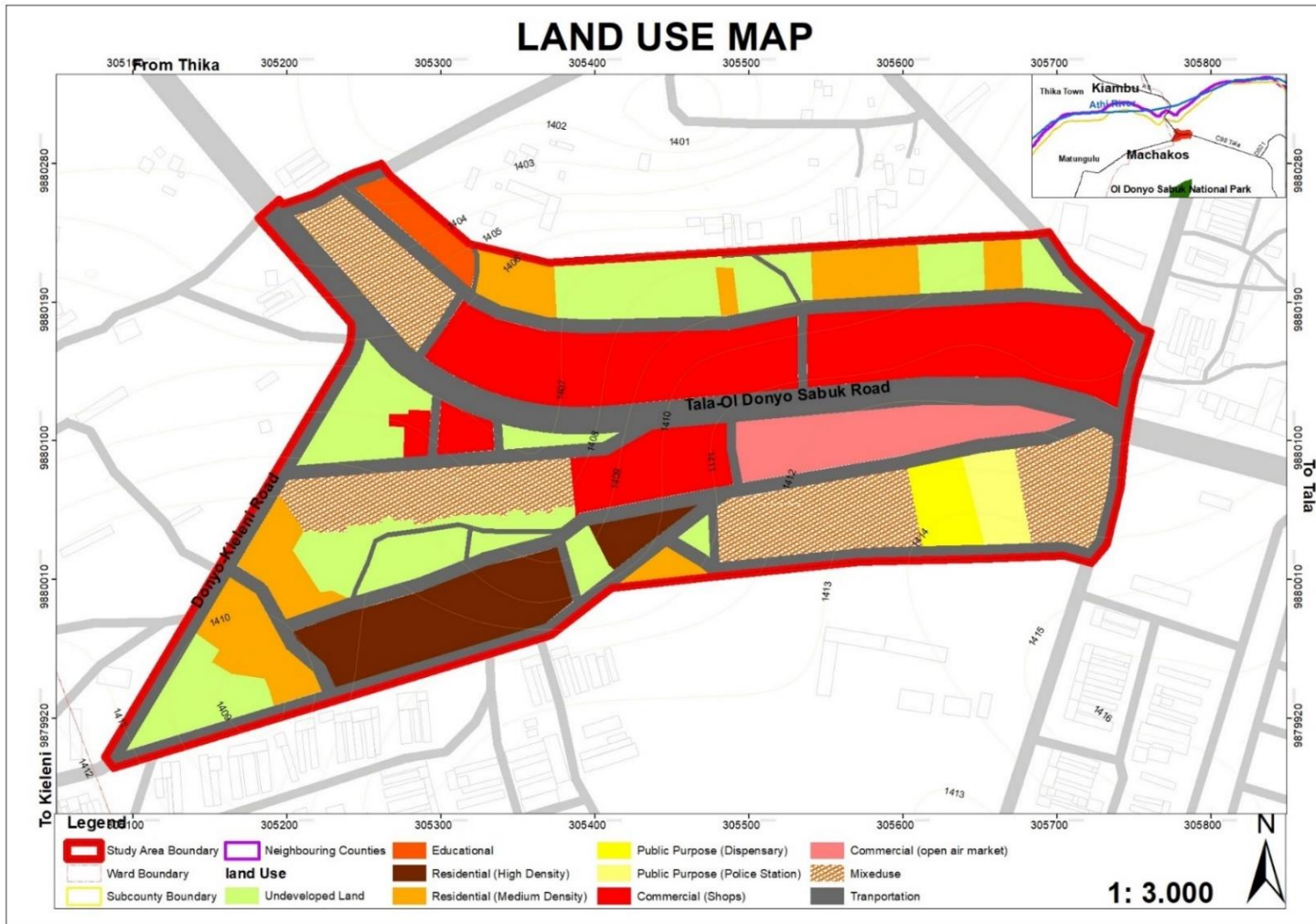
The existing land use pattern in the site, as shown in figure 31, is mostly dominated by transportation, commercial shops and market with 28 percent and 29 percent respectively as shown in figure 30. This is because the site is mainly a commercial zone with an open-air market and shops. The site is also characterised by mixed use developments which comprise of both commercial and residential uses. Public purpose which includes a police station and a dispensary takes about 3 percent of the total area while residential use, which is comprised of both high and medium residential covers approximately 16 percent. This is further illustrated from figure 31 and plate to 22 to 25.

**Figure 30: Land Use Graph**



Source: Author, 2023

Figure 31: Land Use Map



Source: Author, 2023

**Plate 22: Commercial Shops**



*Source: Author, 2023*

**Plate 23: Open Air Market**



*Source: Author, 2023*



**Plate 24: Police Station**



*Source: Author, 2023*

**Plate 25: Educational land Use**



*Source: Author, 2023*

### **5.3.1 Influence of Land use on the market**

Residential land use has resulted to uncontrolled dumping of solid waste on undeveloped land as illustrated in plates 26 and 27. However, it meets the demand of housing for sellers and buyers of the market. Mixed use optimises the use of land which spurs revitalisation and promotes a mix of compatible land uses like commercial shops and residential use. Public purpose like dispensaries and police station support the commercial activities in the market by offering security and health services. Transportation land use is also crucial for commercial growth of the market and links the market to other urban centres like Thika and Tala.

**Plate 26: Dumping near the Commercial Areas**



Source: Author, 2023



## Plate 27: Dumping near Residential Areas



*Source: Author, 2023*

### **5.3 Conclusion**

The primary emerging issue is that Donyo Market Centre has not expanded as much as would be anticipated. This circumstance is the result of a number of physical, economic, and social forces. Despite this, the center has an enormous expansion potential. The centre is a prospective transit town because of its proximity to important transportation corridors like Garissa Road and Ol-Donyo-Tala Road.

However, for growth and stability to be achieved, the center must be carefully planned and equipped with the necessary infrastructure in order to draw investments significant enough to provide a large number of job opportunities. The links between urban and rural areas, as well as other business centres inside and outside Machakos County, also need to be strengthened. The centre's development will be greatly accelerated in this way.

## CHAPTER 6

### FINDINGS, CONCLUSION AND RECOMMENDATIONS

#### 6.0 Introduction

This chapter discusses the study findings, conclusions and recommendations guided by the data analysis presented in chapter 5. The findings and conclusions are a prerequisite for offering the finest planning suggestions for the issues found in the study region. The primary study findings, their interpretations, and the researcher's suggestions for enhancing performance and promoting growth are thus covered in the discussion.

#### 6.1 Research Findings

The key findings were as follows;

##### 6.1.1 Main economic activities at Donyo Market Centre

According to the study conducted, all commercial activity at the centers are small scale. Most of the commodities available for purchase in stores and at public markets are low-demand items. They include commercial goods and services. Commercial goods include groceries, shoes, books, meat, electronics, flour, fruits, fuel, furniture, motor spare parts, clothes both new and second hand, and alcoholic drinks while services include cyber, mpesa, hospital, salon and barber services. Grocery shops are the main business activities mainly within the open-air market but some are located in formal shops.

##### 6.1.2 Factors influencing economic productivity of the activities

The majority of respondents who were traders, customers, and residents of Donyo Market Centre agreed that the market is struggling because there are few employment opportunities, which results in generally low household income levels, poor economic connections between urban areas and their rural surroundings, poor condition of access roads, particularly Tala-Ol Donyo Sabuk Road, and insufficient parking for both private and public vehicles as well as motorcycles.

The center is also impacted by the current run-down and occasionally uninhabitable commercial buildings, the improvised market infrastructure along the road that causes congestion, the high rate of theft cases, the lack of adequate residential development for non-residents, the ineffective waste disposal practices, and the insufficient clean water supply for residents. All these challenges have led to the low economic growth of the market centre with potential growth opportunities not being tapped.



### 6.1.3 Existing pattern of land uses in Donyo Market Centre

The current land use pattern is mostly dominated by transportation, commercial shops and market. Other land uses include mixed use, public purposes and residential use as shown in the table below;

**Table 3: Land Use Area Coverage**

Land Use	Percentage of Area Covered
Commercial shops and market	29%
Transportation	28%
Mixed use	24%
Public purpose	3%
Residential use	16%

*Source: Author, 2023*

### 6.2 Implications of the Findings

The study analyzed the implication both negative and positive of key findings that influence the efficiency of Donyo Market Centre and the following were established;

The centre is characterised by organic growth that is not controlled or planned. This has resulted to land use conflict with residential land use attracting uncontrolled dumping of solid waste on undeveloped land within the market centre. There is therefore need for land use planning that embraces mixed use development which optimises the use of land and spurs revitalisation and promotes a mix of compatible land uses like commercial shops and residential use. Improvement of public purpose like dispensaries and police station will support the commercial activities in the market by offering security and health services. Transportation land use is also crucial for commercial growth of the market and links the market to other urban centres like Thika and Tala. There is therefore need for road maintenance of the access roads and dedicating spaces for non-motorised transport through introduction of pavements and bicycle lanes.

Poor infrastructure development is another factor in the center's underwhelming performance, as shown by the area's shoddy road system, insufficient water supply, lack of suitable sanitary facilities, insufficiently furnished social facilities, decaying structures, and makeshift market infrastructure. For the growing population of merchants and customers, the inadequate public amenities that now exist are insufficient. The water supply and reticulation, as well as amenities

like public restrooms, must be improved in order to accommodate the volume of users of these services and facilities. The spread and backwash impacts of the centers to and from their surrounding areas are low as a result of a poor road network. The Tala-Ol Donyo Sabuk Road has inadequate road maintenance, which slows down traffic of people and products to and from the center and makes it difficult to access key towns like Thika and Tala.

The market's deteriorated and makeshift infrastructure is a sign of its underdeveloped economy. The number of profitable business hours is decreased when it rains. In addition, a lot of the shops are open after the sun has set. This basically means that there is extremely little time available for company activity, which leads to low returns. If improvement is to be reached, small firms must also conduct thorough planning.

### **6.3 Conclusion**

The effectiveness and performance of Donyo Market Center is the main subjects of this study. This speaks to its capacity to carry out the tasks for which it was created. The center, which is essentially a rural service center, is intended to bring together and distribute people, goods, and services in the region.

#### **6.3.1 Conclusion on Economic Activities within Donyo Market Centre**

Donyo Market Centre being a rural market has potential for economic growth due to the existence of an agricultural hinterland that is a source of agricultural products sold in the market. The findings revealed that there is need for provision of special requirements for farmers, merchants, customers and transporters in terms of trading spaces, facilities and services, parking sites and improvement of accessibility.

The centers carry out their intended tasks, but not to their full potential. When the market is fully operating on a daily basis, they do not exhibit the element of growth that balances the basic and non-basic economic activities. This includes establishing manufacturing and processing industries within the centre as well as providing services to the local population like health, security and educational facilities.

Therefore, in the effort to develop the market, there is need for commercial improvement practices that unlock the economic potential of the market which will stir economic growth in the market and the surrounding areas.

### **6.3.2 Conclusion on Factors Influencing Economic Productivity**

The centre is faced by several problems that hinder economic growth resulting to low performance status. Deteriorating and occasionally uninhabitable commercial buildings, improvised market infrastructure along the road that causes congestion, an increase in theft cases, a lack of adequate housing for visitors, poor waste management practices, and insufficient clean water for residents are just a few of the factors that have contributed to the situation. Low household income levels, few employment opportunities, low private sector returns on business investments, low public sector revenue collection, and low private and public sector investment in infrastructural development are all evident in the presence of unfinished or abandoned buildings, improvised market structures, and poorly maintained access roads. Focus on solving the current problems through county government's interventions as well as public-private partnerships would go a long way in restoring the economic prosperity of Donyo Market Centre.

### **6.3.3 Conclusion on Existing Pattern of Land Uses in Donyo Market Centre**

The current land use pattern is dominated by commercial, residential and transport land uses. These uses developed organically with little planning to ensure compatibility and effectiveness. The centre has therefore had minimal evolution of and reorganization of existing land uses resulting to land use conflict, mismanagement of resources and little to no maintenance of public amenities and utilities. Even though rural centres often have development plans for economic nodal centres, Donyo market centres does not have a land use development plan. Support from local planning authorities in maintaining land uses especially public amenities and utilities as well as implementation of Machakos County CIDP and Machakos County Public Market and Stalls Act (2016) would guide land use planning in the centre as well as other rural centres facing similar challenges.

## **6.4 Recommendations**

The recommendations proposed in this study include planning proposals that guide the development and improvement of Donyo Market Centre. They include strategies, programmes and projects which are in line with the study objectives.

### **6.4.1 Recommendation on Performance of Donyo Market Centre**

Recommendations on improvement of economic activities within the market centre so as to realise its economic potential need a multifaceted approach that addresses various aspects of development and economic growth. The approach includes proper designation of commercial and residential

uses in order to minimise land use conflict within the market. This would involve re-organization of commercial stalls along the road to maximize on land and renovate the dilapidated buildings. It is recommended that commercial stalls to have a loading and offloading zone as well as parking for customers and traders. This would be achieved through implementation of policies of setbacks on plots frontage to allow space for parking and ease movement of customers.

It is also recommended that the open-air market be renovated with proper waste management equipment such as waste dustbins and regular cleaning of the market. The open-air market should also have supporting infrastructure such as parking spaces, public toilets and easy access to water to ensure cleanliness within the market. The market should also have a storage facility within the market where perishable goods such as vegetables and fruits can be stored by traders.

Access and circulation to and within the market is an important factor for any economic node. It is recommended that the concept of smart urban planning which promotes sustainable and smart urban planning practices that prioritize walkability, public transportation, green spaces, and conducive working spaces. This would enhance the quality of life for residents and attract businesses and talent. In order to achieve this, safety and connectivity needs to be addressed along transportation lines within and outside the market centre. Paving Tala-Ol Donyo Sabuk Road with tarmac would reduce wear and tear of vehicles moving from Tala or Thika. This would promote connectivity from Garissa Road. The road would attract other motorists as well as open up rural hinterland by reducing transportation cost of agricultural produce to Donyo Market Centre. Drainage along the main and access roads is also crucial in ensuring longevity of the paved roads. Closed and open drainage channels need to be placed along the roads to cater for drainage and act as a barrier between motorised and non-motorised lanes. Planning for non-motorised transportation with designated lanes for pedestrians and bicycles would reduce vehicular conflict witnessed along the main road. These recommendations would generally improve vehicular circulation as well as movement of people within the market.

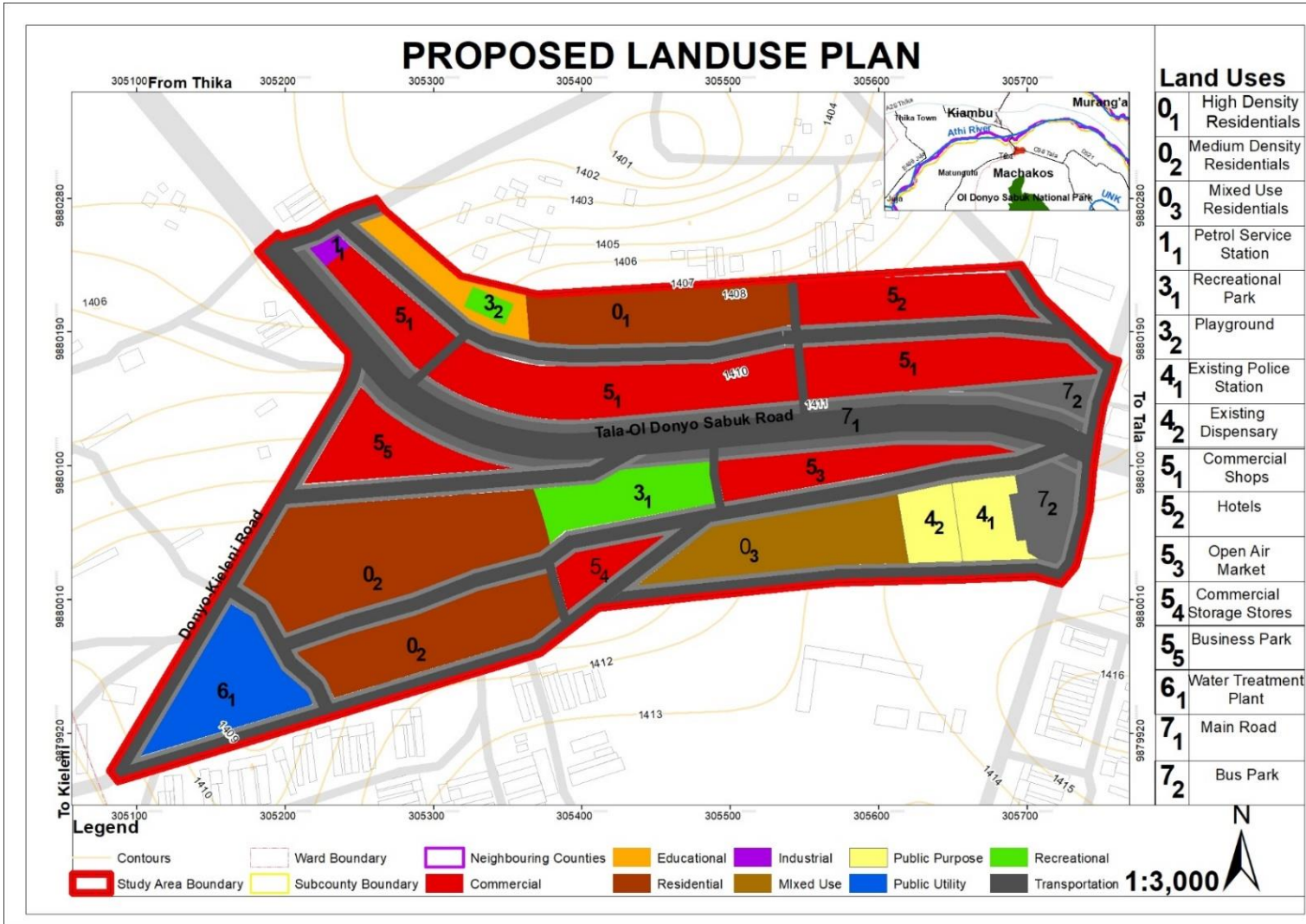
Finally, it is recommended that water and sewerage be planned for with the focus being on supply of clean water, liquid and solid waster management. Establishing solid waste collection points and disposal points within the centre would reduce dumping of waste on undeveloped spaces within the market as well as minimise risk of water and air-borne diseases. Use of septic tanks and soak pits should be encouraged to reduce directing waste water to the roads along residential

developments. Finally, a long-term sewerage treatment plant should be planned for to support establishment of sewerage systems as well as a water treatment plant for water sourced from Athi River which is heavily polluted. The plant will address challenges faced by the residents in accessing piped clean water for household purposes.

#### **6.4.2 Recommendations on Long-Term Land Use Planning Model for Suitable Economic Activities in Donyo Market Centre**

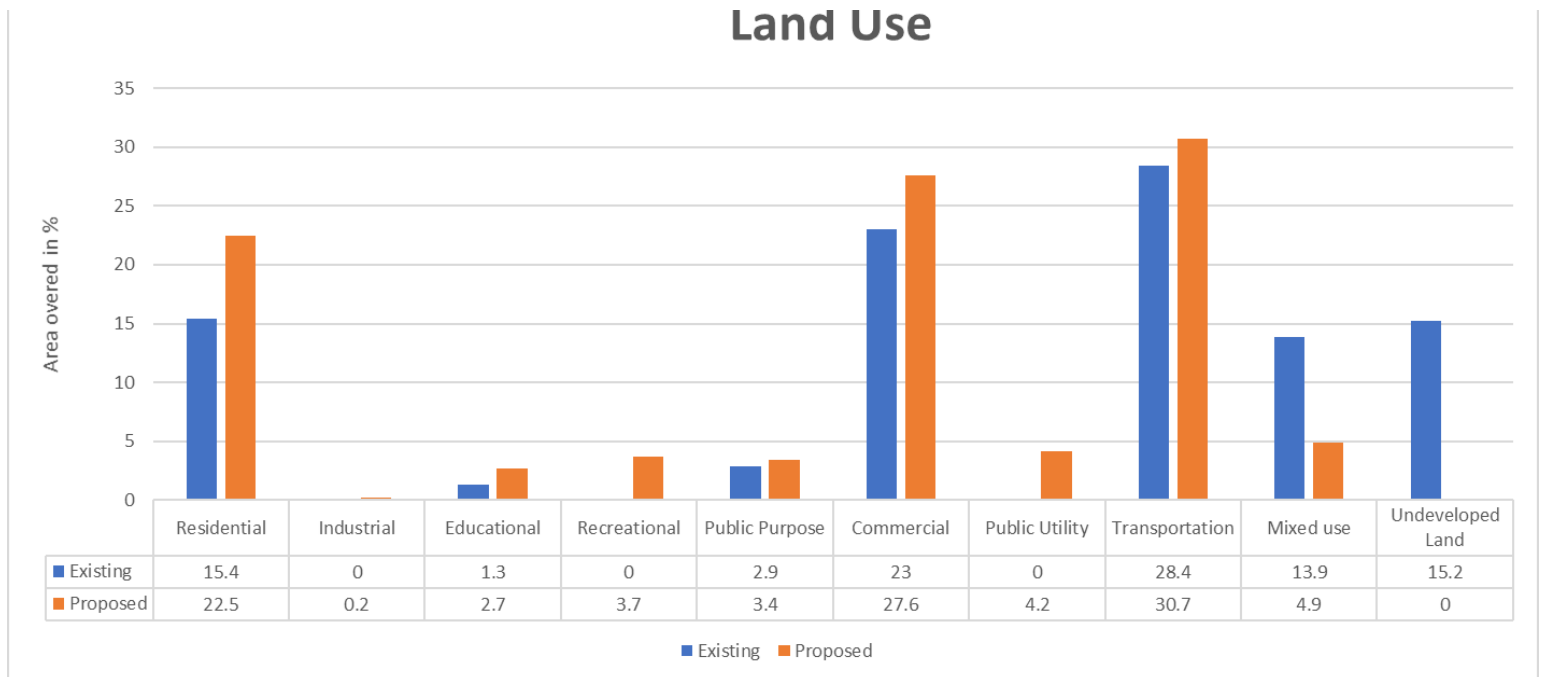
Developing a long-term land use planning model for suitable economic activities involves considering various factors such as economic trends, population growth, natural resources, infrastructure, and sustainability goals. Below is the proposed land use plan for Donyo Market Centre. Land uses considered in the model include commercial, transportation, residential, recreational, industrial and residential uses.

Figure 32: Recommended Land Use Plan



Source: Author, 20

**Figure 33: Existing and Proposed Land Use Comparison**



**Source: Author, 2023**

**Comparison Between Existing and Proposed Land Use**

Commercial, public utility and transportation land use have also increased due to the proposed revitalization of dilapidated commercial buildings, proposed commercial hotels, storage space, proposed water treatment plant, the proposed non-motorized transport, bus and boda-boda park respectively. Residential land use increased due to introduction of both high density and medium density residential use within the market centre. Industrial and recreational uses have also increased due to addition of a petrol service station and a recreational park respectively. Finally, mixed use and undeveloped spaces have reduced significantly due to the reorganization of land uses to reduce land use conflict and increase land optimization with various proposed land uses occupying the undeveloped land.

## **6.5 Areas of further Research**

The study was restricted to Donyo Market Centre only. Further studies of other rural markets can be done in order to understand the overall challenges faced in attaining rural development so as to guide future planning and policy making.

More research can be done on various services supplied in rural centres to determine their impact on hinterland development and enhancing rural people's livelihoods. Because planning is done for the people, it will be possible to plan for services and develop implementation strategies that respond to the requirements of the rural population.



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**APPENDICES**

**Appendix 1: Household Questionnaire**

**HOUSEHOLD QUESTIONNAIRE**

**TOPIC: PLANNING FOR THE ECONOMIC POTENTIAL OF DONYO MARKET  
CENTRE, MACHAKOS COUNTY**

Questionnaire No. \_\_\_\_\_

Date of interview: \_\_/\_\_/2023      Name of Interviewer: \_\_\_\_\_

**Section 1: Respondent's Details**

1.1 Respondent Name (Optional) \_\_\_\_\_

1.2 Age: \_\_\_\_\_ years

1.3 Gender:            Male                       Female

1.4 Level of Education:

None             Primary             Secondary             Tertiary:

1.5 Employment:

Unemployed             Employed             Business Person             Retiree

1.6 Place of employment

Government office/ institution       Private firm             My personal enterprise

1.7 Location of employment institution/enterprise

In my Neighbourhood

Other place (Specify) \_\_\_\_\_

**Section 2: Household Characteristics**

2.1 How many members are you in your household? \_\_\_\_\_

2.2 Kindly indicate the average monthly income of your household

Monthly Income	Tick Where Appropriate
Below Kshs. 10,000	
Kshs. 10,000 – 24,000	
Kshs. 24,001 – 60,000	
Kshs. 60,001 – 120,000	
Above Kshs. 120,00	

No.	Item	Shopping place
1.	Fruits & vegetables	
2.	Cereals	
3.	Other foods (flour, sugar, milk, etc.)	
4.	Clothing	
5.	Electronics	
6.	Farm equipment	

**Section 3: Information on the Centre**

3.1 How often do you visit the center?

Daily

On market days only

Never

3.2 What is the most common purpose for which you go to the center?

Work/business

Shopping

Leisure

3.3 If you never visit the center, why?

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3.4 Please indicate the items and services that are found in the market center

No.	Item/Service	Available	Not available
18.	Foodstuff		
19.	Household items (e.g., utensils)		
20.	Electronics		
21.	Clothing		
22.	Farm equipment		
23.	Clinic		
24.	Dispensary		
25.	Health center		
26.	Primary school		
27.	Secondary school		
28.	College/ Polytechnic		
29.	Market		
30.	Administrative offices (specify)		
31.	Piped water		
32.	Sewer system		
33.	Electricity supply		

3.5 What job opportunities are available within the center?

3.6 (a) Are there any developments made in the center in the last 5 years?

Yes  No

(b) If yes, specify the development(s)

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3.7 (a) Kindly comment on the economic performance of the center



It's doing well.

It's NOT doing well

(b) Please explain your response in 3.7(a) above.

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3.8 What are some of the benefits that your households get from the center?

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3.9 What are some of the challenges affecting the center

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3.10 How can the challenges stated above be solved

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3.11 Any other comment.

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**Appendix 1: Traders Questionnaire**

*DECLARATION: Information generated through this questionnaire will be used for academic purposes only and will be handled professionally and treated confidentially.*

**TRADERS QUESTIONNAIRE**

**TOPIC: PLANNING FOR THE ECONOMIC POTENTIAL OF DONYO MARKET CENTRE, MACHAKOS COUNTY**

**Section 1: Respondent Details**

- 1.1 Name: \_\_\_\_\_
- 1.2 Age (Years) \_\_\_\_\_
- 1.3 Gender:  Male  Female
- 1.4 Relationship to business
- Business owner  Employee  Other (Specify) \_\_\_\_\_

**Section 2: Business Information**

- 2.1 When was the business established? \_\_\_\_\_
- 2.2 What type of products/services do you sell/offer?  
\_\_\_\_\_  
\_\_\_\_\_
- 2.3 Where do you obtain your goods from? \_\_\_\_\_
- 2.4 Where do your customers come from? \_\_\_\_\_
- 2.5 The source of finance for the business:
- Savings  Loan  Other (specify) \_\_\_\_\_
- 2.3 What is your average daily sales? Ksh \_\_\_\_\_
- 2.4 Kindly indicate the monthly profit from the business.
- Below Kshs. 10,000
  - Kshs. 10,000 – 24,000
  - Kshs. 24,001 – 60,000
  - Kshs. 60,001 – 120,000
  - Above Kshs. 120,000

2.6 How many employees does the business have?

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2.7 Which are the busiest and lowest business days of the week?

a) Busiest

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b) Lowest

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### **Section 3: Business Premise**

3.1 Type of Structure

Permanent

Semi-Permanent

Kiosk

3.2 (a) Business premises ownership

Owner occupied

Rented

(b) If rented, how much rent do you pay per month? \_\_\_\_\_ Kenya Shillings

2.8 (a) What type of business license do you have? \_\_\_\_\_ (b)

How much do you pay for it? Ksh \_\_\_\_\_

(c) How often do you pay for it?

Annually

Monthly

Daily

Other (specify)

---

**Section 4: Access to Infrastructure**

4.1 Please select your main source of water.

Borehole

River/stream

Rainwater

Other (Specify)

4.2 (a) What kind of sanitation facilities are used in this premise? (*More than one choice allowed*)

Pit latrines

Flush toilets

Other (specify) \_\_\_\_\_

4.3 Does the center have a sewerage network?

Yes

No

4.4 How do you dispose of your solid waste?

Burning

Burying

Open dumping

Collection by County government

Collection by private company

Other (specify) \_\_\_\_\_

**Section 5: Development Issues**

5.1 (a) Kindly comment on the economic performance of the center

It's doing well.

It's NOT doing well

(b) Please explain your response in 5.1(a) above.

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5.2 What are some of the benefits that this center offers to the residents?

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5.3 What are some of the challenges affecting business in this center?

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5.4 How can the challenges stated above be solved?

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5.5 Any other comment.

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**Appendix 2: Key Informant Interview Guide**

*DECLARATION: Information generated through this questionnaire will be used for academic purposes only and will be handled professionally and treated confidentially.*

**KEY INFORMANT INTERVIEW GUIDE**

**TOPIC: PLANNING FOR THE ECONOMIC POTENTIAL OF DONYO MARKET CENTRE, MACHAKOS COUNTY**

**1. PHYSICAL PLANNING OFFICE**

a) What existing land use plans are available for the center?

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b) What recent projects are currently available for the center?

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c) Are there any development projects planned for the center?

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d) What opportunities are available in the center?

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e) Are there any planning challenges faced in the center?

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f) What are solutions that can be applied to improve the growth of the center?

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**2. TRADE/REVENUE OFFICE**

a) What revenue sources are available from the center?

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b) What was the total amount of revenue collected from each source in the last financial year?

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c) What are the opportunities that the center offers to the office?

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d) What are the economic challenges in the center?

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---

e) What are the solutions that can be applied to improve the growth of the center?

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**3. ELDERS**

a) What year was the center established?

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b) What were the reasons for the choice of the center's location?

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c) What have been the development trends in the center?

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d) What are the opportunities that the center offers?

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e) Are there any planning challenges faced in the center?

---

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f) What are solutions that can be applied to improve the growth of the center?

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### Appendix 3: Observation Checklist

*DECLARATION: Information generated through this questionnaire will be used for academic purposes only and will be handled professionally and treated confidentially.*

#### OBSERVATION CHECKLIST

#### TOPIC: PLANNING FOR THE ECONOMIC POTENTIAL OF DONYO MARKET CENTRE, MACHAKOS COUNTY

##### A. Availability of various goods and services

No.	Item/Service	Available	Not available
1	Foodstuff		
2	Household items (e.g., utensils)		
3	Electronics		
4	Clothing		
5	Farm equipment		
6	Hardware shops		
7	Wholesale outlets		
<b>Facilities</b>			
41.	Chemists		
42.	Clinic		
43.	Dispensary		
44.	Health center		
45.	Primary school		
46.	Secondary school		
47.	College/ Polytechnic		
48.	Market		
49.	Administrative offices (specify)		
50.	Piped water		
51.	Sewer system		

52.	Electricity supply		
53.	Church		

**B. Other units of observation**

<b>No.</b>	<b>Item</b>	<b>Observation</b>
10 .	Number of operational shops in the center	
11 .	Number of closed shops in the center	
12 .	Conditions of buildings	
13 .	Types of buildings	
14 .	Conditions of roads	
15 .	Land use mix	
16 .	Types of activities	
17 .	Intensity of activities on different days of the week	
18 .	Development densities	

#### Appendix 4: Formula used in Determining Sample Size.

$$n = \frac{Z^2 pq N}{e^2(N-1) + Z^2 pq}$$

(Franfort-Nachmias & Nachmias, 1996)

Where N = Population size

n = Sample size

p = Assume a 95% confidence level of the target population

q = 1-p

e = Acceptable error (e = 0.05, since the estimated should be 5% of the true value).

Z = The standard deviation = 1.96

Hence:

$$N (\text{consumers}) = \frac{1.962 \times 0.95 \times (1-0.95) \times 16,135}{0.052^2(16,135-1) + (1.96^2 \times 0.95 \times 1-0.95)} = 73$$

$$N (\text{traders}) = \frac{1.962 \times 0.95 \times (1-0.95) \times 500}{0.052^2(500-1) + (1.96^2 \times 0.95 \times 1-0.95)} = 36$$