ASSESSING THE FUNCTIONALITY OF OPEN -AIR MARKETS: A CASE OF GIKOMBA MARKET, NAIROBI COUNTY

BY:

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DECLARATION

This research proposal is my original work and has not been submitted in any university or any other institution for the award of degree.

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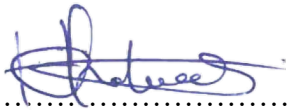
Signed……  …….…… Date……29/11/2023……

Supervisors

This urban planning research project has been submitted for examination with my approval as University Supervisor.

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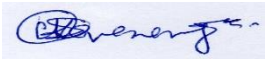
Signed…  …… Date……29/11/2023……

DEDICATION

I dedicate this work to my lovely mother for the strong support and prayers during the undertaking of this assignment. Further, my special thanksgiving goes to my wife and children for their unwavering support and understanding in my pursuit to complete this work and therefore, may the Almighty God continuously and increasingly bless them.

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Every beautiful ending is never the effort of a single individual, but rather the collective and collaborative effort of many hands and brains with a vision. It was this same situation that most of you made unquantifiable sacrifices to support this research effort and contribute to the conclusion of this journey. I salute my supervisors, Dr. Ing. Elizabeth Wamuchiru and Mr. Charles Osengo for their wisdom, knowledge and guidance, without your input, this project would not have seen the light of the day, merci! Further, I recognise the sacrifices made by my family, my wife and children, and my parents. You missed my presence and attention when I spent long hours on this project, you even sacrificed your resources to see this task through.

I acknowledge the support and input of my research assistants, led by Harrison Kioko, for his efforts especially in data collection and analysis. Lastly, to my friends and professional colleagues, your support is greatly recognised.

Special appreciation to the Almighty God, without the light of the world, we would not have the breath of the day, we would not understand and interpret ourselves, surroundings and we would not have the knowledge and courage to write this report, we would never see its end. Thank you, LORD.

ABSTRACT

Gikomba is the largest open-air market in east and central Africa, and among the largest of these markets in Africa. The market located a mile away from the Nairobi CBD has been a key physical, social, and economic pillar for decades that precede Kenya's independence. The market's ability to link and network with other land uses to harness its critical socio-economic contribution to local, national and international society cannot be underestimated. The market is a key facility in facilitating access to local and imported new and second-hand textiles, food products among other goods. It is the epicentre for exchange of these goods and services among the actors drawn from the city, country and globally. It is an economic hub. Despite these critical roles played by the market, its performance has been sub-optimal, not optimally exploiting its potential. This threatens its functionality as the pivot that facilitates local, national and international markets, especially on the exchange of second-hand textiles. The study focused on ascertaining the functionality of Gikomba OAM. Its objectives were to examine the functional land use relations with roots from the market, understand its prevailing spatial organization, and the potential challenges present within/without the market. The main aim was to provide sustainable planning interventions/approaches that would contribute to its optimal functionality. The study followed a cross-sectional field survey design, adopting literature reviews, interviews, focus discussions, and observation to gather secondary and primary qualitative and quantitative data. It administered instruments to 142 respondents composed of traders and customers, held discussions with traders, market leaders and key informants to demystify the market functionality conundrum. Gathered data was cleaned, coded and analysed using SPSS and Ms Excel, and presented via narrations, maps, charts and graphs. A scoring method aided in drawing conclusions and recommendations. Findings indicate that the market is at the centre of a complex web of networks and linkages feeding into and from it. They are local (city -wide networks and linkages), national (from the market to the entire country) and international (the market and foreign nations). They are faced by existential flaws, limiting the optimal functionality of the OAM. Besides, these networks and linkages do not contribute to the market functionality in isolation, with the spatial order of the market being critical. The findings show a market that is spatially and functionally limited by challenges, mainly of congestion and transportation, underserved of basic services and facilities as well as institutional and governance issues. The scores indicate a market whose functionality is hindered by poor drainage and sewer systems, high crime rates and insecurity, poor/unhygienic

environment, transportation quagmires, and overall poor state of infrastructure, resulting to endless bottlenecks and unquantified enormous economic losses. The research made proposed a spatial integrated-linkage land use model to address the spatial linkage functionality weaknesses and challenges in line with the findings. The integrated-linkage land use model is a long-term land use plan that adopts sustainable spatial - design approaches that if implemented would result to a thriving, vibrant, and efficient market that seamlessly integrates and interlinks with all other land uses and human facets. Further, a policy review targeted at guiding the market operations to attain its optimal potential is proposed.

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Abbreviations and Acronyms

CBD	City Business Centre
CBO	Community Based Organizations
CCGN	City County Government of Nairobi
FGD	Focus Group Discussion
GOK	Government of Kenya
ILO	International Labour Organization
OAM:	Open-Air Markets
MoITED	Ministry of Industrialization, Trade and Enterprise Development
MSEs	Micro and Small Enterprises
NEMA	National Environment Management Authority
NMTs	Non-motorized Transport
PSVs	Public/Passenger Service Vehicles

QRIMC	Quarry Road Informal Market Committee
UK	United Kingdom
UN DESA, DP	United Nations Department of Social and Economic Affairs, Population Division
USA	United States of America

CHAPTER ONE: INTRODUCTION

1.0 Background Information

The Concept of Open-Air Market (OAM) poses a significant role in the growth of an economy on the economic, social, environmental and physical perspectives. Furubotn and Richter (2010) introduce the idea that markets are organizations. An organization is understood as an institution plus the people within its context. OAM therefore, is defined as specific organisational form of trading activity and a designated area for the exchange of simple goods where a specific market culture evolves (Polanyi, 1957). Polanyi goes ahead to describe OAMs as not simply the territorial manifestations of the so-called market principle (the emergence of equilibrium automatically due to the functioning of supply, demand and price) and states that OAM is rather an institution where the creation of supply and demand, the process of determining price and the exchange processes themselves are influenced by culturally shaped habits, by the formal rules of local and central authorities, and by the internal processes.

Globally, OAMs are seen to develop spontaneously. The driving force to set them up is entrepreneurial vigor (Egbert, 2007). OAMs are specific in respect to time of operation and area segmented according to products and crafts. The approach of OAMs emphasises the idea that the non-economic functions of OAMs are based upon the fact that they are a meeting point for large crowds of people belonging to different ethnic groups, who have no other opportunities to come together. Therefore, OAMs are also places for the exchange of information, for recreation and political campaigning.

Despite the fact that OAMs have critical role to play in shaping our urban spaces, they manifest as crowded places, they also stimulate the appearance of certain activities, such as prostitution and theft, evoked by the presence of a consumption-oriented crowd that is temporarily freed from domestic cultural constraints. If OAMs are neglected in City planning and integration with wider neighbourhood development, then the situation highlighted worsens. On the other hand, integrated planning and modernizations of OAMs results to overall transformation of OAMs into booming socio-economic hubs that manifest in optimal functionality evidenced by uninterrupted flow and coordination of activities within these spaces.

Planned OAMs are characterised by appeal and attractiveness as a place of recreation, aesthetics and spontaneity, a common space for enhancing spatial and socio-economic relationships, internally and externally (Schmiechen, & Carls, 1999). As a matter of fact, commerce in well planned AOMs takes back stage (not the main force of attraction to an OAM), allowing relationships to thrive as facilitated by the internal and external spatial character of the market.

The functionality of OAMs is therefore evidenced by both the internal and external character of the market. The internal character of the market bonds with the internal arrangement of infrastructure facilities/services and activities (market physical layout) within the OAM as well as ancillary (management methods) and support services (Czakó & Sik 1999). Key internal spatial components of functional/traditional OAMs include adequate sales spaces, constructed or temporary market sheds, circulation space and traffic management, availability of parking, loading and offloading zones, roads and pavements, adequate drainage system, adequate security, presence of storage facilities, and hygienic conditions including solid and liquid waste management. Ancillary and support services border institutional and governance of the market and access to financial services such as banks.

The open-air market layout targeted to achieve unobstructed traffic circulation pattern, adequate parking facilities, maximum possibility of interaction between market users, provision of and full use of support facilities and adequate arrangements of the activities within the market.

The external elements of OAMs are on the other hand related to their relationship with the spatial arrangements with neighbouring uses at the city, national/hinterlands and global scale (Guàrdia Bassols, & Oyón Bañales, 2015). They include the market site location and transportation and road networks that facilitate entry and exit to and from the market for goods and services. Traditionally, OAMs were located on transit points that made for easy and convenient access by both traders and buyers, preferably by walking. Transportation was geared to addressing congestion issues associated with market entry and exit, where mostly a gate was used to control and regulate flow of traffic into the market.

Overall, the market spatial arrangement, ancillary and support services as well as its transportation networks and linkages facilitated functionality relationships, enhancing the success of a traditionally well-planned market. Traditional OAMs that are well planned and integrated with the city must therefore portray desirable characteristics of adequate space provision for sales, storage, specialised facilities, circulation, parking, administration, provide room for future growth and expansion, adopt building designs that have maximum flexibility for change and reduction or elimination of congestion through organized approach to traffic control and segregated non-motorised transportation systems (NMTs), and loading and offloading spaces, especially for large capacity trucks.

In this context, the study thus conceptualised the functionality of Gikomba market as related to its spatial organization internally and its relationship with the external land uses including its immediate neighbourhoods at local and citywide scale, the national level (rural/hinterland relationship) and international (as a point of sale of foreign imported goods). Further attention is given to the ancillary and support services, including the provision of services by the county government and the access to financial services by traders and customers.

Rapid urbanization associated with African cities is usually followed by conflicts about the utilisation of the urban space. The urban areas of Kenya encounter many of the issues typically present in sub-Saharan African countries associated with rapid economic and demographic growth. The population of Kenyan cities is growing at a rate of 4.3% per annum on average and it is projected that by the year 2050 at least close to half (46%) of the total Kenyan population will be urbanized (UN-Habitat,2018). Activities such as land subdivisions, squatting, illegal constructions, street vendors as well as productive activities are a testament of the defiance levels on the existing regulations and efforts perpetuated by governments through enforcement actions. Authorities both in the local and state levels have on many occasions responded in myriad of ways to the enormous challenges facing the OAMs ranging from laisse-faire and co-optation to extremes of coercion (Hansen & Vaa, 2004). Therefore, conflicts over the access to and utilisation of space not just between city occupiers and the law enforcers but also various segments of the urban population,

may lay claim on the same spaces thus making the local authorities in the jurisdictions to assume the roles of spectators or mediators as opposed to effective controllers.

It is therefore essential that open-air markets are improved to ensure the safety and health of food, consumers, and vendors. To protect life and property and enhance safety and hygiene, open-air markets should be modernized and strengthened in its infrastructure base. Risk-attentive re-modelling and operational redesign, including spacing and zoning, would make open-air markets less vulnerable to disruptions and create 'smart markets' of today and tomorrow (The East African, 2021).

1.1 Statement of the research problem

The Open-Air Market sector is evident in diverse spatial forms mainly; along streets, open spaces, markets as well as in residential areas, more so within the informal settlements. Conceptualizing OAM as a residential, physical, and both a public and economic space has far-reaching implications. It is envisaged that OAMs currently accounts for more than half of the global labour force and largely more than 90% of macro and small enterprises worldwide (ILO 2002). They are major sources of employment and support in provision of and access to basic needs for the individuals they employ. They also provide an avenue for access to affordable products, goods and services for the communities they are established to serve. In this regard, OAMs are pivotal in addressing socio-economic gaps in society and epicentres of intricate relationships (including strategic social place for people to interact, meet, chat and connect), including land use relationships, networks and linkages, that sustain them.

Gikomba OAM is no exception. The market is a major source of employment, absorbing a significant proportion of rural urban migrants to the city of Nairobi as part of its labour force. It is envisaged that Kenya's urbanization growth rates will continues in the foreseeable future. Expected to continue growing at an annual growth rate of 4.23% through 2040 (UN DESA, 2019). The implication of this is increased pressure and strain on resources, high rates of unemployment and joblessness, environmental degradation among other challenges which further undermines the transformative power embedded in the urban centres of Kenya (World Cities Report, 2022). Rise in joblessness is not only attached to growth in urban populations, but also to the mismatch between employment

generation and labour force growth giving a deficit manifested in market. With weak or non-existent social policy to take care of the vulnerable, the influx of population to informal activities, overflowing even to the available formal provided spaces.

OAMs within the city, including Gikomba, have assumed the critical role in absolving the vulnerable informal urban populations resulting from the mismatch between employment creation and labour force. The markets are facing among others overcrowding and congestion, breakdown of strained infrastructure facilities, social ills such as high crime rates, and spatial limitations.

A failure to address these challenges of urbanization to OAMs, including the policy effectiveness challenges and a challenge in urban land use planning interventions, is certain for socio-economic losses including breakdown of spatial relationships, networks and linkages that sustain the functionality of these OAMs. Further, the situation is aggravated by institutional failure, with the country experiencing change in governance structures within the city overtime. There exist uncertainties in assuming responsibility for planning and development of the market by the national government, the county government and the local market users – the people. This poses a new difficulty in addressing public interest within the market and its operations since it's a planning and administrative parameter. Nonetheless, the spatial and institutional issues arising from the market call for interventions to replan, redesign and reconstruct the market to address the compounding functionality challenges it is experiencing.

This is geared towards instituting desired improvements which must be comprehensive & intrinsically incorporating spatial, physical, socio-economic and environmental dimensions in a bid to develop sustainable functional neighbourhoods. The functionality of such OAMs lies mainly on the efficiency of linkages, networks and spatial distribution of basic amenities of good quality and condition, as well as management methods and support services.

The study seeks to address the theoretical and developments gaps of Open-Air Markets, to address dysfunctionality and collapse of OAMs, using the case of Gikomba OAM. The theoretical gap includes identifying the deficiency of the existing linkage, network and functionality models. On the other hand, the development gap involves deeper

understanding of the existing planning challenges within the open-air markets which include physical layout issues on land use, location of OAMs, their design, linkage and connectivity to other land uses and human activities. There are glaring gaps in literature on the functionality of the market, specifically on the socio-economic intricacies of the market operations, its linkages and networks that make it thrive or hinder its ability to attain its full potential. There is no sufficient literature on the Kenyan context of how spatial, socio-economic and network functionality challenges of OAMs can be addressed. This study is the first of its kind in this attempt. It targets to provide risk/disaster attentive remodelling, operation/land use redesign and policy interventions that provide an ideal spatial organization of Gikomba and other OAMs to guarantee sustainable integration of functionality, network and linkages for a thriving, secure and less vulnerable smart market.

1.2 Research Questions

The following are the research questions that the study sought to investigate.

1. What are the functionality dynamics of Gikomba OAM?
2. How does the social-spatial organisation of Gikomba market influence its functionality?
3. What facilitates or hinders the functionality of Gikomba market?
4. How can the functionality of Gikomba market be enhanced in the long-term?

1.3 Research Objectives

1. To examine the prevailing functional relations (networks and linkages) of Gikomba market.
2. To analyse the implications of existing social-spatial organization of activities, services and facilities on functionality of Gikomba market.
3. To analyse the facilitators and constraints for a functional Gikomba market.
4. To propose appropriate planning interventions that enhance functionality of open-air markets.

1.4 Justification of the Study

Majority of studies on Open-Air Markets have concentrated on formalising the informal markets through various forms which entails, registrations, taxations, legal and social protection, business incentives and support. The importance of such measures has always

aimed at the labour force getting better (decent jobs), increasing the tax base, increased investment as well as strengthening the social contract or the rule of law. However, very little focus has been converged on the issue of redevelopment of space which encompasses the built environment together with physical amenities. Such a redevelopment option coupled with the institution of appropriate development control measures can act as the much-desired walk to freedom from the current economic, social and environmental challenges facing Gikomba Market. The impetus of this study is therefore to achieve all that has been previously targeted albeit through proper optimisation of the functional space within Gikomba open air-market. The attention is to address the spatial functional challenges that inhibit optimal performance of the market. This approach was deemed to have overall socio-economic impact and transformations for better market functionality, considered the foundation upon which these socio-economic activities take place. Research in the area was therefore important to urban planners in an attempt to examine internal and external functional constraints and opportunities of Gikomba market that motivate solutions from different actors such as the Nairobi City County Government, local community who mainly are the traders, Ministry of Lands and Physical Planning, Ministry of Transport, Infrastructure, Housing and Urban Development, CBOs, and NGOs.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

Globally, open-air markets have a long tradition in Europe. They have existed since ancient times in ancient Greece, the Agora, and in ancient Rome, the forum. The Grand Bazaar in Istanbul is often cited as the world's oldest still-operating market; its construction began in 1455. Open-air markets had an important economic, social and cultural function for cities and their citizens as a place of work and trade; buying and selling of provisions, livestock, and other daily goods, festivals, social life and gathering of people and information. OAMs are also considered as marketplaces often surrounded by the institutions of power; town hall, law court, representative business premises and church. It contributed significantly to growth in medieval Europe from the year 1000, being the focal points of trade (exchange) and sale through local peasant markets at strategic locations such as harbours, crossroads or along rivers, whether international or of a more local nature. This facilitated the development of new services, retail shops, artisans and other businesses, enhancing the growth of a city and its population (Costa et al., 2015).

The earliest American markets were scheduled, open-air events where farmers, fishermen, and other producers met in exchange with the townsfolk, merchants and others who needed food. These colonial-era markets were often located in the middle of wide streets or thoroughfares publicly owned land that required no purchase or seizure of private land to create. Foot, animal, and wagon traffic would simply flow around the market. These open-air street markets were governed by laws and ordinances enacted under colonial (and later state) authority that empowered local government to create and manage markets. In turn, the local authorities could collect taxes, tools, stall rentals, licenses and fines in exchange for the provision of a regulated place of trade.

Unlike in North America and Europe, in Africa, the vast majority of market intermediaries perform their functions in open-air markets (OAMs) otherwise referred to as traditional markets (Baker, 1965; Hodder, 1965). OAMs are collective market areas, similar to farmers' markets in the USA, but occupying large expanse of land. Famous ones include Mfoundi and Mokolo (Cameroon), Merkato (Ethiopia), Kejetia and Makola (Ghana), Aba, Idumota, Oke-Arin, Onitsha (Nigeria), and Kariakoo (Tanzania). OAMs are the hub and

mainstay of commercial activities in most African countries (Baker, 1965; Hodder, 1965) but understanding how they function is challenging to the casual observer (Baker, 1965). They have survived years of competition from Western-style channels. About 50 years ago, marketing channels for consumer-packaged goods in Nigeria were of two types; the large foreign-owned wholesaling and retailing (e.g., Kingsway, G.B. Olivant, Leventis, and John Holt) and the small individual traders found in Open-air Markets (Baker, 1965; Mabogunje, 1964). Today, there are only vestiges of the foreign-owned firms existing.

Regardless of continued expansion of the supermarket chain in Africa, estimates show that up to 70% of consumer demand in the next two decades will be met via OAMs (The East African 2021). This underscores the importance of functional OAMs in the African continent owing to its reliability as a source of basic commodities. Especially they are a source of food for urban and rural inhabitants, contributing greatly to food security and in reduction of unemployment rates within the urban settings.

In Kenya, open air markets are an important source of fresh fruits and vegetables for majority of households living in both rural and urban areas. The county governments are responsible for their management through taxes levied on traders. In Nairobi, open-air markets are managed by the county government which is responsible for space allocation to traders, maintenance of sanitation and hygiene in the market. Traders operating in these markets pay taxes to market attendants who then submit to the county government responsible for budgeting resources towards operational expenses including salaries, electricity, maintenance and occasional improvements in infrastructure. Services for agri-food waste collection in these markets are often out-sourced from the private sector and paid for by the county government (Ogeya, 2014).

Spatial planning is largely a public sector function to influence the future spatial distribution of activities. It aims to create a more rational territorial organization of land uses and the linkages between them, to balance demands for development with the need to protect the environment, and to achieve social and economic objectives. Spatial planning comprises measures to coordinate and improve the spatial impacts of other sectoral policies so as to achieve a more even distribution of economic development within a given territory than would otherwise be created by market forces. Spatial planning is therefore an

important lever for promoting sustainable development and improving the quality and functionality of open-air markets (UNECE, 2005).

Effective spatial planning for the open-air markets help to avoid the duplication of efforts by actors such as government departments, commercial developers, communities and individuals. This is of great importance, as many of the open-air market issues are of a cross-sectoral nature and therefore should be treated as such. Spatial planning is a public sector activity at all levels. Hence it provides a clear distribution of responsibilities between the different levels of administration. Having underscored the importance of OAMs, it is essential that they are well organized, networked and linked spatially to enhance the market relationships and operations. They should be structurally sound, consistently maintained, renovated and repaired to achieve overall degree of functionality that is aesthetic, spontaneous and ambient for the market consumers, including vendors, buyers and visitors alike.

2.1. Concept of Open-Air Markets

Through history open-air markets have typically been held in a city's market district, green space in the city's centre, church yard or open field at the edge of town. Traders from the surrounding countryside would bring their goods to town to sell on a daily or weekly basis, during festivals or other special holiday events. Artisans, living and working near market sites, produced metal and leather goods, jewellery, clothing and woodenware for both necessity and luxury. Even in ancient times, vendors paid a fee to sell on market days. This created spatial order and organization within such market centres, permitting for seamless exchange of goods and services between traders, buyers and other market stakeholders.

In a communist economy, Open-air market (OAMs) had an important place in the distribution of goods. Despite this, they were considered either as remnants of an outdated and unnecessary form of commerce or as a dangerous challenge to the socialized retail sector, as places where profit-making was combined with criminal activity such as speculation, pickpocketing, or the reselling of smuggled and stolen property. As a consequence, OAMs in the communist economy were continually under the threat of police raids or at best tolerated as suspicious but irrelevant distortions of the production and

distribution system. However, there was an increase in activities as communism developed through stagnation into over-maturity during the 1980s (Wedel, 1986; Bo¨ro¨cz, 1992).

The collapse of communism resulted in an expansion of the numbers and types of Open-air markets (OAMs). Street trading appeared in many cities, towns and villages, absorbing a range of social groups. People clustered in open-air markets such as sports stadiums in order to buy and sell goods directly. The activity of trading or buying in OAMs became more open, acceptable and noticeable in the post-communist period (Sik & Wallace, 1999).

Open-air markets were subject to the vagaries of weather, which led to demand from both buyers and sellers for sheltered markets that would permit the conduct of business regardless of conditions (Islam, 2017). Sheltered markets also offered an opportunity for cities and towns to collect revenue through the rental of market facilities. Still most often located in the middle of a wide street, open-air markets boasted a shed or other building. Located on public land, these early markets were still publicly owned and controlled by the local municipalities. Along with a physical structure and revenue stream from licenses and rents came increased management responsibilities, as well as a greater ability to regulate the conduct of trade and the quality of the merchandise (Wedel, 1986).

Today they are a ubiquitous presence in a vast majority of cities, towns and villages throughout the world. This is not to say that open-air markets are the same from whence they started or the same from community to community. Physically the differences from one open-air market to the next are certainly obvious though it is also true of the individual specifics of presence, purpose and function. The concept and practice of open-air markets has in itself evolved over time. From community to community, they tend to operate at the least a little bit differently from their neighbour and arguably in most cases quite dramatically different. Clearly, open-air markets continue to serve an important need within the communities they exist and operate in. They are able to function effectively because they are able to embrace and reflect the unique cultural, political, social and economic realities of the time and place in which they operate.

Market-squares, such as Wakulima market in Nairobi, are usually a beehive of activity, teeming with vendors and consumers. These open-air markets, often chaotic, are the leading source of both staples and nutrient-dense food and other wares for a majority of

the population in the continent. They are essential to the nutrition and food security of both urban and rural inhabitants through transport enabled urban – rural linkages. At the same time, the infrastructure and architecture of many of these markets pose risks to life and property: They are often old and run-down or underdeveloped.

2.2 Spatial Organization of Markets

2.2.1 General overview

Open-air Markets are sites where people come to buy and sell wares in a face-to-face interaction. They differ from normal retail shops in being open air and casual in organization so that vendors may come and go. Markets can take many forms just as shopping centres can be broadly categorized by prototypes (e.g., community center, power centre etc.). There are several different types of markets that range in size, complexity, physical plant, capital requirements and level of risk for market sponsors.

Public spaces are enlivened by activities which provide temporary attractions and services. Even the activities setting up these attractions can invigorate the public realm. The urban design for open-air markets structures (temporary or otherwise) erected in public space should be located in areas which are not subject to major pedestrian pathways, be architecturally expressive of their temporary nature, be simple in form, colour, and materials to place emphasis on the activities taking place, should complement and contrast with the architectural character of permanent buildings and not intrude on any view shaft.

The design and organization of open-air markets and their spatial distribution ought to address the preferences of targeted consumers. In the study Peri-urban food traders' preferences for open-air market design and management attributes in Nairobi, Kenya, by Cherono & David (2016), traders' preferences are determined as key elements in the design of an open-air market. The authors contend that poor design of OAMs is mainly due to failure to consult traders in the design of open-air markets and is recipe for congestion, inadequate space, poor sanitation, inadequate drainage, insecurity, and absence of modern storage facilities.

The findings shows that there is a higher degree of willingness to pay for services in an open-air market when the targeted traders are included in the design and management of

the open-air markets. Key design elements for consultation were statistically significant at 10% and mainly included management services to be conducted by authorities (county government of Nairobi) as opposed to traders' association, provision or access to medium spaces, measuring between 5m by 5m basically to manage congestion and have sufficient transaction space, and monthly payment of market and price (ibid). The overarching objective was attaining functional management of space and operations of the open-air market to achieve optimal returns for traders and sustainability of open-air markets. Limiting space encroachment and contestation is core to traders operating within open air markets. Space is everything they need to display their ways and attract target customers, and the study indicated a willingness to pay at whatever cost to have space that is sufficient to a trader's needs.

Internal organization within an open-air market should be well planned to provide for basic amenities that complement the needs of traders and customers, and the flow of goods and services in and out of the market.

2.2.2 Organisation of Gikomba Market

According to NAMSIP (2018), Gikomba open-air market is divided into two main parts comprising of the formal and informal segments. The formal segment stretches comprises of the sections with permanent buildings. The market has expanded with time to accommodate support industries such as commercial banks, insurance companies, hotels& restaurants, petrol stations, minimarkets, M-PESA outlets as well as retail shops. The establishment and continued existence of these industries is supported by the high influx of population in need of these services which has boosted the growth of Gikomba economy. The frequent fire outbreaks have further necessitated the need for insurance services in order to cushion traders and wholesalers against post-fire related losses. The informal section is spatially organized into 28 sections which are handling different commodities, and which are spread across varying land sizes as represented in the table below;

Table 1: Various sections of the market and estimated land area

S/No	Section Name	Estimated Area (HA)
1.	Posta	0.27
2.	Gikomba riverside Juakali timber section	1.53
3.	Green &Grains (Vegetable) Section	0.83
4.	Solidarity Section	0.62
5.	Solidarity vegetable Section	0.16
6.	Kware Road open air Market	0.48
7.	Kware Road Market	0.50
8.	Footwear section	0.26
9.	Section1A	0.47
10.	Section 2A	0.20
11.	Area 21	0.14
12.	Riverside Section 3A 1	0.12
13.	Riverside Section 3A 2	0.24
14.	Usafi Kiosk Section	0.11
15.	Area 4B1	0.08
16.	Section AB	0.15
17.	Area 87	0.80
18.	Area 42 Go downs& retailers	2.47
19.	Kwa Mashati Section	0.32
20.	Royal Area	0.35
21.	Kwa Gacucu Market	0.30
22.	Fish Section	0.21
23.	Commercial Section	2.81
24.	Solidarity Line	0.06
25.	Solidarity cereals B	0.22
26.	Poultry Section	0.005
27.	J Section	0.08
28.	Material Section	0.22
Total		13.95
NOTE: The area is exclusive of the residential estate within the market		

(Source: NAMSIP, 2018)

Space Occupation

Traders within the market occupy varying sizes of spaces for storage and display of their goods. Wholesalers are regarded to be the largest holders of the spaces in the market with 71% occupying spaces measuring 2400 square feet followed by 25% who occupy 1200 square feet and 4% within 2000 sq. feet as demonstrated in the figure below;

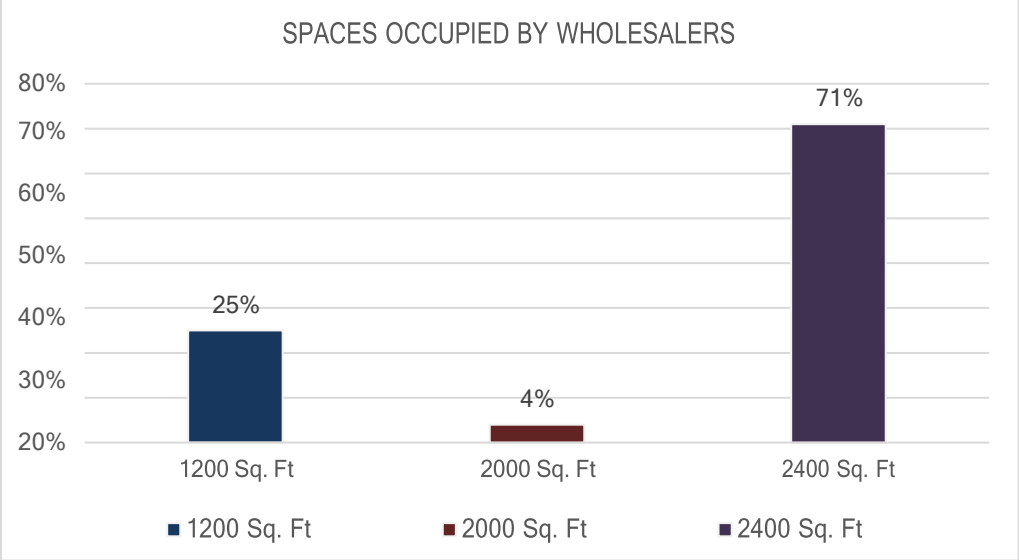


Figure 1:Range of Spaces Occupied by Wholesalers within Gikomba Market

(Source: NAMSIP, 2018)

The retailers are the most affected owing to the little space that they occupy which is as little as 1 m^2. Therefore, this is an indicator that issue of space contestations are very high within this cadre hence the need for vertical expansion of the market to accommodate more traders than currently is the case.

2.3 Functionality of Open-Air Markets

Open-air markets bring an array of social and societal benefits or advantages in a variety of broad areas including but not limited to benefits in respect of social integration, community character and liveability, health and nutrition, city image and identity and community activity through provision of venue in which local government can satisfy the need for public space, the essential prerequisite to social integration. The environment in which social integration is maximized normally accrues with an open-air market that has "something extra" that is, the market must have an attractor beyond its role as a place to

buy goods. Open-air markets also contribute to community character and liveability by reinvigorating or revitalizing downtowns and neighbourhoods, increasing the interaction between rural and urban areas (a little bit of country in the city) and by bringing together a diverse variety of demographic cohorts, cultures and interests. These two concepts exhibit the internal and external functionality dimensions of the market, looking into the internal organization of the market and its external relationships with other land uses.

With today's almost overwhelming preoccupation with health and nutrition, open-air markets play an important role in a community. Local products, especially farm produce, are generally sourced at the peak of the season and normally presented to the market place within 24 hours. This means consumers are buying fresh, highly nutritious products. With a growing emphasis toward buying more organic products, open-air markets play an especially important role by supporting/allowing for the participation of small organic producers and ensuring a product's origin is local.

Open-air markets by drawing a consistent number of local and non-local visitors every year represent a vibrant anchor for community activity. Various studies of open-air markets suggest that when pedestrian traffic counts are significant these levels of patronage have spillover effects to external retailers, hotels, entertainment venues and other businesses within close proximity hence the need to have the Open-Air Market functional.

The various parameters of functionality are classified as physical, social and economic.

2.3.1 Physical indicators

The location of markets encompasses the concepts of the site and its situation. The site relates to the characteristics of a specific market location while the situation concerns the relationships of a market location in relation to the surrounding neighbourhood. Both concepts are interdependent as the characteristics of a market can be expanded by a better situation (connectivity) and a situation can improve if a market is better endowed. This perspective can further be expanded by three interdependent factors in the global location of markets: connectivity and accessibility to the neighbourhood, proximity to a major (or several) resource and serves as a convenient point of collection, distribution, and transformation of goods and services. Other physical infrastructure includes the drainage

system, sewerage system and solid waste management which determine the level of functionality of an Open-Air Market.

2.3.2 Economic indicators

Economic indicators such as the income levels, profits and value of land promote the development and functionality of open-air markets. In many countries these factors are supported by funds from public sources (Martinez 2010). According to the Committee of the Regions of 2011 (Opinia, 2011), open-air markets support the local and regional economy. These markets are an incentive for the use of local potential and a factor to improve the image of the regions that are often unappreciated and neglected. Short distribution channels increase the interaction between consumers and producers and allow for building relationships based on trust and immediate traceability of food products for consumers.

2.3.3 Social indicators

The markets operate as social spaces in different ways, varying across the sites and between different social groups. The social life of traders which includes population and demography, security and crime and prevalence of cultural and social behaviours, play a significant role in creating a vibrant atmosphere, and in forging social ties in the trading community. Interactions between traders and shoppers are also a crucial component of social life, particularly for older people who regularly visit markets for the pleasure of these relationships.

A number of attributes contribute, in varying degrees, to a market's success as a social space. Essential attributes are features to attract visitors, including a diverse range of products fitting well with local needs and tastes, and a sense of surprise or the unexpected to provide interest, informal seating areas are also important (McQuaid et al. 2004).

2.3.4 Internal and external functionality of OAMs

The above-described functionality elements can then be classified into two broad categories as either internal and external elements of OAMs functionality. As discussed in the background to the study, the internal functionality elements of OAMs are the physical arrangements of attributes within the market (Czakó & Sik 1999). The help bring out the social and economic indicators of OAMs. These factors relate to the provision and

arrangement of infrastructures within the market, market hygiene conditions as relates to solid and liquid waste management, the control and management of market congestion characterised by provision of circulation spaces, transportation and traffic control (human and vehicular traffic), paved pedestrian path provisions and provisions for NMTs such hand drawn carts and trolleys, water supply and storm water management to eliminate potential for floods within the market, and the provision of sanitary facilities mainly toilets, provisions of sales spaces and temporary or constructed market sheds for traders, the provision of loading and unloading spaces, and provision of power/electricity supply (Guàrdia Bassols, & Oyón Bañales, 2015).

The internal factors influence the efficiency and functionality of OAMs by addressing all market layout limitations and inhibitions. Besides, their aim and focus are to achieve spontaneity, aesthetics, character, appeal and a market form that is self-marketing and attracting users as a social place for interactions and social relationships among market users.

Additionally, the internal elements of functionality concern with the management methods (institutional and governance) of the market and support services. The ancillary services include the provision of trading permits by local authorities, security and public order as a contributor and facilitator of functionality, as well as overall management of the market organization for effective flow and coordination of spaces within the market. The support services on the other relate to the market components that facilitate trade, the exchange of goods and services. Good examples of support services include banks, eateries and/or restaurants and insurance services.

The external components of OAMs are associated with the transportation networks that facilitate the supply of and access to goods and services within the market. This external character facilitates the relationships that are external to the market, creating a link between the market space and spaces in the hinterlands. They are considered the basis for rural – urban linkages that originate from or terminate at the OAM. This external relationship between the OAM and other supply and/or consumption points are facilitated by transportation and establish the relationships between the market and its immediate neighbouring land uses (urban/city wide), and with its rural/hinterlands (national level) and

global level. The external character completes the supply and demand element of the OAM since the rural area is the chief supplier of fresh food produce that is sold to urban/city dwellers at the market. The OAM is the source of local and foreign goods and products that are at affordable prices for the city/urban dweller and for the rural/hinterland trader. It therefore functions to facilitate the exchange of cheap local manufactured new products (mostly shoes, clothes, tools and others) and imported foreign products mainly textiles as well as locally produced food products, and in the modern OAM imported farm produce. The external factors of OAM functionality therefore appreciate the physical attributes of the market and the relationships that originate in relation to the physical indicators of market.

2.4 Principles of market functionality

2.4.1 Infrastructural Connectivity

Presence of a good infrastructure is considered to be a key pillar for any growing economy. This usually encompasses both basic physical and organisational structures required for the operation of OAM and usually range from transportation systems to communication networks. Therefore, infrastructure in Open air markets has a wide application since it includes transportation, communication, water supply systems, waste management, energy as well as public services such as security and health care. Availability of sound infrastructure is crucial in attracting investments from external sources, improving mobility in and out of the OAM and generally improving the internal circulations for both motorized and no-motorized transportation (Srinivasu & Rao, 2013).

2.4.2 Strategic positioning of the market

In reference to Geoffrey Payne, Tony Piaskowy et al., (2020), the fundamental choice of location of any market is regarded as an important decision specifically for urban wholesalers. The aspect of location is closely linked to the transportation nodes since markets are normally transit stops. Therefore, the ideal location of a market is one which possesses a good access essentially to an existing major road and also one with compatible surrounding land uses. Urban open-air markets ought to be conveniently accessible to customers especially those within walking distance from the low-income housing areas. In addition to locational suitability, the site has to be balanced against other factors current

ownership status of the land, size, suitability for undertaking construction as well as availability of utility services. Therefore, optimum site locations tend to be cost effective to both buyers and sellers through lowering margins hence ultimately reducing the costs of the ultimate consumers. These decreased costs have a direct economic and environmental impact in terms of creating the requisite energy savings and to a reasonable extent minimizing the anticipated air and noise pollution effects.

2.4.3 Proper internal traffic flows and minimal congestion

In most cases, congestion is one of the key factors that creates the need for market improvements. In open air markets where internal access roads are narrow, and parking of vehicles is not regulated then congestion is likely to be highly experienced. The possibility of altering the road pattern to adapt a one-way system and extending or otherwise changing market trading hours may potentially solve this challenge. However, this will not be sustainable if the parking within the OAM is uncontrolled and further there is lack of traffic management (Geoffrey Payne, Tony Piaskowy et al., 2020).

2.4.4 Optimum Utilisation of Market Spaces

One of the fundamental successes of a sustainable OAM is its ability to maximize the use of existing space. Critically, key design decisions revolve around the "core" space of the market which is area allocated for traders to display or sell their goods. This area primarily covers both the sections occupied by traders and the local circulation routes required to facilitate the movement of the customers to the stalls or premises. The area may be entirely indoors or may be adopt a combined covered space linked with the external access platforms/ gangways. Therefore, the existing sales places have a direct correlation with the payable rents and further impact on the market throughput. Moreover, besides the sales spaces, a good OAM should have allowance for siting of ancillary and supporting services such as banks & administrative offices (Geoffrey Payne, Tony Piaskowy et al., 2020).

2.4.5 Principle of Security

This principle will take two forms mainly land tenures systems and safety of shoppers within the Open-air markets. Majorly, the form of tenure system adopted has its own benefits and subsequent limitations Therefore, identifying which approach is appropriate depending on the local existing conditions. Moreover, the desired success will primarily

be determined by the underlying property right which is either public or private ownership of the land in occupation. Consequently, a major consideration when designing urban projects are usually dictated by the impact it is likely to have on the tenure security. Therefore, lands where open-air markets are located with lack of clearly defined tenure security systems will in most cases attract less investments simply because investors feel insecure (Calderon Cockburn 2002). Also, in order to improve tenure security in OAM and the subsequent access to services for the concerned urban citizens, it is imperative that positive relations are fostered within a wide scope of stakeholders both in the private and civil society sectors. Ultimately, there is a growing need to ensure that the existing tenure systems within OAMs respect both national and international human rights commitments as well as legislations which govern and protect occupiers from forced evictions (Geoffrey Payne, Tony Piaskowy et al., 2020).

According to Sutton (2010), stolen goods within open air markets result to several social harms. Some of these stolen goods are normally linked to a bigger and more complex organised criminal groups. The problem is entirely worsened by the people who buy these stolen goods. These people end up creating a demand for their own victimisation and further extend this susceptibility to other consumers, hence compromising public safety. Normally, the vulnerability and subsequent fear of crime in any OAM will discourage business investment, perpetuate population instability and hamper the requisite growth projected for local economies to flourish. In addition, those involved in stolen goods businesses tend to avoid resolving their conflicts using the existing law for fear of being found out, thus they resort to violence which can easily result to injuries or possible deaths. Therefore, for an open-air market to enhance its safety measures for the sake of the customers and occupiers, there is key unparalleled need to identify the prevailing challenges; respond by developing good effective measures; identify critical intervention points and ultimately implement appropriate responses. This will help to encourage both traders and consumers regarding their safety within the confines of the open-air market.

2.5 Challenges facing open air markets

Open air markets are faced by systemic and functional challenges. The study reviews from literature the main challenges that continue to limit open air market operations and their optimal realization of their economic potentials.

2.5.1 Poor solid waste management

Indigenous open-air markets in the urban areas of Ghana more often than not generate significant quantities of water which contributes to considerable proportion in the urban waste stream generated. The management of waste services in the open-air markets has fallen short of the expectation due to inefficiency to handle the volumes generated (Owusu 2010; Forbi et al 2008). The open-air markets of Kajetia, Asafo (Kumasi), Malata Makola and Keneshie (Accra) are suffering from mismanaged waste. This has been occasioned by the dumping of organic waste into drains while open dump serving as grounds for disease carrying vectors including rodents. Open containers overflowing with organic waste attracting insects may be a possible cause of food contamination especially in sections of the open-air markets where food is sold. Food contamination as a result of flies was regarded to be one of the leading causes of diarrhoea among young children in Ghana (Boadi & Kiutunen, 2005). In reference to Ghana Health service, records indicated that between December 2010 and March 2011, a total number of 3,286 cases of cholera were reported in health facilities across Accra out of which 54 deaths were recorded contributing to a fatality rate of 1.6% (Oteng-Ababio, Aurguello & Gabbay, 2013).

The outright ineffectiveness of waste management systems calls for newer and more innovative interventions to better manage solid waste. Waste management challenge faced by urban areas and indigenous open-air markets more so in Ghana entails designing a solid waste management system that can be described to be environmentally, socially and economically sustainable. Most waste management experts together with local government institutions have ignored the role of indigenous groups and CBOs in responding to the waste management problems (Hardoy, Mitlin, and Satterthwaite, 2001). The instituted strategies have widely assumed the indigenous institutions and usually oriented towards the government and the private sector. The ability of the CBOs and local networks working together in the management of urban solid waste is yet to be fully exploited (Asomani-

Boateng 2007; Obeng, Dekor & Mensah, 2009). The greater challenge of handling municipal waste in both developed and developing countries is pegged on the quantities of waste generated and the manner in which the increasing quantities can be equally managed in a sustainable fashion.

2.5.2 Air Pollution

The issue of air quality is a concern affecting both developed and developing countries. Statistics reveal that 53 per 100,000 capita universal deaths are associated with ambient air pollution resulting to 3,732,500 deaths on average. Observable data revealed that human health impacts from pollutants e.g., PM10& Pm2.5, ozone, Nitrogen oxides and sulphur dioxide. (Quansah, et al, 2017)). Pedestrian traffic particularly in marketplaces entails the movement of people to and from by foot for various activities within the market. This is a major cause of pollution which is highly neglected. The depletion of air quality within marketplace is a majorly cause by pedestrian traffic and it is regarded as one of the overall pointers of sustainability and user wellbeing (WHO, 2014). Majority of the open-air markets are not properly structured while a greater percentage of the roads not tarred. Therefore, the movements of pedestrians, vehicles, truck pushers etc back and forth in the market contribute in the subsequent release of particulates or dust. Vendors on the roadside spend averagely 8 to 10 hours along the road margins and thus continuously exposed to both vehicular emission and the fugitive dust (Tilt, 2019). Despite the prolonged exposure, the roadside vendor may not feel the devasting effects of harmful pollutants in the short run but in the long run, respiratory diseases coupled with death are anticipated. Examples of air pollutants commonly encountered in open air markets include but not limited to; carbon monoxide, sulphur dioxide, methane nitrogen dioxide, hydrogen sulphide, ammonia, volatile organic compounds and the total suspended particulate. However, the availability or absence of these pollutants in the atmosphere is a function of the nature of activities been undertaken within the market. Often the respirable fraction comprises of very fine dust which are capable of accessing the lower bronchioles and alveolar regions of the lungs. This sort of dust is attributable to having the potential of transporting the contaminated particles with traces of heavy metals and organic pollutants (Liu et al, 2008).

Particulate matter (PM has negative effects on the humans, environment and atmospheric conditions which encompasses; solar radiation, cloud formation global warming, visibility as well as precipitation (Balogun, 2011). Manisalidis et al. (2020) states that levels of pollution rising are associated with increase in motor vehicle congestions which builds on the already existent background concentrations of particulate matter in diverse locations based on the climate and geographical conditions. There is increasing evidence pointing that pollution from particulate common in marketplaces is usually associated with the increased risk of both morbidity and mortality from heart and lung diseases. Majority of these research revolve around the industrial areas and traffic emission with minimal focus on open air market which is a key area of concern owing to the diverse activities within the market that may pollute the atmosphere with special focus on the number of pedestrians in the market. As a result, the public health of these pedestrians is jeopardised.

2.5.3 Traffic Congestion

Generally, there is no agreed definition for the term traffic congestion since it is both a physical as well as a relative phenomenon (Rahane& Saharkar, 2014). When viewed as a physical phenomenon, it is defined to be a situation where the current demand for the road space surpasses the supply hence manifests by slower speed, longer trips increased vehicular queuing (Dowrie, 2008). It is considered a relative phenomenon when expectations there exists differing perceptions between road performance and the expectation of the road users (Downie,2008: Kiunsi, 2013).

Traffic congestion is understood to be an avoidable consequence of inadequate transport facilities such as road space, road signals, parking area as well as effective management of traffic (Balnco et al, 2009). Urban congestion is known to directly affect two domains of circulation mainly; passengers and freight that share the same infrastructure. There traffic congestion is as result of excessive usage of the existing road infrastructure beyond its capacity is characterised by slower speeds, longer hours and increased vehicular queuing. Any active city with economic vibrancy will rarely lack some sort of traffic congestion (Yildrim, 2001). On a broader view, traffic congestions can be assessed from two opposing angles one of which it can be considered as an indicator of economic growth & urban

lifestyle while on the other end, it can be viewed as an indicator of deterioration of the urban life. (Kuinsi, 2013).

Victoria Transport Policy institute (2009) indicates that there are two types of traffic congestion which are; recurrent and non-recurrent congestions. Recurrent congestion is the one usually occurs at the same place and at the same time every day. This is a consequence of certain factors acting regularly or periodically on the transportation system.

Traffic congestion is usually aggravated by some causes which include; increase in urban population, increase in vehicles and number of people using cars, low capacity of the road infrastructure, poor traffic management, street parking shortage, non-compliance of traffic regulations, poor urban planning or development control, car accidents, encroachments to the road, road works, poor weather, poor public transport among many others(Remi, Adegoke,&oyerinde,2009; Mahmud, Gope & Chowdhury, 2012 and Andoh, 2014)

In markets, traders are normally responsible for more than half of the experienced traffic congestion. Trader inclusive of hawkers are the major users in any open-air market. Unfortunately, these trader/hawkers in most cases occupy pedestrian walkways and portions of the road in the bid to showcase their goods to the shoppers. This inadvertently results to conflicts between pedestrians and motorists who are forced to share the already narrow roads in the market centre (Albane, 1993). Lack of parking lots for drivers or shoppers visiting open air markets is a common phenomenon in developing countries. In most cases, there may be a terminal station where commercial drivers operate however, they may be located far from the market forcing various categories of drivers to indiscriminately park on the shoulder of road to either drop or pick or worse still to go into the market to shop or work. This form of illegal parking goes a long way in congesting the already narrow way and encroaching on the pedestrian walkway if any. The pedestrians as key users of the market will be forced to conflict with other users such as traders and motorists in utilising the remaining portion of the road aggravated by the illegal on-street parking.

2.5.4 Other open air market challenges

The East African in August 2021 ran a story titled 'Modernise, clean up open-air markets to avert disease outbreak and disasters. The main call of the story was a rallying cry for better service provision within open air markets that it highlighted as experiencing traders and buyers to health and disaster challenges owing to old, dilapidated and run-down infrastructure synonymous with most OAM within the East Africa region. To underscore the gravity of the situation, the daily reports on the frequent fires markets such as Kariokoo in Tanzania and Gikomba in Kenya.

"In July 2021, a six-hour blaze burned down Dar es Salaam's 47-year-old iconic Kariakoo market causing losses running into millions of shillings. According to the Vendors Association of Tanzania, 1,662 vendors lost all their wares and business equipment. Out of the 397 registered traders, 224 were affected by the inferno..."

The daily further asserts that the infrastructure of the market was outdated, old and dilapidated, needing emergency repair and calling for overall renovation of the entire market infrastructure to make it habitable, organized and structurally sound for the market consumers.

> "Prior to this (fire) incident, an assessment of the market showed that most electrical wires were in poor condition or informally connected, that firefighting systems were unfit for a fire emergency, and that up to 95 percent of the service systems were dilapidated and required immediate repair and upgrading. In addition, the market's storm water drainage trenches and pipes were in a poor state, making vendors vulnerable to flooding during rainy seasons. Upgrades and modifications to most sections of the market were long overdue."

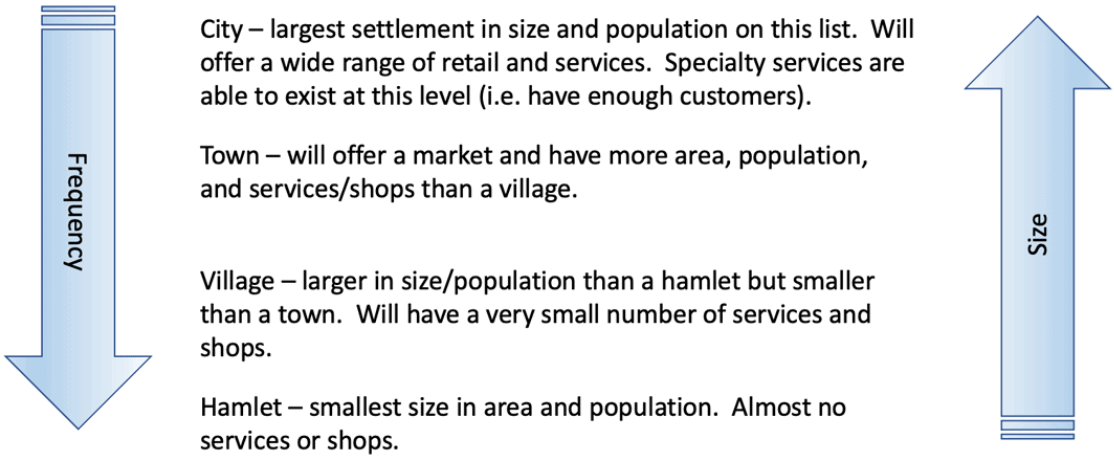
The periodical further reports that such dire conditions of open-air market infrastructure were not unique to Kariokoo in Tanzania. It reports that OAMs such as Gosa and Utako in Abuja, Nigeria, Kiambu and Machakos markets in Kenya, Kimironko in Kigali, Rwanda are in wanton state of disrepair that expose market consumers to vagrants of fire, weather hazards, and power failures. The daily just falls short of mentioning Gikomba OAM market that has been a news item in Kenya for the longest over what has come to be known as "Gikomba Fires".

Notable challenges facing open air markets as highlighted by the daily include poor drainage systems, poor water infrastructure and water supplies challenges that are considered a leading source of disease outbreaks, improper electrical connections, dysfunctional firefighting systems (or their absence), inadequate sanitation facilities (not enough and in poor state toilet facilities), and disaster unpreparedness of market authorities. These infrastructure weaknesses contribute to the physical harm of the OAMs and their consumers and have the potential to give rise to food safety hazards, owing to the fact that these OAMs are major food security sources for urban and rural habitants within East Africa and indeed the entire Sub-Saharan Africa (The East African, 2021).

2.6 Theoretical and analytical framework

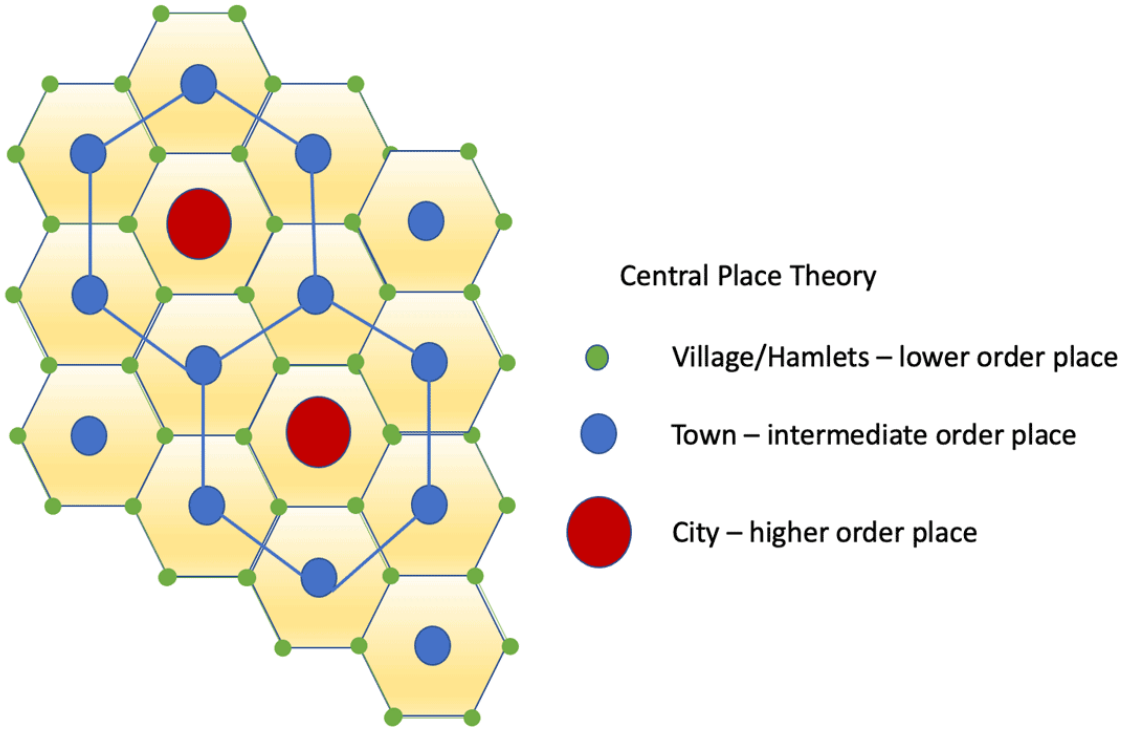
2.6.1 Central Place Theory

The Central Place Theory (CPT) was formulated by Walter Christaller in the year 1933. This theory sought to give a clear explanation regarding the location, number as well as the size of settlements. These locations acted as central places which were key in providing services to the surrounding areas. CPT was central in explaining an isotropic landscape which is characterised by flat and homogeneous surface together with the existing variation in the dispersion of these urban locations. The population was perceived to be evenly distributed within the settlements which were assumed to be equidistant. Also, the theory assumes that both consumers and sellers have similar economic and purchasing power which ends up influencing the markets and service placements (King,1985).



(Source: https://www.geographyrealm.com)

Notably, as the existing large settlements grow bigger then few large ones tend to sprout. These larger settlements keep growing the more the larger ones are far from each other. Therefore, as these settlements grow, they usually tend to specialize and further provide greater services to the population. Hence this theory is best visualized as a pattern of hexagons and connected networks that form as a result of the arrangements of the varying order of settlements. Basically, in a homogenous landscape defined by the distribution of population, fertility of soils as well as transportation systems; the lower order settlements which comprises of villages and hamlets tend to form hexagon patterns more specifically around the transitional order settlements(towns) which further forms a hexagon around higher order settlements which are cities. Subsequently, the available goods and services are distributed and served mainly to the settlements which are closest to the central place (Altaweel, 2022).



(Source: https://www.geographyrealm.com)

In Christaller's view, he noted that the results were likely to change depending on the existing environmental and social factors that define the landscape, population as well as services. Therefore, this theory can be applied to explain how regions conform or vary from central Places Theory's ideal point of view. The theory is of importance to this study owing to the spatial existence of Gikomba market within the higher order place which is Nairobi City. The market has interlinkages to the other markets in various towns which form the intermediate order places which are further linked other small markets which form the lower order places.

2.6.2 Functionality theory

The goal of functionality stance is workability and competence. Functionalism, coined in 1920s and published in 1933 by Congrès Internationaux d'Architecture Moderne (CIAM) has undergone through a series of corrections in response to criticisms. The latest version of the theory conceives the city as an aggregation of uses that needs accommodation. These uses comprise of residence, work, leisure, administration etc and the transport system that serve them. Earlier conceptions of the theory perceived the city as a machine. The latest

ideas of functionalism theorists consider the city as a complex organism, and as a constellation of community centres linked to and directly by a central core (the central business district).

Each of residence, work and leisure are considered discrete elements by functionalists. Functionalists are of the view that activities should not mix up, hence advocate for creation of zones. They point out that in a zoned environment activities are undertaken without or with little interference from other activities. Zones create a segregation of activities and limit interference of actions in their respective zones. In urban planning dimensions, organizing functional relations in a two-dimensional plan usually overrides organizing other relations. Functionalist schemes heavily rely on plan drawings over intimate views, diagrams or bird's eye perspectives. Despite the theory advocating for separation of activities in zones, they must be commingled at the core of the city, the CBD. The objective of commingling is to enable people meet and exchange ideas with one another. The centre must thus be "attractive to all types of people it serves". This to mean the centre must a place of spontaneity, rendezvous, refuge and organized activity – one that engenders civic consciousness.

Key elements of functionalist theory comprise of: -

- A functionalist city should be equitable – it should not favour or ignore social groups. All must have access to open spaces, sunlight, fresh air etc.
- Its core must comprise of other elements, more often of imponderable nature. It goes beyond a machine for making money and more than a crossroad for traffic, people and goods
- Its success is hinged on absence of vehicular traffic, the core should be a domain for pedestrians.
- In contemporary contexts, functionalists' goal is that the contemporary town must display contemporary modes of expression.

"The quality of functionalist design depends on how competently it accommodates needs and activities and on how well it uses light, space, and greenery, the ingredients of an urban

plan that enhance daily experience. Open space is highly valued—not vast spaces but controlled, demarcated spaces adjacent to functional areas".

The core of functionalist view is to ensure segregation of activities, and in a modern set up of the city, to achieve compatibility of activities within and beyond the zones. Taking into context the functionalist perspectives, the core is a place of mingling, undertaking financial activities, crossing to another part of the city, and a place of leisure, peace and comfort. Besides, within the respective zones, functionalists attempt to achieve a functional workspace that provides workers with sufficient access to sunlight, greenery, open space etc in an organized manner to ensure competence in flow of activities and exchange of ideas, goods and services. The functionalists focus on attaining an urban experience regardless of whether one is at work, residence or leisure spaces. This theory provides for the study to remodel and re-design Gikomba market to achieve seamless compatibility, efficiency, competence and success by assigning all necessary aesthetics their due space, order, organization and connectivity.

2.6.3 Linkage theory

All over the world, streets, buildings and spaces define urban activities. A study by Wahid et al. (2021) found that the accessibility of users from all directions (connected by a short cut path), diversity of activities at each corner of the blocks, continuous flow of primary and secondary use intertwined in between the main street and lanes supported the connectivity of urban linkage. This followed a study of India's main street, Kuching Sarawak, in an attempt to understand pragmatic parallelism of the linkage theory between the main street and its neighbouring urban phenomenon that constitute primary and secondary human activities and their support system. These convergencies of human activities regardless of location or condition give meaning to a place. Place inevitably integrates multi-dimensional human activities. Fusions of natural and human order, places are significant centres of our immediate experiences of the world.

When place is created within a space, it generates an activity space. These activity spaces are therefore created out of human experiences that draws attraction to the space, and such demanding for linkages between activity spaces for space and place to obtain meaning and create human experience upon its consumption activity spaces therefore vary depending

on the motive for which space is utilised. These births urban form where various human activities are spread. Activity spaces may comprise of spaces for open air markets, tourist spaces, production spaces (industrial, manufacturing, and agricultural), commercial spaces, recreational spaces, administrative spaces, educational spaces, transportation spaces (harbours, ports, bus stations, railway stations, subways etc) among other human activity spaces. These spaces are in turn land uses and provide platforms for human actions over land. For space therefore to make meaning, their multi-dimensional integration is inevitable, necessitating linkages.

Roger Trancik in his book "*Finding the Lost Space – Theories of Urban Design*" extrapolates on three theories of urban design. Among them is the linkage theory. Trancik explain linkage theory as the approach that entails the organization of lines that connect all forms of layers and activities in a city context (Trancik, 1991). These lines connect the various elements of spatial form within the city with each other. Linkage theory emphasizes on the circulation spaces connecting one urban element to the other and the spatial arrangement of the city. The stressing of linearity takes shape in the city in as streets, pedestrian ways, lanes, riverbanks, open spaces and other linear spaces that connect the different parts/elements of the city (Kiss & Kretz, 2016). The idea of linkage theory is generally that of a network where the lines provide the structure for organization of space. Connection and circulation are the core of attention in linkage theory and they generate urban structure. In this context, the movement system and efficiency of its infrastructure are dominant over the patterns of defined space. Site boundaries, flows of movement, organizational axes, building edges etc combine to frame a constant system of linkages.

Linkage theory therefore results into an urban form and creates connections between activity spaces, eventually facilitating exchange of goods and services through efficiency in movement systems. The outcome of linkage theory is a street layout that enables familiarity, accessibility, interdependency and interactions within and across the urban structure (Wahid et al., 2021). The street layout is viewed to familiarize with its accessibility, familiarity, vitality, diversity, uniqueness, safety and security. This is achieved through the 5 elements of urban design that blend together urban principles. These elements include Path, Landmark, Node, Edge and District (ibid).

Modern linkage theory approaches extend the web of connections beyond the city to what is now known as urban-rural linkages. The basic definition of urban-rural linkages is that they comprise of spatial flows (of goods, services, people/labour, information, finance, waste, social relations etc), linking urban and rural areas. It refers to the functional links between sectors (industry, agriculture and services) (Tacoli, 2016). The linkage theory in this context establishes a network of connections within and beyond the city, creating a functional aspect of interconnectivity. This facilitates spatial flows of relationships, interactions and exchange of goods, products, services, people and information between the countryside and the city through connectors which are a system of movement mainly made possible via transportation. Urban rural linkages foster inclusivity, partnerships, mobility, migration, and integrated territorial development between urban and rural areas.

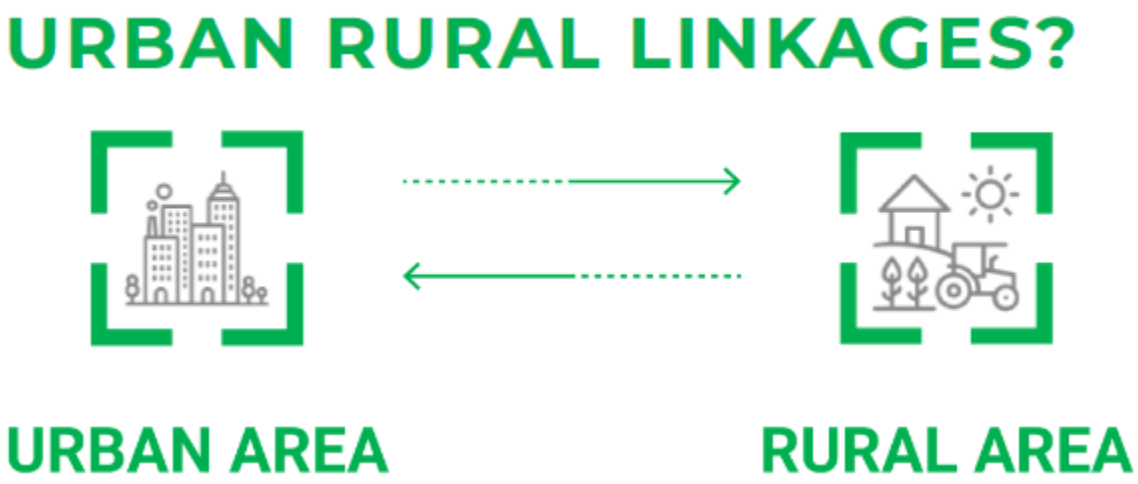


Figure 2: Urban-rural linkages

Adapted from: *https://urbanpolicyplatform.org/urban-rural-linkages/*

The movement systems and linkages define the functionality of an area and its interrelationships with other parts of the city, and now the countryside. Therefore, they are a profound basis upon which the study is entrenched, with a view to determine the functionality of Gikomba OAM on grounds of its character and form vis a vis its linkage within and beyond the Nairobi city network. Gikomba OAM is a node within the city and it is the space where the exchange of goods, products and services between the urban and rural areas occur, hence a key component of the urban rural linkages.

2.6.4 Network theory

Urban networks enable the exchange of goods, people and ideas within and across activity spaces. They make it possible for the movement of people (skilled and unskilled labour/human resources) and ideas. The main objective of networks is to establish a linkage between activity spaces – which could be within the same city or between cities/towns (Glaeser et al. 2016). The connections between elements births to a city or a portion of urban landscape (Salingaros, 1998). Urban and interurban networks serve to connect distinct networks, each one with its own organisational approach and dynamics (Pflieger & Rozenblat, 2010). Cities serve as a support for and expression of human activities.

The urban space tolerates a greater degree of similarity to an agglomeration made of numerous discrete networks – social, economic, technical, political or infrastructural – that interconnect at an agreed point, and therefore affording urban space its own specificity. The particular set up of each network differentiates one urban space from the other. In-turn, this shapes the organization of various entities and functions within networks (Pflieger & Rozenblat, 2010).

> "*Any urban setting can be decomposed into human activity nodes and their interconnections…"* - Nikos A. Salingaros (1998).

The urban network is a concept that infers to a degree of interdependency among cities that are connected by various linkages at different spatial levels (Ducruet, 2020). Network theory is important in that it help understand the relations between different scales through small worlds, connectors or aggregators (Pflieger & Rozenblat, 2010). Historically, urban networks are perceived as the specific form of organization that cut across political borders because of the cultural and economic nature. The emergence of urban networks was basically to foster trade and shipping activities spearheaded by merchants who sought a degree of freedom and thus were in opposition to centralized political governments while simultaneously complementing them (Ducruet, 2020). Spatial planning issues pioneered studies of urban networks. This followed the pre-existing non-consonance on definition and interpretation of networks that existed due to three key elements that included the scale of analysis adopted, urban processes captured and the ontological status ascribed to the network under study (Derudder, 2021).

Ducruet (2020) identifies two the Anglophone group and the Swedish group as the two main poles that actively researched on urban networks in the 1960s and 1970s, both adopted quantitative methods. Inspired by central place theory, the main innovation of these groups was the shift from intra-urban to interurban in the "first science of cities". Further, he posits that the expression of "cities as systems within systems of cities" by Brian in 1964 was symbolic to the shift and was inspired by Ullman (1954) horizontal definition of urban networks that was based on three elements of complementarity, distance and economic opportunity. Later in 1977, Alan Pred provided a clear definition of urban network that remains valid to this date. In Pred (2017), a review, Pred defines urban network as "a national or regional group of interdependent cities where changes in one city (e.g., economic activities, professional structure, wages or population) will affect the other cities.

Numerous analyses of urban networks followed this proposition, though they were based on urban population as the key variable, for example to explain the degree of centralization or integration. Numerous studies and contestations have since followed in the effort to demystify the concept of urban networks. The key findings however remain nested on the interactions between entities within the urban fabric, that are interwoven together by ties (which could be transport or communication or relationship ties) and are made possible by the active involvement of entities that make the city a network of functional whole. The components involved are dyads and are in a way interconnected through some form of relationship, which could be trade, investment, ethnicity, exchange and so on. As a result, there exists a similarity between modern and classical theories in the definition and character of the concept including the use of quantitative methods such as network analysis. Besides, the study and analysis of the concept took a multidisciplinary approach, each of which made attempts to align the concept with its respective discipline, however, it maintained the same elements as defined by Pred in 1977.

These multidisciplinary approaches birthed various connotations in respect of the discipline. French geographers developed "evolution theory of cities" constructed from self-organization, synergetic and co-evolution concepts that focused on distribution of urban population and transport networks. United Kingdom's Michael Batty coined "new

science of cities" that defined urban networks by use of biology and physics methods. The 1990s improvements on transport and communication technologies in the US megalopolis explained the fading role of distance and the rise of service economy and globalisation. Economists define urban network as a "collection of economic agents (consumers and firms) without or with limited spatial interactions, with static, comparative, and equilibrium methods as the basic core of analysis". As such distance was considered not to affect the mobility of economic agents within cities.

The "city network paradigm" by Capello (2000) was such a significant shift among the multidisciplinary analysts of urban networks. It was a critique of the highly dominant hierarchical approaches to urban networks. They perceive cities as "specialized in certain firms' activities and connect through horizontal linkages as a matter of complementarity, thereby generating positive externalities, vertical integration, cooperation, innovation, and synergy effects".

Briefly therefore, a network consists of a set of actors referred to as nodes and the relations (ties, edges, connectors) between these actors. Nodes can be people (individuals), groups, organizations or even societies. Ties may fall within a level of analysis or may cross the levels of analysis. A network represents a map of all relevant ties between the nodes under study. The intellectual unity of a network is identified by five principle of network approach as defined by Berry Wellman 1988 in Onday (2016). Firstly, the behaviour of people predicted by examining the web of relationships they are embedded in rather than their attitudes, drives or demographic features. Secondly, the analysis should focus on the relationships between units as opposed to the individual units themselves or their fundamental characteristics. Thirdly, the methods of analysis must not centre on the traditional assumption of independence. Fourthly, understanding social networks demands more than the mere aggregation of dyadic ties. The flow of information and resources depends on both the relationship between them and their relationship with others (everyone else). And lastly, sometimes groups have fuzzy rather than firm boundaries. The building blocks of organizations are more overlapping networks than are discrete groups (ibid).

Approaching markets as networks considers markets as networks of exchange relationships. The significant relationships within markets are business relationships.

These are interactive and develop with time through a series of episodes of interactions between actors (Harrison & Kjellberg, 2014). The parties involved in these networks are assumed to be active in their relationships. Business networks are formed as a result of a single dyad being connected both directly and indirectly to other relationships within the market generating a pattern of interdependency across relationships. In this sense, exchange is organised into dyads and networks so as to facilitate value creation and cooperation. The interdependencies, interrelationships and interactions are the crucial underpinnings of network theory of markets. The other crucial underpinning of network theory of markets is resource heterogeneity which is a central assumption of the theory and a pivot driver of development processes in networks. The main aim of markets as network is to provide conditions for interactions/exchange (the relationship and network structure) in a favourable way

Adopting network theory in the assessment of functionality of Gikomba OAM aided the researcher in identifying the existing relationships, their nature, form and character between traders, and the physical connectedness that enhances the functionality of the market. A network analysis approach aided in the identification, specifying and measuring the interactions within the market, its neighbourhood and the city at large, the importance of the market in these interactions and demystify some of the key characteristics of the market and the city as a whole. The object was to infer on the relationships between samples/actors, the importance of these relationships and the actors involved and how to better improve on the relationships and maintain them in the redesigning and remodelling/restructuring of the market to exploit its maximum potential.

2.6.5 Lessons from theories

The central Place Theory is vital in explaining the various economic correlations between cities with the smaller settlements or markets. Therefore, this theory has sought to explain why cities are spatially located where they are in the higher order place and how critical they are in serving the immediate and lower order places with particular goods and services. Therefore, this theory identifies Gikomba as a very key market which is key in receiving and distributing goods in other markets spatially located in other surrounding towns and beyond.

The functionality theory pays attention to zoning activity spaces and segregating each of these spaces, in our context Gikomba OAM. It focuses on achieving efficiency and functionality by limiting and discouraging interference with activities within each zone. Further, it creates coherence by promoting compatibility and relationships across zones. Within the respective zones, activities must be well organized, and coordinated to create a great work experience, rendezvous and spontaneity while simultaneously facilitating social-economic relationships between the internal context of the OAM and its neighbourhood land uses. Achieving functionality is therefore made possible through connectivity of transport channels that interlink the respective activity zones.

The network and linkage theories provide a clear explanation of the external and internal connections of OAMs. These theories explain the detailed and intricate relationships between spaces, in our context OAMs and other human activity centres. Further, these theories bring out the interdependencies that exist within OAMs and between OAMs and the immediate neighbouring land uses (local/city level interdependencies), between OAMs and the rural hinterlands and between OAMs and the foreign markets at the global scale. Notably the effectiveness and efficiency of the networks and linkages directly influence the efficiency and functionality of the OAMs. The networks and linkages facilitate the supply and demand, access to and from OAMs, and the exchanges of goods and services at the various levels established through the existence of the OAM. Further we draw that a success or failure of facilitator/enablers of networks and linkages, primarily transportation, has direct corelation to the functionality, as a failure of transportation results to failure in delivery of products, goods and services to and from the market, and hence congestion and bottlenecks that inhibit its functionality.

2.7 Case studies

2.7.1 Rungis International Open-Air Market, Paris

Rungis International OAM deals mainly with food. The French spend an average of 16% of their monthly budget on food (Larochette and Joan, 2015), and are becoming increasingly demanding when selecting their products, as certain criteria such as proximity and environmental impact take on greater importance. To meet these demands, various studies conducted in France have demonstrated a large diversification of available food

products, due to the development of new short supply chain distribution channels and the development of partnerships between large retailers and local producers. Faced with this new competition, food markets attempt to keep their place and are subject to changes.

According to Marechal, 2008, Open-Air Markets also referred to as covered markets or food markets take place when a group of professionals known as “nomadic” traders who can be permanent or temporary subscribers gather in a public space made available by the local council in exchange for a fee, to sell provisions, non-food goods and products such as meats, cheeses and breads. These indoor or outdoor spaces follow their own regulations, which govern opening hours, specific attributes, that is, specialized produce, organic, etc. and type of management, whether outsourced or not.

A study conducted by Research Centre for the Study and Observation of Conditions of Life (CREDOC, 2010) in France showed that from 2007 to 2010, the French chose to buy produce according to 4 main criteria: product quality, price, geographical proximity of the store and product variety. The markets focus on short food supply chains and according to De Fazio, 2016, a short food supply chain is a supply chain formed by a limited number of economic operators who focus on the promotion of the cooperation, the regional development and the tight social and territorial relationships between producers and consumers.

Studies and reports have agreed on the fact that markets are genuine assets for towns and cities. Open-air markets contribute to the economic drive of the community (Navarro, 2012), allowing traders to sell their products at minimal costs without having to invest in an expensive shop front. Furthermore, markets with nomadic traders and their producers seem to be a positive addition to what the permanent traders have to offer. On market days, there is a real dynamic urban atmosphere, benefiting the local community and reflecting its identity: Essential to urban life, markets are seen as a real tool for the planning and economic development of the community, and are an undeniable instrument for social cohesion (Mabille, 2015). Geographical proximity, accessibility and versatility are also important, as statistics show that a high number of elderly folk or people with no means of transport attend markets on a regular basis to get out of the house and socialize.

Figure 3: SWOT analysis on the development of OAMs in Paris

Opportunities	Threats
• Develop the distribution of local agricultural production; • Healthy diet and local food supply supported by the Paris Food Policy; • Quality as a first-choice criterion for foodstuff in the eyes of consumers; • The French "art de vivre", tourism, and international outreach with the French Market concept; • The search for cooperation with local shops in the market area; • Training and support for the sustainable development of nomadic traders; • Take part in the European "Urban Markets" project to develop solutions to urban challenges.	• Present economic conjuncture; • Competition from other short supply chain systems (AMAP, local farm shops); • Environmental policies instated by the City of Paris (impacting transportation and logistics); • Consumer awareness of environmental impact; • New online sales channels (Amazon Fresh, etc.) • Fuel price increases and national policies on diesel engines.
Strengths	**Weaknesses**
• The image of the French "Art de Vivre" and tourism; • Prospects for local agriculture; • Geographical locations ensure food supply to areas lacking in permanent grocery stores; • Possibility to purchase in small quantities; • Historical dimension and a reputation for providing quality products at fair prices; • First changes made to improve market appeal.	• License fee costs on the increase; • Time constraints which no longer meet consumer needs; • Declining interest in markets due to a lack of butchers, cheese mongers, bakers and other food shops; • The development of nomadic sales professions; • Lengthy procedures for markets to achieve compliance; • Only 10% of market stalls are local or short supply chain producers; • Narrow selection of product categories for visitors.

Source: Food open-air markets in Paris: transportation environmental issues, 2019

Figure 4: Rungis Open-Air Market, Paris in Photos

Sources: AFP News Agency (https://www.youtube.com/watch?app=desktop&v=kk7D1mJM9bo) and https://www.pinterest.com/pin/535858055643941306/

2.7.2 The Soulard Open-Air Market, St. Louis, USA

It is a combination of good location, grit, and city subsidies that have kept this market viable long after the others had ceased. Soulard Farmers Market was created when Julia Cerré Soulard donated two undeveloped half-blocks of her real estate to the city of St.

Louis in 1841. Her instructions dictated that the donated property be used as a public market place in perpetuity, lest it be reclaimed by her heirs. In the mid-1920s, the city proposed an $87 million bond issue for public improvements throughout the city. One of the many proposals was for a new, cleaner, modern Soulard Market building. Any surviving original buildings and later shed pavilions were all razed to make way for the deluxe new facility. Construction began in 1928. The new building's two-story central structure contains a loggia and a roofed open gallery with arches inspired by the 1419 Brunelleschi Foundling Hospital in Florence, Italy. The total cost was $267,000. A central two-story section built over Eighth Street boasted an upstairs gymnasium and all-purpose hall. It was flanked by four, one-block-long wings, two on each side. Today, the Market is open Wednesday through Saturday year-round. On Wednesday, Thursday and Friday, hours of operation are 8 a.m. to 5 p.m. and Saturdays from 6 a.m. to 5 p.m.

A master Plan was prepared for the market in 2012. The goals and principles for the master plan were;

- Create a vibrant destination for local shoppers from throughout the region while producing revenue for the Market.
- Preserve the historic character of the Market.
- Maintain the facility as a public market.
- Continue to serve a diverse range of customers and attract more customers.
- Improve revenue streams to provide a sustainable business model.
- Rental, lease, policies/procedures, utilities
- Improve Market operations
- Trash disposal, parking, storage, heating and cooling, security procedures
- Create a strong and responsive management structure and approach
- Assess and identify opportunities for special events and festivals

The Proposed mission statement for the market was Soulard Market provides opportunities to local independent businesses and farmers, serves the entire community with fresh healthy foods, and helps revitalize the Soulard neighbourhood.

The Master Plan recommended creation of a hierarchy of preferred vendor types (farmers, food producers, resellers), creation of incentives, rules and management practices to provide consistent shopping experience on all days the Market is open, keep ownership with City of St. Louis, create Community Advisory Committee to ensure ongoing community input, expand management staff as revenue become available, rents should be reasonably low to support independent businesses, make rents proportional to sales opportunity and reflect desired tenant mix, create new leasing model that charges rent based on Location, Type of vendor, Day of the week and Season of the year. The following images shows a revamped Soulard Market after the implementation of the masterplan for the market in USA.

Figure 5: Soulands Market St. louis, USA

Source: Master Plan for Soulard Market and Park, 2012

2.7.3 Lessons from Case Studies

The case studies provide key learning points that contributed to the final land use and policy proposals for replanning, redesign and remodelling of Gikomba OAM. Key deductions from these case studies include the consideration of flexibility and versatility in market operations that are made successful through efficient flow of traders, goods and services with intent of achieving proximity and short supply chains as is the case with Rungis in Paris. The concept provides that networks and linkages between the market its neighbourhoods can be redesigned to promote functionality and proximity in access to fresh foods, the purpose for which the study seeks to achieve for Gikomba OAM. The key objective is to reduce operational costs for traders, suppliers and customers in the provision of and access to goods and services offered in the market. We draw that both internal and external elements of the market are key functionality components that foster efficiency and success of the OAM.

Additionally, the demolition of structures, replanning, redesign and reconstruction as well as the provision of incentives and subsidies to traders were the hallmark of Soulard OAM. This provides the confidence of a complete overhaul of Gikomba market to meet

functionality concepts of efficiency, connectivity and aesthetics. Soulard replanning of its spatial organization and investments in a modern vertical market that provided aesthetic, social, and historical concepts via galleries, gymnasium, and social halls are notable contributors to the final spatial recommendations for re-organization of Gikomba market. Soulards latest 2012 master plan provide a basis upon which the study based its recommendations for a revamped, aesthetically sound networked market that appreciates its history, character, diversity and spatial organization. It also provides a reference in the development of a market policy that regulates the maintenance of the market sustainably. It too provides the foundation for replanning and reorganizing of Gikomba OAM in relation to existing character and features.

Overall, urban planners are at the core of both case studies, leading the market redevelopment and replanning strategies to achieve optimal functionality. This indicates the critical value attached to providing room and space for professionals in land use to lead and guide spatial planning of urban and regional spaces.

2.8 Policy, Legal and Institutional Framework

2.8.1 Policy Framework

2.7.1.1 Sustainable Development Goals

The United Nations' 17 Sustainable Development Goals (SDGs) aim to achieve decent lives for all on a healthy planet by 2030 (Jatana & Currie, 2020). Goal 9 seeks to achieve industry, innovation and infrastructure, target 9.1 envisage the develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all. Goal 11 seeks to achieve sustainable cities and communities, with target 11.8 envisage the support for a positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning (GoK, 2016).

2.7.1.2 The New Urban Agenda

The New Urban Agenda, adopted at Habitat III in Quito, Ecuador, presents a paradigm shift based on the science of cities and lays out standards and principles for the planning, construction, development, management and improvement of urban areas and it highlights

the linkages between sustainable urbanization and job creation, livelihood opportunities and improved quality of life, and it insists on incorporation of all these sectors in every urban development or renewal policy and strategy (African Union, 2015).

2.7.1.3 Agenda 21

Agenda 21 is one of the major documents that came out of United Nations' Rio Summit on Environment and Development in 1992. It is a comprehensive plan of action, recommended by UN summit to be taken globally, nationally, and locally by organizations of the United Nations System, governments, and major groups in every area in which human impacts on the environment.

Chapter 2(5) advocates for an open, equitable, secure, non-discriminatory and predictable multilateral trading system that is consistent with the goals of sustainable development and leads to the optimal distribution of global production in accordance with comparative advantage is of benefit to all trading partners. Moreover, improved market access for developing countries' exports in conjunction with sound macroeconomic and environmental policies would have a positive environmental impact and therefore make an important contribution towards sustainable development (Linder, 2019).

2.7.1.4 Agenda 2063

Agenda 2063 is a shared strategic framework for inclusive growth and sustainable development and a global strategy to optimize the use of Africa's resources for the benefit of all Africans. It was developed through an extensive consultative process involving various African stakeholders. The agenda has many aspirations including a prosperous Africa, based on inclusive growth and sustainable development. Goal 1 under the first aspiration envisages a high standard of living, quality of life and well-being for all citizens with priority areas on modern and liveable habitats and basic quality services (African Union, 2015).

2.7.1.5 Kenya Vision 2030

Vision 2030 is a long-term development blueprint whose goal is a globally competitive and prosperous country with a high quality of life by 2030. It aims at transforming the country into a newly industrializing, middle-income country providing a high-quality life to all citizens in a clean and secure environment. The Vision is anchored on three pillars:

Economic, Social and Political. One of the sectors provided for under Economic and macro pillar is Building tier-1 retail markets whose impact was an improved efficiency and increased in the market share of products sold through formal marketing channels (GoK, 2007).

2.7.1.6 National Industrialization Policy (2012)

The policy's goal is to provide an integrated enabling business environment for the growth and development of productive MSEs in Kenya that make significant socio-economic contributions to the economy through provision of decent jobs and source of quality products. Among the key policy statement include expanding market opportunities for MSEs. The policy interventions target domestic (open-air markets) and export markets by addressing issues related to access to information, compliance with standards, product standardization, certification, value addition, local content opportunities, sub-contracting linkages and adoption of technology. The policy measures also seek to create awareness on standards requirements, ensure compliance and strict enforcement of standards, promote standardization of MSEs products, create accessible digital portals for MSEs to access market information, establish sub-contracting framework, create awareness and streamline government procurement opportunities and establish creating marketing approaches, among other interventions (GoK, 2012).

2.7.1.7 National Trade Policy (2017)

The National Trade Policy was formulated within the framework of the national long term policy blueprint; the Kenya Vision 2030 which is the basis of the country's entire policy formulation and implementation for all sectors in the country. Chapter 4 (Micro and Small Enterprises Trade), small scale trade remains the entry point for the majority of business starters providing the production, distribution and retailing of goods and services. Being largely unregulated, most of the MSE sector operations have led to some undesirable social and environmental impacts such as environmental degradation, non-observance of health standards and infringement of copyright laws whilst heavily relying on self-supporting and "informal" institutional arrangements. The MSE sector commonly referred to as the "Jua-kali" sector in Kenya continues to play an important role in the labor market. It reduces the

levels of unemployment by creating jobs for people in the labor force that cannot be absorbed in the modern sector (GoK, 2016).

2.8.2 Legal Framework

2.7.2.1 Constitution of Kenya, 2010

The constitution is the supreme law of the Republic of Kenya which binds all persons and all state organs at both level of government and presents development opportunities in terms of decentralization of public services and roles of the county governments in development of infrastructure, enterprises and trade. The fourth schedule (distribution of functions between National and the County governments) under section 7(a) accords the county government the full function of the market (GoK, 2010).

2.7.2.2 Public Health Act (Cap 242)

An Act of Parliament to make provision for securing and maintaining health. Article 154 states that "for the purposes of this Act, the Minister may make rules for the establishment, control and closing of all markets and market buildings (GoK, 2012). Thus, giving the Mister authority over all the markets in Kenya including the open-air markets.

2.7.2.3 Environmental Management and Coordination (Waste Management) Regulations, (Legal Notice No.121 of 2006)

The Waste Management Regulations are basically aimed at streamlining the handling, transportation and disposal of various types of wastes. The broad goal of the regulations is to protect human health and the environment. The regulations place emphasis on waste minimization, cleaner production and segregation of waste at source. The regulations have also classified various types of waste and recommended appropriate disposal methods for each waste type. Under the regulations, National Environmental Management Authority (NEMA) is supposed to licenses transporters, incinerators, landfills, composers, recyclers and transfer stations. Facilities to be licensed include local authorities, transporters and handlers of various types of waste. The regulations provide an opportunity for investment in various aspects of waste management within the open-air markets. This ensures good hygiene and healthy working environment for those providing goods and services and buyers within the open-air market.

2.7.2.4 The Nairobi City County Public Markets Bill, 2019

An Act of County Assembly of Nairobi City to provide for implementation of section 7 (a) of Part 2 of the Fourth Schedule to the Constitution, and for establishment, development, management and regulation of public markets, and for connected purposes. The objectives and purpose of the act includes, to promote and enhance growth and development of wholesale and retail trade; to ensure efficiency and effectiveness on operations of the markets; to promote and ensure inclusiveness and participation of wholesale and retails traders in the governance and management of the markets; and to enhance sustainability of operations of the markets (GoK, 2019).

2.8.3. Institutional Framework

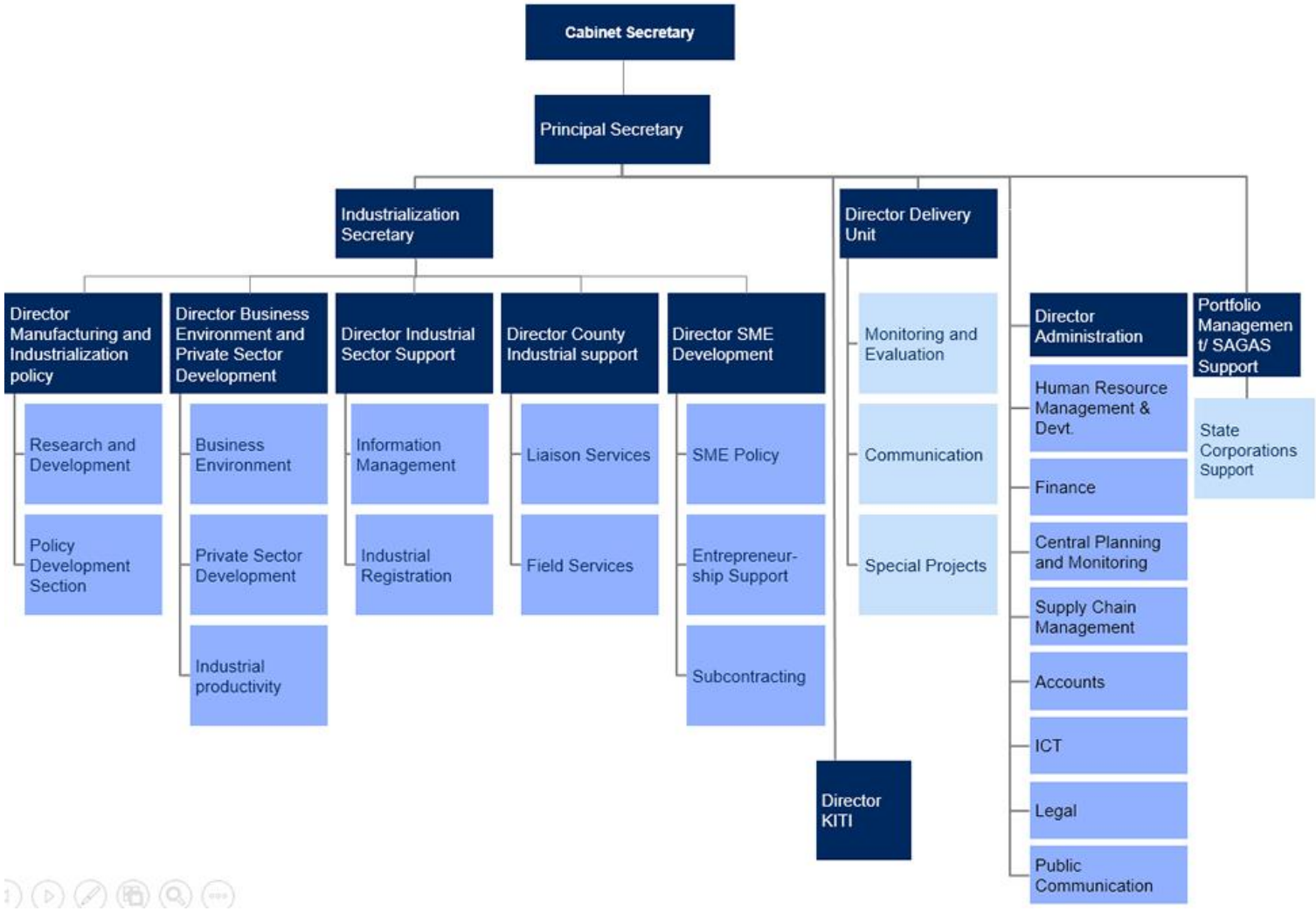
2.7.3.1 Physical Planning Department

The key mandate of this department is to prepare physical development plans. The urban and rural areas of Kenya are facing problems related to resource utilization and distribution, sustainable space use, poor infrastructure, declining urban areas and environmental degradation. All these have directed implication on the well-being of the society and the physical planning department is duty bound to provide solution to the mentioned issues in conjunction with other players or stakeholders. The declining physical fabric of Gikomba Market calls for immediate redevelopment actions and Integrated Urban Planning.

2.7.3.2 Trade and Industrialization

The figure below indicates the various institutions involved in the planning and management of Open-Air Markets when it comes to trade and industrialization in Kenya.

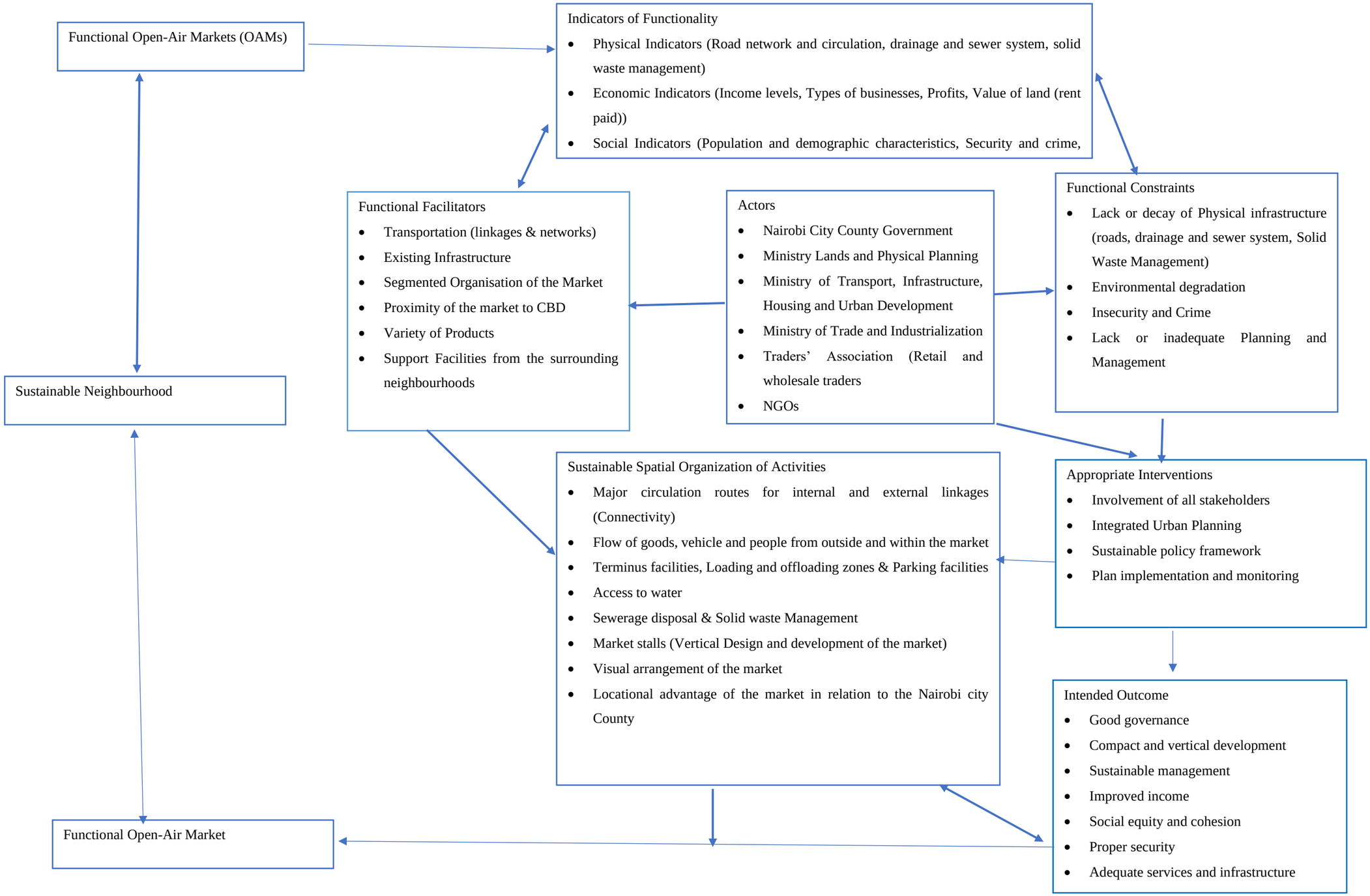
Figure 6: Trade and Industrialization Institutional framework



Source: MoITED, 2020

2.9 Conceptual framework

Figure 7: Conceptual framework



Source: Author, 2023

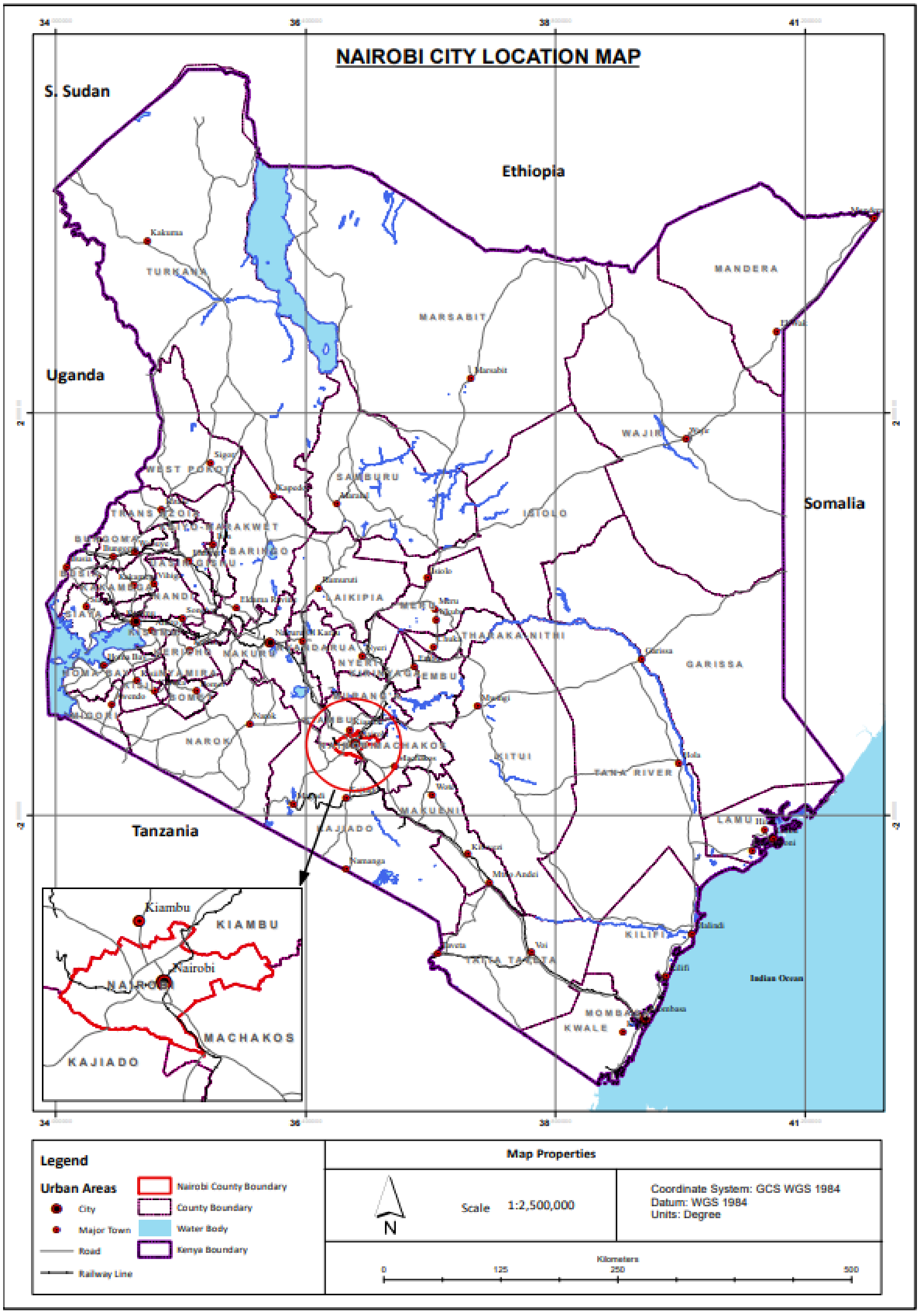
CHAPTER THREE: STUDY AREA

3.0 Location and Size of the Study Area

The study was carried out in Gikomba Open-Air Market. The market is in close proximity to Nairobi Central Business District (CBD) and it is adjacent to Bondeni, Majengo, Pumwani and Gorofani estates. Geographically, it is situated on the Southeast of Nairobi CBD and its one of the largest OAMs in East Africa. The Gikomba OAM, which is some 2.8km from the heart of Nairobi CBD, borders Industrial Area to the south, while on its East and Northern zones lie a number of middle- and low-income residential areas such as Majengo, Bondeni, Gorofani and Pumwani estates (Ngunyi, 2011). The Nairobi River is a major physical element of Gikomba OAM, sprawling on either side of the market.

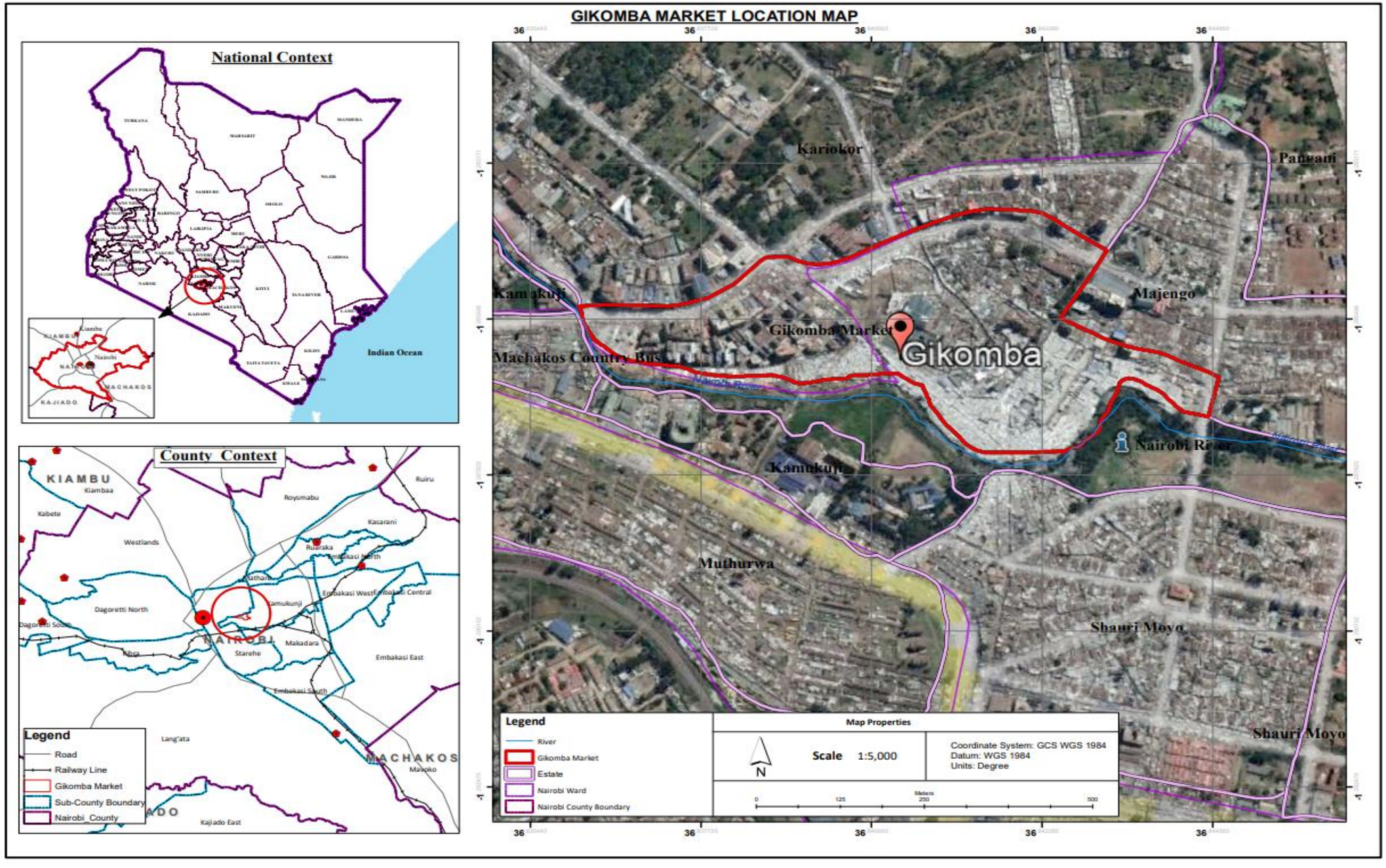
The market has both the formal and the informal section. Consequently, the market in its entirety (formal &Informal Sections) occupies a total area of 19.62Ha however only 13.95 Ha is covered by the informal section.

Map 1: Regional Context of the study area



Source: Author, 2022

Map 2: Urban Context of Gikomba Open-Air Market



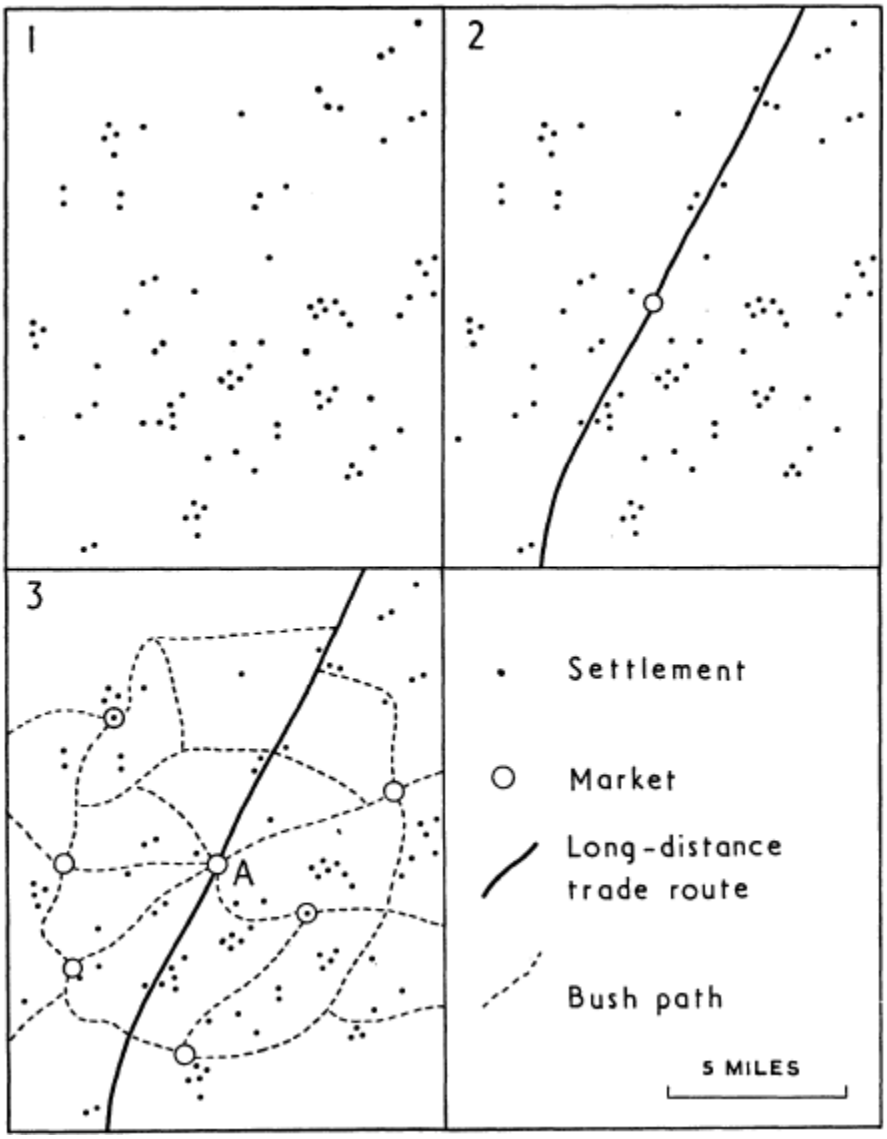
Source: Author, 2022

3.1 Historical Background of Gikomba Market

Hodder (1965) was among the earliest scholars to trace the origins of traditional markets in Sub-Saharan Africa. In his publication, some comments on the origins of traditional markets in Africa south of the Sahara, he attempts to elaborate on two theories about the origins of market institutions south of Sahara. The writings give sufficient validation of the theory that market institutions in south of Sahara were as a result of an orthodox theory that originated from individual's inclination to barter. This theory argues that traditional markets in Africa were established out of need for local exchange, division of labour and local markets, and then, the necessity for long distance, or at least external exchange – trade. Therefore, local exchange (local trade i.e., barter trade) and local markets is the starting point for market institutions in Africa, with just but a few of the markets become valuable market centres with long-distance trading just because of their locational advantages.

The other construct to the origins of markets in south of Sahara as discussed by Hodder (1965) was premised entirely on a reverse of the sequence of the events resulting to the origination of a marketplace. It postulates that 'trade, with its associated market phenomena can never arise within a community'. It contends that trade is an external affair that involves different communities. Therefore, markets cannot arise entirely out of the demands of an individual or local exchange. The foundation for establishment of markets according to this perspective was therefore premised on external trade, particularly involving long distance transportation that fostered exchange of supplementary products with non-local population. Markets were therefore the end result of long-distance trading, division of labour, and the variable geographical location of goods. As such, markets origination and growth followed a sequence of events; trade routes – hamlet market established on the trade route – and 'local' market growing around the original 'parent' market as a network of tracks or roads develops – see the figure below.

Figure 8: Idealized sequence of events leading to growth of markets



Source: Hodder, 1965

This latter approach garnered widespread support and validation as opposed to the former orthodox theory, arguing that eternal trade was the stimulus to emergence and growth of markets in Africa south of Sahara. The orthodox approach is criticised on the basis that there are no market systems that arise naturally owing to demands for local exchange.

The origin and growth of Gikomba OAM potentially assumed one of the above-described models, or even a hybrid of the two constructs. It must be noted that there is very limited theory on the origin and growth of markets in Africa, and particularly the case under this

investigation. It is reported by The Standard on October 2017 that the first structures in Gikomba OAM were erect by the government in 1952 following a rapid growth and expansion of the market. The structures comprised of iron sheet shelters encompassed a barbed wire fence. The periodical reports that Railway construction workers, then camped in Muthurwa, used to flock at the market for household items, and most importantly, second hand imported clothes brought in by Asians (The Standard, October 6, 2017).

Gikomba, one of the largest markets in East Africa, is a unique market located right next to the city centre. Its origin has foundation to combination of a number of factors. First, it was the only open space available for open air market activities following the zoning of the city into different race-based zones. NAMSIP points that Gikomba originated during colonial times following the division of Nairobi into zones which were further subdivided into commercial, industrial and residential zones. At the time the colonial government was installing informal structure around the market in 1952, it had become a beehive of activities with trade involving mainly Africans (particularly railways construction workers stationed at Muthurwa) and Asian traders who had international connection and were trading imported wares, mainly second-hand clothes commonly known as Mitumba. This Afro-Asian interactions saw a rapid growth and expansion of Gikomba and took a decision to contain the growth of the market through the installation of the fence and the structures inside it. The market growth was also fostered by increasing Nairobi population. With rural urban migration in search for better pasture, Gikomba became the marketplace where common people would then gather to exchange goods and services without any restrictions such as taxes. As the urban population in Nairobi grew, joblessness was all over and resulted to the emergence of informal activities and small cottage craft industries like shoe repairs, tailoring, handcrafts, basketry among others. These became a new avenue of employment and source of affordable clothing as compared to the prices by local textile industry.

Despite the colonial government's 1952 fencing of Gikomba to contain its growth, it continued to grow post-independence, expanding into neighbouring areas zoned as residential. It was in 1973 when the defunct Nairobi City Council moved in to contain further spread into the neighbouring residential areas. At the time, the number of informal

traders had grown exponentially, something that worried the council authorities who viewed the market as a hindrance to growth and success of local textile industry. Faced with the challenge of striking a balance between the informal trading of clothes and other wares in Gikomba and protection of local textile industry, the market was let to grow without further restrictions, allowing for a free market competition. However, the city council moved in to regulate the operations of informal traders by requiring them to pay taxes and apply for licences (permits) to be able to operate within the market, eventually legalizing informality in the market and limiting police and council enforcement officers from interfering with the operations of informal traders. Mitumba dealers were then able to operate freely while the City Council of Nairobi collected revenue from all traders.

Since then, the market has continuously grown, becoming a hub for local traders of both Mitumba, furniture, fresh food products among others. Today, Gikomba is home to thousands of traders of all descents. It is a convergence of importers of new and used clothes, shoes, household wares, construction materials, furniture and fittings, farm products including fresh vegetables, fish, and cereals. The market is interconnected locally and internationally with traders coming from as far as neighbouring Tanzania and Uganda. Wares are locally obtained or imported overseas and traded locally with traders from all over the country and beyond Kenya to the neighbouring nations of Uganda, Rwanda, Congo, Tanzania among other neighbouring nations.

Gikomba traders are categorized as either wholesalers, middlemen or retailers in relation to the kind quantity of goods one deals with. The market has boozing with activities, both traders and buyers converge here daily with a lot of exchange of goods and services occurring at significant levels.

3.2 Original Functional Context of the Market

Gikomba market was an open and undeveloped space which mushroomed and grew into a market. The Asians used to import second hand clothes/items and then sell to the Railway Construction workers residing within Muthurwa estate in Nairobi. Presently, there are no traceable records about the initial land size/area occupied by the traders, however, there is information that the market was rapidly growing, which forced the existing government to put a barbed wire in 1952 in order to contain its growth. Due to the then growing population

of Nairobi and the limited number of traders confined within the existing space, there was emergence of hawking along Pumwani Road.

It is also paramount to note that Kenya Bus Service (KBS) came into effect way long for the establishment of the Gikomba market. It had a designated bus route number 41 which used to ply through Eastleigh & along Digo road in Gikomba via OTC and finally used to terminate at Kencom stage. Therefore, the locational factor of Gikomba Market along the circular route of KBS enhanced its activities. On the contrary, the establishment of Gikomba market preceded the Machakos Country bus which was operationalised in the 1980's. As a result, the location of the terminus in close proximity to the market further enhanced the already existing activities within Gikomba Market. Also, the expansion of the market continued to be influenced by the surrounding estates of Pumwani, Majengo and Bondeni that hosted high population of people with low purchasing power.

3.3 Existence of the market in relation to the various city plans

The Nairobi Metropolitan Growth strategy of 1973 envisaged continuous urbanisation, growth of industries and projected densification. As a result, the plan covered six thematic areas mainly; land use ad human settlements; secondly Population & economy thirdly, Governance & institutional arrangements, fourthly, urban infrastructure and lastly transport. The plan identified key challenges to encompass uncontrolled urban development, inadequate infrastructure, traffic congestion among other issues. For Gikomba market, the land was originally part of Bondeni and Gorofani estates. However, despite its existence as a gradually growing urban economic space which served the low-income population, it was never given much focus in the 1973 master plan.

According to NAMSIP, markets provide unique experiences and are valuable in adding vibrancy where they exists. This being an urban renewal plan, it recommended spatial improvements to boost market performance. The plan proposes improved safety, enhanced movement of pedestrians and goods as well as management of environmental footprints. In line with the NAMSIP, the Nairobi County government on course to construct five-storey market building to decongest and enhance trading within the market space. This market building recommends 525 stalls spread across the five floors. So generally, the Plan recommended vertical developments within the market as part of its urban renewal plans.

3.4 Climatic Conditions

The study area is located within Nairobi whose climate is mainly influenced by altitude. The area is usually pleasantly warm during daytime and cool at night. Nairobi is situated at 1650 metres above sea level. The region experiences two rainy seasons which corresponds with the two passages of the sun particularly at the zenith. Therefore, the wettest months are April, May and November while the coolest and driest months are July and August. The study area has an average temperature of the coldest month (July) which is 17.5 ^{0}C and that of the warmest month is 21.5 ^{0}C. Also, the study area receives an average rainfall amounting to 745millimetres annually (*Climate - nairobi (Kenya)*, 2023).

3.5 Topography

Generally, Nairobi city is mainly characterized by undulating hilly topography composed of an elevation range of between 1460m to 1,920m however the study area falls between 1578 and 1678m. The market boundary is within a fairly flat gradient and therefore can be easily developed.

3.6 Land Tenure

The existing land covering Gikomba market has accommodates both public and private land. There is an existing portion within the market boundary which belong to the Pumwani Riyadha Mosque. This portion is occupied by traders currently although it is a does not belong to the Nairobi City County Government. The other land is public land which originally was part of Gorofani and Bondeni estates.

3.7 Geology and Soils

The study area is composed of base rock made of phonolites which are regarded as stable enough to accommodate high density structures. On the other hand, the project area comprises of black cotton soils which requires a deeper excavation in order to support firm foundation for vertical developments.

3.8 Drainage Network

The study area is drained by Nairobi River which is classified as a permanent river. The river's flow is precisely along the east to west axis and forms the boundary of the Gikomba market along one end. The greatest flow recorded for Nairobi River is 12.74 m^3 back in 1961 during the heavy rains for the month of November. However, the average volume of

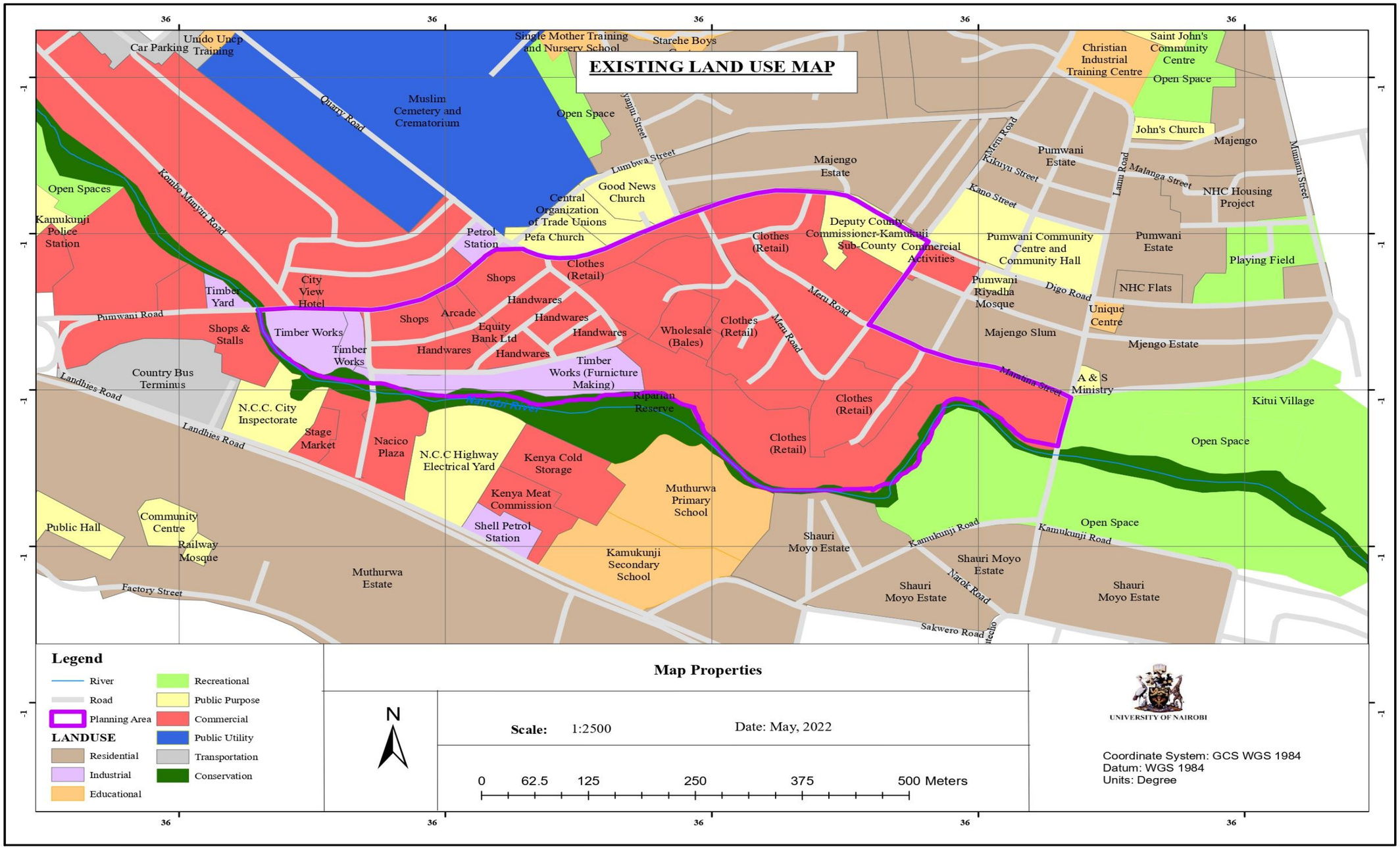
the river flow ranges from 0.14 to 0.23m^3 for about seven to nine months for the year, rising to the peaks of 0.85 to 1.7m^3 in the months of April and May. The project area has storm water drainage network which is directed to Nairobi River.

3.9 Existing Major Land Uses

The market space is largely in a commercial zone, and it is in character with the surrounding. Within the market boundary, there is an area zoned for light industrial use mainly dealing timber works and furniture. The other conspicuous land use within the market boundary is the public purpose land hosting the Deputy County Commissioners office (Kamukunji). The major public utility surrounding the market is the Muslim Cemetery and Crematorium. Transportation land use is evidenced by the major roads which are upgraded to bitumen standard mainly Pumwani, Digo and Meru Roads. The market is also in close proximity to the Machakos Country bus which is known as a terminus for long-distant travels across the country. There is also a conservation area owing to the existence of Nairobi.

In extension, Nairobi Railway terminus within the CBD is an important transportation node. The terminus is critical in the functioning of the market since it can be used as an alternative mode of transport by wholesalers, traders and customers. The smooth transition from rail to road network leading to the market is a major boost to the functioning of the urban market space. Generally, the existing surrounding road networks such as Landies, Pumwani, Digo, Meru Roads among others continues to link the market to the surrounding regions thus strengthening the desired social fabric in the city through these networks and linkages.

Map 3: Existing Gikomba market land use map



(Source: Author, 2023)

CHAPTER FOUR: RESEARCH METHODOLOGY

4.0 Introduction

The chapter elaborates on the methods and techniques that were applied by the study to investigate the study phenomenon. It describes the research design, study population, sampling techniques, data types and needs, data gathering approaches, and techniques for data analysis and presentation. It ends by explaining ethical considerations that guided the entire data collection and management, in respect to anonymity and confidentiality of study participants.

4.1 Research Design

A Research Design is the 'procedures for collecting, analysing, interpreting and reporting data in research studies' (Creswell & Plano Clark 2007). The research design sets the procedure on the required data, the methods to be applied to collect and analyse this data, and how all of this is going to answer the research questions (Gray, 2014). The study adopted a cross-sectional survey design to investigate the subject phenomenon. The observational approach was adopted owing to its extensive ability to gather both qualitative and quantitative data in a faster and inexpensive manner. It follows a descriptive approach to explain the study objects at a given moment in time (Setia, 2016). This makes the adopted research design suitable for this research in its quest to demystify the current situation in Gikomba OAM, describe the current market situation and provide planning and policy interventions. This study employed both quantitative and qualitative methodological approaches to investigate the research problem and to achieve its objectives.

4.2 Target Population

The target population refers to the entire group of individuals/elements or objects with specific features/aspects that a researcher wishes to make inferences. These objects/individuals' characteristics are therefore of interest to the researcher (Oresi, 2013). Mugenda and Mugenda (2008) defined target population as the entire group pf individuals, events or objects having common characteristics or attributes. The subjects targeted for the study include; The traders in Gikomba Market, both wholesale and retail traders, the customers/consumers of products traded by the traders and policy makers (CCGN leaders)/market leaders within the market.

4.3 Sample Procedure

The target population of this study included the traders in Gikomba Market dealing with various products such as vegetables, timber, footwear, go-downs and the cloth retailers. It also collected data from policy makers (Nairobi City County Government). The various departments interviewed included the Department of Planning, Urban Renewal, Housing, Commerce, Tourism and Cooperatives, Environment, Energy, Water and Sanitation, Roads Public Works and Transport.

Simple random sampling method was employed. However, data was collected from the various sections of the market, suitably referred to as 'clusters' in the study context. Factors such as wide geographical area, financial resources, and time constraint led to further selection of the sample size of the accessible population through random sampling. The sample size constituted the various groups represented by vegetable traders, timber traders, footwear and cloth wear traders and go-down operators in Gikomba Market. The sample frame constituted all the physical and environmental, socio-cultural, economic aspects that characterize Gikomba Market. These were observed from the study area in order to examine functionality of Gikomba Market within and without.

4.4 Sample size

Sample size determination refers to the process of preferring the number of study elements/observations or replicates to include in a study sample (Kaur, 2017). Ideally, it is the process of determining the number of study objects/elements to be investigated to represent the entire population of objects under investigation. It involves selection of a subset/portion of the population to estimate the aspects/features of the entire population. The selected subset of the population is the sample size. The main advantages drawn from sampling representatives from the entire population include faster data collection and reduced cost of data gathering (Singh & Masuku, 2014). A sample size ought to be carefully fixed for it to be adequate to draw valid and reliable conclusions and generalizations about the entire population (ibid).

Table 2: Sample size for ±5% and ±10% precision levels

Size of Population	Sample Size (n) for precision (e)	
	±5%	±10%
500	222	83
1,000	286	91
2,000	333	95
3,000	353	97
4,000	364	98
5,000	370	98
7,000	378	99
9,000	383	99
10,000	385	99
15,000	390	99
20,000	392	100
25,000	394	100
50,000	397	100
100,000	398	100
>100,000	400	100

Sample size for ±5% and ±10% precision levels where confidence level is 95% and P=0.5

Source: Adopted from Glenn (1992

In determining a sample size, the population size under investigations and the purpose of the investigation are key components of the formula for reaching a reliable and valid sample size. Further, the criteria for computing such a sample size must be determined. A good sample size must specify the level/degree of precision (sample error), the confidence (risk) levels, and the degree of variability. The degree of variability concerns itself with the distribution of attributes of the population under investigation, resulting to homogeneity or heterogeneity of the population. A high homogeneous population calls for a small sample size and the opposite is true (Singh & Masuku, 2014; Kaur, 2017). The study adopted a degree of precision of 5%, and a 95% confidence level. All population under investigation

are homogeneous, displaying similar characteristics as they are all traders/customers of different varieties within the same open-air market.

Table 3: Determined sample size for population of 25,000

Size of Population	Sample Size (n) for precision (e)	
	±5%	±10%
500	222	83
1,000	286	91
2,000	333	95
3,000	353	97
4,000	364	98
5,000	370	98
7,000	378	99
9,000	383	99
10,000	385	99
15,000	390	99
20,000	392	100
25,000	394	100
50,000	397	100
100,000	398	100
>100,000	400	100

Determined sample size for population of 25,000 at ±5% degrees of precision and confidence level of 95%, P=0.5

Source: Glenn, 1992, edited by Author, 2023

There are several approaches to determining the sample size. These include the use of census for small populations, imitation of sample sizes of similar studies, use of published tables, and use of formulas to compute the sample size. The study adopted published tables to determine the sample size for the population under investigation. The published table used was published by Glenn, 1992. The study population under investigation exceeds 25,000 elements.

With the above provided characteristics of the criteria for determining the sample size, the study sample size was determined as 394. While this is the ideal sample size for the study,

the investigator could not interview all 394 responses owing to time and cost limitations. As a result, a total of 142 study sample size was investigated, equivalent to 36% of the computed sample size. A stratification approach was employed where 33 interviewees were customers while 109 were traders within the market.

The decision to interview more traders was reached on grounds that traders/vendors use the market on a day-to-day basis, while customers occasionally visit the market. This meant that all resident vendors/traders were able to provide in depth understanding of the spatial challenges and opportunities within the market and the potential prospective opportunities that would come with re-designing and re-modelling of the market. Further, there were multiple strata within the vendors/traders, which demanded for acceptable saturation interviews within each stratum. Traders range from shoe and clothes sellers to food traders, and household wares traders for furniture and fittings and kitchen wares among others. For this reason, each category/stratum was targeted for interviewees not less than 35. Similarly, customers would provide such ideal scenario, explain the linkages and networks, and the purpose of re-designing potentially for increased interconnectivity of transportation channels to make the market more efficient and spontaneous and increase seamless connectivity between activity spaces.

4.5 Data Needs and Data Sources

Table 4: Data Needs Matrix

Research Objectives	Data Needs	Data Sources	Data Collection Methods	Data Analysis Methods	Data Presentation Methods	Expected Outputs
To examine the functional relations of Gikomba market with adjacent land uses.	Indicators of functionality Physical Indicators • Location • Land Use • Physical Infrastructure • Social facilities • Natural Environment • Beauty and other aesthetic values Economic Indicators • Income levels • Types of businesses	Primary Sources-field visit; observation, interviews with the traders-both wholesale and retail	Observation Questionnaires Mapping Photographing	SPSS MS EXCEL Spatial Analysis by use of GIS	Charts Maps Sketches Bar graphs Tables Photographs Written report	The indicators of functionality of Gikomba Market and how they have affected the functionality of the market in relation to the adjacent land uses

Research Objectives	Data Needs	Data Sources	Data Collection Methods	Data Analysis Methods	Data Presentation Methods	Expected Outputs
	• Profits • Value of land (rent paid) Social Indicators • Population and demographic characteristics • Security and crime • Prevalence of cultural and social behaviours					
To analyse the existing spatial organization of activities within Gikomba market.	• Design of Gikomba Market • Major circulation routes for internal and external linkages (Connectivity)	Primary Sources-field visit; observation, interviews with the traders	Observation Questionnaires Mapping Photographing	SPSS MS EXCEL	Charts Maps Sketches Bar graphs Tables Photographs	A comprehensive analysis of the existing spatial organization of activities

Research Objectives	Data Needs	Data Sources	Data Collection Methods	Data Analysis Methods	Data Presentation Methods	Expected Outputs
	• Flow of goods, vehicle and people from outside and within the market • Terminus facilities • Loading and offloading zones • Parking facilities • Access to water • Sewerage disposal • Solid waste Management • Market stalls (Design and material used in construction) • Visual arrangement of the market	Secondary sources to give data on the History of the Market structurally and socially -How the market has evolved over time			Written report	within Gikomba Market

Research Objectives	Data Needs	Data Sources	Data Collection Methods	Data Analysis Methods	Data Presentation Methods	Expected Outputs
	• Locational advantage of the market in relation to the Nairobi city County					
To analyse the functional facilitators & constraints and of Gikomba market.	• Challenges facing the market when it comes to its functionality. • Opportunities available for improvement for better functionality	Primary Sources-field visit; observation, interviews with the traders and Key Informants Secondary sources to give data on the challenges that	Observation Questionnaires Key Informant Interview Mapping of the specific areas faced with the various key challenges Photographing	SPSS EXCEL GIS for spatial Analysis Synthesis of the Qualitative data	Charts Maps Sketches Bar graphs Tables Photographs Written report	The internal and external challenges facing Gikomba Market and how they have affected the functionality of the Market and the

Research Objectives	Data Needs	Data Sources	Data Collection Methods	Data Analysis Methods	Data Presentation Methods	Expected Outputs
		have been facing the Market				adjacent land uses Identify the available opportunities for a better functionality of Gikomba Market
To propose appropriate planning interventions that enhance functionality of open-air markets, case study of Gikomba Market.	• Applicable and sustainable land use form • Opportunities and weaknesses of planning Gikomba Market • Economic, Social, and Environmental	Primary sources Secondary sources	Literature review Observation Questionnaires	Synthesis of the findings	Maps Models Sketches Written report	Applicable planning interventions

Research Objectives	Data Needs	Data Sources	Data Collection Methods	Data Analysis Methods	Data Presentation Methods	Expected Outputs
	implication of the intervention					

Source: Author, 2022

4.6 Methods of Data Collection

Primary and secondary data sources were used to generate both quantitative and qualitative data. Data was gathered through face interviews, group discussions, key informant interviews, observations and photography techniques. The interviewees comprised of both traders and customers within Gikomba OAM.

a) Secondary Data

This data type was obtained through literature review of existing publications relevant to the concept of Open-Air Markets. This aided in the understanding of the area of study, Gikomba Market and establishing what has previously been uncovered by authorities within the subject phenomenon. This data type was sourced from journals, internet sources, government publications, articles, maps and other sources.

b) Primary data

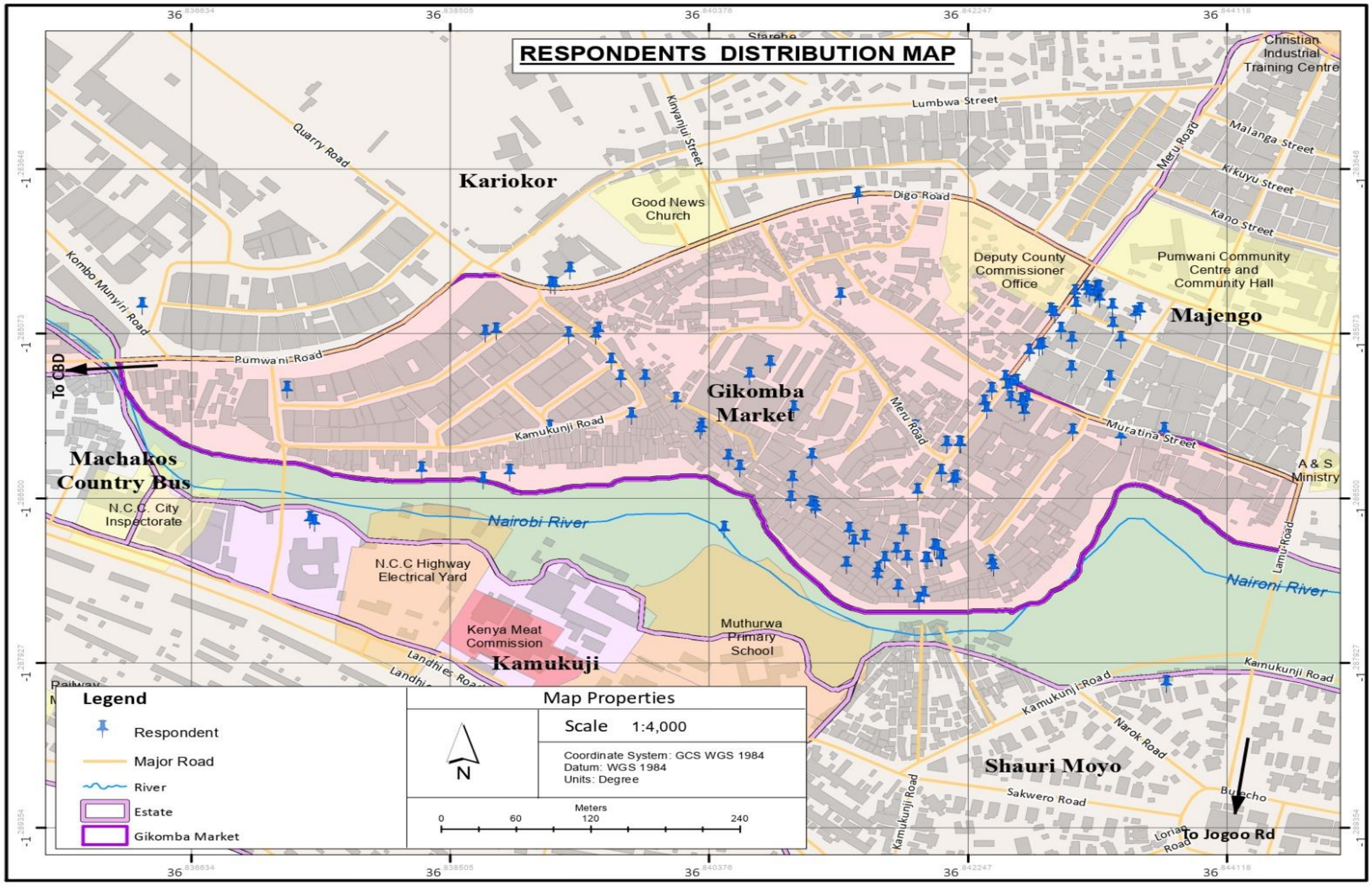
This form of data formed the main data source that informed the assessment of the functionality of Gikomba Market in relation to the adjacent land uses. As data straight from the field and from those in contact with the study area, this was the most valuable source of data that aided in providing the best picture of the situation at hand.

The methods that were used to collect primary data included:

- Questionnaires

This consisted of a series of structured questions whereby some were closed while others were open ended and other prompts for the purpose of gathering information from the Gikomba Market traders, both wholesale and retail traders. The questionnaires were administered to the respondents electronically by use of the Kobo Collect Application. The Questionnaires sought to collect data on elements such as how many years the respondents have operated in Gikomba Market, source of their goods, the challenges they face in their day-to-day activities, whether they consider the market functional and if not, what are some of the key recommendations they would give just but to mention but a few.

Map 4: Distribution of respondents across the market



Source: Author, 2023

- Interview schedules

Interview schedules were prepared for the key informants and stakeholders involved in the daily operations of Gikomba Market. These included: Department of Planning, Urban Renewal, Housing, Commerce, Tourism and Cooperatives, Environment, Energy, Water and Sanitation, Roads Public Works and Transport.

- Observation

This involves the systematic selection, observation and recording of the characteristics depictable on site. The Observation checklist was used as the tool that aided in the observation. The observation checklist was adopted to aid in gathering data that would complement the other methods of data collection by facilitating the observation of key aspect which include the social structure, physical structure, land and economic structure. The Observation Checklist sought to collect data on the various indicators of functionality of Gikomba Market such as beauty and other aesthetic values, circulation routes, terminal facilities, loading and offloading zones, access to water, solid and liquid waste management in the market.

- Mapping, and photography

Maps were employed to establish the spatial organization of activities in Gikomba Market and also to show the surrounding neighbourhood or rather the adjacent land uses to the Market. Photographs of the area were taken to facilitate the analysis of the physical layout of the Market and the characteristics of the various land uses within and adjacent to the market.

- Focus Group Discussion

Groups of the various clusters of traders in Gikomba Market; vegetable traders, timber traders, footwear and cloth wear traders and go-down operators in Gikomba Market were assembled and interviewed using the various Focus Group Discussion guides. Informative discussions evolved and issues on the existing conditions of the facilities in the Market which aid in the functionality of the Market, Challenges experienced and a vision for the Market in the next 10 years were established.

4.7 Data Analysis

Data analysis entailed the use of appropriate methods to synthesize data to answer the research questions. This is therefore the aspect that sought to make meaning of the data collected. At the end of the fieldwork all data collected from the structured questionnaires was cleaned and analysed using the Statistical Package for Social Science (SPSS) and Ms Excel.

4.8 Presentation of Data

The analysed qualitative and quantitative data collected was presented using simple frequency distribution, analytical tables and descriptive narrations. Further, the quantitative data analysed was also presented by the use of maps, plans, illustrations and photographs.

Graphs and photographs were equally used to illustrate data discussed in descriptive analysis. The overall information and findings were finally interpreted and synthesized to facilitate the writing and composition of this research project. All the gathered information was synthesized and presented using simple tables, pie charts, bar graphs, maps and photographs into an integrated planning research report.

4.9 Ethical considerations

The study adhered to social and scientific research ethics. The research process observed confidentiality, honesty and integrity. The data was gathered and processed in confidence, respecting the anonymity of study participants, their ideas and opinions.

CHAPTER FIVE: ANALYSIS AND PRESENTATION OF FINDINGS

5.0 Introduction

The chapter provides a detailed analysis of data gathered from the cross-sectional field survey approaches adopted by the study. The analysed data is presented inform of charts, figures, tables, maps and images. It is organised based on the objectives of the study that attempt to identify the functionality status of the market in terms of its linkages and networks (connectivity) and its functional characteristics evidenced by the provision/availability of socio-economic infrastructure facilities and their arrangement on space. The overall organization of the market is also discussed.

5.1 Characteristics of Respondents

5.1.1 Age of respondents

The average age of traders who participated in the study was 36.2 years with a standard deviation of 10.41. The traders age distribution is shown in table 4. The majority of traders were aged between 25-34 and between 35 – 44 years at 36 and 33 percent respectively. The youngest trader was 17 years old while the oldest was 64. All the traders, except the one who aged 17 years, were mature and of age, and met the legal criteria for being adult since they were above 18 years.

Table 5: Traders Age Distribution

Age Group	Frequency	Percentage
15-24	10	9%
25-34	39	36%
35-44	36	33%
45-54	17	16%
55-65	6	6%
Grand Total	**108**	**100%**

5.1.2 Sex of respondents

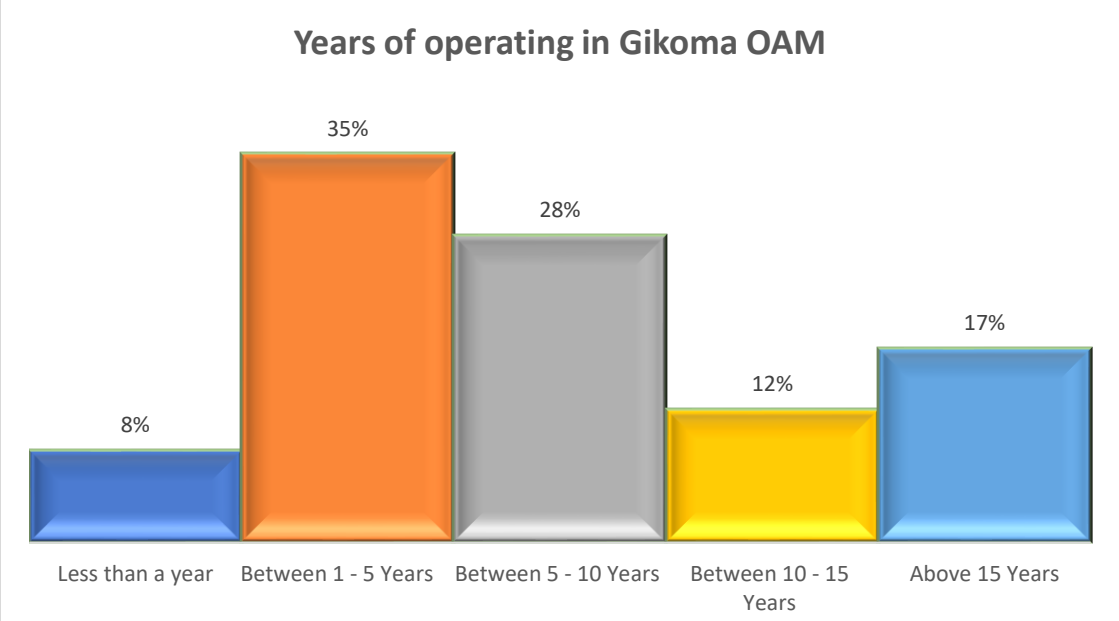
Majority of the interviewees were males. There were 64% male trader respondents compared to 36% female traders who participated in the study. The customers sex orientation comprised of 56% male and 44% female respondents as shown in the table below.

Table 6: Sex of respondents

Sex of the respondent	***Traders***	***Customers***
Female	36%	44%
Male	64%	56%
Total	**100%**	**100%**

5.1.3 Years of operating in Gikomba market

Figure 9: Years of operating in Gikomba



The least of all participants had operated in Gikomba for less than a year. They made up 8% of all participating traders. The majority 35% of the traders had operated in Gikomba for between and year and five years. A significant 28% other traders had been undertaking their business in Gikomba for a period between 5 and 10 years.

5.1.3 Nature of business

Majority of the traders engaged in retail business at 85% with only 15% others being wholesalers. These traders mainly engaged in the sale of clothes and shoes. With other products sold including food items, bags, furniture among others. As per the following figure, clothes were the dominant products sold by the traders. They accounted for 58% of all reported merchandise traded by the respondents. The study interpretated clothes as any sort of fabric such as men, women and children wear that comprised of outer and inner wears, beddings, warm weather clothes, seat covers among others.

Plate 1: Clothes on sale at Gikomba OAM

Source: Field Survey, 2023

There were 19% traders who traded shoes at the biggest open-air market in East Africa. The shoes traded included all types of shoes for both men and women and children. They comprised of open and closed shoes made of leather and other materials. Food products were sold by 14% of trader respondents. The food items included cereals, green maize and beans, vegetables, potatoes, green and ripe bananas, fish, fruits among others. Cooked food in kiosks was also included in this classification as was street food such as eggs, smokies, roasted maize, roasted potatoes (sweet), sliced fruits (water melons, pineapples etc) among others.

Plate 2: Clothes packed for the night at a stall in Gikomba

Source: Field Survey, 2023

Furniture and fittings accounted for 4% of all products sold by traders in Gikomba. They consisted of all types of furniture, household and office furniture. Household wares, including *mali mali,* kitchen wares, hard wares, and accessories accounted for 3% of all traded products while others accounted for 3%. These other products include human hair, packaging materials (nylon papers, organic carrier bags etc), and bags (school bags, hand bags, travel bags etc).

Figure 10: Products sold by traders

Plate 3: Shoes and street food stands

Source: Field Survey, 2023

5.1.4 Structure type used by traders

The largest proportion of participants used wooden structures. These stalls made of wood were the operating structures for 59% of participants. The majority of traders in the market traded from wooden stalls, especially cloth dealers inside the open-air market. Some of the wooden stalls were exceptionally big, extending to even 40m^2. There were 17% of traders who operated from stalls inside/within buildings such as Mumbai House. Another share of 12% of respondents traded their wares from metallic stalls/structures. These included those traders who operated from metallic wheelbarrows. Floor display was used by 10% of participants while those who operated in structures made of cartons were 2% of all traders who participated in the study.

Figure 11: Types of trading structures

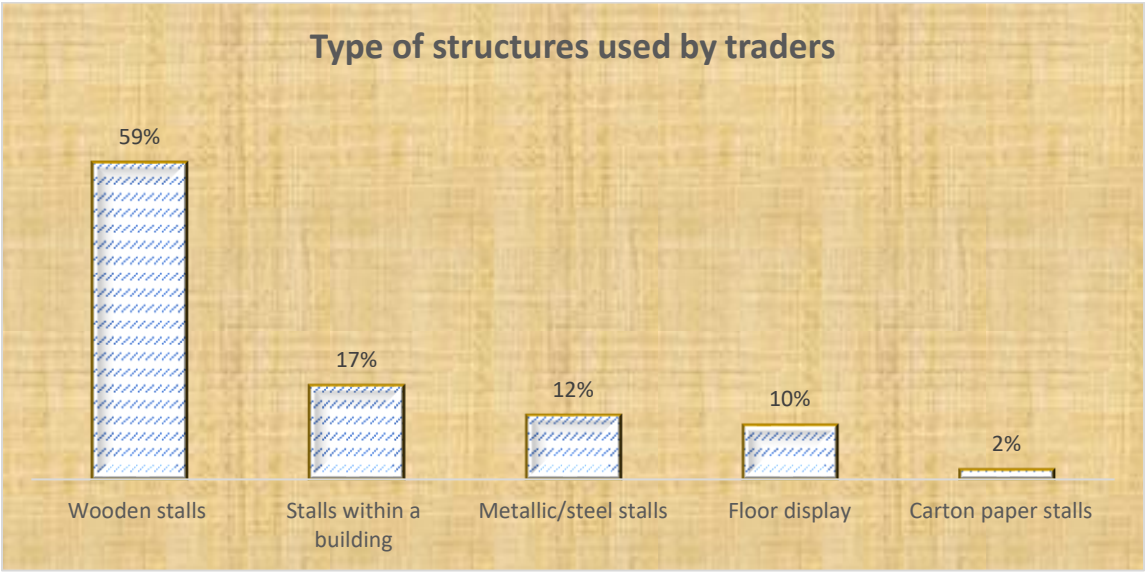


Plate 4: Clothes wooden stalls (closed) in Gikomba

Source: Field Survey, 2023

Plate 5: Metallic/wooden shoe stands in Gikomba

Source: Field Survey, 2023

Some other traders sold their products off from metallic stands or on floor display. Particularly, a significant portion of shoe retailers sold their shoes from the floor if not from the metallic stands or a few from tall wooden stands.

Plate 6: Floor display/wooden shoe stalls in Gikomba

Source: Field Survey, 2023

Observations revealed that there were mobile traders who operated from their vehicles (mainly lorries). These traders opted to operate from their vehicles to reduce losses associated with fire outbreaks. They visit the market on a daily basis with their stock loaded in their lorries everywhere they moved, becoming the custody of the stock overnight at their residential homes, and a shop during the day at Gikomba market.

Plate 7: Mobile food vendors, vehicle traders and galvanized iron sheet stalls in Gikomba

Source: Field Survey, 2023

Further, some of the traders who operated from stalls within a building were hosted in temporary galvanized iron sheets buildings or buildings made of iron sheets from metallic

drums. Almost all traders in ready to eat food items such as roasted maize, sliced fruits and vegetables etc operated from mobile metallic wheelbarrows, and mostly stationed at strategic places.

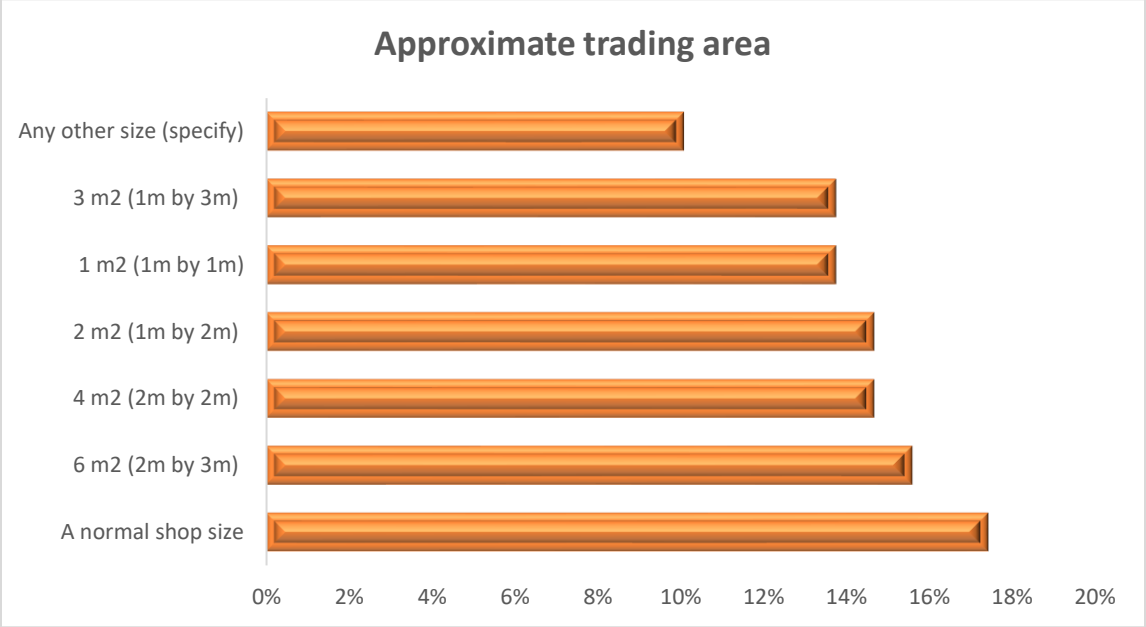
Plate 8: Mumbai Building, housing wholesalers of imported products

Source: Field Survey, 2023

5.1.5 Size of trading area/shop/stalls

Most of the traders operated from a normal shop size, equivalent to 17% of all participating traders. Shops/stalls measuring $6m^2$ were second most common at 16% while those measuring $4m^2$ and $2m^2$ were prevalent at 15% apiece. Other common shops/stalls sizes were those measuring $1m^2$ and $3m^2$ with each accounting for 14% of all reported stall/shop sizes by participants. Some of the participants had shop/stall sizes that were of a different size. They were 10% of all traders who participated in the study.

Figure 12: Trading area occupied by traders



For those 10% participants who reported a different size of the space they occupied, they varied in the size of the space they operated in. they were equivalent to 11 study participants. Each had a different size from the other, though three had similar space size that varied only on measurements. The summary of the stall sizes they occupied included a 12m2 (2m by 6m), (1.2m by 10m) and a (3m by 4m), a 20m2 (4m by 5m), a 30m2 (5m by 6m), a 40m2 (5m by 8m), a 70m2 (5m by 14), and a 75m2 (5m by 15m). The other three participants had one operating from a Kibanda (kiosk), another from a wheelbarrow and the other being a mobile distributor who dropped goods from place to place.

Plate 9: Traders displaying their wares on top of wheelbarrows outside Gikomba Fish Market

Source: Field Survey, 2023

5.1.6 Payment of rent for occupied space

The majority 83% of traders reported that they paid rent while the other 17% did not pay rent for the space they operated in. Of the 83% who reported that they pay rent, 96% of them paid rent to private citizens or individuals. Only 4% of them paid rent Nairobi City County.

Majority of the traders paid rent between Kshs. 0 and Kshs. 9,999, at 63% of all participating rent paying traders within the market. Another 18% of rent paying traders paid rent between Kshs. 10,000 and Kshs. 19,999. There were just 1% of all rent paying traders who paid between Kshs. 40,000 and Kshs. 49,999 while those who paid between Kshs. 70,000 and Kshs. 80,000 were among the fewest at 2% of all traders who paid monthly rent. The average rent amount paid by traders was Kshs. 12,2940.44 per month with a standard deviation of Kshs. 15,001.85 which is within 1 standard deviation about

the mean. The minimum rent paid by a respondent trader was Kshs. 1,000 per month while the maximum amount paid by a trader per month was Kshs. 80,000.

Table 7: Gikomba Market Landlords

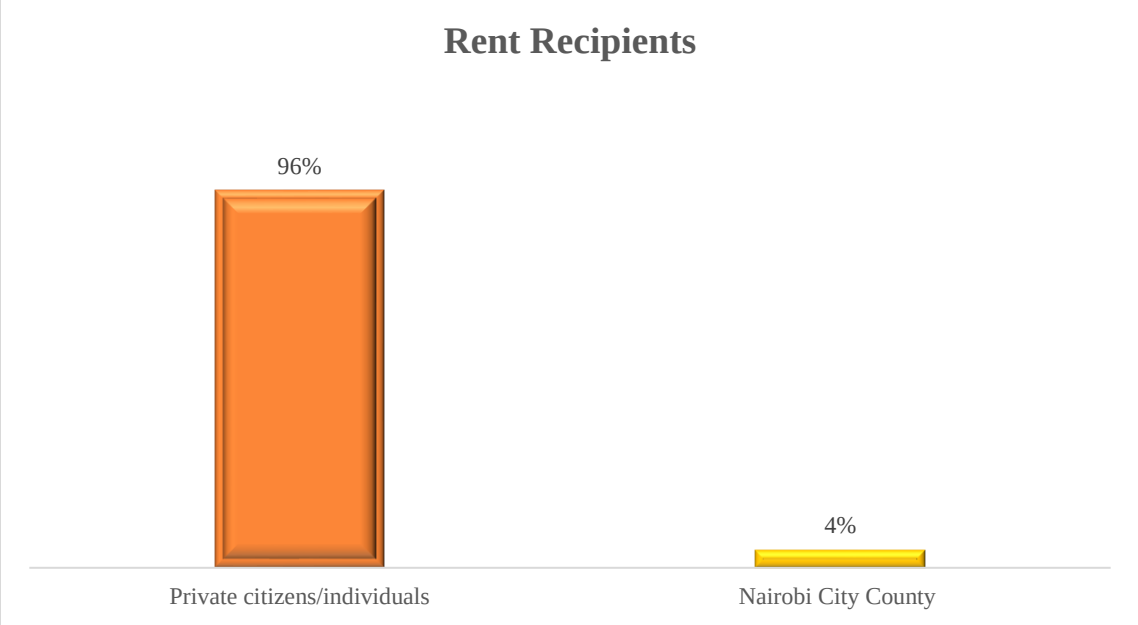


Table 8: Monthly Rent Paid by Traders within Gikomba

Rent payable by traders			
Rent Amount	**Rent recipient**		
	CCGN	Private individuals	**Grand Total (%)**
0-9999	4	53	63%
10000-19999		16	18%
20000-29999		4	4%
30000-39999		7	8%
40000-49999		1	1%
50000-59999		3	3%
70000-80000		2	2%
Grand Total	**4**	**86**	**100%**

As can be deduced from the table above, all four traders who paid their rent to the county government of Nairobi had their rent amount of less than Kshs. 10, 000 per month. On average, they paid Kshs. 4000 per month with the minimum monthly rent payable being Kshs. 2000 and maximum of Kshs. 8000 per month. The other 86 traders paid rent to private citizens/individuals. The minimum amount of rent paid by this category of traders

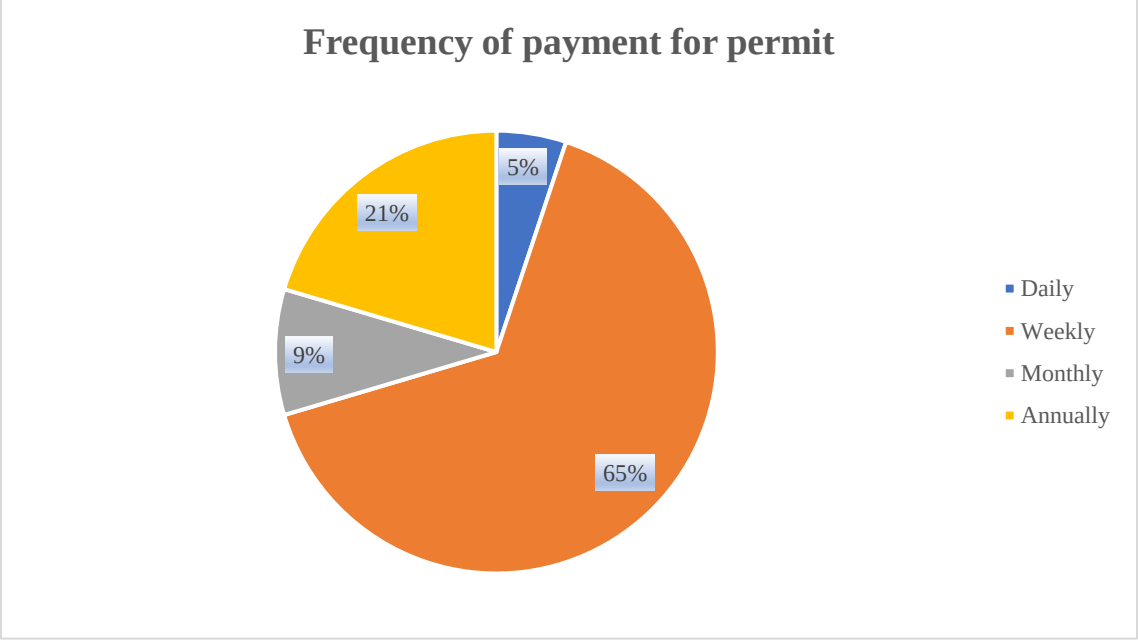
was Kshs. 12,680.23 per month. The minimum amount paid by traders in this category was Kshs. 1,000 while the maximum rent paid by traders to private citizens was Kshs. 80,000.

5.1.7 Payment of license

A significant majority of 91% of all traders paid for trading license/permit to the county government of Nairobi. There were just 9% of traders who reported that they did not pay permit or license to the city county. Among the 91% who paid trading license/permit to the county government of Nairobi, 5% of them paid daily, 65% weekly, 8% monthly and 21% annually.

On average, the 5 participants who paid for trade license daily paid Kshs. 1,110 with a minimum of Kshs. 100 per day and a maximum amount paid per day of Kshs. 3000. There were 64 participants who paid for trading license on a weekly basis. On average they paid Kshs. 190.63 per week with the highest amount paid being Kshs. 800 and the least amount of Kshs. 100 per week. For the 9 participants who paid for permit to the county government of Nairobi on monthly basis, the least amount paid was Kshs. 600 while the highest amount was Kshs. 14,000. The average monthly permit amount paid by these traders was Kshs. 3,800. The annual payers of trading license paid on average Kshs. 7, 485 per year with a minimum amount paid of Kshs. 2000 and a maximum of Kshs. 40,000 per year.

Figure 13: Frequency of paying for trading license



To establish uniformity, all figures were converted into annual amounts payables for trading license. The study established that on average, the traders pay an annual license fee of Kshs. 32,078.57. There were however two extreme values of Kshs. 1,080,000 and Kshs. 720,000 license fees paid by traders who paid Kshs. 3000 and Kshs 2000 daily for license fee. Excluding these figures, the annual average license fee paid by traders to the coun ty government of Nairobi was Kshs. 13,996.88. The annual average amount paid by traders who paid for license daily was therefore reduced to Kshs. 66,000 from Kshs. 399,600. The annual average license fee paid by traders who paid for license fee on a weekly basis was Kshs. 9,150, and for those who paid license fee on a monthly basis, the average annual license fee was Kshs. 45,600. These computations indicate that traders pay very high amounts for them to undertake business activities within Gikomba market. It also calls for prudent management of these payments to provide services and facilities to the traders and other visitors of the market.

5.2 Linkages and Networks

Linkages and networks facilitate socio-economic value of space and place, aiding the relationships between local, regional and international economies. Networks and linkages are aided by channels that link OAMs to local, national and international economy (Opinia, 2011). The study therefore followed the literature on linkages and networks as integrated by the socio-economic indicators of OAMs to investigate the existence of linkages and networks in relation to Gikomba OAM. The attempt was to establish functional relationships and their efficacy to aid the markets functionality. It followed the relationship between the participants and their residential areas, the participants and the source of their products, and the traders against the origin of their customers. The findings in this respect were analysed and presented as follows.

5.2.1 Participants area of residence

Traders resided mainly in either Nairobi or Kiambu Counties. In Nairobi, they live mainly in the east side of the city in residential areas of Eastleigh, Umoja, Shauri Moyo, Huruma, Mathare among other key estates within the city's eastlands region. In Kiambu county, traders reside in Kiambu, Githurai, Ruiru, Kahawa, Kenol, Uthiru, Githunguri, Thika among others. The table below provide a frequency distribution of traders' residential

areas. Traders usually commute to the Gikomba OAM from their residential areas. It's given that they commute to the market on a daily basis.

Table 9: Traders residential area

Traders' residential area					
Residential Area	**Frequency**	**Residential Area**	**Frequency**	**Residential Area**	**Frequency**
Eastleigh	9	Kahawa	3	Ruiru	1
Shauri moyo	8	Mwiki	2	Thika	1
Umoja	8	Mathare	2	Buruburu	1
Huruma	6	Majengo	2	Blue Estate	1
Gikomba	5	Donholm	2	Ngong	1
Githurai	5	Kamulu	2	Uthiru	1
Fedha	4	Gorofani	2	Githunguri	1
Kibra	4	Kayole	2	Luckysummer	1
Kiambu	4	Kenol	1	Roysambu	1
Utawala	3	Kariobangi	1	Kangundo road	1
Ruai	3	Makadara	1	Kawangware	1
Dandora	3	Outering	1	Maringo	1
Pipeline	3	Parklands	1	Mukuru Kwa Reuben	1
Kasarani	3	Gachie	1	Embakasi	1
Bahati	3	Land mawe	1		

Majority of the interviewed customers resided within Nairobi. These accounted for 76% of all customer respondents. There were just 18% of customer interviewees who lived outside Nairobi.

Table 10: Customers residential area

Customers residential area	***Frequency***	***Percentage***
Within Nairobi	25	76%
Outside Nairobi	8	24%
Total	**33**	**100%**

For the majority 76% of customers who reside within Nairobi, the majority of them live in Kayole or Huruma residential neighbourhoods. A significant proportion of them also reside in Gikomba, Eastleigh, and Kasarani residential areas. Most evident from the following table is that almost all of the customers who live within Nairobi reside in the city's eastlands area. Only a few of customer respondents lived in other city neighbouring regions such as

Lang'ata and Kibera in Nairobi south, and Industrial area which predominantly is a non-residential area.

Table 11: Customers residential area within Nairobi

Customers residential area within Nairobi			
Residential area	**Frequency**	**Residential area**	**Frequency**
Kayole	4	Makadara	1
Huruma	3	Dandora	1
Gikomba	2	Umoja	1
Eastleigh	2	Kariobangi	1
Kasarani	2	Industrial area	1
Embakasi	2	Kibera	1
Bondeni	1	Pumwani	1
Muthurwa	1	Lang'ata	1

The 8 customer respondents who reported to live outside Nairobi, most of them mainly resided in Kiambu county specifically in Kikuyu, Waginge, Kahawa West, Banana, Kiambu. There were one customer respondents in each of Machakos, Nakuru and Embu counties. According to the chairman and committee members of Quarry Road Informal Market, Gikomba attracts local and non-local residents as traders and customers alike. The market attracts Nairobi and non-Nairobi people. They come from all parts of Kenya, East and Central Africa.

"We have both local and non-local visitors of about 15,000 people visit the market daily from upcountry and neighbouring countries" - QRIMC

This indicates the connectivity of the market to local and international scales.

5.2.2 Frequency of visit to the market

It is given that traders made way to the market on a daily basis. The case was not deemed the same for customers. Due to this understanding, the study sought to understand the frequency of access to market by customers. As shown in the following table, majority of the customers visited Gikomba market on a daily basis. This accounted for 52% of all customers who participated in the study. There were 27% others who visited the market more than twice a week. Significantly, except the least 3% who visited Gikomba on a

monthly basis, the greatest percentage of the customer participants visited the market at least on a weekly basis.

Table 12: Customers frequency of visiting Gikomba Market

Customers frequency of visiting Gikomba Open Air Market		
Rate of visiting Gikomba	Frequency	Percentage
Daily	17	52%
Weekly	3	9%
Twice a week	3	9%
More than twice a week	9	27%
Monthly	1	3%
Total	33	100%

5.2.3 Spatial sources of products/merchandise

The majority 81% of traders sourced their merchandise locally within Nairobi. Further, 12% of all participating traders acquired the products they sold outside of Nairobi. Lastly, some 7% others sourced their wares both within and outside Nairobi. For the 81% who acquired the products they sold within Nairobi, majority of them, 82% acquired the products from within Gikomba area. They disclosed that Mumbai Building is the main source of imported clothes and shoes that retailers trade within the open-air market. Products are sold in bales within the building. Besides Mumbai Building, there are other wholesalers housed in buildings/go downs within Gikomba and brokers also play a part in the traders obtaining their products within Gikomba area.

Table 13: Specific product sources within Nairobi

Specific product source within Nairobi	**Frequency**	**Percentage**
Gikomba	81	83%
Industrial Area	4	4%
Cabanas	3	3%
Marikiti	3	3%
Kamukunji	3	3%
Nyamakima	1	1%
Kayole	1	1%
Muthurwa	1	1%
Jogoo road	1	1%
Total	**98**	**100%**

The major products found/sourced within Gikomba include clothes and shoes. Industrial area at 4% is another major source of shoes and clothes traded in Gikomba. Other areas within the city where products sold in Gikomba are sourced include Cabanas, Marikiti, and Kamukunji each at 3% of all specified areas. Marikiti and Nyamakima were main sources of food products and cereals sold within Gikomba market.

Mombasa was the main source of product sourced outside the city of Nairobi at 30% of all product sources outside Nairobi region. It was the main source of products sold by wholesalers. They reported that they acquired their merchandise from importers who use ship to transport the consignments to the port city. This explains why all wholesale traders of bales acquire their wares from Mombasa.

Table 14: Non-Nairobi sources of products traded in Gikomba

Specific product source outside Nairobi	**Frequency**	**Percentage**
Mombasa	7	30%
Rift Valley	4	17%
Nyeri	2	9%
Meru	2	9%
Kisumu	2	9%
Kisii	1	4%
Kenya	1	4%
Canada	1	4%
China	1	4%
Uganda	1	4%
Dubai	1	4%
Total	**23**	**100%**

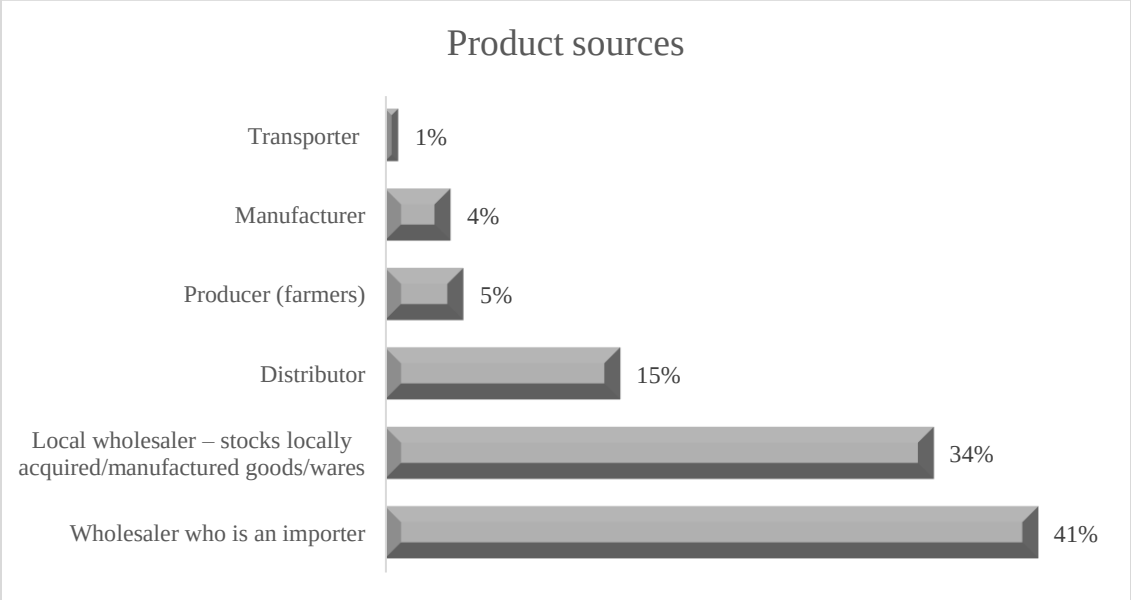
The rift valley including Eldoret, Kitale, and Nakuru accounted for 17% of all sources outside Nairobi. They were sources of food products and cereals, as was other localities within Kenya, traded in Gikomba open air market. Other notable non-Nairobi sources of merchandise traded in Gikomba include Nyeri, Meru, and Kisumu at 9% each. Kisii and Kenya (across different areas within the country) accounted for 4% each of all product sources outside Nairobi. Non local sources included Canada, China, Uganda and Dubai which happen to be sources for imported clothes, shoes and food products such as green

bananas and pineapples from Uganda. Each of these countries accounted for 4% of all sources of products sold in Gikomba and obtained outside Nairobi.

These findings echo the argument by the Quarry Road Informal Market committee. They posited that the products sold in Gikomba market come from different areas locally and internationally. The local sources were described as Gikomba wholesalers that comprise of wholesalers who import directly from foreign countries such as United States of America (USA), United Kingdom (UK), Europe (specifically Canada and Germany), and China; and wholesalers who acquire merchandise from importers based in Mombasa. They observed that other traders obtain their wares from Uganda and Tanzania, and especially food commodities such as cereals, fruits and vegetables such as bananas and pineapples. The imports complement locally produced/ manufactured products that are obtained within industrial area, Thika, Nyeri, Kisumu (mainly fish and fish products), Kisii, Meru and Kirinyaga for bananas, avocado and other green vegetables, and fruits from the Ukambani (Makueni, Kitui and Machakos) region including mangoes and oranges.

5.2.4 Product sources within the distribution chain

Figure 14: Sources of products



Wholesalers who import merchandise were the main sources of the products sold and traded in Gikomba market. They accounted for 41% of all sources of the products sold in the OAM. Local wholesalers who deal with locally manufactured or produced products

were the other main sources of items that were traded in Gikomba. They contributed to 34% of all product sources. Other significant sources of wares traded in Gikomba were distributors of products. These distributors traded on both locally manufactured and imported merchandise. They equated to 15% of all product sources while producers (mainly farmers of local produce) and manufacturer sources accounted for 5 and 4 percent respectively.

5.2.5 Storage of merchandise

The majority of the participants stored their merchandise in a store located within Gikomba market. Stores within Gikomba accounted for 66% of all storage facilities used for storing merchandise for sale by traders. Within the shop/go-down/outlet storage space accounted for 29% of all reported storage spaces. This included traders who locked up their wares inside their shops/stalls and or those who wrapped them and left them on the top of the stall overnight. Other storage methods adopted by traders included stores located within Gikomba neighbourhoods (Majengo, Pumwani etc) and those that are located within the city centre. These were least used and accounted for 4 and 1 percent respectively for all storage facilities used by traders.

Table 15: Storage mechanisms deployed by traders

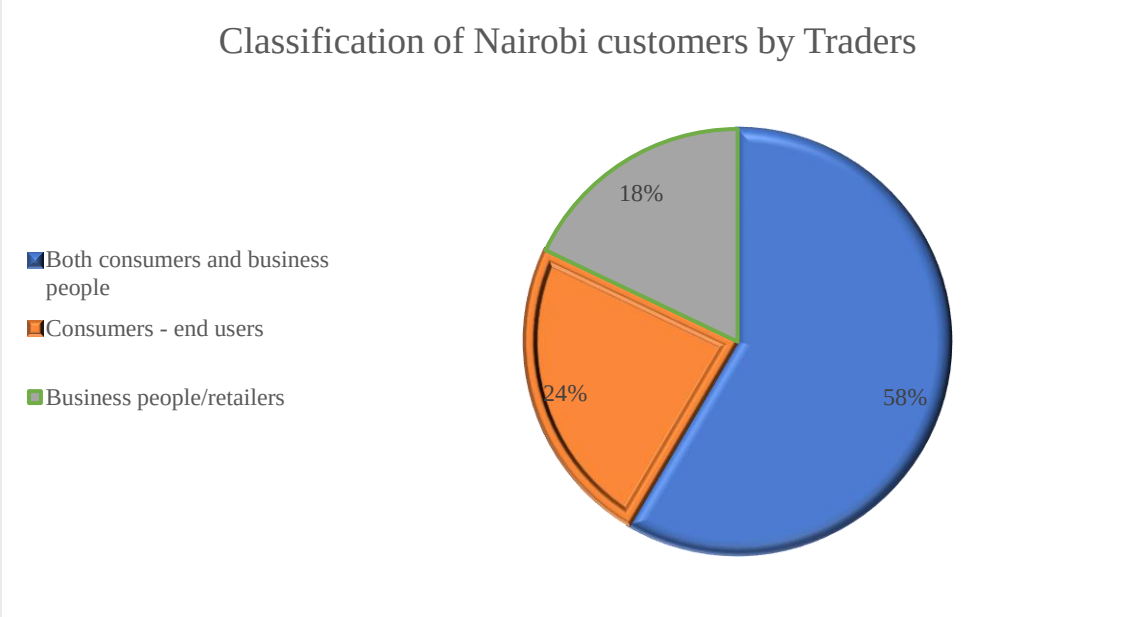
Storage of merchandise	**Frequency**	**Percentage**
A store within Gikomba market	74	66%
Within the shop/go down/outlet	32	29%
A store within Gikomba neighbourhoods (Majengo, Pumwani etc)	5	4%
A store within the Nairobi CBD (city centre)	1	1%
Total	**112**	**100%**

5.2.6 Major customers

Gikomba traders observed that their major customers were both Nairobi and Non-Nairobi residents. This category of traders accounted for 62% of all customers that were attended to by the traders. Nairobi residents accounted for 36% of all customers served by Gikomba traders while non-Nairobi residents were the least category of customers at 2%. According to Gikomba traders, both consumers and business people accounted for 58% of all the

Nairobi based customers they served. Further, there were 24% of Nairobi based customers who were consumers only. Business people/retailers who were non-consumers accounted for 18% of all Nairobi based customers according to the traders.

Figure 15: Customer categories according to traders



5.2.7 Area of operation of Nairobi based customers

According to the traders, the majority of their business clients who reside in Nairobi undertake their business activities across the city markets and estates. In their view, this category of customers accounted for 10 of all 57 identified business operating areas of the customers. The following frequency distribution table shows the identified places where customers who are business people to Gikomba traders operate from. As can be deduce from the table, the customers trade from markets and estate within the city, and other even beyond the city since Githurai, Ruai and Ngong are growth and development nodes at the periphery of the city in Kiambu, Machakos and Kajiado counties respectively. The Nairobi areas were specified to include Gikomba (for traders who buy and sell within different sections of Gikomba OAM), Central Business District (CBD) for traders who buy 'camera' second hand clothes to hawk within the city centre, and other markets and regions/residential areas as shown in the frequency distribution table.

Table 16: Customer business station as per traders

Customers area of operation within Nairobi			
Area of operation	***Frequency***	***Area of operation***	***Frequency***
Markets/estates within Nairobi area	*10*	*Dandora*	*1*
Gikomba	*9*	*Ruai*	*1*
Umoja	*4*	*Roysambu*	*1*
Eastleigh	*2*	*Huruma*	*1*
Githurai	*2*	*Kariobangi*	*1*
Industrial area	*2*	*Ngong*	*1*
Westlands	*2*	*Buru Buru*	*1*
Kawangware	*2*	*Korogocho*	*1*
Pipeline	*2*	*Donholm*	*1*
Toy market -Kibera	*2*	*Karen*	*1*
Kayole	*2*	*Ziwani*	*1*
CBD	*2*	*Muthaiga*	*1*
Shauri moyo	*1*	*Kangemi*	*1*
Mathare	*1*	*Kariokor*	*1*
Total = 57			

5.2.8 Origin of Non-Nairobi customers

Respondents observed that their non-Nairobi customers came from across and beyond the country. According to the traders, their customers came from across 157 places. The following frequency distribution table shows the specified regions where customers originated from. These were responses from 71 respondents who reported to have Nairobi and non-Nairobi customers. Kisumu, Mombasa, Kiambu and all over the country were the most frequent places where customers to Gikomba traders originated. Kisumu was mentioned 23 times, Mombasa 14 times, Kiambu 12 times and all over the country 11 times.

Other significant mentions included Murang'a, Nakuru, Meru, Machakos, and Nyeri. Further, there were mention of customers from Uganda – 2 times, Tanzania, Malawi and South Africa once each. All over the country and the multiple other places mentioned depict the linkages between Gikomba and other regions within and outside the country.

Table 17: Origin of Non-Nairobi Customers According to Traders

Origin of Customers according to traders					
Area/Region	**Frequency**	**Area/Region**	**Frequency**	**Area/Region**	**Frequency**
Kisumu	23	Bomet	2	Bungoma	1
Mombasa	14	Kitui	2	Kenyatta road	1
Kiambu	12	Kajiado	2	Turkana	1
All over the country	11	Embu	2	Kapkatet	1
Murang'a	8	Kisii	2	Narok	1
Nakuru	7	Wajir	2	Othaya	1
Meru	7	Uganda	2	Nyahururu	1
Machakos	6	Isiolo	1	Isinya	1
Nyeri	6	Makueni	1	Kenol	1
Busia	4	Yatta	1	Mandera	1
Eldoret	4	Kirinyaga	1	Marsabit	1
Thika	4	Molo	1	Githurai	1
Kitale	4	Naivasha	1	Kikuyu	1
Rift Valley	3	Rwanda	1	Tanzania	1
Kericho	3	Karatina	1	Malawi	1
Kakamega	2	Maua	1	South Africa	1
Total = 157					

Finally, there was also a mention of rift valley which appeared three times. The traders clarified parts of rift valley to include Eldoret, Narok, Bomet, Nakuru, Kitale, Turkana among others. These indicate the web of interconnections that emanate from Gikomba, creating a spider web that are networks with roots at the open-air market. The intra- and inter- linkages are clear indications of how Gikomba market is linked and connected to the city neighbourhoods, regions across the country and beyond the country. This fits the linkage and network theory, with transportation being the connector between and across regions in space.

Plate 10: Tanzania bound lorry loads bales at Gikomba market

Source: Field survey, 2023

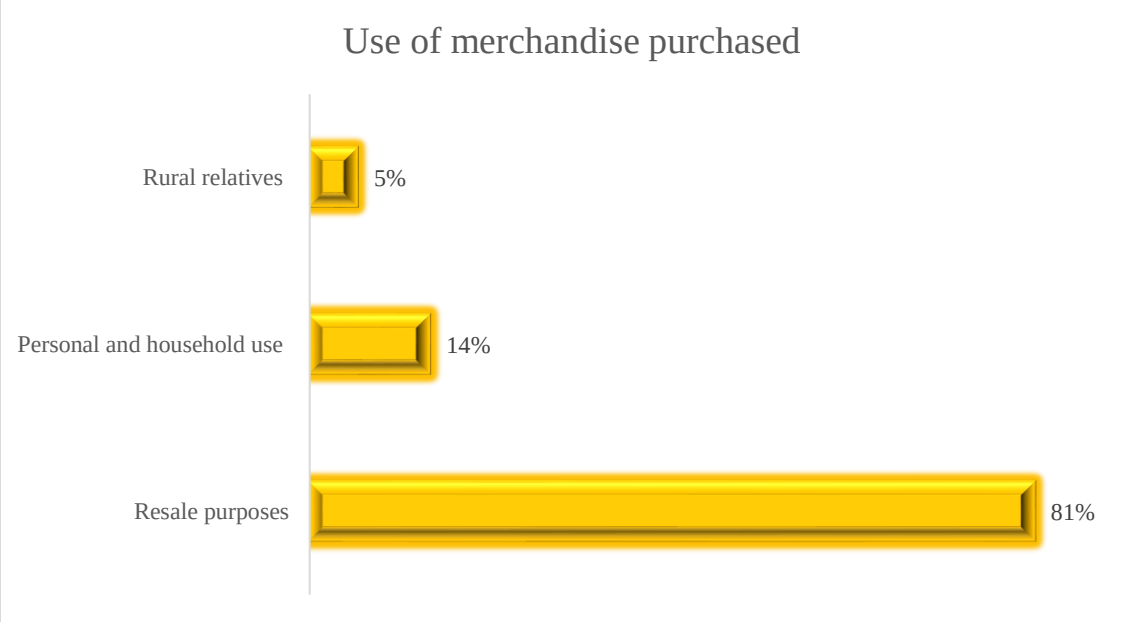
5.2.9 Purpose of visiting Gikomba

The customers asked why they often visit Gikomba OAM observed that they made way to the market for three main reasons. This included acquisition of second-hand textiles such as clothes, shoes, beddings etc at 61% of all reasons for visiting Gikomba. Secondly, they made way to the market to purchase food stuffs such as cereals, vegetables, fish, green maize etc at 27%. Gikomba is known to have variety of food items from across and beyond the country that retail at affordable prices, explaining a key reason customers make way to the market. Lastly, customers visited Gikomba OAM to obtain household items that included furniture, kitchen ware, laundry items, *mali mali* (mainly plastic household items including plates, cups, jugs, water jerrycans etc), electronic among others. This accounted for 12% of all reasons that made customers go to Gikomba.

5.2.10 Purpose of purchased merchandise

The majority of the customers acquired their merchandise for resale purposes. The merchandise for resale accounted for 81% of all use of the merchandise acquired by customers. There was acquisition of merchandise for personal and household use which accounted for 14% of all use of the merchandise purchased by customers in Gikomba. There was only 5% of merchandise bought by customers in Gikomba that was intended for consumption by rural relatives.

Table 18: Purpose of products purchased at Gikomba



5.3 Spatial Organization and Access to Facilities Within Gikomba

The study envisaged that the spatial organization of activities within Gikomba OAM had implications on its functionality. The arrangement of existing market facilities, provision and access to basic facilities, services and amenities are key drivers of market functionality. In this understanding, the study undertook to investigate the rate of access to facilities/services, status/condition of the available facilities/services and the rate of provision of basic facilities/services that facilitate functionality of the market. Interviews aided in the understanding the rate of access, condition and availability of these key functionality elements.

5.3.1 General Organisation of the market

The existing traders are categorized into various categories and spatially positioned based on the quantities of goods they handle. Therefore, they are categorized into; wholesalers, middlemen and retailers. Functionally, the wholesalers import goods from various parts of the country and the world and then sell them to middlemen who distribute them to retailers and finally the retailers sell them to final consumers.

a) Wholesalers

The entire market has approximately 150 wholesalers who represent various zones within the market structure. These wholesalers owe their membership to the Gikomba wholesalers committee which has 15 members. The committee is tasked to provide leadership and is headed by a chairperson who oversees meetings and ensures deliberations & decisions are effected as agreed.

b) Retailers

Generally, the retailers have organized themselves into 28 sections as highlighted in the table below and spatially represented in the map below. Each of the 28 sections is under the stewardship of a chairperson. However, there is an overall chairman who is in charge of Gikomba Retailers Association who is mandated to organize meetings and ensure that every information is circulated to the section chairpersons for delivery to their section members.

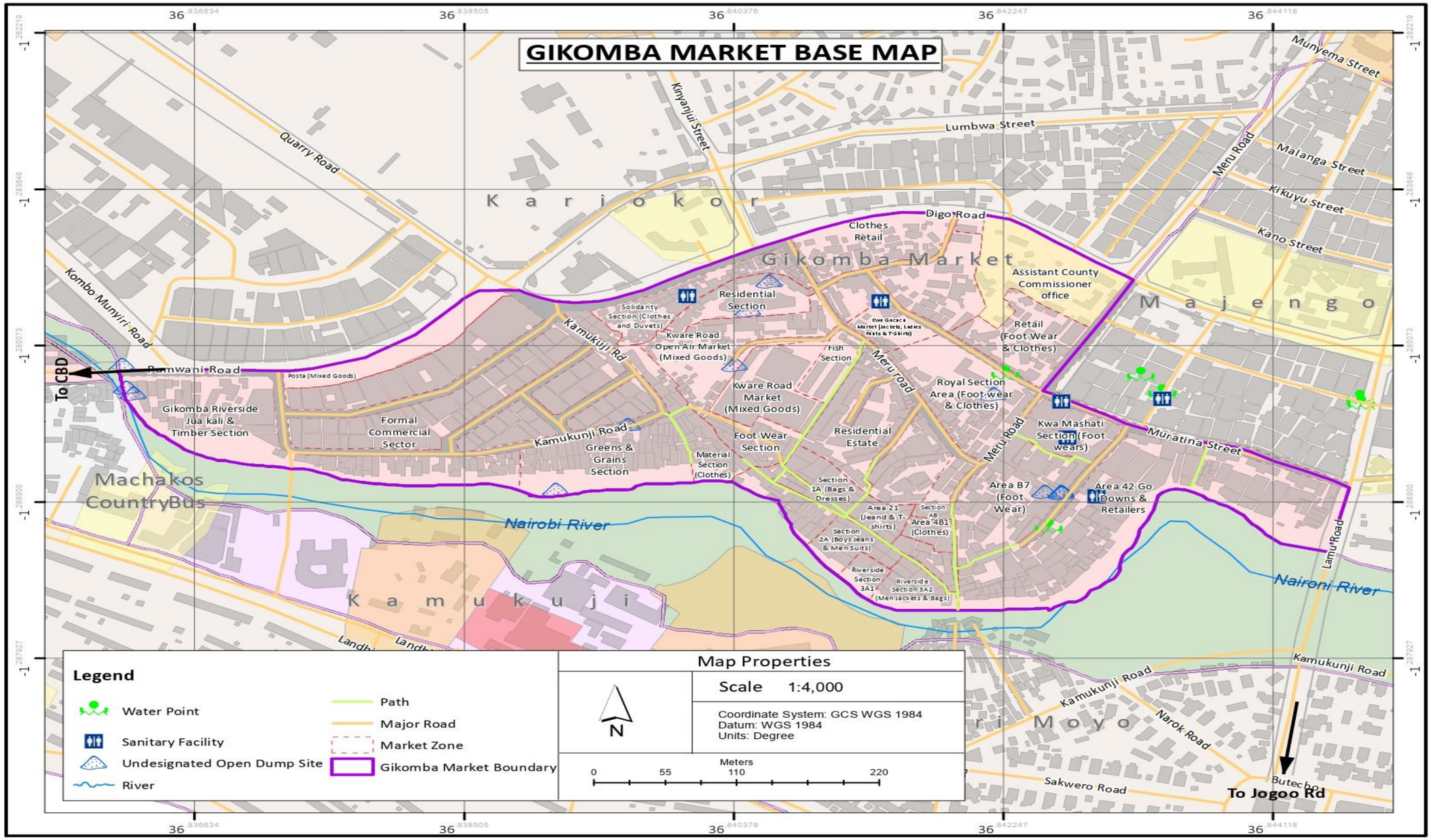
Table 19: Sections of Gikomba Market, Commodities Sold and Occupants

No.	Section	Commodities Sold	Occupants
1	Quarry Market Fish Mongers	Fish	1530
2	Cereals/Poultry	Poultry, cereals	1500
3	Vegetable market	Vegetable/fruits/grains	1500
4	Quarry Market Shoe Retailers	Shoes	1500
5	Quarry Road Open Air Market	Mixed goods	1550
6	Quarry Road Main markets	Mixed goods	4000
7	Timber area	Timber	1000
8	Material area	Clothes	400
9	Section 1A	Bags Dresses	1100
10	Section 1B	Jackets	2000
11	Section 1C	Jogger/fleeces	300

No.	Section	Commodities Sold	Occupants
12	Section 1D	Sweater/Hotels	250
13	Area J	Blazers/coats	270
14	Area 2A	Boys jeans/men suits	500
15	Area 2B	Jackets/men jeans	560
16	Area 42	Shirts/jeans	2000
17	Area 2C	Child jacket/t-shirt	1800
18	2D	Shirts	500
19	Shoes Traders	Shoes	4000
20	Kwa Gacucu Open air market	Child rummage, jackets, ladies pants, t-shirts	3500
21	Dispensary Line	Duvet/towels/nets	100
22	Solidarity area	Jackets/shirts/sweaters	1000
23	Area market line	Blankets/capes/t-shirts	500
24	Iron area	Iron sheets	1500
25	Hotels	Food/drinks	500
26	Posta	Mixed goods	500
27	Lumbwa Road	Timber/ plywood/jokes	500
28	Kamkunji road	T-shirts/leather jackets/sweater/socks/blouses	3000
	Total		**37,360**

(Source: Gikomba Retailers Association)

Map 5: Spatial Representation of Gikomba Open-Air Market



(Source: Author, 2023)

5.3.2 Access to the Existing Facilities

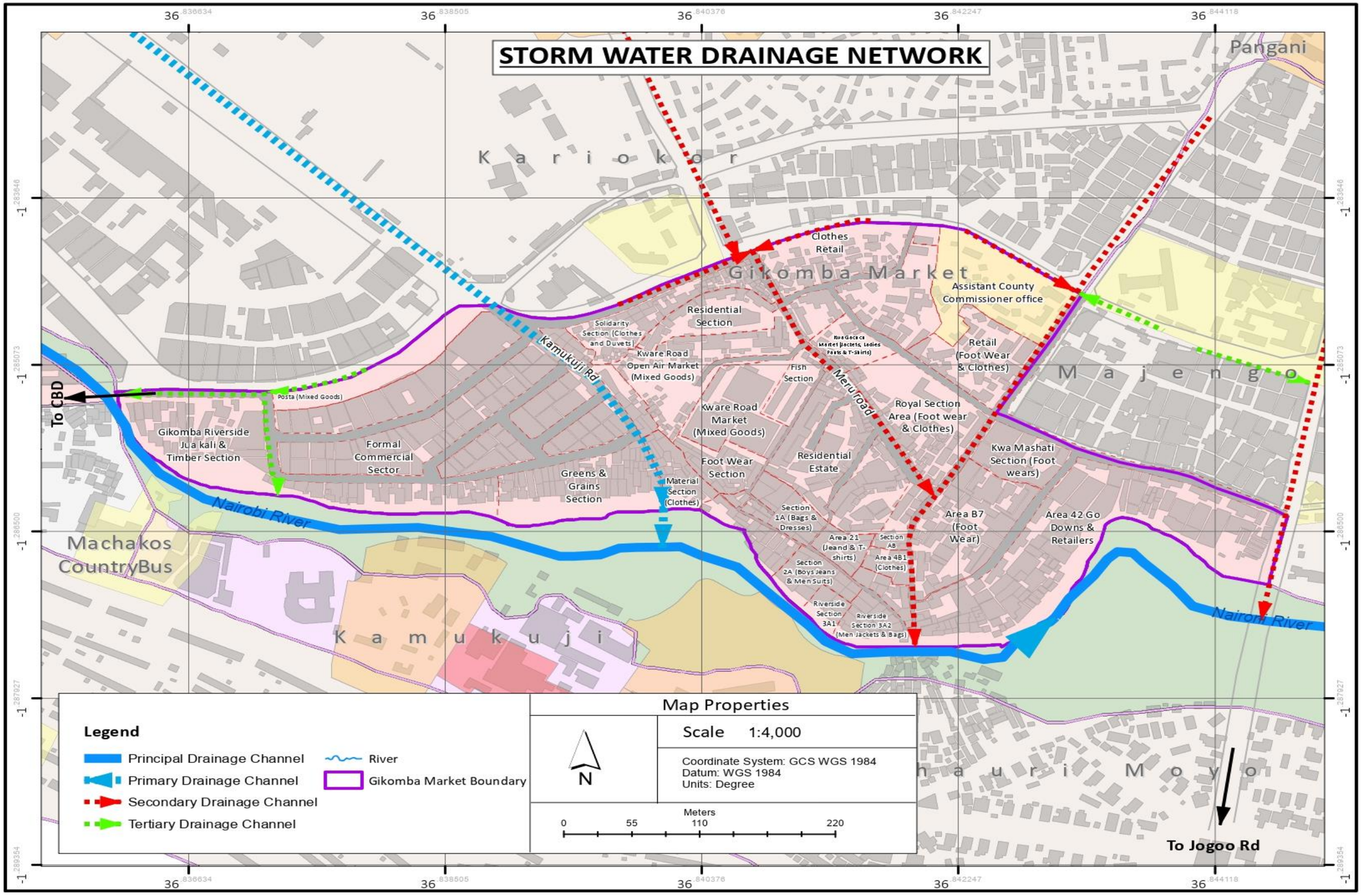
5.3.2.1 Access to drainage system

Majority of traders at 54% did not have access to drainage system. There was only 46% of the participants in this category who had access to drainage system. Unfortunately, most traders on sections with drainage system displayed their wares on top of the drainage channels. For those who accessed drainage channels, 40% of them considered the drainage system to be in a very poor condition, 26% poor condition, 4% were neutral, 28% termed it as good and only 2% defined it to be in a very good condition. Overall, the majority 66% determined the condition of the drainage system to be wanting.

Plate 11: Drainage line inside Gikomba OAM, traders display goods atop the drainage

"*The drainage system is poor and insufficient, it can't contain rain water and flooding especially during the rainy season*" – QRIMC

Map 6: Existing storm water drainage network within the market



(Source: Author, 2023)

5.3.2.2 Access to sewer system

There were 64% of traders who had access to sewer system within Gikoma market. Only 36% of all participating traders who did not have access to sewer connections within the Gikomba OAM. Among the 70 participants who reported to have access to sewer system, they rated the condition of the sewer facility they accessed. Out of them all, 31% rated the sewer system to be in a very bad condition, 21% bad condition, 36% good condition and only 1% rated it to be in a very good condition. There were some 10% others who considered the sewer system as neither in good or poor condition. “Sewer bursts are common especially during the rainy season” – shoes trader, “sewer bursts are common, they make this place inhabitable due to the bad smell and water spreading all over” – handcart pusher.

Plate 12: Drainage conditions within the market

Source: Field Survey, 2023

Figure 16: State of sewer system

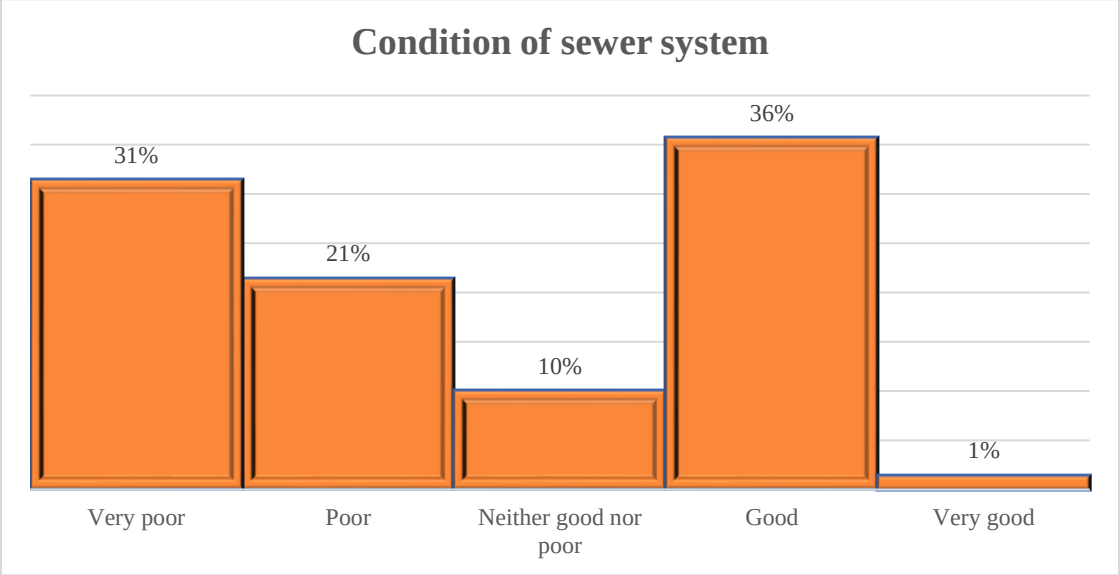
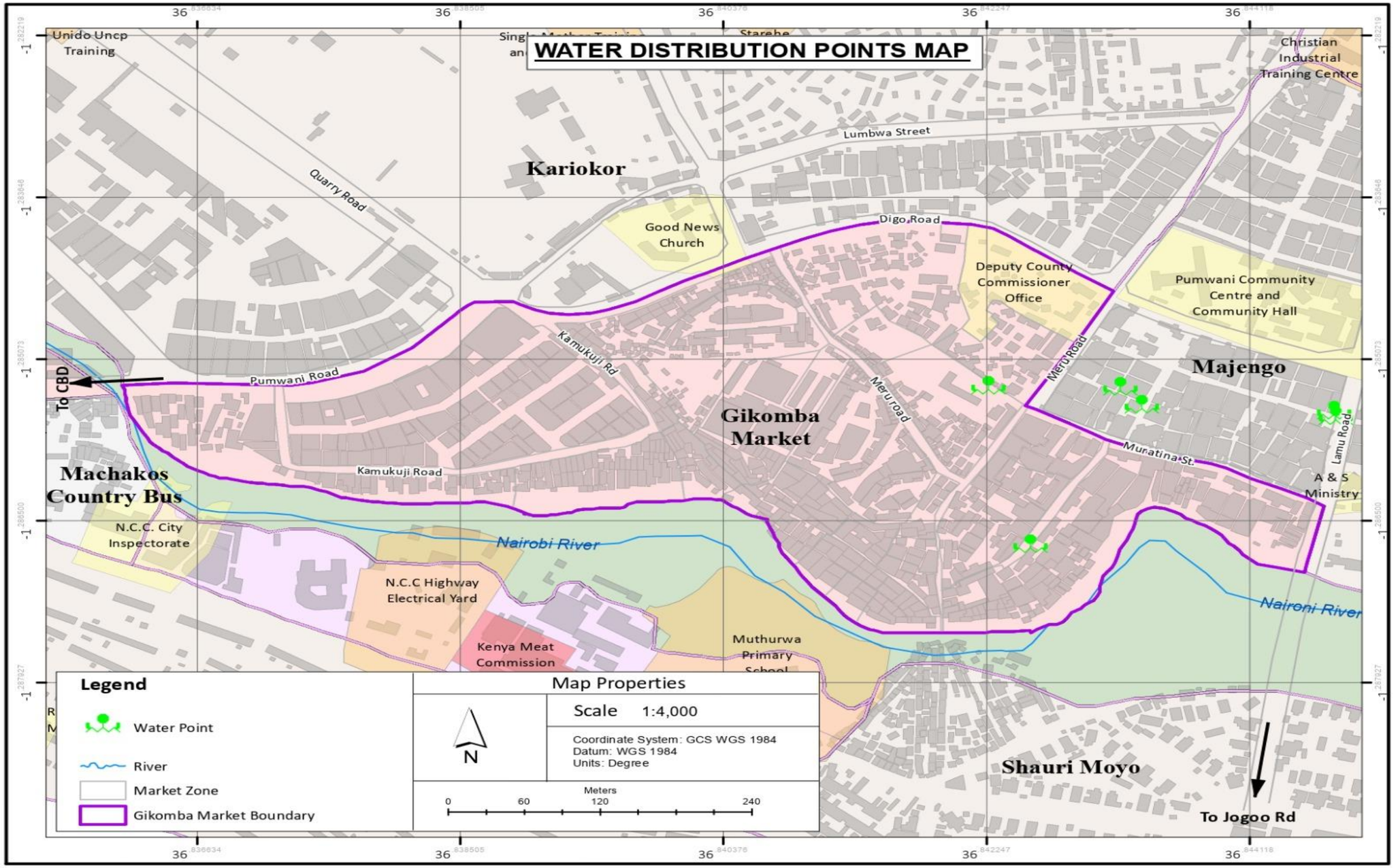


Plate 13: Broken sewer line within Gikomba

Source: Field Survey, 2023

5.3.2.3 Access to water

Map 7: Water access points distribution within Gikomba OAM



Source: Field survey, 2023

Table 20: Status of access to water

Status of water supply/access in Gikomba

Status	**Traders**	**Customers**
Very poor	5%	0%
Poor	10%	0%
Neither good nor poor	16%	35%
Good	66%	39%
Very good	3%	26%
Total	**100%**	**100%**

There were 88 traders who had access to water as compared to 21 who did not have access to water within Gikomba. Further, 23 of the 33 customers accessed water whenever they visited Gikomba with only 10 other customers unable to access the precious commodity within the market. According to some traders, water points are readily available, only that some have been closed, others grabbed by individuals who now sell water to traders and customers alike, "*there are no public water points, they have all been grabbed*" - QRIMC

The study mapped just six water points that had unlimited access where water was accessed without pay. Of these six, one is located at the health centre and is not for public use or consumption and for the health centre water needs. The other water points have since been grabbed and water is available at a fee for traders.

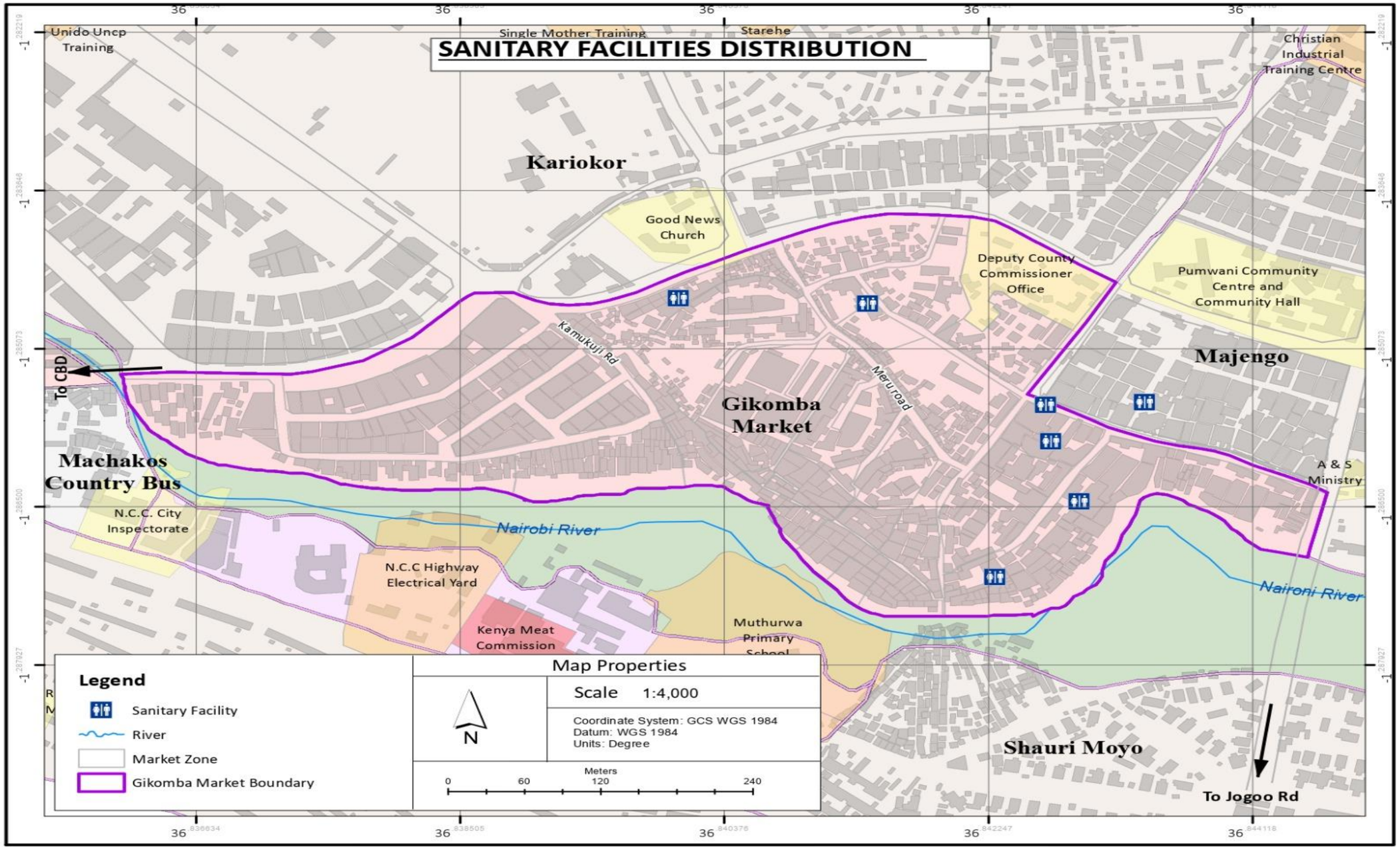
Plate 14: Water point in Gikomba

The traders and customers who reported access to water rated the condition of water supply including its quality and reliability. As per the participating traders, 66% rated the condition of water supply/access as good with just 3% rating it as very good. Only 5% others rated the condition of water access/supply as very poor while 10% other traders rated it as poor. The participating customers who had accessed water within Gikomba had the majority 39% report the status of water access/supply as good with another 26% terming its condition as very good. Regrettably, a significant 35% of participating customers who had accessed water were neutral on the condition of its supply/access as neither good nor poor.

5.3.2.4 Access to toilet

The majority of participants had access to toilet facilities within Gikomba market. A majority 94% of participating traders accessed toilet with 6% other traders unable to access such a critical facility. Similarly, majority 85% of interviewed customers had accessed toilet while in Gikomba with the rest 15% having been unable to access toilet within the market. *The public toilets are in a very poor condition. They have been grabbed by young men who charge for use yet they do not even maintain them* – Timber traders FGD. Those traders and customers who reported access to toilet facilities within Gikomba market rated the condition of such facilities. According to traders in this category, 79% of them considered the condition of toilets within Gikomba as good with just 7% considering it very good and another 14% unable to tell the condition of toilets as either good or poor. The customers who accessed toilets within Gikomba rated their condition as either good or very good at 77 and 23 percent respectively.

Map 8: Toilet facilities distribution map



(Source: Author, 2023)

An in-depth discussion with study participants revealed that there are very few toilet installations that belong to the county government of Nairobi. Unfortunately, these toilets by the county government are run down and needing rehabilitation with just one that is clean and in good shape, at Pumwani Social Hall. *The public toilets are in dire state, they have aged since they were constructed very many years ago, they have collapsed and are not well managed, they are in a bad state* – QRIMC. The majority of the toilets are however privately operated and are well maintained, clean and readily accessible for both customers and traders. *We use private toilets which we are charged 10/- per use, they are in good condition and are clean. The public toilets are charged at 100/- per month* – Handcart pusher, *we need a public toilet which we don't have to pay*– Boda Boda rider. These toilet facilities double up as water points that supply traders and customers with water within Gikomba open-air market.

As shown in Map 5, the study mapped 7 toilet facilities. All these toilet facilities were at some point public facilities. Currently, they are private resources, run by individuals who grabbed them from the public, they charge a fee to access them. There are public toilet facilities only at the block hosting the fish market, which serves traders around that locality, they are not mapped. The other only public toilet facility is among the mapped seven and it is located at the Pumwani Social Hall in Majengo, outside the study area, however supporting access for participants.

Plate 15: Bale seals dumped along the alleys

5.3.2.5 Access to solid waste management facilities

The study interviewed 109 traders and 33 customers. Out of the 109 traders, majority 74% of them lacked access to solid waste management system with just 26% having such access. The situation was worse for customers with 97% of them reporting to have never accessed waste management system within Gikomba and just 3% had accessed such services. The clearest responses from the study participants were that waste management services were largely unavailable. Indeed, there were no designated waste sites as shown in Map 8, all existing sites are illegal.

According to traders and through observations, majority of waste in Gikomba originates from bale wrappers and seals that are haphazardly disposed any-how under the wooden stalls, along the alleys, just all over the place. Other waste sources include biodegradables from food and food by-products. Mitumba clothes and shoes waste is also very common in the market largely due to presence of clothes and shoes that are old, rugged and unwearable which cannot be sold. Such waste is usually dumped all over, and especially along the Nairobi River which snakes along the market. Clothes waste also originates from tailors who dispose of waste remains from their tailoring activities. The fish by products make another source of waste that is dumped right behind the fish market. Such waste is extremely smelly and has potential to spread diseases within the market. Timber waste is also very rampant. Generally, the market solid waste condition is of great concern.

Plate 16: Solid waste dumped along the road in front of an eatery

The QRIMC reported that Gikomba market does not have a solid waste dumping/disposal site. *We dump amidst people, whenever these spaces are overloaded, we beg the city county to come and collect the waste. All over the market, there is no place set aside for waste, there are no dustbins, no nothing* – QRIMC chairperson. *We deserve better services from the county government. Services such as waste collection, toilets/washrooms, security lights etc. we pay a lot of money to the county. There is no organized waste management here, everyone takes care of their own waste, and it is dumped all over the place –*

Mpesa shop attendant. Further solid waste concerns were raised by timber dealers along the furniture section near the river. *There is no dumping site here, we dump at the river, we don't even have dustbins around, the council does not collect the waste we generate. We pay the county 200/- per week yet they do not do anything* – FGD Participant.

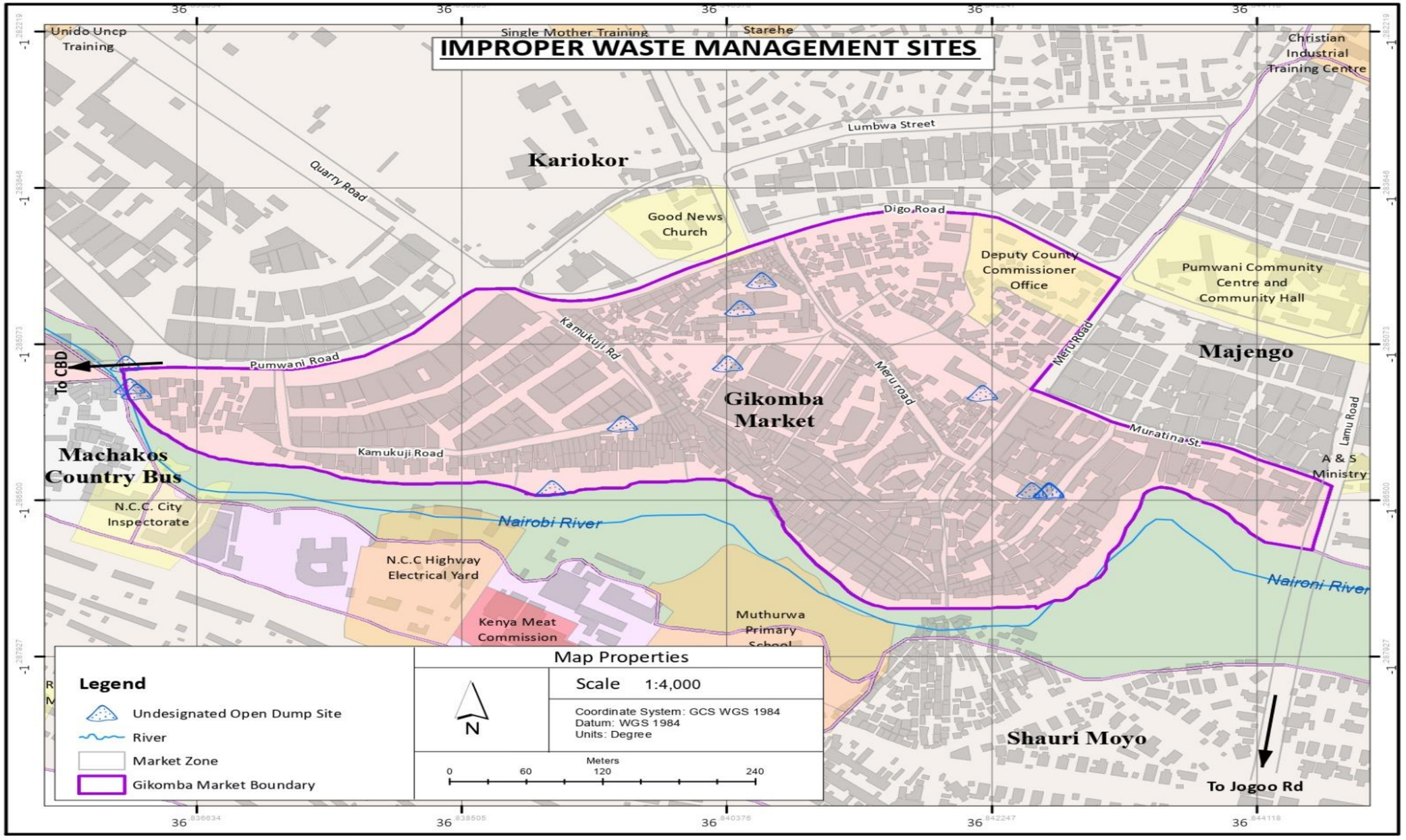
Strangely though, 55% of those who reported access to solid waste management services observed that the services were good with another 7% reporting them as very good. There were only 10% neutrals who could not determine the waste management services as either good or poor. However, 17% of them reported that waste management system was in a poor state and another 10% considered the services as very poor. These 27% echoed the reporting by majority of the respondents, key informants and focus group discussants as discussed above.

Plate 17: Solid waste dumped behind the fish market

5.3.2.6 Overall hygiene conditions within Gikomba

Gikomba traders rated the overall hygiene conditions of the market. The majority 36% rated the hygiene conditions as very poor and another 29% as poor. Overall, these made the majority 65% of all participants who were traders and were not pleased with the hygiene conditions of Gikomba market. There were some other 26% participants who were neutral and could not determine whether the sanitation conditions in Gikomba were good or poor. Only a small proportion of 9% of all participating traders reported the hygiene conditions as good while none of them reported the hygiene levels as very good.

Map 9: Illegal solid waste dump sites within Gikomba OAM



Source: Field survey, 2023

5.3.2.7 Access to public health facilities

A total 72 responses were received from traders on access to public health facilities. Most of the study participants had access to public health facilities. These were 94% of all traders who were targeted for this response. Just 6% of the traders did not have access to public health facilities. There is only one health facility within Gikomba market. The FGD participants indicated that there was only one health facility located in Majengo. *There are no public health facilities near us. There is only one public health facility in Gikomba, it is far from our section, it is situated in Majengo area and it is empty. You visit them then they send you to buy drugs/medicine from the chemist* – Timber section FGD discussants. This position was echoed by QRIMC which argued that "there is only one public helth facility – Pumwani Dispensary in Majengo – without drugs, you can't get treated there".

The 68 traders who reported access to public health facility rated the status of the facility as very poor 4%, poor 4%, neither good nor poor at 35%, good at 54% and very good at 1%. These ratings were to an extent in agreement with the reporting from key informants who described the public health facility as a good empty structure (QRIMC), therefore implying its good condition which is not equipped with the right equipment and medicines. There is a resident doctor according to Gikomba traders, its biggest failure is its being unstocked with medicines.

Plate 18: Pumwani Dispensary

Source: Field survey, 2023

5.3.2.8 Access to open/public spaces/social halls

There were only 29% of interviewed traders who had access to open/public spaces/social halls within Gikomba. The highest share of the participating traders did not have access to public spaces/social halls within the market. This was equivalent to 71% of all traders who participated in the study. The 32 participant who had accessed open/public spaces/social halls rated their condition as either very poor, poor, neither good nor poor, good or very good at 3, 31, 31, 31 and 3 percent respectively. With these ratings, the condition of the public spaces/social halls accessed by these 32 traders could not be determined as either good or poor since the respondents were 50% on either side of the provided rating scale.

5.3.2.9 Access to natural environment and vegetation

There was only one out of the 109 traders who had access to natural environment and vegetation within Gikomba. The majority 99% of traders who participated in the study did not have access to natural environment and vegetation within Gikomba. Gikomba does not have any natural green environment and vegetation in close proximity. The only traders who reported to have accessed such environments within Gikomba described the spaces to be in a poor condition.

5.3.2.10 Access to police post/station/presence

All participants except one had access to police post/station or police presence within the market. The 99% of all traders who participated in the study reported that police were within reach in Gikomba, indicating surety for security within the market. The 108 participants who had accessed the police post described the condition of the facility as very bad at 1%, bad at 6%, neither good nor bad at 34%, good at 57% and very good at 1%. The highest proportion of these participants considered the condition of the police post as good, giving it an overall positive rating.

5.3.2.11 Availability of High mast security lights

Table 21: Status of high mast security lights

Condition of high mast security lights	Frequency	Percentage
Very poor	4	5%
Poor	6	8%
Neither good nor poor	20	27%
Good	41	56%
Very good	2	3%
Total	**73**	**100%**

The highest proportion of traders reported the presence of high mast security lights. They were 67% of all traders who participated in the study. A share of 33% of the traders who were interviewed did not have access to high mast security lights. The majority 56% of the traders considered the high mast security to be in good condition with another 3% determining them to be in very good condition. However, 5% of these traders described the condition of high mast security lights as very poor and another 8% as poor. Observation indicated that there were only two high mast flood lights serving the entire market.

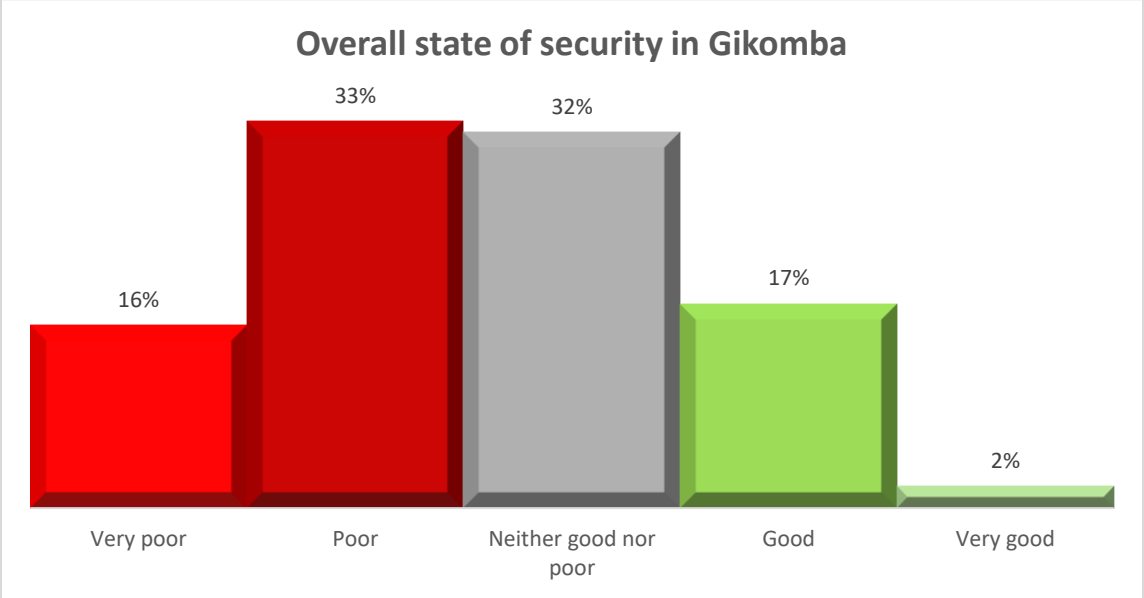
5.3.2.12 Availability of street lights

A significant 58% of traders who responded to the study reported the availability of street lights within Gikomba as compared to 42% who reported otherwise. Street lights were only available along the main road in Gikomba. The majority 51% of the traders who reported presence of street lights in Gikomba observed that the street lights were in good condition with another 8% of them describing them to be in a very good condition. There were 14% others who determined them to be in poor condition and another 2% observing that the street lights were in very poor condition. There were 25% of the participants who were in between in their description of the streets lights as neither good nor poor.

5.3.2.13 Safety status within Gikomba market

The study participants were probed on whether they feel secure within Gikomba market. A majority 53% of the traders reported that they felt safe and secure within the market with the rest 47% being insecure within Gikomba. There were just 27% of customers reported that they felt secure while in Gikomba. This was in contrast to 73% of all customers who participated in the study since they responded that they felt insecure while within Gikomba. All 73% customers who felt insecure explained that they felt insecure due to fear of thieves, noting rampant theft and pick pocketing was common in Gikomba and was aggravated by congestion within the alleys and high population within the market. The bridges were quite unsafe due to being hideout for thieves with guns and street children. According to the 47% traders who reported being insecure within Gikomba attributed they predicament to high crime rates within the market that included pickpocketing, mugging, luggage theft and general theft. They observed that this situation was worsened by absence of street lights, presence of many thieves and armed gangs within the market, congestion within the market and fire outbreaks. Gikomba streets and the roads leading to the market are extremely secure in early mornings and at night while daylight robbery was highly prevalent especially involving loss of phones, wallets, handbags, stock theft (stealing of bales in store or on transit while on handcarts and/or trolleys) among other forms of theft.

Figure 17: Overall security conditions within the market



Probed on the overall security status of the market, 16% of the participating traders observed that the security condition in the market was very poor and another 33% reported it as poor. There were significant 36% of traders who were neutral in describing the security conditions within Gikomba, not able to describe the state of safety and security as either good or bad. Nonetheless. 17% of all participating traders felt that the state of security in Gikomba was good while another 2% described the security situation in Gikomba as very good. Overall, the majority 49% were of the opinion that the levels of security within the market were not good (- ve security situation) as opposed to only 19% who were adamant that the security within the market was good (+ ve security situation). The neutrals remained at 32%.

5.3.2.14 Access to pedestrian (paved) walkways

The majority traders and customers reported their inability to access paved pedestrian walkways within Gikomba market. This category comprised of 66% of all participating traders and 79% of all participating customers. There were only 34% of all interviewed traders and 21% of interviewed customers who reported to have access to pedestrian walkways within Gikomba market. There is only one main road – Digo road – that has paved pedestrian walkway. Unfortunately, the paved pedestrian walkway along this road has been 'grabbed'/encroached on by traders who display and conduct their business atop

Plate 19: Traders occupy paved pedestrian walkway along Digo road

the pedestrian walkway. All other streets and alleys do not have any paved pedestrian walkways within the market. The traders who reported to have access to pedestrian walkways within Gikomba rated their condition at very poor by 14% of them, poor by 61% others, good by 14% and very good by 3% with 11% of them remaining neutral on the condition of paved walkways in Gikomba. On the other hand, 71% of all customers who had accessed pedestrian walkways within Gikomba rated their condition at poor with the other 29% being neutral over the same. Overall interpretation of these responses indicates a poor state of pedestrian walkways within the market.

Table 22: Condition of paved pedestrian walkways

Condition of pedestrian walkways	**Traders**	**Customers**
Very poor	14%	0%
Poor	61%	71%
Neither good nor poor	11%	29%
Good	14%	0%
Very good	3%	0%
Total	**100%**	**100%**

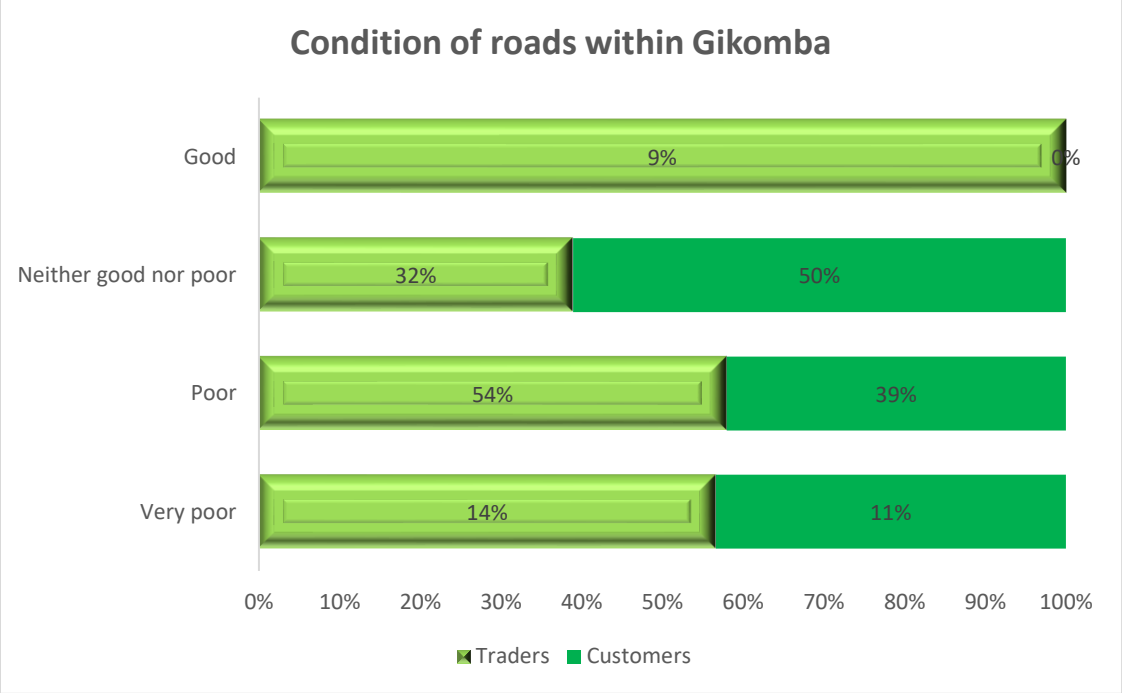
5.3.2.15 Access to road network

Plate 20: An alley within Gikomba market

The majority traders and customers reported to have access to road network within the market. Road network was interpreted to mean the distribution of access roads/alleys within the market. A majority 69% of all traders who participated in the study and 55% of all customers who were interviewed reported to have access to road network within the market. This contrasted to 31% of all traders and 45% of all customers who did not have access to road network within the open-air market. The 75 traders who reported presence of road network defined their condition as good, neither good nor poor, poor and very poor at 16, 32, 44 and 8 percent respectively. Similarly, the 18 customers who had accessed road networks within Gikomba had 6% of them describe the condition of the road network as very good, 22% others as good, another 22% were neutral, and 50% others described road networks to be in bad condition. Further, the study investigated from the traders the state of road infrastructure within the market and the results were displayed in the following figure.

There were only 9% of traders who described the condition of road infrastructure within Gikomba as good, none of the customers thought so. Further, 32% of all traders were neutral on the condition of roads within Gikomba as did 50% of all customers who responded to this question. A majority 54% of all interviewed traders reported the condition of roads within Gikomba as poor, and so did 39% of all interviewed customers. Another

14% of all traders who participated in the study described the condition of roads within the market as very poor, a position that was upheld 11% of all customer participants.



"There are no roads, accessing the market is a nightmare. In case of fire outbreak, accessing the market by a fire engine is difficulty if not impossible. Many at times it does not manage to access the site of the fire outbreak. An ambulance can never penetrate here, we have to carry the sick person to the nearby road for the ambulance to pick him/her" – FGD Discussant.

Plate 21: A major alley inside Gikomba market

The findings were echoed by QRIMC which posited that Gikomba market had poor state of road infrastructure with roads that were not tarmacked and lacked drainage channels. The Boda Boda riders also decried the poor state of the roads, indicating that the market was highly inaccessible due to poor and extremely narrow roads, that there were no roads for emergency access including ambulance and fire engines.

Plate 22: Condition of roads/alleys within the market

Source: Field survey, 2023

Similarly, the truck drivers were unhappy with the narrow, traffic jammed and congested roads within Gikomba, citing that they could only access specific areas of the market since there were no roads inside the market, and as such they had to search for parking at the edges of the market. Similarly, the FGD by timber dealers reported the poor state of roads within the market, arguing emergency response was an enormous challenge due to poor road condition and congestion within the existing roads.

5.3.2.16 Access to loading and offloading zones

There was absence of loading and offloading zones according to 70% of all interviewed traders and 79% of all interviewed customers. Only a small proportion of 30% of all traders and 21% of all customers who participated in the study reported to have had access to

loading and offloading zones within Gikomba. According to truck/lorry drivers, there were no loading or offloading zones and that the they were forced to load or offload from the road or on building frontage where they blocked other people's business and at times had to pay high penalties for the same.

Plate 23: A Moyale bound truck loads from the road. On the left, a timber lorry from Murang'a offloads from the road.

Source: Field Survey, 2023

For the 33 traders who reported access to loading and offloading zones within Gikomba, 1 rated their condition as very poor, 7 as poor, 15 as neither poor or good, 9 as good and only 1 as very good. As shown in the frequency distribution table below, 3 of the 7 customers who had accessed loading/offloading zones in Gikomba observed that such spaces were in bad shape, 2 rated them as neither good nor poor and the other 2 considered such zones to be of good condition.

Plate 24: State of loading/offloading zones

Condition of loading/offloading zones in Gikomba	Traders	Customers
Very poor	1	0
Poor	7	3
Neither good nor poor	15	2
Good	9	2
Very good	1	0
Total	**33**	**7**

Plate 25: Trucks offload and load into each other along the road

Source: Field survey, 2023

5.3.2.17 Access to parking spaces

Plate 26: Truck parked in front of a building at the edge of the road

The majority 76% of all traders who participated in the study did not have access to parking spaces within Gikomba as did 85% of all customers interviewed by the researcher. There were just 24% of all traders who reported access to parking spaces and only 15% customers had access to such critical transport spaces. According to the traders who had access to parking spaces, these spaces were inside buildings (which the traders had rented rooms for their business operations) or in front of private building installations and were for pay. A key informant, reported that a parking space was available at the county premises along Digo road but they were very few to accommodate all traders and other visitors of the market despite them being for a pay. All truck drivers and PSV drivers decried the absence of parking facilities in the market. They were forced to pay high amounts to park inform of private buildings, or squeeze the vehicles at the shoulders of the already narrow roads that are congested and have been encroached on by the traders.

Those 25 traders who reported availability of parking spaces in Gikomba had 5 of them describe the parking spaces as ones in bad condition, 8 rated them as neither good nor bad, 12 rated them of good condition and only 1 considered the parking spaces to be in very good condition.

Plate 27: A truck offloads as it parks on the edge of the road

Source: Field Survey, 2023

The 5 customers who had accessed parking spaces within Gikomba had only 1 of them consider such spaces to be in bad condition with the other 4 rating the condition of the available parking spaces as good. The QRIMC reported the absence of parking spaces and loading/offloading zones indicating that the only designated parking spaces were available at the fish market and had already been encroached by traders hence unavailable. They also described an open space used currently as a parking space as having been a result of fire outbreak and earmarked for new market development blocks hence it is a temporary parking space used by traders, customers and other visitors of Gikomba market.

5.3.2.18 Access to bus terminal facilities

Most of the traders reported to have accessed bus terminal facilities within Gikomba. These accounted for 66% of all traders who participated in the study and only 27% of all customer participants. A high proportion of customers reported not to have access to bus terminal facilities. They were 73% of all customers who were interviewed. A similar position was reported by 34% of all traders' respondents.

Table 23: Condition of bus terminus

Condition of bus terminal facilities	Traders	Customers
Very poor	11%	0%
Poor	29%	22%
Neither good nor poor	43%	33%
Good	15%	33%
Very good	1%	11%
Total	**100%**	**100%**

As relates the condition of the bus terminal facilities, 11% of the traders who had accessed such bus terminal facilities rated their condition as very bad, 29% poor, 43% neither good nor poor, 15% good and only 1% very good. Approximately 22% of customers who had accessed bus terminal facilities rated their condition as bad while 33% of them were neutral on the condition of bus terminal facilities they had accessed as neither good nor poor, another 33% rated them as good and 11% others determined the facilities to be in very good condition.

5.3.2.19 Access to recreational facilities

The largest proportion of 82% of all traders and all 100% customers did not have access to recreational facilities within Gikomba. Just a small proportion of 18% of all traders had access to recreational facilities within market. The 20 traders who reported to have access to recreational facilities within Gikomba had 25% of them rate the condition of the facilities as poor, 40% were neutral and 35% considered such facilities to be in good condition.

Table 24: Condition of recreational facilities

Condition of recreational facilities - Traders	Frequency	Percentage
Poor	5	25%
Neither good nor poor	8	40%
Good	7	35%
Total	**20**	**100%**

Plate 28: An eatery in Gikomba

5.3.2.20 Access to hotels/food cafes/kiosks

The majority of the study respondents indicated to have had access to hotels/food kiosks/café/restaurants within Gikomba market. These were represented by 93% of all traders that were participants in the study and 79% of customers who gave their ideas to the researcher. There was only a small proportion of 7% of all traders and 21% of all customers respondents who reported their inability to access hotels/restaurants/food cafes/kiosks within Gikomba market.

Further probing on the state of such hotels/restaurants/food café/ kiosks, 10% of the traders reported that these facilities were in very bad condition as did 4% of the customers. Further, 23% of traders rated the condition of these eateries as bad as was a similar response from 15% of all interviewed customers. There were 42% traders and 35% customers who were neutral on the condition of food café/kiosks as neither good nor bad. On the flipside, 26% of all interviewed traders rated food eateries within Gikomba as good as did 38% of all customers who participated in the study. There were only 8% of all customer interviewees who rated food joints within Gikomba to be in a very good condition, a rating that none of the traders had attested to.

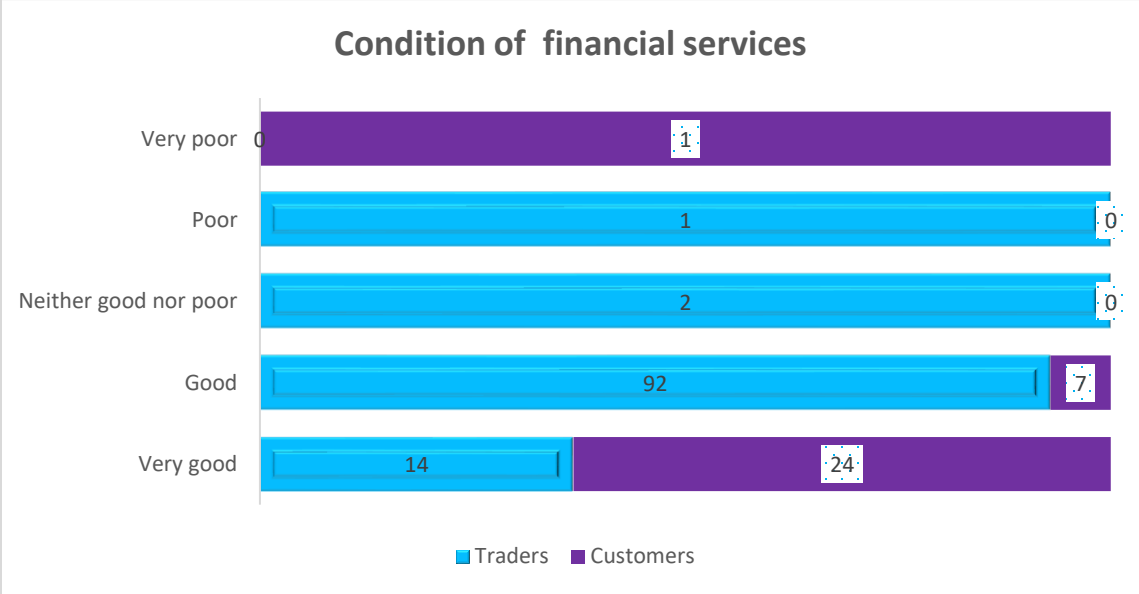
Table 25: Condition of eateries within the market

Condition of hotels/restaurants/food cafes/kiosks	***Traders***	***Customers***
Very poor	10%	4%
Poor	23%	15%
Neither good nor poor	42%	35%
Good	26%	38%
Very good	0%	8%
Total	**100%**	**100%**

5.3.2.21 Access to financial services

All traders who participated in the study reported to have access to financial services. This was the position held by 32 of the 33 customers who responded to the study. Financial services included access to banking services, mobile money services such as Mpesa, Airtel Money and T-Kash by Safaricom, Airtel and Telkom Kenya respectively, and access to insurance services. There were plenty of Mpesa shops that also provided mobile banking services from Kenya Commercial Bank (KCB), Equity Banks, Absa Bank, Family Bank and Cooperative Bank among others. There was only 1 customer who did not have access to financial services. Insurance brokers/agents had also set shop within the market, especially in Mumbai building. Commercial banks, Savings and Credit Cooperative Organizations (Sacco) and micro-finance institutions (MFIs) have opened their branches within the market. These include Family Bank, KCB Bank, Equity Bank, Cooperative Bank, Absa Bank, NCBA among others.

Figure 18: Status of financial services



The respondents rated the condition of financial facilities available within Gikomba market. Out of the 109 traders, 14 considered the financial facilities within Gikomba to be in a very good condition, a position supported by 24 of the 32 customers who responded to the question. Further, 92 of the 109 traders reported that the financial facilities/service were good, this was echoed by 7 customers. There were only 2 neutral respondents on the

condition of financial facilities as neither in good or poor condition while another 1 trader rated them as poor. None of customers was neutral or rated the facilities as poor. Nevertheless, 1 customer considered the state of financial facilities within Gikomba to be very poor.

5.4 Facilitators and Constraints of Functionality

5.4.1 Facilitators of Functionality of the Market

5.4.1.1 Transportation (Enablers of Networks and Linkages)

Networks and linkages are made possible through transportation channels. The study envisaged that transportation facilitated the movement of people (participants) and goods and services within the market. In this context, it investigated the state of the enablers of networks and linkages and their contribution to the market functionality.

a) Mode of accessing Gikomba

The respondents more or less used similar modes of transport to access Gikomba market. The customers rated public service vehicles (PSVs) as the most frequently used at 68% of all modes that they reported to have used to access the market. Walking and bi-cycling non-motorised means were the other significant modes of accessing the market frequently used by customers. It accounted for 25% of all transportation means that customers used to access Gikomba market. Other notable means of transport adopted by customers to access Gikomba market included use of motorcycles and the Nairobi commuter railway service at 5 and 3 percent respectively. Customers reported to have walked long distances to access the market, explaining the high use of NMTs. Also, those who used commuter rail walked from central railway station at the city centre to the market site.

Figure 19: Transport Modes of Accessing Gikomba

Transportation modes used to access to Gikomba		
Mode of transport	**Customers**	**Traders**
Public service vehicles (Tuk Tuks, Nissans, Matatus, Buses etc)	68%	49%
Non-motorised transport (Walking, bi-cycling etc)	25%	32%
Motor cycles	5%	11%
Private vehicle		4%
Taxi ranks		2%
Cargo vehicles (pick-ups, lorries, trucks etc)		1%
Digital taxi means (Uber, Bolt, Little, Faras, etc)		1%
Use of Nairobi commuter rail system	3%	
Total	**100%**	**100%**

On the other hand, PSVs were mostly used by traders at 49% of all modes of transport traders used to access Gikomba market. NMTs were also common with traders and were highly used hence accounting for 25% of all modes of transport that traders used enroute Gikomba market. Use of motorcycles at 11% was another common means deployed by traders to access Gikomba market. Other modes of transport used by traders to access Gikomba market comprised of private vehicles, taxi ranks, and digital taxi modes at 4, 2, 1 and 1 percent respectively. Traders decried the challenge of having to walk very long distances to the market from the city centre where most PSVs dropped them. Highlighting the potential challenge of mugging enroute the market, especially those who arrive at the market extremely early in the morning.

b) Mode of transporting merchandise from source to the market

Road transport was the main mode adopted by traders for transporting their merchandise from point of purchase to the point of sale in Gikomba market. This was equivalent to 96% of all modes of transport employed by traders. Other modes included the use of sea and air transport modes at 3 and 1 percent respectively. None of the traders used railway transport, even them that acquired their products from Mombasa and in other regions where railway transport is present.

Plate 29: Long haul truck delivering products to Gikomba market

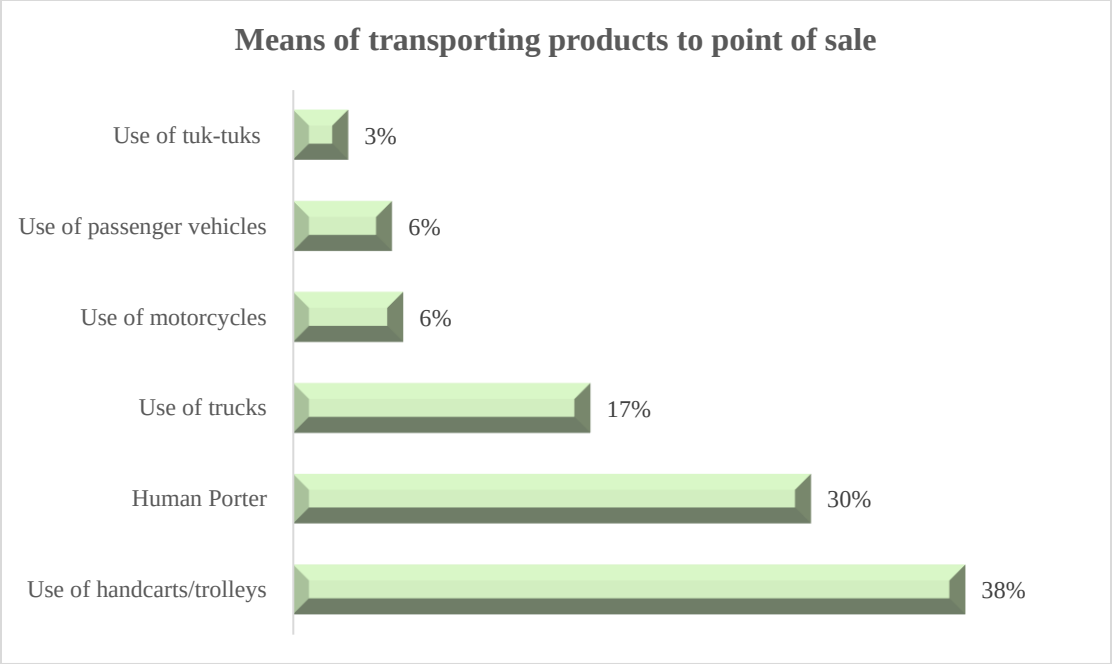
Source: Field Survey, 2023

c) Carriage types employed to transport items to point of sale

Handcarts and trolleys were the main mode of transporting merchandise from the point of acquiring such products to the traders' selling points. This accounted for 38% of all transport carriage methods deployed by traders. Human porter was the other main mode of

carrying the wares to the selling point. It rated at 30% of all methods adopted by traders. Human pottery was a significant transport carriage mechanism due to the ability of individuals to make way even in the narrowest of the alleys. This means use of human shoulders or back of head to carry goods around the market was very common since they could easily access all areas of the market. Also, the short distances between source and point of sell meant that human porter was a viable option in the wake of poor road network and condition within the market.

Figure 20: Means of transporting products to point of sale



Use of trucks accounted for 17% of all transport carrier types reported. This was mainly used for goods obtained outside Nairobi. Other significant vehicle carriage types employed by traders included use of motorcycles, and use of passenger vehicles at 6% apiece and use of tuk-tuks at 3%. Motorcycles were relied on due to their ability to penetrate the narrow alleys, though they could not make way to the very heart of the market. Tuk-tuks were critical in ferrying goods obtained within the city, mainly from Industrial area and other areas surrounding Gikomba.

Figure 21: Human porter transportation

d) Transportation of wares between store and selling point

Traders observed that there were movement of goods for sale between storage facility and selling point, especially those who did not store their goods at the selling point or within their shop. The main method used for the transfer of goods in this context included mainly the use of human pottery (human backs, shoulders, hands etc) at 61% of all transportation modes adopted by traders. Other significant mode of transporting wares between storage facility and selling point include the use of handcarts/trolleys at 31%, use of motor vehicles (tuk-tuks, motor-cycles, pick-ups) and vehicles (low-, medium-, and high- capacity trucks) at 7 and 1 percent respectively.

Table 26: Transportation modes within Gikomba

Transportation of wares between selling point and storage facility	
Transportation mode	**Percentage**
By human pottery (human backs, shoulders, hands etc)	61%
By hand carts/trolleys	31%
By vehicular means (tuk-tuks, motor cycles, pick-ups)	7%
By vehicular means (low-capacity, medium-capacity, high-capacity trucks)	1%
Total	**100%**

e) Challenges in accessing Gikomba market

The following table provides percentage frequency distribution of the transportation challenges encountered by both traders and customers (and generally by everyone) making way to Gikomba OAM. Out of the 102 responses from customers in Gikomba, congested roads that had all sorts of vehicular, non-vehicular and pedestrians was the major challenge

as it accounted for 25% of all challenges reported by customers. Other significant challenges according to the customers who were interviewed, they experienced vehicle and human traffic jams at 19%, unsafe roads and streets at 13%, poor state/condition of road infrastructure at 11% and lack of access to express vehicles to Gikomba at 10%.

Table 27: Transportation Challenges Experienced while Accessing Gikomba

Transport challenges experienced while accessing Gikomba		
Transportation challenges	**Customers**	**Traders**
Vehicle and human traffic jams	19%	18%
Congestion within roads humans, carts, cycles, vehicles on the same road	25%	16%
Narrow roads/streets	9%	14%
Unsafe roads and streets	13%	14%
Poor state of roads	11%	13%
Challenges of accessing direct vehicles to the market	10%	9%
Absence of parking facilities	1%	5%
Absence of loading and offloading zones	0%	5%
Absence of designated bus stops/terminal facilities	1%	3%
Too many connecting vehicles before I get to the market	0%	2%
Lack of connecting means from one means of transport to another	2%	0%
Lack of drop and pick up points	1%	0%
Others (please specify)	10%	2%
Total	**100%**	**100%**

These challenges were echoed by truck/lorry drivers, passenger service vehicle drivers and touts as well as by the boda boda riders within Gikomba. They observed that they suffered road congestion challenges while entering or leaving Gikomba, absence of parking spaces within Gikomba forcing them to park along the road or pay for parking outside private buildings, the narrow roads/alleys within the market, and the absence of bus terminal facilities. The lack of designated bus stage was a major challenge for PSV vehicles. They were forced to take risks and pick passengers along the road, or pay heavy fines to police after arrest or bribe them to pick up passengers along the streets. Human, vehicle and non-vehicle traffic jam was a major challenge to drivers, especially of lorries/trucks and PSV drivers.

The other challenges specified by customers and traders, accounting for 10 and 2 percent of responses respectively concerned with the overall state of Gikomba.

Table 28: Other challenges experienced by customers while accessing Gikomba

Other challenges - Customers	Frequency
High bus fares	6
Expensive direct vehicles	1
Inaccessibility	1
Lack of NMT space	1
Dirty market	1
Delay waiting for a vehicle to the stage nearest to Gikomba	1
Congestion in the bus	1

Plate 30: PSVs pick passengers on the road (Digo Road)

Source: Field survey, 2023

According to the customers, the other specified challenges comprised of high bus fares, expensive direct vehicles, inaccessibility within the market, dirty market, congestion inside passenger vehicles and delays in catching a bus to the nearest stage (city stadium stage) to Gikomba market. The traders however specified other challenges that largely related to their work environment. They decried muddy roads during the rainy season, high cost of transportation, high rate of criminal activities, lack of shelter (they sell in open sun/rain), hawkers selling from the roads hence congesting it and impairing ease of way, sewerage break outs and poor drainage system among others.

Table 29: Other challenges experienced by traders while accessing Gikomba

Other challenges - Traders	**Frequency**
Muddy roads during the rainy season	2
Traders selling from the road causes congestion and narrowing of the ease way	2
High rate of criminal activities	2
Fires	1
Sewerage break outs	1
Poor drainage	1
Poor working environment - no shelter	1
High cost of transport	1
No customers due to high prices	1

f) Solutions to market access challenges

Table 30: Solutions to Gikomba Access Transportation Challenges

Solutions to challenges	**Customers**	**Traders**
Expand road facilities	29%	25%
Renovate and upgrade roads condition	0%	18%
Increase security and safety on the roads and the bus terminus	15%	17%
Provision of modal split (separate lanes for NMTs, motor etc)	19%	14%
Provision of organized/smart/digital and secure parking spaces	3%	7%
Provide loading and offloading zones	0%	6%
Provide a bus terminus	5%	4%
Provide drop and pick up points	1%	4%
Renovate and upgrade roads	16%	0%
Integrate light railway system with the road facilities	1%	2%
Provide service lanes along main roads/streets	1%	0%
Any other - please specify	9%	3%
Total	**100%**	**100%**

According to the customers, key measures to address the identified Gikomba market access transportation challenges included expansion of roads to reduce vehicle and human traffic and congestion on the roads, increased security and safety on roads and bus termini, adoption of modal split and renovation and upgrading of road infrastructure. These were equivalent to 29, 15, 19 and 16 percent respectively of all 75 solutions postulated by

customers. The traders opined that the transportation challenges associated with access to Gikomba market could be addressed by employing 384 transport related solutions.

They reported the key solutions lied on the expansion of road facilities at 25% of all solutions they reported, renovation and upgrading of road facilities at 18%, enhanced security and safety on roads and within bus termini at 17% and provision of modal split along transportation corridors at 14%. Modal split included separation of carriage lanes on the road to accommodate lanes for NMTs (pedestrians and cyclists), vehicles and rapid transit facilities for bus rapid or light rail network. Road expansion included the provision of dual carriageway on the roads leading to the market.

Other solutions included provision of smart parking spaces, which would enable traders and customers use private cars to the market for assurance of safe and secure digital parking spaces, provision of loading and offloading zones, establishment of a bus terminus within the market vicinity, provision of pick-up and drop-off points along the road channels, and the integration of light rail into the Gikomba transportation system. The target of these proposals was to address traders and other market visitors from being dropped far off the market such as in town, city stadium stage, NACICO stage, Pumwani stage and walk long distances to the market, which proved costly in terms of time.

Table 31: Other solutions to Gikomba access transportation challenges

Other solutions to transportation challenges - Traders	**Frequency**
Provide security	4
Decongestion	3
Provide loading and offloading zones and parking spaces	2
Reinforce development control guidelines	1
Construct/repair drainage channels	1
Construct a railway terminal and integrate it with the road transport network	1
Other solutions to transportation challenges - Customers	**Frequency**
Reduce price of (direct) PSVs	4
Improve quality of public transport and reduce number of private cars on the road	3
Reduce fuel prices	2
Decongestion	1

Both sets of participants proposed other solutions, which accounted for 9% of all solutions reported by customers and 3% of those that were reported by traders. The other significant solutions according to traders included provision of security, decongestion of road facilities which targeted the removal of traders from operating from the road, provision of loading, offloading zones and parking spaces, enforcement of development control guidelines and establishment of railway station/interconnection between the railway station and the market. The customers other solutions focused mainly on the cost of access to the market calling for reduction of fare prices, especially for direct PSVs that have access to the market, improved quality of public transport (safety and hygiene and congestion/stuffiness) and reduce number of private cars on the roads with an objective of reducing traffic jams on the roads leading to the market, reduction of fuel prices and decongestion of road spaces.

g) Transporting merchandise to respective destinations

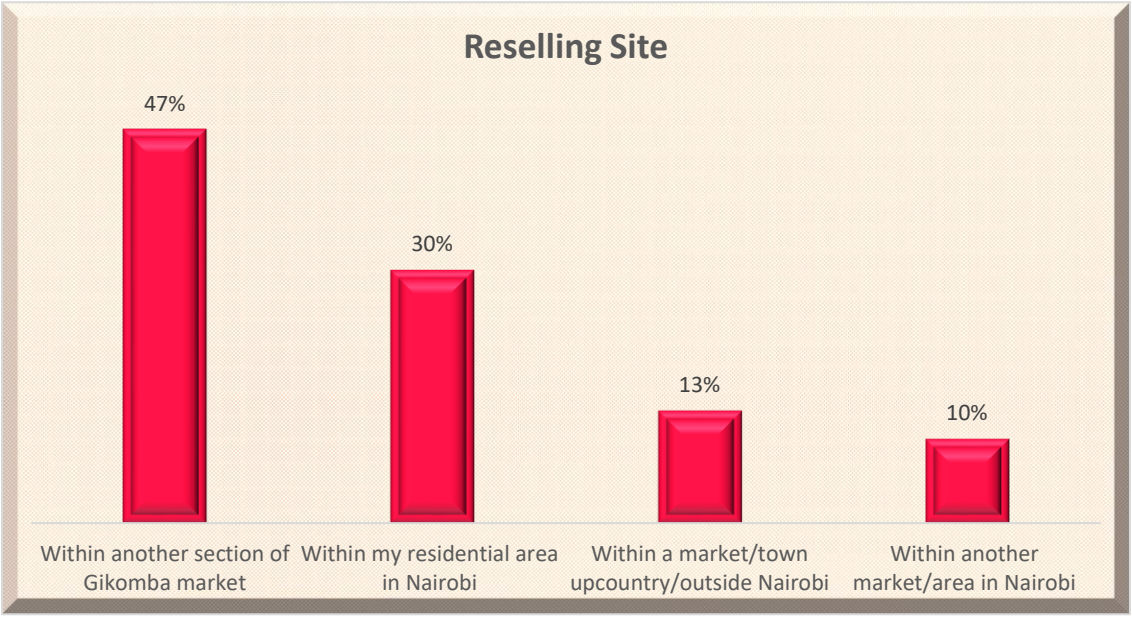
- **Personal and household use products**

Those customers who acquired items for personal use transported them to their respective residential homes. They mainly used public service vehicles including matatus, buses, taxis etc, human pottery through their backs, hands shoulders etc, motorcycles, and by use of public cargo vehicles such as pick-ups, lorries, trucks etc.

- **Resale merchandise**

For the 81% who acquired merchandise for resale, they specified their selling sites, some within the city and others beyond its borders. The majority 47% of them sold their merchandise within Gikomba market with another significant 30% trading their wares within their residential areas. There were 13% others who sold their wares in a market or town upcountry and indeed outside Nairobi city. The least proportion of 10% sold their acquired merchandise within another market area within the city. This category had customers who sold their wares in Muthurwa, South B and Limuru town which happens to be outside Nairobi though it's in close proximity with the city in Kiambu county.

Figure 22: Customer business location



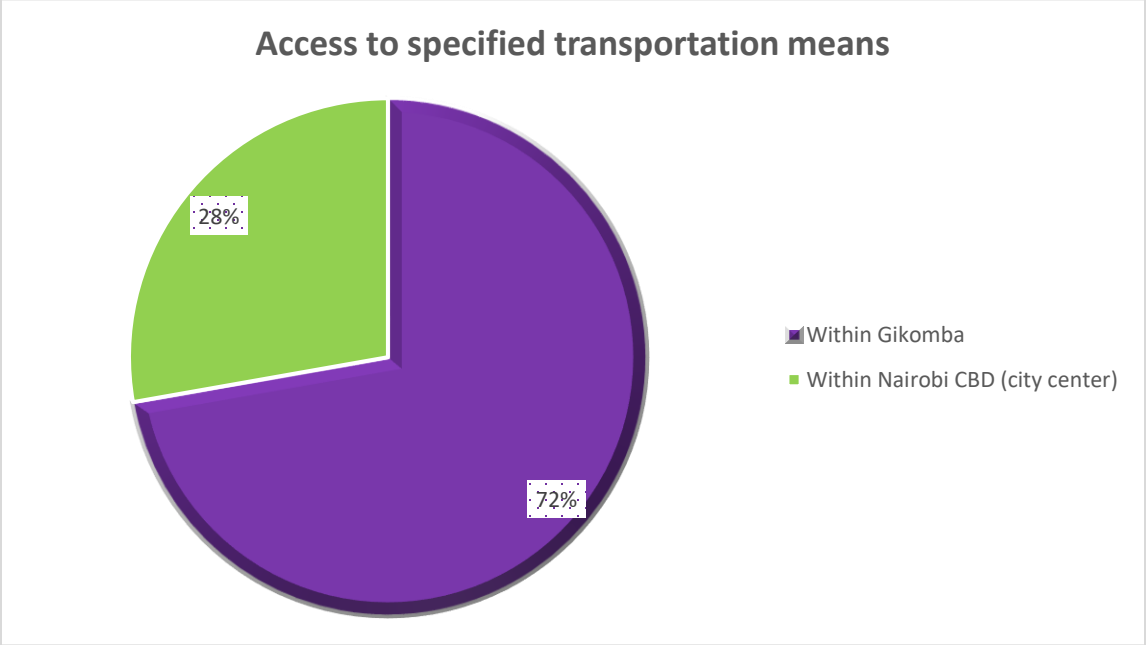
Transport enabled the access of products from Gikomba market and their transfer to the reselling point. The traders reported that they mainly used human pottery and passenger service vehicles within Nairobi to transport their merchandise from the purchase point in Gikomba to their respective selling point. These two were equivalent to 36 and 29 percent of all transport mechanisms deployed by traders respectively.

Table 32: Customers mode of transporting merchandise to their business site

Mode of transporting wares to reselling point	Frequency	Percentage
Through human pottery	15	36%
Via PSVs operating within Nairobi	12	29%
Through hand drawn carts	6	14%
Via PSVs for upcountry	5	12%
Via motor-cycles	4	10%
Total	**42**	**100%**

Other means of transporting merchandise to the reselling point comprised of hand drawn carts (including trolleys), PSVs for upcountry and use of motorcycles. They accounted for 14, 12 and 10 percent accordingly. PSVs for upcountry played a critical role in transporting merchandise for resell in towns and markets outside Nairobi.

Figure 23: Access to transportation means



Customers observed that these transport services were readily accessible within Gikomba and the city centre. A significant 72% of customers in this category acquired their transportation services within Gikomba while the other 28% accessed transport services from the city centre.

Table 33: Location of transportation modes

Location of transportation means	Frequency	Percentage
Within Gikomba	18	64%
Within Gikomba, Within Nairobi CBD (city centre)	8	29%
Within Nairobi CBD (city centre)	2	7%
Total	**28**	**100%**

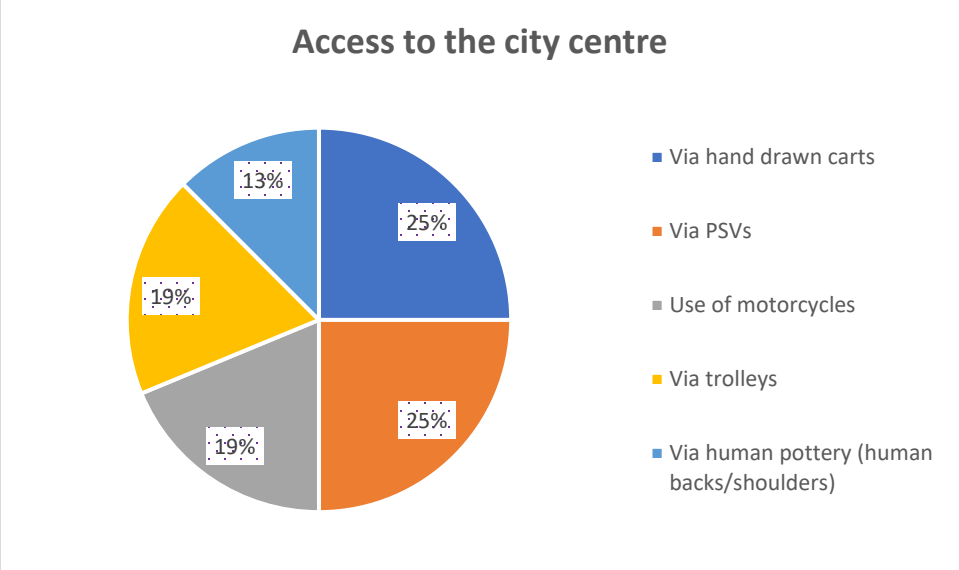
A detailed check indicates that there existed a third iteration on access/location of transport means used by customers to transport their merchandise to their reselling point. Transport means were available within Gikomba at 64% of all means used by the customers while there were those that were accessed from both Gikomba and within the city centre. This category accounted for 29% of all transport access points. Lastly, there were transport means that were accessed only from the city centre and they were equivalent to 7% of all transportation modes deployed by the customers.

Table 34: Means of connecting to preferred transportation modes

Count of Location of transportation means				
	Access point (Location of transport mode)			
Transportation mode	**Both Gikomba and the city centre**	**Within Gikomba**	**Within Nairobi CBD (city centre)**	**Grand Total**
Through human pottery	2	13		15
Via hand drawn carts		5	1	6
Via motor-cycles	1	3		4
Via PSVs for upcountry			5	5
Via PSVs operating within Nairobi	6	6		12
Grand Total	**9**	**27**	**6**	**42**

Further analysis showed that all PSVs for upcountry were only accessed from the city centre while all customers who reported to have used PSVs that ply within Nairobi were able to access them from both Gikomba and the city centre, in relation to where one was headed to. Notably, the city centre was more reliable due to the assurance of accessing such PSVs. Motor cycles, human pottery and hand drawn carts (including trolleys) were all readily available and accessed within Gikomba.

Figure 24: Transport means of accessing the CBD from the market



The customers who could only access their preferred transport means from the city centre were required to transport their wares from Gikomba market to the city centre. They mainly used hand drawn carts and PSVs that were readily available in Gikomba. These modes accounted for 25% apiece of all transportation mechanisms used by these customers to move their wares to the city centre. Other means of transport employed by these customers to ensure their wares accessed the city centre included use of motorcycles and trolleys at 19% apiece and the use of huma pottery (mainly use of one's hands, shoulders, back etc) at 13%. This last method was least preferred due to the distance from Gikomba to the city centre.

These dynamics help elaborate on the network and linkage channels established from the Gikomba market. The ability to draw traders from different parts of the city and of the country and to sustain such connectivity is crucial for a web of connections. Worth noting, some traders specified that their customers from upcountry needed not necessarily visit the market but that they send their merchandise via PSVs for upcountry or by means of courier services. This completes the network theory generated as a result of Gikomba OAM. Where traders in Gikomba acquire locally manufactured or imported merchandise from different parts of the country and of the world respectively, then sell to consumers and traders drawn from all parts of the country and beyond. These networks and linkages are therefore enabled and completed through transportation channels/modes.

h) Use of railway transportation means

The significant majority 94% of all customers never used railway transport to move their wares in any part of the city or country. there were just 6% of all customers who had used railway transportation to move their merchandise across the city or other parts of the country. For the 6% who have used railway transport, they accessed the railway station from Gikomba via PSVs. None of the customers had ever used standard gauge railway (SGR) to transport their products from Gikomba to any other part of the country.

i) Transportation challenges within Gikomba OAM

Customers experienced multiple transport related challenges while undertaking their activities within Gikomba market. Key among these challenges consisted of human traffic congestion, vehicular traffic congestion, and disorganized/haphazard and congested

transport spaces. These were reported at 26, 19 and 11 percent accordingly. Further, additional challenges on transportation where reported by customers to include the lack of seamless interconnectivity between various transportation modes at 6%, unintended connection of multiple transport means before one access the final bus station or destination to and from Gikomba at 5%, absence of designated loading and offloading zones at 5%, lack of a railway station at 5%, lack of a designated bus termini at 4%, absence of pick up and drop off points at 4% and lack of designated parking spaces at 1%.

These similar challenges were echoed by truck drivers, PSV driver, trolley pushers, hand cart pushers, boda boda riders and the Quarry Road Informal Market Committee (QRIMC) leadership led by their chairman. Truck drivers decried the narrow roads which limited their ability to turn their long vehicles, congested roads with extreme human and vehicle traffic and traders operating from the road, the absence of parking spaces and the lack of loading and offloading zones. They indicated that they were forced to park and load/offload from the road if not pay high amounts to the tune of Kshs. 500 to park in a building frontage. Other issues echoed by these transporters included impassable roads whenever it rains due to them being muddy, especially hand cart and trolley pushers and boda boda riders, the very narrow alleys that limits penetration to the farthest ends of the market, and dead-end alleys within the market.

Figure 25: Transportation challenges experienced by customers within Gikomba

Transportation challenges experienced by customers within Gikomba (%)	
Human traffic congestion	26
Vehicular traffic congestion	19
Other challenges - please specify	15
Disorganized/haphazard and congested transport spaces	11
Absence of seamless interconnectivity between various modes of transport	6
Connecting multiple transport means before accessing the final bus station/destination	5
Lack of designated loading and offloading zones	5
Lack of railway station	5
Lack of designated bus termini	4
Absence of pick up and drop off points	4
Lack of parking spaces	1
Total	**100**

According to the QRIMC leadership, Gikomba suffers from poor road infrastructure with roads that are not tarmacked and without drainage channels, absence of paved pedestrian walkways, lack of designated loading and offloading zones, the absence of parking lots and the absence of designated bus terminus. These reporting was in agreement with the findings as analysed from both traders and customers perspectives and from transporters operating within Gikomba open air market. From observation, it can be reported that the streets were extremely narrow, that there was only paved walkway along the main road and it was occupied by traders who displayed their wares on top of the walkway and that available open drainage channels. These observation findings concur with the reporting by the transporters, customers and as earlier noted by the traders. These transportation challenges have economic ramifications to all parties involved and call for urban spatial planning interventions.

Table 35: Other transportation challenges by customers within Gikomba

Other transportation challenges experienced by customers within Gikomba	**Frequency**
Poor road conditions	5
Muddy roads	5
Insecurity	2
Poor drainage	2
Flooding	2
Narrow streets	2
Absence of cargo vehicles	1
Rush hour challenges	1
Dirty market	1
Inconvenience train timings that require connection of other vehicles	1
High bus fares	1
Total	**23**

Besides the above challenges, the customers specified other challenges which accounted for 15% of all 104 challenges reported. According to the customers, the other challenges they experienced included poor road conditions (the poor state of the road surfaces within Gikomba which remain untarmacked), muddy roads during the rainy season that make movements a real challenge for them, poor drainage and flooding with the blocked water drains considered major contributors to flooding particularly whenever it precipitates,

narrow streets and alleys, absence of direct cargo vehicles that do not carry passengers and do not have to go through the city centre, challenges originating from rush hour when passenger vehicles despise cargo holders leaving them behind which costs them a lot of man hours waiting for a vehicle at the stage despite having spent more time walking to the stage, dirty and stinking market and poor timings of the Nairobi commuter railway which also requires multiple vehicle connections before accessing it or from the final station to the final destination. The above frequency distribution table highlight the plight of customers in relation to transportation within Gikomba.

j) Effects of transportation challenges

The transportation challenges were not without impacts on the customers. In their view, transportation challenges contributed to loss of man hours since it takes time to move around in search for reliable transport means or to access the available transport means at main transport corridors such as Lusaka Road, Jogoo Road, Digo Road or in Pumwani and Majengo. This loss of man hours was reported at 67% of all impacts associated with transportation challenges. Loss of wares in transit was another impact which accounted for 17% of all challenges reported. This included loss of merchandise within Gikomba market, while being transported by human porters, hand carts and trolleys, at the nearby bus stages among other transport related losses. Other impacts accounted for 17% of all negative effects of transportation challenges. They specified other challenges as insecurity in transit which contributes to loss of consignment, unreliable transport means which contributes to long travel hours and loss of items in transit, loss of customers due to high transport costs which have forced them to increase the price of their products, and loss of perishable commodities such as fruits while in transit.

k) Solutions to transport challenges

Table 36: Solutions to transport challenges

Solutions to transportation challenges	***Percentage***
Expand the road infrastructure	25%
Provide a modal split (set lanes for NMTs, vehicles, handcarts, light rail etc)	17%
Provide bus terminus within the market	8%
Create loading and offloading zones	7%
Replan the market to organize and order transportation channels and interchanges	6%
Provide a light rail network and station	6%
Provide an interchange for vehicle to ease interconnectivity to different areas	5%
Create pick up and drop off zones within key roads/main streets	4%
Ease access to Machakos Country Bus	4%
Designate a parking zone/lot	1%
Others (specify)	18%
Total	**100%**

The customers reported that these transportation challenges experienced within Gikomba market could be addressed through the expansion of road infrastructure, provision of modal split on key roads, establishment of a bus terminus within the market, provision of loading and offloading zones, replanning of the market to organize transport channels and interchanges, provision of a railway network and creation of an interchange for vehicle interconnectivity to various regions. These key proposals accounted for 25, 17, 8, 7, 6, 6, and 5 percent respectively of all proposed solutions by the customers. Other tangible actions to sort out the transportation nightmares experienced by customers, and indeed all traders and visitors of Gikomba market, include the creation of pick up and drop off zones, ease access to Machakos Country Bus in Kamukunji, and designate parking spaces. There were other solutions that accounted for 15% of all solutions. These are as shown in table 30.

The other solutions reported by customers sought to address both transportation challenges experienced within Gikomba and the impacts such challenges had on their activities as earlier discussed. These other solutions are discussed in the above table. It can be seen that improved road conditions, which was clarified to included tarmacked and expanded road surfaces, improved security, at bus terminus and aboard, installation of good drainage along

road corridors, and construction of spacious stalls, targeted to decongest the road by removing traders from the roads, were key other solutions. These significant proposals accounted for 32, 16, 16 and 13 percent respectively of all other solutions proposed by the customer participants.

Table 37: Other solutions to transport challenges

Other solutions to transportation challenges and impacts	Frequency	Percentage
Improve road conditions	12	32%
Increase security	6	16%
Provide drainage	6	16%
Construct good stalls that are spacious	5	13%
Provide cargo vehicles	2	5%
Waste management	2	5%
Traffic to be controlled within Nairobi	2	5%
Constructing paved ways for customers	1	3%
Improve connectivity	1	3%
Increase the trips by the commuter rail system	1	3%
Total	**38**	**100%**

There were additional other proposals that comprised of provision of cargo vehicles, those that carry luggage only and do not use the city centre, waste management to improve market hygiene and cleanliness within the market, traffic control by additional traffic police to manage traffic jams and reduce loss of time and man hours during travel to and from the market, paved pedestrian walkways and purchasing bays for customers, improved connectivity, and increased number of train trips by the Nairobi commuter railway.

Emerging Issues on networks and linkages

1. There were three types of networks and linkages that originate or terminate at the market, indicating the existence of relationships between various activity spaces. These networks and linkages aid in the functionality of the market and enhance market economic value between it and the various activity spaces/land uses that are interconnected with it. These networks/linkages include: -
    a. Local network – this network is generated as a result of existing relationships between residential areas of traders and customers and the

market. These land use relationships indicate the value the market creates with traders trickling daily to the market form various parts of the city, and some from the neighbouring urban development centres in Kiambu and Machakos counties. Also, the web is enhanced by storage of merchandise within the market at different sites from the outlets/stalls.

b. National networks and linkages – these networks have a symbiotic relationship with the market. It offers the regional connection between the market and the rest of the country. These networks relate mainly on source of products and origin of customers as per the traders. The network includes sourcing of second-hand clothes and shoes from Mombasa mainly, food products from places such as Kisii, Nyeri, Murang'a, Makueni, Kajiado, Narok etc, selling of second-hand textiles to other regions including Kisumu, Wajir, Marsabit, Isiolo etc.

c. International network – the international network is mainly on sources and selling of products. While some traders and customer participants have origins beyond Kenya, the products on sale are the main source of these international land use relationships. It relates to products sourced from UK, US, Canada, China and Europe, among others and the selling of products or sending them to neighbouring countries including Uganda, Tanzania, Malawi, South Africa among others.

2. Networks and linkages are facilitated by transportation channels. These transportation channels are mainly land, air and sea. However, land transport is the dominant facilitator of these networks and linkages. Road transport is the main mode of transport with limited use of railway transport. Road transport facilitates the connection of land use relationships originating or terminating in the market. These relationships are facilitated by roads within the market, the city, the country and international level to an extent.
3. The enablers of the networks and linkages have not been without limitations, this affects the functionality of the market. The success or failure of the market is therefore depended on the efficiency of transportation as key enablers of socio-economic relationships with origins from or terminating at the market.

4. There is a close relationship between the functionality of the market and the transportation as the main channel of facilitating socio-economic land use relationships of Gikomba open-air market.

5.4.1.2 Existing Infrastructure

The market leaders opined that the few existing infrastructure such as availability of water points, sewer line infrastructure are fundamental in the normal functioning of the market. The existing water utility lines are used to supply water resource to traders who require water for various purposes. Furthermore, the market has several sanitation facilities that are connected to the existing sewer line infrastructure within the market which ensures that the liquid waste generated is properly disposed hence facilitate the smooth operation of the market.

5.4.1.3 Segmented organisation of the market

The market leaders and the general field observation indicates that the OAM is orderly in terms of segmentation of the areas handling particular type of goods. The existence of various sections handling particular type of goods has continued to facilitate swift shopping by customers who are familiar with the market. The compartmentalisation of the market informs customers where to go and fetch particular type of goods hence saving time and at the same time accessing varieties.

5.4.1.4 Proximity of the market to CBD

The current location of the market is central and adjacent to the Nairobi central business district. Thus, this makes Gikomba market accessible from all corners of the city and its environs as evidenced by the wide spectrum of both traders and customers within the OAM. In addition, the market is strategically located near the Machakos country bus which hosts majority of long-distant vehicles plying to various towns across the country. All these vehicles terminate at the bus terminus which is geographically within Nairobi CBD. Therefore, this aspect of its positioning ensures that there is continuous flow of customers who ensures that the core business of trade is achieved hence keeping the market functional for the numerous years since its establishment.

5.4.1.5 Variety of products

The market leaders reiterated that the existence of the wide variety of products emanating from the 150 wholesalers supplying various goods is regarded as a key strength of the market. Customers have plenty of options to choose from when undertaking their purchases. The availability of both new and second-hand items/goods ensures the customer base is well-spread based on their disposable income. This aspect makes the market ideal for all classes of people who also have the autonomy of choosing goods according to their taste and preferences.

5.4.1.6 Support Facilities from the surrounding neighbourhoods

The respondents during the focus group discussion stated that market borders Bondeni, Majengo and Pumwani estates. There are various existing facilities within the estates which are of essence and are normally used by traders for their activities such as Pumwani social hall. The social hall is usually used to accommodate key market meetings to deliberate on various issues affecting the operation of the market. Also, the presence of Pumwani dispensary helps serve the traders within the market in case of a minor ailments in the course of undertaking their duties. The presence of Pangani and Kamukunji police stations are central in ensuring the general security of the market. The existence of Machakos country bus also aids the long distant travellers who buy goods in bulk for resell in various town within the country. Its accessibility ensures minimal transport cost is incurred hence the desired convenience to buyers. In addition, the presence of Kenya Railway terminus further aids movement of goods into the market and also from the market to various destinations served by rail network.

5.4.2 Gikomba market functionality Constraints

5.4.2.1 Functionality challenges facing Gikomba Market

Traders and customers were asked to explain the challenges they encountered while undertaking their business within the market. According to the traders, the main challenges they faced within Gikomba market comprises of poor drainage, high crime rates and poor/unhygienic work environment. These accounted for 19, 15 and 14 percent of all challenges reported by the traders.

Other notable challenges that traders reported included transportation challenges attributed to absence of parking facilities, absence loading and offloading zones, poor state of road facilities, absence of bus terminal facilities and poor road network within the market; fire outbreaks whose cause remained a mystery to the traders; and congestion in the market due to high human and vehicular populations and the encroachment of roads and pavements by traders and hawkers within the market. Besides these significant challenges, traders indicated other challenges among them spatial issues. The specific planning challenges comprised of poor sewer systems, poor lighting within the market, lack of paved pedestrian walkways, lack of shelters exposing them and their merchandise to poor weather conditions such as heat of the sun and rain, failure to access good services from the county government of Nairobi (they highlighted inequality in the amount paid to the county government, failure of the county to manage waste, reduce congestion especially on the roads, its inability provide good roads and shelter for traders, and manage drainage within the market), poor infrastructure facilities (these infrastructures included roads, paved walkways, baby care facilities, sewer system, drainage system, toilets, health facilities, market stalls etc), insufficient toilets, absence of permanent market stalls, dirty eateries/cafes, lack of clean water within the market, floods exacerbated by poor drainage system and frequent power outage with high levels of unreliable electricity supply.

Table 38: Challenges experienced within Gikomba

Major challenges	***Traders***	***Customers***
Poor drainage	18%	3%
High crime rates within the market/insecurity	15%	19%
Poor/unhygienic work environment	13%	10%
Transportation challenges	9%	25%
Fire outbreak	8%	4%
Congestion in the market	8%	21%
Heavy Import duty/taxation	4%	1%
Lack of customers due to tough economic times	3%	0%
Poor sewer systems	3%	0%
Low quality products	2%	5%
Poor lighting within the market	2%	0%
Expensive products	2%	0%
Absence of paved pedestrian walkways	2%	0%

Lack of shelters	1%	1%
Unstable product prices	1%	0%
Poor services by the county government	1%	4%
Poor infrastructure facilities	1%	1%
Insufficient toilets	1%	0%
Absence of permanent market stalls	1%	0%
Dirty eateries	1%	0%
Lack of clean water within the market	1%	1%
Floods	0%	1%
Frequent power outage	0%	1%
Lack of capital	0%	1%
Total	**100%**	**100%**

> *If you are not careful, the bales on the door are stolen as you attend to a customer. This place is not safe at all – a bales trader at Mumbai House.*

On the other hand, customers determined the major challenges that they frequently encounter whenever within Gikomba market to be transportation and congestion challenges at 25 and 21 percent respectively. The transportation and congestion issues raised by the customers mirror the ones highlighted by the traders as elaborated earlier. The other significant challenges experienced by customers included high crime rates that mainly centred on pickpocketing and theft of products in transit. They attributed high crime rates to high unemployment rates and congestion within the market. Traders had noted that they recorded significant losses due to high crime rates that included stealing at gun point, especially at night and early mornings. The loss by traders mainly was for goods in store or in transit when they send them to their customers within the city or upcountry. Besides the high crime rate at 19%, traders also decried the poor/unhygienic state of Gikomba market, attaching the situation to poor dumping/disposal of solid waste, anyhow and anywhere by traders and all Gikomba market visitors alike. Further, the absence of designated dumping sites and sanitary facilities that are in good state exacerbates the situation, while muddy roads especially during the rainy season, broken sewer, absence of sufficient toilets and lack of dust bin do not help the hygienic conditions of the market. The QRIMC observed that they have to bow down to the city county government to collect waste dumped in major dumping points along the roads and behind buildings, the FGD with the timber dealers argued that traders retorted to dumping waste along the river behind

their stalls since there was no organized waste collection while a trader decried the poor disposal of bale seals along the alleys and under the stalls or along the river as key contributors to the unhygienic conditions within the market. Frequent fire outbreaks, poor service by the county government of Nairobi and poor drainage systems were other significant challenges reported by the customers who frequented Gikomba market.

5.4.2.2 Contextualising the Problem

The study mapped the challenges existing in the market, based on the existing situation of facilities and services. The efforts were geared towards simplifying and contextualising the functionality challenges within the market, that have limitations to the socio-economic value of the market as discussed in literature review. further, these challenges agree with the literature review in terms of their spatial contexts, affecting the spatial/physical arrangement of the market, the environmental aspects of the market including its hygiene among others. The following map helps put into context the functionality problems of Gikomba OAM.

The market is characterised by the following aspects that implicate its functionality.

- Absence of drainage systems for the large swathes pf the market, occupation of existing drainage systems along Digo road and within the fish market by traders for the display of their products and clogging of these drains by solid waste.
- Inadequate old sewer system that is prone to frequent bursting

Map 10: Gikomba Problem Map

(Source: Author, 2023)

- Public water access points that are spatially inadequate to serve the entire market. Loss of public water points to private gangs and cartels that have turned them money making projects, others have even fenced them off from the public.
- Lack of sufficient toilet facilities characterised by grabbing and forceful operation by cartels and gangs, especially taking advantage of fire incidents to take over such facilities. Existing private facilities are accessible only at a fee.
- Absence of designated waste dumping and collection sites. Dumping is done along the roads and alleys, under the stalls, and at any available space. This is recipe for hygiene related diseases such as diarrhoea. Waste is therefore spread all over, and in illegal dumping sites.
- Poor environmental and sanitation hygiene conditions, bad odour and smell exacerbated by haphazard dumping of waste including the disposal of fish waste in open spaces that worsen air pollution, and insufficient sanitary facilities.
- A health centre which is unequipped, limiting access to health services. It is also spatially insufficient. Further, it is the only public health facility within the market, does not have drugs, ambulance services and emergence services, it just provides first aid services. This limits its functionality and reliability. The alleys do not help emergency health access since they are very narrow for ambulance to penetrate the innermost parts of the market.
- The market does lack natural environment and vegetation. There does not exist any green vegetation in any part of the market. In fact, trees within the study area are countable.
- There is a police post within the market. The security situation is however not addressed by the presence of the police post and police patrols within the market. It is characterised by rampant theft and pick pocketing, loss of goods in transit while on trolleys/hand carts, loss of goods inside the stalls, especially inside Mumbai building where bales are stocked in wholesale. Majority participants reported feeling insecure within the market environment.
- The market is poorly lit with only two high mast security lights '*mulika mwizi'* that are functional. The streetlights were reported to be dysfunctional, though they are only along one street, Meru Road. Lighting is therefore a major challenge and

problem with traders having to improvise their own lighting systems for their operations to be seamless.

- The market does not have paved pedestrian pavement, except along Digo road. Even these have been occupied by traders as indicated in the analysis of facilities within the market. Pedestrians have to contend with vehicles, motor cyclists, hand carts and other road users at the available roads, creating chaos and confusion and bottlenecks on the roads and alleys.
- The market has road networks that are spread across it, it is easy to move from one part of the market to the other in a continuous flow. However, some of the alleys within the market lead to dead ends, limiting ease of manoeuvring within the market.
- The market is characterised by narrow roads, with Digo Road being the only major road traversing across it along its edge/periphery. It is also narrow to allow turning of long haulage trucks. The alleys within the market are very narrow, ranging between 0.5m to 1.5m wide, allowing only pedestrians. If a handcart is along the alley, pedestrians have to squeeze elsewhere for the cart to pass. Further, the road surface condition is in dire state, rough with stones for comfortable walking of pedestrians crisscrossing the market. Muddy during the rain season, without drains, soiled with solid waste and congested with huge populations. The roads have also been encroached by traders/hawkers on wheelbarrows or by foot, occupying the large portions of the road, having to pave way on the single lanes for vehicles and carts to pass through. They are in chaotic congested state.
- There are no designated loading and offloading zones. Loading and offloading takes place on the road.
- There are no designated parking facilities within the market. Vehicle owners have to park along the road or outside building fronts, or any available space within the market.
- There is absence of bus terminal facilities within Gikomba market. PSVs park along the roads leading to the market from where they load and offload passengers. The market does also lack drop of and pick up points for passengers. The stages are on the periphery of the market since the interior roads are narrow enough for PSVs to

penetrate through. The boda boda riders work from open sites, they do not have shelter, and are exposed to extreme weather conditions. The hand carts are parked atop of the drainage channels along Digo Road for lack of space for their parking/storage overnight.

- There are no public open/green spaces within the market. A social hall is present at Majengo area in Pumwani, adjacent to the market outside the OAM boundaries. There are not even cultural centres within Gikomba market.
- There are no recreational facilities within the market. These key social infrastructures are missing. There is absence of playgrounds and open spaces, no gymnasium, no entertainment theatres, cinema halls and art galleries, no spa, no parlour, no amusement parks, no public gardens, no nothing. It also lacks accommodation facilities, which are critical for long distance traders and hauliers.
- There are eateries that are haphazardly located within the market. They are in sorry state, food is prepared and consumed in the open. It is recipe for illnesses and disease.
- Telecommunication network is limited by the fact that it is available in the outdoor spaces, where even mobile banking operators such as Mpesa traders complain its reliability. Its reach is limited inside buildings and in sections of the market.
- Majority of the traders operate from the floor display without shelters/sheds, a situation that worsens whenever it rains. Others operate from wooden structures that are poor light and thatched, while the mobile ones on wheelbarrows and hawking by foot are never exempt from wrath of extreme weather conditions.
- The market has the best financial facilities distribution. All corers are well served by mobile banking and physical banking facilities. Mainstream banks, microfinance institutions and Saccos have branches in operation within the market, at a reachable distance by all traders.

The market also suffers from uncoordinated and failed governance and institutional frameworks.

5.4.2.3 Recommended solutions to challenges

Table 39: Recommended solutions to challenges

Solutions to identified challenges	Traders	Customers
Improve drainage system	21%	6%
Increase security within the market	19%	20%
Improve market hygiene	13%	11%
Improve road/transport infrastructure	11%	35%
Replan and construct the market	5%	5%
Manage fire outbreaks and fire prevention	5%	2%
Reduction of tax/import duty	4%	2%
Improve infrastructure within the market	4%	2%
Improve sewer infrastructure	3%	0%
Provide open spaces and decongestion mechanisms	3%	3%
Reduce price of products	2%	0%
Improve lighting facilities	2%	0%
Expand shops/stalls/malls for traders	2%	0%
Provide paved pedestrian walkways	2%	6%
Improve the working environment	1%	0%
County government to provide services effectively and efficiently	1%	6%
Provide consistent clean water supply	1%	2%
Construct more toilets	1%	2%
Total	**100%**	**100%**

The study participants recommended a number of solutions to the challenges they encountered within Gikomba market. According to the traders who participated in the study, the challenges can be addressed by improving the drainage system within the market, increasing security within the market, improving market hygiene (mainly through effective waste management), and improving the road/transport infrastructure to address transport challenges. These were the key recommended solutions that accounted for 21, 19, 13 and 11 percent respectively for all reported solutions by traders. Improved road/transport infrastructure centred on expansion of existing roads and alleys, improving the surface conditions to tarmac state, provision for parking, loading and offloading zones, the establishment of a bus termini, and coordinated interlinkage/alignment of commuter rail network for the benefit of the market, reduction of traffic jams and congestion on the roads and provision of express cargo routes and carriers that do not necessarily use the city centre.

Other significant measures that can be adopted to address challenges within the market according to traders include replanning and construction of the market to bring order and organize space within the market as well as house traders in a better working environment, adopt fire management mechanisms to prevent, reduce and fight fire incidents – installation of a fire station, fire engines, fire hydrants and expand roads for fire engines and emergency vehicles to penetrate the market easily, improve the overall infrastructures within the market, improve sewer facilities, provide open spaces and decongestion of the market, improve lighting facilities including street lights for increased security, expand shops/malls/stalls for traders in permanent structures to keep them safe from unfavourable weather conditions, make provisions for pedestrian walkways, improve the overall work environment including safety and hygiene measures, provide efficient and effective services by the county government of Nairobi, provide consistent clean water supply and construct more toilets to improve on the sanitation conditions of the market.

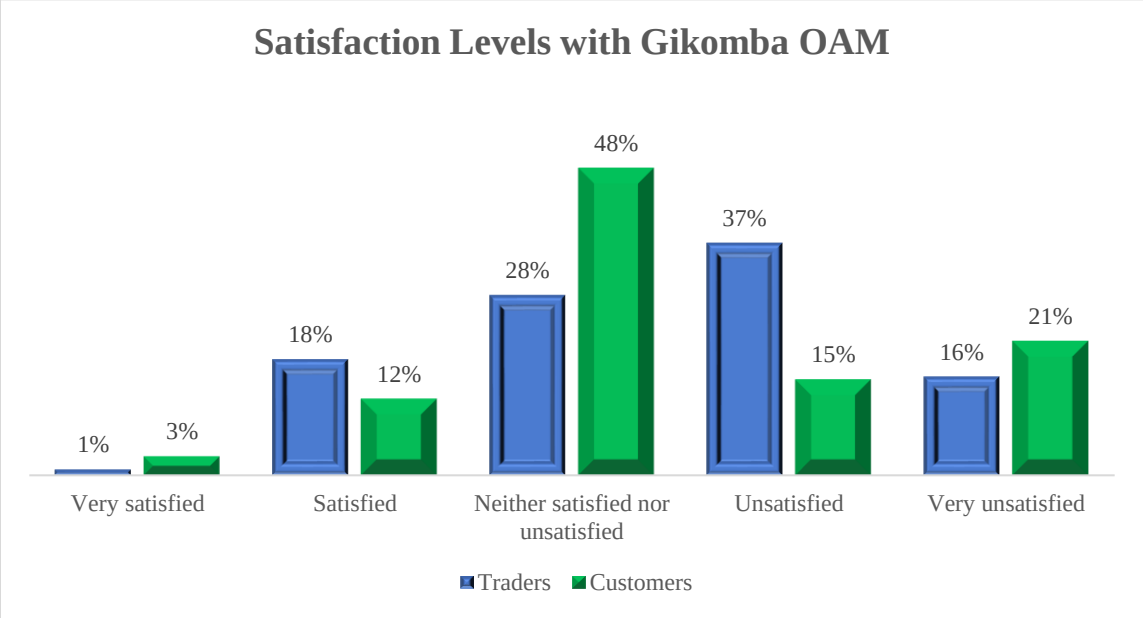
While the customers highlighted almost similar solutions to the challenges, they placed their emphasis on improved road/transport infrastructure at 35%, increased security within the market at 20% and improved market hygiene conditions at 11%. Other significant recommendations by the customers to address the challenges suffered within Gikomba consisted of provision of paved pedestrian walkways, improved drainage system, effective and efficient service deliver by the county government of Nairobi and replanning and construction of the market to bring order and efficient use of space and reduce congestion within the market.

5.4.2.4 Levels of satisfaction with Gikomba market

There were just 1 and 3 percent of all participating traders and customers respectively who were very satisfied with the overall state of Gikomba market at the time of the study. In the satisfied category, 18% of all traders who participated in the study were satisfied with its current state as were 12% of all customers who responded to the study. Majority 48% of all customers were neither satisfied nor unsatisfied with the current condition of Gikomba market. There were 28% of all traders who were in a similar dilemma, unable to tell whether they were satisfied or unsatisfied with the current state of Gikomba market. However, the high numbers of respondents within this category of indecisiveness were

driven by fear that any negative response, which they had, had ramifications in that they would lose their place of work should replanning to upgrade the market happen, or would be at loss if they gave negative rating and it leaks to market cartels among other un founded fears.

Table 40: Rate of satisfaction with Gikomba



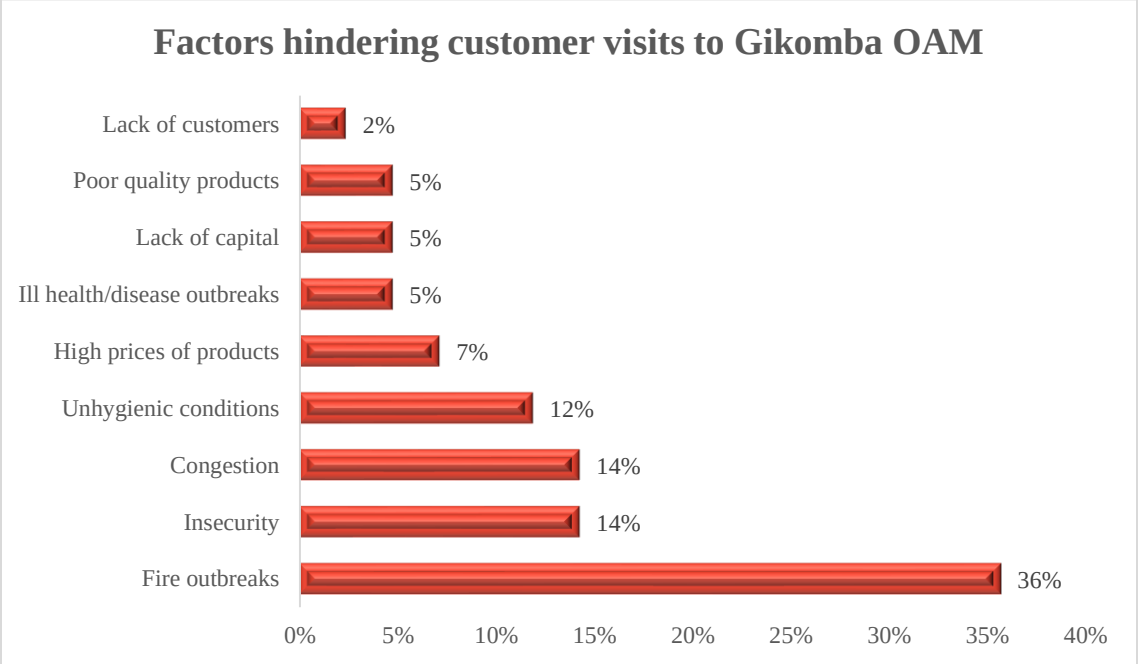
Despite these concerns however, a significant 37% of all traders and 15% of all customers involved in the study were unsatisfied and another 16% of all traders and 21% of customers were very unsatisfied with the state of affairs within the market, unhappy with the poor management of solid and liquid waste, poor state of the river, absence of recreation facilities and green/open spaces, poor state of sanitation, unequipped health facility, muddy roads and alleys, frequent sewer bursts, poor drainage conditions, absence of reliable transportation means, insecurity among other issues that do not make Gikomba a conducive work environment for them.

5.4.2.5 Reasons limiting customer visits to Gikomba market

The study investigated on the specific issues that would make customers not visit Gikomba market. There were multiple responses from all the customers on the constraints that would prevent them from making way to the market. The key reasons comprised of fire outbreaks with customers citing their unwillingness to visit the market in case of fire incidents. This

rated at 36% of all reasons that would prevent customers from going to the market. Fire outbreaks is considered to cause chaos within the market, and loss of products that these customers would otherwise need to acquire and as such would consider visiting the market after reported fire outbreaks.

Figure 26: Factors limiting customer visits to Gikomba OAM



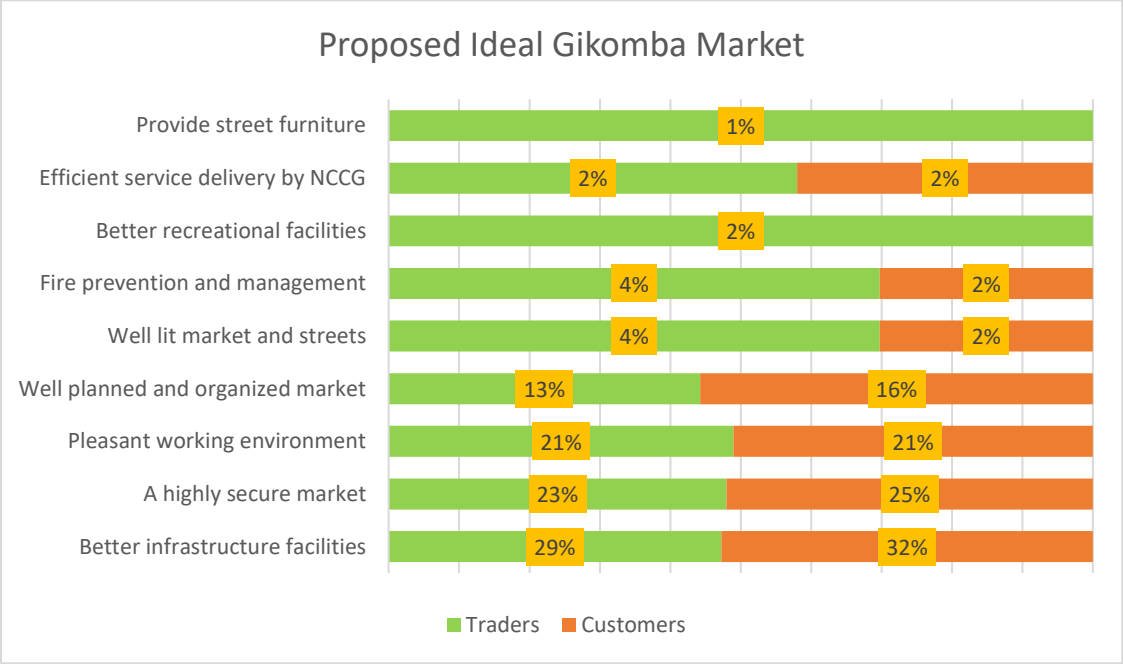
Insecurity and congestion (which includes chaouse and disorderliness within the market) can inhibit customers from visiting Gikomba market. They each account for 14% of all reasons as to why customers would not visit Gikomba market. The poor state of hygiene accounted for 12% of all reasons that would prevent customers from visiting the market while high price of products stake at 7%. Other reasons include ill health/disease outbreaks within the market, lack of capital to acquire merchandise in the market, poor quality products and lack of customers for their products.

5.4.2.6 Proposed Ideal Gikomba Market

The study sought to understand an ideal market that traders and customers would prefer to work from or frequent. According to the traders, their ideal market should have better infrastructure facilities (excellent roads complete with drainage, pedestrian walkways and bicycle lanes, excellent sewer infrastructure, great works stations which are under shelter or in permanent structures, well equipped health facility, reliable electricity infrastructure,

modern transport infrastructure (railway and bus terminus), and excellent sanitation facilities including toilets, water and sewer infrastructure among other infrastructure facilities), a highly secure and safe market, and a pleasant work environment (exceptional solid and liquid waste management systems, with recycling infrastructure, clean work environment free of sewer flows, with designated waste dumping site and clean river environment that makes the entire market a great place to live and work from). These three elements were the highly significant components of an ideal Gikomba market according to traders. They accounted for 29, 23 and 21 percent of all elements for an ideal Gikomba market respectively.

Figure 27: Proposed ideal Gikomba market



Besides, traders identified their ideal Gikomba market must be well planned and organized at 13%. The planning and organization of the market was aimed at creating order within the market, promoting circulation and movement within the market, addressing insecurity and congestion issues and providing a great workplace for traders. This contributed to the traders' placing emphasis on provision of open spaces, well-lit streets, better recreation facilities and street furniture. To achieve functional and operational success within the market, they desire an ideal place where the county government of Nairobi (NCCG) provides services due to the market without partiality, corruption and inefficiencies.

Improve our work environment to better standard. We pay to the county permit, they should give us better service including security, sanitation, health facility, bus terminus, upgraded roads, sewage management to avoid blockage, clean toilet etc. They should issue us with the receipts for the permit that we pay every week, 100/- on Monday and 50/- on Thursday. This can help us access funds. They restore the pay bill or give us receipts – A shoes trader

According to the customers, their ideal Gikomba market must focus on ensuring better infrastructure provision, borrowing a leaf from traders' ideal infrastructure facilities for a functional open-air market as discussed above. This component accounted for 32% of all proposed elements of an ideal Gikomba market. Other key significant elements as per the customers who participated in the study comprised of a highly secure and safe market at 25%, and a pleasant work environment that is free from sewer flows, muddy roads, haphazardly dumped waste and disorderly market at 21%. Additionally, the customers admire a well-planned and organized open-air market that meets and provides for all key planning components that will make it a thriving market with ease of access to transportation (for both human and cargo transportation), excellent sanitation facilities including access to clean and safe water for drinking, modern loading/offloading zones and parking spaces, recreational facilities, to highlight but a few key land uses for a well-coordinated, networked, and linked functional open air market.

These identified recommendations for an ideal Gikomba market provide great opportunities for the physical and socio-economic vibrancy of the market. Replanning and redeveloping the market to engineer its socio-economic value and vibrancy is critical to harness its functionality and achieve optimum benefits. Addressing these issues is therefore critical and should be informed by proper public participation in the design and implementation of market replanning and re-development programs. The physical aspects of the market location present great opportunities, due to its proximity to the city centre and ease of access from multiple entry points. It is also a gateway to east and central Africa for imported new and used textiles, an economic hub and a centre for access to locally produced agricultural products. These present great opportunities for harnessing by all market stakeholders.

CHAPTER SIX: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

The chapter summarises the study findings based on the conceptual and theoretical constructs that aided in the identification of the challenges and solutions to networks, linkages and spatial organization of space within Gikomba open air market. The situational context in Gikomba and its relationship with the value of the market within the city and beyond aided in establishing the functionality of the market in terms of how it networks, links and enables traders, customers and other visitors to the market. Functionality was therefore based on networks and linkages between the market and the city, between the market and other areas of the country beyond the city of Nairobi, and between the market and international markets; and by the access to basic services and amenities that facilitate and coordinate overall human activities within the market. The summary of findings therefore deduces from the findings the functionality of the market based on these parameters.

The chapter also provides the conclusions that a derived from the findings, interpreting the entire findings and drawing conclusions based on the interpretation of the findings to provide overall functional situation in the market. After, the study makes recommendations by summarising the recommendations from the study participants, and providing possible planning interventions and models that target to provide lasting solutions to all the functional and spatial challenges experienced by the market consumers.

6.1 Objective 1: To examine the prevailing functional relations (networks and linkages) of Gikomba market.

6.1.1 Functional relations (networks and linkages)

The study findings indicate the existence of relationships between the market and the city of Nairobi, between the market and other parts of the country beyond the city of Nairobi (upcountry), and between the market and international markets. These networks and linkages are facilitated by transportation and communication.

6.1.1.1 Local networks and linkages

Networks define relationships, they help demystify the functional relations between land uses, in the context of the study, the local networks help define the relationships within the market itself and between it (commercial land use) and neighbouring commercial, industrial and residential land uses. The study identified that there exist local networks that help maintain the continued functionality/operations of Gikomba OAM. The functional relationship was premised on the traders and customers residential areas and workstation relationships, the relationships between products sold at Gikomba market and the spatial sources of such products, and the origin/source of customers to traders according to the participating traders. These networks and linkages are space/place based and are described as follows.

i) Traders and customers place of residence: -

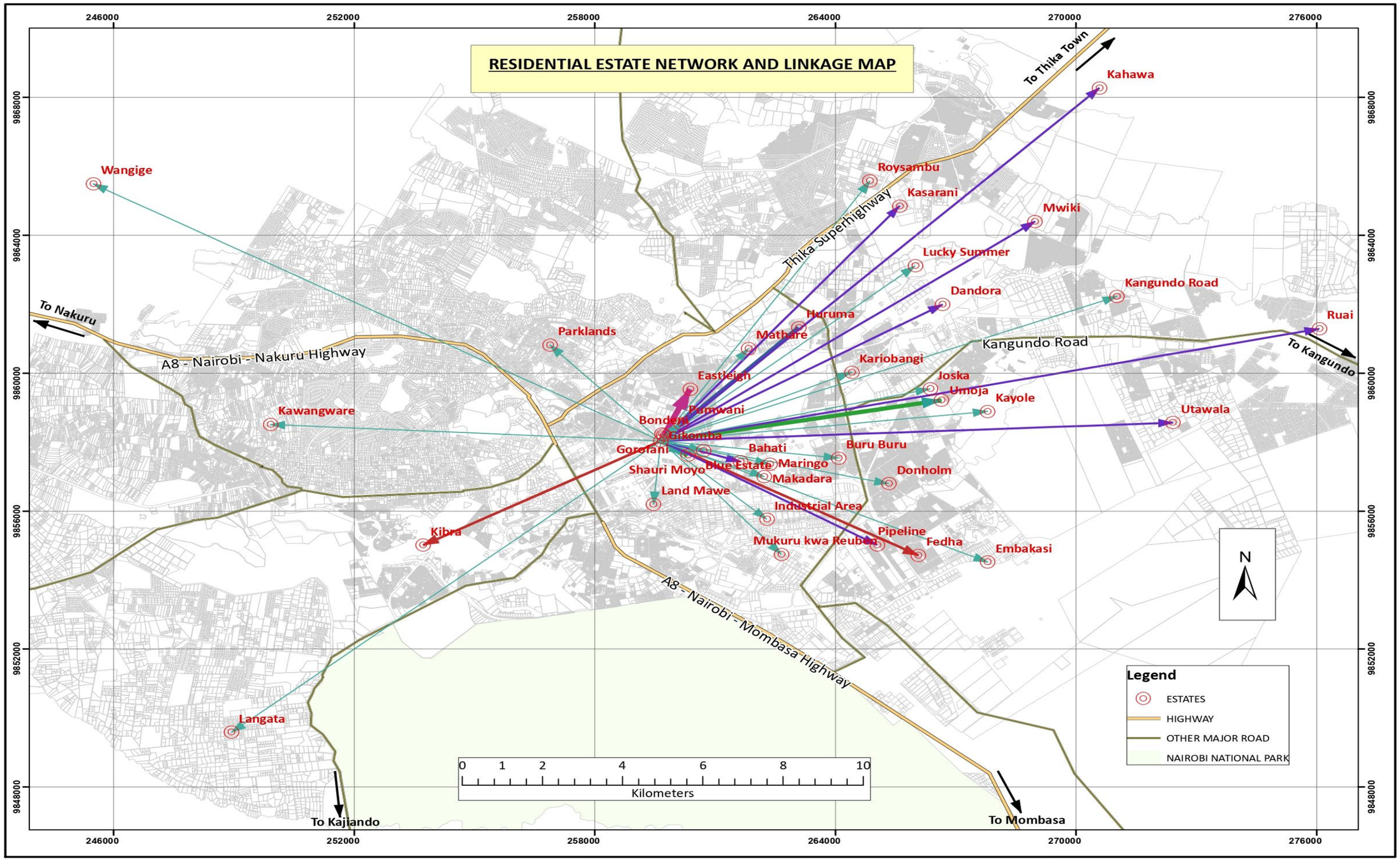
With Gikomba at the heart of the network diagram/map, traders and customers alike flock to and from the market from their respective residential areas within Nairobi. Out of the 109 trader respondents, only 18 reside outside Nairobi. This meant that 84% of participating traders resided within Estates in Nairobi and commuted daily to the market. The study found that 76% of the interviewed customers lived within the city with 52% of all customer respondents visiting the market daily. The Network Map 8 shows the functional relationships between Gikomba and the local residential land uses, which in this context is interpreted to all traders and customers residing within Nairobi.

ii) Traders and the spatial origin of products sold

All products sold within Gikomba market were locally obtained, within Gikomba market, or within the city, upcountry or internationally. This generates a web of functional relations between various land uses, commercial to commercial, commercial to industrial, and of course the undeniable linkage between residential – commercial – residential in a web of city-wide network facilitated by transportation. This city-wide local network is enabled by 81% of traders who sourced the products they traded from within the city and 7% others who acquired the products from bith within and outside the city. They all operated from Gikomba market, making it central to traversing to and from the various product sources, hence a local network. Further, an intra-netwrok within Gikomba market

is manifest inform of 83% of Gikomba traders who acquired their merchandise within the city sourcing them within the market wholesalers. This indicates the key role transportation facilitates functionality of the market within itself, its surrounding land uses, beyond the city and internationally.

Map 11: City-wide linkages and networks of Gikomba Market



Source: Author, 2023

iii) Area of operation of traders' customers

The final local network map relates to the linkage between Gikomba and the area where customers served by traders operated their businesses within the city. The traders could not specify the residential areas of their Nairobi based customers. They however specified the areas within the city where their customers who were business people operated from. Key among the reported spaces within the city include other markets within the city, indicating the strong linkage between Gikomba and other markets within the city.

Further, the customers who participated in the study comprised of 81% business people who resold the merchandise they bought from Gikomba. The majority 41% of these customers resold their products within Gikomba market, 30% others within their residential areas in Nairobi and 10% others in another market within the city. These amplifies the role of Gikomba as an epicentre of a complex network that generates value for the city and its occupants.

6.1.1.1.2 Country wide network and linkage

The networks that have links to Gikomba market extend to beyond the city and other parts of the country. It follows the same dynamics as those of the local city-wide networks described earlier. These networks and linkages are enabled by transportation to establish functional relationships between various land uses. They mainly establish the core of Gikomba as the heart that feeds the city with agricultural food crops grown upcountry while simultaneously underpinning the core of the market as a feeder for markets and towns in the rural areas across the country. these linkages also facilitate the exchange of goods, products and trade, Gikomba being integral in the economic transaction that exist between the city and the rural areas. They create a symbiotic relationship between the urban and rural hinterlands and the mutual benefits across the various landscapes. Key land uses involved in this kind of network include residential – commercial – industrial – agricultural – transportation/logistics land uses. While these specific land uses directly contribute/feed into this network, there exists indirect contributing human activities that facilitate these networks. These uses include health, recreational, and public purpose and utility land uses.

The study findings indicated these land use following similar patterns as the local networks. These networks are derived in the following categories.

i) Traders and customers residential areas

A total 18 of the 109 traders lived within the outskirts of the city, they commuted daily to the market. These commuters made their way to the market from Kiambu, Machakos or Kajiado counties. The network is thus comprised of 5 traders from Githurai, 4 from Kiambu, 1 from each of Uthiru, Gachie, Ruiru, Thika, Kenol, and Githunguri in Kiambu County, 2 from Kamulu in Machakos County, and 1 from Ngong in Kajiado County. The findings show that 18% of interviewed customers lived outside Nairobi. They resided in Kiambu, Nakuru and Embu counties.

The 8 customer respondents who reported to live outside Nairobi, had one resident in each of Kikuyu, Waginge, Kahawa West, Banana, Kiambu in Kiambu county. There were 1 customer respondent in each of Machakos, Nakuru and Embu counties.

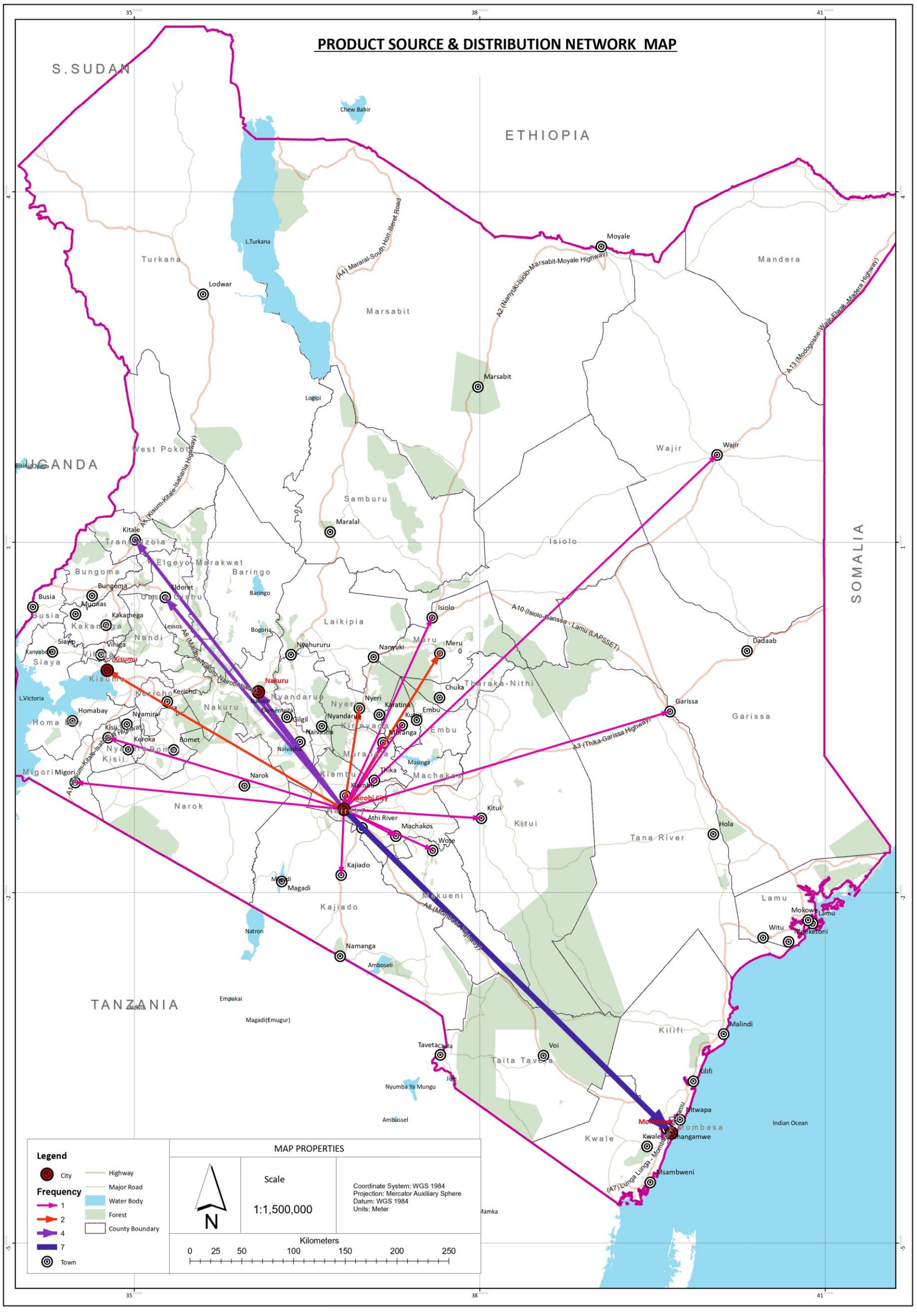
ii) Product based networks

Traders not only sourced products they traded from within the city alone but also from further parts beyond the city. These comprised of rural hinterlands and other major cities and towns within the country. Traders indicated that they acquired imported products from wholesalers/distributors situated in the port city of Mombasa, while other products were sourced from Kisumu, Nakuru and Eldoret which are major cities and towns connected to the market by key highways and major railway lines.

Further, the study established that some customers resold their products upcountry, they were equivalent to 13% of all customers who resold the products they purchased from Gikomba. Transporters and courier services that were interviewed transported products purchased from Gikomba to upcountry areas. Specifically, the couriers and transporters ferried products to Wajir, Marsabit, Isiolo, Bomet, Garissa, Kisii, Sirare in Migori county, and Kilgoris in Narok County. The following network map provides the linkage between Gikomba market and other regions/counties within the country where products were outsourced or sold/distributed to according to the study participating traders, customers,

transporters and key informants. It places emphasis on the key role Gikomba plays in trade, the exchange of good and services between the city and the country hinterlands.

Map 12: Networks and linkages between Gikomba and the National scale



Source: Author, 2023

iii) Customer origin network

The traders specified the locations of their customers upcountry. The study found out that Gikomba traders had established relationships with their customers who primarily originated from other parts of the country outside the city. These traders more often than not facilitated this network/relationship by sending merchandise to their customers upcountry using PSVs at Machakos country bus or courier services from within the market or the city centre, or by use of cargo vehicles. Besides transportation, this network/linkage is facilitated by communication and technology where orders are placed via voice/video calls and instant messaging services, and payments made through mobile money platforms primarily Mpesa or bank transfers. This approach facilitates inter- and intra- linkages between activity spaces. The Gikomba traders' upcountry customers mainly originate from across the country, with notable mention of 42 areas/regions by traders shown in the network map below.

6.1.1.3 International networks and linkages

The literature review on the history of Gikomba market revealed the open-air market had international roots at its establishment. Asian traders were at the heart of the creation of the market, importing second hand clothes to the market with railway staff housed at railway staff quarters and supporting the construction and operations of Kenya's first railway line being the target customers. To this day, the findings establish that the international roots of the market remain constant to its existence, feeding majority of trading activities within the market. The international network with Gikomba at its fulcrum is premised on two key elements. These are place of origin/operation of traders/customers, and the areas products are sourced.

i) Place of origin of traders/customers

Traders did not specify their places of origin as the interview instrument did not seek to inquire about this parameter. However, reports by research assistants indicated that traders from Tanzania were up in numbers, the only international country to have traders reported by interviewers who carried out the study. The traders who participated in the study indicated that they had customers who originated from outside Kenya, mainly from Uganda, Tanzania, Rwanda, Malawi and South Africa.

ii) Place of origin of products

This is the main international link between Gikomba market and the international world. Gikomba acts as the gateway for second hand clothes in the country. All second clothes and shoes sold in the market are imported from foreign countries specifically European countries such as Germany, the United Kingdom, the United States of America, China, Canada and Dubai as reported by traders and key informants. Further some food crops sold at the market are imported from neighbouring countries, specifically Uganda which is a major source of pineapples traded within the market, while timber is imported from Congo.

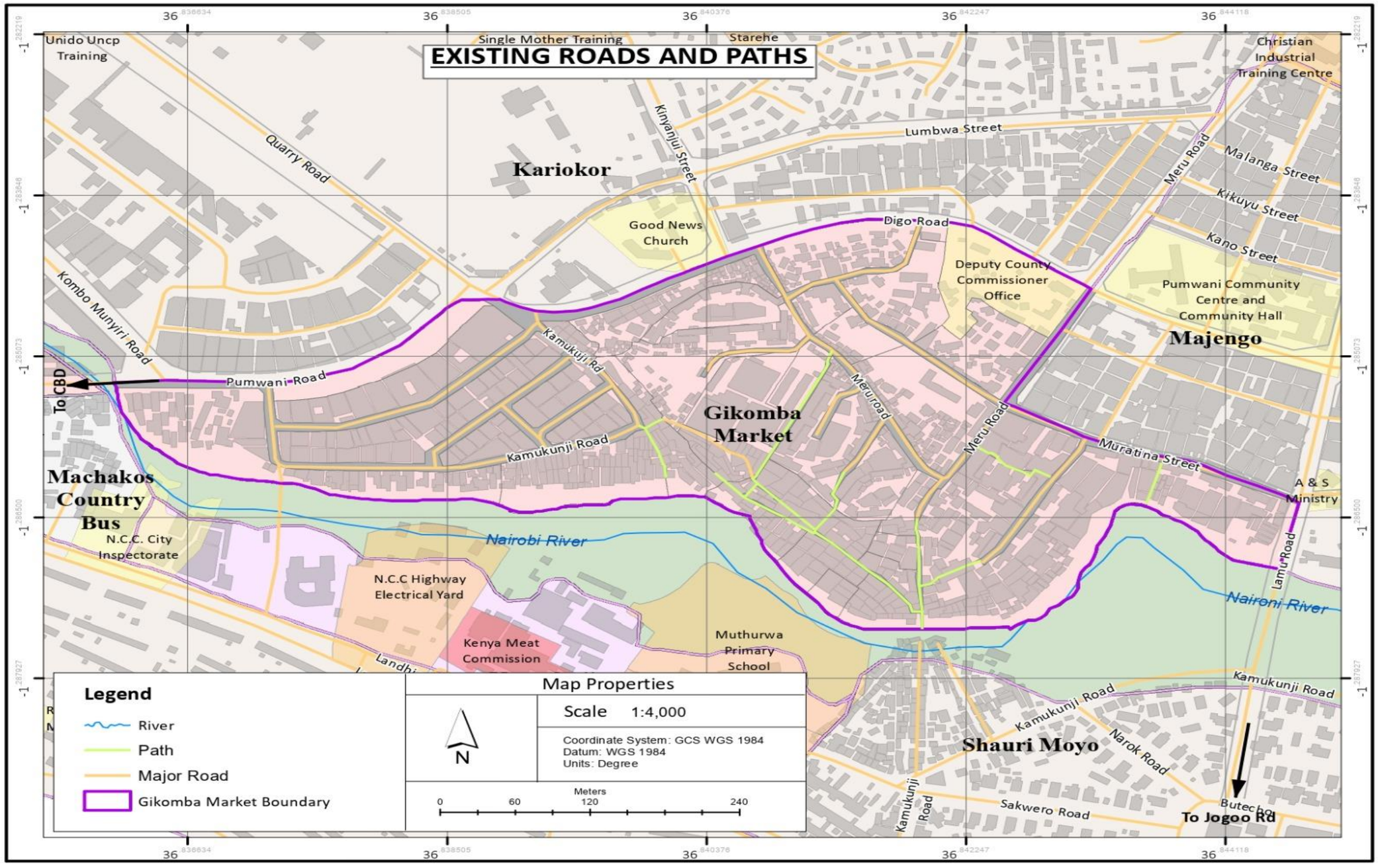
6.1.2 Transportation as an enabler to functionality of Gikomba OAM

The study findings identify the functionality of Gikomba market as the core of local, country and international network as facilitated by technology, transport and communication. While these three key elements are integral to land use relationships linked with the market, transportation is the main enabler of these relationships. The success or failure of the market and its interconnectivity is therefore greatly impacted by transportation. An in-depth review of the findings reveals that transport played significant roles to facilitate the functionality of the market, within itself and its networks/linkages. These key roles included access to market by both traders and customers, and the delivery of goods into and out of the market. Transportation therefore completes the linkages and networks established through the OAM. It also ameliorates order and organization of activities within the market, determining the efficiency, success or failure of the market. The following transportation modes and means were employed by study participants in their undertaking of activities in relation to Gikomba market.

6.1.2.1 Access to market

Access to the market was mainly by road transport, with absence of railway line in close proximity, very few customers used the mode. Public service vehicles (PSVs) including14 seaters, buses (33 seaters and above) and tuk tuks were the major means of accessing the market, used by 68% of interviewed customers and 49% of traders. Use of NMTs was also prevalent with a significant proportion of traders walking to the market. NMTs were used by 25% of participating customers and 32% of interviewed traders. Motorcycles were used, albeit not as much as the previous two means of transportation.

Map 13: Existing roads/alleys within Gikomba market



Source: Author, 2023

6.1.2.2 Merchandise transportation

From source to market: road transport was the main mode of transporting products/goods for sale from source to the market. It accounted for 96% of all modes of transport used by traders for this purpose. Other modes used included sea and air transport, mainly by importers of the merchandise that they sell within the market. Hand drawn carts/trolleys, human porters and trucks/lorries were the major transportation carriers for moving goods from point of purchase to point of sale. They accounted for 85% of all modes of transportation employed by traders to move goods from point of purchase to point of sale. Hand drawn carts/trolleys and human porters were used by traders who acquired their goods within the market while trucks were mainly by those who purchased their products further away outside the market in places such as Mombasa, Industrial area among others as specified.

There was also transportation of wares between store and selling point, with 71% of the traders storing their merchandise away from their outlets. Road transport in the form of human porters and hand drawn carts/trolleys were the main transportation means employed by these traders. These two were equivalent to 92% of all means of transportation adopted for moving goods between store and selling point.

There were customers who purchased products for resale from Gikomba market. They used mainly human pottery, PSVs and hand drawn carts/trolleys to move their goods from the market to their selling point. These three modes accounted for 79% of all modes of transport used by customers in this category. Pottery was however significant with most of these customers being hawkers/roadside vendors. PSVs for upcountry were also used to carry goods to further places such as Kisumu, Machakos, Busia among others.

Synthesis

Generally, road networks are considered key facilitators in aiding both inflow and outflow of people within a given geographical space. In reference to the study area, the key collector roads facilitating these movements to and from the market are; Landies, Pumwani, Digo, Kombo-Munyiri, Haile Selassie and Meru Roads. The market is also served by key internal roads which are already upgraded to bitumen standards which are; Meru and Kamukunji roads. These two roads are characterised with immense

encroachments which limits their functionality& utility to both customers& traders. One collector road of key importance is Pumwani Road that links the market to Machakos country bus terminus which is a major transportation node. It is of essence to the market since it generates high human traffic of people and vehicles some of whom access the market. Thereafter, Pumwani Road stretches to connect to Landies which links to Haile Sellasie Road. Afterwards, the road ultimately branches off to connect to the Nairobi railway terminus. This railway terminus ferries people from/to the city as well as outer regions such as Mombasa, Kisumu, Nakuru among other places served by the existing railway line. Therefore, the railway provides an alternative transport mode for people and goods in/out of the market. Beyond that, these collector roads form a network of linkages with the major arterial roads that are critical in linking up the market to other distant towns across the country. The major arterial roads of importance to our research are; Nairobi-Mombasa Highway, Nairobi-Nakuru Highway and Thika Superhighway. These major transit routes usually open up the market for delivery of goods into and out of Gikomba OAM. The interlinked road system plays a critical role in ensuring that there is seamless movement of goods between the market and various the places locally and regionally. Therefore, the market demonstrates its importance in promoting and advancing local, regional and global economies. Generally, the external roads are in fair condition unlike the internal roads linkages which are non-standard, varying in sizes, highly encroached, exhibiting poor drainage and aggravating human congestion & conflict between motorized and nonmotorized transportation. As a result, this objective has helped in the general understanding of how the existing networks and linkages have continued to exemplify Gikomba OAM as a regional economic hub. It has further showcased that in order to achieve the ideal market then there is a dire need to upgrade internal and immediate connector roads, expand their carriageways and shoulders to minimize existing human congestions as well as ensure that adequate enclosed drainages are provided to enhance storm water flow within the market.

6.2 Objective 2: To analyse the implications of existing social-spatial organization of activities, services and facilities on functionality of Gikomba market.

6.2.1 Spatial organization of the market

According to the literature review, urban design for OAMs (temporary/permanent) should not block pedestrian pathways and generally should be architecturally expressive (form, colour& materials). Also, the urban design and organisation of the market should address the preferences of the targeted consumers. Further, the literature review highlighted that lack of involvement of traders in the design of the market usually leads to various challenges and also propels them to be unwilling to pay for the poor services in place. Also,the existing spaces for traders was noted to be as little as $1m^2$ and the market layout is organised into sections with various chairpersons.

Therefore, the aspects discussed below reveals the existing situation of the market in terms of the spatial organisation of activities, services and facilities as deduced from the collected data. Here, the study scores the rate of access and condition of basic services and facilities as per the researcher's professional perspective. This was guided by the findings from field survey, analysed data as well as the problem issues informed by engagements from focus group discussions.

6.2.2 Access to basic facilities/services

The literature review highlights that the organization of activities within the spaces demands order to facilitate efficiency and flow in the relationships that are borne out of the activities. The success or failure of activities within space, in context of an open-air market that Gikomba is, is heavily dependent of the access to key facilities and services within the space. Facilities and services such as road, sewer, drainage, health, financial services, open spaces and green areas, water and electricity supply etc are integral to the functionality of Gikomba market. Besides the availability of the services or facilities, their sufficiency to meet demand, their quality/condition for human consumption, and their organization to create order, aesthetics and coordination within spaces, and their integration with the core economic activities within these spaces corelate to the functionality of the core activities of such spaces. The following table provides a summary of access to key facilities and

amenities within Gikomba market as per the analysed findings from interviews and group discussions.

Table 41: Overall state of access to facilities within the market

Access to Facilities/Amenities/Services by participants				
Facility/Amenity/Service	**Overall score**			
	Yes	**No**	**Rating**	**Remarks**
Drainage system	0.4587	0.5413	-	Average
Sewerage system	0.6422	0.3578	+	Average
Water	0.7817	0.2183	++	Good
Toilet facilities	0.9225	0.0775	+++	Excellent
Solid waste management system	0.2042	0.7958	--	Very poor
Public health facilities	0.9444	0.0556	+++	Excellent
Open/public spaces/social halls	0.2936	0.706	--	Very poor
Natural environment and vegetation	0.0092	0.9908	---	Unavailable
Police post/station/presence	0.9908	0.0092	+++	Excellent
High mast security lights	0.6697	0.3303	+	Average
Street lights	0.5780	0.4220	+	Average
Feeling of safety within the market	0.4718	0.5282	-	Average (Unsafe)
Pedestrian walkways	0.3099	0.6901	-	Average
Road network	0.6550	0.3451	+	Average
Loading/offloading zones	0.1831	0.7183	-	Very poor/unavailable
Parking spaces	0.2183	0.7817	--	Very poor/unavailable
Termini facilities (Bus stage)	0.5704	0.4296	+	Average
Recreation facilities	0.1408	0.8592	---	Unavailable

Access to Facilities/Amenities/Services by participants				
Facility/Amenity/Service	Overall score			
	Yes	No	Rating	Remarks
Hotels, food cafes and restaurants	0.8943	0.1034	+++	Excellent
Financial services	0.9930	0.0070	++++	Excellent

*The overall scores were obtained by obtaining sum of responses from all participants in each binary and divided by the cumulative responses per object. The positive (+) and negative (-) ratings were determined based on the weight attached to the score between 0 and 1 with 0.5 where 0 was extreme in-access/unavailability of service/facility/amenity, 0.5 average access/availability and 1 excellent access/availability.

There were six key services/facilities that were grossly unavailable, these included recreational facilities, parking spaces, loading and offloading zones, natural environment and vegetation, open/public spaces/social halls and solid waste management services. The access to these services was limited as per the study participants. This overall position of absence of such key services/facilities inhibited the functionality of the market immensely.

Further, as can be deduced from the table, most of the services/amenities were averagely accessed, either positive or negative in their overall rating. These included drainage system, sewer system, high mast security lights, streetlights, safety levels within the market, pedestrian walkways, road networks and bus terminal facilities. The average provision/access to these services/amenities proved to have significant contribution to performance of the market, limiting its ability to fully exploit its potential and accord maximum benefits to the market consumers.

Lastly, some services/amenities were excellently available and readily accessible by the study participants. These services/facilities comprised of water access, toilet access, public health facilities, police post/station/presence, hotels/food cafes/restaurants and financial services. The availability and unlimited access to these services positively impacted the functionality of the market. Access to financial services reduced loss of cash for participants since banks and mobile money services were pivotal banking facilities available every few meters within the market. A disclaimer is however on some of these facilities as discussed below.

Water access: there are multiple public water points, they are however in the hands of cartels who control access and traders are required to pay for access. Further, some of the water points are located within toilet compounds, with its quality being contested.

Toilet access: there was only one public toilet according to participants. There were however multiple private toilets within the market that are available at a fee. The public toilet is not sufficient for all people who make way to the market on a daily basis, estimated to be over 80,000 visitors on top of the daily commuters of both traders and customers according to QRIMC. QRIMC observed that the only public toilets are within the newly built fish market, and the rest have been grabbed and are in the hands of private investors who charge for their use.

Police post/station/presence: there is a police post within the market which is also served by Pangani and Kamukunji police stations. Police patrols are not in question. Despite this, the rate of theft has never been managed, explaining the feeling of safety levels at average for all who make way to the market.

Public health facilities: there is only one public health facility which is unequipped with drugs and equipment.

Despite the disclaimer as per the findings, the excellent provision and access to these services and facilities have immensely contributed to the overall success and functionality of the market, regardless of their state or condition.

6.2.3 State/condition of facilities

The participants who reported access to facilities rated the quality/condition of such facilities. The ratings were summarised in the following table.

Table 42: Condition of services/facilities available within the market

Condition of Facilities/Amenities/Services				
Facilities/Amenities/Services	**Overall rating**			
	Positive	**Neutral**	**Negative**	**Score**
Drainage system	0.3000	0.0400	0.6600	--
Sewerage system	0.3714	0.1000	0.5286	-
Water access/supply	0.6847	0.1982	0.1171	++

Toilet facilities	0.7405	0.1145	0.1450	++
Solid waste management system	0.6000	0.1000	0.3000	+
Overall hygiene levels within the market	0.0917	0.2569	0.6514	--
Public health facilities	0.5588	0.3529	0.0882	+
Open/public spaces/social halls	0.3438	0.3125	0.3438	
Natural environment and vegetation	0.0000	0.0000	0.0000	
Police post/station/presence	0.5833	0.3426	0.0741	+
High mast security lights	0.5890	0.2740	0.1370	+
Street lights	0.5873	0.2540	0.1587	+
Overall state of safety within the market	0.1927	0.3211	0.4862	-
Pedestrian walkways	0.1364	0.1364	0.7273	--
Road network	0.1828	0.3011	0.5161	-
Road surface condition	0.0645	0.3333	0.6022	--
Loading/offloading zones	0.3000	0.4250	0.2750	
Parking spaces	0.5484	0.2581	0.1935	+
Termini facilities (Bus stage)	0.1975	0.4198	0.3827	
Recreation facilities	0.3500	0.4000	0.2500	
Hotels/restaurants/food cafes/kiosks	0.2992	0.4016	0.2992	
Financial services	0.9716	0.0142	0.0142	+++

*The ratings were computed by getting the sum of the respective Likert scale responses from both traders and customers. The very good and good category were then cumulated into positive rating while the very poor and poor categories into negative rating. The neutral response values were maintained. The final sum values of positives, negatives and neutrals were then divided by the sum of the total responses per category. The highest value per category is then highlighted as the final score per category, which is either positive, negative or neutral. The scales range between 0 – 1 where 0 is least positive/neutral/negative rating and 1 is highest positive/neutral/negative condition of the service/facility. It indicates the condition of the facility as per all traders and customers who participated in the study.

From the summary in the above table, it can be deduced that drainage system, sewer system (liquid waste management system), overall hygiene levels within the market, overall state of safety/security within the market, pedestrian walkways, road network, and road surface condition were in a very poor condition, with some of these receiving a very strong negative rating. Water access, toilet facilities, solid waste management, public health facilities, police post/station, high mast security lights, streetlights, parking spaces, and financial services were positively rated, considered to be in good condition. Some of these services such as financial services were strongly positively rated as compared to others such as public health facilities and parking services.

There were some service/facilities categories that were average such as open/public spaces/social halls where all ratings were neither positive, neutral or negative, with a slight

skew to both positive and negative. Other facilities rated to be in average condition included loading and offloading zones, bus terminal facilities, recreational facilities and hotels/restaurants/food cafes/kiosks. Their condition was neither good nor bad since the neutral category had the highest preference by all participants who rated their condition.

The overall condition of most of the facilities were therefore average or negative, being 13 of the 22 facilities/services that the study participants rated. There were only 9 services/facilities with considerable positive ratings.

Synthesis

Generally, the socio-spatial arrangement and organisation of the market was found to be wanting despite the market being segmented into various identifiable sections. The current organisation falls off an ideal market which observes the principle of Optimum utilisation of market spaces. This principle advocates for designs that ensure proper & adequate allocation of core spaces for traders to display or sell their goods. Gikomba OAM traders are constrained on this since they are presently occupying as little spaces as $1m^2$. Therefore, with proper design of the of the organisation of the market; subsequent allocation of adequate trading spaces and improvement of the internal circulations, it is expected to achieve a boosted shopping experience, reduced human congestion, resolved conflicts between motorised & non-motorized transportation, creation of adequate spaces for siting of ancillary & support services as well as the overall improved service delivery which will lead to traders willingness to pay more for improved services.

On the other hand, inadequate provision, constrained access & poor condition of key facilities/services in Gikomba OAM indicates that the overall shopping experience is hampered and limited to the low-income population who are able to withstand such conditions. Currently, the market is engulfed with key pertinent issues of illegal dumping sites, lack of parking spaces, missing loading & offloading spaces, lack of recreation facilities among many other indicators showing that the market currently is not optimally functional. Therefore, in order to achieve the desired state of an ideal OAM, the already mapped facilities will require expansion, upgrading, integration and adequacy in their provision & distribution within the larger market space in order to cater for the growing market needs. The overall effect of these actions will be improved functionality of the

market to accommodate all social classes and further improve the existing aesthetics, desired mobility, hygiene levels and further deal with the effects of urbanisation among others.

6.3 Objective 3: To analyse the facilitators and constraints for a functional Gikomba market.

6.3.1 Facilitators of Market Functionality

In reference to the literature review, the study assessed functionality based on the physical, economic and social indicators. These parameters were key in identifying the keys gaps in both existing facilitators and constrains. Among the key facilitators were; transportation which is a major enabler of linkage and networks; the existing spatial organisation of the market which facilitates easier identification of location of goods and services; proximity of the Gikomba Market to CBD continues to ensure continuous influx of people hence boosting business. Further, the existence of variety of goods increases options for buyers to select what suits their taste and preferences. Ultimately, the surrounding support facilities boost the social welfare of the traders and buyers such as existing police stations boost security, presence of Machakos country bus aids movement of goods from the market to distant destinations as well as the proximity to the rail terminus within the CBD.

6.3.2 Hindrances to market functionality

The functionality of the market is hampered by a number of challenges according to the analysed findings. The data indicates that key challenges contribute to market performance inefficiencies, chaos and disorderliness. They also negatively impacted on the success of networks and linkages established in relation with the market and other human activity spaces within the city, country and world. The inhibitors are mainly transportation challenges and challenges originating from the overall state of organization/planning of the market including the provision/access or the non-provision/in-access to basic services, facilities and amenities.

6.3.2.1 Transportation challenges

The study findings indicate that transportation challenges contributed to loss of man hours and loss of goods while in transit. The participants highlighted key transport related challenges to include vehicle and human traffic jams, congestion within roads, narrow roads/streets, unsafe roads and streets, poor state of roads, absence of direct PSVs to and from the market, lack of parking facilities that limited use of private vehicles, absence of loading and offloading zones, and lack of designated bus terminal facilities. Congestion included the encroachment of roads by hawkers and traders, constraining free movement of people and vehicle within the market. Overall, these challenges affected the functionality of the market, limiting ease of movement and flow of goods and services into and out of the market.

6.3.2.2 Spatial organization challenges

These challenges originated from the arrangement of activities on space within the market. The findings identify the main spatial challenges affecting the overall success of the market to include poor drainage system, insecurity and high crime rates, unhygienic work environment, transportation challenges, fire outbreaks and congestion inside the market.

Other notable spatial organization challenges as per the study findings consisted of poor sewer systems with frequent sewer bursts, poor lighting within the market, absence of paved pedestrian walkways, lack of shelters or shades for traders and boda boda riders, poor services by the county government, poor infrastructure facilities, insufficient toilets, absence of permanent market stalls, dirty eateries, lack of clean water within the market, floods especially during the rainy season, and frequent power outage. Further, there is noted absence of recreational facilities including absence of open spaces, cultural centres, gymnasium, amphitheatres, entertainment joints, aesthetics, green areas, social halls among others.

These challenges affected the overall operation and functioning of the market, limiting performance of traders and customers and other visitors to the market, creating inefficiencies and hindering the maximum utilization of space within the market, while also failing on the aesthetics and vibrancy that attracts people to the market. These limiting factors are in line with the functionality and linkage theories that contend that space consumption is made effective, attractive and valuable by its ease of access, availability of basic facilities and amenities, and its splendour and aesthetics that make one desire to be on site at any given chance in time.

Gikomba market is in no way attractive and appealing to anyone, except traders and customer–traders alike who have to make way to the market to eke a living. It is never an interesting place for anyone to visit. This greatly limits its functionality, with loss of income form high net worth individual who hardly make way to the market but rather spend their money elsewhere where it is appealing and aesthetically attractive. The market is thus left for middle to low-income earners to muddle through the muddy, congested, soiled alleys that are chaotic and disorganized, not to mention the haphazard waste disposal all over the place, the absence of toilets and water access points, the lack of parking facilities, lack of clean and highly hygienic eateries with quality clean food among others.

The study findings show that customers would not make a trip to the market due to spatial related challenges that included fire outbreaks, insecurity, congestion, unhygienic conditions within the market, and ill health and disease outbreaks associated to the unhygienic conditions of the market.

6.3.2.3 Solutions to challenges

The participants identified the solutions to these transportation and spatial challenges to include improved drainage system, increased security, improved market hygiene, improved road/transport infrastructure, replanning of the market and construction of new modern market and managing fire outbreaks. Other potential solutions were reported as improved infrastructure within the market, provision of open spaces and adoption of decongestion mechanisms, improved lighting, expanded shops and stalls, provision of paved pedestrian walkways, better service delivery by the county government, provision of clean water and construction of more public toilets.

Synthesis

The study met the objective of analysing the various facilitators and constrains affecting the optimal functionality of the market. The consideration of the physical, economic & social indicators was regarded key in synchronizing the key issues in achieving this objective. The physical parameters considered the physical location as well as accessibility and connectivity. This revealed that despite the presence of adequate arterial and connector roads in good condition leading in and out of the market, the poor design and organisation of the market has led to increased conflicts between motorist and non-motorised transportation, human congestions, lack of the requisite transport facilities such as bus terminus, parking spaces as well as loading & offloading zones. In addition, other key physical parameters that aid the functionality of the market are existing infrastructure such as Sewerage, Water reticulations systems, storm water drainage systems among others which despite being present, they are inadequate and deplorable condition. Moreover, they are in adequate to serve the existing urban population who rely on such services to aid in the operation of the market.

The economic parameters revolved around income levels, profits and taxes. The market is currently handling billions of monies in a single day owing to the voluminous goods which are been traded. This benefits all levels of the supply chain ranging from the importers, wholesalers, middlemen and retailers. Therefore, income is generated, and profits are distributed across the supply chain. The wholesalers/importers pay import duties and cess fees when moving goods across the county borders while the retailers pay

their normal trading fees to operate within the market. These payments are integral in supporting both local and regional economies. Therefore, the current organisation of the market denies the county government a lot of revenue which would otherwise be generated with proper trading structures in place, better organisation of the market to promote service delivery which the locals are willing to pay as long they are enhancing their business experience. It is thus important to ensure that the market absorbs more unemployed urban population who are able to contribute to the increased countries GDP owing to the anticipated doubled or tripled revenue generations.

The social parameters considered the existing population visiting the market every day comprising of both the traders and customers. The market was found to be serving greatly population from the low- and middle-income earners. The market as currently constituted excludes the high-income social class who are discouraged from visiting the market by the prevailing issues of insecurity, lack of parking spaces, the present congestions and poor service delivery in place among other reasons. Therefore, this means that for the market to foster the desired social fabric and liven up the experience of shopping as an all-inclusive social platform.

Gikomba is still far from achieving the ideal market. This is because even with all the current facilitators of functionality, the market is still performing below per owing to the prevailing challenges/constraints that are worsening the already poor condition. As a result, the synchronisation of the physical, economic and social indicators will be critical in promoting a sustainable market that meets the needs of the current generation without compromising the ability of the same market to satisfy the needs of the future generation.

6.4 Conclusion

The study concludes that the overall functionality of Gikomba market is hampered by multiple challenges that inhibit the growth and expansion of linkages and networks, the operational and performance efficiency of the market and the overall order and organization of activities within the market. These conditions combined with elements of inefficient service delivery by county government of Nairobi which embody institutional failure. This includes failure to plan the market and adopt modern open air market

dynamics, failure to implement existing urban development plans such as the Nairobi Metropolitan Service Improvement Project (NAMSIP) Development of Nairobi Eastlands, plan that had Gikomba as part of the planning area, continued negligence and failure to upgrade/improve aged/depreciated/outdated infrastructure facilities including sewer systems, sanitation facilities, roads etc resulting to dereliction of infrastructures within the market, and the loss of land, infrastructures and services to gang and cartel control. The outcome of this situation is a market space that is in dire chaos, disorder, inefficiency, bedlam, confusion and pandemonium, it never appeals, never aesthetically correct, ever disjointed, and highly uncoordinated. This situation can be remedied by replanning of the market and addressing the institutional challenges thereon. This will enhance optimal use of space, create aesthetics and appeal, and augment the economic value of the space.

6.5 Recommendations

The majority study participants were unsatisfied with the current state of Gikomba market, they were 53% of all traders who participated in the study and 37% of all customers who were interviewed. Some other significant 48% customers and 28% traders were neither satisfied or unsatisfied with the condition of the market. This resulted to the participants proposal for an ideal Gikomba market that addresses the issues and challenges they face within the market. Their ideal Gikomba market should provide better infrastructure communities, must be very secure, have pleasant and hygienic work environment, must be well planned, orderly and organized, together with its streets should be well lit, have the ability to prevent fire incidents and manage/address them swiftly should they arise, must have better recreational facilities, should have provisions for street furniture and the county government must be efficient in service delivery with fairness and equity to all market stakeholders. QRIMC observed that the only solution to address the current chaotic state of Gikomba market is by replanning market and implementing such plans. This was also the position of FGD participants who observed a renewal of the market was due and would be done better by replanning the market and recovering grabbed market land from cartels with organized development.

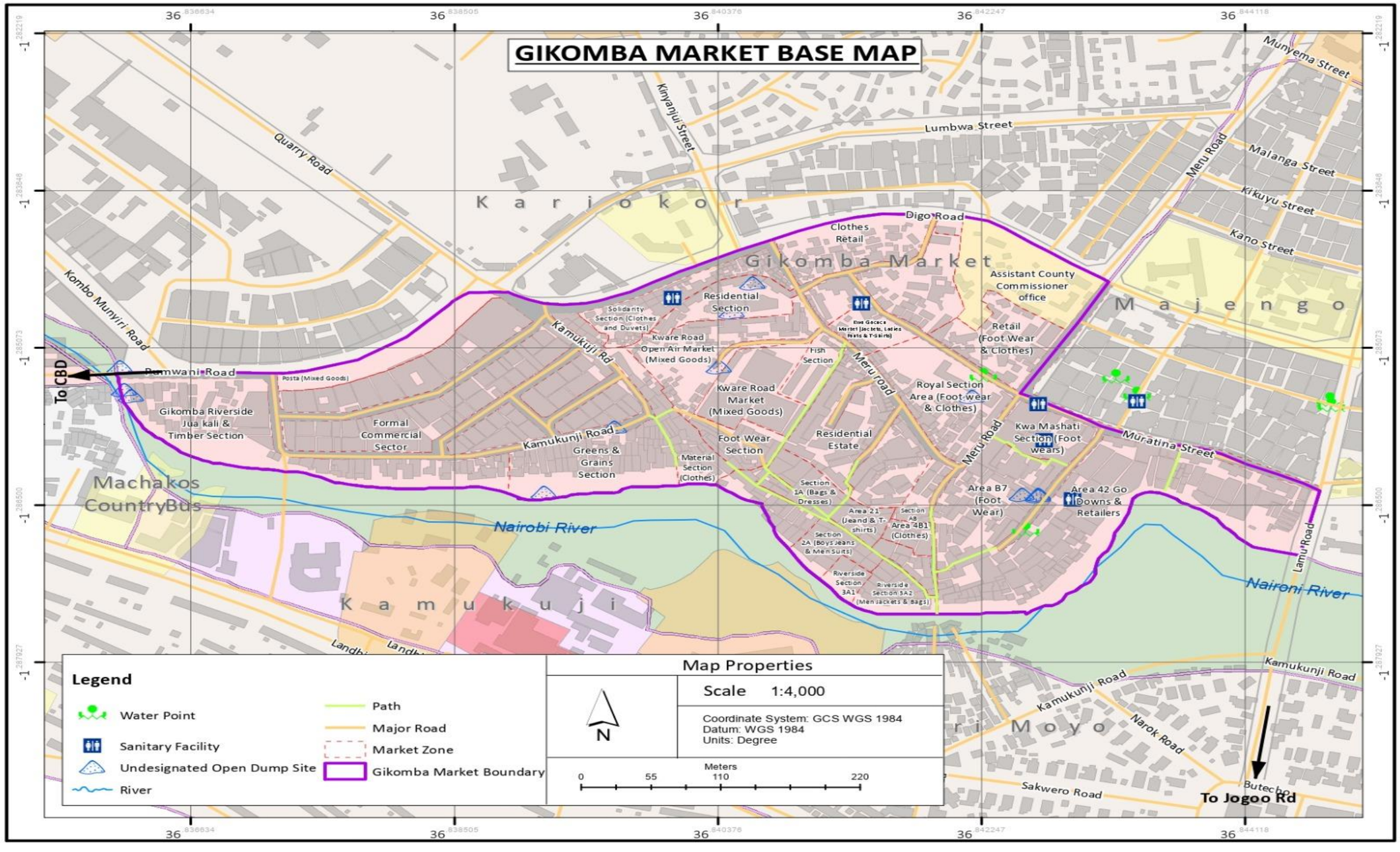
With these recommendations from the market stakeholders that included traders, customers, key informants such as transporters and market committees, the study proposed three planning recommendations. These include maintaining the status quo, basic market improvements and ideal market strategy. These are discussed as follows.

6.5.1 The status quo

This option was arrived at following some participants who were either satisfied or very satisfied at the current state of Gikomba open air market. There were others who were neutral, neither satisfied or unsatisfied, but categorical that they feared loss of their stalls should the market be earmarked for developments. They would rather continue being in the current situation rather than risk losing their stalls without guarantee of another workstation should the market be developed. They however would welcome developments that assures them their fears would be fully addressed. In this respect, the research recommends retaining the market in its current pandemonium state, allowing everything to flow without an interference or developments whatsoever.

In this scenario, nothing changes, the market remains in its current state as shown in the base map below.

Map 14: Gikomba OAM Base Map



(Source: Author, 2023)

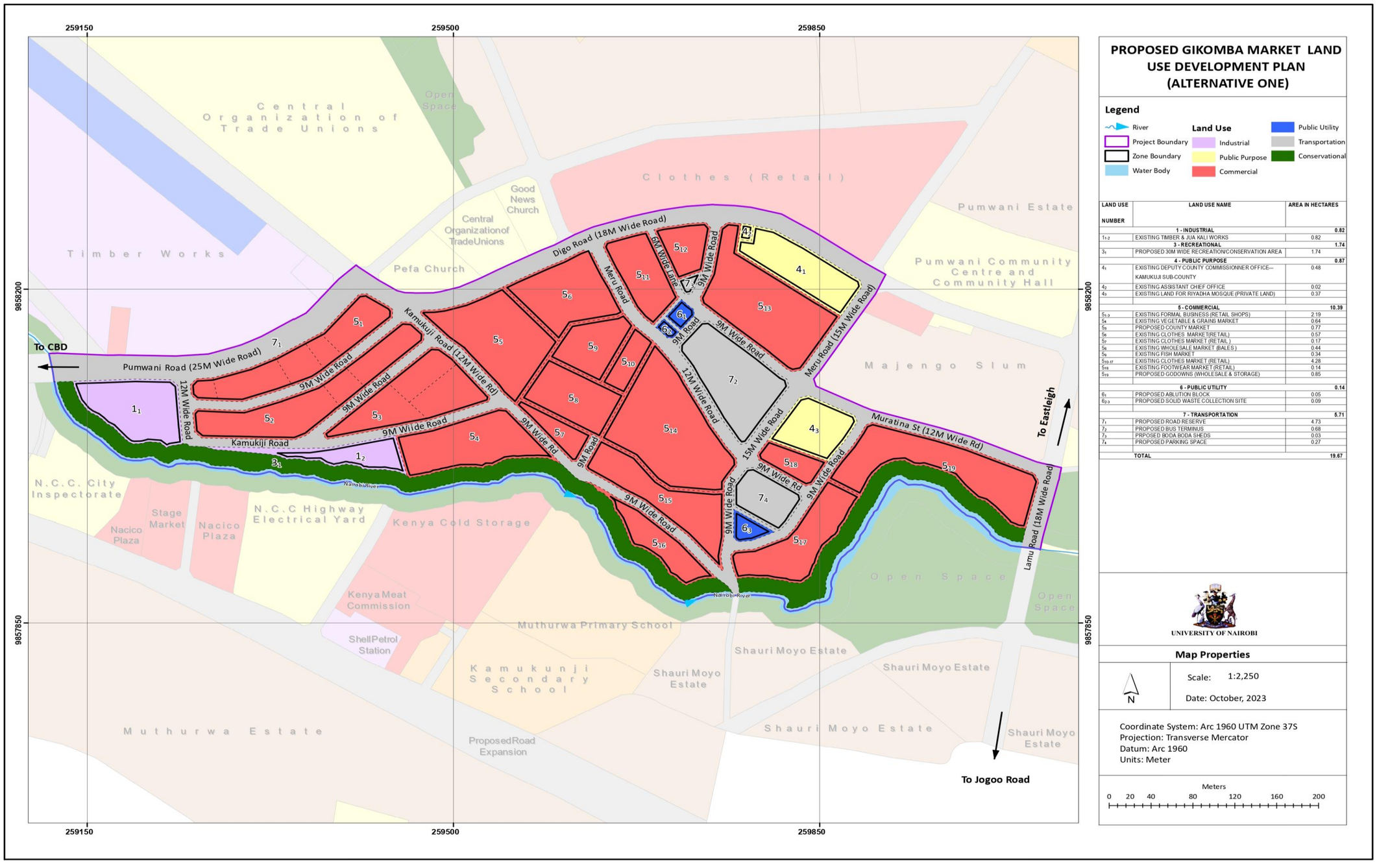
6.5.2 Spatial – Linkage Approach

This scenario considers improving the status of the market to meet the basic requirement for improved land use conditions for traders, customers and other market visitors/stakeholders. The approach is informed by the findings and recommendations of traders to have improved access to facilities and services within the market. It aims at opening the network and linkage channels to reduce congestion and transportation bottlenecks experienced while entering or leaving the market. The objective is to improve road distribution networks, size and condition of roads, and the infrastructures facilities that facilitate efficiency and flow of humans, goods and services into and put of the market. It is tied to literature review on call for local and regional linkages that have roots within OAMs. This proposal takes into account the minimalistic approach which focusses on the basic improvement of facilities. The key elements of this proposal include: -

- Improvement of the market infrastructure. This includes: -
    - The expansion of the alleys to at least motorcycle status (minimum 2m wide)
    - Upgrading the existing roads within the market to bitumen standards (complete all incomplete roads started by NMS and connect them to have a key road across the market)
    - Renovate and replace old sewer infrastructure to reduce incidents of sewer bursts.
    - Increase street lighting and high mast flood lights to boost security.
    - Address power outage by clean energy solar power and possibly stand by generators at strategic sites to ensure uninterrupted business flow.
    - Provide additional modern sanitation facilities to serve both traders, customers and the general public within the market.
    - Designate a horizontal parking, loading and offloading zones within the market, and upgrade them to at least cabro status.
    - Erect modern shelters/shades for traders.
    - Designate spaces for boda boda riders and erect shades for them.
    - Designate waste collection sites, install dust bins at strategic places.
    - Establish a bus terminus within the market.

- Designate an area for go-downs and storage facilities for wholesalers.
- Provision of a designated hand-cart parking space to promote order and harmony.
- Allocate a segment for construction of boda-boda sheds.
- Identify a sub-fire station and provide a standby fire engine and install fire hydrants in all sections of the market.
- To encourage shopping for all classes of citizen, allocate adequate parking space for traders and customers.
- Provide several ablution blocks within the market to promote sanitation and hygiene issues.
- Expand and upgrade the roads to bitumen standards with provision for non-motorized transportation.
- Increase the frequency of police patrols to enhance safety within the market.
- The county government to efficiently undertake its responsibility in running the market in order to collect more revenue from traders.
- Renovate the river section and create a recreational area complete with street furniture and manicured street vegetation.
- Expand and upgrade two existing bridges accessing the market across the Nairobi River.

Map 15: Proposed spatial linkage (partial) map



PROPOSED GIKOMBA MARKET LAND USE DEVELOPMENT PLAN (ALTERNATIVE ONE)

Legend

River
Project Boundary
Zone Boundary
Water Body

Land Use

Industrial
Public Purpose
Commercial
Public Utility
Transportation
Conservational

LAND USE NUMBER	LAND USE NAME	AREA IN HECTARES
	1 - INDUSTRIAL	**0.82**
1_{1-2}	EXISTING TIMBER & JUA KALI WORKS	0.82
	3 - RECREATIONAL	**1.74**
3_1	PROPOSED 30M WIDE RECREATION/CONSERVATION AREA	1.74
	4 - PUBLIC PURPOSE	**0.87**
4_1	EXISTING DEPUTY COUNTY COMMISSIONNER OFFICE--- KAMUKUJI SUB-COUNTY	0.48
4_2	EXISTING ASSISTANT CHIEF OFFICE	0.02
4_3	EXISTING LAND FOR RIYADHA MOSQUE (PRIVATE LAND)	0.37
	5 - COMMERCIAL	**10.39**
5_{1-3}	EXISTING FORMAL BUSINESS (RETAIL SHOPS)	2.19
5_4	EXISTING VEGETABLE & GRAINS MARKET	0.64
5_5	PROPOSED COUNTY MARKET	0.77
5_6	EXISTING CLOTHES MARKET(RETAIL)	0.57
5_7	EXISTING CLOTHES MARKET (RETAIL)	0.17
5_8	EXISTING WHOLESALE MARKET (BALES)	0.44
5_9	EXISTING FISH MARKET	0.34
5_{10-17}	EXISTING CLOTHES MARKET (RETAIL)	4.28
5_{18}	EXISTING FOOTWEAR MARKET (RETAIL)	0.14
5_{19}	PROPOSED GODOWNS (WHOLESALE & STORAGE)	0.85
	6 - PUBLIC UTILITY	**0.14**
6_1	PROPOSED ABLUTION BLOCK	0.05
6_{2-3}	PROPOSED SOLID WASTE COLLECTION SITE	0.09
	7 - TRANSPORTATION	**5.71**
7_1	PROPOSED ROAD RESERVE	4.73
7_2	PROPOSED BUS TERMINUS	0.68
7_3	PRPOSED BODA BODA SHEDS	0.03
7_4	PROPOSED PARKING SPACE	0.27
	TOTAL	**19.67**

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Map Properties

N

Scale: 1:2,250

Date: October, 2023

Coordinate System: Arc 1960 UTM Zone 37S
Projection: Transverse Mercator
Datum: Arc 1960
Units: Meter

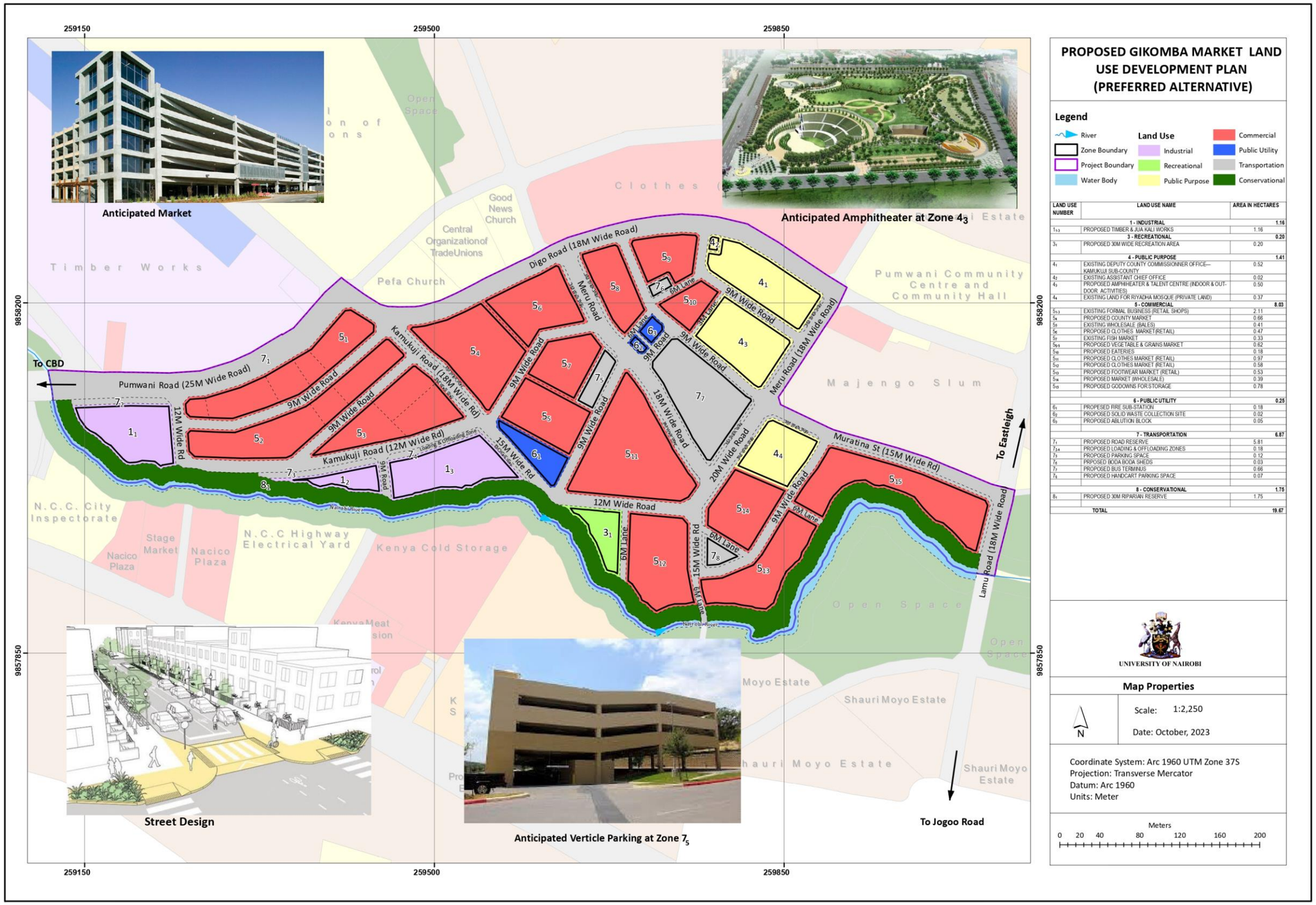
Meters
0 20 40 80 120 160 200

(Source: Author, 2023)

This approach does not necessarily advocate for rearrangement of the land use structure at the market. It is limited in its approach that it targets to maintain the current market form and structure, only targeting improvements on facilities and infrastructures at their current locations or site. There is no replanning or redesigning of the market and does not envisage demolishing and re-construction of new trading blocks and facilities. Its overall aim is to improve the existing condition to better service/facility access and delivery by all market stakeholders.

6.5.3 Integrated and Networked Gikomba Market

Map 16: Preferred Integrated-Networked Map



LAND USE NUMBER	LAND USE NAME	AREA IN HECTARES
	1 - INDUSTRIAL	1.16
1_{13}	PROPOSED TIMBER & JUA KALI WORKS	1.16
	3 - RECREATIONAL	0.20
3_1	PROPOSED 30M WIDE RECREATION AREA	0.20
	4 - PUBLIC PURPOSE	1.41
4_1	EXISTING DEPUTY COUNTY COMMISSIONNER OFFICE--- KAMUKUJI SUB-COUNTY	0.52
4_2	EXISTING ASSISTANT CHIEF OFFICE	0.02
4_3	PROPOSED AMPHITHEATER & TALENT CENTRE (INDOOR & OUT-DOOR ACTIVITIES)	0.50
4_4	EXISTING LAND FOR RIYADHA MOSQUE (PRIVATE LAND)	0.37
	5 - COMMERCIAL	8.03
5_{13}	EXISTING FORMAL BUSINESS (RETAIL SHOPS)	2.11
5_4	PROPOSED COUNTY MARKET	0.66
5_5	EXISTING WHOLESALE (BALES)	0.41
5_6	PROPOSED CLOTHES MARKET(RETAIL)	0.47
5_7	EXISTING FISH MARKET	0.33
5_{eg}	PROPOSED VEGETABLE & GRAINS MARKET	0.62
5_{ea}	PROPOSED EATERIES	0.18
5_{11}	PROPOSED CLOTHES MARKET (RETAIL)	0.97
5_{12}	PROPOSED CLOTHES MARKET (RETAIL)	0.58
5_{13}	PROPOSED FOOTWEAR MARKET (RETAIL)	0.53
5_{14}	PROPOSED MARKET (WHOLESALE)	0.39
5_{15}	PROPOSED GODOWNS FOR STORAGE	0.78
	6 - PUBLIC UTILITY	0.25
6_1	PROPESED FIRE SUB-STATION	0.18
6_2	PROPOSED SOLID WASTE COLLECTION SITE	0.02
6_3	PROPOSED ABLUTION BLOCK	0.05
	7 - TRANSPORTATION	6.87
7_1	PROPOSED ROAD RESERVE	5.81
7_{14}	PROPOSED LOADING & OFFLOADING ZONES	0.18
7_3	PROPOSED PARKING SPACE	0.12
7_4	PROPOSED BODA BODA SHEDS	0.03
7_7	PROPOSED BUS TERMINUS	0.66
7_8	PROPOSED HANDCART PARKING SPACE	0.07
	8 - CONSERVATIONAL	1.75
8_1	PROPOSED 30M RIPARIAN RESERVE	1.75
	TOTAL	19.67

Source: Author, 2023

This is the ideal and preferred alternative recommended to upgrade the market into an ultra-modern one. The focus of this proposal is to overhaul the entire chaotic market to replan and reconstruct it to accommodate more traders and create additional space for missing facilities and services. The main focus of this land use is to provide a conducive business environment that is appealing to all market stakeholders, and aesthetically attracts and accommodates people of all walks and classes of life. The attention is to make Gikomba a preferred place of first choice/priority by any individual regardless of their class or status. The ultra-modern Gikomba market proposal is influenced by the case studies on modern markets as economic hubs, particularly the Soulard OAM and borrows heavily from the case of Rungis International OAM. The proposal adopts reorganization of the spaces and land uses and the redevelopment of the market and its infrastructure to harness maximum potential. It targets to wipe out completely negative hazards present at the current market situation and harness the benefits of a thriving well linked and network market. The key components of the recommended market structure and re-organisation entails the following:-

- Vertical development of market stalls, target of a minimum 1+4 floors and maximum 1+6 floors. These include retail and wholesale stalls for the different categories of traders. The blocks to host eateries at their topmost floors, and rooftop recreation sites for indoor games.
- Construction of go-downs as key feeders and storage facilities for traders mainly wholesalers.
- Interlink/connect the market structures via tunnels to ensure seamless movement from block to block across the entire market.
- Expand and upgrade the roads to at least 6M wide complete with NMT and drainage facilities. In other sections, provide access lanes. Expand all entry and exit road channels for ease of local, regional (national) and international connectivity.
- Establish a bus terminus at the heart of the market, link it with light rail and BRT services to ease movement into and out of the market.
- Development of a fire sub-station equipped with fire engines and fire fighters. Also, ensure installation of fire hydrants across all sections of the market.

- Upgrade and instal new sewer infrastructure within the entire market.
- Creation of parking zones, that are electronically manned and privately operated in a secure place. The creation of a handcarts and trolley parking sites.
- Loading and offloading zones to be inside or on the rear side of the market blocks, and along key roads for ease of long-haul cargo vehicles.
- A ring road that interlinks Digo, Meru, Pumwani and Kamukunji roads with attempt to establish a buffer along Nairobi River.
- A recreation site along Nairobi River buffered mainly by a paved pedestrian walkway and fitted with lighting, street vegetation and street furniture. This to double up as a playground for volleyball and tennis courts. It is a 30M riparian reserve stretching 15M either side of the river.
- Proposed canalisation of Nairobi River in order to manage heavy rainfall and high storm water discharge.
- Upgrade and widen the two pedestrian bridges across Nairobi River. This will minimize conflicts between pedestrians and non-motorised transportation e.g. Handcarts, trolley etc
- Erection of an amphitheatre and talent centre, cultural centre, art gallery, gymnasium, public gardens and rooftop playgrounds.
- Provision of accommodation facilities, restaurants and entertainment joints.
- Provision of solid waste dumping/collection sites. Adopt refuse chutes within the building structures and have a central waste collection site. In addition, waste bins can be provided strategically along the road corridor as well as within the recreational area.
- Provision of eateries within the market. However, it is proposed that the retail market structures can adopt roof tops to set up eateries for both traders and customers.
- Provision of a fire sub-station within the market to enhance rapid response towards any fire outbreak within the market hence reduce economic losses.
- Proposes ablution blocks within the proposed modern market structures to promote convenience and access.

- Provide adequate vertical parking spaces for both motorized and allocates designated specific spaces for non-motorized transportation e.g hand-carts, trolleys etc.
- Installation of fire-safety control measures such as smoke detectors in every market structure to act as early warning systems in case of fire outbreak.
- Expand and upgrade two existing bridges accessing the market across the Nairobi River.

These are key highlights of the plan that proposes to retain existing public purpose land uses in county commissioner and assistant chief's offices. The nitty-gritties of the plan as envisaged are show in the map above.

6.5.4 Recommendations for policy review

The study further recommends policy review on the governance and institutional frameworks for open air markets. The proposed policy review should provide a governance structure that facilitates the growth and expansion of the market. Key policy considerations include: -

- Delineate a proper market governance structure that is clear and understandable by all market operators and stakeholders. There is no clear governance structure despite the market being divided into sections which are headed by committees. The election of officials should follow modern procedures, and the mandate of elected officials need to be well stipulated in the policy. The governance levels must be delineated and tasks assigned for each level and individual within the leadership framework.
- Address clearly the payments of trading license/permit by traders, with a clear payment chart that indicates the amounts payable for the size and type of business. The platform should bridge the lack of transparency and inequity in the current payment method where even traders are not well aware how much to pay and to who. They are not even issued with receipts. A well-managed payment platform should be adopted, and annual payments aligned to ensure no one pays more than the other. Currently, daily payers end up paying more than annual payers.

- A delivery charter, assigning the specific roles the county government is tasked to undertake. The charter should also stipulate the role of traders and all other market stakeholders. This approach should result in ease of attaining the vision, mission, objectives and goals of the market.
- A waste management strategy/framework. The policy should clearly outline the best role of each market player in the management of market waste, including waste reduction, reuse, recycling and of course disposal.
- Market growth and functionality framework. This section of the policy should delineate all key components of efficacy in growth and expansion of the market, including value creation through expanded networks and linkages at the local, city, national and international scale.
- Facilities management. The recommended policy review must consider the management and maintenance of facilities, renovation, and replacement of failed/aged facilities.
- Management of fires, floods and other environmental hazards. This strategy should guide in the prevention, reduction and response to fire incidents and other hazards. The key objective must target to eliminate fire incidents in totality.
- Socio-cultural and recreational strategy. The policy should guide on socio-cultural issues related to the market, including special historical market days for showcase of the various cultures present at the market, as well as for remembrance of the historical origins of the market. It should guide such occasions and their contribution to future growth aspects, aesthetics of the market. Art galleries, social halls and museums provisions in relation to the market and other OAMs across the market should be considered for policy review.

The proposed ideal/preferred integrated – networked land use model and the policy review recommendations were drafted in tandem with the markets development and management guide developed by the state department for housing and urban development.

6.6 Contribution to knowledge

The study was the first of a kind in the Kenyan context. In this regard, the findings contribute to the body of knowledge by providing new approaches in understanding the role and functionality concepts of open-air market. It also specifies the potential approaches for redesigning and redevelopment of OAMs, explaining the best collaborative approaches have to originate from identifying the existence of a problem and then the best approaches to diagnose such problems. There is scanty literature on open air market, and by conducting the study, new literature has been generated to support future studies in the same subject. Further, it cannot be underscored how critical OAMs are, and their inevitable socio-economic contributions relate well with the growth and feeding of urban set-ups, at the same time promoting the rural-urban linkages. This study has been able to extrapolate on these linkages and networks, with an OAM that acts as the fulcrum where urban-rural linkages find space to exchange resources, goods and services. It therefore contributes that OAMs are the foundation upon which urban-rural linkages can be measured, they are indicators of such relationships and they pivot the exchange and transfer of knowledge, resources, goods, services and socio-economic values across the both spaces.

6.7 Recommendations for further study

The study only focused on networks and linkages and the spatial components that were believed to feed into the socio-economic aspects of the market. In this respect, it is only wise to identify the specific value contribution aspects of the networks and linkages from OAM. In this regard, the study recommends research that traces the socio-economic value of OAM and their networks and linkages at the national scale. Tracing this network, quantifying the value of each network to both OAM and the regional context and within the channel would help complete the findings and advise on more approaches for promoting efficiency and functionality within the channels and networks and the two spaces of OAMs and the region. Additionally, the interconnectivity between one OAM and other OAMs in a city set-up should provide for interesting research at the same time providing viable strategies for harnessing/enhancing these networks and linkages and creating harmony and cohesion in the operations of the markets in an urban set up. Finally, the study recommends further research on transportation as a feeder of network to

understand clearly its contributions to functionality of OAMs and best-case scenarios to harness these relationships.

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Appendices

Appendix 1: Traders questionnaire

UNIVERSITY OF NAIROBI

DEPARTMENT OF URBAN AND REGIONAL PLANNING

Title of Research Project: Assessing functionality of Gikomba market for sustainable neighborhood development in Pumwani, Nairobi

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Declaration: This questionnaire is meant for academic purposes only and any information collected will remain confidential and used for the purpose of the academic research only.

Questionnaire No…….

A. Preliminaries

1. Name of interviewer
2. Date of interview
3. Location of interview. (GPS Coordinates)
4. Obtain Consent from interviewee. Consent granted?
   - □ Yes – proceed with interview.
   - □ No – proceed to the next potential interviewee.

B. Personal details

1. Name of respondent (Optional)…….
2. Age of the respondent (Completed years) …….
3. Sex of the respondent
   - □ Male
   - □ Female

4. Area of residence (within Nairobi) ……

C. Business characteristics and linkages

5. Nature of Business
    - □ Retail
    - □ Wholesale
    - □ Other (specify)
6. What type of products/merchandise do you deal with in Gikomba market?
    - □ Clothes (men, women, children wear, beddings, warm weather clothes etc)
    - □ Shoes (all types of shoes)
    - □ Wares (household wares etc.)
    - □ Food products (all sorts of food products i.e., green maize/beans, cereals, fresh vegetables (kales, cabbages, potatoes, tomatoes, greens etc.), fish, meat products, bananas etc.)
7. Where do you source your products from?
    - □ Within Nairobi (specify specific locality)
    - □ Outside Nairobi (specify specific area (county) or country)
8. From whom do you acquire the products
    - □ Manufacturer
    - □ Wholesaler who is an importer
    - □ Local wholesaler – stocks locally acquired/manufactured goods/wares
    - □ Producer (farmers)
    - □ Distributor
    - □ Transporter
9. How do you transport your products from the source to point of sale?
    - □ By road
    - □ By air
    - □ By sea
    - □ By railway

10. Please specify the carriage type for transporting your wares to the point of sale
    - ☐ Use of handcarts/trolleys
    - ☐ Use of trucks
    - ☐ Human Porter
    - ☐ Use of motorcycles
    - ☐ Use of tuk-tuks
    - ☐ Use of passenger vehicles
    - ☐ Use of airplane
    - ☐ Use of ships
    - ☐ Railway coaches/wagons
11. If by use of ships/air, please specify your mode of transport from the port to your selling point/storage facility
    - ☐ By road transport (use of trucks, PSVs etc)
    - ☐ By railway transport
12. If by rail, please specify the mode of accessing the products from the railway station to your selling point/storage facility
    - ☐ By use of public cargo modes (trucks, pick-ups, tuk-tuks, motor cycles etc)
    - ☐ By use of public transport (PSVs such as matatus, buses, tuk-tuks etc)
    - ☐ By hand carts/trolleys
    - ☐ By human pottery (human backs, shoulders, hands etc)
13. Where do you store your merchandise?
    - ☐ A store within Gikomba market
    - ☐ A store within Gikomba neighborhoods (Majengo, Pumwani etc)
    - ☐ A store within the Nairobi CBD (city centre)
14. Please specify the methods of transporting your wares from the selling point to and from the storage facility
    - ☐ By hand carts/trolleys
    - ☐ By human pottery (human backs, shoulders, hands etc)
    - ☐ By vehicular means (tuk-tuks, motor cycles, pick-ups)
    - ☐ By vehicular means (low-capacity trucks, medium-capacity trucks, high-capacity trucks)

15. What is the approximate area of the space you trade from?

- ☐ 1 m^2 (1m by 1m)
- ☐ 2 m^2 (1m by 2m)
- ☐ 3 m^2 (1m by 3m)
- ☐ 4 m^2 (2m by 2m)
- ☐ 6 m^2 (2m by 3m)
- ☐ Any other size (specify)

16. What type of structure is used by the trader?

- ☐ Wooden stalls
- ☐ Stalls within a building
- ☐ Carton paper stalls
- ☐ Plastic stall
- ☐ Floor display

17. How many years have you been operating in Gikomba Market?

1 - 5 Years

5 - 10 Years

10 - 15 Years

Above 15 Years

~~18. On average how much do you sell in a day? Kshs……~~

19. Who are your major customers?

- ☐ Nairobi residents only
- ☐ Non-Nairobi residents only
- ☐ Both Nairobi and non-Nairobi residents

20. If Nairobi residents, are they?

- ☐ Consumers
- ☐ Business people/retailers?

21. If business people, from which areas of Nairobi do they sell from?

22. If non-Nairobi residents, are they?

- ☐ Business people/retailers

□ Consumers

23. From which country or part of Kenya do they come from?

□ Name of town/county/country …….

24. (a) Do you pay rent for the space occupied?

□ Yes

□ No

(b) If Yes, who do you pay?

□ Nairobi City County

□ Private citizens

(c) How much do you pay as rent? Kshs…….

25. Do you pay for license/permit to the county government of Nairobi?

□ Yes

□ No

26. If yes, how much do you pay per month? Kshs……...

D. Functionality of the Market

27. How do you access your work station?

□ Public transport

□ Walking

□ Private vehicle

□ Other transport means (please specify……)

28. Do you have the following facilities/services within Gikomba:

Service	Availability	
	Yes	No
Drainage system		
Sewerage system		
Water access		
Toilet facilities		
Public health facilities		
Solid waste management system (waste bins/waste drop of points etc)		

Open/public spaces/social halls		
Natural environment and vegetation		
Police post/station/presence		
High mast security lights		
Street lights		
Pedestrian walkways		
Road network		
Loading/offloading zones		
Parking spaces		
Termini facilities (Bus stage)		
Recreation facilities		
Hotels, food cafes and restaurants		
Financial services (Banks, Mpesa, Airtel money and insurance services)		

29. On a scale of 1 – 5 where 1. Very good, 2. Good, 3. Neutral, 4. Bad, 5. Very bad, please rate the condition of the following Gikomba OAM facilities

Service	Condition (very good, good, neutral, bad, very bad)				
	Very good	Good	Neutral	Bad	Very bad
Drainage system					
Sewerage system					
Water access points					
Toilet facilities					
Solid waste management system (waste bins/waste drop of points etc)					
Overall hygiene levels					
Public health facilities					
Open/public spaces/social halls					
Police post/station					

High mast security lights					
Street lights					
Overall state of security					
Pedestrian walkways					
Road network					
Roads					
Loading/offloading zones					
Parking spaces					
Termini facilities (Bus stage)					
Recreation facilities					
Hotels, food cafes and restaurants					
Financial services (Banks, Mpesa, Airtel money and insurance services)					

30. What are the three major challenges facing Gikomba market traders within the last 5 years?
    - ☐ ----------
    - ☐ ----------
    - ☐ ----------
31. What are the main solutions to the above three challenges?
    - ☐ ----------
    - ☐ ----------
    - ☐ ----------
32. To what extend are you satisfied with the overall organization of Gikomba open air market? On a scale of 1 to 5, please rate your level of satisfaction as:
    - ☐ 1. Very unsatisfied
    - ☐ 2. Unsatisfied
    - ☐ 3. Least satisfied
    - ☐ 4. Satisfied
    - ☐ 5. Very satisfied

33. Please suggest your ideal Gikomba market.

34. Do you have any question for us, idea, opinion or suggestion? (Please highlight the concern and the response given).

THE END, THANK YOU.

Appendix 2: Customers questionnaire

UNIVERSITY OF NAIROBI

DEPARTMENT OF URBAN AND REGIONAL PLANNING

Title of Research Project: Assessing functionality of Gikomba market for sustainable neighborhood development in Pumwani, Nairobi

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Declaration: This questionnaire is meant for academic purposes only and any information collected will remain confidential and used for the purpose of the academic research only.

Questionnaire No…….

E. Preliminaries

5. Name of interviewer
6. Date of interview
7. Location of interview. (GPS Coordinates)
8. Obtain Consent from interviewee. Consent granted?
   - □ Yes – proceed with interview.
   - □ No – proceed to the next potential interviewee.

F. Personal details

35. Name of respondent (Optional)…….
36. Age of the respondent (Completed years) …….
37. Sex of the respondent
    - □ Male
    - □ Female
38. Highest level of education attended……
    - □ None

- □ Primary
- □ Secondary
- □ College (post-secondary)
- □ Vocational training
- □ University
- □ Post graduate

G. Linkages and networks

39. Area of residence
    - □ Within Nairobi (specify residential estate)
    - □ Outside Nairobi (Specify village/town/county)
40. How often do you visit Gikomba market?
    - □ Daily
    - □ Weekly
    - □ Twice a week
    - □ More than twice a week
    - □ Monthly
    - □ Once every two months
    - □ Annually
41. What usually brings you to Gikomba?
    - □ To acquire household items (furniture, kitchen wares, laundry items, mali mali etc)
    - □ To acquire second hand clothes and/or shoes
    - □ To acquire food stuffs – cereals, vegetables etc
    - □ Others – please specify
42. The merchandise you purchase is it for
    - □ Personal and household use
    - □ Rural relatives
    - □ Resale purposes
43. If for personal and household use, how do these products get to your residential house?
    - □ Via hand carts (Mkokoteni and trolleys)

- ☐ Via human pottery (people's backs/shoulders/hands)
- ☐ Courier services
- ☐ Public transport (PSVs) including matatus, buses, taxis
- ☐ Public cargo transport (pick-ups, trucks etc)

44. If for rural relatives, where are your rural relatives located? Name of village and county.
45. What mechanisms do you use to transfer the merchandise to them?
    - ☐ I deliver to them when traveling to the village
    - ☐ I send to them via public service vehicles
    - ☐ I use registered courier services (RCS)
46. If you send them via PSVs or RCS, where do you access such services from?
    - ☐ Within my residential area
    - ☐ Within Gikomba market
    - ☐ Within the Nairobi city center
47. If for resale purposes, where do you sell the merchandise from?
    - ☐ Within my residential area in Nairobi
    - ☐ Within another market/area in Nairobi
    - ☐ Within a market/town upcountry
48. If within another market/residential area in Nairobi, please specify the name of the market/residential area.
49. How do the wares get to the specific selling point?
    - ☐ Via PSVs operating within Nairobi
    - ☐ Via PSVs for upcountry
    - ☐ Via hired cargo vehicles – pick-ups, trucks etc
    - ☐ Via the railway line – passenger/cargo train
    - ☐ Through hand drawn carts
    - ☐ Through human pottery
    - ☐ Any other means – please specify
50. Please specify where you access such transportation means
    - ☐ Within Gikomba
    - ☐ Within Nairobi CBD (city center)

51. If within Nairobi CBD (city center), how do your wares get to the bus stop/courier shops?
    - □ Via hand drawn carts
    - □ Via trolleys
    - □ Via human pottery (human backs/shoulders)
    - □ Via PSVs
    - □ Via cargo vehicles such as pick-ups, low-capacity trucks etc
52. Have you ever used railway transport to transport your wares to the rural relatives or to your reselling point upcountry?
    - □ Yes
    - □ No
53. If yes, please specify the mode of accessing the railway station from Gikomba market

    Via hand drawn carts

    Via trolleys

    Via human pottery (human backs/shoulders)

    Via public transport (PSVs)

    Via public cargo vehicles such as pick-ups, low-capacity trucks, trucks etc

54. Have you ever used the SGR for transportation of your merchandise to the reselling point or your rural relatives?
    - □ Yes
    - □ No
55. If yes, how do you access the SGR station from Gikomba?
    - □ Via hand drawn carts (including trolleys) and/or human pottery directly to the SGR terminus
    - □ Via public transport directly to the SGR terminus (Connecting various vehicles)
    - □ Via public cargo transport (trucks and pick-ups) directly to the SGR terminus

- □ Via public cargo transport then the Meter gauge railway at the CBD
- □ Via public transport (PSVs) then the Meter gauge railway at the CBD
- □ Via hand drawn carts (including trolleys) and/or human pottery, then the Meter gauge railway at the CBD

56. What are the major transportation challenges that you face within Gikomba market?
    - □ Human traffic congestion
    - □ Vehicular traffic congestion
    - □ Lack of designated loading and offloading zones
    - □ Lack of designated bus termini
    - □ Lack of railway station
    - □ Disorganized/haphazard transport means
    - □ Absence of seamless interconnectivity between various modes of transport
    - □ Lack of courier services to my final destination
    - □ Connecting multiple transport means before accessing the final bus station/destination
57. What are the effects of such challenges?
    - □ Loss of wares in transit
    - □ Loss of man hours as it takes time to move around searching for reliable transport means
58. What are the possible solutions to the specified challenges?

H. Functionality of the Market

59. Whenever you visit Gikomba market, do you have access to the following facilities/services within the market?

Service	Availability	
	Yes	No
Water access		
Toilet facilities		
Solid waste management system (waste bins/waste drop of points etc)		
Pedestrian walkways		

Road network		
Loading/offloading zones		
Parking spaces		
Termini facilities (Bus stage)		
Recreation facilities		
Hotels, food cafes and restaurants		
Financial services (Banks, Mpesa, Airtel money and insurance services)		

60. On a scale of 1 – 5 where 1. Very good, 2. Good, 3. Neutral, 4. Bad, 5. Very bad, please rate the condition of the following Gikomba OAM facilities

Service	Condition (very good, good, neutral, bad, very bad)				
	Very good	Good	Neutral	Bad	Very bad
Water access points					
Toilet facilities					
Solid waste management system (waste bins/waste drop of points etc)					
Overall state of safety within the market					
Pedestrian walkways					
Road network					
Roads					
Loading/offloading zones					
Parking spaces					
Termini facilities (Bus stage)					
Recreation facilities					
Hotels, food cafes and restaurants					
Financial services (Banks, Mpesa, Airtel money and insurance services)					

61. What are the three major challenges you have consistently faced in Gikomba over the last 5 years?

    □ ----------

    □ ----------

    □ ----------

62. What do you think are the main solutions to the above three challenges?

    □ ----------

    □ ----------

    □ ----------

63. To what extend are you satisfied with the overall organization of Gikomba open air market? On a scale of 1 to 5, please rate your level of satisfaction as:

    □ 1. Very satisfied

    □ 2. Satisfied

    □ 3. Neither satisfied nor unsatisfied

    □ 4. Unsatisfied

    □ 5. Very unsatisfied

64. What do you think are the three major Gikomba related reasons that would prevent you from visiting the market?

    □ ----------

    □ ----------

    □ ----------

65. Please suggest/describe your ideal Gikomba market.

66. Do you have any question for us, idea, opinion or suggestion? (Please highlight the concern and the response given).

THE END, THANK YOU.

Appendix 3: Key informant schedules

UNIVERSITY OF NAIROBI

DEPARTMENT OF URBAN AND REGIONAL PLANNING

Title of Research Project: Assessing functionality of Gikomba market for sustainable neighbourhood development in Pumwani, Nairobi

---

Declaration: This information gathered through these guides is meant for academic purposes only and it will remain confidential and used for the purpose of the academic research only.

I. Preliminaries

9. Name of interviewer
10. Obtain Consent from interviewee. Consent granted?

J. Personal details

67. Name of respondent (Optional)
68. Age of the respondent (Completed years)
69. Sex of the respondent
70. Highest level of education attended
71. Area of residence
72. How do you access Gikomba market?

K. <u>Porters/trolleys and handcart pushers</u>

73. Please describe for us the nature of your work. Who do you carry items for? From where to where?
74. Please explain to us your experiences while undertaking your tasks during extreme weather conditions such as when it rains, is extremely cold, at night…
75. What are the major challenges that you experience while undertaking your duties?
76. Are your daily earning affected by these challenges? If yes, how?
77. What are the possible solutions to these challenges?

78. How best can we improve Gikomba market to make it an ideal work station for you?

L. <u>Passenger drivers/touts</u>

1. What is your main route(s)?
2. What are the major challenges you experience while entering and operating within Gikomba market?
3. What are the solutions to these challenges?
4. What kind of a work environment (Gikomba market) would you prefer working in?
5. Do you have access to bus terminal facilities? If yes, what are their conditions? Are they enough/sufficient, safe/secure and reliable for all passenger vehicles entering and leaving the market?
6. Do you have access to basic amenities/facilities within the bus terminal? If yes, what is the condition? Are they enough? Are they clean, hygienic, well maintained? Are they affordable?
7. Do you have access to parking spaces within the market? If yes what is the condition of these spaces? Are they safe/secure? Are the enough/sufficient for all vehicles? Are they reliable?
8. What other challenges do you encounter on your day-to-day operations within Gikomba?
9. What are the solutions to all of the above situations/circumstances?
10. What would you describe as an ideal work environment for you within Gikomba market?

M. <u>Truck/Lorry/Cargo Drivers</u>

1. What is your main route (from where do you transport wares) and to which destination?
2. How often do you transport cargo into and out of Gikomba?
3. What mainly do you transport into and out of Gikomba?
4. What are the main challenges you encounter while entering and within Gikomba?
5. Do you have access to parking spaces within the market?
6. If yes, how is their condition? Are they sufficient for all of cargo trucks/lorries within the market? Are these spaces safe/secure, enough/sufficient and reliable?

7. Do you have access to loading and offloading zones within the market? If Yes, what is its condition/status? Are these zones safe/secure, enough/sufficient and reliable?
8. Have you ever lost cargo within Gikomba market and its surroundings?
9. What are the solutions to these challenges?
10. What is your dream/vision of an ideal Gikomba market?

THANK YOU FOR YOUR TIME

UNIVERSITY OF NAIROBI

DEPARTMENT OF URBAN AND REGIONAL PLANNING

Title of Research Project: Assessing functionality of Gikomba market for sustainable neighbourhood development in Pumwani, Nairobi

KEY INFORMANT INTERVIEW GUIDE

Declaration: This Key Informant Interview Schedule is meant for academic purposes only and any information collected will remain confidential and used for the purpose of the academic research only.

Gikomba Market Chairperson

Interview Questions

1. Please give us a brief history of Gikomba market?
2. When did you first arrive and/or start operating from Gikomba market?
3. What changes have you seen occur in Gikomba over the years?
4. Please provide us the overall state of provision of basic amenities including but not limited to public health facilities, telecommunication networks, drainage and sewer systems, solid and liquid waste management, electricity and lighting, police post/police presence, paved walkways/alleys, road network and road condition, stalls condition, loading and offloading zones, parking spaces, water supply (quality, reliability, and condition of water points), and the overall condition of the work environment.
5. What are the main challenges encountered by traders, customers, transporters and visitors to Gikomba market?
6. What are the possible solutions to these challenges?
7. What other issues that we have not addressed and are of concern to residents/traders/customers/transporters/visitors to Gikomba?
8. What is the structure of the market leadership?

9. How does one become a leader?
10. What is your core mandate?
11. Do you think you are on course to deliver on your core mandate?
12. What are the challenges that you encounter while focusing on attaining these goals/mandates?
13. What are the solutions to these challenges?
14. What kind of governance/actions do you think would best address the issues raised?
15. What do you determine as the strengths of the county government in the running of the market?
16. What are its shortcomings?
17. How do we best address these shortcomings?
18. What would you dream/aspire as an ideal Gikomba market that you would be proud of?

THANK YOU FOR YOUR TIME

Appendix 4: Observation/photography list

UNIVERSITY OF NAIROBI

DEPARTMENT OF URBAN AND REGIONAL PLANNING

Title of Research Project: Assessing functionality of Gikomba market for sustainable neighbourhood development in Pumwani, Nairobi

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Study observation/photography list

The following are elements/items for observation during field survey.

- Infrastructure facilities (drainage, sewer, toilets, roads, water points, NMTs, pavements/alleys, security and light installations etc)
- Trading facilities and spaces (stalls, their type/kind, types of product display)
- Transport means (carriage types – carts, trolleys, PSVs, cargo trucks etc)
- Overall market condition (congestion, space contestations, bottlenecks) etc
- Administration/institutions/governance installations
- Peculiar conditions/services/facilities. Incidents that are usually abnormal and not captured in this list.