

**PLANNING FOR A FOOD COURT IN NAIROBI INDUSTRIAL AREA, WUNDANYI
ROAD**

BY

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for the award of a Bachelors of Arts Degree in Urban and Regional Planning**

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DECLARATION

This Planning Development Project is my original work and has not been presented for a degree in any other university for examination

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This Planning Research Project has been submitted for examination with my approval as the University Supervisor

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DEDICATION

To my beloved parents (Mr and Mrs Paul Kiema), siblings and my friends for their support throughout my academic endeavours.

ACKNOWLEDGEMENT

First is to acknowledge the Almighty God for the gift of health and knowledge in pursuing this planning development project without which it would have not been successful.

It is also my great pleasure to acknowledge Mr.Osengo (my supervisor) who has worked tirelessly in guiding me in undertaking this planning development project.” Sir, you have really gone out of your administrative roles including up to dedicating your own time to see the successful completion of this planning development project. May God bless you abundantly”.

It would sound unfair failing to acknowledge our project coordinators, Mr. Zacharia Maleche and Mr. Charles Karisa for their insightful guidance that they offered throughout the period. The whole fraternity of the Department of Urban and Regional Planning, the City County of Nairobi and the Kenya Urban Roads Authority (in particular Mr. Victor) are some of the entities that cannot be forgotten for the continuous support they gave during the time of acquiring the project specific information.

I can also not forget to acknowledge my parents, Mr. and Mrs. Paul and my siblings for their financial and moral support. Last but not least, to my beloved and close friend Ruth for her support during in the process of doing my project.

ABSTRACT

The main planning issues that resulted from the research project which informed this development project included exclusive planning and non-revision of plans to conform to the present realities and dynamics, inefficient development control and urban economy not matching the needs of all the residents. The existence of the fore stated planning problems has led to emergence, haphazard location and encroachment onto the road reserve by informal food kiosks. This has reduced the pedestrian walkway pushing them onto the carriageway thus increased traffic congestion. The kiosks have used substandard building materials which are vulnerable for fire outbreaks and which contributes to ugly environments an aspect coupled by the filthy environment and location of waste site near the kiosk which is never or takes months to be collected. All these poses the kiosk operators and customers to health risks.

To adequately respond to the above planning problems, the following recommendations were proposed; efficient development control, planning for a food court, regular revision/update of development plans and formulation of support legislation. After evaluations it was found that inclusive planning and in particular planning for a food court would largely solve the problems as compared to the other recommendations.

This project thus develops a food outlet inclusive planning along Wundanyi road. The main component of the project is a food court that is to be integrated within the plan thus improving their standards and the eating environs. Other programs that were incorporated within the plan include; footpaths, landscaping and expansion of Lungalunga road among others. The project was guided by the following objectives; to identify and acquire site for inclusive planning, to conduct a site inventory and analysis, to plan and design the components of the inclusive plan for implementation and to provide a development project framework of implementation and monitoring for the inclusive plan.

The design process entailed a series of steps including problem identification (through a prior research project undertaken by the same author), a detailed situational analysis and interpretation, design of alternative proposals and choice of the preferred alternative. A detailed framework for project implementation, monitoring and evaluation has been incorporated.

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LIST OF ACRONYMS

1. NCC.....	Nairobi City County
2. KURA.....	Kenya Urban Roads Authority
3. NLC.....	National Land Commission
4. GIS.....	Geo-referencing Information System
5. KENASVIT.....	Kenya National Alliance of Street Vendors and Informal Traders
6. WHO.....	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter basically introduces the development project that was found to respond better to the main planning issues identified along Wundanyi road through a research project exercise. The research was conducted between October 2013 and January 2014. It therefore gives a summary of the findings from the research, the proposed recommendations, the development project title and its justification. Further, the chapter gives the location and the specific area to develop the project. This is followed by the objectives of the project, assumptions and the scope it expects to cover. Finally a methodology on how the project was be carried out is discussed.

1.2 Summary of the main findings

1. Non review of plans/exclusive planning

It was evident from chapter four of the research project on history of planning of the industrial area that there exists only one spatial plan for the industrial area and the study area, the 1948 Nairobi industrial master plan. The other plans that were concerned with the industrial area are the Nairobi Metropolitan growth strategy of 1973 and the Sessional paper No. 2 of 1996 Industrial transformation to the year 2020 though they were limited in their capacity to guide the development of the industrial area since they lacked the spatial aspect. In addition, the plans were highly misinterpreted at the implementation level with respect to facilities and services to workers thus contributing a lot to their deficiency. Due to this, the plans have been unable to respond to the current situation in the project area as a part of the large industrial area.

Up to date the plans have not been reviewed to respond to the changing socio-economic dynamics of the urban life. With the increased growth of industrial developments and increased number of industrial workers, the need for more facilities and services to serve both the industries and the workers has increased. However, since these facilities and services were not planned for and there exists no spatial layout on where and how they would be laid, a lot of pressure has been impacted on the few existing facilities. This aspect has led to reduced supply of support facilities and deterioration of the existing facilities to serve the industries and the industrial workers.

The perception that these kiosks are temporary intrusion that could be addresses through forceful evictions by NCC planning department is the key issue related to their exclusion in the plans. Nevertheless, it is worth noting that the trade has resisted eviction, persisted and continued growing whereas reluctance to accept it remains. This is coupled by the inadequate finance and the controlling of symptoms rather than the root cause issue.

In relation to food outlets, informal food kiosks have been proliferating without proper guidance to provide the overlooked function by NCC as a result of their exclusion and non-review of the formulated plans to include them and reduce their deficiency. Due to this, the kiosks have encroached the road reserve, constructing substandard and unsafe structures and operating without permits. Their increased number and their close location to one another create congestion on the road reserve due to their attraction of many customers especially during lunch hours. Their close location to the road kerb causes many people to walk on the road carriageway since there are no pedestrian walkways. This leads to increase of traffic on the road creating congestion and thus conflicts between the Motorized and the Non-motorized modes of transport. With the on street parking of the oil tankers, the situation is made even worse.

However, the kiosks play a very big role in increasing the accessibility to cheap food for the low income industrial workers. This is due to the fact that the formal food outlets offers food at twice higher prices offered in the kiosks making them out of reach by the low paid industrial workers whose majority works on casual basis. In addition, the kiosks have also reduced the distance that one had to walk to reach formal food outlets which are all located on the upper/northern part of the study area increasing the accessibility distance to the southern people.

The significance of the role played by the informal food kiosks along Wundanyi road reserve is limited by the fact that they have not been planned for. This presents a high opportunity for tax and rates collection by NCC if the kiosks are planned. This will ensure that they are well organized, provided with support facilities and thus the owners can have security to invest heavily in their businesses.

2. Inefficient development control

The research study found out that the kiosks have been in existence along Wundanyi road for more than 5 years. It was also evident that these kiosks are all located along the road reserve, located in

a disorganized manner, temporary in nature, using substandard building materials, operating without permits, operating in unhygienic conditions with poor aesthetic and not observing any public health regulations of food outlets. The nature of the building materials exposes them into high risks of fire accidents. Moreover, the kiosks are not supplied with water and sanitation utilities. This has greatly contributed to the invading of the private sector to provide for the services and which are offered in high prices thus exploiting the vendors. However, the services are also poor and of low quality. For instance, the sanitation facilities offered are two in number located at separate areas and which are used by both genders. However, the efforts that were made by NCC to control the kiosk were through eviction but it was in vain as they completely resisted the evictions. The NCC should have noticed that eviction is not the only way to control these informal food kiosks and advocated for other methods geared towards accommodating them. This shows how inefficient the authority has been carrying out development control contributing to the current situation along Wundanyi road reserve.

Conversely, NCC has been collecting taxes from the kiosks which seems to be their most interest rather than organization of the place, its functionality and the welfare of the consumers and food vendors. As result, the number of the kiosks has increased creating congestion along the road reserve and eventually into the road carriageway. The ignorance of the working conditions of the informal food kiosks has also contributed to the ugliness of the place due to the use of substandard materials and lack of support facilities which has led to other problems like informal waste disposal sites being located near the kiosks which takes months to be collected.

The insufficient development control is a result of many planners and other concerned authorities viewing the informal food kiosks as always illegal and turning a blind eye to them without acknowledging the role that they play to the dependents and to the economy. Due to their view, the planners have not formulated any regulatory laws and plans to ensure order in their organization and operations. This is coupled with less capacity in terms of the required skilled labour to inspect development efficiently and effectively within the county and the project area as well.

The change of the perception as it was indicated in chapter two of the research project like in India will ensure that the contribution of these informal food kiosks on the economy is acknowledged

and thus incorporated in plans. It will even trigger the formulation of laws and policies to guide their operations thus controlling their haphazard development and their associated negative effects.

3. Existence of many players

The presence of many controlling entities/ players on the use of road reserve also serves as one of the contributing factors to the existing situation along Wundanyi road. These players include; NCC, KURA, NLC and industrialists. All these players operate under different legal statutes which give them different and contradicting mandates. For instance, with regard to road reserves, KURA is entrusted with the duty of controlling urban road reserves and access to roadside developments. It was also clear from KURA that they do not allow the use of a road reserve for personal purposes and for this case business premises like food kiosks.

On the same note, NCC is entrusted with the mandate of planning the use of any land being government land, trust land/community or private land within the county and controlling developments. It is also their duty to ensure access to social and economic facilities and services by the members of the public and thus where it sees fit the facility or service is planned for. For example, when asked about their views about the planned food kiosks along Argwings Kodhek road reserve opposite Nairobi hospital, KURA respondent that they were against the idea and were having consultative meetings with NCC to ensure the demolition of the food kiosks an act that NCC is against. KURA has also been issuing demolition threats through notices to the operators an aspect that makes them live in fear of loss of their property. However, beyond the notices and the demolitions, the institution has not reflected on the bigger picture of the kiosks, their importance's and the provision of alternatives.

For the same land that NCC and KURA is supposed to manage and ensure its sustainable utilization NLC is mandated by the National Land Commission Act to manage public land on behalf of the national and county governments. The actions of all these players in the industrial area in one way or the other affect the industrial functions and thus comes in the industrialists. For instance, the observation of plot ratios, ground coverage's by industrialists while developing their premises is always in conflict with the specifics since they are profit oriented but not the aesthetic organization and operation of the whole region.

The existence of all these players has led to delayed developments since consultations have to be held in which most of them ends up bearing no fruits especially concerning the control of informal food kiosks. They have also led to conflicts between the institutions as one follows their mandates. This can be attributed to the absence of a policy that brings the players together. It is therefore necessary to harmonize the statutes guiding the functionality of these institutions and the formulation of a policy that brings the players together to reduce the conflicts and speed sustainable developments. Formation of aboard compost of members from each institution is one of the best alternatives to reduce conflicts.

4. Low economic status of urban areas

The main driving factor into the informal businesses by the food vendors is the increased unemployment and under employment rates. This has resulted from the increased urbanization rates which have led to increased supply of labour force as compared to its demand. In addition, there has been increased inability of the urban economy to provide livelihood opportunities to the rising urban population. Due to this, many urbanites have ended up into the informal sector to earn their living in the city. The increased inflation rates have led to increased prices of items, lowering the currency value thus high economic expectations of the urbanites. This aspect has led to many of the urban poor and low wage earners continue living in poverty and becoming poorer.

From the research project, it was established that the operators had low education levels with those who had attained primary and secondary education composing of 47.6 per cent and 42.9 per cent respectively. Only 9.1 per cent had acquired tertiary education. Due to their low education levels, they the vendors have little chances for permanent employment that would enable them earn more.

1.3 Summary of the main action recommendations

To adequately respond to the above planning problems, the following recommendations were proposed;

1. Inclusive planning

There is a need to incorporate the micro-economic activities undertaken by the low income earners who form the majority of the sector. The plans should consider all the social economic status of the urbanites. In relation to the food outlets, they should be planned in a bid to increase its

accessibility by all the economic social groups. For purposes of this project, inclusive planning will be particularly the incorporation of a food court in the project area.

A food court is defined as a space, as in a shopping mall, with a concentration of fast-food stalls in which vendors sell food at stations about a common eating area. One of the advantages of a food court is that it reduces the number of food kiosks since it's composed of one big hall where food is served. Within this recommendation, two food courts can be designed and planned for in the site. One of them should be located on the lower side of Wundanyi road where cooking should be permitted. This is because of its distant location from the oil depots. The other food court should be located on the upper part of Wundanyi road and cooking be strictly prohibited due to its nearness to the oil depots.

Other supporting components of the food court inclusive planning includes; designating site for waste disposal, designating parking sites for the oil tankers, creation of pedestrian pathways and provision of storm water drainage systems. Regulations in the implementation and operation of the plan should also be stated.

2. Regular revision/ update of development plans

As it was observed, the project area and the industrial area development at large is guided by the 1948 Nairobi master plan which is out of date and which never had a consideration on the evolving urban dynamics. New changes would have been incorporated within the industrial zone with planning permission. However, as of now, there is no planning permission except the financial related legitimacy which overlooks other issues. This call for the regular revision and update of plans putting into account the current changing dynamics of urbanization and urban sprawl.

2. Efficient and adequate development control

Efficient development control is needed to address the main issues faced along Wundanyi Road reserve. This would involve ensuring the use of the standard building materials, installation of fire safety equipment (fire extinguishers) issuing of permits to the kiosk operators and controlling their number, provision of supportive infrastructure (water and sanitation facilities, electricity) and formulation of food kiosk supportive legislation. This shall reduce the land use incompatibility within the study area. Within this recommendation, more field officers with relevant training

should be deployed to ensure that development takes place within the stated development control laws and zonal regulations.

Legislation is also key in development control. In this case, it should involve provision of legislation that recognizes the importance of the food kiosks, with issuing of permits for the operators to have security while investing in their businesses and live without fear of eviction. In addition, legislation to control the increased urbanization rates which leads to increased unemployment rates and increased urban poverty aspects and which results in many urbanites engaging in informal activities to earn their living should be formulated. This can also be supported by ensuring sustainable development and creation of employment opportunities in the rural areas.

The adequate enforcement of development control regulations will lead to order in the organization of the food outlets in space; improve aesthetics, increased income of both the vendors and their workers thus improving their economic status and living standards.

3. Harmonization of involved institutions

The research found out that there exists many actors in relation to road reserve utilization and management. It is therefore necessary to harmonize the legal documents guiding the functionality of these institutions to reduce conflicts between the institutions and speed sustainable developments. Formation of a board composed of members from each institutions is one of the best alternatives to reduce conflicts.

1.3.1 Evaluation of the policy recommendations

1. Harmonization of involved institutions

Harmonization of institution involved in road reserve utilization and management can serve as part of the actions needed to control and correct the situation along Wundanyi road. However, it will lack the spatial aspect of the organization of activities in space leaving the institutions without any platform to work on. As a stand-alone recommendation, it is impossible for it to control and correct the current situation within the study area as it has no any element on support facility, compatibility of land use, issues to concern the environment and public health.

2. Efficient development control

It has been observed that, the industrial area has no current spatial development plan to guide its development. By being the main development control tool its absence means that development control won't be efficient. The big question here is; what will guide this development control in the study area? It is a matter of fact that one won't be able to answer this question without touching on the planning bit of the area. This is because, within a plan, regulations are always stated to guide in the implementation and operationalization of the planned activities. It therefore proves that, development control alone won't offer a better solution in correcting the situation in the study area.

3. Regular revision/ update of development plans

Regular revision and update of plans as a recommendation offers a better chance of correcting the situation along Wundanyi road. However, it will be a long time action of which before it is completely done the situation will be worse that it is. In addition, given the current trend of in development of plans by CCN is might even take more than ten years to formulate and execute the plan. This aspect makes the recommendation limited in its adoption. In addition, it is also catered for in recommendation number one on planning for a food court.

4. Inclusive planning

As aforementioned, inclusive planning is one of the best policy recommendation alternatives to be adopted in the study area to improve the current situation. One of the advantages of the proposed food court which is the key element is that it will reduce the number of food kiosks since it's composed of one big hall where food is served. It is also important to note that, a planned food court will be formal, located in recommended place thus avoiding incompatibility in land use, built with standard materials. However, unlike the other recommendations, planning for inclusive planning will not only provide for formal food outlet but also other support facilities will also be planned for. These would include designating sites for waste disposal, designating parking sites for the oil tankers, creation of pedestrian pathways and provision of storm water drainage systems among others. Regulations in the implementation and operation of the plan will also be stated within the plan.

The regulations formulated to guide the implementation of the plan and operation of the planned land uses and the plan as a whole will act as a key development control tool. Within the plan there

shall also be mandate allocation to different player to avoid conflicts while executing the plan. Planning for a food court will also serve the purpose of reviewing and updating plans as by itself will be a plan to guide development within the study area. The recommendation has offers the best action towards the current situation in the study area within short term.

It is therefore worth noting that, planning for a food court offers the best and the preferred alternative in providing a concrete solution to the current situation in the study area as it incorporates all other aspects of the other alternatives.

1.4 Development project title

The proposed planning development project title is

Project title: *Inclusive planning, Wundanyi Road, Nairobi industrial area.*

1.5 Justification of the development project

As aforementioned, a food court is one of the best policy recommendation alternatives to be adopted in the study area to improve the current situation. One of the advantages of a food court as the main component of the plan is will reduce the number of food kiosks since it's composed of one big hall where food is served. It is also important to note that, a food court planned food court will be formal, located in recommended place thus avoiding incompatibility be in land use, built with standard materials. However, unlike the other recommendations, planning for a food court will not only provide for formal food outlet but also other support facilities will also planned for. These would include designating sites for waste disposal, designating parking sites for the oil tankers, creation of pedestrian pathways and provision of storm water drainage systems among others. Regulations in the implementation and operation of the plan will also be stated within the plan.

The regulations formulated to guide the implementation of the plan and operation of the planned land uses and the plan as a whole will act as a key development control tool. Within the plan there shall also be mandate allocation to different player to avoid conflicts while executing the plan. Planning for a food court will also serve the purpose of reviewing and updating plans as by itself will be a plan to guide development within the study area. The recommendation has offers the best action towards the current situation in the study area within short term.

1.6 Location and area of coverage of the development project

The project will be located in the Nairobi industrial area in the Southeastern part of the city of Nairobi, 6 kilometres from the CBD. The project area is Wundanyi Road reserve. It was observed from the research project that, customers travelled for a range of 100-150m to access food in the informal food kiosks. The project intends to provide a space where affordable food to all the customers within a radius of between 100m-150m from Wundanyi road will be sold. However, it is expected that with increased and improved facilities with cheap and quality food offered in hygienic conditions, the radius of coverage will definitely increase in time. It is therefore, important to make such considerations while planning for the food court. As a result, the project area radius was increased to 250m from Wundanyi road on either side. in total project area covers 647,901m². (64.8Ha).

1.7 Objectives of the development project

The objectives of this project are:

- 1) To create awareness to the people in the project area on the need for inclusive planning
- 2) To identify and acquire site for inclusive planning
- 3) To conduct a site inventory and analysis
- 4) To plan and design the components of the inclusive plan for implementation
- 5) To provide a development project framework of implementation and monitoring for the inclusive plan.

1.8 Assumptions of the development project

- i. Failure to control the informal kiosks would lead to increased environmental effects, increased congestion and more conflicts between NCC officers and the kiosk operators.
- ii. Full implementation of this project will provide a concrete solution to the problems of food vending currently faced along Wundanyi Road.
- iii. All the relevant stakeholders will support the project as found necessary and appropriate

1.9 Scope of the development project

The project was entitled to establish a food court inclusive development plan land use. In terms of the content and scope of data required by the project involved; to create awareness to the people in the project area on the need for inclusive planning, to conduct a site inventory and analysis, to

plan and design the components of the inclusive plan for implementation and to provide a development project framework of implementation and monitoring for the inclusive plan.

The project chapters are organized as follows:

1. Introduction

This is the first chapter of the project. It focuses on the following; summary of the main research findings of the planning research project, the main recommendations of the planning research project, statement of the development project title, reasons for the choice of the title, statement of the location and area of coverage of the development project, objectives of the development project, assumptions of the project, its scope and organization of the chapters and statement of the research methodology for the development project.

2. Policy review

This chapter concerns itself with the review of Kenya's relevant planning policies, plans and design guidelines and standards to guide the planning design and the implementation of the food court development project. The chapter also uses a case study, analyzing the past experience on the implementation of food court development project and stating the lessons learnt from it. Finally, a conceptual framework is formulated to guide the design and the implementation of the project.

3. Situational analysis

The chapter gives the background information of the project area. It involves analyzing out the locational context of the project (both regional and local contexts), the background of the project area and its historical context, the physical and climatic conditions of the project area, population and demographic characteristics, land use analysis (including their relationships with others and synthesis of key issues areas) and institutional, legal and financial issues of the project area.

4. Project planning, design and implementation

This chapter articulates the planning process, planning and design of projects (expected outputs and outcomes of the project), development of the spatial plan, site planning and implementation

strategies and programs (formulation of alternatives and their evaluations and approvals) for the project.

5. Monitoring and evaluation

This is the last chapter of the development project. It gives the monitoring and evaluation stages in the implementation of the development project, guidelines for the implementation process and site/environmental management plan.

1.10 Development study methodology

This section, guided by the development project objectives, describes the data needs and requirements, data sources, methods of data collection, methods of data analysis and methods of data representation that informed the planning development project.

1.10.1 Data needs and requirements

First of all, the primary data was collected and analyzed in the research project which was also reflected in this development project. In addition, to adequately address the concerns of this project, the following information was sought; legal and policy guidelines, zoning regulations and development control, planning standards of a food court/ food outlet together with services requirements, information of land-use patterns an compatibility, location and historical location of the project area, the physical and environmental characteristics of the project area and size of target group.

1.10.2 Data sources

The legal and policy information was obtained through reading a number of government legal documents and policies. The legal information was mainly obtained from the Constitution of Kenya 2010 and Acts of parliament which consisted of ; the County governments Act 2012, The Physical Planning Act (Cap 286), The Urban Areas and Cities Act 2011, Environmental and Management Act, Public Health Act, The Land Act among others. On the other hand, policy information was guided by the Kenya Vision 2030 and the National Land Policy among others.

The physical and environmental, land and land use patterns and levels of service provision information was mainly obtained from the primary methods of data collection. These included; observation, sketching, photography. Information on site acquisition and suitability analysis was

obtained through interviews with the key informants who were KURA and NCC. All these were supported by the legal and policy frameworks.

The planning standards were mainly obtained from the NCC by-laws, zoning regulations, the Physical Planning Handbook (2008), the Building code and the A.J. Metric Handbook

1.10.3 Methods of data collection

Both the primary and the secondary methods of data collection were used to inform and provide a guide to the completion of the project.

1.10.3.1 Primary data collection methods

1. Interviews

Interviews were conducted with the following stakeholders; the industrial workers, the food kiosk operators, the industrialists, NCC (department of city planning) and KURA (departments of survey and planning and environment).the industrial workers, the food kiosk operators and the industrialists were to provide information on accepting and owning of the project through awareness creation. NCC provided information on zoning, requirements in acquisition and use of the space for locating the project. KURA being the custodian of road reserves for the people of Kenya, had important information on to what use could a road reserve be put into, the issuing of permits and monitoring purposes. As a way to guide these interviews, the researcher came up with interview schedules for each respondent.

2. Observation

This mainly involved observing the physical aspects. Some of these included; the physical characteristics of the area, current locations and designs of the food kiosks, levels of service provision and existing land uses among others. To guide this method of data collection, observation checklists were formulated.

3. Photography

Photography involved capturing by use of a camera, different phenomenon that seemed of interest to the researcher in relation to the development project for illustration purposes. These included;

the existing land uses around the project area, the drainage systems and the site location of the project.

4. Field sketching

Field sketching involved detailed drawing of sketches with the use of a pencil and writing paper. This particularly was used to capture relationships between land uses in the project area. Its main purpose was to make detailed illustrating easier.

1.10.3.2 Secondary data collection methods

Secondary methods of data collection mainly involved review the projects relevant literature. These were obtained through reading different legal and policy documents, development plans, journals, thesis and dissertations informing planning especially for a food court.

1.10.4 Methods of data analysis

The data collected was in two forms; qualitative and quantitative data. All the data was sorted, edited, coded, processed and analyzed for meaningful interpretation of findings. The qualitative data was analyzed through the researchers' understanding and reasoning whereas the quantitative was analyzed using MS-Excel and SPSS programs. AutoCAD and ArchCAD were used to analyze the spatial data.

1.10.5 Methods of data presentation

After analysis, the data was presented in different forms. These included; charts, graphs, tables, maps and ketches among others.

1.10.6 Planning development project methodology

The project entailed the following process:

- Creation of awareness on the research project findings about the problems identified and their implications, the proposed recommendations and where the project will take place.
- Issuing out notice on the intention of inclusive planning for a food court within the area and implementing the design.
- Determination of data needs, sources and preparation of data collection instruments
- Carrying out of situational analysis of the project area (data collection and analysis)
- Presentation of the data findings to stakeholders and incorporation of comments

- Development project planning and design and presentation to stakeholders for comments
- Preparing actual designs of the food court and accompanying facilities.
- Conducting and Environmental Impact Assessment
- Approval and implementation

1.10.7 Limitations

- Time was the most limiting factor in the process of carrying out the development project.
- There was a bit of difficulty in acquiring some of the needed statistical information of the recent years. For example, the current census of industries and employees within the project area.

Table 1: Data needs matrix

Objective	Data needs	Data sources	Data form	Data use
To create awareness to the people in the project area on the need for inclusive planning	-Number of respondents accepting the project	-Holding interviews with food vendors and their customers	-Quantitative/ Numerical -Qualitative data/Descriptive	-To ensure that the vendors and their consumer are aware of what a food court is and its operation -To gets their opinion on the project
To identify and acquire site for inclusive planning	-Information on land ownership -Required documents	-NCC records on land use within the project area	-Qualitative data/Descriptive	-Avoid conflicts on the use of land
Site inventory and analysis	-Climatic and physical attributes (wind direction, rainfall amount, sunshine hours and sunshine path among others) -Quality and quantity of support facilities -land suitability (land size and accommodation of the programs of the project)	-Kenya meteorological department data on the climatic characteristics -researchers field observation -Researchers measurements and calculation on available land capacity to accommodate the proposed programs -Researchers counts of facilities and assessing their quality	-Qualitative data/Descriptive -Quantitative/ Numerical	-To help in designing the food court and other programs of the project -To assess the land adequacy to accommodate the project programs

To plan and design the components of the inclusive plan for implementation	<ul style="list-style-type: none"> -Planning standards for a food court -Number of customers to be served by the food court -Climatic and physical attributes (wind direction, rainfall amount, sunshine hours and sunshine path among others) -zone number and zonal regulations 	<ul style="list-style-type: none"> -NCC records on the census of industries and their employees in the project area -NCC zonal guides 	<ul style="list-style-type: none"> -Qualitative data/Descriptive -Quantitative/ Numerical 	<ul style="list-style-type: none"> -To provide a well-functioning food court -To ensure adoption of planning standards
To provide a development project framework of implementation and monitoring for the inclusive plan.	<ul style="list-style-type: none"> -Institutional framework for food court and land use planning -Stakeholders to be involved 	<ul style="list-style-type: none"> -Physical planning handbook -Constitution of Kenya and Acts of parliament 	<ul style="list-style-type: none"> -Qualitative data/Descriptive 	<ul style="list-style-type: none"> -Ensuring that planning interventions sought are up to various stakeholders' expectations -Appropriately assigning responsibilities in the implementation and monitoring framework

Source: Author 2014

1.11 Definition of key terms and concepts

- **Inclusive planning**

Inclusive planning refers to the process of anticipating the future and formulating plans/goals and strategies to achieve that future with inclusion of all the stakeholders, the consumers of the plan, putting into consideration all the socio economic groups and taking into account the expected future dynamics of an area before that future.

- **Food court**

A **food court** or **food hall** is generally an indoor plaza or common area within a facility that is contiguous with the counters of multiple food vendors and provides a common area for self-serve dining. It can also be defined as a large hall that houses groups of small outlets selling a wide variety of specialist food products (Architects data, undated).

- **Pedestrian pathways/footpath**

A foot path is a type of thoroughfare that is intended for use only by pedestrians, not other forms of traffic such as motorized vehicles and horses.

- **Landscaping**

Landscaping refers to any activity that modifies the visible features of an area of land, including living elements, such as flora or fauna; or what is commonly known to as gardening.

- **Food vendor**

¹A food vendor is a person who offers food for sale to the public without having a permanently built structure but with a temporary static structure or mobile stall (or head-load). They could be stationary and occupy space on the pavements or other public/private areas, or could be mobile.

- **Carriageway**

A carriageway consists of a width of road on which a vehicle is not restricted by any physical barriers or separation to move laterally (Banks, 1998).

¹ <http://nasvinet.org/newsite/defining-street-vendors/>

CHAPTER TWO

POLICY GUIDELINES

2.1 Overview

This chapter begins with a discussion of the characteristics of inclusive planning and giving out the advantages of a food court and its operations. It then elaborates on the relevant policies and regulatory frameworks as well as planning standards guiding land use and food outlets/food court planning in Kenya. It also discusses on some selected case studies where the concept of a food court has been applied and succeeded.

2.2 Inclusive planning

There is a need to incorporate the micro-economic activities (informal food vending outlets) undertaken by the low income earners who form the majority of the sector that many planning authorities have been neglecting for long. The negligence could be attributed to their perception that street vending/ informal food vending outlets as illegal entities, encroachers on public space, and a source of unsightly nuisance. In addition, the view that informal food vending outlets are temporary intrusion that could be addressed through forceful eviction has been one of the leading contributory factors to the negligence. This has led to the persistent harassments to the vendors by threatening them and confiscating their merchandise. However, it is worth noting that the trade has resisted eviction, persisted and continued to growing whereas reluctance to accept it remains.

Due to their perception, planning authorities have always excluded these important economic activities in their development plans. However, a few countries have adopted the concept of inclusive planning of these activities. This was after the recognition of their contribution to the economy through creation of employment (direct and indirect), source of revenue to planning authorities and the provision of low price commodities to the urban people among others. In addition, they observed that the sector is very resistant to eviction (one of the solutions that was tried for long) and thus sought for other efficient and effective methods of addressing the sector. India and South Africa are some of the countries that have adopted the concept.

Inclusive planning is a participatory exercise to all the stakeholders, with the key stakeholders being the planning authorities and the vendors. The vendors should form an association and choose their representatives in bargaining for their issues. For instance, in Kenya KENASVIT should take

lead in negotiating for inclusive planning with NCC. Street vendors have innovative ideas of how space conflicts can be resolved, and when secured vending space is assured many vendor associations can manage the vending space. Management may include, space allocation, collection of fees or license payments, and cleaning and litter collection. For example, figure 1 below shows the outcome of involvement of vendors in a workshop conducted in India. In addition, a report prepared by FAO/WHO, 2005 in Lusaka (Zambia) and Harare (Zimbabwe) on street food vendors indicated that the vendors would be willing to pay for basic facilities such as running water and electricity, but would want the local authorities to provide the water points, refuse receptacles and washing facilities. A viable partnership involving local authorities, vendors and policy makers is therefore encouraged as this should lead to the improvement of business conditions and allow for the improvement of the livelihoods of vendors and their families.

Figure 1: Outcome of vendor involvement in planning



Source: Prof. D. Mahadevia, 2014

2.3 Ways of providing informal food trades

Different ways have been used to provide informal food trades by different planning authorities. One of them is the use of a food court. A food court is defined as a space, as in a shopping mall, with a concentration of fast-food stalls in which vendors sell food at stations about a common eating area. One of the advantages of a food court is that it reduces the number of food kiosks since it's composed of one big hall where food is served. Malaysia and India are some of the countries that have adopted the concept of food court in provision of informal food trades and in a bid to address to the issues of street trading. For example; Lot 10 Hutong food court in Malaysia (as explained in the case study section of this chapter) that brought together 30 street vendors in one common operating place. The food court which is located in a commercial complex offers all the necessary support facilities to the vendors, giving them a secure tenure and thus being able to invest heavily in their businesses.

Singapore is one of the countries in Asia that have adopted an interesting strategy in providing for informal food vending outlets. Unlike in countries like Malaysia and India who have been integrating food outlets in shopping complexes thus ending up serving the high income earners, Singapore has developed a strategy of setting up hawkers. The hawker centers were to achieve decentralized location of cheap food outlets to the citizens of Singapore by the government, avoiding the centralization system that led to increased growth of street trade due to the exclusion of the low income people in the plans of the government. Though using the same ideas of a food court, the hawker centers are stand-alone developments located areas of low income urbanites and whose food prices are relatively the same in all the centers. The government provides and maintains the centers for the street vendors.

Kenya and in particular NCC has also adopted modern kiosks in an effort to address the issues of street trading. A good example is the Nairobi hospital modern kiosks as discussed in the case study section of this chapter. The kiosks are well designed built with steel and are mobile. NCC construction them and hires them to the vendors who pay gradually to own them. In addition, the authority places them at strategic places and in a well-planned manner. The kiosks are provided with the necessary support facilities to ensure their efficient and effective operations. As result, the places are clean and hygienic for one to eat from.

However, each of these methods of providing informal food trades has its limitations. It is quite clear that for the case of a food court and by the fact that is located in a commercial complex befits the high income earners rather than the low income earners. On the other hand, the NCC modern kiosks have limited capacity in terms of carrying capacity and thus not able to serve many customers at a time. Nevertheless, the adoption of a hybrid of these two would bring out an interesting and a satisfactory solution to the low class urbanites. This would involve the adoption of the element of a common eating place from the food court and the modern food kiosks to replace the stalls used in a food court. This would form cheaper food court able to serve adequately the Nairobi industrial area.

2.4 Importance of a food court

A food court is bound to have the following advantages;

i. Increased revenue generation to the County government.

It has been a norm for the food kiosk operators/owners to run away from the City County field officer once they see them to escape from paying taxes. This has also been the case with the Public Health officers. This makes it difficult to collect rates and money for renewal of license of operation from the kiosks. Introduction of a food court that will be housing several stalls/food kiosks will make it easy for NCC to collect taxes from the vendors.

ii. Promote order in our cities.

Planning is all about bringing order and sustainability in land use. This will promote order as their number, design, building materials, location and areas of operation will be regulated. Another aspect of planning is the separation of incompatible land uses and association of the compatible ones. Through planning for a food court these aspects will be considered thus reducing the incompatibilities in existence currently.

iii. Reduced environmental effects.

This will be brought about by reduced pollution as mitigation methods of pollution and waste management will be addressed. Consequently, this will lead to increased aesthetic value of the operating environments.

iv. Reduced health effects to the public, operators and kiosk owners.

There are health effects that may result from unplanned food kiosks as no inspection of the health safety of the food to be offered and cleanliness of the areas of operation. Concentrating the vendors in one area within a food court will make it easy to inspect and license the vendors.

v. Increased formal employment

The sector of informal food vending economic activity absorbs a very large population especially women and those who have low education levels. Planning for food court will make their operations legal creating room for issuing of licenses. The issue of legality guarantees the operators security and no threats of or no demolitions.

vi. Reduced informality within the city.

Informal food kiosks is one of the major contributor to the total informality within the city of Nairobi and thus if they are planned the informality will be reduced by a certain scale.

2.5 Centralized model in the location of food outlets

Centralized locational model is borrowed from the central place theory developed by Walter Christaller in 1933. The theory (CPT) attempts to explain the spatial arrangement, size, and number of settlements in a given place. In his explanation of the theory, Christaller made the following assumptions that all areas have;

1. an isotropic (all flat) surface
2. an evenly distributed population
3. evenly distributed resources
4. similar purchasing power of all consumers and consumers will patronize nearest market
5. transportation costs equal in all directions and proportional to distance
6. no excess profits (Perfect competition)

He further developed these principles that explained the different arrangements of central places. They include;

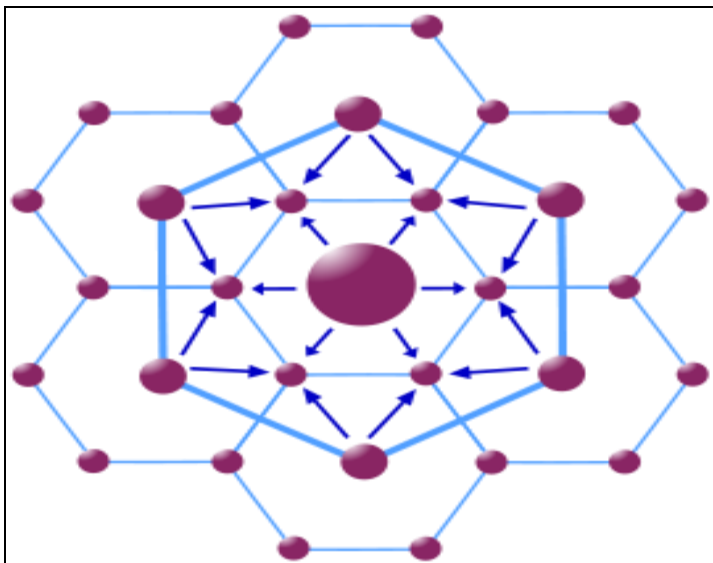
- i. The marketing principle (K=3 system);
- ii. The transportation principle (K=4 system);

iii. The administrative principle (K=7 system).

According to the marketing principle $K = 3$ (K=principle), the market area of a higher-order place (node) occupies 1/3rd of the market area of each of the consecutive lower size place (node) which lies on its neighbor; the lower size nodes (6 in numbers and 2nd larger circles) are located at the corner of a largest hexagon around the high-order settlement. Each high-order settlement gets 1/3rd of each satellite settlement (which are 6 in total), thus $K = 1 + 6 \times 1/3 = 3$. However, although in this $K = 3$ marketing network the distance traveled is minimized, the transport network is not the most efficient, because there is no intermediate transport links (network) between the larger places (nodes). Figure 2 below illustrates the market principle in the distribution of markets.

The higher the order, the greater is the areas served

Figure 2: Locational characteristics of central place theory



Source: http://en.wikipedia.org/wiki/Central_place_theory#K_3D_3_Marketing_principle

2.5.1 Applicability of the model in the project area

The assumptions of the model largely makes the model inapplicable in Nairobi industrial area. For instance, the model assumes that all consumers have similar purchasing power and will patronize nearest market is contrary to the existing situation in Nairobi industrial area. It was evident from the research project that main customers to the informal food outlets are industrial workers and whom more than 70 per cent work on casual basis earning little as compared to the permanently employed workers whose income is much higher.

The model also assumes that the transportation costs are equal in all directions and proportional to distance. Though the industrial workers may not require to board vehicles in the access of the food outlets, they would be required to walk. Given the distribution of the outlets, one would be required to walk for long distances in reaching them. In addition, the whole idea of centralized model represents the existing situation in which there exist restaurants which mainly serves the high income earners while the low income earners eats from the informal ones. In this case, the restaurants acts as the high order market while the informal kiosks represents the low order markets. The adoption of this model would result to increased congestion in the low order food outlets as compared to the high order one. Furthermore, according to the model, the high order food outlets would compose of the best foods, quality eating places and best services. This means the low order food outlets would remain to be unhygienic and offering poor services. It is also noted that a more segregated society would result due to the social classes created by the order of food outlets.

In terms of space occupations, the high order food outlets would require an extensive piece of land that may not be available in the Nairobi industrial area given its dense developments and which can be described as one which is fully developed. This is due to the fact that the high order food outlet is supposed to serve three times the number of consumers served in the preceding order.

2.6 Operations of food court

A food court is generally an indoor plaza or common area within a facility that is contiguous with the counters of multiple food vendors and provides a common area for self-serve dining. Food courts may be found in shopping malls, airports, and parks, universities or even in high schools. However, in some regions like Asia, America and Africa may be a standalone development.

In a food court, food is usually eaten with plastic cutlery, and sporks are sometimes used to avoid the necessity of providing forks and spoons. Meals are ordered at one of the vendors and then carried to a common dining area. The food may also be ordered as takeout for consumption at another location, such as home or work. In this case, it may be packaged in foam food containers. Food courts may also have shops which sell prepared meals for consumers to take home and reheat, making the food court a daily stop for some.

A food court is managed by an operator who leases space from the property owner. The operator designs and renovates the premises to house individual stalls, tables and chairs, then rents these stalls out to vendors. Besides air-conditioning, food court operators provide cutlery, cleaning staff support and sometime even uniforms to vendors so as to give each food court a neat and standardized look-and-feel. The day-to-day operations, the tenant mix and the marketing of the food courts are also managed by the food court operators.

2.7 Policy framework

1. Millennium Development Goals (MDGs)

Extreme poverty and hunger is the millennium development goal number one. The goal targets that between the year 1990 and 2015 to reduce by halve the proportion of people whose income is less than one dollar a day and the proportion of people who suffer from hunger. The MDGs strategies are to increase employment rates which would consequently increase each household's income thus reduced hunger. Planning for food court will see many kiosk owners engaging in legal food selling activities, being able to invest heavily, access credit facilities to expand their businesses and thus increased income.

The other MDG that this project is geared to achieve is the goal number seven of Environmental Sustainability. One of the strategies of this goal is to increase sustainable access to clean and safe drinking water. Inclusive planning of street food vending outlets would lead to improved aesthetics, improved waste disposal methods and supply of clean and safe drinking water. The negligence in the incorporation of these activities in development plans would leave a major contribution of this sector in the achievement of goal number seven of the MDGs.

2. Kenya vision 2030

The vision 2030 recognizes land is a critical resource for the socio-economic and political developments. It also points out that, respect for property rights to land, whether owned by communities, individuals or companies, is an important driver of rapid economic transformation and thus ought to be observed. For efficient and effective use of land and its resources, the policy is determined to facilitate the process of land administration, the computerization of land registries,

and the establishment of national spatial data infrastructure in order to track land use patterns, and the introduction of an enhanced legal framework for faster resolution of land disputes.

It aims to transform Kenya into a newly industrializing, “middle-income country providing a high quality life to all its citizens by the year 2030” based on three “pillars”: the economic, the social and the political.

The economic activities being one of the three Pillars of the vision 2030 is anchored on macroeconomic stability; this is after considering its contribution in the country’s economy in the year 2003, For this reason, *Kenya Vision 2030* places the highest premium on the stable macroeconomic environment the country now enjoys, and expects it to continue in the future as a matter of policy. The vision also plans to enumerate informal sector operators, to provide them with permanent and serviced facilities, training and access to credit and markets. The simplification of business registration and trade licensing will continue in order to create a more enabling business environment for all trading activity.

The key sectors of the economic pillar as stated by the vision, include; tourism, agriculture, wholesale and retail trade, manufacturing for the regional market, business process offshoring (BPO), and provision of financial services. Some of Key social sectors emphasized in the vision 2030 include; Health; Water and Sanitation; the Environment; Housing and Urbanization. The 2030 vision for water and sanitation is to ensure that improved water and sanitation are available and accessible to all with clean, secure and sustainable environment improved pollution and waste management systems.

The vision stipulates that, Kenya’s cities and towns are now poorly planned and must change. In response to this, the policy proposes for new nationwide urban planning and development campaign starting with the major cities and towns.

3. National land policy 2007

The aim of the National Land Policy is to promote efficiency, sustainability and equity in the use of land to achieve prosperity while ensuring that it is protected for the benefit of future generations. Specifically, the policy offers a framework of policies and laws that will provides all citizens with

the opportunity to access and beneficially occupy and use land and an economically, socially equitable and environmentally sustainable allocation and use of land.

The Policy proposes to address these challenges resulting from land use management through the application of land use planning principles. It states that the government should promote the use of urban land for different purposes within a planned framework and establish laws and systems for the proper management of urban land use, including the practice of urban agriculture and forestry as well as informal commercial activities, to ensure that they are undertaken in an ordered and sustainable manner.

2.8 Legal framework

1. The constitution of Kenya 2010

The constitution of Kenya 2010 is the supreme law of the land. Chapter Four (Bill of Rights) in article 42, states that every person has the right to a clean and healthy environment, to protect the environment for the benefit of present and future generations through legislative and other measures, particularly those contemplated and to have obligations relating to the environment.

Chapter Five of the constitution (land and environment) states that land should be used in a manner that is equitable, efficient, productive and sustainable (article 60, 1). In addition, article 62 (1),(h) states that Public land shall include all roads and thoroughfares provided for by an Act of Parliament; this land shall be held by the County government and administered by the National Land Commission on behalf of the county.

The constitution also recognizes land use planning. This is found in fourth schedule where it shows how powers will be distributed between the National and the County government. In article 8 it gives one of the functions of the county governments as conducting county planning and development. Therefore, the City County of Nairobi has to undertake planning as an obligation stated in the constitution the County Government Act and the Urban Areas and the Cities Act.

From the above stipulations of the constitution of Kenya, advocacy for sustainability, health and use of public facility has been emphasized. The planners are therefore called upon in planning for commercial activities to observe those advocacies. This also entails even planning for the street food areas of operation to enhance the above stated aspects.

2. The National Land Commission Act

National Land Commission Act is an Act of parliament primarily enacted to make further provision as to the functions and powers of the National Land Commission, qualifications and procedures for appointments to the Commission; to give effect to the objects and principles of devolved government in land management and administration, and for connected purposes. In addition, the Act gives effect to articles 62 (2, 3) and 67 of the constitution of Kenya 2010.

Functions of the Commission.

Section 5 (1, 2) of the Act and in relation to the Kenya Constitution 2010 gives the functions of the Commission as follows

- (a) To manage public land on behalf of the national and county governments
- (b) To recommend a national land policy to the national government;
- (c) To advise the national government on a comprehensive programme for the registration of title in land throughout Kenya;
- (d) To conduct research related to land and the use of natural resources, and make recommendations to appropriate authorities;
- (e) To initiate investigations, on its own initiative .or on a complaint, into present or historical land injustices, and recommend appropriate redress;
- (f) To encourage the application of traditional dispute resolution mechanisms in land conflicts;
- (g) To assess tax on land and premiums on immovable property in any area designated by law; and
- (h) To monitor and have oversight responsibilities over land use planning throughout the country.
- (i) On behalf of, and with the consent of the national and county governments, alienate public land;
- (j) Monitor the registration of all rights and interests in land;
- (k) Ensure that public land and land under the management of designated state agencies are sustainably managed for their intended purpose and for future generations;
- (l) Develop and maintain an effective land information management system at national and county levels;

- (m) Manage and administer all unregistered trust land and unregistered community land on behalf of the county government; and
- (n) Develop and encourage alternative dispute resolution mechanisms in land dispute handling and management.

The Act also provides for the establishment of county land management boards for purposes of managing land (section 18, 1). It therefore states that the board shall;

- i. Subject to the physical planning and survey requirements, process applications for allocation of land, change and extension of user, subdivision of public land and renewal of leases; and
- ii. Perform any other functions assigned by the Commission or by any other written law.

3. Environmental Management and Coordination Act (EMCA), 1999

This Act promotes environmental sustainability and as one of its principles. Its general principle is that every person in Kenya is entitled to a clean and entitlement to healthy environment and has the duty to safe- a clean and guard and enhance the environment. The Act gives effect to the constitution of Kenya 2010 stipulation. For instance in the Bill of rights, article 42 states that every person has the right to a clean and healthy environment, which includes the right to have the environment protected for the benefit of present and future generations through legislative and other measures, particularly those contemplated in Article 69 and to have obligations relating to the environment fulfilled under Article 70.

Section 7, 1 of the Act informs the establishment of National Environmental Management Authority which shall be the sole controller of the environment. In addition, section 58 of the Act states that any development likely to have adverse effects on the environment, an Environmental Impact Assessment shall be carried out before its initial start. In particular these includes; activities out of character with its surrounding, any structure of a scale not keeping with its surroundings and major changes in land use.

Every development in nature is bound to have some effects to the environment. This means food kiosks though sometimes are perceived as informal, they are developments in one way or the other. This calls for conduction of an Environmental Impact Assessment before they are constructed and have adverse mitigation measures. In addition, section 74 (1) of the Act states that every owner or

operator of a trade or industrial effluents to be undertaking shall discharge any effluents or other discharged only pollutants originating from the trade or into sewerage industrial undertaking only into existing sewerage system systems and the relevant Local Authority operating or supervising such sewerage system shall issue, at a prescribed fee, the necessary licence for discharge.

4. The public health Act

This act is concerned with the health of the public at large. Its aim is to ensure members of the public live in a clean and healthy environment. It mainly addresses matters of sanitation, hygiene, and general environmental health and safety. Section 116 requires the local authorities to take all lawful necessary and reasonable practicable measures to maintain their jurisdiction clean and sanitary to prevent occurrence of nuisance or condition liable to injuries or dangerous to human health.

This Act enforces and gives ways of achieving what is stated in the constitution particularly in the Bill of rights. For instance, in article 42 of the constitution of Kenya 2010, states that every person has the right to a clean and healthy environment, to protect the environment for the benefit of present and future generations through legislative and other measures, particularly those contemplated and to have obligations relating to the environment.

It informs the establishment of public health offices in the local authorities from whom enquiries are made on the health effects that may result from developments before they are approved after which a license of operation is issued. The public health officers also carry regular inspections in all the food selling business to ensure hygiene and the required health standards are met. Some of the occupational health safety issues that ought to be considered in informal food outlets includes; well ventilated, clean stores and eating places and well light.

When planning for food outlets it is highly recommended that enquiries be made on their safety in terms of their building materials and their location in relation to other land uses and any other incompatible land uses. In addition, and on a critical note methods of waste management, cleanliness of the kitchen, food stuff store, and the dining-place, health safety of the food to be cooked and sold to the public and above all the health status of the cooks and waiters should be considered with a lot of emphasis.

5. The Physical planning Act 1996

Section 24 (1) of the Act provides for the preparation with reference to any Government land, trust land or private land within the area of authority of a city, municipal, town or urban council or with reference to any trading or marketing centre, a local physical development plan by the director of physical planning. The plan involves securing suitable provision for commercial, transportation, public purposes, utilities and services, industrial, residential and recreational areas, including parks, open spaces and reserves and also the making of suitable provision for the use of land for building or other purposes (section 24(2)). The commercial use shall include shops, offices, hotels, restaurants, bars, kiosks, markets and similar business enterprises and trade but does not include petroleum filling stations.

The local physical development plan prepared, shall have for its general purpose orderly, coordinated, harmonious and progressive development of the area to which it relates in order to promote health, safety, order, amenity, convenience and general welfare of all its inhabitants, as well as efficiency and economy in the process of development and improvement of communications.

According to the Act (Section 29), each local authority shall have the power to prohibit or control the use and development of land and buildings in the interests of proper and orderly development of its area. However, this mandate is now vested to the County governments by the County government Act.

However, according to the new laws; the County government Act and the Urban Areas and Cities Act, the plans are to be prepared by the County government authorities specifically by the county director of physical planning. Though, the Acts are not entirely planning laws, they give some new dimensions in planning. It should also be noticed that these laws respond little to the physical planning concerns. To conform to the emerging issues and incorporate what has been outlined in these new laws, the Physical Planning Act needs to be reviewed.

6. The county government Act 2012

According to the Act section 107.(1) to guide, harmonize and facilitate development within each county, the county governments shall prepare; County integrated development plan; County

sectoral plans; County spatial plan; and Cities and Urban areas plans and which shall be the basis for all budgeting and spending in a county. The county planning framework shall integrate economic, physical, social, environmental and spatial planning. All these shall be carried out in pursuit and giving effect to the Bill of rights stated in the Kenya constitution 2010.

(a) County integrated development plan

The Act requires that each county to prepare a five year County integrated development plan which shall have clear goals and objectives; an implementation plan with clear outcomes; provisions for monitoring and evaluation and clear reporting mechanisms (section 108.(1)). The County integrated development plan shall identify the institutional framework, which shall include an organization chart, required for the implementation of the integrated development plan and addressing the county's internal transformation needs (section 108(2)).

(b) County sectoral plan

As a component of the county integrated development plan the county government shall prepare a ten year County sectoral plan (section 109(1)) which shall be programme based; the basis for budgeting and performance management and which shall be reviewed every five years by the county executive and approved by the county assembly, but updated annually.

(c) Spatial plan

In section 110.(1) the County government Act states that, there shall be a ten year county GIS based database system spatial plan for each county, which shall be a component part of the county integrated development plan providing —

- ✓ A spatial depiction of the social and economic development programme of the county as articulated in the integrated county development plan;
- ✓ Clear statements of how the spatial plan is linked to the regional, national and other county plans; and
- ✓ Clear clarifications on the anticipated sustainable development outcomes of the spatial plan.

The spatial plan is intended to provide the spatial development framework for the county and give effect to the principles and objects of the county planning. It is also intended to set out objectives that reflect the desired spatial form of the county taking into account the development programme of the county as articulated in its county integrated development plan. In addition, the plan should contain strategies and policies regarding the manner in which the objectives shall be achieved. Finally, the spatial plan shall address the spatial construction or reconstruction of the county and provide strategic guidance in respect of the location and nature of development.

(d) Cities and urban areas plans

Section 111.(1) of the Act stipulates that for each city and municipality there shall have or prepare a City or municipal land use plans, City or municipal building and zoning plans, City or urban area building and zoning plans and location of recreational areas and public facilities.

1. A city or municipal plans

A city or municipal plans shall be the instrument for development facilitation and development control within the respective city or municipality. The plans shall provide for

- ✓ functions and principles of land use and building plans;
- ✓ location of various types of infrastructure within the city or municipality;
- ✓ Development control in the city or municipality within the national housing and building code framework.

City or municipal land use and building plans shall be the regulatory instruments for guiding and facilitating development within the particular city or municipality and binding on all public entities and private citizens operating within the particular city or municipality. The plans shall be reviewed every five years and the revisions approved by the respective county assemblies.

Public participation in the county planning processes shall be mandatory and which shall be facilitated through (115 (1));

- a) reasonable access to the process of formulating and implementing policies, laws, and regulations, including the approval of development proposals, projects and budgets, the granting of permits and the establishment of specific performance standards.

- b) provision to the public of clear and unambiguous information on any matter under consideration in the planning process, including—
- i. clear strategic environmental assessments;
 - ii. Clear environmental impact assessment reports;
 - iii. Expected development outcomes; and
 - iv. Development options and their cost implications.

Each county assembly is required to develop laws and regulations giving effect to the requirement for effective citizen participation in development planning and performance management within the county and such laws and guidelines shall adhere to minimum national requirements.

It is worth noting that this Act do not state the processes of application of development permissions and their approvals. It however states the relevance of the PPA on the statement of the above though some of its other clauses are obsolete given the new laws.

7. The Urban Areas and Cities Act 2011

This is an Act of parliament formulated to provide for the, classification, governance and management of urban areas and cities; to provide for the criteria of establishing urban areas, to provide for the principle of governance and participation of residents and for connected purposes.

Subject to the Second Schedule, residents of a city, municipality or town may deliberate and make proposals to the relevant bodies or institutions on the proposed issues for inclusion in county policies and county legislation and the proposed development plans of the county and of the national government.

In section 36 (1) of the Act it is required that every city and municipality established under this Act shall operate within the framework of integrated development planning which shall give effect to the development of urban areas and cities as required by this Act and any other written law; nurture and promote development of informal commercial activities in an orderly and sustainable, provide a framework for regulated urban agriculture, basis for development control and be the basis for;

- i. The preparation of environmental management plans;
- ii. The preparation of valuation rolls for property taxation;
- iii. Provision of physical and social infrastructure and transportation;
- iv. Preparation of annual strategic plans for a city or municipality;
- v. Disaster preparedness and response;
- vi. Overall delivery of service including provision of water, electricity, health, telecommunications and solid waste management; and
- vii. The preparation of a geographic information system for a city or municipality

2.9 Regulatory guidelines, planning and design standards

The regulatory guidelines, planning and design standards discussed in this section include; industrial area planning, transportation planning in industrial areas, standards for public utilities, commercial planning standards, design requirements and the NCC by laws in relation to street food.

2.9.1 Industrial area planning standards

2.9.1.1 Land Allocation

The planned industrial area should have proper relations to residential, commercial and recreational areas as an integral part of the overall urban development plan. Overall total land reserved for industry should form **8%** of the total area planned. A ratio of **1:3** should be maintained for light and heavy industry. The percentage allocation of land in an industrial area/estate may be as suggested below (see table 2 below), depending upon the type of industries and the extent of the industrial area/estate. The land requirements for the different categories of industries are as shown in table 3 below.

Table 2: Land allocations for industrial land uses

	Land use	Percentage land allocation
(a)	Workshops	50-55%
(b)	Organized open space	10-15%
(c)	Utilities, services of facilities	20-25%
(d)	Roads, parking lots	15-20%
(e)	Others	5-10%

Source: Physical Planning Handbook 2008

Table 3: The land requirements for the various categories of industries

<i>Type of Industry</i>	<i>Land Requirements in ha.</i>	<i>Catchment Population</i>	<i>Min Land Size in Ha.</i>
Light	4	30,000	0.05
medium	10	100,000 to 500,000	2
Heavy	none	Over 1 million	20

Source: Physical Planning Handbook 2008

For heavy industries the specific land requirement was not placed because it may transcend one town and will depend on the type of technology and the level of services available.

Special industries

Special industries include; Quarrying, sand harvesting, brick making, mining and oil depots. They are subject to environmental regulations and are only considered for planning when need arises. They are located outside the town because of their special feature.

2.9.1.2 Plot areas and coverage

The essence of fixing minimum plot areas is to prevent over-crowding, to ensure adequate light and ventilation and to facilitate easy movement of people, vehicles and goods. The physical planning handbook suggests that no industrial unit other than a service industry be allowed to allocate on a site less than **0.5 Acre**. The actual amount to plot size will depend on the type of

industry, number of workers to be employed, and densities and plot coverage. It also suggests that plot coverage should not exceed **75 percent** to allow for sufficient scope for circulation, utilities, services and facilities.

2.9.2 Transportation standards in industrial areas

2.9.2.1 Building Lines

The objective of fixing building lines in industrial areas is to mitigate the effects of noise, industrial fumes, odour, dust, vibration, fire, heat, glare and other hazards. The following are the recommended **setback lines** from centre-lines of roads to the property lines. These refer to sites devoted to only manufacturing industries and not to service industries.

- (a) Major Communication routes (Highways)25m. to 31m.
- (b) Spine Roads (Major roads)18m. to 21m.
- (c) Collector roads15m. to 18m.
- (d) Access streets12m. to 15m.

Source: Physical Planning Handbook 2008

In exercise of the powers of the legislative supplement no. 43 Legal Notice 135 section 12 (1) where a provision has not been made for an access road then the building line should be **6m** deep. Where an access road has been provided the building line may be **3m** shallow.

2.9.2.2 Road Reserves

Wide roads in industrial areas are suggested to provide for easy movement of people and heavy trucks, **storm water drainage**, conveyance of industrial effluents, laying out of sub-systems like water mains, electrical cables, gas mains etc. and for curb-parking, where necessary. The following widths of **carriageways** are suggested:

- (a) Major Communication routes (Highways).....13.5m. to 16m.
- (b) Spine roads (Major roads)11.5m. to 13.5m.
- (c) Collector Roads9m. to 11.5m
- (d) Access streets7m to 8.5m

Source: Physical Planning Handbook 2008

The road reserves for the above suggested carriageways should take into account provisions for storm water drainage, conveyance of industrial effluents, water mains, footpaths and curb parking, where necessary. The following **road reserves** are therefore recommended:

- (a) Major communication routes (Highways)60m.
- (b) Spine road (major roads)25m.
- (c) Collector roads18m.
- (d) Access streets.....15m.
- (e) Service lanes6m.

Source: Physical Planning Handbook 2008

Other roads service provisions and their widths

- (a) Cul-de-sac or short connection road not exceeding 60m6-9m
- (b) Service lanes.....6m
- (c) Cyclist lanes.....3m
- (d) Footpaths.....2m

Source: Physical Planning Handbook 2007

2.9.2.3 Pedestrian pathways

According to Neurfert metrics (architects data) a footpath should be not less than 2m wide. However, in the vicinity of schools, shopping centers and leisure facilities it should be not less than 3m wide.

2.9.3 Standards for public utilities provision

1. Water supply

Water lines should be laid at a depth sufficient to protect against frost damage. The minimum pipe depth should be 0.5m below the ground level with the main water pipeline requiring a way leave of 10 metres. The reticulation systems in form of pipeline should be designed in a hierarchical manner, from the main pipeline distributor to the minor in order to achieve equity in distribution.

2. Sewerage

It is recommended that sewage collection and treatment plants be considered for all settlements with a population of 3000. However, where an integrated sewage scheme is not provided, septic tanks should be provided. The treatment plant should be sited as far as is practicable from boundaries of the master plan area, with considerations of the prevailing wind direction. A minimum of 3m is preferred when planning for sewerage facility.

3. Garbage Collection and Disposal

Garbage collection sites must be environmental friendly. They should be located on the leeward side and have a 100m-protection belt.

4. Storm water drainage

Storm water drainage systems are necessary particularly in built up areas receiving more than 200mm of rainfall. It is therefore recommended that for a storm water drainage system a minimum of 2m width strip of land should be provided. The table 4 below shows the recommended/preferred way leaves for different facilities including drainage wayleaves.

Table 4: Storm drainage wayleave

Way leaves facility	Preferred day leave
Drainage way leaves	3m – 4.5m
Anti-Malarial Way leaves	4m
Building clearance	1.5m, 2.5m and 7.5m
Septic Tank clearance	6m
Sewer line	3m

Source: Physical Planning Handbook 2008

5. Electricity cables

According to the physical planning handbook, the electricity cable wayleaves should be as shown by table 5 below.

Table 5: Electricity cables wayleaves

Capacity of line	Way leave
11 KV	10m
33KV	20m
40KV	20m
66KV	30m
132KV Single circuit towers	50m
132KV Double Circuit towers	60m

Source: Physical Planning Handbook 2008

6. Standards for car parking requirements

Different standards have been set to guide the construction of parking sites for vehicles. They are depended on the use of land and the number expected. The table 6 below gives the provisions for **one car space for every usage.**

Table 6: Standards for car parking requirements

Requirements Usage	One car space for every usage
Housing	2 houses or lodgings
Specialized market place	50 to 60 sq. m of covered area
Market	30-50 sq. m of covered area
Office and Administration	50 to 60 sq. m of covered area
Hotel	5-8 beds
School	(a) 0.5 classroom/secondary school and above (b) 1.0 classroom/below secondary school level
Restaurant, Cinema and Theatre	12seats
Mosque/Church	10-12 worshippers
Hospital	5 to 10 beds
Sports field	10 to 20 seats or spectators
Industrial establishment and workshops	6-10 workers

Source: *Physical Planning Handbook 2008*

However, it should be noted that when reflected upon clearly in some cases there is under provision of parking lots. For instance, in the case of housing where one car space is provided for two houses it seems unrealistic. This is because in the current urban trends most of the single houses have more than three cars where the husband and the wife each has his or hers while their children still have. This calls for the revision of the parking requirement standards to meet the current urban trends.

Two types of parking are used which include *flush parking* and *angle parking*. For the former 5.0-6.5m by 2.5m dimensions are used for cars while 30.0m by 4.0m dimensions are used for trailers and trucks. For the later, same dimensions are used for the cars whereas for trailers and trucks 40.0m by 2.5m dimensions are recommended at an angle of 30 degrees

2.9.4 Commercial planning standards

2.9.4.1 Plot size

The minimum size recommended for a commercial plot should be 0.045 hectares with length versus the width should not be more than 1:3. However, the concept of corner shops at each corner plot should be discouraged.

2.9.4.2 Planning standards for kiosks

Kiosks and hawking activities are considered as special features in planning. Designated sites for kiosks need to be planned for and designate places for hawking e.g. hawking grounds and hawking streets. Kiosks should be located adjacent to bus parks, open air markets and certain institutions. In addition, the following locational factors determining their siting are recommended;

- Accessibility
- Market demand
- Foot loose character of hawking

The minimum size of a kiosk should be 3m by 3m.

2.9.5 Design requirements

According to the building code 2009, any building and any structural element or component thereof shall be designed to provide strength, stability, serviceability and durability in accordance with accepted structural design and so that it will not impair the integrity of any other building or property. Any such building shall be designed that on the event of accidental over-loading the structural system will not suffer disastrous or progressive collapse which is disproportionate to the original cause.

2.9.5.1 Building materials

The structural system of any building shall be carried out in accordance with one or more of the following regulations relating to the materials used in such building or in any element or component thereof: (building code 2009)

- i. Structural use of concrete
- ii. Structure use of steelwork
- iii. Structural use of masonry work

- iv. Structural use of stone masonry
- v. Structural use of timber Structural use of aluminum
- vi. Steel fabric for reinforcement of concrete
- vii. Size sawn and processed softwood
- viii. Code for design and installation of damp proof course in masonry construction
- ix. Composite construction in structural steel and concrete
- x. Reinforced and pre-stressed concrete structure for storage of water and other aqueous liquid
- xi. Protection of iron and steel structures from corrosion
- xii. Cement, aggregate and sand for concrete works
- xiii. Specification for lightweight aggregate for masonry units and structural concrete
- xiv. Testing concrete
- xv. Design of concrete structure for retaining aqueous liquid

Common materials used in constructing food courts are tile, linoleum, Formica, stainless steel, and glass, all of which facilitate easy cleanup. However, NCC has been using steel as the main building materials in construction kiosks.

2.9.6 NCC By laws in relation to food outlets

All the designs of buildings and food outlets, the materials used should be approved by the authority and a certificate issued. The holder of the certificate/ permit should provide adequate fire lighting facilities located strategically within the structure. It also a requirement that all persons carrying or handling the food must have medical certificates renewable annually.

2.10 Summary of the policy guidelines

From the discussion above on the policy guidelines and standards the researcher found the found some worth borrowing items. The footpaths were to be maintained 2m width since there is no school in the vicinity as proposed by the Neurfert metrics. In additions the maintenance of Lungalunga road and Wundanyi setback lines between 15 and 18m and between 12m and 15m respectively was necessary. Their carriageways standards were to be to be between 9m and 11.5m and 7m to 8.5m respectively. The project also found the road reserve requirements for the different road classes realistic and adopted 18m for Lungalunga road and 15m for Wundanyi road.

As recommended by the building code, structural use of masonry work materials are to be adopted in the project development and in particular the construction of the proposed food court. Drainage and sewer line wayleaves selected for implementation in the project were 3m.-4.5m and 3m respectively.

The food court shall be inspected regularly by NCC health officer to maintain high standards of hygiene and reduce the health risks currently experienced in the project area. Of importance is also ensuring that all the vendors and waiters are holders of valid medical certificates from NCC.

2.11 Relevant case studies

The case studies looked at three cases studies. They include two international and one local. The international were Lot 10 Hutong Food court (food court integrated within other forms of land uses and buildings) and Carnival food court (stand-alone food court). The locally selected case study was the Nairobi hospital food kiosks, a project by NCC.

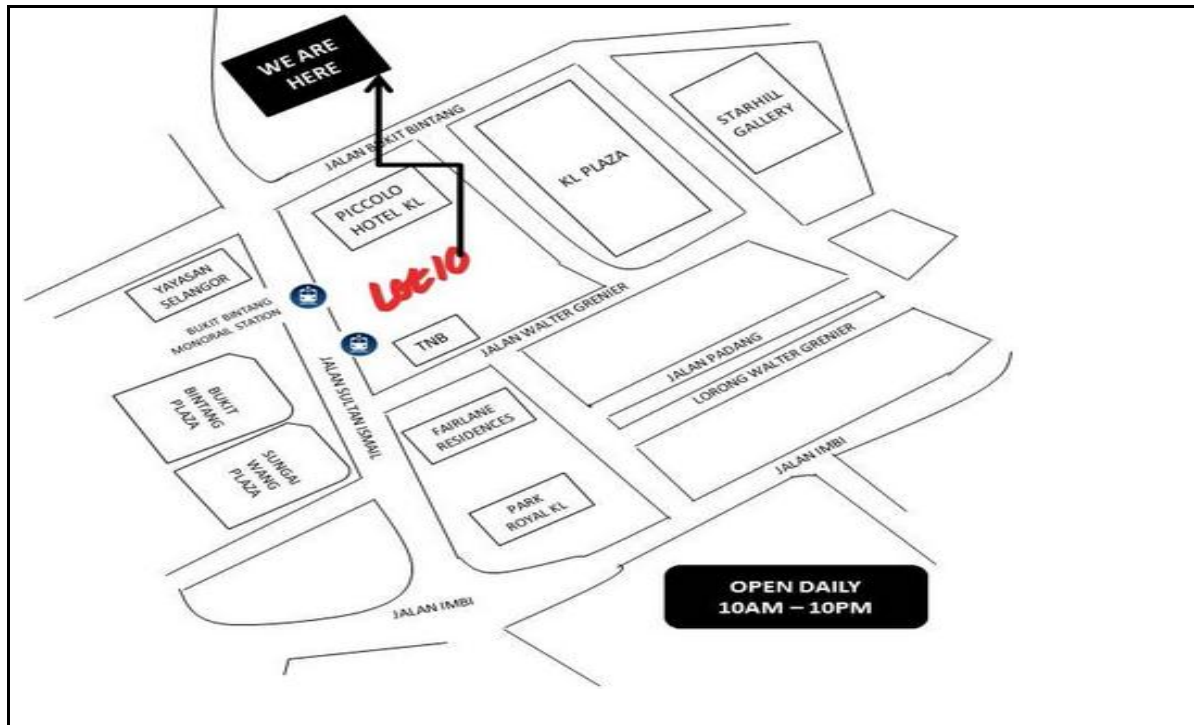
2.11.1 Integrated food courts

Lot 10 Hutong Food court

The Lot 10 Hutong food court is an infamous food court strategically located, in the basement of a shopping mall (Lot 10 mall, see plate 1 below) along Bukit Bintang Street (see figure 3 below) in the city of Kuala Lumpur, Malaysia.

The food court was established in the year 2009 integrating it with other functions of the mall hence the source of its customers. Designed to look like an old Chinese village, the food court has more than 20 stalls selling mainly Chinese cuisine. As a result, more than 30 famous heritage hawker stalls from different parts of the city have been gathered under one roof. The vendors include some of Malaysia's most famous names such as Honkee Porridge, Soong Kee's beef noodles, Mo Sang Kor's bah kut teh, Kim Lian Kee's Hokkien mee and Kong Tai from Singapore.

Figure 3: Location of Lot 10 shopping mall



Source: <http://mymall.netbuilder.com.my/index.php?doit=showclass&cid=27&domain=gheehian>

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Plate 1: Lot 10 shopping mall



Source: <http://www.travelnix.com/wp-content/uploads/Lot-10-Shopping-Centre-Image-Photo.jpg>

Interior of the food court

The interior of the food court is well designed separating the circulation area with the eating places, well furnished with modern eating tables and chairs, well lit and with ample and adequate eating spaces are provided. (see plate 2 below). The food court has a seating capacity of 1200, yet the place is often fully occupied during lunch time due to its popularity and strategic location.

Plate 2: Interior set up of Lot 10 Hutong food court



Source: <http://www.wonderfulmalaysia.com/food/top-10-food-courts-in-kuala-lumpur.htm>

Lessons learned

Proper planning of food outlets promotes order resulting to good and healthy eating places. This comes as a resulting of observing the recommended building standards and space utilization. In addition, this case study has illustrated that a food court is capable of reducing the informal food outlets. For instance, before its establishment more than 30 hawkers operated on streets and immediately after it was constructed they were all confined to work under one roof. The market for their products was not interfered with, an aspect which most of street vendors would fear.

Limitations of the case study

1. The level of income of the people who come to the shopping complex is quite high as compared to those in Nairobi industrial area.
2. The tenure of where they operate from is secure unlike for Wundanyi road reserve which is not.
3. The food court is integrated in a commercial complex contrary to that of industrial area.
4. There are some data gaps in relation to this case study. For instance, no information on the size of the food court.

2.11.2 Stand-alone food court

Carnival food court

Carnival food court is located in Ernakulum district, Kerala state in India. It is located between these coordinate 10.1167°N 76.3500°E and 10.1167°N 76.3500°E. It is located 4 km from Kochi international Airport.

Its construction began on January 2011 and was commissioned on April 2012. It offers a variety of foods including Indian, western, Chinese and Arabian foods in dedicated stalls. Juice & ice-cream counters add to the variety. A full coffee shop is also planned in the food court. Kids play area, ATM, traveler's shop ample car parking are some of the popular aspects of this food court. Plate 3 below shows the exterior appearance of carnival food court.

Plate 3: Carnival food court external appearance



Source: <http://www.gbcindia.in/images/carnival-court-kariyad-big.jpg>

The interior set up of carnival food court

As illustrated in plate 4 below the interior of the food court is well designed and furnished. The chairs are made which are well designed are made of plastic while the eating table are made of wood. They are row arrangement of the chairs and tables make the place look organized with no constrained to movements hence more space for circulation. Different light colours have been used to provide lighting to both the customers and the vendors. These colours create a very attractive and pleasant environment for one to work and eat from.

The stalls, from which customers obtain food, are strategically placed next to the eating place. They are placed in a manner that avoids customer to customer and customer to vendor conflicts.

Plate 4: The interior of carnival food court



Stalls from where food is obtained/prepared by different vendors

Source: <http://www.gbcindia.in/images/carnival-court-kariyad-big.jpg>

Lessons learnt

As it has been the view by a majority that a food court should always be integrated or incorporated within other building in shopping malls, learning institutions and airports, however, this case study proves it wrong.

Limitations of the case study

1. The level of income of the people who come to the shopping complex is quite high as compared to those in Nairobi industrial area.
2. The tenure of where they operate from is secure unlike for Wundanyi road reserve which is not.
3. The food court is integrated in a commercial complex contrary to that of industrial area.
4. There are some data gaps in relation to this case study. for instance no information on the size of the food court

2.11.3 Nairobi hospital food kiosks, Kenya

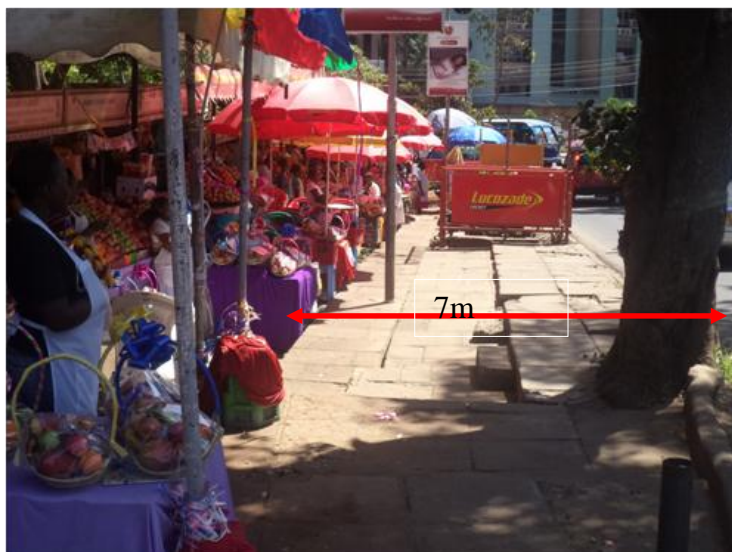
Nairobi hospital food kiosks are a good example of the efforts that the former City Council of Nairobi had done in a bid to improve food and the general trade. They represent a good case on the nature, location and the general environ of food kiosks.

Nairobi hospital food kiosks are located in the Upper Hill part of the City of Nairobi. They lie along Argwings Kodhek Road on the right side as one heads to the Gate of Nairobi Hospital which branches from Ralph Bunche Road in. They are situated directly opposite to JF Centre which is adjacent Nairobi Hospital.

The kiosks were developed by the City Council of Nairobi to provide food and fruits at cheap prices to the patients visiting Nairobi Hospital as it is its main catchment area. The kiosks also get customers from the University of Nairobi, School of Dentists students which is in a few metres distant. By passers also contribute to the number of customers attended by the kiosks.

The kiosks are located at approximately 7m from the road kerb (see plate 5 below). Their size measures approximately 4m by 3m and they are 12 in number. Next to the kiosks are two main sanitation facilities. Of these one is a toilet that serves both the vendors and their customers while the other is a hand washing place facility. Plate 6 and 7 illustrates the two sanitation facilities respectively. There are also dustbins that are strategically located for disposing wastes generated. In front of the kiosks several benches with shades have been placed for customers to settle as they consume their purchase.

Plate 5: Distance to road kerb



Source: Author 2014

Plate 6: Sanitary facilities



Toilet

Source: Author 2014

Plate 7: Hand washing facility



Source: Author 2014

The foundation of the food kiosks is made of concrete with the floor being made of tiles. The walls are made of steel and with folded doors. Though the kiosks were mainly made for fruit vending,

some of the vendors have incorporated other foods served as breakfast and lunch. Plate 8 below shows Mama Wachira's Nutricious fruits, one of the vendors that have incorporated other foods.

Plate 8: Inside the food kiosks



Limitations of the case study

- Majority of the kiosks sell fruits only while three of them cook food.
- Its locational context is more of social facility function (hospital being the main one) whereas in the study area is purely industrial function.
- The capacity of the food kiosks in accommodating the population served by the informal food kiosks along Wundanyi road is low.

2.11.4 Summary of the case studies

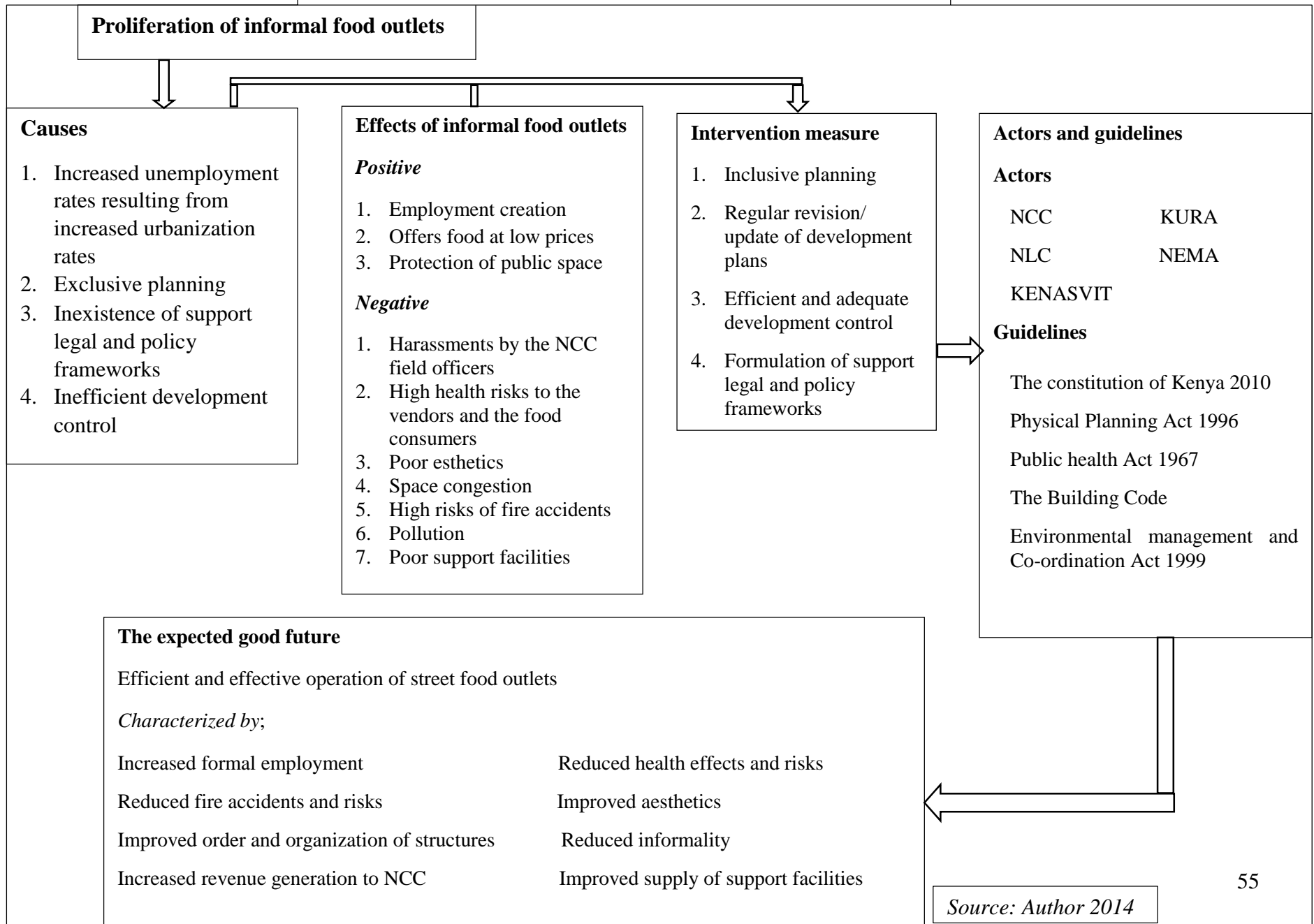
From the discussions in the three case studies some items were worth borrowing. The first two cases introduces the characteristics and the functionality of a food court. The idea of having a common eating place and customers obtaining food from vendors of their choice is a brilliant one as opposed to restaurants. It is quite applicable in the project area since there exists many vendors and planning for a restaurant or a one outlet eating place would result to the loss of jobs to many of the vendors and their workers thus reducing their income. It is also important to consider the

revenue that can be generated by all the vendors as compared to one of them as in the case of a restaurant.

For the case of Nairobi hospital, NCC really demonstrates the capacity in the management of the kiosks and its advocacy in the provision of cheap food outlets. It is hereby that this project wishes to borrow the kiosks sizes used by NCC in Nairobi hospital as compared to the minimum set by PPA of 3m by 3m. Their functionality has also shown the potential in solving the issues of informal food outlets. The project also borrows the building materials used by NCC since they are cheaper and more environmentally sensitive as compared to uses of block. It is also worth noting that the kiosks are mobile and thus if located on a road reserves that need to be expanded they can be transferred to another place.

It is from the above stated critical aspects of the cases studies borrowed that the development project will be based on. The stall used in the international cases shall be replaced with the NCC kiosks while a common eating place shall be provided in at a central place between the kiosks.

Figure 4: Conceptual framework



CHAPTER THREE

SITUATIONAL ANALYSIS

3.1 Overview

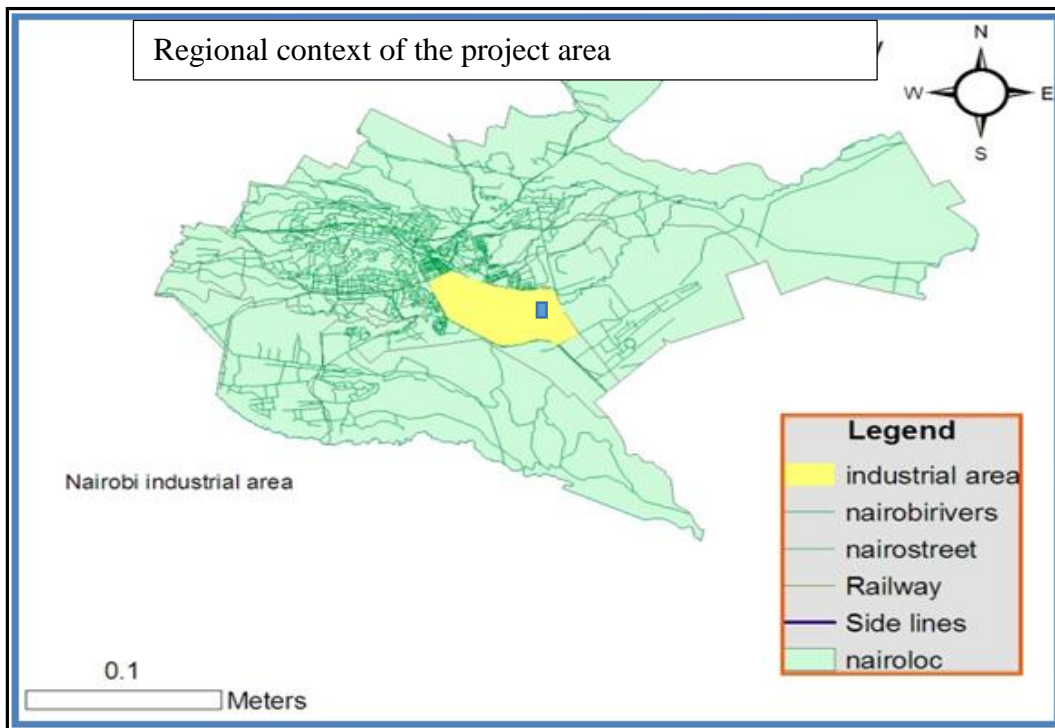
This chapter articulates on the physical location of the project area in the context of regional, sub regional and local. It also gives background information of the project area and the project. Further the chapter gives a discussion on the site analysis of the project area and the effects of such to the project. Moreover, the chapter explains the population and the socio economic characteristics of the project area and the existing land uses. Finally, the chapter states the institutional, legal and financial issues of the project area.

3.2 Background of the study area

3.2.1 Regional context of the project area

The project area, at its regional context, is located in Nairobi, the capital city of Kenya which lies 1.19° South of the Equator and 36.59° east of the Prime Meridian 70 (see map 1 below).

Map 1: Regional context of the project area



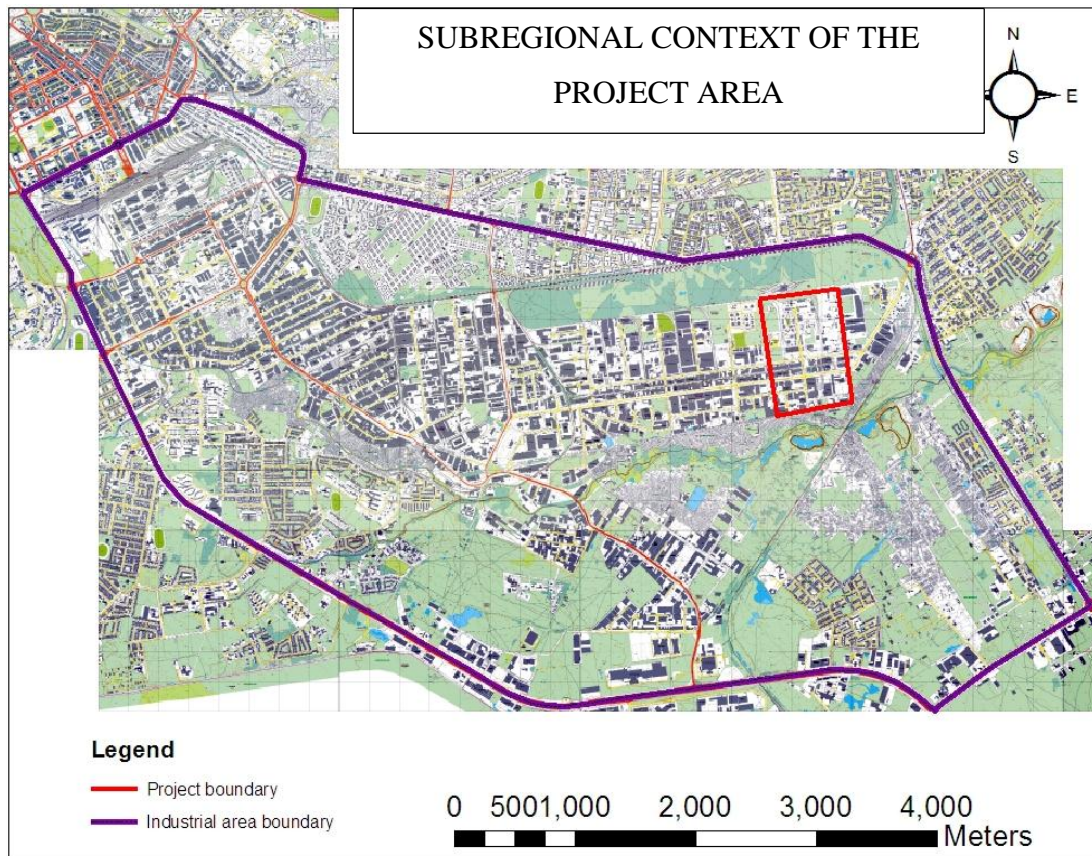
Source: Author 2014

3.2.2 Sub-regional context of the project area

Sub-regionally, the project area is located within the main Nairobi industrial area sub-region. The Nairobi industrial area lies on the South Eastern part of the city (see map 2). It borders the CBD of the city on the South Eastern part along the Haile Sellasie Avenue. The area is sandwiched between the city centre and the railway station to the west, to the north by the high-density residential areas with inclusion of Mbotela and Makadara and the Nairobi National Park to the South. The area lies at a Latitude of (118°0.000'S) and Longitude of (3649°59.880"E)

The project area which is in this case Wundanyi Road is located on the Eastern side of the Nairobi Industrial areas with an approximate of 6KM from the CBD of the city of Nairobi (see map 3). It lies in zone 9 of the city county of Nairobi referred to as the main industrial area. Within this zone, the plot coverage's and ground coverage's should be 300 and 80 respectively with minimum recommended development area being 0.05 hectares which should be on sewer.

Map 2: Sub regional context of the project area

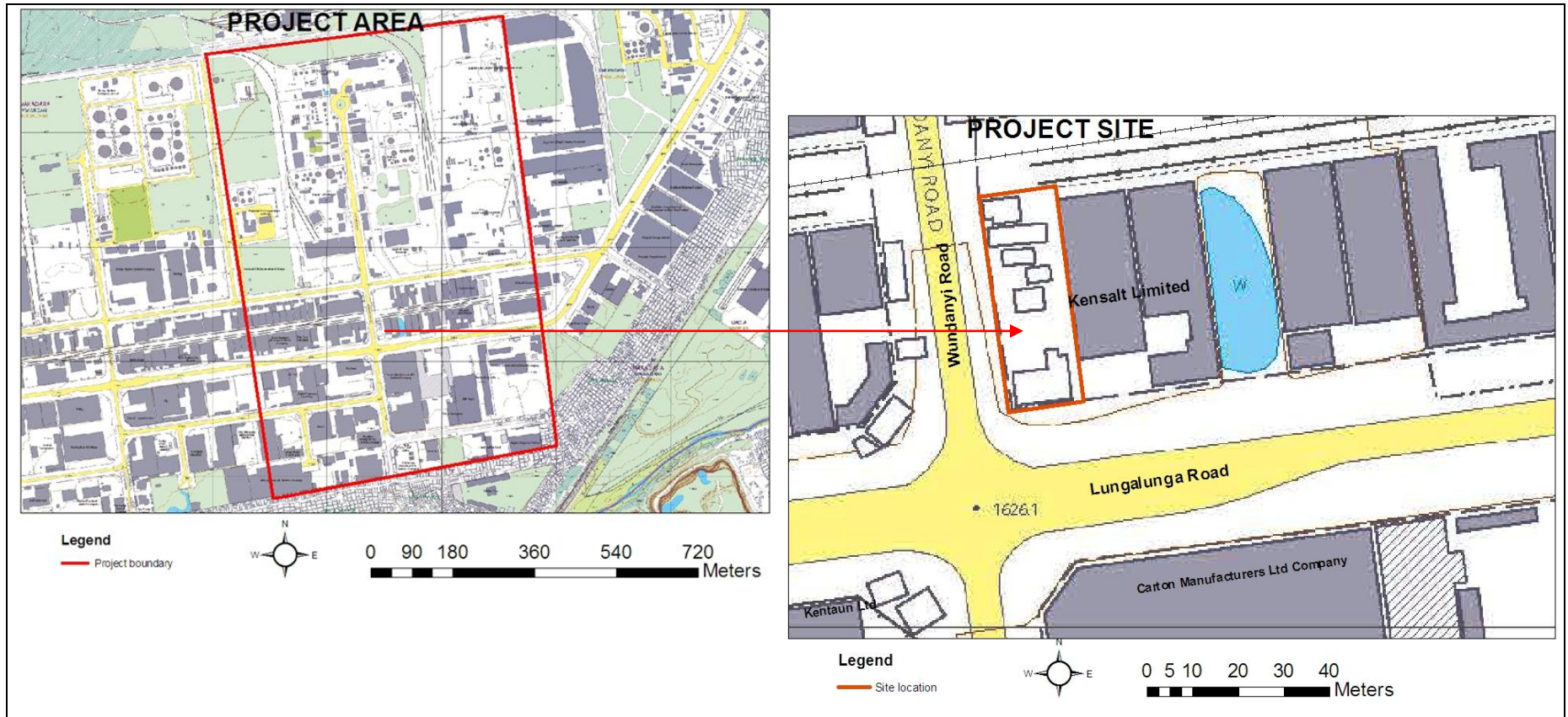


Source: Author 2014

3.2.3 Local context of the project area

The project site is specifically located in the Eastern side of Nairobi industrial area along Wundanyi road. It is located on approximate, 6km from the CBD of the city of Nairobi. The project site lies at the right angle of Wundanyi Road and Lungalunga road as illustrated in map 3. The food court shall be designed and planned for the site shown but shall be replicated in the cul-de sac on the northern side end of Wundanyi road. In addition to the Wundanyi road reserve, there shall be also 100m either side of Lungalunga road from its junction with Wundanyi road. In total the project area covers 647,023m² approximately.

Map 3: Local context of the project area



Source: Author 2014

3.3 History of the project area

Nairobi's origin dates back in 1889 after a British railroad camp and supply depot for the Uganda Railway was built. The town grew fast and by 1919, Nairobi became a municipality with a corporation and the initial circular boundary was changed to include some of the residential estates. It was at this period that an industrial zone was developed as a separate entity from the Central Business District.

The official planning of the Nairobi industrial area was done and revealed by the 1948 Nairobi master plan. By that time the size of the industrial area was about 960 hectares (9.6 km²) being the largest in East Africa. The provisions of the master plan for Nairobi industrial area included the following: industries dealing with bulky goods were located along the railway line, light industries were to be built in the area closer to the center, and a smaller strip for noxious industries was planned in a separated position in the east (see map 5 below). However, according to Prof. Jacques 2007, between 1948 and 1963, the city developed more or less on the same lines prescribed by the master plan that followed modernist separation of functions.

The plan also proposed that the great majority of workers should reside within a one-mile radius of the industrial area. Low-income areas to serve the industrial area with the required labour were, Kaloleni, Ofafa Jericho, and Makongeni. However, the space for these areas underestimated the expansion potential of the industrial area, and therefore need for more workers.

Currently, the Nairobi industrial area is the country's industrial hub. According to Fadamura 1991, the number of industries was about 635 in the 1991. By the year 1997, it had an approximation of 1300 (Osengo 1997) industries. This shows a great expansion in the number of industries which consequently leads to physical expansion of the area under industrial function. However, the number ought to have increased to date and is expected to increase in the future. Currently it occupies an approximate area of 2,655 Hectares (26.55 km²).

This increase in number of industries consequently led to increased number of workers. As a result, a lot of pressure was exerted to the existing socio-economic facilities formally planned for a small population. For instance, the existence of three formally planned food outlets of low capacity as ten customers, selling food at high prices making it unaffordable to the majority of the workers

who work on casual basis, has largely contributed to the mushrooming of the informal food outlets. This is what is currently faced along the Wundanyi road reserve.

It is worth noting that, during the pre-independence period, the industrial area was largely occupied by the whites and the Asians whose later was transferred to the then city council of Nairobi. During that time, the current eating areas (where the kiosks are located) fell under the formally planned areas. After independence, urbanization rates increased following the introduction of the freedom of movement. This aspect increased the supply of labour as compared to the demand by the industries which provided the bulk of the employment opportunities. Consequently, the urban economy was not able to march the increased urbanization rates and CCN failed to revise of planning of the area to accommodate the dynamics that came with the urbanization thus exclusive planning. With the inadequate of planning regulation and public health issues coupled with inefficient development control, the informal business became an avenue to the to the unemployed in a bid to earn their living in the city. This explains the increased growth and spread of informal foo kiosks along Wundanyi road.

3.4 Site analysis

3.4.1 Topography and slope characteristics

The topography of the project area and Nairobi industrial area in large can be described as gentle. It gently slopes from North West side to South East towards the Ngong River with a gradient of less than 1%. The altitude of the area changes from a height of 1628m high to 1624m. Due to its gentle slope, drainage is highly impeded and in some occasions it results to flooding. This suggests that storm water drainage channels should be constructed to drain the rain water and prevent it from stagnating in the project area. It is also important that the structures to be constructed be installed with good drainage systems. However, the topography can be described as good for construction of physical structures.

3.4.2 Geology and soils

The soils in the project area are generally cotton soils (Sombroek et al, 1980) which have developed on tertiary basic igneous rocks. The soils are imperfectly drained, deep, dark grey to black, firm, boulder and stony, crawling clay. Due to their poor drainage, they often lead to flooding. Since the soils are very weak to hold heavy buildings, excavations will be done to remove the weak soil for firm foundation of the structures.

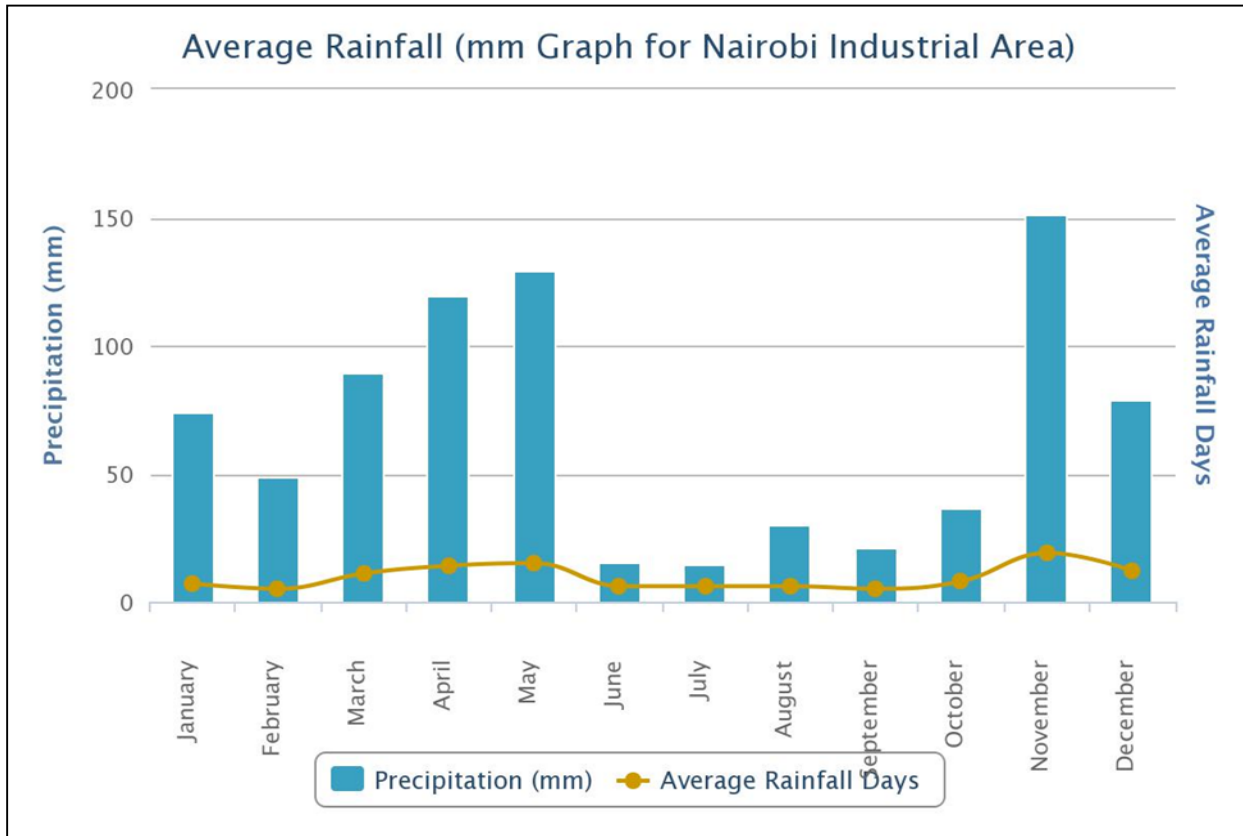
3.4.3 Hydrology

The project area is drained by the Ngong River that enters from the western side cutting across and leaving on the Eastern side. However, the river is highly polluted by wastes from the surrounding informal settlements, industries and other human activities like the food kiosks that have no designated place for disposing waste that finally finds itself into the river. In the year 2001, the river was described as the most polluted river in Kenya. The average volume of flow of the river is from 5 to 8 cusecs for 7 to 9 months of the year rising to peaks of 30 to 60 cusecs in April and May. This indicates that any drainage channels to be constructed should be able to hold the peak run off of 60 cusecs as well as the waste water that arises from the developments in the area.

3.4.4 Rainfall

The area receives on average 820 mm of rainfall annually. There are two rainy seasons, from February-March to the end of May (the "Long Rains"), and from mid-October to December and which sometime may extend to January (the "Short Rains") and is well distributed throughout the area as for the whole of Nairobi. The average rain days ranges from 100-115 (See chart 1 below). It is therefore important to note that rainwater harvesting to supplement the water supplied by the City County of Nairobi is one of the viable sources of water. However, this aspect is limited by contaminations of the rain water by smoke and the harmful gases released into the atmosphere by the industries. As a result, the water is always unfit for human consumption and thus the project does not indent to harvest water for human consumption.

Chart 1: Average rainfall for Nairobi industrial area

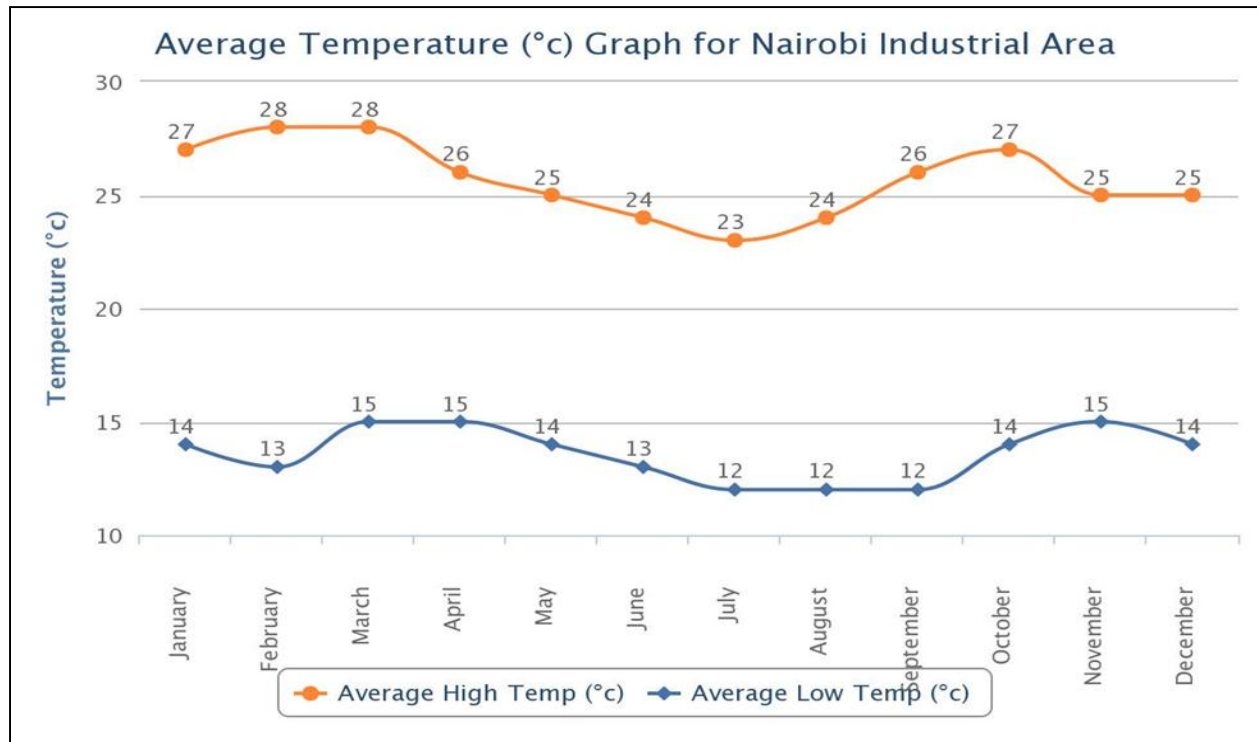


Source: <http://www.worldweatheronline.com/Nairobi-Industrial-Area-weather-averages/Nairobi-Area/KE.aspx>

3.4.5 Temperature

The temperatures of the project area vary greatly. The annual average high temperatures are 27.8°C while the annual average low temperatures are 13.6 ° C. This translates to mean annually temperatures of 20 ° C. The hottest months are January, February, March and October with their highest temperatures ranging from 27° C -28°C while the coolest months include; July, August and September having average temperatures of 12.20 ° C (see chart 2 below). This indicates that the proposed buildings materials, the designs and the building materials should be able to withstand the hot and the cold temperatures thus making the room temperatures neither too cold nor too hot for the comfort of the occupants.

Chart 2: Nairobi industrial area average temperatures



Source: <http://www.worldweatheronline.com/Nairobi-Industrial-Area-weather-averages/Nairobi-Area/KE.aspx>

3.4.6 Humidity

The humidity of the project area generally ranges from a daily maximum of 88% in May to daily minimum of 35% in the humidity is relatively maximum is experienced in the months of during the morning hours while the minimum relative humidity occurs on March, April, May, October November and December i.e. during the rainy months.

3.4.7 Prevailing wind

The wind near the ground is very predominantly easterly throughout the year, generally between North-east and east from October to April, and between east and south-east from May to September. The strongest winds occur during the dry season just prior to the "Long Rains" when speeds of 20 to 25 m.p.h. In relation to this project, the proposed buildings must be oriented in a way that they will be naturally aerated by the prevailing wind. Their alignment should also ensure that the wind path is not blocked to reduce the pressure that could be imparted by the wind to the structures. Sanitation facilities (toilets) and waste disposal site being components of this project

should be located on the leeward side of the food court to avoid bad smell being carried into the eating places by the wind.

3.4.8 Sunshine

Although the early mornings are often cloudy in Nairobi the sun nearly always breaks through by mid-morning and throughout the year there is an average of nearly 7 hours of bright sunshine per day which translates to 2555 hours a year; 30% more sunshine occurs in the afternoon than in the morning, so that westerly exposures receive more insolation than those facing east. This calls for strong roofing materials and building materials to be able to withstand the sunshine. For instance, buildings with iron sheets forming the roof and the walls attracts a lot of heating during the day. The designs of buildings within this project should also utilize natural lighting as one of the ways to reduce energy consumption. In addition, due to the increased number of sunshine hours in a day, adoption of solar panels to supplement electricity is also important as it is a cheap, clean and renewable energy. The direction of sunrise and sunset in the project area is predominantly south east and north west respectively.

3.4.9 Environment and Pollution

The environment of the project area can be described as one that is struggling with pollution issues. These pollution effects are highly attributed to the land uses within the area. It faces heavy pollution from smokes, harmful gases and oil spills (which caused fire outbreak leading to death of one hundred people with more than same number left with injuries together with loss of property in September 2011) originating from the industries, smoke from vehicles (especially the oil tankers which form the greater number of vehicles), and wastes from the informal kiosks are deposited near the kiosks and is never collected.

3.5 Population and socio-economic characteristics

3.5.1 Population characteristics

From the research project it was established that the number of informal food vending kiosks in the study area was thirty in number. Most of the food kiosks had two to three employees assisting the owners. The total number of customers served per day in each kiosk ranged from 20-50 in number translating to an average of 35 customers per kiosk per day per kiosk. as a result, the researcher was able to calculate the average number of customers served translating to one

thousand and fifty persons served per day (30x35). This was inclusion of breakfast, lunch and supper. However, it was established that lunch time had the highest number of customers served accounting to 80 per cent of the total number served per day. Out of the customers served by the food kiosks, the research found that more than three quarters of them were industrial workers. The number of customers served is expected to increase in the future due to the increased urbanization rates coupled with increased poverty, unemployment and underemployment rates..

However, there existed a data gap of the total census of all the casual employees and the number of industries within the study area.

It is therefore necessary for the proposals of this project to be able to accommodate the total number of persons including the vendors, their employees and their customers (industrial workers). For instance, in the case of the food court, it should be able to serve the customer supply by providing adequate sitting and eating space for the 1-2 hours of dedicated for lunch.

3.5.2 Socio-economic characteristics

The informal food vending outlets in the project area are operated by mainly women aged between 20-30 years with more than 60% of them having more than three children as it was observed from the research project. The research project also found that these operators had low education levels with majority of them having acquired only primary education. A majority of the operators have been operating within the kiosks for more than 3 years.

The customers to the food kiosks were mainly men with majority aged between 20-30 years. Most of them were industrial workers who majorly worked on casual basis. It illustrated their low income status that they cited as the main reason of eating from the informal food kiosks.

3.6 Land size and tenure

The project area measures 651m by 960m translating to an area of 624960m². However, the actual site location of the food court measures 47m by 17m transforming to an area of 799m². The plot is relatively bigger as compared to the surrounding plots which measures 44m by 15m. This could be attributed to the fact that it is a corner plot. The project area developed part is owned under leasehold by the industrialists from the Nairobi City County. The proposed site for the location of the food court is also owned by the NCC.

3.7 Land use analysis

The project area lies under zone 9 known as the main industrial area. Zone regulations indicate that ground coverage's of 80 and plot ratios of 300 should be observed. The permissible developments are only industries or godowns which should be developed on a minimum land size of 0.05 hectares which should be on sewer.

3.7.1 Industrial function

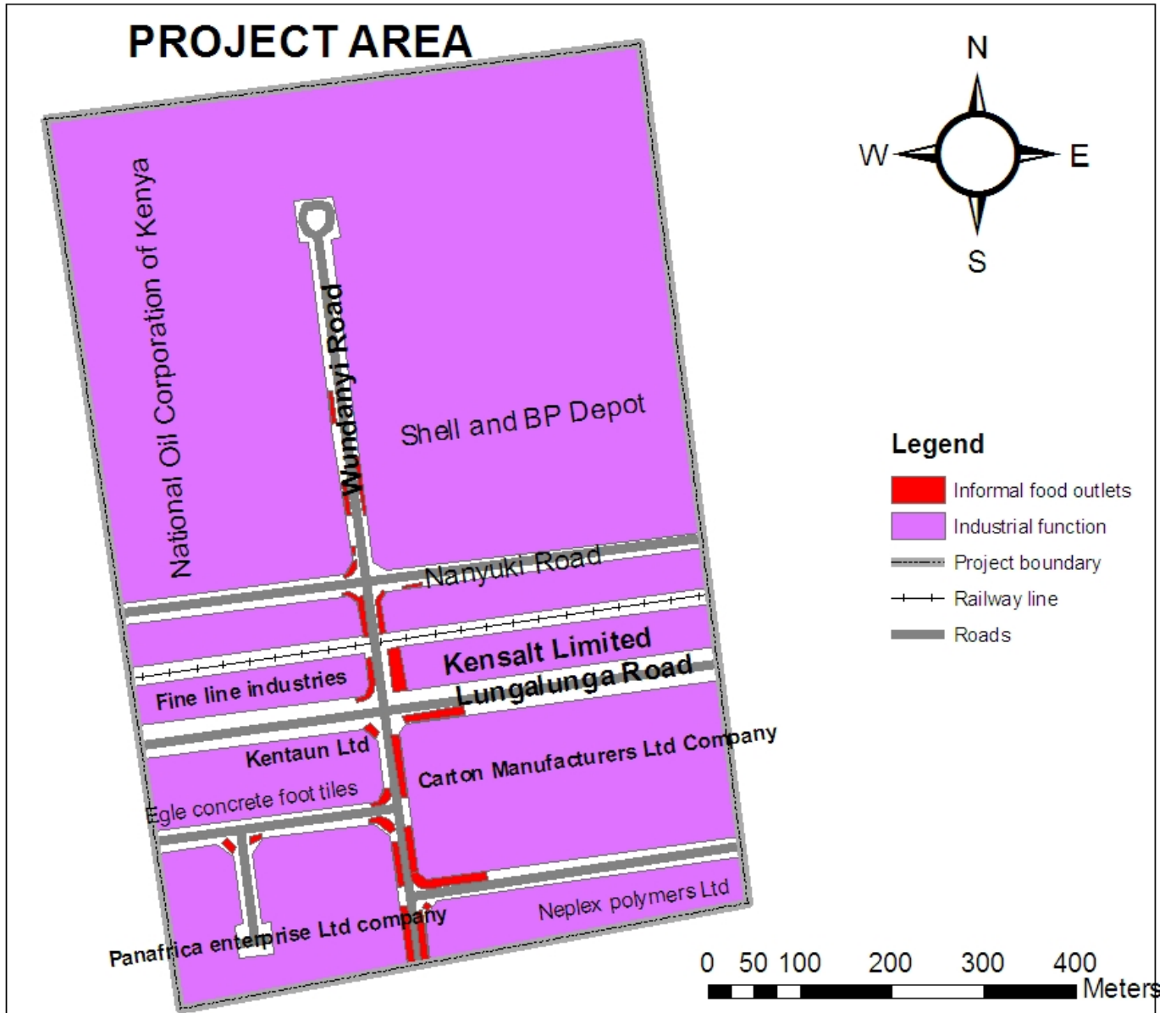
Industrial function forms the main land use within the project area. The project area is surrounded by industries on either side. Examples of these industries include; petroleum depots (AGIP, total, shell and BP) in the northern part of the study area, Carton manufacturers Limited Company, Panafrica Enterprise Limited Company on the southern part of the study among others. Industry covers more than 90 per cent of the project area (see map 4 below) since it is the only planned land use. The building typologies are mainly godowns as shown in the plate 9

Plate 9: Industrial building typologies



Source: Author 2014

Map 4: Land uses within the project area



Source: Author 2014

3.7.2 Transportation

Transportation in the project area can be analyzed in the three main roads i.e. Wundanyi road, Lungalunga and Nanyuki road. The three roads are

Wundanyi road reserve is 25m with a road carriageway of 7m wide and 700m long. It cuts across Lungalunga and Nanyuki Road. However its road reserve is highly encroached by street vendors which are mainly composed of informal food vendors and street parking by the petroleum tankers and transit trucks. This aspect has reduced its width to less than 10m including the carriageway. Currently, the road has no pedestrian pathway as the space that could be used by pedestrians is under use by the street vendors. Due to this, pedestrians have been forced to use carriageway, (see plate 10 below) an aspect which has led to a lot of conflicts along the road. The road is tarmacked but due to absence of storm drainage system, rain water and waste water from the informal food kiosks is drained through the carriageway which has led to many potholes making the road to deteriorate faster. This is clearly shown in plate 11 below.

Lungalunga road is the main collector road in the study area that connects traffic to enterprise road. It has a road reserve of 35m and the section within the study area is 650m long. The road has a carriageway of 8m wide. However, along its junction with Wundanyi road the carriageway is wider. Its road reserve has also been highly encroached by street vendors and informal parking (street parking) by the petroleum tankers. The road has two bust stops, one on the eastern side of its junction with Wundanyi road and the other on the western side. In its section that lies within the project area, Lungalunga road does not have storm water drainage channels and pedestrian pathway on either side of the road. The street is better landscaped than the other roads in the study area.

Nanyuki road is also a collector road within the project area. It collects traffic and drains it to Lungalunga road. The road has a road reserve of 24m wide and a carriageway of 7m wide stretching for 670m within the study area. Like the other two roads discussed above, Nanyuki road do not have pedestrian pathways and drainage channels. However, constructions have begun from its junction with Lungalunga road on the eastern side of the project area which is providing for drainage and pedestrian facilities.

The study area is crossed by a railway line. However, it is not functional. It has a way leave of 20m wide. The way leave is currently used as a waste dumping site by the street vendors and which takes more than two months to be collected by NCC. Thus contributes to the filthiness of the place.

Plate 10: Traffic flow along Wundanyi road



Encroachments

Source: Author 2014

Plate 11: Drainage along Wundanyi road



Source: Author 2014

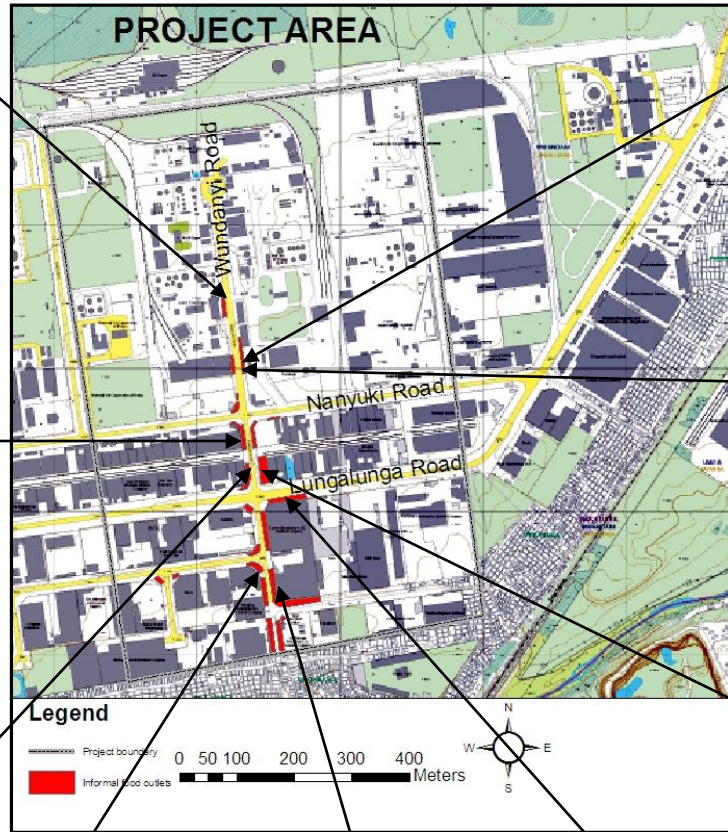
3.7.3 Commercial land uses

The commercial activities within the project area are informal food kiosk, cloth vendors, automobile spares part vendors, Mpesa recreation facilities (pool tables and dirts) and restaurants as shown in map 5. More than 80 per cent of these activities were not planned for and thus take place along the road reserves except the restaurants. The informal food forms the main land uses along the road reserves. They are built of substandard building materials and operate in unhygienic conditions. The kiosks are poorly ventilated characterized with a lot of heat especially during the midday an aspect that makes the places uncomfortable to eat from. However, there exist different types of the kiosks; some operate on open space while others have structures, some are roofed but with different building materials while others are not. Besides, they generate a lot of traffic especially during lunch hours into the road carriageway since there are no pedestrian pathways. Wundanyi road is the most affected in terms of encroachments by informal food outlets. As a result, a lot of congestion is experienced on the road. Therefore, the project must ensure that the increased encroachments by the informal food kiosks is reduced by providing a lasting alternative.

It is worth noting that the businesses have not been approved and thus the vendors don't have permits to operate their businesses. This informs the absence of public utilities and other support facilities to help them carry out their activities.

Plate 12: Commercial land uses within the project area

Commercial land uses in the project area



Source: Author 2014

3.7.4 Public utilities and Public Purpose

3.7.4.1 Electricity lines

Electricity is basically aligned along the main roads i.e. Lungalunga, Wundanyi and Nanyuki road. The electricity has been supplied to the various industries within the study area. It has been informally tapped into the informal food outlets. It was evident from the research project that the recommended way leaves have not been observed.

3.7.4.2 Street lighting

Street lighting is only evident along Lungalunga road which is the main road in the study area. However, most of them are fault something that has contributed to insecurity especially during the night. The project should ensure that the fault street lights are replaced and new one provided to ensure lighting in the streets.

3.7.4.3 Sanitation facilities

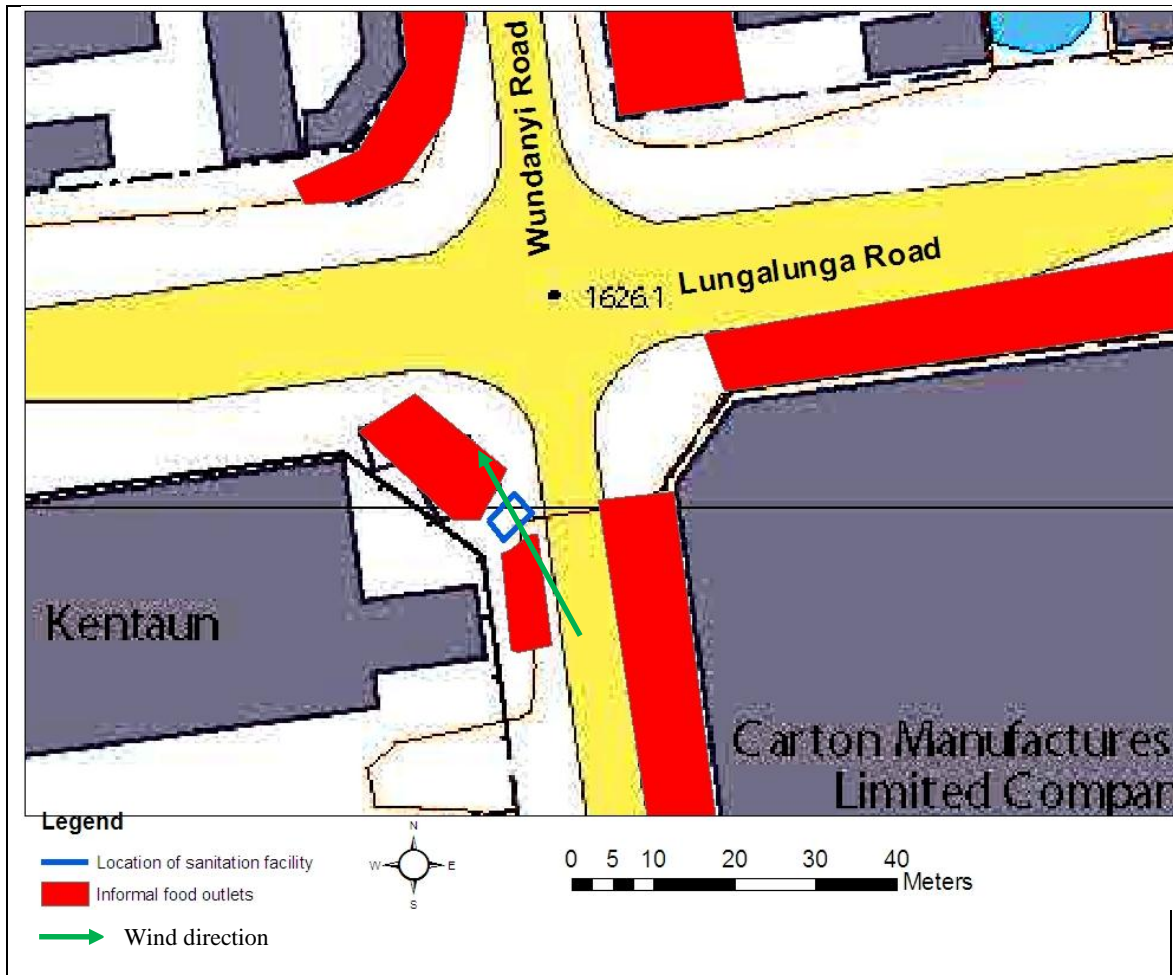
There exist only two public toilets provided by private a company that serves the close to one thousand people served by the informal food kiosks. As shown by plate 13 below the facilities are located very close to the food kiosks and to the road contributing to the bad smell experienced by the vendors and their customers. This is further illustrated by map 6, showing its mapped location in relation to the food kiosks and to the road. For the use of the facility one has to pay Ksh. 5.

Plate 13: Sanitation facilities



Source: Author 2014

Map 5: Sanitation facility location



Source: Author 2014

3.7.4.4 Waste disposal sites

There exists no designated waste disposal site within the project area. The railway line reserve is used for that purpose (see plate 14 below). It is therefore important for the project to consider the provision of waste management systems within the project area for efficient functioning of the main component i.e. food court.

Plate 14: Waste disposal site



Source: Author 2014

3.7.4.5 Drainage channels

Wundanyi Road has no storm drainage channels as shown in plate 15 below. It is also evident as illustrated in plate 16 that Lungalunga road has no drainage channels. During the rainy season, the place floods leading to water stagnating on the road. This consequently leads to accessibility problem into the food kiosks and poses movement problems to the pedestrians. Waste water from the food kiosks flows on the road carriage stagnating on it. The stagnant water on the road causes the road to deteriorate faster. It is therefore necessary for the project to provide adequate drainage channels within the study area to reduce its adverse effects to the roads

Plate 15: Drainage along Wundanyi road



Source: Author 2014

Plate 16: Drainage along Lungalunga road



Source: Author 2014

3.8 Institutional, Legal and Financial Issues of the Project Area

Institutions are key players that explains the existing situation along Wundanyi road reserve. These institutions include; NCC, KURA, NLC and NEMA. They are under a legal mandate guided by different statutes to ensure sustainable development takes place. Some of these statutes include

Constitution of Kenya (2010), the County Government Act (2012), the Urban Areas and Cities Act (2011), the Physical Planning Act (1996) EMCA, National Land Commission Act, National Land Policy among others. However, due to their negligence, poor implementation of the statutes and overseeing their mandates informal food vending outlets have mushroomed encroaching Wundanyi road reserve. Conflicts between the legal guidelines of each institution mandated by the different act of parliament has greatly contributed to the existing situation along Wundanyi road. It is therefore necessary to harmonize the legal documents guiding the different institutions in their function to reduce the conflicts currently experienced. This harmonization should also ensure the formation of a board, compost of representatives from every institution for efficient development control and management.

Plate 17: Existing land use in the upper side of railway



Source: Author 2014

Plate 18: Existing land uses on the lower side of railway line



3.9 Opportunities and strengths

Opportunities

- i. Adequate supply of customers from the industrial workers, neighbouring informal settlements and pedestrians
- ii. Spacious land enough to accommodate a spacious food court.
- iii. Lungalunga road being a collector road offers an opportunity for easy transportation of raw materials for the vendors
- iv. The will of the vendors in accommodating change
- v. The physical and climatic conditions are fit for the construction of the food court

Strengths

- i. Existence of well laid legal statutes that guides different institutions in performing their duties to ensure the effective and efficient operations of the food court
- ii. Existence of institutions with the mandate of implementing the food court

CHAPTER FOUR

PROJECT PLANNING DESIGN AND IMPLEMENTATION

4.1 Overview

As outlined in chapter one of this report, the objectives of this project will be achieved through a series of stages. The stages are as outlined in the subsequent sections of this chapter.

4.2. Planning and Design of the Project

4.2.1 Expected Outputs and Outcomes of the Development Projects

i. Expected outputs

The expected outcome is primarily a spatial plan in form of design drawings guiding the development of the area. It involves a site layout plan, elevations and cross-sections of the proposed developments. These have been presented in form of schematic drawings. The plans and designs will be accompanied by project's implementation strategies and schedules, project's monitoring and evaluation framework and institutional framework for project's implementation.

ii. Expected outcomes

Acting as tool for development control, the plan (output) is expected to lead to efficient development control along Wundanyi road. This will lead to increased compatibility of developments within the project area and reduce the encroachments currently experienced. As a result, the working environments for food vendors and their customers will be improved. In addition, quality and adequate support facilities.

4.2.2 Development of the Spatial Plan

1. Problem identification

This was done through a research project exercise. The research established that the key problems in the study area included; Non review of plans/exclusive planning, inefficient development control, existence of many players and low economic status of urban areas.

2. Goals and objective setting

After the identification of the problems within the study area the researcher formulated four policy recommendations to address the problems. The recommendations included the following;

1. Inclusive planning
2. Regular revision/ update of development plans
3. Efficient and adequate development control
4. Harmonization of involved institutions

All the recommendations were evaluated in a bid to come up with the most appealing one that would respond largely to the problems stated. As a result, Inclusive planning was chosen for implementation due to its increased potential to address the main issues within the study area. This formed the ultimate goal of this project. To ensure its effective implementation, the following objectives were formulated.

1. To create awareness to the people in the project area on the need for inclusive planning
2. To identify and acquire site for inclusive planning
3. To conduct a site inventory and analysis
4. To plan and design the components of the inclusive plan for implementation
5. To provide a development project framework of implementation and monitoring for the inclusive plan.

3. Data collection and analysis

This was done largely under objectives 1, 2 and 3 as stated above. It involved creating awareness to the members of the public within the project area especially the food vendors, industrial workers and industrialists. This was mainly done to get their on whether they welcomed the idea of planning the area and providing them with formal food outlet inform of a food court. After acceptance by the plan consumers, information on site acquisition of the specific site for construction of the food court was sought. Later, after acquiring the site analysis was done on the suitability of the land to accommodate the food court.

4. Synthesis

Synthesis was basically done to understand the causes and effects of the problem identified to the environment and to the public. A land suitability was also done to establish the effects of the physical and climatic attributes of the area to the proposed developments.

5. Alternative strategy formulation

Three intervention measures were formulated. They included; regularization, centralized and decentralized models. Regularization occurs when a situation is given minimal planning attention in an effort to address the main issues facing a place. On the other hand, centralized model refers to the act of concentrating development in one place for ease access by all the potential consumers. This model suggests the planning and designing for one food court which shall be located at one place within the project area. In contrast of the centralized model, decentralized model involves the planning and location of food outlets at different strategic areas for ease access and equality in distribution of resources which will also reduce the effects of congestion.

6. Choice of the preferred alternative

The above models were evaluated using two different evaluation techniques which include; goal achievement matrix and cost benefit matrix. It was established after evaluation that the decentralized model formed the best alternative strategy and thus was adopted.

7. Plan preparation stages

The plan preparation involved three main stages. It started with the preparation of a bubble diagram which involved tentatively allocating space to different functions within the project area. This gave way to the formulation of a concept design. Within each space that was allocated different functions/land uses, a preliminary design of each function was done, these included; a food court, recreation facility and a security house together with landscaping of the area. Finally, the preliminary designs were perfected and the final plan was prepared.

8. Implementation

Implementation schedule to guide the implementation of the prepared plan and the achievement of the ultimate goals of the project was formulated. The schedule illustrates in relation to the objectives the actions/activities to be done, phasing, the time required, the relevant actors and the indicators of success.

9. Monitoring and evaluation

This formed the last step in the development of the project. It involved the stating of the objectives of monitoring and evaluation the guidelines of implementation. In addition, the site/environmental management plan was also formulated.

4.3 Site planning and design process stages

The project adopted the conventional planning and design process. The process encompassed the following stages:

Phase 1: Research and Analysis

This was done through a research project exercise under the topic- Implications of locating informal food vending outlets in Nairobi industrial area, Wundanyi road. The research established that the key problems in the study area included; Non review of plans/exclusive planning, inefficient development control, existence of many players and low economic status of urban areas. These were arrived at after analyzing the symptoms that manifested themselves in the study area and the planning impacts of their root cause.

The researcher sought to give planning recommendations to the planning issues within the study area. As a result, inclusive planning, regular review/update of planning, efficient and adequate development control, regular revision/ update of development plans and harmonization of involved institutions was arrived at as the main recommendations. Furthermore, these recommendations were evaluated in a bid to come up with the best alternative recommendation to permanently address all the issues facing Wundanyi road reserve. After evaluation, inclusive planning with the main component being a food court was arrived at and was chosen for implementation in the development project thus forming the title of this project. The recommendation was justified in that it was found to adequately address the issues of the study area as opposed to the other three.

Phase 2: Program Development

Program development was done to act as a guide to the designer in accomplishing due tasks. The was as shown below;

THE DESIGN PROGRAM

Goal statement

Planning for a food court along Wundanyi Road, Nairobi industrial area.

Objectives

- 1) To create awareness to the people in the project area on the need for inclusive planning
- 2) To identify and acquire site for inclusive planning
- 3) To conduct a site inventory and analysis
- 4) To plan and design the components of the inclusive plan for implementation
- 5) To provide a development project framework of implementation and monitoring for the inclusive plan.

Program elements

Food court (main component)

- Adequate capacity to accommodate the customer supply
- Recreation facilities
- Support facilities; Waste disposal site/facilities, fire extinguishers, sanitation facilities

For both Wundanyi and Lungalunga road

- Lanes marks
- Drainage channels
- Landscaping
- Pedestrian walkways
- Electricity lines
- Street lighting

Others

- A zebra cross on both Wundanyi and Lungalunga road.
- Maintenance of Wundanyi road
- Expansion of Wundanyi road carriageway from 7m to 12m wide to increase its capacity. This is because it is a collector road which already holds the standards for an access road.

Assumptions of the planning and design process

The planning and design process assumes that;

1. The indicated process of development of the spatial plan will be followed to the later.
2. Efficient and effective implementation of the programs of the project will lead to a permanent solution to the current planning issues facing Wundanyi road reserve.

Phase 3: Synthesis (Design Phase)

This phase entails a series of stages. First, the formulation of a conceptual design which involves coming up with functional diagrams to explore the relationship between the program elements and other activities land uses within the project area. This is followed by preliminary design translating each program element into a physical component, suggesting basic form, size, and materials to be used. Finally, a site plan is designed giving the precise form, location size and indication of materials to be used for the construction of the proposed elements.

4.4 Current land use project area

Table 7: Current land use

Land use		Area (m ²)	Percentage (%)
Total project area		649,703	100
Industrial function		542,408	83.4
Transportation (the area also accounts for the street activities which are operated along the road reserves, public purpose and public utilities)	Railway	13291	2.0
	Wundanyi road	16800	2.6
	Lungalunga Road	23400	3.6
	Nanyuki road	16080	2.5
Total land remaining		37724	5.9

Source: Author 2014

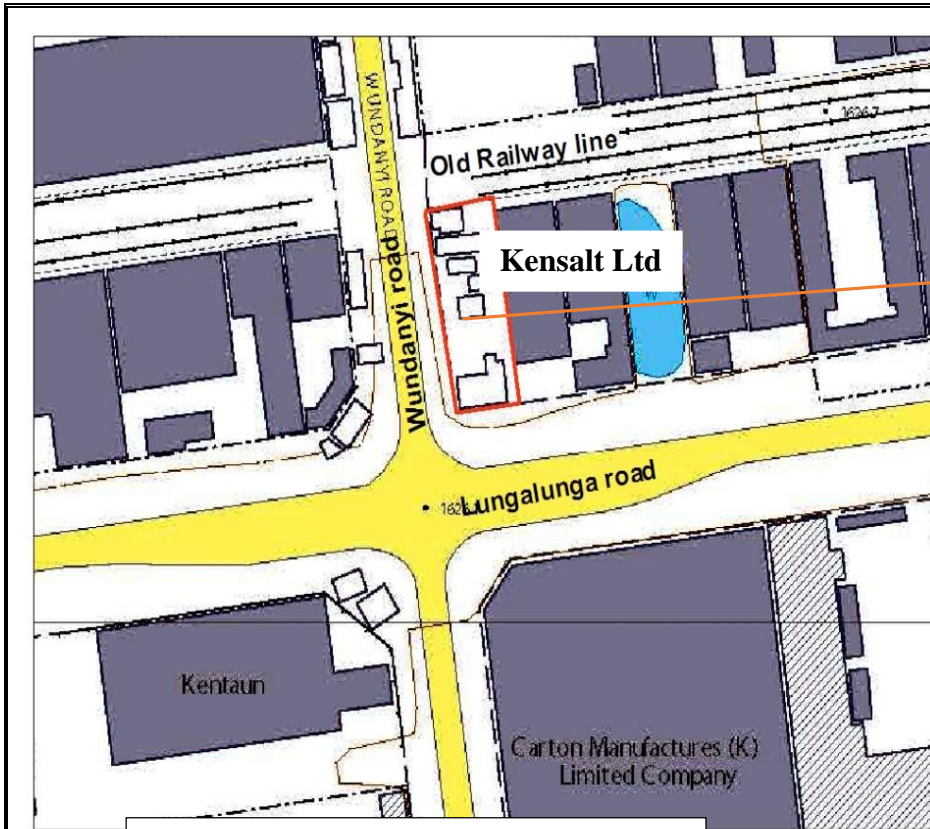
Current use of project/food court site

As shown in the plate 19 below the project site/food court site area is mainly used by informal food trading activities and sometimes used as a parking yard. It is located in on the right angle of Wundanyi-Lungalunga junction on the North-eastern side of the junction and opposite Carton

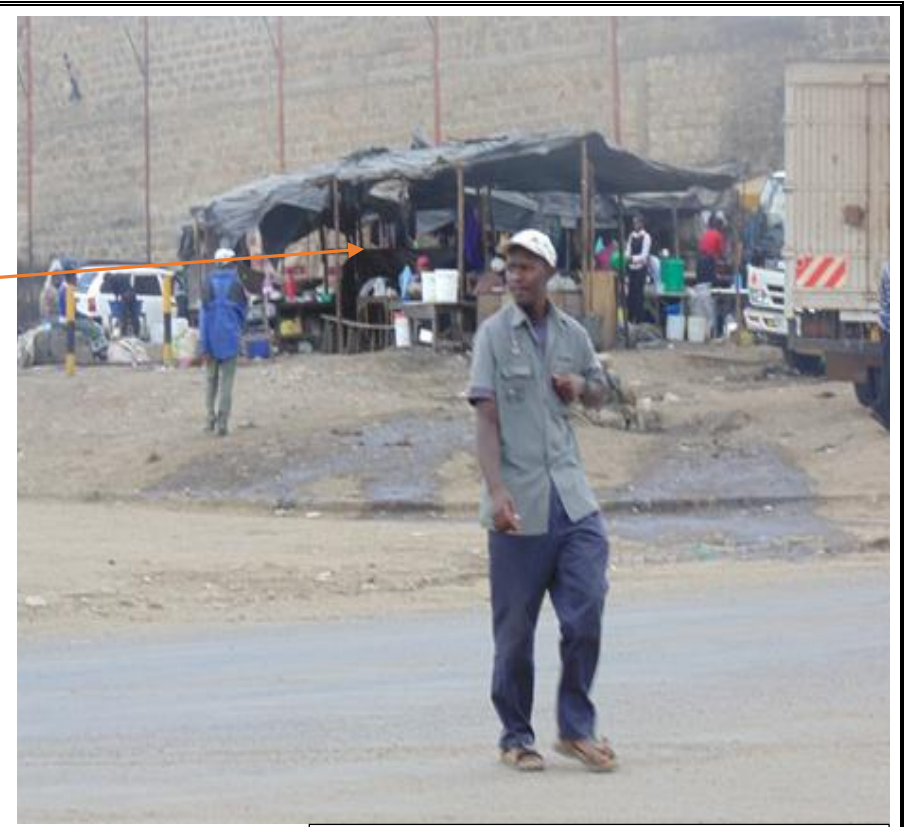
Manufacturers (K) Limited Company. On the northern side, it borders the old railway line reserve (see map 10 below). The site covers an area of 804.95 Square Meters. On the cul-de sac where the designed food court is to be replicated, currently is under no use, but some flowers which are poorly maintained have been planned.

Map 6: Project/food court site area

Plate 19: Project/food court site current use



Source: Author 2014



Source: Author 2014

4.5 Land suitability analysis

The project proposes the demolition of the existing informal food kiosks in the project site to create adequate space for the food court and its accompanying activities. The exact place for the location for the food court is approximately 799m². In relation to the size of the proposed which is 428 m² the land available can be described as suitable for the development. The project also proposes for expansion of Lungalunga road from 7m to 12m wide. Lungalunga road reserve is 36m wide, more than the standard size of 18m. It is however not encroached like Wundanyi road reserve, making it easier to acquire the site for construction purposes. The roads reserve (both Wundanyi and Lunagalunga) offers enough space for landscaping and construction of footpaths. The two are to be 1m and 2m wide respectively. The road reserves are also wide be enough to accommodate the two elements i.e. landscaping and footpaths.

Land budget

Table 8: Land budget

Land use	Area(m ²)
Landscaping and footpaths and provision of utilities	15378
Food court	428
Expansion of Lungalunga road	7920
Total	24093

Source: Author 2014

4.6 Design of alternatives

4.6.1 Regularization of the existing informal food kiosks

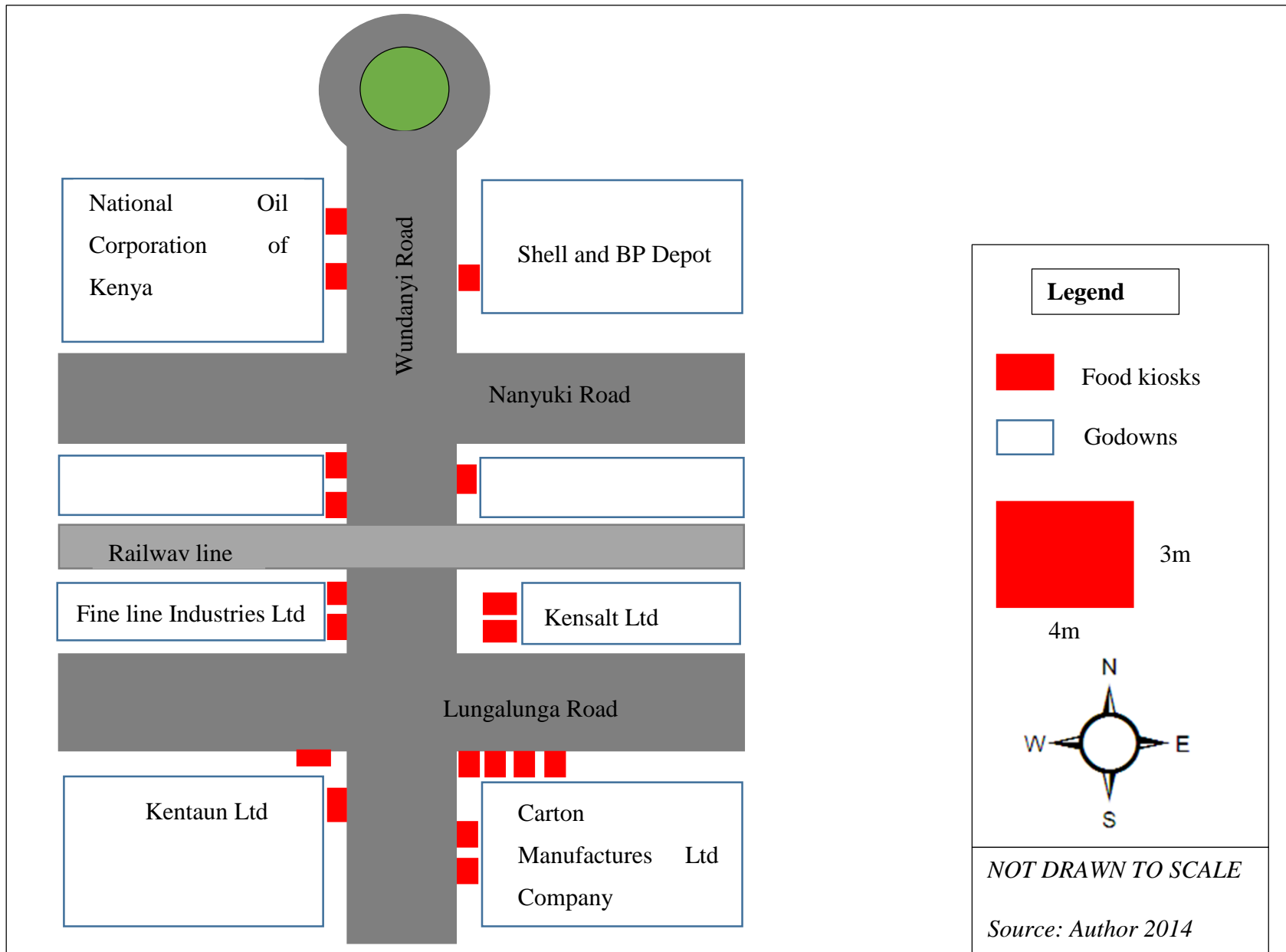
²Regularization refers to the act of changing a situation or system so that it obeys laws or is based on reason. In relation to the informal food vending outlets, it would refer to the slight modification/minimal intervention of the informal food kiosks. This would involve the modification of the kiosk sizes, changing their locations and provision of approvals to the existing food kiosks. In addition, regularization will also involve the provision of permits and issuing of licenses to the vendors operating in the food kiosks. Moreover, support facilities like water and sanitation and electricity. This will ultimately change the perception of street vendors as illegal

² <http://dictionary.cambridge.org/dictionary/british/regularize>

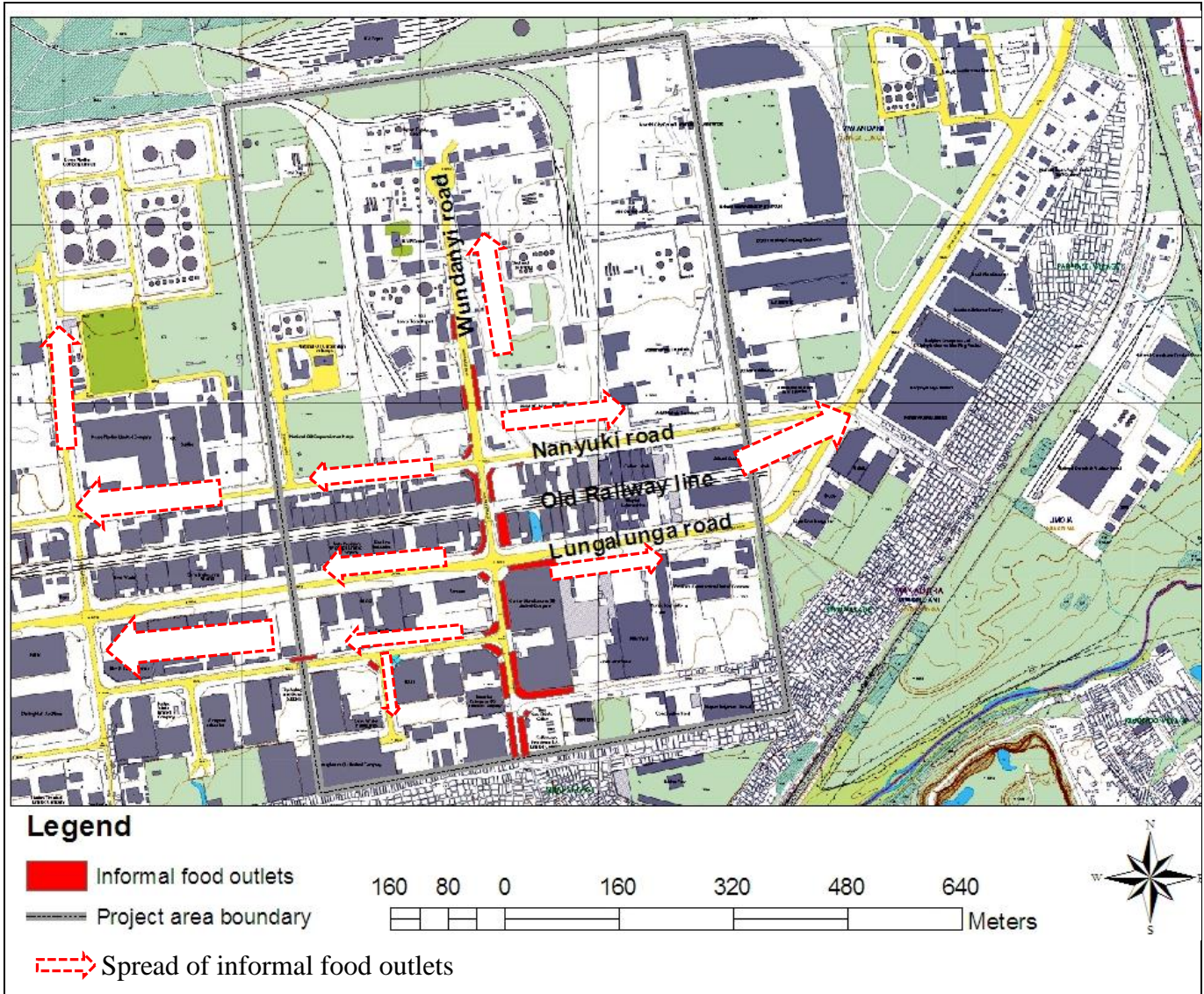
entities, encroachers on public space, and a source of unsightly nuisance by NCC field inspectors. In addition, the persistent harassments to the vendors by threatening them and confiscating their merchandise would be minimized. The spatial arrangement of the kiosks will be as illustrated in figure 5 below.

However, the existing situation will remain and the core planning issues of exclusiveness, inefficient development control, low economic status of the urban areas and the existence of conflicting statutes guiding different institutions directly related to the use and the management of road reserves would not be fully addressed. Due to the inefficient development control by NCC there are high prospects of increased encroachments into the road reserve and use of substandard materials. Map 11 illustrates the how the informal food kiosks will spread if the alternative is adopted for implementation. As a result, the space available for use by pedestrians will all be put into use by the street vendors. Consequently, the pedestrians will be forced to walk along the road carriage way leading to conflicts with the motorized traffic which could sometimes cause accidents. Due to their unplanned nature, the provision of support facilities will be compounded with difficulties.

Figure 5: Regularization model design plan



Map 7: Spread of informal food outlets



Source: Author 2014

4.6.2 Centralized model

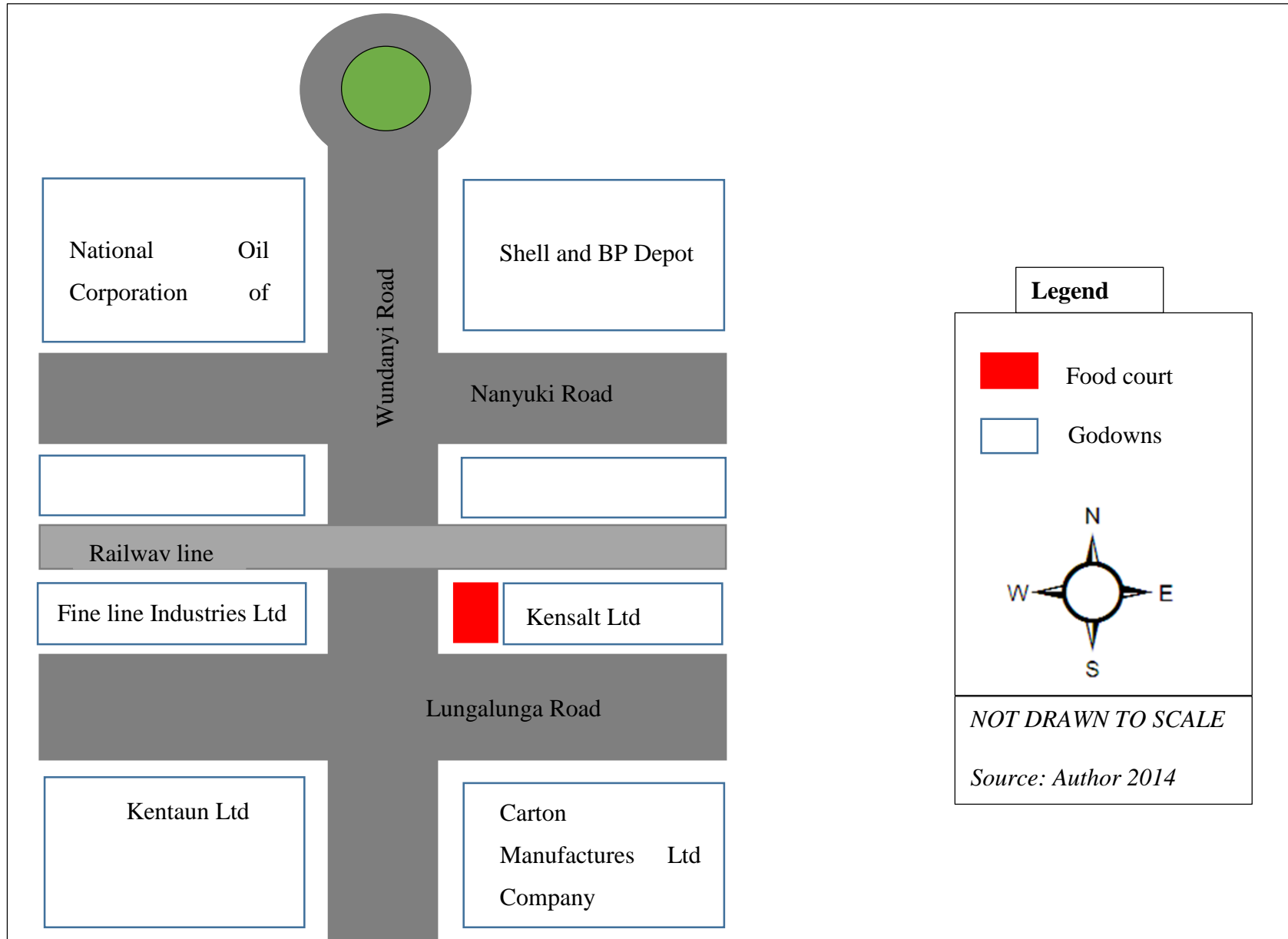
Centralized model in the context of Wundanyi road in Nairobi industrial area would assume concentrating all the food kiosks/outlets in one place. The strategic place of concentration needs to be chosen. To the chosen site, planning intervention measures are carried out for implementation. This would include redesigning the kiosks, recommending the best building materials, provision of support facilities and other related activities.

Design

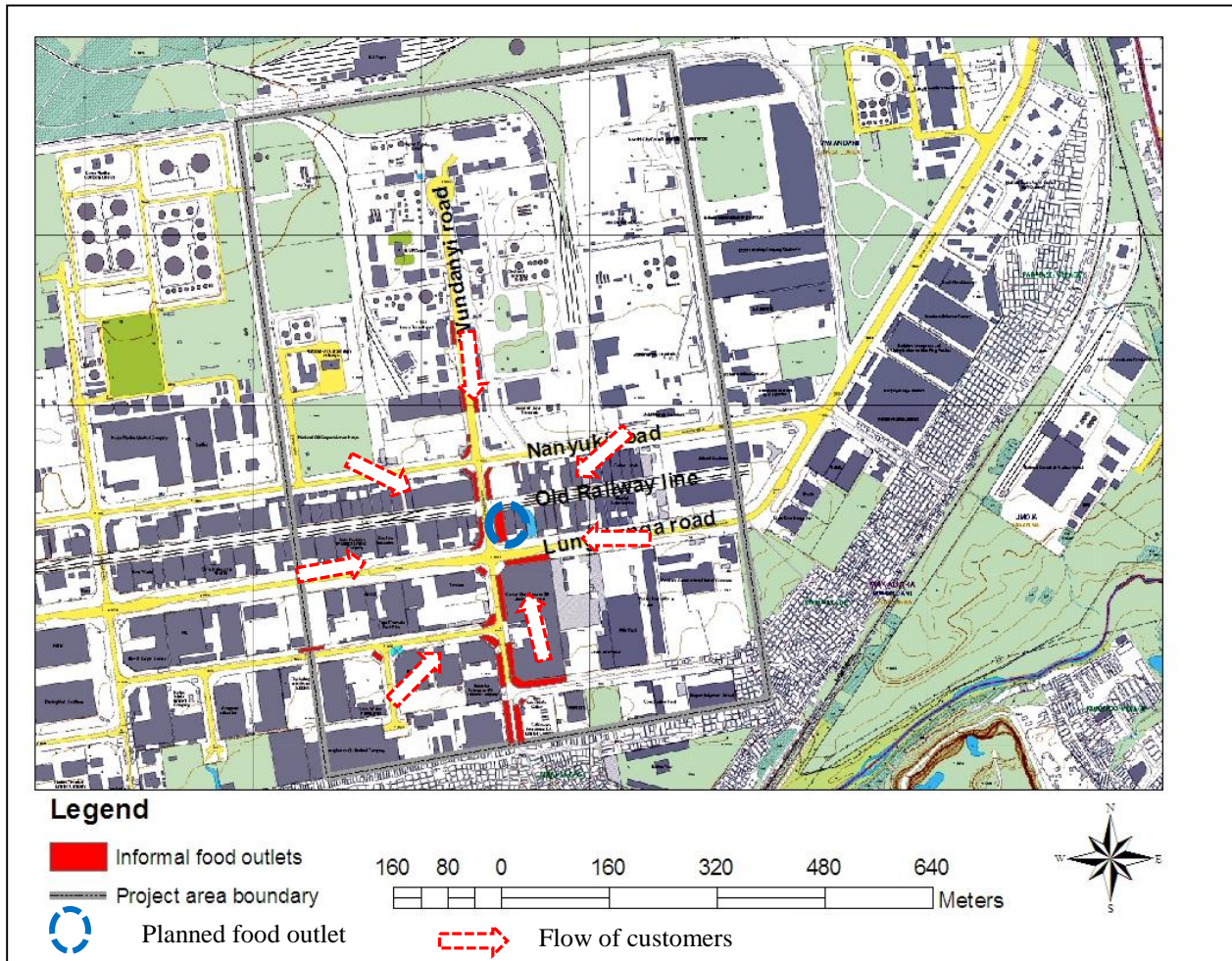
The first phase of this alternative would be the identification of suitable site for implementation of the centralized food outlets. The area to be chosen should be centrally located for equitable access by the potential customers. This will be followed by preparation of appropriate plans for implementation in the chosen site. After the implementation, relocation exercise of the street vendors will be done to occupy the newly constructed operating points. To those who will resist to operate in their current place will then be forcefully evicted. This will then be followed by complete rehabilitation of Wundanyi road back to its normal state. This exercise will include repairing the potholes on the roads, providing pedestrian walkways and landscaping the road. Its plan design is illustrated below in figure 6.

This alternative is however noted not to respond to all the issues along Wundanyi road. For instance, the model will lead to congestion of facilities and service in one central point. Map 12 illustrates how customer flow will be in the event the alternative is adopted for implementation. This will lead to increased congestion since all the customers will be served from the same place. As a result, there will be a lot of conflicts between the motorized and the non-motorized traffic. In addition, Wundanyi road neighbourhood is already built up making it difficult to get huge tracts of land for this project.

Figure 6: Centralized model design plan



Map 8: Effects of centralized model



Source: Author 2014

4.6.3 Decentralized model

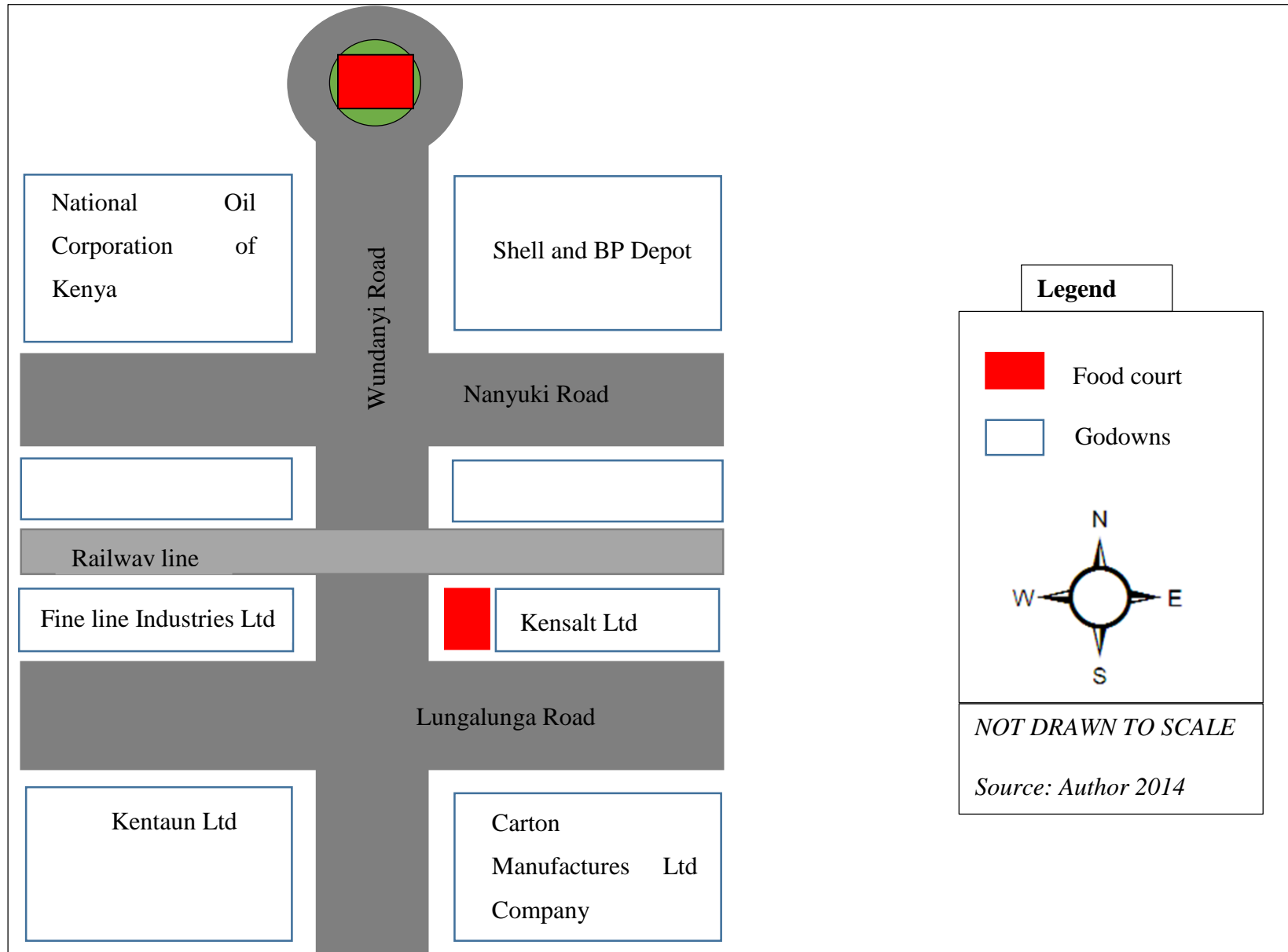
In contrast to the centralized model, this model assumes that the current situation in Wundanyi road and the project area at large has some smaller pieces of developable land. It is in those pieces of land that these food outlets would be distributed. In this case, instead of having one large strategic piece of land where vendors would locate their premises, this model will adopt the concept of a food court which will be located in different sites. The spread of activities on a much wider scale will prevent the congestion caused by concentration of activities and promote equitable distribution and access to facilities and services by the public.

Design

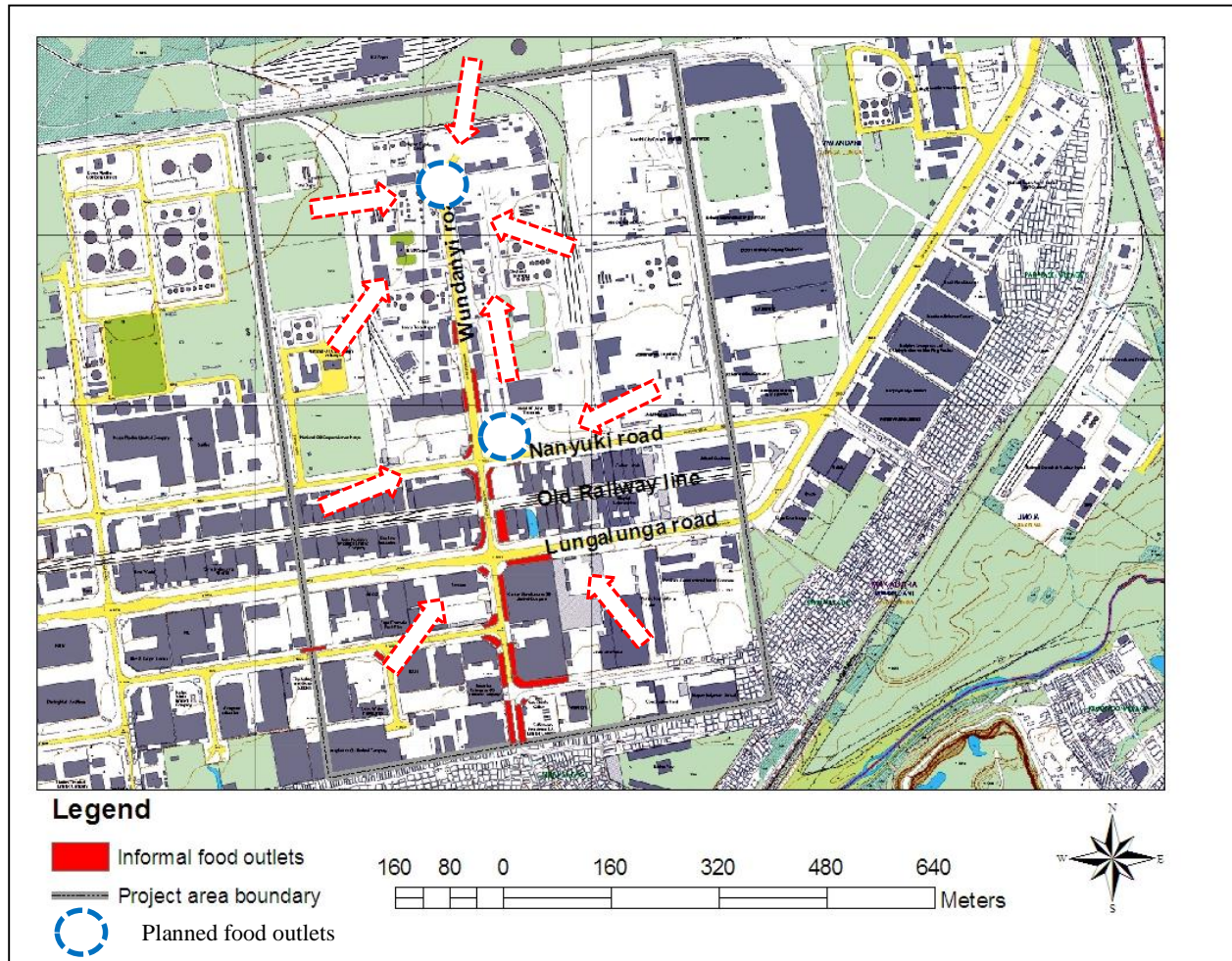
The first phase of this model will involve creating awareness to the consumers of the plan on the introduction of a food court. After the idea has been accepted, identifying of the strategic and suitable points for the location of the food outlet shall follow. This will be followed by the acquisition of such sites and appropriate food court plans prepared for implementation. The areas chosen for implementation of the food courts should show compatibility of land use for efficient operation of the plan. After its implementation, different vendors will be allocated different sites for their operation but can also be given the opportunity to choose their preferred areas of operation. Finally, Wundanyi road will completely be rehabilitated back to its normal state. This exercise will include repairing the potholes on the roads, providing pedestrian walkways and landscaping the road. Its design and the chosen areas of implementation are shown in figure7.

Unlike the centralized model, the decentralized model advocates for equitable distribution of facilities and services over the whole project area. This aspect reduces congestion that would result from centralization of food outlets (see map 13 below). The idea of a food court also reduces the number of food kiosks without interfering with the income of the vendors and the food consumers. In addition, the model gives the vendors a choice as to where they would want to operate from.

Figure 7: Centralized model design plan



Map 9: Effects of decentralized model



Source: Author 2014

4.7 Evaluation of the alternatives

- **Criteria for selection of alternatives**

The criteria for selecting of the best alternative to adopt for implementation will be determined on how each addresses the below main planning issues identified during the research project.

- ✚ Non review of plans/exclusive planning
- ✚ Inefficient development control
- ✚ Existence of many players
- ✚ Low economic status of urban areas

The evaluation will also consider to what extent an alternative addresses the following selected symptoms of the above planning issues.

- Congestion
- Compatibility of land use
- Aesthetics
- Distribution and quality of support facilities
- Time and costs of implementation
- Use of standard materials

4.8 Appraisal techniques

To identify the preferred alternative, two techniques were used which included cost benefit analysis/matrix and goal achievement matrix.

1. Cost benefit matrix

Cost benefit matrix involves a list of all the benefits/ strengths accrued by an alternative against its disadvantages/ weaknesses. The alternative which emerges out with many benefits against its weaknesses is therefore considered as the best.

After evaluation, and as shown in table 9 below, it was evident that the decentralized model yielded more benefits as compared to the other two. It also had the least weaknesses/ disadvantages as compared to nil intervention and centralized models. It was therefore concluded that decentralized model was the most viable alternative.

Table 9: Cost benefit matrix

Alternative	Benefits	Weaknesses
Regularization	Very cheap in terms of financial costs	<ul style="list-style-type: none"> • Non review of development plans thus no guidelines for development control • Continued conflicts between institutions on the use and management of road reserves <p>Some of the symptoms that will continue manifesting within Wundanyi road reserve. Includes;</p> <ul style="list-style-type: none"> • Increased conflicts between NCC and food vendors • Continuous degradation of the environment • Increased congestion along Wundanyi road • Increased pressure on the existing facilities making them deteriorate faster • Poor aesthetics • Poor working environments • Continuous mushrooming and haphazard location of informal food outlets
Centralized model	<ul style="list-style-type: none"> • A plan to guide development will be produced • Institutions will also be harmonized by allocating them different functions • It will lead to improved aesthetics • Improved quality of support facilities • Economical in terms of time for implementation 	<ul style="list-style-type: none"> • Activities will be concentrated in one place leading to congestion • It represents inequality in distribution of facilities and services • Requires large tracts of land for efficient operationalization which is currently unavailable in the project area • Increases the need to set up informal food outlets in sections not served by the centrally located food outlet
Decentralized model	<ul style="list-style-type: none"> • A plan will be generated to guide development control • Institutions will also be harmonized by allocating them different functions • Results to equitable distribution of quality facilities and services • Leads to improved aesthetics • Reduced incompatibility of land uses • Reduced conflicts between NCC and street vendors • Improved working environments • Increased investments by the vendors since they will have the security 	<ul style="list-style-type: none"> • Expensive in its implementation • Requires more time as compared to the centralized for it to be fully implemented since it contains many elements

Source: Author 2014

2. Goal achievement matrix

Goal achievement matrix involved the construction of a cross tabulation matrix that indicated the achievement of certain goals considered critical for the success of the development project. The achievement of a goal was given a score of 1 (one) whereas a value of 0 (zero) was given for failure to achieve a certain goal. The main assumption is that all goals carried the same weight in terms of significance. Finally, a column was introduced to sum up the scores of each alternative. The alternative with the highest score is assumed to be the most viable one. These are represented in form of a table as shown below.

Table 10: Goal achievement matrix

Alternative	Goals							score
	Reduced congestion	Compatible land uses	Economic advantage	Improved aesthetics	No encroachments	Captures vendors and consumers aspirations	Well distributed facilities and services	
Regularization	0	0	1	0	0	0	0	1
Centralized model	0	1	1	1	0	0	0	2
Decentralized model	1	1	1	1	1	1	1	7

Source: Author 2014

From the table 10 above, it is evident that decentralized model was found to achieve all the goals that this project is intended to achieve with a score of 7. This was followed by the centralized model which had a score of 2 (achieving two goals) and the last was regularization achieving only one goal of the project.

- **Preferred model**

From the analyses done, it was noted that though it is the most expensive model to implement and operationalize, decentralized model had scored the best in the cost benefit matrix and the goal achievement matrix with a great margin. It is therefore the most viable alternative for implementation in the project area. one food court will be designed and implemented in the location shown in figure 5 below and will be replicated in thhe cul-de sac other areas within the industrial area. however, it should be noted that in the cul-de sac cooking shall be strictly prohibited due to its close location to the oil and petroleum depots.

Figure 8: Conceptual design

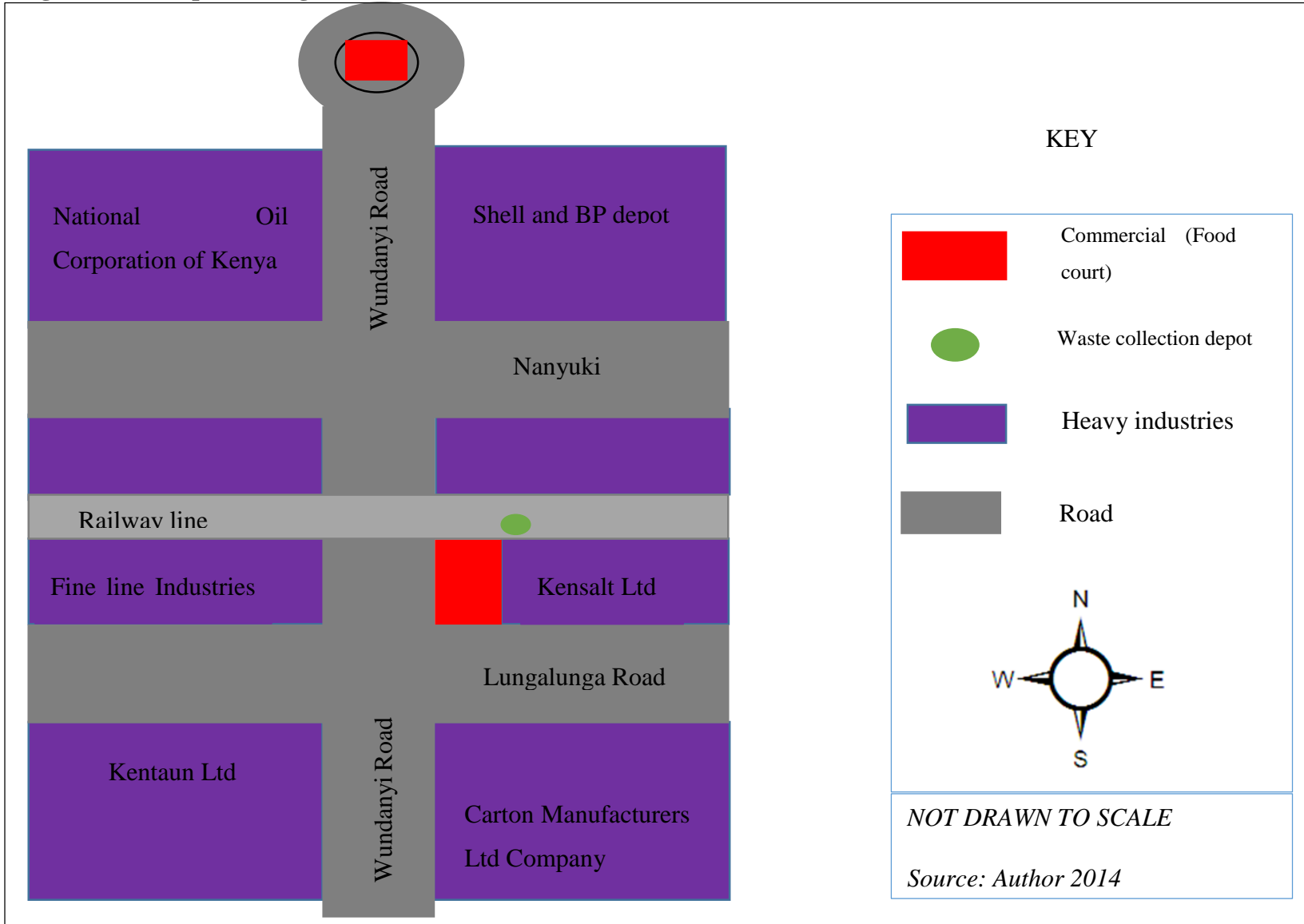


Figure 9: Site location plan

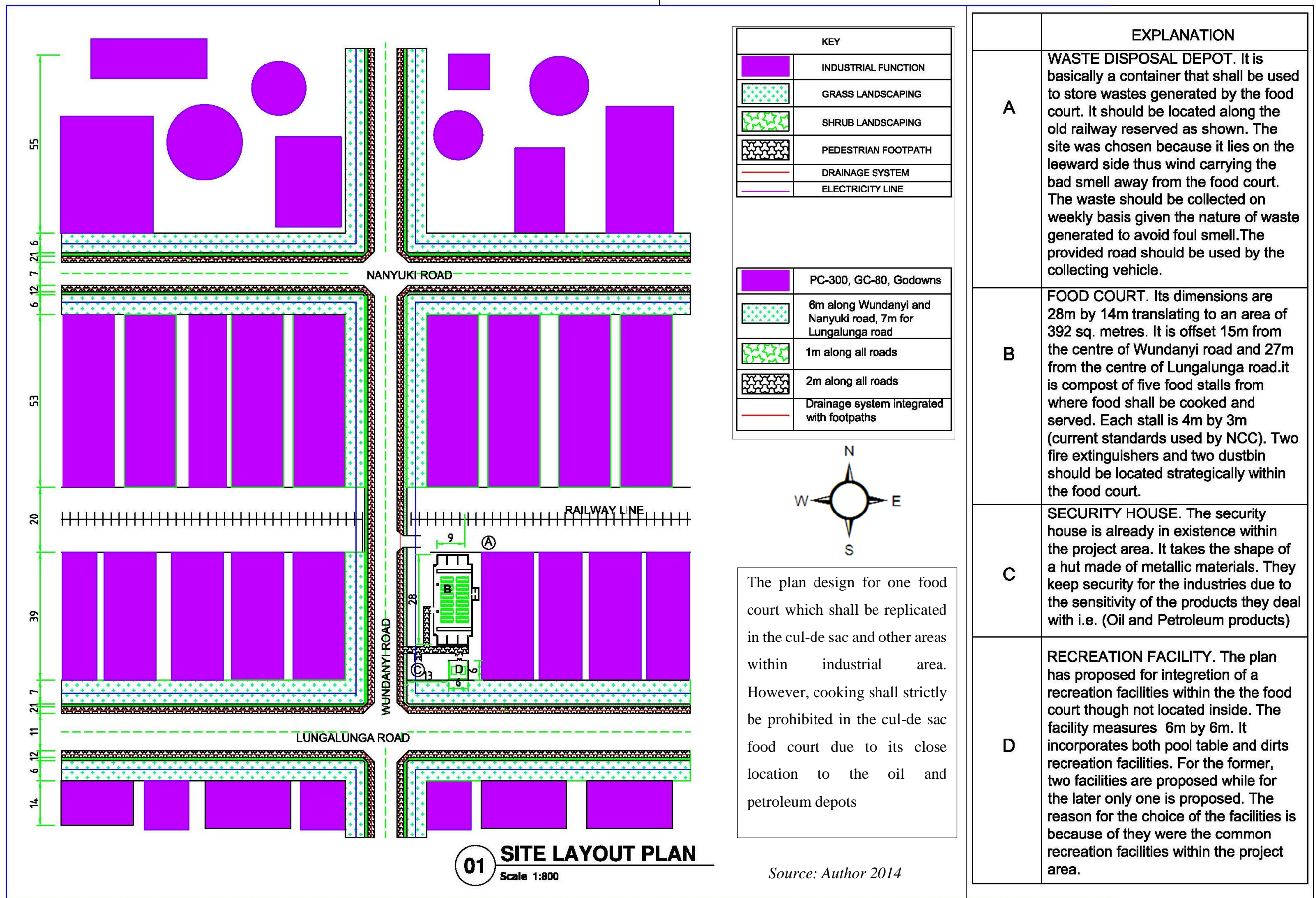


Figure 10: The food court plan in relation to the neighbourhood

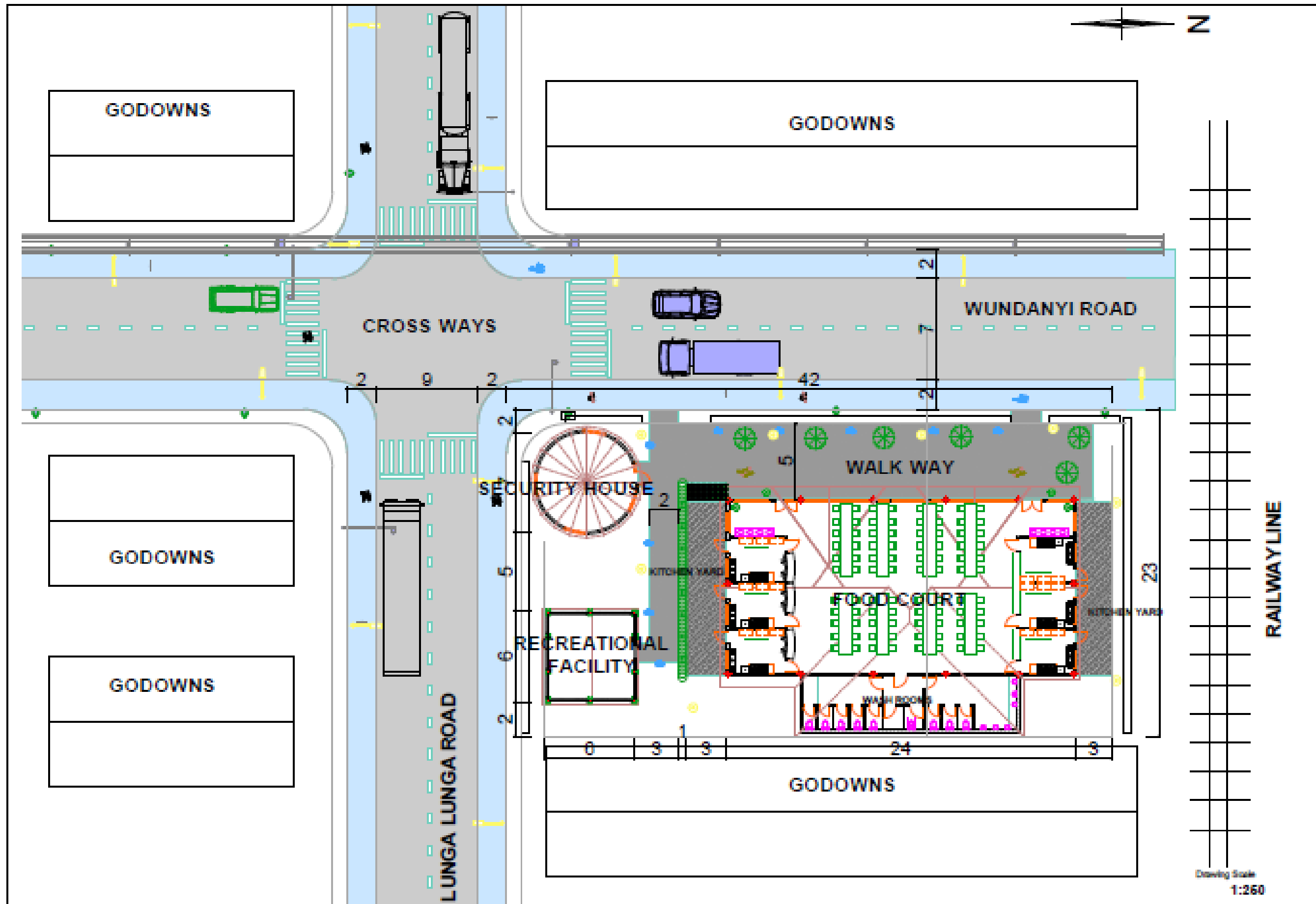


Figure 12: Side view of the proposed developments from Wundanyi road



Source: Author 2014

Figure 13: Bird's eye view of the whole area when developed



Source: Author 2014

Figure 14: Side elevation of the food court from Wundanyi-Lungalunga junction



Source: Author 2014

Figure 15: Street view from Southern side of the project site



Source: Author 2014

4.9 Implementation Schedule

The implementation matrix (table 11) below shows how the different objectives of this project would be achieved through the designs proposed in this chapter. The actions/ activities to be undertaken to achieve each objective have been listed, phased and time allocated for the achievement of each objective. The various actors to be involved as well as the indicators of success in each objective are also indicated.

Table 11: Project implementation matrix

Project objective	Action/ activity	Phasing	Time	Actor(s)	Indicators of success
To create awareness to the people in the project area on the need for inclusive planning	-Holding of seminars and workshops on importance of a food court -Advertisements through notices	I	1 Years	-NCC (city planning department) -KURA -Industrialists -Food vendors -Industrial workers	Project acceptance
To identify and acquire site for inclusive planning	-Applications to NCC for change of use from industrial to commercial -consultations with industrialists on the use of the land	II	6 months	-NCC (city planning department) -KURA -Industrialists -Food vendors	Approval on the use of such piece of land

To conduct a site inventory and analysis	<ul style="list-style-type: none"> -Site analysis -Land suitability analysis -Land budget formulation 	III	6 months	<ul style="list-style-type: none"> -NCC planners -Geologists -City engineers 	<ul style="list-style-type: none"> -Positive effects of the areas physical attributes to the project -Adequate land to accommodate all the components of the project -Recommendations on the designs of the food court and other activities accompanying the project
To plan and design the components of the inclusive plan for implementation	<p>-Preparation of a food court plan (Designing a food court, pedestrian walkways, landscaping element, drainage channels, expansion of Lungalunga road, and other support facilities)</p> <p>-Preparation EIA to NEMA</p> <p>-Construction and implementation of the designed elements of the project</p>	IV	year	<ul style="list-style-type: none"> -NCC planners -Geologists -City engineers -KURA engineers 	<ul style="list-style-type: none"> -An inclusive food court plan which shall guide development within the project area and ensure all the problems are addressed -Better designed food outlets A go ahead from NEMA through issuing of a certificate of approval -Well functioning Wundanyi road and neighbourhoods

Source: Author 2014

Table 12: Project costing and resource requirements

Project activity	Cost (Ksh)
Awareness creation and advertisements	1,500,000
Land acquisition costs	2,000,000
Landscaping	3,000,000
Food court construction	6,000,000
Installation of fire extinguishers	1,000,000
Distribution of bins	100,000
Expansion of Lungalunga road and maintenance of Wundanyi road	400,000,000
Provision of public utilities (electricity, waste collection depot, street light among others)	50,000,000
Total	463,500,000

Source: Author 2014

Table 13: Project Implementation schedule

Activity	2014				2015			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Designing the project								
Environmental Impact Assessment								
Project design adjustment and approval								
Project bidding and nomination of contractors								
Construction								
Monitoring and evaluation								

Source: Author 2014

Q1 = First Quarter of the year; Q2 = Second Quarter of the year; Q3 = Third Quarter of the year; Q4 = Fourth Quarter of the year

CHAPTER FIVE: MONITORING AND EVALUATION

5.1 Monitoring and evaluation stages in the implementation of project

Monitoring and evaluation is an essential tool assessing the quality and impacts of this project in relation to its objectives. The process begins immediately the implementation exercise is initiated. It ensures that the project runs as planned and the targeted goals are achieved within the stipulated time and resources available. It involves the review of the progress, identification of areas of deviations and making adjustments before moving into the next step.

5.1.1 Evaluation approach

The state and progress of the project will be evaluated in three different stages. These stages include; mid-term evaluation, terminal evaluation and post implementation evaluations.

a) Mid-term evaluations

Mid-term evaluations will involve monitoring the progress of the project at each phase. This is to ensure that the project runs in conformity with the desired targets and in case of any deviations, adjustments are made.

b) Terminal evaluation

Terminal evaluations are conducted at the end of each phase during implementation of the project. It enables the stakeholders to measure the level of goal achievement by the project at the end of each phase. Before entering into the next phase, any undesirable outcomes are adjusted.

c) Post implementation evaluation

Post implementation evaluation is undertaken after the completion of the project. This seeks to understand the effects and implications of the project to the food vendors, food consumers (industrial workers), pedestrians and the environment. The negative effects of the project are thus mitigated.

5.1.2 Objectives of monitoring and evaluation

The ultimate objective is to ensure that the plan is implemented up to the later following all the standards stated and making adjustments where necessary.

Other objectives includes;

1. To ensure that all the programs of the project are implemented as planned
2. To ensure efficient utilization of resources
3. To ensure community and stakeholder participation during the implementation of the project

5.2 Guidelines for the implementation process**1) Adoption and enforcement of planning standards**

It is important while monitoring a planning project to ensure that the stated planning standards are implemented. During implementation all the adopted planning standards should be cross-checked with the proposed ones. If any alterations, the project should be put to halt and evaluate the causes and then hold consultations on the way forward.

2) Stakeholder participation and involvement

Stakeholder involvement and participation also forms part of the guidelines for monitoring and evaluation. The NCC, KURA, industrialists, food vendors and industrial workers should be involved at every stage in monitoring. This ensures that the project from the starts is in satisfactory of each stakeholder's expectations and needs. If any issue emerges, consultations should be done among the stakeholders to see the way forward.

3) Reporting

Under this, reports shall be prepared constantly at each phase during the implementation of the project. The reports shall contain information on the state and progress of the project. It will also highlight areas which needs adjustments and that seem to have been misconstrued during the project design. These reports will be forwarded to the different stakeholders for documentation and evaluating and coming up with the required adjustments. Reporting is important as it keeps the stakeholders and the project on track.it is also a good tool for evaluation of progress.

4) Continuous consultative meetings

Stakeholder meetings should continuously be held throughout the process of implementation. The main function of these meetings would be to discuss the progress of the project and deliberating on the emerging issues.

5) Memorandum of understanding

All the institutions involved have to agree on the roles of each in the implementation of the project to avoid conflicts. Terms and conditions to be observed by each institution in their operations shall also be set to ensure successful implementation of the project.

5.3 Site /Environmental Management Plan

Table 14 Environmental Management Plan

Potential Environmental Impacts	Mitigation	Actors
Demolition of the informal food outlets during implementation of the project	-Provision of an alternative site for the displaced activities. -Phasing the implementation process to provide alternative route to pedestrians -Transporting the debris immediately not to interfere with the aesthetics	NCC KURA Contractor
Loss of vegetation especially on the Northern side of Wundanyi road and along Lungalunga road	-A clear environmental impact assessment should be carried out to identify the species to be affected and possibilities of relocation -Replanting of trees and grass in the landscaping	NCC Contractor
Pollution -Noise pollution during construction -Air pollution from dust particles during construction	-Minimize noise and during the working hours -All works near Sinai residential area should be carried out during the day -develop standard operating procedures, schedules and supervision guidelines -Damp all the open and dry working surfaces	Contractor Workers NEMA NCC
Risks of injuries to pedestrians and workers	-Some workers to be directing traffic to prevent pedestrians from passing close to their equipment -Keep away from pedestrians all the equipment that may cause injuries -Avail first aid services to deal with emergencies	Contractor Workers NCC
Disruption of traffic especially when expanding Lungalunga road, constructing the pedestrian paths and repairing the potholes along Wundanyi road carriageway.	-some workers to be directing traffic -the repairing of potholes to be done during the night	Contractor Workers

Source: Author 2014

5.4 Conclusion

The main goal of this development project was to come up with functional food court plan which was geared to address the key planning issues identified in the project area through a research project prior to the development project. The project could be termed as a success as the goal has been achieved.

The project has also recommended on certain issues that has to be observed during the implementation of the project. Some of these includes the monitoring and implementation schedules and the environmental impact plan of which if not strictly observed the project may not up to standard.

Replication of the project into the different area within the Nairobi industrial area and the whole of Nairobi that are experiencing the same challenges is important.

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