

**COMMUNITY PARTICIPATION IN URBAN  
BROWNFIELD LANDS REGENERATION IN NAIROBI,  
KENYA**

**A THESIS SUBMITTED TO THE INSTITUTE OF  
GRADUATE STUDIES  
OF  
NEAR EAST UNIVERSITY**

**By  
EVANS KIMANI NJUNGE**

**In Partial Fulfilment of the Requirements for  
the Degree of Master in Science  
in  
Architecture**

**NICOSIA, 2021**

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A handwritten signature in blue ink, consisting of a stylized 'K' followed by a long, sweeping horizontal stroke.

Date: 20<sup>th</sup> January, 2021

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**To my Parents, Brother, Kate...**

## ABSTRACT

The engagement and participation of the community plays a vital and significant role in ensuring the successful regeneration of urban brownfield lands. The main purpose of this study is to try to understand the distinctive role the community involvement and participation plays in the effective regeneration of brownfield lands in Nairobi, Kenya. This research also intended to increase awareness to the importance of community participation in the execution of community development projects and to be specific to urban brownfield regeneration projects. The research applied a quantitative approach incorporating the use of a descriptive analytical design. The use of an online survey questionnaire (Google Forms), observations and case studies was employed to fulfill the study's objectives. The survey respondents were residents of Nairobi City who live near brownfield lands, as well as management personnel in charge of brownfield regeneration projects. Before the application and analysis of the user survey, a theoretical study was also undertaken in Nairobi, Kenya, on a variety of brownfield regeneration projects. The study also focused on a number of case studies from different countries that have actively incorporated community engagement and participation in their brownfield regeneration projects. Community participation is now increasingly being recognized as a crucial prerequisite for brownfield land regeneration development projects. In Nairobi, Kenya the strategy has not yet achieved much progress but still has a promising future ahead. There is a need to provide an elaborate community participation framework and mechanism that includes all stakeholders in initiatives dealing with brownfield lands regeneration, which will result in much improved project execution.

**Keywords:** Community participation; brownfield lands; urban regeneration; user survey; Nairobi, Kenya

## ÖZET

Halk katılımı ve desteği, kentsel kahverengi alanların başarılı bir şekilde yenilenmesini sağlamada hayati ve önemli bir rol oynar. Bu çalışmanın temel amacı, Kenya, Nairobi'deki kahverengi alanların etkili bir şekilde yenilenmesinde toplum katılımının ve desteğinin oynadığı ayırt edici rolü anlamaya çalışmaktır. Araştırma, analitik bir tasarımın kullanımını içeren nicel bir yaklaşım uygulamıştır. Bu amaçla çevrimiçi anket, gözlemleme yöntemi ve vaka çalışmaları kullanılmıştır. Ankete katılanlar, kentsel kahverengi alanlarda yaşayan Nairobi sakinleri ve kahverengi alan yenileme projelerinden sorumlu yönetim personeliydi. Kullanıcı anketinin uygulanmasından ve analizinden önce, çeşitli kahverengi alan yenileme projeleri üzerine Kenya, Nairobi'de teorik bir çalışma gerçekleştirildi. Çalışma aynı zamanda, kahverengi alan yenileme projelerine toplum katılımını aktif olarak dahil eden farklı ülkelerden bir dizi vaka incelemesine de odaklanmıştır. Toplum katılımı artık, kentsel kahverengi alan iyileştirme ve geliştirme projeleri için çok önemli bir ön koşul olarak kabul edilmektedir. Kenya, Nairobi'de söz konusu stratejiler henüz çok fazla ilerleme kaydetmemiştir, ancak hala umut verici bir gelecek var olduğu söylenebilir. Kentsel kahverengi alanların yenilenmesi ile ilgilenen tüm paydaşları içeren ayrıntılı bir halk katılımı çerçevesi ve mekanizması sağlanmasına ihtiyaç vardır, bu da çok daha etkili uygulamayla sonuçlanacaktır.

**Anahtar Kelimeler:** Halk katılımı; kahverengi alanlar; kentsel dönüşüm; kullanıcı anketi; Nairobi, Kenya



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## LIST OF ABBREVIATIONS

<b>CBD:</b>	Central Business District
<b>DPMO:</b>	Deputy Prime Minister's Office
<b>EPA:</b>	Environmental Protection Agency
<b>EU:</b>	European Union
<b>NaMSIP:</b>	Nairobi Metropolitan Service Improvement Project
<b>NCA:</b>	National Construction Authority
<b>NCC:</b>	Nairobi City County
<b>NEMA:</b>	National Environment Management Authority
<b>NGO:</b>	Non-Governmental Organization
<b>NIUDMP:</b>	Nairobi Integrated Urban Development Master Plan
<b>NMS:</b>	Nairobi Metropolitan Service
<b>PSV:</b>	Public Service Vehicle
<b>SD:</b>	Sustainable Development
<b>UK:</b>	United Kingdom
<b>UN:</b>	United Nations
<b>USA:</b>	United States of America



## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Background of the Study**

As a result of urbanization in countries, environmental degradation has become a huge and pressing concern affecting the heart of cities. These urban cores have seen a greater need for regeneration, ultimately in order to repurpose and restore these distinctive zones and properties on the basis of their value. However, these sites are considered to be a very significant asset in city centers, but are usually still occupied by very dilapidated buildings and facilities. The transformation that is taking place in cities over time is one of the main reasons for having such deteriorated sites within cities. These transformations, whether in the form of an economic standpoint or demographic shifts or social changes, have led to the emergence of diverse need for contemporary and up to date developments and have in one way or another resulted to many vacant, abandoned or under-utilized properties; these lands are referred to as Brownfields. Brownfields are often vacant, abandoned or under-utilized land which could have been used for commercial, manufacturing or residential purposes but have been left derelict and got contaminated in the process. They often occur in desirable lands, often on waterfronts, commercial centers, old industrial regions or densely developed urban areas, which often present a waste of land resources.

Brownfield lands have been in existence even since before they had been defined. Many researchers have concluded that deindustrialization and suburbanization are the two primary causes of brownfields. Brownfields typically occur in industrial areas that mainly began to shrink in the mid-20th century, particularly in industrial countries around the world. They also left neglected and polluted property behind, as many industrial areas were driven out of old towns. The mid-20th century also saw the beginning of population decline in older central cities as people moved to new homes on the urban periphery or moved to newer population centers

outside of old cities (Alker et al. 2000); (Oliver et al. 2005); (Ganser and Williams, 2007); (Adams, et al. 2010)

Over the last few years, Kenya has had a strong focus on the ideals of sustainable development (SD), with greater attention being paid to planning and growth processes. The creation of sustainable development plans seeks to enhance development that promotes economic growth but maintains social inclusion and minimizes environmental impacts. Many ventures across Kenya have converted such brownfield sites into parks and commercial real estate. Nairobi, the Capital City of Kenya, which much of the urban land is zoned for residential purposes has seen a huge need for accommodation and housing facilities. With the housing market need in Nairobi rising with the supply of the latter declining and the high costs of putting up new constructions, many contractors are finding it hard to sustain themselves due to the harsh financial times and end up stalling down their projects before they are even completed, which has resulted to an influx of many abandoned buildings across Nairobi. Also with the new urbanization wave, the old and conventional looking houses which were built in the late 70's and became redundant in the present day are being phased out to pave way for new and modern buildings which comprise of sustainable designs and concepts. Occasioned with the rise in cost of new unused greenfields lands, investors are turning to these abandoned sites which could be cleaned, remodeled and used to build new homes (this would be better than clearing new land and could actually embellish an area that needs aesthetic value). This goes to show that reconstructed brownfield sites could bring people back to the city with careful planning and well-executed procedures.

The integration of the society in the planning process appears to be an engaging and interpretive process, conducted in communities through diverse and transformative conversations with a constructive approach to interpersonal and intercultural agendas, focusing on the 'arenas of struggle' (Healey, 1993). In Kenya and in particular Nairobi, the planning of public spaces has been faced by numerous challenges mainly because of failing to take into account the general way of thinking of the masses and failing to engage them in constant dialogs to help them to express their thoughts more freely; this can only be seen in a culture of democracy. The community is ultimately the primary beneficiaries and users of these completed projects, and

therefore, they should also be able to play an enormous role in the development process as they know specifically what suits them best. The theory is that a key factor in urban regeneration is one which integrates social innovation in the unique structure of community-based organizations and this is done by including local residents, interest groups, and private and public organizations in all the phases. Such projects may include brownfield land regeneration developments, in which the community should take part in and with that they help plan their society for the better. Barton et al. (2003) argued that the greater the involvement of the local community is in the design and development of neighborhood developments, the greater the likelihood of establishing a place of local significance.

Through the governance of policy networks, the public sector organization in Kenya normally involves other community stakeholders in the implementation of strategic learning processes whose aim is that to protect the public interest. However, in Nairobi this has seen poor successes for public consultations and hearings have often been wrongly executed. This can be seen from the point of view of the knowledgeable public masses, where completed projects across Nairobi have been of less significance to the masses, for they do not meet the needs and wants of the general public. This goes to show the complexity of the issue at hand; because public participation in the community normally involves complicated interactions between a great number of stakeholders which are not simple, it has resulted to its slow growth and execution in the society (Klijn and Koppenjan, 2000); (Peters, 2015). Nonetheless, when properly implemented, it gives the society an altogether harmonized sense of belonging and significance to the said development projects.

## **1.2 Statement of the Problem**

The community, therefore, being primarily the main beneficiaries and consumers of completed projects, should be able to play a significant role in the planning phase because they know directly what is best suited to them. The idea is that a key factor in an effective and successful urban development model is one that stimulates social creativity by incorporating a diverse

framework of community-based organizations, including local residents, interest groups and private and public organizations, into community development planning.

With the rise of sustainable development across Kenya and the world, Nairobi City is turning to pieces of land that had been left out and forgotten after the poor use of the lands and their regeneration into land pieces that could be of great value to the society has become a huge priority. With the spiraling rise in cost of greenlands in Nairobi, Kenya and a huge demand for development projects, the Government of Kenya's decision to construct some of its current development projects on brownfield lands could be seen as a more economical point of view, but through the regeneration of this brownfield lands into development projects, the government is also helping create a more healthier environment while also empowering the society by offering significant developments to the community. However, as it has been the norm for public projects, they are usually conducted in a manner that doesn't give value to the final users which in this case is the society at large hence in retrospect the projects usually lack any sense and value. This forms the backbone for this study; could the participation of the community help to better development projects which in this case is applied in the regeneration of brownfield lands?

A lot of studies have been carried out on how development projects can be effectively carried out so that the society can get maximum value out of the projects but sadly less research has been conducted in regards to what role the integration and inclusion of the society can play in the overall community's development projects. It is therefore really important for this study to ascertain how could the participation of the society in the community's development play in the successful urban regeneration of brownfield lands. This will be done through the analysis of a number of case studies in Nairobi, Kenya which is relevant to the researcher.

### **1.3 Aim and Questions of the Study**

This study whose main context was Nairobi, Kenya endeavored to understand what brownfields are and how they could be regenerated into urban community development projects. This research also intended to bring home the understanding on what community participation is and

what role it plays in creating community development projects and to be specific on the regeneration of urban brownfields; this was also done by critically analyzing different case studies across the world that have successfully applied urban regeneration of brownfield lands. The goal of the study was also to examine the different factors affecting community engagement in urban brownfield land regeneration and development. To further understand the relationship between Community Participation and Brownfields regeneration, the study endeavored to seek answers to the following questions;

1. What are brownfields and how could they be regenerated? How can brownfield regeneration contribute to community development projects?
2. What is Community Participation and what role does it play in Community Development Projects?
3. What function does Community Participation play in the Urban Regeneration of Brownfields Lands?
4. What factors influence Community Participation in the Successful Urban Regeneration of Brownfields Lands?

The paper builds on the findings of previous researches, using a variety of case studies from different regions around the world and also in the country Kenya, which is relevant to the researcher, that have successfully implemented urban brownfield land regeneration. The research also selected three case studies from three different urban areas to identify the satisfactory and unsatisfactory characteristics of the projects in relation to community participation in their regeneration and to identify possible ways of improving the regeneration of the projects.

## **1.4 Research Methodology**

### **1.4.1 Design**

The research design is the arrangement of the data collection and analysis situation in a manner that seeks to combine relevance for research with economics in the process (Kothari, 2004). A

quantitative method for the descriptive analytical design of the research was be used in this analysis. The research design allowed the researcher to employ a quantitative approach to inquire from the respondents from Kenya, which is relevant to the researcher, about their own ideas and also what other new ideas would be formulated in order to develop an insight into the problems under study. Case studies of cities that have successfully implemented community inclusion and participation in their brownfield land regeneration projects were also be used as part of the quantitative method. The design was considered acceptable because it is more accurate and reliable, more versatile, more efficient, more economical and one which could provide full details. The Descriptive Analytical Design was chosen because it is important for the researcher to identify and critically examine a specific situation. It involves observing and describing the behavior patterns of an individual, a community or any group, and identifying the reason for the problem and how the different variables correspond. The research employed the use of an online questionnaire (Google Forms), observations and case studies to meet the aim of the study.

#### **1.4.2 Sampling and technique**

The sample in this research was collected using simple random sampling technique. The research population entails of the general public and also top management teams of various construction bodies in Kenya. The main Construction bodies in Kenya is National Construction Authority (NCA), the Kenya Department of Public Works, National Environment Management Authority (NEMA); they are in charge of matters relating to any development in Kenya, hence choosing some of the heads of those bodies for the collection of information. Conducting random sampling to get a good sample size from the target population was reasonable.

#### **1.4.3 Data collection procedures**

The research employed the use of questionnaires, case studies and observation. Due to the limitations in money, time and the Covid-19 pandemic only a small number of people were chosen and precisely any resident from Ngara Ward, Central CBD Ward, Pangani / Pumwani or

any Other Ward in Nairobi where brownfield lands are located. Also randomly selected Top Management officials from teams of various construction bodies in Kenya were viable to answer the questionnaires issued. Due to the severity of the pandemic and constraints, an online questionnaire was issued; the questionnaire was created using Google Forms and the results were automatically recorded as soon as the respondents answer to the questionnaires. The observation technique used also depended on the researcher's experience and memories in relation to the case study in question. The selection of case studies was done in regards to the articles of cities that have successfully implemented brownfield land regeneration which related the relevance of the study.

#### **1.4.4 Materials**

The research used questionnaires designed by the researcher on Google Forms; observations based on the researcher's experience and a selection of case studies which was done in regards to the articles of cities that have successfully implemented brownfield land regeneration which related the relevance of the study

#### **1.4.5 Data analysis procedures**

The primary data from the questionnaires was evaluated. The study utilized Excel and Google Forms analysis to obtain frequencies and percentages. Analyzed data was displayed using tables to display the frequency distributions and pie charts. The data was organized in tables so as to be easily interpreted, and the interpretation thoroughly analyzed.

As far as secondary data sources were concerned, which includes past research on the subject by former researchers. The main advantage was that it was cheap and was very easy to get and collect. However, one major downside of the secondary results was that it contained a number of different issues under analysis and therefore, in certain circumstances, was not appropriate for the purpose of the study. It was therefore necessary to combine this information with primary data sources in order to improve the accuracy of the data.

#### **1.4.6 Ethical considerations**

Issues concerning the confidentiality of the respondents were answered promptly and the guarantees were given. The survey sought both the permission and informed consent of the respondents who by answering the questionnaire showed their agreed consent to participate in the survey. Research participation was optional and respondents had the right to either agree or refuse to participate in the research.

An introductory letter from the Near East University Ethical Committee was obtained. At the request of the respondents, the introductory letter was issued to inform the prospective respondents of the following: that their response would be considered purely confidential, that they would remain anonymous, that their participation would be voluntary, that their withdrawal from answering questions and the completion of questionnaires at any time would not affect them in any way whatsoever, and that the results of the study would be notified to the participants upon request after the completion of the research.

#### **1.5 Significance of the Study**

This study is relevant to academics, i.e. researchers; government bodies; potential investors; decision-makers as well as stakeholders across the Built Environment industry.

The aim of this thesis is to set additional scientific criteria and to promote background information for future scientists in the same field. This is going to drive future studies. It is also useful for researchers, as the relationship between community participation and the successful urban brownfield regeneration would be better understood.

This study is also very useful to government institutions. The knowledge gained from this study will improve the decision-making capacity of policy makers. Understanding the role of the society in regenerating Brownfield Lands will help the Government put more and better policies in place to serve them well.



The study would help investors learn about the impact of community's participation in the regeneration of Brownfield Lands in the community. This would also enable them to gain an understanding of when to take risks and take full advantage of market niches.

With the understanding of the different Brownfield Lands and how they could be regenerated to better bring up community development projects, this study will help different stakeholders in the construction industry to come up with more feasible studies and plans that would bring effective developments in the community.

### **1.6 Limitations of the Study**

It was expected that some of the respondents would not be able to provide information believing that their identity would be exposed and that it would be a disadvantage for them to provide information. The researcher explained to the respondents the importance of the study in order to resolve this limitation.

Confidentiality is a very important issue with research study and therefore a challenge was expected. The researcher however, assured the respondents that none of the information will be used for any purpose other than that which was stated.

Most at times the Top management tend to be suspicious of researchers, and it was also foreseen that a few of the survey participants will be perturbed about the extent to which the management wanted them to contribute any information without any implications.

With regard to the limited time and resources given to collect and organize the information required, it was challenging to collect data from resources from all over the world, hence the study was limited to Nairobi Area due to the relevance of the researcher. It was also a struggle to gather data with the prevalence of Covid-19; due to the magnitude of the situation all over the world hence the employment of the Google Forms online questionnaire.

## 1.7 Outline of Chapters

Any key definitions, theoretical criteria for brownfield sites, urban regeneration and sustainable urban brownfield regeneration development will be discussed and presented in *Chapter two*. It also presents the significance of brownfield lands and the barriers to the regeneration of brownfield lands.

*Chapter three* expounds on the complexity of community participation in urban brownfield lands regeneration and also include some relevant international worldwide expertise, where conversations will illustrate various approaches and case studies to urban regeneration initiatives policies and models. Also it explores the role of different stakeholders in the regeneration project while also discussing on various factors influencing Community Participation in the Regeneration of Urban Brownfield Lands.

*Chapter four* is far more relevant in the context posed in the Kenyan setting, explaining the role of the community in the regeneration process of urban brownfields, and discussing the existence and development of brownfields in Nairobi, Kenya. In Nairobi, two examples were analyzed as an illustration of the context of regenerating brownfields there. It also analyzes the data collected from the survey carried out while giving out an elaborate discussion of the survey's findings guided by the specific research aims.

*Chapter five* presents a conclusion and recommendation of the study in an endeavor to involve the community on the agenda for brownfield regeneration strategies in Nairobi, Kenya. It also presents suggestions for further studies

## CHAPTER 2

### URBAN BROWNFIELD LANDS REGENERATION

#### 2.1 Brownfield Lands Concept

While the word brownfield is widely used today, there is not a single simple definition that is generally recognized. Its own definition varies from country to country, as it is often formulated at national level. It is a relatively recent concept, however, and its dominant use has been seen in the past two decades, especially in the US and Europe. The next segment will include a description of a range of different brownfield definitions.

##### 2.1.1 Definition of brownfield lands

The word brownfield was first used in the United States in 1992. The brownfield term most widely cited comes from the U.S. EPA (Environmental Protection Agency) of 1997. "*Brownfields are abandoned, unused or underused commercial and industrial structures where significant environmental contamination makes regeneration impossible.*"

A multi-disciplinary point of view recommended a description in 2000, claimed that a Brownfield site is "*any property or facility that has been originally used or built and is not currently in full use, even if it may be partially occupied or used.*" It may also be vacated, deteriorated or contaminated land.

According to Perovic and Folic, (2012) the word "brownfields" refers to real property that has been purposely utilized but is not being used to its potential. Brownfields are not generally considered farm land. In other terms, brownfields can be defined as unused non - farming pieces of land.

While brownfields have many meanings depending on the context, the most common definition is the one suggested by the CABERNET working group. "*Brownfields are sites that have been*

*contaminated by prior use of the area and surrounding land, which may be neglected and underutilized and may have real or potential pollution problems. They are mostly built in city environments and need action to restore them to productive use”.*

For example, the meaning of Brownfields could vary by country; the western world's approach links brownfields with primarily industrial or commercial facilities, often with pollution. The UK approach, on the other hand, involves housing and land lying desolate without contamination issues.

A brownfield land was defined by Dixon (2007) as "*any land originally developed, including abandoned and undeveloped land which might or might not be polluted.*"

In general, the word brownfields, from all previous definitions, pertains more of "*previously utilized land or sections of commercial and industrial infrastructure to be renovated.*"

### **2.1.2 Emergence of brownfield lands**

The main development and advancement of the modern urban setting was brought about during the industrial revolution. It began with rapid urbanization which brought about a wide range of cultural change. New technologies (transport and construction techniques) have also had a major impact on the growth of cities. The large growth of cities, due to the migration of people from rural areas to urban centers for better opportunities, has seen the rise in population in cities resulting to the building of skyscrapers and cluster housing apartments. This brought about overcrowding, dirty and crime ridden streets which result to unpleasant and inhabitable cities. (Mohl, 1985)

With the emergence and upgrade of the transport systems; People started moving to the outskirts of the town (the suburbs) to get away from the harsh conditions of urban life. With the city reaching the point where it was perceived as a dirty, noisy place with loud noises and rising crime rates, it also became a problem and a concern (Grimski and Ferber, 2001). It resulted in people fleeing to the peripheries and outskirts of the major cities, leaving behind many

abandoned buildings and sites that were plagued by waste and degradation as a result of their abandonment. These lands, left unused and polluted over time, are the so-called Brownfield lands.

Brownfield lands have been in existence even since before they had been defined. Many researchers have concluded that deindustrialization and suburbanization are the two primary causes of brownfields. Brownfields typically occur in industrial areas that mainly began to shrink in the mid-20th century, particularly in industrial countries around the world. They also left neglected and polluted property behind, as many industrial areas were driven out of old towns. The mid-20th century also saw the beginning of population decline in older central cities as people moved to new homes on the urban periphery or moved to newer population centers outside of old cities (Alker et al. 2000); (Oliver et al. 2005); (Ganser and Williams, 2007); (Adams, et al. 2010).

### 2.1.3 Types of brownfields

Brownfields can be found in relatively small areas in mixed urban areas or large complexes such as military bases, public parks, construction plants, coastal regions, and airports. Although industrial complexes are common, brownfield sites can also be regarded as areas destined for other functions in which the primary activity is no longer in operation. Brownfields' classification requirements may be extended to entire sites or portions of sites. According to (Ferber et al. 2006) these parameters are primarily based on the characteristics that define the current condition of the site that may have one or more of these characteristics, such as abandonment, dereliction, site size, pollution, partial or complete occupancy, prior usage and situation of ownership.



**Figure 2.1:** Brownfield characteristics. (Page and Berger, 2006)

Brownfields are usually neglected or underused areas within the city center. Typically speaking, these sites are areas that have been built-in before, but are either abandoned or deteriorated. Some areas could potentially be polluted. Brownfield sites are therefore a key component of the government's strategy to build sustainable urban areas. At the end of the day, brownfield sites around the world are the result of a wide range of former industrial operations, including mineral mining, coal and steel production, gas plants, electricity generation, conventional engineering, transport networks and chemical processing (Ferber et al. 2006).



**Figure 2.2 :** Industrial brownfield lands. (Skyscrapercity, 2016)

Tang and Nathanail, (2012) agree that as a result of past industrial or commercial use, many existing brownfield sites have undergone pollution. The contaminants may include a variety of substances, such as metals, asbestos, petroleum, solvents and pesticides, depending on how these sites have been previously used. For those who live and work near brownfield sites, these contaminants may pose serious health and safety risks. The pollutants may move off-site when abandoned brownfield land is ignored, creating risks for those in the vicinity.

The Deputy Prime Minister's Office in UK; DPMO, (2005) describes brownfield land as 'land that is unused or that may be possible to develop. This involves both empty and dilapidated land and land still in use which has proven potential for regeneration. This excludes earlier built land, where over time the ruins have been incorporated into the landscape. Brownfield land can also be defined as previously developed land that is or has been occupied by a permanent structure, including the core of the developed land and any associated fixed surface infrastructure. The definition includes buildings built for defense, but excludes:

- Land in which agricultural or forestry buildings are or have been occupied.
- Land constructed for the extraction of minerals or for the disposal of waste for landfill purposes, where provision has been made for the restoration of minerals through development control procedures.
- Land in built-up areas, such as parks, recreation grounds and allotments, which may include paths, pavilions and other buildings but have not been previously developed.
- Land that has been previously developed but where, over time, remains of a permanent structure or a fixed surface structure have been mixed into the landscape (to the extent that it can reasonably be considered part of the natural environment).



**Figure 2.3:** Brownfield land taken over by nature. (Cory, 2016)

Environmental Protection Agency defines brownfield land as a property, extension, redevelopment, or land regeneration that may be complicated by the existence or possibility of a hazardous material, pollutant, or contaminant. The estimated number of brownfields in the USA is over 450,000. Cleaning up and reinvesting in these resources boosts local tax bases, fosters job creation, makes use of existing infrastructure, reduces competition from undeveloped, open land and both strengthens and preserves the environment (Alker et al. 2000). Brownfields could be classified into three main categories based on their origin, position and relative usage as shown in Table 2.1:

**Table 2.1:** Types and causes of brownfields site according to location. (Grimski and Ferber, 2001).

<b>Brownfields in Traditional Industrial Areas</b>	<b>Brownfields in Metropolitan Areas</b>	<b>Brownfields in Rural Areas</b>
The reduction in industrial employment has led to a need for greater industrial structural change. It has resulted in a number of Brownfield lands that are no longer used as mining sites, some of which are identified as polluted because of the delicate activities that were taking place there.	Cities are lined with vacant land on both large and small properties. Historically, such sites have been used for large-scale rail and port operations, small factories and buildings. These Brownfields are created by leaving and abandoning these areas for years due to a shift in use.	Rural areas also include locally-limited individual Brownfield sites, which may be of immense importance to the relevant local government authorities. Sites primarily associated with primary economic activities in agriculture, forestry or mining have undergone a restructuring phase over the last few decades, resulting in the abandonment of many sites.

Just as urbanization has had an impact on the industrial revolution, technological developments can be used to make life easier for people living in brownfields. Many ventures have converted such sites into parks and commercial real estate. With the housing market declining and new constructions closing down before they were completed, many abandoned sites could be cleaned, remodeled and used to build new homes (this would be better than clearing new land and could actually embellish an area that needs esthetic value). Reconstructed brownfield sites could bring people back to the city with careful planning and well-executed procedures.



## **2.2 Urban Brownfield Land Regeneration Concept**

Urban regeneration is a term commonly used to describe urban reconstruction or redevelopment plans. It is one of the key interventions in dealing with current urban areas and is conceived as a process of coordinating and implementing existing urban communities, instead of creating something from the empty land or demolishing the old to create new ones. Urban regeneration is more than the result of the interaction between several sources of power, the response to opportunities and challenges at a particular point in time. It is defined as a "coherent and holistic definition and practice that contributes to the resolution of policy initiatives and aims to bring about a permanent economic, physical, environmental and social regeneration" (Cook et al. 2001). Urban renewal has begun as an attempt to recover the detrimental effects of globalization and to allow the world economy to attract potential urban growth. The urban redevelopment process is expected to promote smart growth, produce significant revenues and returns from underused and abandoned land, create new employment and business opportunities, inspire the community, address the real needs of residents, enhance the quality of the environment as well as improve the standard of living for all (Porter, 1995); (Barton et al. 2003).

The scope of urban renewal initiatives and their bodies varies from organizational to national levels of government. The adaptation of the current built environment can also be a large-scale process. Where they define their respective policies, with varying degrees of emphasis, allocation of money and power. Regional strategies for urban renewal projects could range from the rehabilitation of a single dilapidated building to the rebuilding of entire communities. Individual regeneration schemes, large regeneration areas, client-driven reconstruction or flagship projects and marketing may be regeneration initiatives (Robert and Sykes, 2000). Key elements of urban regeneration projects should include the long-term perspective, the political will and dedication, the participation of multiple actors/stakeholders, the organizational framework, financing and, most significantly, the continuity of the project.

There are more than 500,000 sites in the United States known as "brownfields" in need of restoration. Reclamation is described as restoring the land in a manner that improves its original

condition (Page and Berger, 2006). The cycle is similar to how the muscles tear when they work, and how they regenerate to become even stronger afterwards. Effective reclamation is a condition that protects the restored environment from the habitats found within the site.

Porter, (1995) states that unique regeneration projects, primary regeneration areas, development-driven regeneration projects or flagship projects can be the guiding force behind regeneration projects. Some of the Critical elements of urban renewal projects can include long-term visions, political will and commitment, participation of multiple actors/stakeholders, organizational structure and financing, all while retaining an efficient framework. One of the key aspects of urban regeneration, however, is that each case is exceptional. According to (Burton et al. 2003) some approaches have arisen as a reaction to environmental challenges when undergoing brownfield regeneration projects developed in urban environments, based on the different problems and adjustments. They include;

- *Property-driven physical approach*: Profit creation is the primary priority. It is expected that a major retail or mixed-use structure will have an exponential effect on the local economy. Property-driven regeneration can also bring enormous improvements to the physical infrastructure as well as economic benefits by meeting a structural goal; sole enterprises are usually inadequate in resolving urban social, economic, ecological and physical problems. Moreover, this strategy fails to deliver on very important urban social issues.
- *Business-driven approach*: the goal of the regeneration program is to boost job opportunities. It underlines the importance of 'under-utilized industries' as a key priority of regeneration, which is primarily driven by commercial development and is especially located in inner-city areas.
- *Community-based approach* to the community development projects: emphasizing the importance of engaging local communities in decision-making, planning, execution of the regeneration development projects is a huge driver for development projects.

Over the last few years, a strong focus has been on the ideals of sustainable sustainability (SD) around the world, with greater attention being paid to planning and growth processes. This seeks development that promotes economic growth but also one which maintains community participation and minimizes environmental impacts (Dixon, 2007) and (Dixon and Adams, 2008). Some urban regeneration approaches are being studied in order to achieve sustainability in the sense of community integration and participation around the world. In reality, much more emphasis is being put in which, the community could be the drivers of development projects and this forms part of the study.



**Figure 2.4:** Abandoibarra city regenerated brownfield lands. (Skyscrapercity, 2016)

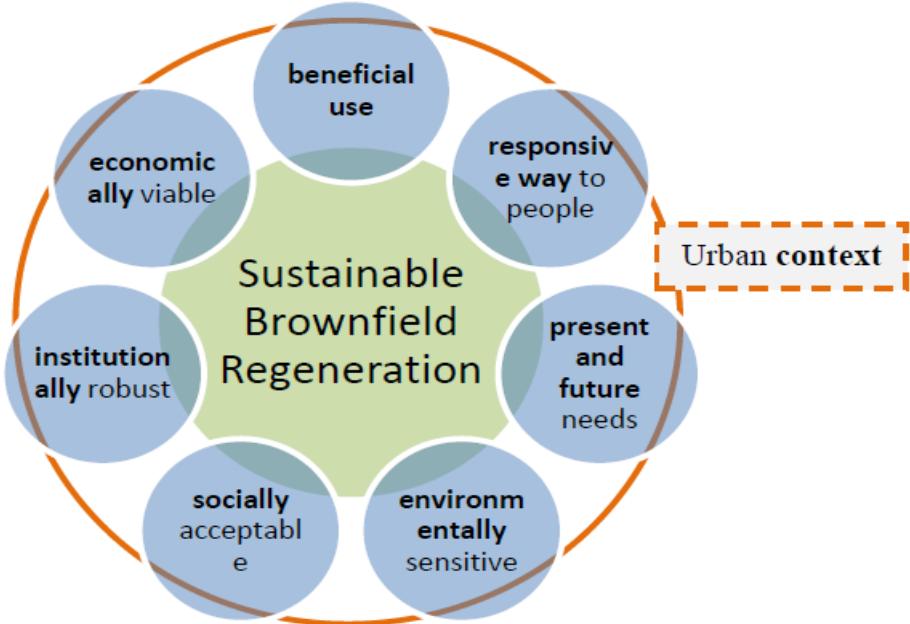
### **2.3 Sustainable Urban Brownfield Regeneration Concept**

The definition of sustainable urban development has been described in various ways. The most widely quoted concept of sustainable development is “Any development that meets the needs of the present without compromising the capacity of future generations to meet their own needs.” Sustainable development could also be defined by development that provides basic environmental, economic and social facilities to all community residents without adversely affecting the sustainability of natural, built and social structures based on the provision of these services (Cook et al. 2001).

According to Porter, (1995) a city that seeks to achieve sustainable development ought to have a long-term balance between its structure and its implementation. It needs not only environmental responsibility, but also economic productivity. Moreover through enhancing health, learning, protection, justice, prosperity, diversity and standard of living, the social cohesion generates opportunities to engage the social, cultural and spiritual interests of the society. Several urban renewal strategies are currently being tested in the fields of community engagement, neighborhood regeneration, economic change, physical regeneration, Brownfield regeneration, with a view to achieving sustainability around the world. In the coming years, even more approaches will be devised to prepare cities in the face of their complex problems (Burton et al. 2003).

The definition of regeneration of brownfields in the sense of sustainability could be described as:

“Sustainable Brownfield Regeneration is the development and the restoration of brownfields towards *productive use* in a manner that is receptive to people; taking into account *present and future needs*, in the relevant local *environment*, ecologically conscious, *financially* feasible, structurally viable and *socially* appropriate.”



**Figure 2.5:** Sustainable brownfield regeneration illustration. (Donovan et al. 2005)

According to (Donovan et al. 2005) the hidden critical component of this theory is attaining the balance between both the needs of the stakeholder's, current and future generations, and various aspects of sustainability in terms of the sensitive nature of the stakeholders and relevance of the project. A redeveloped brownfield site could be sustainable; but could also have negative effects on the environment. The positive impacts may offset the negative ones through one or even more elements of sustainable development and which in turn could balance the negative impacts on the site on an urban scale. For instance, regeneration of an brownfield site to an industrial and commercial project (could have a negative environmental impact) but however it could be more financially viable than that of regenerating the brownfield site into a public park, since it contributes to the protection of the environment by preserving more Greenfield sites, while it still creates jobs and has a significant socio - economic impact.

The notion of sustainable brownfield regeneration can be seen as a scenario that could only be done some time in the future (Carley and Kirk, 1998). However, complete sustainability cannot really be achieved, since each individual concept of sustainable development will still compete with each other to some degree. The final scenario will also bring into question the concept of sustainability, since if the 'sustainable development goals' are already reached, future generations would also be faced with their own specific challenges. Consequently, in consonance with Porter, (1995) the focus from today's point of view, should never be on the conditions considered desirable, but it should also leave room for future mitigation and high flexibility in determining how to approach sustainable growth.

## **2.4 Significance of Brownfield Lands**

### **2.4.1 Negative effects of brownfield lands**

Brownfields can have negative effects on the surrounding communities and the community in general in different ways. Such properties exist, for example, in or near areas with a low-income population, inadequate education, high unemployment, corruption, suspected environmental pollution, and other challenges. Brownfields has led to major social and economic issues. The

cessation of industrial activities has resulted in the loss of job prospects and the release of large quantities of land in the vicinity. Walkowiak and Frazier, (2000) suggest that as a result, the economic conditions in the surrounding areas have worsened. The deprivation has had an impact on the health of the community and further destroyed the value of the property. Crime activities, unemployment and declining economic development are usually influenced by communities adjacent to these properties.

The problem of contamination persists mainly at the sites that were initially used by industries. Contaminants found in brownfield sites can contaminate on-and off-site land, air and water supplies. This poses a danger to the climate and public health. Health is also considered to be a problem, as abandoned sites are popular places for illegal activities, such as dumping. The derelict or abandoned buildings on brownfield lands can also be often ignored in well-maintained communities. Brownfields, especially in low-income neighborhoods, are considered to be a burden on the national economy and a negative burden on the community at large. City planning and large-scale infrastructure development, however, are generally the means to reduce or reverse these negative impacts. Brownfields are not always bleak locations, because they can be seen as possibilities and limitations at the same time, as they are often perfect places for rejuvenation (Walkowiak and Frazier, 2000).

#### **2.4.2 Positive effects of brownfield lands**

Amidst the pollution of the Brownfield lands, the lands within this precious lands in these cities are almost empty. As a result, even though they are contaminated property, brownfields are considered to be city development properties (Paull, 2008); (Groenendijk, 2006). There are many direct and indirect natural, economic and social benefits from the clean-up and reuse of brownfields. These benefits make investments in brownfields worthwhile. Some of the advantages are as outlined in Table 2.2;

**Table 2.2:** The benefits of brownfield regeneration

<b>Significance</b>	<b>Description</b>
Benefits on the Location	The location of Brownfield lands is usually considered to be beneficial, as brownfields are often located in strategic locations near river fronts, railway lines and transport networks, and in the city center. Regeneration restores desirable areas, allowing urban intensification to encourage smarter growth.
Benefits on Infrastructure	Since brownfields are located in sites that have already been developed, they are typically merged with new systems that can be upgraded and extended to other new areas more efficiently than before the new infrastructure was implemented. Reviving older urban communities and surrounding areas, preserves architectural landmarks and heritage. Arable land, which can be fertile agricultural land or important natural land, is also restored. It also aims to improve urban conditions.
Benefits on the Economy	It would lead to the creation and retention of employment opportunities, increased competitiveness for cities, increased export potential for cleanup technologies, increased tax base.
Benefits on the society	It would lead to the improved quality of life in neighborhoods, removal of threats to human health and safety, access to affordable housing.
Benefits on the Environment	Regeneration of brownfield lands results to reduced urban sprawl pressures on greenfield sites, restoration of environmental quality, improved air quality and reduced greenhouse gas emissions.

### **2.4.3 Barriers to brownfields regeneration**

Despite the fact that brownfield sites also have outstanding facilities, these sites are not widely recognized as undeveloped land (Greenfields) for potential re-use. As a result, developers also opt for new sites on lands that are free of such hazards associated with brownfields for factories and commercial activities (Siebielec et al. 2012). Contamination, while important, is not the only problem with regenerating sites. In developing countries, high demand and a spiraling decline in social and economic conditions in the regions are particularly difficult to reverse. There is also a marked lack of government-led incentives for developers to build brownfield sites (e.g. tax reliefs and policy instruments). Developers must also follow the same process when dealing with brownfield sites as they do with more 'natural' and less 'problematic' sites (i.e. Greenfield sites) and therefore favor problem-free sites compared to brownfield sites (De

Sousa, 2002). However, weak awareness and tax relief regulations on contaminated grounds were acting as a hurdles, and other problems related to inadequate and under-resourced infrastructure were acting as a further barriers.

Brownfield regeneration also faces a range of challenges that may lead to a number of renovation issues that could potentially limit the re-use of these sites. As a result, success in reviving brownfield sites is highly dependent on overcoming these obstacles to redevelopment. In particular, two key perspectives, namely physical and environmental challenges and socio-economic challenges, which are outlined in Table 2.3, are majorly some of the obstacles to brownfield regeneration.

**Table 2.3:** Potential obstacles to brownfield regeneration

<b>Physical and Environmental Barriers</b>	<b>Socio-Economic Barriers</b>
Inadequate and low-quality infrastructures which cannot be easily implemented are present.	Insecure aid and collaboration in the society.
The gap and lack of communication with the main roads.	Threat of growth in a region as a result of the presence of an area unfavorable conditions.
Poor access to society due to lack of access to basic services and amenities.	The challenge of receiving financial assistance from private and public authorities.
Unknown contamination status that leads to the problems of the clean-up process (for contaminated sites).	Competition on uninhabited lands hinders growth because they are less expensive and also much quicker to develop.
Rigid clean-up criteria that can restrict construction in some areas.	Exorbitant cost (for polluted sites) of the clean-up and overseeing operations.



## **CHAPTER 3**

### **COMMUNITY PARTICIPATION IN URBAN BROWNFIELD LANDS REGENERATION**

#### **3.1 Community Participation in Planning**

Community Participation is the context within which local government decision-making blends with the society's mutual needs, preferences and values. It is a two-way conversation and engagement with the ultimate aim of better choices that the society embraces (Creighton, 2005). Community Participation is a process by which society regulates and shares authority over development activities and the policies and resources that influence the society (Collier and Dollar, 2002). Public participation in more geographical, contextual, pragmatic terms may be seen as a logical development of the democratic structure (Pimbert and Wakeford, 2001). However, it requires people in the design process who strive to sustain a proposal that their future buyers will follow more widely (Burby, 2003); (Brody et al. 2003); (Miraftab, 2003).

Planning appears to be an engaging and interpretive process, conducted in communities through diverse and transformative conversations with a constructive approach to interpersonal and intercultural agendas, focusing on the 'arenas of struggle' (Healey, 1993). The planning of public spaces should also take into account the general way of thinking of the masses and engage them in constant dialogs to help them to express their thoughts more freely; this can only be seen in a culture of democracy. The community is ultimately the primary beneficiaries and users of these completed projects, and therefore, they should also be able to play an enormous role in the development process as they know specifically what suits them best. The theory is that a key factor in urban regeneration which generates social innovation is the unique structure of community-based organizations, including local residents, interest groups, and private and public organizations. Barton et al. (2003) argued that the greater the involvement of the local community is in the design and development of neighborhood developments, the greater the likelihood of establishing a place of local significance.

Public engagement is a primary consideration for the phase of urban planning in the built environment. However, the complexity and challenges faced by planners in adopting such methods, ingrained in the standard approach of community engagement, are now becoming crucial issues. Public engagement involves the actual participation of community stakeholders in the general planning and formulation of development projects at the local level. According to Creighton (2005) and Sanoff (2000), the concept of social participation is championed to minimize citizen mistrust about government, create trust among stakeholders in government, and improve administrative decision-making. In previous studies, these concepts of Community Participation have been identified and analyzed critically.

Most governments exemplify the concept of sustainable development, as public participation is an integral part of sustainable growth and effective governance. Public involvement is a key aspect of various government's decision-making and planning phases, which can be achieved through numerous initiatives by various state agencies (Anuar and Saruwono, 2013). As affirmed by Omar and Leh (2009), who assessed that public engagement should not be a substitute for successful management, but should be a necessity as stated in different town and country planning acts. In addition, the Community has the right to be informed as well as to participate in decision-making, in particular matters which may affect the communities as well as the regions in which they reside and operate.

The combination of top-down policies that allow neighborhoods to self-organize their municipal resources and bottom-up community-led organizations are now showing fascinating results in terms of inner-city social innovation. The objective is to recover deprived urban areas by generating economic development and improving social conditions. The final outcome of this process of engagement between national and local levels is the development of community-based enterprises that are able to manage assets and projects for the well-being of individuals on a continuous basis; people form these business ventures that operate in inbuilt social systems and which involve different stakeholders and have a specific community mission (Peredo and Chrisman, 2006).

Participation is now widely recognized as a key organizational principle for growth, but the approach is under debate. Initially, a participatory method is seen as a solution to the limitations of externally applied and expertly-oriented, top-down development approaches (Chambers, 1987). The advantage of these alternative proposals is that they focus on the regional population in a broad role as a big benefactor who should be empowered (and encouraged) to track and bear responsibility for the life-affecting design process. Arnstein (1969) argues that public engagement is the power of the people and that the contrast between the pointless practice of involvement and the real power needed to affect the quality of the final product is important. Involvement without separation of authority is an insufficient and tiresome job for the powerless.

Social inclusion begins, as described by Loures and Crawford (2008), by laying the groundwork for sustainable practices in the management and planning of the physical environment in conjunction with urban design. Local communities are interested in creating sustainable community designs as well ensuring that they explore their own problems and create their own solutions. This is done by encouraging more local initiatives to enable the community to become drivers of their own transformation. Public dialog offers an opportunity to dilute self-interest statements by adding theoretical elements to convince others of their relevance, or at least their credibility. Hypocritical as these statements may be, they may lead to compromises in the public interest or in the interests of other groups (Allmendinger and Tewdwr-Jones, 2002). The use of a participatory approach allows for timely identification of principles, priorities and future disputes, and the participation of stakeholders and, as a result, planning activities. It can improve local people's conditions because businesses can bring wealth if they are set up with social and mutual values.

In order to influence and encourage public participation, many scholars have recognized the need either to establish confidence in local government or to address its absence (Fordham et al. 2009); (Hibbitt et al. 2001); (Russell, 2008). Dasgupta (2000) believes that *'trust is central to all transactions'* while Giddens (1990) argues that some basic form of trust is a prerequisite. Generally speaking, the fall in public trust in governments over the last decade has been a topic

that has received a great deal of attention from the public sector and policy makers. This explicit decline in popular trust in regimes has been documented in some developed democracies, such as the United States, Canada, Sweden, the United Kingdom, France and other countries of the European Union. For a number of countries, an increase in public trust is therefore an immediate issue that may potentially impede social integration and involvement in planning (Seimuskane and Voroslava 2013).

### **3.2 Community Participation in the Regeneration of Urban Brownfield Lands**

Brownfield regeneration, one of the most dynamic aspects of sustainable land use, requires multiple disciplines with diversified values and views. The integration of multiple professions and synergies of experts from various domains, such as economic and infrastructure growth, transport and environment conservation, is key in order to effectively incorporate the principle of land re-use. The negotiation in between the wide range of stakeholders is one of the necessary planning skills that is needed (Bouckaert and Halligan, 2007). On this basis, it can be argued that the regeneration of brownfields in sustainable urban growth is a complex activity, the effectiveness of which depends largely on the ability of planning experts to identify the priorities of society and implement strategies and coordinate regeneration.

One of the most critical responsibilities governments play to the society is to achieve a stable and productive urban environment that is achieved by minimizing the use of Greenfield sites and by concentrating development on urban regeneration of abandoned sites (Peric, 2013). In view of urban planning, restoration of Brownfield is one of the most relevant activities that the public sector could take part in. That being said, although the government is the leading player in the launch of these initiatives, the participation of the private sector is significant, as the society not only could make a profit for itself but also help to improve the environment by investing in regeneration projects. Citizens' and local government programs raise awareness of the issue of vacant brownfield lands in our cities, indicating to the public and private sectors the issues that need to be tackled for the sustainable development of urban systems (Groenendijk, 2006).

The restoration of Brownfield lands is therefore usually a very dynamic process. On a broader urban development scale, Brownfield redevelopment can be very successful, but it is important to recognize the complexities of the mechanism and the fundamental nature of the challenges of creating brownfields. Brownfields regeneration is a transition from linear to circular economy in relation to comprehension of the complexities of the transformation of brownfield lands. The circular economy is an economic and technical framework that considers as a reference basis the reproducibility of commodities and the durability of natural assets, one that minimizes the loss of revenue of the entire process and embraces the production of value in each relation of the process (Tukker, 2013). Ferber et al. (2011) argued that as urban development begin to lose its socioeconomic viability and becomes derelict, the cycle life will become more essential. The second life of the site should indeed be taken into consideration in 10 - 20 years when structures first were approved for construction. Otherwise, instead of just regeneration, there'll be a possibility of causing more subsequent brownfields.

Owing to the extensive use of untouched, so-called Greenfield lands for new residential and commercial projects, the restoration of brownfield sites is hereby gaining significance. The issue of urban sprawl and urban decay is emerging as a result of an aggressive strategy to build on free and unused areas (Lag Reid and Rykkja, 2014). The overwhelming horizontal expansion of urban cities poses a serious problem in its structure and operation, and hence it is certainly one of the objectives of urban regeneration, so as to limit and discourage this negative phenomenon. In relation to this, different governments across the world have undertaken policies by which there will be effective regeneration and renewal of brownfield lands so as to cater for the rapid need of commercial and residential projects (Crosby and Bryson, 2010). Different brownfield regeneration institutions, led by Government initiatives, should allow stakeholders to better develop their capacity to sustain these processes in a sustainable manner, even if situations change over time. When it meets the actual (as well as the known and expected future) needs of society in the region, the process of brownfield regeneration can be considered socially acceptable (Bovaird, 2007; Torfing and Ansell, 2017).

The position of public organizations in leading multi-stakeholder engagement, designed to gather support from local community members for initiatives that can bring lasting benefits to society, is seen as a need to resolve negative social issues. These challenges can hardly be consolidated within traditional institutional boundaries, because they have diverse and dynamic characteristics, including multi-level, multi-actor and multi-sectoral challenges (Head and Alford, 2015; Lagreid and Rykkja, 2014). A state institution carrying out the regeneration of brownfield lands should include other community members in the governance of policy networks in the implementation of strategic cognitive growth aimed at identifying the economic good, its drivers, as well as the constructive tools required to influence the outcomes of society (Bovaird, 2007). This learning process promotes the layout of "robust policies", with a view towards the output. In an effort to foster community cohesion and equitable socio-economic development, it could include co-design, co-production and co-evaluation of policies by various stakeholders.

A transparency mechanism that efficiently monitors inputs, processes and outcomes is therefore a prerequisite for enforcing shared governance of policy networks (Crosby and Bryson, 2010; Emerson and Nabatchi, 2015). Performance governance of brownfield regeneration according to Bouckaert and Halligan, (2007) as a mode of performance management is essential to the impact of group outcomes. Conventional approaches for executing urban brownfield regeneration plans on the basis of performance are embedded in an organizational point of view that could be defined as an *inside-out* approach. In this way, policy decisions are defined by the "lenses" of each group rather than just the ideas of the local community. While an *inside-out* strategy has the advantage of concentrating on the structural context in which policies are actually applied, it may not be that effective to address social negative issues.

Where community issues threaten sustainable community development, the ability of the various stakeholders to outline consensus policies that create shared strategic capital at the community level will have a strong impact on organizational performance. This is what can be viewed as an *outside-in* point of view, where government policy is first and foremost about the social circle rather than individual organizations. As a second step in the analysis, the goal of

each organization should be to reflect on how to efficiently implement group policies. An external performance management and governance perspective will encourage accountability and foster good governance, both in the immediate setting of the society and the organization, in policy formulation and implementation (Lagreid and Rykkja, 2014).

In his book, *Empowering Urban Regeneration in Communities through Participatory Methods*, Narayana Reddy G. suggests an alternative to the top-down model in the form of a 'bottom-up partnership model' in which governments and communities work together with long-term planning and decision-making outcomes. (Reddy, 2002)



**Figure 3.1:** Integrated bottom-up and top-down partnership model.

**3.3 Stakeholders in Urban Brownfield Lands Regeneration**

Different urban management and development surveys have shown that the Brownfield Regeneration subject covers so many technological and social disciplines which is challenging not just to comprehend the functioning of the entire framework, as well as to classify its limits. The diverse workforce of professions is among the critical elements of brownfield regeneration success (Head and Alford, 2015). As shown in Table 3.1, the whole variation of disciplines could be classified into stakeholder groups which directly or indirectly affected by the

brownfield regeneration. Ferber et al. (2011) suggests that the more stakeholder groups identified as well as engaged early in the inception of the restoration project, the steadier the execution of the project. Effective regeneration of Brownfields also depends on good cooperation between stakeholders, including central societies; regional authorities; private entities; and NGO's. Whenever these entire chain work together to implement a widely accepted regeneration objective, the effective development of brownfields can be realized or intensified (Peric, 2013).

**Table 3.1:** Stakeholders engaged in brownfield site regeneration

Stakeholder Groups	Examples in each group
Stakeholders Involved In Planning and Regulation of Land Use	
Providers of Services, Legal Consultancies, Local Governments.	<ul style="list-style-type: none"> <li>• Regulators of local authorities (e.g. developers, city planners, public health law enforcement personnel, regulators of motorways and roads, landscape designers)</li> <li>• Regulators of the Environment Agency, council members, building regulators (local authority or authorized officers), utility regulators and suppliers of services (gas, electric power, water and sewage), departments of the central government and local councils.</li> </ul>
Interest groups and individuals that are non-statutory.	<ul style="list-style-type: none"> <li>• Interest groups, Private Entities, Community Groups, Individuals.</li> </ul>
Stakeholders involved in the development and construction	
Property Developers and Consultants.	<ul style="list-style-type: none"> <li>• Investors, landholders, shareholders of investment institutions and developers, construction workers, suppliers.</li> </ul>
Professional Bodies	<ul style="list-style-type: none"> <li>• Architects, Contractors, Quantity Surveyors, Engineers, Lawyers, Valuers and Estate Managers.</li> </ul>
Stakeholders involved in end use	
End Users	<ul style="list-style-type: none"> <li>• Residential Dwelling Users, Commercial Outlet Proprietors (including, offices, shops, restaurants), Manufacturers, Public Institutions and School Proprietors, Public Spaces for the General Public, Landowners and Entrepreneurs.</li> </ul>

Stakeholders have different perceptions and different expectations. As a direct consequence, brownfield solutions will also need to concentrate on multi-stakeholder frameworks that recognize both the diversity of viewpoints and the distinctiveness of principles of stakeholders (Peric, 2013). It should always be acknowledged that while revolutionary



techniques are needed, many examples of successful techniques and valuable assets that have been commonly known and used are already available. The visualization and evaluation of stakeholders may be used accurately to classify the persons or organizations that are probably to be influenced by a proposed measure and to classify them as to their impact and the effect the action would have on them.

According to (Ferber et al. 2011) stakeholder evaluations are used to evaluate how the proposed design, policy, procedure and, presumably how other initiatives will meet the needs of those stakeholders. During the planning process of the project, the research initially defined should be undertaken to determine stakeholder attitudes towards possible modifications. It may be possible to track changes in stakeholder perceptions once over time or regularly in the future.

### 3.3.1 Role of participants in the urban brownfield land regeneration

Every participant either has a stake or involvement in these aforementioned categories, or both, all which impact on the brownfield regeneration program. Table 3.2 below summarizes the roles that each participant may play in rejuvenating brownfields and their involvement in its successful regeneration. The basic principle is to take into account a multi-perspective context in which each participant would have an incentive or a desire to make the brownfield regeneration succeed.

**Table 3.2:** Role of participants in the urban brownfield land regeneration

Participants	Examples	Role	Benefit
Owners of the Property	-	<ul style="list-style-type: none"> <li>Invest or Develop the Property</li> </ul>	<ul style="list-style-type: none"> <li>To revive and acquire the value of the land.</li> <li>To tackle any liability issues.</li> </ul>
The Public Sector	<ul style="list-style-type: none"> <li>Regional Governments</li> <li>Society Groups</li> <li>Funding Beneficiaries</li> <li>NGO's</li> </ul>	<ul style="list-style-type: none"> <li>Rebuild the land from the viewpoint of community and economic growth.</li> </ul>	<ul style="list-style-type: none"> <li>To see the project a success in terms of redeveloping polluted assets and stimulating economic or social development.</li> <li>To have a good property appraisal, renovation, and restoration to boost the reputation of the city.</li> </ul>

The Private-Sector	<ul style="list-style-type: none"> <li>• Lenders</li> <li>• Entrepreneurs</li> <li>• Insurers</li> <li>• Investors</li> <li>• Contractors</li> </ul>	<ul style="list-style-type: none"> <li>• Provide funding for the property to be built.</li> </ul>	<ul style="list-style-type: none"> <li>• In terms of redeveloping polluted assets and stimulating economic or social development, to see the project succeed.</li> <li>• To receive a satisfactory investment return.</li> <li>• To incorporate the renovation of the property into a broader community or public renovation plan.</li> </ul>
Other Parties	<ul style="list-style-type: none"> <li>• Lawyers</li> <li>• Ecological Advisers</li> <li>• State and National Regulators</li> </ul>	<ul style="list-style-type: none"> <li>• Offer additional support in technological and statutory respects.</li> </ul>	<ul style="list-style-type: none"> <li>• To make sure that the property is within acceptable levels of perceived usefulness and reuse after it has been cleaned up and secured.</li> <li>• To mitigate the property's potential environmental issues.</li> </ul>

### **3.4 Factors Influencing Community Participation in the Regeneration of Urban Brownfield Lands**

#### **3.4.1 Public awareness of urban brownfield land regeneration projects**

Awareness is the understanding or comprehension of a topic, problem, or situation, while at the same time being mindful of a specific subject and of how it is associated with the issue at hand. As such, awareness may be seen as what encourages and preserves consciousness. Public awareness would be unlikely unless the appropriate information is available. Accessibility to information is a blend of intellectual, environmental and social components that affect the accessibility of knowledge to society (Oltmann 2009).

McCreadie and Rice (1999) cites that there are six different ways in which awareness can be actualized, such as publications, electronic information, pictorial media, amongst many others; exposure to devices such as pcs, telephones, internet, Television, audio, and others; access to information such as trying to make sense of what is happening, by using information, networking, and interpersonal skills; awareness as an involvement in monitoring and content

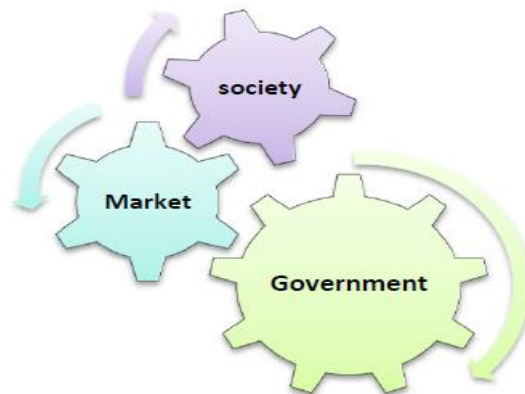
control; awareness as a provider of economic products or services; and, ultimately, access as engagement, such as programs, activism and confidentiality.

The idea of community awareness and involvement originated from the social initiative in developing nations in the early 1970s and has subsequently been an essential cornerstone for the effectiveness of the initiative (Thwala, 2010). Public knowledge and engagement is especially important because of the lack of top-down strategies to address problems such as high levels of poverty and deterioration of the environment, and many others. As a result, focus has turned from imported technological skilled strategies to community-based growth, acknowledging local expertise and capabilities of persons struggling in hardship and those seeking efforts to engage in participatory initiatives (Cooke and Kothari, 2001).

We eventually begin to evoke our concerns about the right of people to engage in social, political and economic activities when looking at awareness in the sense of regulating access to information. Actually, in virtually all awareness-related studies, awareness is usually seen as a means of participation in democracy and plays a huge role in adding to the global knowledge economy (Oltmann, 2009). This is realized because there is a clear and direct correlation between information control and the engagement of people. Information competencies are also a requirement for involvement in modern information society in the social, financial and legislative spheres. In either way, public awareness is good for participation while restricted access to public information demeans people's participation (Lor and Britz, 2007).

### **3.4.2 Governance factors**

Governance could either be a catalyst of brownfield regeneration or an obstacle. Governance refers to state, economy and society in general policies and activities together which aim to affect urban environments. A process of engagement, communication and cooperation between various actors in society are involved in governance. There are three significant classes of stakeholders within the diverse contexts of urban development; public actors; as government, private actors; as business and community actors in the society; as shown in figure 2.4.



**Figure 3.2:** Governance stakeholders.

Actors from all three classes have multiple techniques to contribute to.

- One or more of the following could be *government instruments*;
  - Laws and regulations.
  - Policy.
  - Economical resources, i.e. taxes and funds.
  - Communication and information.

Most of these strategies may be even more successful than the others.

- *Market instruments* are strategies that understand the dynamic existence of the marketplace; they may influence production or consumption.
- Coordinated advocative activities, like Nonprofit initiatives, lobby groups, programs and marches, community networks, collaborative procurement projects and businesses, may be instruments of *societal reforms*.

In order to achieve effective success in integrating and including the society in urban brownfield regeneration projects; cooperation and communication between various actors and synchronization of activities are deemed necessary.

### **3.4.3 Trust factors**

In an attempt to affect and promote public involvement, several scholars have recognized the necessity to either create confidence in democratic accountability or to resolve its absence (Fordham et al. 2009). Russell, (2008) acknowledges that 'trust is fundamental to all interactions' whereas Giddens (1990) claims that some basic form of trust is a necessity. Put simply, over the last decade, there has been a declining amount of public confidence in governments which has now become an issue that has drawn a great deal of attention from most public relations fields and policy makers. In some democratic nations, including the United States of America, Canada, England, France as well as other European Union countries, have observed a serious decline in public confidence in governance. Therefore, across numerous countries, the rise in the lack of public confidence is a pressing concern (Seimuskane and Voroslava 2013).

Trust guarantees credibility for the authorities, according to Inglehart (1999). Putnam (1995) argues that trust creates the ability and willingness of individuals to acknowledge and implement state authority policies. It is presumed that social engagement and involvement, through participation in a community regeneration programs, rests on the duties and responsibilities that a person is tasked with. This is further asserted that even if a person is involved in any activity or operation linked to the community's regeneration it is all reliant on their determination and commitment to perform the said tasks.

Wang et al. (2007) also indicates that the generation of trust in the public sector is influenced by the two major behavioral aspects of the roles of those taking part in the involvement and engagement of the projects. Firstly, participation affects confidence as involvement offers significant services that are needed by the community, and secondly, improved ethical conduct of the public management is another primary explanation why participation correlates to trust. The assumption is that elected officials should show qualities such as transparency, strong moral behavior, fairness when carrying out these regeneration projects. It was also found out that when moral norms are entrenched in service delivery through the engagement and involvement of the society processes, public confidence tends to increase.

### **3.4.4 Financial implication of participating in brownfield land regeneration projects**

The financial position measures the degree to which a person thinks he or she is in control of his or her financial conditions. Are they going to pay their bills? Would they have saved for them? Do they generally feel that they're comfortably well off, rather than that life is financially hard? Income is closely associated with participation, even when gender, family type, employment status, ethnicity, educational level and the region of residence are taken into account (Ferragina et al. 2013).

Many citizens are conscious of the advantages of engaging in local development programs (such as urban regeneration programs), but due to their financial status, they are less willing to engage in these initiatives (Ngesu et al. 2013). It is possible to view this fact in many ways. Another possible interpretation is that, in a deliberate effort to escape financial distress by reducing their social expenditure, people appear to withdraw from social involvement to avoid financial pressure that associates itself with it (Ferragina et al. 2013). People often stay away from public engagement in order to avoid being publicly known of their poor financial situation or out of fear that they will be shunned by the more affluent people in society (Chase and Walker, 2013).

Agrawal and Gupta (2005) stressed that, contrary to their financially struggling peers, people both of whom are socially and economically well off are far more inclined to interact in society community groups. Ferragina et al. (2013) goes on to mention that with declining revenue, the share of social participation will continue to decrease until it hits a ground level where revenue increases or decreases do not necessarily translate into observable involvement discrepancies. If this occurs, further differences in the rate of civic involvement could be due to other factors of exclusion, besides poverty. This would include: class, nationality, welfare, impairment, age, sex, family structure, and achievement in literacy. It also appears to differ according to location.

### **3.5 Worldwide Experience of Community Participation in Urban Regeneration of Brownfields, International Case Studies**

The regeneration of brownfields, particularly in the urban areas, plays a vital role in the rejuvenation of the entire city. Worldwide planning and policy initiatives have also intensified in the sense of urban planning, financial and ecological regeneration and sociotechnical innovation. Several nations and governments have acknowledged the existence of brownfields as a complicated subject which extends well beyond a particular financial, environmental, civil or urban issue. They have begun to vigorously encourage the restoration of brownfields as an important strategy that leads to sustainable growth. Much of the international response to Brownfields has been influenced by a variety of factors, including:

- The size and amount of properties that have been contaminated.
- Availability of land.
- Density of Population.
- Goals for heritage conservation.
- Government targets.

The United Kingdom, the Netherlands and Germany for example, are nations that have minimal unused land and therefore need to maintain their dwindling greenlands. Nations such as the United States, Canada and Australia, from the other side, are far less confined by land availability; nevertheless, they appreciate the importance of brownfield sites for wealth creation and urban regeneration, notably in the U.S.A. Whereas the contributing reasons are different, there are brownfield sites in conventional industrial areas and in urban cities, as well as in peripheral locations. This has contributed to numerous policies and initiatives to promote brownfield regeneration.

In order to draw new interest and investment, many countries and communities have identified their underutilized properties, facilities and systems as targets for government or private reconstruction. The goal of regenerating these brownfield sites is to find more economically

feasible or socially beneficial uses that are better suited to the needs of the community. Brownfield regeneration projects that employ the community-based approach to the development projects which mainly emphasize on the importance of engaging local communities in decision-making, planning, execution of the regeneration development projects were chosen from different cities around the world.

Different projects in different countries demonstrate that in fact there are a few noteworthy cases around the world which are active examples of community engagement in the urban regeneration of brownfields, and the challenge was to select how many instances to list. The following cases were selected to illustrate the diversity of community participation in brownfield regeneration, variations in size, area, practices, use as well as goals intended to be achieved.

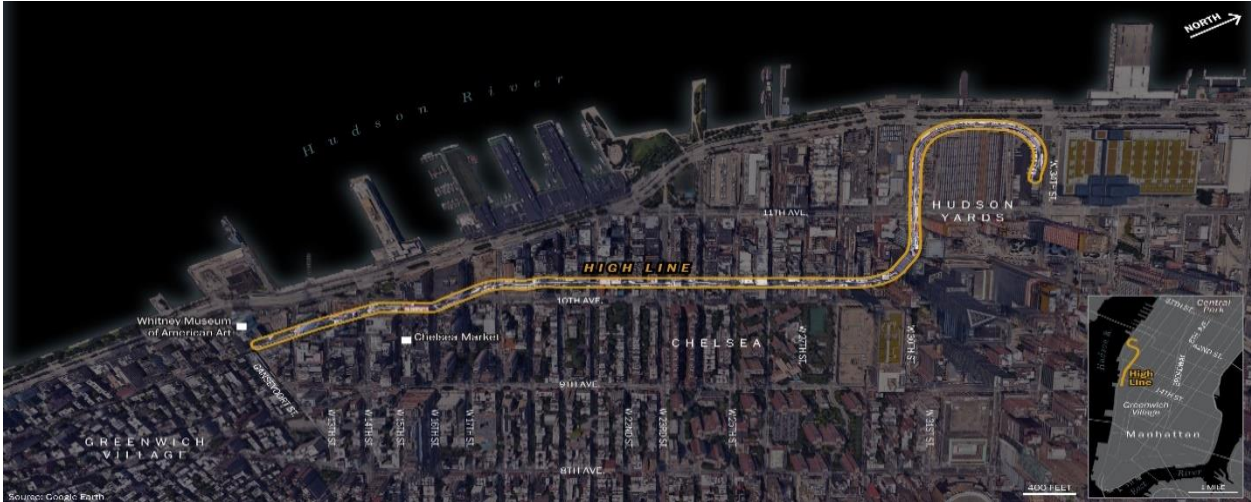
### **3.5.1 Brooklyn Navy Yard High Line, New York, USA**

The Brooklyn Navy Yard High Line Park is a 2.33 km section of the decommissioned Central New York Railway. The High Line has been restored and designed as a greenway and a railway-to-trail park, inspired by the 4.8-kilometer Promenade plantée elevated linear park, a similar successful project completed in Paris in 1993.



**Figure 3.3:** High-Line railroad in the 1980's. (washingtonpost, 2013)





**Figure 3.4:** The high line map layout. (washingtonpost, 2013)

In the 1980s, after the railroad was out of operation, a consortium of landowners and business owners pushed for its removal to pave way for bigger developments. This was heavily contested by local residents and activists who protested the demolition attempts in court. In 1999, a group named "Friends of the High Line" was formed by High Line residents to lobby for the conservation of the High Line and to reuse it as a public open space. A report revealed it was indeed financially beneficial to commission the High Line project and this culminated in a healthy competition for proposals on the High Line design. In 2006, the CSX Transport Company donated custody of the High Line to The City, and the best design was selected and planned to be the image of New York City after several community consultations.

The participation of the community to directly enhance the regeneration is one to be really appreciated. With the coming together of the community and forming a lobbying group "Friends of the High Line" which spearheaded the regeneration of the decommissioned railway-line into a user friendly public space. The role the community within its neighborhood cannot be understated as the High Line has already become a signature feature and a powerful driver of New York City development. This is deemed to have greatly contributed to the revitalization of Manhattan's West Side. In 2005, the city remodeled the region all around High Line in an effort to enhance development while maintaining the neighborhood's heritage. The park's combination

of zoning changes and expansion has helped foster one of the largest growing and vibrant communities in New York City.

The layout of the park is undoubtedly symbolic and has prompted other cities to determine the capacity to duplicate it in their cities. The High Line can be seen as a relevant and important political, ecological, technological, social and economically sustainable initiative. Politically, as proof and as an indication of the importance of community participation, where the help from the residents of neighboring communities played a significant role in its success. Ecologically speaking, it is in the middle of the city, with a 6-acre green roof. Historically, the conversion as a construction project of an abandoned rail line into a new public space was unheard of in the United States of America. Socially it developed into a world-class and an internationally recognized park, where families, visitors as well as the city get together and economically as an entrepreneurial venture that has shown the ability of public spaces to increase income, attract businesses and stimulate local economic development.

**Table 3.3:** Brooklyn Navy Yard High Line summary

Title	Description
Location	New York City, USA
Area	2.33 km
Previous Use	Raised Railway Line
New Use	Public Park
Sustainable Factors	There was a need to preserve and reuse the High Line as a public open space. It established recreational facilities and a public walkway by modifying the existing layout, while preserving local culture and heritage.
Stakeholders	<ul style="list-style-type: none"> <li>- "Friends of the High Line" organization.</li> <li>- New York city government.</li> <li>- CSX Transportation company.</li> </ul>
Role of Community	<ul style="list-style-type: none"> <li>- Lobbied for the regeneration of the park.</li> <li>- Came up with designs that would better serve them.</li> </ul>
Driving Factors	<ul style="list-style-type: none"> <li>- The Collaboration of community and the governmental bodies.</li> <li>- The financial model for the project was very conducive.</li> </ul>
Results	- The High Line, in its neighborhood, has become a signature element and a strong driver of investment in New York City, while preserving the identity of the neighborhood. This is considered to have contributed significantly to the rejuvenation of the West Side of Manhattan.



**Figure 3.5:** Present day view of the Highline. (Highline, 2018)

### **3.5.2 Paris Seine Rive Gauche, Paris, France**

Seine Rive Gauche is considered to be the largest and most significant urban project of the France capital since the time of the famous French official Baron Haussmann. Regenerated into a compact dense mixed-use, mixed-income, pedestrian-and bike-friendly series of modern developments in public transport and buildings. It has been in development from 1995 to the present day on former rail sheds, warehouses and industrial property, and has been identified as a quality model for urban design and sustainable transport planning.

Siene Rive Gauche is an example of public urban planning, where the role of the community and the private sector is limited to the development and construction of the individual parcels of land within the overall plan. The site is divided into zones, with each zone having its own coordinating architectural team, with different architects and owners managing the various buildings in each zone.



**Figure 3.6:** Seine Rive Gauche, Paris in the 1980's. (Skyscrapercity, 2016)

The Paris Rive Gauche project is managed and built by SEMAPA, a semi-public company run by the mayor, elected by the community, and a number of shareholders (government bodies and civil society bodies). In 1991, the 13th administrative district, in which the Paris Seine Rive Gauche project is in, was designated as a (mixed growth zone) for the start of the SEMAPA led regeneration project. In 2003 the Paris Council changed the program to be more responsive to social needs, with changes to the (zone development plan) aimed at ensuring a high social mix. This enabled the participation of community in town planning which has played a very significant role in the success of this regeneration project.

The project, being community driven, has resulted in it being one of the key success drivers of the project; the creation of a semi-public company to manage regeneration has made the project more community-based, giving it its unique identity. The combination of the stakeholders including the government and civil society bodies have helped have this transitioning effect, where the different developments put in place are carefully assessed and evaluated to see if they meet the society's needs and expectations. Also with the community being involved in the governance of the SEMAPA body, they play a role in ensuring that the zoning laws are followed to the latter and are also responsible for the final handover of the completed projects to the clients after they have fully evaluated that they are sustainable and compliant with the requirements set.





**Figure 3.7:** Seine Rive Gauche, Paris in 2018. (Skyscrapercity, 2019)



**Figure 3.8:** Regenerated Seine Rive Gauche, Paris in 2018. (Skyscrapercity, 2019)

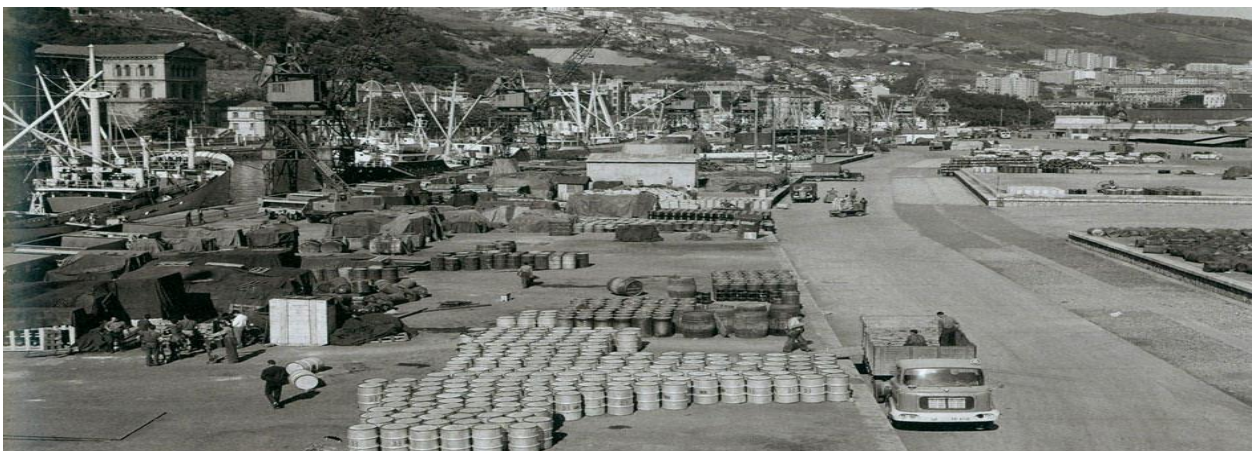
**Table 3.4:** Seine rive gauche summary

Title	Description
Location	Paris, France
Area	130 hectares
Previous Use	Rail Yards and Industrial Facilities
New Use	Mixed-Use Development
Sustainable Factors	Providing sustainable development to the east of Paris and creating job opportunities while responding to the city's need for housing, offices and new public facilities; this has been achieved in order to achieve sustainable urban growth while at the same time linking it to the architectural context-considered values.

Stakeholders	<ul style="list-style-type: none"> <li>- Local authority of Paris city.</li> <li>- SEMAPA semi-public company.</li> <li>- Governmental bodies,</li> <li>- Civil Societies in the community.</li> </ul>
Role of Community	<ul style="list-style-type: none"> <li>- The community through the SEMAPA body, plays a role in ensuring that the regeneration and zoning laws are followed.</li> <li>- The Community is also tasked with participating in discussions that help design plans that better sort their needs.</li> </ul>
Driving Factors	<ul style="list-style-type: none"> <li>- The project, which has been publically driven, has resulted in it being one of the key success drivers of the project.</li> </ul>
Results	<ul style="list-style-type: none"> <li>- The project is a response to the situation in the city, providing a vibrant mixed living district that attracts people and businesses to the underused area.</li> </ul>

### 3.5.3 Abandoibarra City regeneration, Bilbao, Spain

Abandoibarra (The word means Abando Valley (Abando + Ibar) is an area located next to the Bilbao estuary with an area of 348,500 square meters) is a Brownfield land once occupied by a port as well as a railroad. Bilbao was a large industrial port town on both sides of the river, with such great emphasis on mining and manufacturing activities. Deindustrialization as a result of the financial recession of the 1980s had an impact on the entire waterfront and created an opportunity for urban regeneration within the region. Generally, the transformation phase of the city was carried out through the regeneration of old industrial spaces and its waterfront. The area that used to be shipyards and container locations are now riverside boardwalks, open-air art galleries, new districts and business areas, where top-notch architecture has become one of the key components of the restoration project.



**Figure 3.9:** Abandoibarra city in the 1960's. (Skyscrapercity, 2016)

One of the main components of the revitalisation program was the "recovery of degraded urban infrastructure" by leveraging unused or neglected industrial spaces and rehabilitating the old town. In 1992, the public led company 'Bilbao Ría' was founded in 2000 with the sole aim of planning and managing the urban regeneration of the city. Its function is to promote the acquisition and development of land, to organize and implement projects related to urban planning, transport and the environment.

The city of Bilbao is a rare example of the rebirth of civilization. It features a number of architectural landmarks by famous architects such as Calatrava, Norman foster, Arata Isozaki and Frank Gehry's Guggenheim Bilbao Museum. The project included the construction of a new urban center in Bilbao, with a focus on new investments. The scheme included the demolition of the industrial districts of Abandoibarra. There were many shipbuilding industries in this area, as well as the main freight railway station in the city. The renovation project Abandoibarra was planned to replace the entire industrial district with garden parks, museum exhibitions, commercial buildings, apartment complexes and education centers. The Guggenheim Museum was the first part of the regeneration project for the Bilbao Region and the Community. The regeneration project of the area is led and financed by the government and through that the Guggenheim Foundation was commissioned and set up with the supervision of the Guggenheim Museum construction tasked to the company 'Bilbao Ría'.

The recovery strategy was to rebrand Bilbao as a "poly-centric global city" to become a "city of innovation and knowledge" to attract all kinds of creative professionals. This was its main key strategy that led to its success; the Public company, 'Bilbao Ría' founded in 2000 with the sole aim of planning and managing the urban regeneration of the city, helped bring together different stakeholders in the community, to bring together ideas of the regeneration of the city. One of the key successful concepts was the conversion of the former railways to beautiful and aesthetically appealing riverside boardwalks which have helped boost the image and identity of the city of Bilbao.





**Figure 3.10:** Abandoibarra City in the present day. (Skyscrapercity, 2019)

**Table 3.5:** Abandoibarra City summary

Title	Description
Location	Bilbao, Spain
Area	348,500 Sq. meters
Previous Use	Harbor and Railway
New Use	Mixed-Use Development
Sustainable Factors	Transforming the economy from traditional industries into a culture and knowledge-based economy through the provision of services and facilities that serve the development of the city. This was achieved by organizing multiple stakeholders to enhance the natural environment and by balancing diverse interests.
Stakeholders	<ul style="list-style-type: none"> <li>- Bilbao Ría Non-Profit Public Company.</li> <li>- Government Bodies.</li> </ul>
Role of Community	- The Community is also tasked with participating in discussions that help design plans that better sort their needs.
Driving Factors	<ul style="list-style-type: none"> <li>- The project brings together all levels of government and the balance between different political interests.</li> <li>- The financial model for the project was very conducive.</li> </ul>
Results	- The redevelopment project has brought many advantages to the city: economic transformation, career opportunities, physical and environmental change, improved mobility and accessibility.





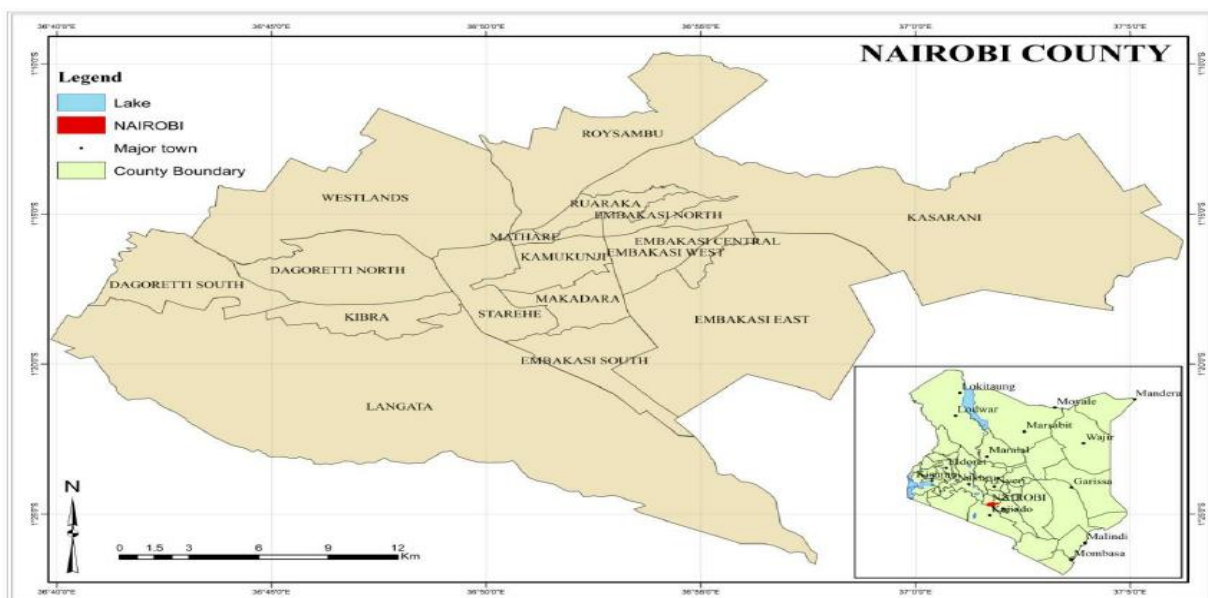
**Figure 3.11:** Frank Gehry Guggenheim Bilbao museum on the Abandoibarra city regenerated brownfield land. (Guggenheim.com, Retrieved 23<sup>rd</sup> October,2020)

## CHAPTER 4

### COMMUNITY PARTICIPATION IN URBAN BROWNFIELD LANDS REGENERATION IN NAIROBI, KENYA

#### 4.1 Nairobi, Kenya (Study Area)

Kenya is an East African country bordering the Indian Ocean with a population of more than 51 million according to the recently concluded 2018 census. It is well known for its savannah grasslands that are home to the world's big five wildlife, also boasting beautiful beaches, amazing cultures, the best great distance runners in the world, biodiversity, tropical warm climates. Kenya has 47 counties with its capital city being Nairobi City County, which is the world's only capital city with a national park. Nairobi is also Kenya's largest city by population. As a result of the promulgation of the 2010 constitution of Kenya, the City Council of Nairobi was disbanded and replaced by the Nairobi City County.



**Figure 4.1:** Nairobi city county map. (NIUDMP, 2015)

The Nairobi County is made up of 17 sub-counties which comprise of; Kibra, Starehe, South Dagoretti, Mathare, North Dagoretti, Roysambu, South Embakasi, North Embakasi, Westlands,

Central Embakasi, Langata, Makadara, East Embakasi, Kamukunji, Ruaraka, West Embakasi, and Kasarani. There are 85 wards in the county, served by 85 elected members who make up the Nairobi County Assembly. The history of Nairobi, known as the "Green City in the Sun", dates back to 1899 and continues to develop as rural residents find their way to this big city for job opportunities.

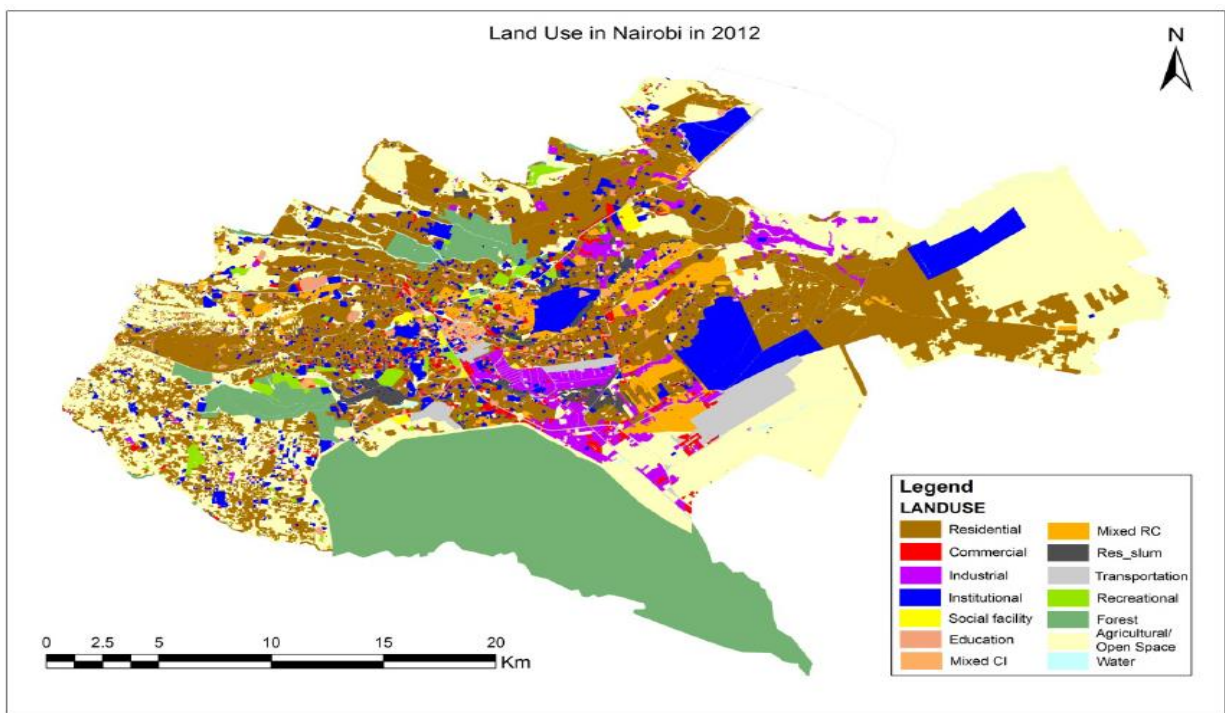
The study area was chosen because of the researcher's accessibility and relevance. It would also be worth noting that it was also a suitable case study since Nairobi County passed a law in the Nairobi County Public Participation Act No 11 of 2015, to involve the community in development projects, but nonetheless, effective public participation has not yet been realized. As envisaged by the constitution that the public should take part in development projects, the number of residents attending public forums and meetings is very minimal. Furthermore, a major problem is inadequate delivery of services. In addition, the researcher is a resident of Nairobi County, so it will minimize the economic cost of the report. The sub-county in Nairobi County, namely Starehe and in particular; Ngara, Central CBD and Pangani Wards, will be the target population. This was deliberately chosen primarily because several brownfield lands regeneration initiatives have been undertaken by the Nairobi County Government over the last 3 years and which would help shed more light into the role the community participates in the regeneration of the brownfield lands.

#### **4.1.1 Main issues of current conditions and urban renewal development strategy**

Nairobi was not set up by sheer coincidence. As illustrated by the 1901 'Plan for a Railway Town' carried out by railway engineers, the town was carefully designed from the outset to be more of a rail depot where different goods would be stored on their way to Uganda. The architecture and writings of various architects such as Marcus Vitruvius Pollio were seen to support the three main central aims at the time Nairobi was founded: power, functionality and elegance (White et al. 1948). The era just after Second World War also witnessed major developments in the construction industry in Nairobi. The rise was that of small homes, industries and warehouses immediately after 1946 with a substantial number of residential

houses comprising of apartments being erected by 1954. Also on different instances saw the rise in development of shops and other forms of housing, with several storied buildings coming up in the CBD. This formed the backbone of Nairobi City and as time passed and the conventional ways of life long forgotten, many buildings became derelict and abandoned and which later constituted the city's Brownfield lands. This formed part of the restoration program to regenerate the city of Nairobi.

Urban planning is very complex and competitive in Nairobi. It is very important to recognize the issues facing Nairobi in order to establish a strategic plan that addresses the needs of the community, and avoiding these challenges makes it much more challenging to deal with them through time. Nairobi, however, does have a population that typically opposes official proposals for any change in the city's structure. In part, the urban planning of Nairobi is carried out by housing developers and property speculators rather than just the architects of the region. Private dynamics are increasingly prevailing as policymakers have been pressured to approve the plans of private developers.



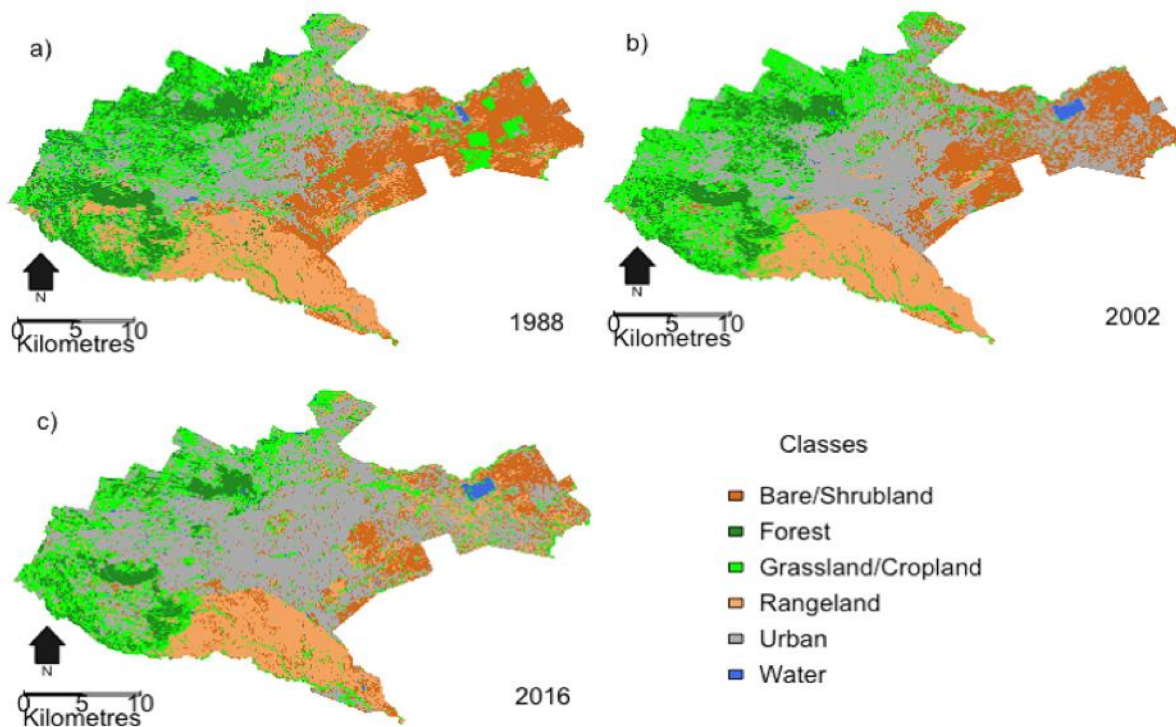
**Figure 4.2:** Nairobi land use. (NIUDMP, 2015)

The 'Integrated Urban Development Masterplan for the City of Nairobi' report outlines conceptual directions for urban development and land use in order to meet the needs of a variety of sectors and citizens. In terms of urban planning and land use, the key problems facing Nairobi in particular are:

1. Population and economic development. Nairobi needs to curb the booming population growth and generate structures for economic development which would be sustainable, while at the same time guaranteeing social equality. It also needs to concentrate on the 6.7% of the total area, where population concentration, traffic congestion and loss of agricultural land and the degree of land suitability for production is increasing tremendously.
2. The unintended development in utilities and housing. In addition to being prepared for future expansion, Nairobi needs to adjust from the preset heritages that Kenya as a country has suffered due to unplanned growth in the last century. This can be seen by the rise in abandoned conventional buildings that have since left derelict as the city pursues for more modern and contemporary designs.
3. Biodiversity destruction in urban areas. A lot of public land has been subjected to pollution and contamination which makes such lands unusable for development. To avoid such degradation, Nairobi requires radical solutions to curb this menace.

In addition to the minimal vacant greenlands available, the majority of urban development problems in Nairobi are associated with the high density of activities in residential areas (Myers, 2015). In addition, the majority of urban growth projects are in upcoming cities and on the periphery of the city, resulting in a trend of sprawling urbanization, inefficient land use and low densities, with peripheral residents slowly becoming disconnected to the main city. The community can ensure that they take part in regeneration projects with the idea that it may help better their needs in the upcoming future.





**Figure 4.3:** Nairobi loss of greenlands over years. (Langsdale, 2017)

#### 4.1.2 Resource allocation and utilization of existing assets

Allocation of resources is one of the greatest obstacles hindering Nairobi's urban growth with the most difficult resource here being usable land availability. While vacant greenlands within the city being quite minimal, there is a need to use or reuse areas within the city. An even greater need is to reconsider the use of neglected assets as capital, as well as changing former industrial land to other uses, considering the relocation/redevelopment of industrial facilities, military bases and the other derelict empty spaces. This however needs a strategic plan to deal with these lands (Muraya, 2006). Furthermore, the re-distribution of density of population in certain places to make the most of land prices could provide many possibilities for growth in terms of land use shift. Environmentally damaging activities should be considered and moved further away from the Center of the city.

According to Mitullah, (2012) the governance of Nairobi City has identified relevant goals and priorities for their current and future land assets from the Strategic Plan in both the Nairobi CBD and its periphery. These plans entail;

*Nairobi CBD:* The re-use of derelict lands for public activities and also the relocation of land-use activities that can be shifted outside of Nairobi so that the land could be freed up to meet the needs of the society for green areas and amenities.

*Periphery of the City:* Land planning could be used to cope with the complexities of potential economic growth and to understand the effectiveness of the different corridors on public transport.

Furthermore, relooking at abandoned prospective and undesirable pieces of land situated in or neighboring the degraded areas or derelict properties could also be included in the urban plans. Deserted assets that need on-site regeneration could draw developers and improve urban sustainability and the livability of residents. Brownfields could be seen as a possible asset that could be used as a leverage for urban planning. In particular with the view of the community involving itself in the regeneration of such sites, developers would better understand what needs need to be met in the society.

#### **4.1.3 Community participation in planning in Nairobi, Kenya**

Essential citizen involvement and participation in governance is a core element of the reforms brought about by the Constitution of Kenya in 2010. Article 1(1) of the Constitution confers all sovereign rights on the people of Kenya. This control can be transmitted directly or through the indirect participation of elected representatives. In addition, the principles of public participation are outlined in a variety of statutory initiatives underpinning delegated powers. Together, these statutory and administrative provisions make use of various mechanisms to include people in the government. Citizen participation is also one of the national values and, as expressed in Articles 10(2,a) and 232(1) of the Constitution, is one of the major principles of civil administration.

Kenya's concept of community recognition and engagement emerged from social programs in developing countries in the early 1970s, which have now become an essential tool for the success of projects (Thwala, 2010). Community Participation in Nairobi has come in handy and has become increasingly relevant due to the lack of top-down policies to resolve concerns such as high levels of poverty and environmental degradation, among others. As a result, the balance has changed from imported technical skilled approaches to community-based development, recognizing the community's expertise and skills of people mainly those in poverty, and working actively to engage them in community projects (Cooke and Kothari, 2001).

According to Thwala, (2010) through; social empowerment, service delivery, increased project delivery and sustainability, project cost allocation and ownership; community involvement has given major benefits to communities in Nairobi. The extent of participation varies from the sharing of information, consultation, decision-making and implementation of different acts. In situations where community members and associations actively participate and take on responsibility, the outcome is typically more successful than where local governments involve them exclusively through baseline surveys and consensus-building forums (Thwala, 2001; 2010). Community-based organizations serve as information flow channels for communities to make informed choices and decisions.

Nairobi residents want local governments to have reciprocal and cooperative relations which should aim to reach a balance of the economic effects of engaging with their local governments. Ledingham, (2001) concluded that, in order for public participation to be effective, relations should be seen as mutually beneficial to the parties involved on the basis of common interests. This theory implies the present predicament as to the Nairobi society as a whole is left out of decision-making and planning. Citizens' interest in group decision-making and policy-making can sometimes be influenced by their thinking and knowledge of their power to influence policy decisions and limited government awareness. Their presence in local government is largely limited because people do not think they will have an impact on local decision-making. As a result, social integration and engagement in Nairobi can be seen as more sensitive than proactive.



## **4.2 Brownfield Lands in Nairobi, Kenya**

Like many African cities, Nairobi is an old city with a long history of development. Nairobi City County has many abandoned and empty houses, some of which were used in the mid-1950s or older than that and were closed down over the years and remained shut as vacant or deserted properties within the city due to many factors. Owing to the highly competitive land market, many land uses have been shifted to the peripheries, all of which are due to the rapid urban sprawl in the region. Sizeable rail networks and old abandoned buildings have been exposed to regeneration strain. Conflicts of interest, re-use costs and ownership disputes resulting from such situations have led to the growth of desolate brownfield lands in the city of Nairobi.

### **4.2.1 Definition of brownfields in the Kenyan context**

Although the word is commonly used in the context of urban planning, Nairobi, Kenya, does not have an exact or standard interpretation of the expression (Brownfields). It is also not listed in Kenyan laws or policies, but perhaps some related words could be used to apply to it are such as 'areas to be re-developed' or 're-planning areas' or 'underused property' or 'polluted properties.'

The term "Brownfield" has still not been used in any of the previous government studies or project schedules with the exception of the physical survey for (Kenya Vision 2030) which states that the phrase "Brownfield" may be used to identify grounds that have not been used adequately leading to insufficient land usage.

While the term 'Brownfield' was used in the project assessment of the (Kenya Vision 2030), the parameters that could be used to describe the appropriate sites or buildings are not widely agreed upon. Nevertheless, it may be interpreted as "ignored/unused lands or buildings" by the project members, and the best use of it could be assessed according to the location description.

Brownfield lands in Nairobi, Kenya could be described as; 'any property or facility that has been originally used or built and is not currently in full use, even if it may be partially occupied or used,' derived from the previous interpretations and as stated in *chapter 2* earlier.

#### 4.2.2 Brownfields examples in Nairobi, Kenya

There are several locations within Nairobi City County and along the Nairobi Railway Station that could be called brownfields. These devalued properties include, in many cases, abandoned or neglected warehouses and storages, small houses and light industrial workshops which are mainly located in important sites (locations) within the urban core. Brownfields really aren't ruined properties, but could be completely existing houses, left abandoned and desolate. It could also include Industrial areas, train stations, old factories or empty residential buildings which could be closed. The railroad warehouses and yards in the Nairobi CBD city, which occupy vast areas of the town, are examples of these sites. In addition, Brownfields could entail of closed factories which were used for manufacturing and old houses which have been deserted for a long time.



**Figure 4.4:** Old abandoned railway and workshops. (Kenypics, 2019)



**Figure 4.5:** Old derelict building in Nairobi.

#### **4.2.3 Types and range of brownfield sites in Nairobi**

Brownfields are not classified on a national scale; thus, no statistical data is available to reflect brownfield areas or numbers. The (NIUDMP) buildings and establishments survey however, indicates that there are a number of uninhabited and unused buildings. This could be described as building structures without activities such as military sites or derelict properties containing old buildings used in the past as residential spaces. In 2010, a survey was conducted by Kenya's Vision 2030 for all parts of Nairobi and funded by UN-Habitat, and this is where the phrase 'Brownfield' was first reported. Brownfields are situated in areas of utilities and near services within the city. According to that survey, there were around 986,716 square meters of total brownfield areas within the city of Nairobi. They are not a significant percentage of the overall urban areas, it could be argued, but they are situated in crucial and significant areas.

Considering the use of these brownfield lands, they can be classified as;

- *According to original use:* The initial uses of brownfields in Nairobi ranges from industrial to commercial areas. The biggest location is the one used for transportation (Nairobi railway storage and warehouses). Old houses that were constructed to house staff and British Settlers which are a significant proportion of brownfield areas in Nairobi. Industrial uses like; old factories and warehouses lastly occupy small scattered sections in the city of Nairobi.

- *According to the ownership:* The possession of these brownfield lands varies across different government agencies, organizations and the private industry. Among other fields, the national government represents the largest percentage of ownership of these lands, accounting for more than 60 percent of the total brownfield area in the city of Nairobi. The brownfields may be managed by one agency or separate authorities. The government's policy in recent years has been to allow the privatization strategy to shift the majority of its public ownership of these lands to private ownership.

#### **4.2.4 The pattern of dealing with brownfields in Nairobi**

A large number of issues in Nairobi are related to the inappropriate land use that has arisen in different areas of the city, as most urban land uses do not comply with any approved strategic plans for the region. Much of the proposed urban land uses, including various manufacturing and design areas, airports, military barracks and cemeteries, were located outside the city center. Because of the land use transformation processes that have pushed the city further out, most of these urban land uses have now become obsolete, and because these redundant activities have left abandoned buildings, these sites need to be redeveloped to accommodate the growth of the city.

There is also inadequate recognition of particular issues with brownfields, such as the severity of contamination, infrastructure and unique conditions for building purposes. This can lead to significant hurdles, most of which stem from the failure of successful and sustainable recovery plans and the complete failure of the project. It also results in a lack of usage of less suitable brownfields in peripheral areas with low land market prices. Transitional uses have been a significant problem for urban development in the areas concerned.

The key trend in dealing with underused real estate assets is selling to gain full benefit, which is most likely impacted by the reuse and redevelopment or sale of the land. Other key significant factors include;

- The Owner of the brownfield land, which is generally managed or held by banks.
- The location of the brownfield land.
- The asset size of the brownfield land (area).
- The influence and Participation of the Community.
- The (supply and demand) market for assets in the surrounding regions.

However, there seems to be a growing interest in the re-use and redevelopment of these brownfield lands in Nairobi but it doesn't overshadow the fact that there are a number of challenges hindering the regeneration of brownfield lands. Some of obstacles to brownfield redevelopment could include;

- Responsibility and possession of land (complex ownership pattern, e.g. government ownership, bank responsibility for property).
- Prerequisite for major capital investment.
- Lack of sufficient and credible expertise within government departments dedicated to the development of Brownfields.
- Lack of shared vision and cohesive planning (between the community and statutory bodies).

The Nairobi City County local authorities are also concerned with such matters relating to the re-use of abandoned sites. However, there is a lack of a coherent mechanism for these authorities to deal with brownfield issues, primarily due to the lack of general legislation, because decisions are currently made on a case-by-case basis. Also with the increased rally by the Kenyan government to include the community in the participation of these regeneration efforts, little can be seen to bear fruit, which has also resulted into the slow regeneration pace of brownfield lands.

#### **4.3 Brownfields regeneration in Nairobi, Kenya**

Although the notion of brownfield regeneration as a major intervention is not so widespread in the city of Nairobi as it deals with developed urban areas, some brownfield sites have been regenerated. Each of them is an unmatched example, but they all share one predominant

characteristic; that they are all brownfields that have been restored. Most of these redevelopment projects are approached separately through a combination of design competitions, master plans and investor preparation. The inclusion of the community in the regeneration of these brownfield lands could also be seen as the missing element to the successful regeneration of these brownfield lands. However, in a wider sense, there are no structural approaches to integrating brownfield regeneration that are important to the Nairobi City's strategic plan or sustainability.


Not all of the brownfields in Nairobi, however, are plagued by pollution problems, but they give a very significant asset, which is land that is not wisely used. This creates opportunities for the regeneration of the available sites in Nairobi. The railroad warehouses and yards in the Nairobi CBD city, which occupy vast areas of the town, are examples of these sites. Usually, the regeneration process faces some common challenges, such as lack of functional knowledge, unclear policies, lack of a reliable regeneration structure, and lack of city-wide database systems, especially for brownfields.



#### **4.4 Brownfield regeneration projects in Nairobi, Kenya**

There are many Brownfield Projects around the world which have been already been carried out that the city of Nairobi pays homage to. Brownfield regeneration projects that employ the community-based approach to the development projects which mainly emphasize on the importance of engaging local communities in decision-making, planning, execution of the regeneration development projects were chosen. In Nairobi to be specific we can narrow down a few examples of brownfield sites that have undergone or are currently undergoing regeneration. These examples vary in scope, objectives and structure of the regeneration programs or organization. Some of these examples are mentioned out in Table 4.1 below.



**Table 4.1:** Examples of brownfield regeneration projects in Nairobi, Kenya.

Project	Previous Use	Proposed/ Current Use	Project Initiated By	Image
Park-Road Affordable Housing Project	Old Abandoned Houses	Mixed-use development with social, common and housing amenities.	Government of Kenya	
Green-Park Bus Terminus	Old Abandoned Railway	New Bus Terminus	Nairobi City County Government	
Old Ngara Housing Project	Old Abandoned Houses	Estate with High-Rise Apartments	Nairobi City County Government	

<b>Project</b>	<b>Previous Use</b>	<b>Proposed/ Current Use</b>	<b>Project Initiated By</b>	<b>Image</b>
Starehe Affordable Housing Project	Old Abandoned Houses	Mixed-use development with social, common and housing amenities.	Government of Kenya	
Proposed Police Forensic Laboratory	Old Military Base	Police Forensic Laboratory	Government of Kenya	

Two case studies were chosen to investigate the concept of community participation in brownfield regeneration, the selection conditions were as follows:

- The type of the Brownfield.
- The location the Brownfield in the city.
- The execution of the regeneration process.
- Public benefit (value) being recognized.
- The involvement of the community in the regeneration process.

The two selected are; *Park-Road Affordable Housing Project* and *Green-Park Bus Terminus*.



#### 4.4.1 Park-Road affordable housing project

Once an Old Derelict built and abandoned land filled with a contaminated swamp, is one of the key projects that the Government of Kenya has been able to regenerate. According to the Kenya Vision 2030, the Government of Kenya put up a plan to ensure that there is affordable housing to its residents and most preferably the low income earners who have long since had an issue with finding suitable accommodation.

The Park Road project, which began construction in April 2019, is the first low-cost housing project to be implemented by the Kenyan national government under the 500,000-unit Affordable Housing Program of the Big Four Agenda. The project which is in Ngara Ward in Nairobi City County and nestled along the Park Road, Kinsasha Road and the Muslim Road. The project will have 1,370 housing units, consisting of one, two and three-bedroom apartments, targeting low-and middle-income earners. The houses have an adequate parking area and social facilities, including a running track, roof-top gardens, solar water heaters, a shopping center, a dispensary and a preschool among others. China State Construction Engineering built the units in a 7.9-acre plot formerly owned by the state, where there were initially 48 separate bungalows built during the colonial era.



**Figure 4.6:** Park-road affordable housing project site location. (Google Maps, 2020)

The Park Road Affordable Housing Project had also been envisioned as a case study for a range of construction obstacles, ranging from environmental rehabilitation to cultural conservation. The aim was to create development models which could be repeated in Nairobi and in the country as a whole in many other environments and other housing projects.



**Figure 4.7:** Overview of park-road housing program. (Pwk, 2020)

*Regeneration Process;* The site was initially a housing estate in the colonial period around the mid 50's and ever since the independence of Kenya, the settlers left the country leaving the houses inhabited by locals under the management of the Nairobi City County government. Through time the buildings became old and derelict, got vacated and remained abandoned which were later on taken over by nature.







**Figure 4.8:** Previous existing structures. (Gicho, 2012)

The ongoing recession and challenging economic times, with financial institutions finding it extremely difficult to make any lending decisions for construction development projects because of their potential risks. Also with the decline in land prices on brownfield lands being seen as a new business opportunity, was the idea behind Kenya's government selection to opt for brownfields rather than Greenfields to build their Affordable Housing Project. This set a foundation for the regeneration of most brownfield lands into development projects that would properly serve the community. The development project has now become a testing ground for seeking solutions for the challenges spanning from the design specifications of the physical regeneration to equally significant challenges with social and economic developments.



**Figure 4.9:** Regeneration works on the park-road brownfield land. (Pwk, 2020)

### ***1. Community participation in the regeneration of the park-road affordable housing project***

The inclusion and participation of different stakeholders is what has been the success of this project which include the State government; Nairobi City County Government; Private entities; Community based groups and Voluntary organizations. The project which is funded by the Government of Kenya but managed by the private sector has seen a huge paradigm shift from the conventional way where projects were fully funded and run by the government to a rather more community based program which involves the inclusion of the private sector and public at large in the execution of the public project. With the inclusion of the public in the planning phase, where they had a huge say on the different plans to be executed on the project cannot be understated.

The inclusion of the community served as one of the flagship concepts in which the government through community groups and different voluntary groups have sought for development ideas from the public. The project, Park-Road Housing Program, being a program to provide affordable housing to the low-income earners, had to seek out ideas from the said people who would benefit from the project. This brought about different ideas and concepts but which in common had to accommodate the houses together with related social and commercial amenities. With this the best design was chosen and the program was rolled out which entailed one bedroom units, two bedroom units and three bedroom units which varied in size and cost varying from 15,000\$ to 40,000\$.

In comparison to wholly driven and managed government projects, which are occasioned with overpricing of tenders and projects which at times result to the stalling of these projects, the inclusion of the public in the planning of the Park-Road Housing Project is one of the key pillars that have attributed to its success. The public were not only involved in the planning but also in the construction phase, where they worked as handy men in the project so that the project can also uplift the lives of the people in the society, in short a project for the people, by the people. However, the inclusion of the society in the project doesn't come without its challenges; the time taken to get the public opinions and ideas to the implementation takes a long of time, which

usually at times consumes money. Also it is really hard to harmonize all the communities' ideas, interests into one design, therefore there will still be some dissatisfied users at the end. Nonetheless, the benefits of including the society in the regeneration of the Park-Road Housing Project outweighs the pitfalls and this is one of the reasons that can be attributed to the success of the project.



**Figure 4.10:** Completed Units of the park-road housing program. (Pwk, 2020)



## ***2. Outcomes and achievements of the park-road affordable housing project***

In Nairobi, Kenya, this project is considered to be a good implementation of the principle of successful brownfield regeneration. It offers a number of lessons, good practices and ideas that could be acquired, they include:

- By transforming old abandoned houses into a mixed development project that serves the community, the project restored negative brownfield lands into positive beneficial use.
- By offering a Solution to the current housing concerns brought about by the limited percentage of greenfields in Nairobi.
- By offering a systematic and coordinated approach of carrying a project at the level of the community, by linking the social problems affecting the community with the relevant project's context.
- Long-term and lasting growth; this was done by successfully creating a lasting development through Tackling larger concerns in a methodical manner. This is because the activities were coordinated together with community assistance, which resulted to a management plan was effective and productive.
- Creating a publicly acceptable project in the redevelopment process by linking the "top-down" approach to the "bottom up" approach. This is because the community was involved as a real stakeholder, not only taking into account the needs and priorities of the community, but also enabling the community to participate in the planning process, as many of the development proposals came from the residents themselves.
- It improved the sensitive aspects and integrated delivery of the following objectives;
  - Economic: Providing nearby neighborhoods with workforce development.
  - Social and culture: the provision of safe and usable residential community.
  - Environmental: Brownfield site cleanup into a viable project to the society.
  - Institutional: connecting and bridging gaps on issues relevant to the society by bringing together the local communities and government authorities.
  - Physical: enhancement of the quality of life that of the urban world.

In conclusion, the project provided an effective example and benchmark for future regeneration projects in the city of Nairobi and in Kenya as a whole.

#### **4.4.2 Green-Park bus terminus**

The Green Park Terminus is a newly designated bus terminal developed by Nairobi Metropolitan Services (NMS), as part of the Nairobi Integrated Urban Growth Master Plan and Decongestion Strategy, under which public service buses will end their journeys outside of the Nairobi Central Business District. Green-Park bus terminus, formerly known to many as Railways club, was initially a railway depot and workshop where old trains and their wagons used to stop over but were since left abandoned as the city's infrastructure grew.

The Green-Park Bus Terminal is one of five new terminals to be built by Nairobi Metropolitan Services (NMS) to assist in the relocation of public service vehicles (PSVs) from the central business district of Nairobi in order to minimize city congestion. Public Service Vehicles (PSV) plying on Ngong Road and Lang'ata Road and precisely on the routes of; (Rongai, Kawangware, Kiserian, Kibera, Rongai, Kikuyu and Langata) will end their journeys at the Green-Park bus terminal. The bus station will act as both a drop-off point and a pick-up point for passengers.



**Figure 4.11:** Green-park bus terminus ongoing construction. (Nmskenya, 2020)

The bus terminal will be equipped with modern services, including a police station, a hospital and a mini-supermarket in the bus park. In order to provide lighting, the site will be equipped with a solar energy system and gardens will be built around the bus park to enhance its beauty. Two modern ablution blocks, one at the drop-off point and the other at the pick-up point, will also be built in Green Park. They will be set up in a way that will be helpful to everyone, including children and the physically disabled.

*Regeneration Process;* The bus-terminus which was once an old railway depot and warehouse is a proper case study of how old railway lines could be regenerated into different public amenities which serve the community better. The initial railway station used to serve as an industrial depot for the Uganda Railway line that was being built. Workshops where railway workers would work surrounded the railway station. With the advancement of infrastructure, the trains became more obsolete as better and fast means of transport were realized. This led to the slow death of the railway which after years of being abandoned was left to be a train-track and wagon yard which became more derelict as years passed by.



**Figure 4.12:** Former green-park terminus with abandoned railway and workshops (Nmskenya, 2020)

The location of the abandoned railway station was so strategic this formed part of the decision to situate the new bus terminus there. The regeneration of the old abandoned railway and workshop under the Nairobi Metropolitan Services (NMS), as part of the Nairobi Integrated



Urban Growth Master Plan and Decongestion Strategy into a new bus terminal is one of the first of its kind around East Africa and its success is dependent on the key relationship between different stakeholders and the Nairobi City County Government. This has also become a framework for the revival of infrastructure projects in some of the brownfield lands that would well enough benefit the city of Nairobi. The development project has now become a viable analysis in the quest for solutions to problems ranging from physical regeneration requirements to equally important social and economic policy initiatives.



**Figure 4.13:** Regeneration works on the green-park bus terminus brownfield land (Nmskenya, 2020)

### ***1. Community participation in the regeneration of the green-park bus terminus***

The Nairobi City County Government's initiative to involve multiple stakeholders from the transport sector through the incorporation of the Nairobi Metropolitan Services (NMS) is what could be seen as the success of the project. The Nairobi City County Government; owners of Public Service Vehicles (PSVs) and representatives of different transport Sacco's; community-based organizations and charitable organizations are some of stakeholders taking part in this project. The project is sponsored by the Government of Nairobi City County with the support of the Government of Kenya. The project has evolved from the traditional way in which the

Nairobi City County Government implements and operates projects to a much more community-based program requiring the participation of the private sector and the general public in the implementation of the public project. The inclusion of the public in the planning process can be said to be very important where they have had a significant say in the many designs to be carried out on the proposed Green-Park Bus Terminal and which would best serve society.

The transport network in Nairobi City County has seen numerous challenges through which there has been lack of commitment and trust between the owners of Public Service Vehicles (PSVs); representatives of Sacco stakeholders and the Nairobi City County Government. This has presented a huge loophole where members of the public have been affected with the lack of cooperation between the two sectors. With the recent initiative in the Green-Park Bus Project, the mutual participation in-between the between the owners of Public Service Vehicles (PSVs); representatives of Sacco stakeholders and the Nairobi City County Government can be seen as the key successful driver of this project. The Public Service Vehicles (PSVs); representatives of Sacco stakeholders who represent the society were not only involved in the planning but also in the construction phase, where they worked to allocate the different terminal locations for the specific routes so that the project could better serve and uplift the lives of the people in the society. One of the factors that can be attributed to the success of the project is the participation of community, through the involvement of the owners of Public Service Vehicles (PSVs); representatives of Sacco stakeholders, in the regeneration of the Green-Park Bus Terminal Project.

## ***2. Outcomes and achievements of the green-park bus terminus***

The Green-Park Bus Park regeneration development is deemed to be an exceptional example of brownfield regeneration which has employed a rather systematic and integrated regeneration approach. Through the reusing the former railway yard it has achieved compact growth, which has been achieved by strengthening the existing urban city cores and transport corridors. Whilst also revitalizing existing urban structures the regeneration project has aimed to develop a more integrated urban city. The project aims to enhance the connectivity of the Nairobi region through

a more modern transport network which is currently under construction. It also renovated unplanned sites, built green spaces and provided the community with modern amenities. The key achievement of this urban regeneration project is to address the challenges of establishing a sustainable transport infrastructure network through the participation of the community in urban brownfield regeneration.



**Figure 4.14:** Regeneration works on the green-park bus terminus brownfield land (Nmskenya, 2020)

#### **4.5 Analysis of User Survey**

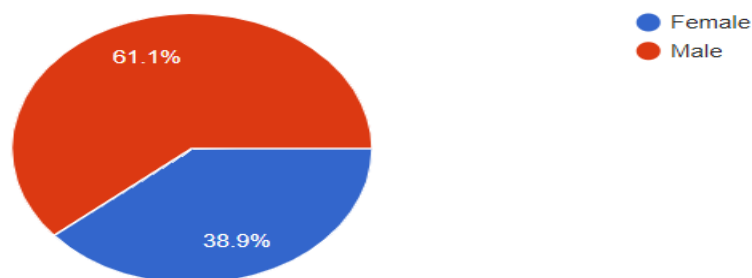
This section focuses on the review, presentation and interpretation of data obtained from a survey of respondents using Google forms based on the study's objectives. This study aimed to explain what brownfields are and what value they have when they are regenerated into projects for urban community development. This research was also intended to bring home an awareness of the role of community engagement in the creation of community development projects and to be specific to urban brownfield regeneration projects. The goal of the study was also to examine the different factors affecting community engagement in urban brownfield land regeneration and growth.

The questionnaire issued on Google forms was broken down into three sections; A, B and C respectively, with section B and C employing the use of Likert scale to gather data. (Section A) sought to know the background information of the respondents, (section B) aimed to establish how the community perceives the regeneration of brownfield lands and its significance to the society while (section C) sought to shed light on the distinctive role and influence the community's participation has in the regeneration of brownfield lands while examining different factors affecting community engagement. Answers were provided to the questions by selecting the most suitable alternative. The respondents of the study any resident from Ngara Ward, Central CBD Ward, Pangani / Pumwani or any Other Ward in Nairobi where brownfield lands are located. Also randomly selected Top Management officials from teams of various construction bodies in Kenya were viable to answer the questionnaires issued. The total number of participants in the study was 229. The data analysis was carried out using Microsoft Excel software; the presentation was made using graphs and tables, while the analysis of the data presented was based on the interpretations of the study.

#### 4.5.1 Findings of Section A of the user survey

##### 1. Gender of respondents

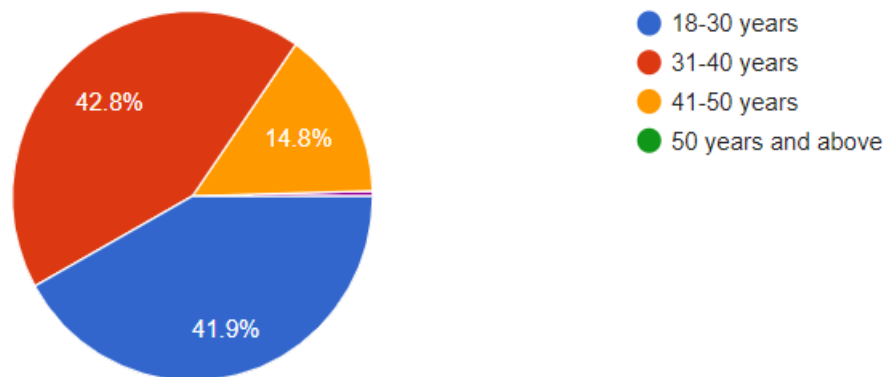
The total number of participants in the study was 229. We had 89 of the total respondents which was 38.9% being female respondents and 140 of the total respondents which was 61.1% being male respondents. The results showed that during data collection, gender neutrality was achieved, and therefore data presented was cut across the board. Figure 4.15 below illustrates this.



**Figure 4.15:** Gender of respondents.

## *2. Age of respondents*

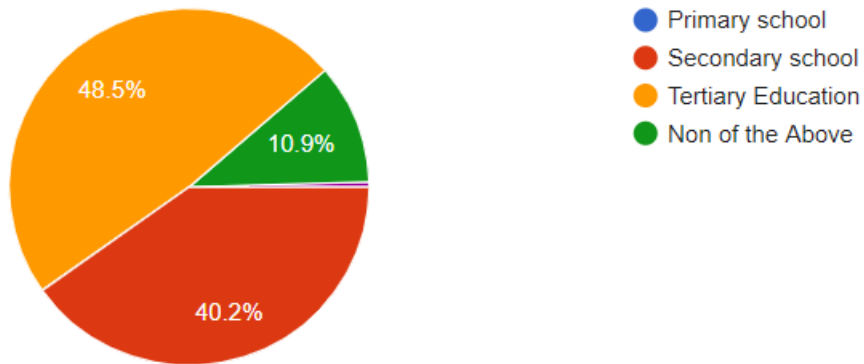
The age of the respondents was requested so that, as regards involvement in community development, the researcher could find out the most active as well as the least active age group. It was reported that 42.8% of the participants with 98 of the respondents being 31-40 years of age, 41.9% with 96 of the respondents being below 30 years of age, 14.8% with 30 of the respondents being 41-50 years of age, and 3% were above 50 years of age. The distribution of the ages is shown in Figure 4.2 below.



**Figure 4.16:** Age of respondents.

## *3. Level of education*

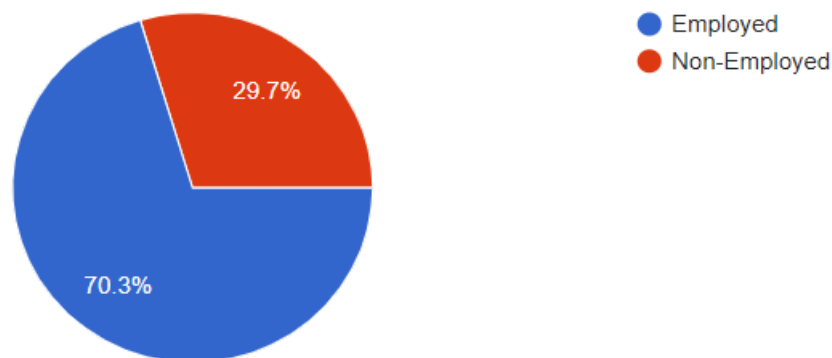
As the highest level of completed education, most of the respondents had tertiary education; 111 participants which was 48.5% had attained tertiary education, with 92 respondents which was 40.2% having attained secondary education, with the remaining 10.9% receiving none of the above or primary education which constituted of about 25 respondents. Since more than 88% of the respondents had secondary education and above, it meant that the respondents were well educated and were able to make fair and impartial decisions on the questions of the survey and the study's interests. Figure 4.17 below illustrates this.



**Figure 4.17:** Level of education.

#### ***4. Employment status***

From the total 229 respondents, 161 of them indicated that they were employed which was 70.3% of the respondents while 68 respondents did not have any form of employment and constituted 29.7% of the respondents. This is illustrated in Figure 4.18 below;

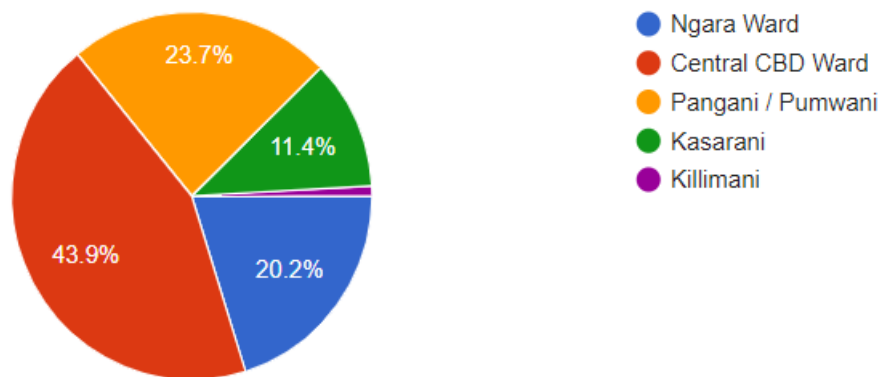


**Figure 4.18:** Employment status

#### ***5. Area of residence***

The selection of the residence was in relation to proximity to brownfield sites. The wards are in Nairobi City County. 100 respondents indicated that they reside around Central CBD ward which comprises of 43.9%, while 54 respondents answered that they live in Pangani/Pumwani Ward which comprised of 23.7% of the participants. 20.2% of the respondents which numbered 46 respondents indicated that they reside in Ngara ward while the rest 12.2 % living in other wards; Kasarani and Kilimani respectively. This is as shown in Figure 4.19 below;

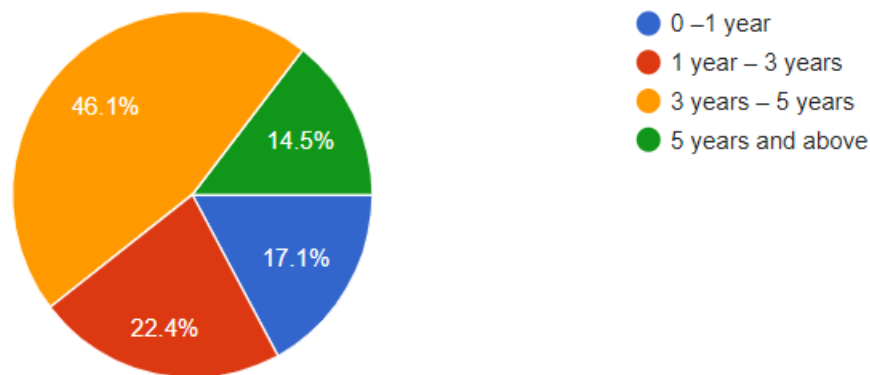




**Figure 4.19:** Area of residence

### ***6. Duration lived around brownfield lands***

The respondents being residents of different brownfield lands; it was important to understand how long they had lived around Brownfield Lands so as to properly understand the respondents better. With majority of the respondents living around brownfield lands for 3-5 years which accounted for 46.1% of the respondents which was 105 respondents. 51 respondents which was 22.4% of the participants indicated that they had lived around brownfield lands for 1-3 years. 17.1% of the respondents which accounted for 39 participants answered that they had lived in brownfield lands for less than a year, with 33 respondents saying they have lived in brownfield lands for more than 5 years, this was the minority which accounted for 14.5% of the respondents. These results suggest that the residents under investigation had lived around brownfield lands long enough to appreciate the importance of the lands' regeneration.



**Figure 4.20:** Duration lived around brownfield lands

#### 4.5.2 Findings of Section B of the user survey

The research aims to establish how the community perceives the regeneration of brownfield lands. The regeneration of brownfield lands should have some significance to the community residing next to it. The results of this section of the survey which was conducted using the Likert scale where respondents answered in a ranking of 1 – 5 where a Mean = 1 represented strongly disagree, Mean = 2 suggested disagree, Mean = 3 represented neutral, Mean = 4 illustrated agree and a Mean = 5 portrayed strongly agree.

This is as outlined in Table 4.2 below;

**Table 4.2:** Community views about regenerated urban brownfield lands

Question		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
7. Does the regeneration of Urban Brownfield Lands help better public transportation and improve infrastructure?	Percentage	-	1.31%	8.30%	37.11%	53.28%	4.42
	Frequency	-	3	19	85	122	
8. Does the regeneration of Urban Brownfield Lands better allocate green spaces for public use?	Percentage	-	-	10.48%	59.39%	30.13%	4.20
	Frequency	-	-	24	136	69	
9. Does the regeneration of Urban Brownfield Lands lead to the improved health and well-being of the society?	Percentage	-	0.44%	12.23%	33.62%	53.71%	4.41
	Frequency	-	1	28	77	123	
10. Does the regeneration of Urban Brownfield Lands play a role in the protection of the environment?	Percentage	-	-	9.61%	51.53%	38.86%	4.29
	Frequency	-	-	22	118	89	
11. Does the regeneration of Urban Brownfield Lands lead to the creation and retention of employment opportunities?	Percentage	-	1.75%	9.17%	34.49%	54.59%	4.42
	Frequency	-	4	21	79	125	

The study's results depict that for question 7; ‘does the regeneration of Urban Brownfield Lands help better public transportation and improve infrastructure?’ The majority of the respondents with a mean of 4.42 implied that the respondents agree that the urban brownfield lands



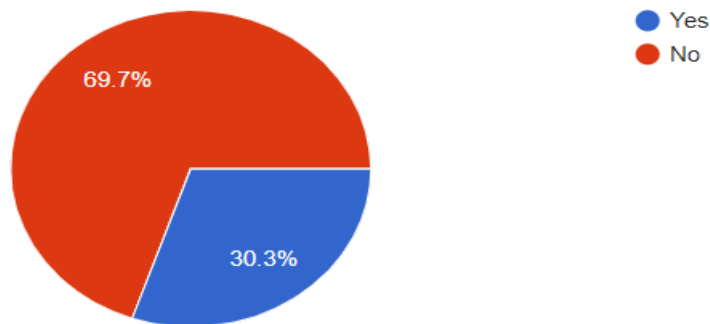
regeneration aims to boost public transport and improve community infrastructure. A mean of 4.20 for question 8; ‘does the regeneration of Urban Brownfield Lands better allocate green spaces for public use?’ This shows that the participants agree that urban brownfield lands regeneration aims to better allocate green areas for public use. In question 9; ‘does the regeneration of Urban Brownfield Lands lead to the improved health and well-being of the society?’ The respondents with a mean of 4.41 hint out that the respondents agree that with the urban regeneration of brownfield lands, the society’s health and well-being would be drastically improved. The survey participants responded with a mean of 4.29 to question 10; ‘does the regeneration of Urban Brownfield Lands play a role in the protection of the environment?’ This results depict that the respondents agree that urban brownfield lands restoration plays a huge and significant part in protecting the environment. A mean of 4.42 for question 11; ‘does the regeneration of Urban Brownfield Lands lead to the creation and retention of employment opportunities?’ This implies that the respondents agree that with the restoration and regeneration of brownfield lands, the community gains more employment opportunities.

#### **4.5.3 Findings of Section C of the user survey**

The study sought to ascertain how the community is involved in the Urban Brownfield Restoration. This study in this section sought to give light the distinctive effect of the community's involvement on the restoration of brownfield lands. This will provide more information and guidance on how the community is engaged in the regeneration of urban brownfield lands.

The study while pursuing to know what impact the community participation plays in the regeneration of brownfield lands, sought to know the number of respondents who had attended any development meetings in their community that related to urban brownfield lands regeneration. 69.7% of the respondents which was 158 study participants said they had never attended any development meetings in their community that related to urban brownfield lands regeneration while 71 respondents which articulated to 30.3% of the respondents said that they had attended. As shown in Figure 4.21 below, this clearly outlines that there is a need for the

community to participate in development meetings in their community and particularly that related with brownfields regeneration.



**Figure 4.21:** Attendance of community meetings related to urban brownfield lands regeneration

The results of this section of the survey were also conducted using the Likert scale where respondents answered in a ranking of 1 – 5 where a Mean = 1 represented strongly disagree, Mean = 2 suggested disagree, Mean = 3 represented neutral, Mean = 4 illustrated agree and a Mean = 5 portrayed strongly agree. This is as illustrated below in Table 4.3;

**Table 4.3:** Community participation in urban brownfield regeneration

Question		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
13. Is the community directly included in the regeneration plans of urban brownfield lands?	Percentage	7.42%	55.02%	31.44%	5.68%	0.44%	2.37
	Frequency	17	126	72	13	1	
14. Do different stakeholders in the community play a role in the regeneration of brownfield lands?	Percentage	-	0.87%	39.30%	41.05%	18.78%	3.78
	Frequency	-	2	90	94	43	
15. Does including the community in the regeneration of brownfield lands lead to better executed projects than those that are only government based?	Percentage	-	0.44%	10.48%	50.66%	38.42%	4.27
	Frequency	-	1	24	116	88	
16. Does the government help to better community participation the regeneration of the urban brownfield lands?	Percentage	0.44%	0.87%	25.32%	52.84%	20.53%	3.92
	Frequency	1	2	58	121	47	

17. Does the inclusion of the community in the regeneration of brownfield lands lead to outputs that are more based on the society's needs?	Percentage	-	-	7.86%	58.08%	34.06%	4.26
	Frequency	-	-	18	133	78	
18. Is the lack of public awareness for these brownfield land regeneration processes affecting the participation of the community in such projects?	Percentage	-	0.44%	10.48%	32.75%	56.33%	4.45
	Frequency	-	1	24	75	129	
19. Does the community trust that their ideas will be implemented if they participate in the urban brownfield regeneration projects?	Percentage	-	31%	13.54%	36.68%	18.77%	3.43
	Frequency	-	71	31	84	43	
20. Are there any financial implications that the community bears when involving itself in these urban brownfield regeneration projects?	Percentage	1.75%	10.04%	34.49%	41.93%	11.79%	3.52
	Frequency	4	23	79	96	27	

The survey participants responded with a mean of 2.37 to question 13; 'is the community directly included in the regeneration plans of urban brownfield lands?' This implies that the respondents disagree that the community plays a direct role in the regeneration of brownfield lands and feel left out of such development projects. In question 14; 'do different stakeholders in the community play a role in the regeneration of brownfield lands?' The respondents hold a neutral point of view, with a mean of 3.78, with the majority agreeing that indeed the regeneration of brownfield lands is conducted with different stakeholders and not just the government alone with others holding a neutral point of view. The study depicts that the respondents agreed with a mean of 4.27 to question 15; 'does including the community in the regeneration of brownfield lands lead to better executed projects than those that are only government based?' This implies that with the inclusion of the community in the regeneration of brownfield lands the respondents agree that it will result to better executed projects. The survey participants responded with a mean of 3.92 to question 16; 'does the government help to better community participation the regeneration of the urban brownfield lands?' The majority of the respondents agree that the government does help to better the participation of the

community in the regeneration of brownfields with some respondents holding a neutral point of view that there in regards to the government support while some disagree the presence of government support. A mean of 4.26 for question 17; ‘does the inclusion of the community in the regeneration of brownfield lands lead to outputs that are more based on the society’s needs?’ This suggests that the community agrees to the fact that with the inclusion of the community in the regeneration plans of brownfield lands, they feel that the outputs would be more related to their needs. The survey participants responded with a mean of 4.45 to question 18; ‘is the lack of public awareness for these brownfield land regeneration processes affecting the participation of the community in such projects?’ This goes to show that the community agrees that there is an inadequacy of public awareness for the brownfield land regeneration projects which altogether affects the participation of the community in such projects. The respondents with a mean of 3.43 as a response to question 19; ‘does the community trust that their ideas will be implemented if they participate in the urban brownfield regeneration projects?’ This shows that there is a neutral point of view in between the respondents with the majority agreeing that their ideas will be implemented if they participate in brownfield regeneration projects while some of the respondents disagree with the view. The study's results depict that for question 20; ‘are there any financial implications that the community bears when involving itself in these urban brownfield regeneration projects?’ The survey participants responded with a mean of 3.52, which holds a neutral point of view. However majority of the respondents agree that there are financial implications that the community bears when involving itself in urban brownfield regeneration projects with some holding a neutral view in regards to there being a financial implication while other respondents disagree that there are no financial implications.

#### **4.6 Summary of the Study’s Findings**

##### **4.6.1 Evaluation of the findings of brownfield regeneration projects in Nairobi, Kenya**

Although the idea of brownfield regeneration is not so common in the city of Nairobi as it deals with developed urban areas as a major intervention, some brownfield sites have undergone regeneration. It could also be seen that the community's inclusion in the restoration of these

brownfield lands is the missing factor in the sustainable regeneration of these brownfield lands. There are several locations within Nairobi City County and along the Nairobi Railway Station that could be called brownfields. These devalued properties include, in many cases, abandoned or neglected warehouses and storages, small houses and light industrial workshops which are mainly located in important sites (locations) within the urban core of Nairobi City.

There seems, however, to be a growing interest in the re-use and redevelopment of these brownfield lands in Nairobi, but it does not outweigh the fact that the rehabilitation of brownfield lands is hampered by a range of challenges. Some of the barriers to redeveloping brownfields may include; Responsibility and possession of land (complex ownership pattern, e.g. government ownership, bank responsibility for property); Prerequisite for major capital investment; Lack of sufficient and credible expertise within government departments dedicated to the development of Brownfields; Lack of shared vision and cohesive planning (between the community and statutory bodies). Also with the increased rally by the Kenyan government to include the community in the participation of these regeneration efforts, little can be seen to bear fruit, which has also resulted into the slow regeneration pace of brownfield lands.

In Nairobi to be specific we can narrow down a few examples of brownfield sites that have undergone or are currently undergoing regeneration. They include; Park-Road Affordable Housing Project, Green-Park Bus Terminus, Old Ngara Housing Project, Starehe Affordable Housing Project, Proposed Police Forensic Laboratory among many others. Two case studies were chosen to investigate the concept of community participation in brownfield regeneration; the two selected are; Park-Road Affordable Housing Project and Green-Park Bus Terminus.

The Park Road Affordable Housing project, which began construction in April 2019, is the first low-cost housing project to be implemented by the Kenyan national government under the 500,000-unit Affordable Housing Program of the Big Four Agenda. The site was initially a housing estate in the colonial period around the mid 50's and ever since the independence of Kenya, the settlers left the country leaving the houses inhabited by locals under the management of the Nairobi City County government. Through time the buildings became old and derelict,

got vacated and remained abandoned which were later on taken over by nature. The inclusion and participation of different stakeholders is what has been the success of this project which include the State government; Nairobi City County Government; Private entities; Community based groups and Voluntary organizations.

The inclusion of the community served as one of the flagship concepts in which the government through community groups and different voluntary groups have sought for development ideas from the public. The public were not only involved in the planning but also in the construction phase, where they worked as handy men in the project so that the project can also uplift the lives of the people in the society, in short a project for the people, by the people. However, the inclusion of the society in the project doesn't come without its challenges; the time taken to get the public opinions and ideas to the implementation takes a long of time, which usually at times consumes money Nonetheless, the benefits of including the society in the regeneration of the Park-Road Housing Project outweighs the pitfalls and this is one of the reasons that can be attributed to the success of the project.

The Green Park Terminus is a newly designated bus terminal developed by Nairobi Metropolitan Services (NMS), as part of the Nairobi Integrated Urban Growth Master Plan and Decongestion Strategy, under which public service buses will end their journeys outside of the Nairobi Central Business District. Green-Park bus terminus, formerly known to many as Railways club, was initially a railway deport and workshop where old trains and their wagons used to stop over but were since left abandoned as the city's infrastructure grew. The location of the abandoned railway station was so strategic this formed part of the decision to situate the new bus terminus there. This has also become a framework for the revival of infrastructure projects in some of the brownfield lands that would well enough benefit the city of Nairobi.

The Nairobi City County Government; owners of Public Service Vehicles (PSVs) and representatives of different transport Sacco's; community-based organizations and charitable organizations are some of stakeholders taking part in this project. The project is sponsored by the Government of Nairobi City County with the support of the Government of Kenya. The

inclusion of the public in the planning process can be said to be very important where they have had a significant say in the many designs to be carried out on the proposed Green-Park Bus Terminal and which would best serve society. The Public Service Vehicles (PSVs); representatives of Sacco stakeholders who represent the society were not only involved in the planning but also in the construction phase, where they worked to allocate the different terminal locations for the specific routes so that the project could better serve and uplift the lives of the people in the society. Through the reusing the former railway yard the project achieved compact growth, which has been achieved by strengthening the existing urban city cores and transport corridors.

#### **4.6.2 Evaluation of the findings of the user survey**

A study carried out on respondents using Google forms which were based on the study's objectives. The total number of participants in the study was 229. The data analysis was carried out using Microsoft Excel software; the presentation was made using graphs and tables, while the analysis of the data presented was based on the interpretations of the study. The findings revealed that the regeneration of brownfield lands regeneration; boosts public transport and improve community infrastructure; aims to better allocate green areas for public use; leads to the improved health and well-being of the society; plays a huge and significant part in protecting the environment; leads to the creation and retention of employment opportunities. This was in consonance with the results given out by the respondents who agreed to the significance of the regeneration of brownfield lands to their community.

The study sought to ascertain how the community is involved in the Urban Brownfield Restoration. This study sought to give light the distinctive effect of the community's involvement on the restoration of brownfield lands. The findings clearly outlined that there is a need for the community to participate in development meetings in their community and particularly that related with brownfields regeneration, with only 30.3% of the respondents participating in development meetings, shows the increasing need to rally the community in the participation of these regeneration efforts. The study also revealed that 55.02% of the

respondents disagree that the community plays a direct role in the regeneration of brownfield lands and feel left out of such development projects. This shows that there has been little involvement of the community in such brownfield regeneration projects or rather the community feel that they do not take part in brownfield regeneration projects and that they are majorly carried out by the government and its agencies. This shows an urgency for the government to include the community in such brownfield regeneration projects.

The findings also reveal that including the community in the regeneration of brownfield lands lead to better executed projects than those that are only government based. This goes without say that the involvement of the community in the regeneration of brownfield lands will result to the execution of brownfield regeneration development projects. The findings also show that indeed the regeneration of brownfield lands is conducted with different stakeholders and not just the government alone. This clearly shows that the regeneration of brownfields is a multi-disciplinary venture which involves different stakeholders in the regeneration of these brownfield lands. The findings also showed that 52.84% of the respondents agree that the government does help to better the participation of the community in the regeneration of brownfields. With the increased rally by the Kenyan government to include the community in the participation of these brownfield land regeneration efforts, it shows that there is an increased drive to facilitate the inclusion of the community in the regeneration of brownfield lands.

The findings also suggest that 58.08% of the respondents agree to the fact that with the inclusion of the community in the regeneration plans of brownfield lands, they feel that the outputs would be more related to their needs. This sheds more light to the role of the community in the regeneration of brownfield lands, for the more they are involved in the regeneration projects, the more they will put emphasis on projects that tend to serve them better. The findings also go to show that 56.33% of the respondents agree that there is an inadequacy of public awareness for the brownfield land regeneration projects which altogether affects the participation of the community in such projects. With the lack of awareness of brownfield projects, it could be seen as a hindrance in the inclusion and participation of the community in the regeneration of brownfield lands.



From the findings it could be seen that the community trust that their ideas will be implemented if they participate in the urban brownfield regeneration projects with the majority agreeing that their ideas will be implemented if they participate in brownfield regeneration projects. The community with the participation and inclusion in the regeneration of brownfield lands, trust that by engaging themselves in the regeneration plans, their ideas would be implemented and that their ideas would be ones that would serve the community better. The findings also suggest that 41.93% of the respondents agree that there are financial implications that the community bears when involving itself in urban brownfield regeneration projects. The cost may vary from project to project and from individual to individual; however, these financial implications may affect how the community involves itself in the regeneration of brownfield lands.

## CHAPTER 5

### CONCLUSION AND RECOMMENDATIONS

#### 5.1 Conclusion of the Study

Increasingly, the principle of brownfield urban regeneration is becoming very relevant and widely accepted around the world. Brownfields have emerged from the deindustrialization of cities as a whole and suburbanization of activities in the city's core. Therefore, it is possible to identify brownfield lands as historically used land or parts of commercial and industrial facilities which are to be renovated. While there may be a few detrimental effects of brownfield properties, there are many potential benefits which could be obtained from its restoration, which is why there is growing concern about its appropriate regeneration. The largest threat to their regeneration however occurs in real or alleged post-industrial or mining polluted sites which have detrimental effects on human health and the environment. The most positive factor to be taken into account in coping with brownfields is the opportunity for its regeneration into sustainable urban development projects.

The regeneration of Brownfields can be structurally complicated, but nonetheless its sophistication, the rising need for growth in urban environments motivates its execution, rendering the process more complex and demanding. Starting with the dynamics of growth and restoration of brownfield sites, the experiences of the various stakeholders can be seen as the driving force behind the idea of regeneration. Efficient brownfield regeneration can be improved by an intelligible, easy-to-understand and systematic land management plan involving a wide variety of stakeholders. Negotiations with a wide variety of stakeholders is one of the necessary planning skills required to enable successful restoration of brownfields, and this underpins the Bouckaert and Halligan (2007) concept, which suggests that the planning of regeneration schemes should thoroughly include the different stakeholders who bring with them their vast knowledge and expertise in brownfield regeneration. The different variety of stakeholders each

hold diverse views on the basis of their interests and roles in the reconstruction process which when channeled together presents a more holistic and comprehensive environment which enables the successful execution of the brownfield regeneration projects. The role and significance of stakeholder engagement has been recognized by a variety of studies, campaigns and organizations which have helped enhance community involvement altogether.

The general way of thinking of the masses should also be taken into account and engaged in regular dialogs to allow them to express their views more openly in order to have an effective plan for the regeneration of brownfield lands; this can only be seen in the culture of democracy. At the end of the day, the community is the main beneficiary and user of these completed projects and should thus be able to play an enormous part in the execution of the projects since they know what is best tailored for them; This supports the Omar and Leh (2009) study, which assessed that civic discussion really shouldn't be a replacement for effective delivery, but should be a requisite for every development project, as stated in various city acts and regional planning by-laws. Community engagement is now slowly becoming recognized as a crucial organizational prerequisite for development, but the approach has still not gained much headway in Nairobi but still has a bright future ahead and this supports Chambers (1987) concept that community participation is slowly gaining significance in countries and with effective governance and awareness, it will result to better service delivery for projects.

The inclusion of public participation in Nairobi's planning practices and urban regeneration projects too would be seen as a remedy to some of the flaws in the top-down planning systems that have traditionally been the planning narrative. The participatory mechanism is commonly seen as a workaround to the shortcomings of the top-down delivery processes implemented initially. In tandem with modern architecture, social integration succeeds by laying the groundwork for sustainable approaches to the management and planning of brownfield land regeneration and the physical environment, which underpins the Loures and Crawford (2008) principle as to how having an elaborate framework and mechanism for social participation in development projects leads to better service delivery.

Groenendijk (2006) also sheds more light on the understanding of awareness-raising as well as on how residents and county council programs raise awareness of the problem of vacant brownfield land in the city of Nairobi, indicating to the public and private sectors the problems that need to be addressed for the sustainable development of urban systems. That said, while the government is the leading player in the implementation of these programs, the role of the private sector is vital because, for by engaging in brownfield land regeneration initiatives, the community can not only make more profits for itself, but also help to improve the environment.

The Nairobi City Council should aim to establish confidence and trust while at the same time encouraging low-income communities by greatly raising their participation. This will be achieved by creating an open and constructive dialogue on previous neighborhood achievements and lessons learnt in order to avoid the same pitfalls and failures in sustainable planning and the brownfield property renovation policy and techniques. This is in favor of Thwala's (2001; 2010) theory that civic engagement and participation initiatives have now become an important mechanism for the progress of projects. This will continue to direct citizens' attitudes towards participation in a good way and encourage higher levels of participation, as confidence from the point of view of citizens plays a crucial role in the form of participation and supports the concept of participation.

## **5.2 Recommendations of the Study**

There is a tremendous need to introduce and encourage policies to ensure that brownfields are regenerated sustainably. Such policies should be integrated into the system and should be focused on flexible, scalable policies that allow for the management and planning of sustainable urban growth. In order to ensure that brownfields are covered, it is also necessary to introduce regulations enabling complete and productive use of empty, unused, underused or uninhabited public and private land. Establishing frameworks for participation between decision-makers and stakeholders in the regeneration of the brownfield process by establishing regulations, laws, options and solutions that could be proposed to draw private landowners in order to protect the rights of landowners and to concentrate on strategic growth plans. This would allow the

government to partner with property developers on brownfield sites to create projects whilst requiring community input in the planning process.

A multi-stakeholder negotiation, is needed for successful brownfield regeneration, between a diverse range of stakeholders, which is an alternative to a top-down approach which is opposed to a 'partnership model' in which governments and neighborhoods cooperate on long-term planning and decision-making outcomes. Specifying the key steps that all prospective stakeholders, developers, public bodies should take to rebuild and outline the priorities and weaknesses is a significant contribution that should be taken into account in order to ensure that community involvement in brownfield regeneration is successful. In addition to the involvement of stakeholders in each level of the development cycle, it would be very important to class the groups to be included and identify the level of participation for each group.

Different government-led brownfield restoration agencies should facilitate stakeholders by guiding them to further improve their ability to sustain these brownfield regeneration initiatives in a sustainable way, even though conditions change over time. The government should create policies that aim to attract the community to participate in schemes for brownfield restoration. The government should also strive to deepen its relations with the community, but at the same time gaining their confidence so that they can better their society through their participation. This could be done in the community by a variety of awareness campaigns and seminars. Other actors that act as mediators between the government and the parties concerned, such as experts, international and local organizations, can serve to provide a third point of view to help facilitate this phase of building trust with community. In addition, the initial costs and rewards of regeneration should be assessed for individual projects and, in particular, for each stakeholder. It is also important to choose an effective planning model for collaboration between private development, public development or PPP (Public Private Partnership); it is also important to devise the terms of reference to be used for contracting and execution.

It will also be commendable if the community or different governmental programs could outline programs and policies that even though the brownfield lands are undergoing regeneration, the

lands don't lose their heritage and significance to the society for some ancient buildings may have significant value to the society.

### **5.3 Suggestions for Further Studies**

For possible and applicable research subjects, there are many ways and fields in which more innovative applications may be applied;

- Comparative study in between the brownfield restoration for soft temporary development projects and the regeneration for large-scale intensive infrastructure development plans.
- A study on the adoption of responsive urban sustainable land frameworks that could create a cleaner and healthier environment, encourage investment, boost livability and be more sustainable should be explored.

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## **APPENDICES**



## Appendix 1: Similarity Report

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## Appendix 2: Questionnaire

This research work is intended to **investigate Community Participation in the Regeneration of Urban Brownfield Lands**. The questionnaire is broken down into three sections; A, B and C respectively. Please provide answers to the following questions by selecting the most suitable alternative (Responses will be treated with utmost confidentiality).

### SECTION A: General Background Information

1. Indicate your gender.  
 Male                       Female
  
2. What is your age bracket?  
 18-30 years    31-40 years    41-50 years    50 years and above
  
3. What is level of your education?  
Primary school              
  
Secondary school          
  
Tertiary Education        
  
None of the Above
  
4. Indicate your Employment Status.  
 Employed                       Non-Employed
  
5. What is your area of residence?  
Ngara Ward                        
  
Central CBD Ward              
  
Pangani / Pumwani              
  
Any Other Ward
  
6. How long have you lived around Brownfield Lands?  
 0 –1 year    1 year – 3 years    3 years – 5 years    5 years and above

**SECTION B: Community Views about Regenerated Urban Brownfield Lands.**

For the following sector, please select the most appropriate response (strongly disagree, disagree, neutral, agree and strongly agree) : (Tick the most appropriate box)

		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>7</b>	Does the regeneration of Urban Brownfield Lands help better public transportation and improve infrastructure?					
<b>8</b>	Does the regeneration of Urban Brownfield Lands better allocate green spaces for public use?					
<b>9</b>	Does the regeneration of Urban Brownfield Lands lead to the improved health and well-being of the society?					
<b>10</b>	Does the regeneration of Urban Brownfield Lands play a role in the protection of the environment?					
<b>11</b>	Does the regeneration of Urban Brownfield Lands lead to the creation and retention of employment opportunities?					

**C: Community Participation in Urban Brownfield Regeneration**

12. Have you ever attended any meetings in your Community that related to Urban Brownfield Lands Regeneration?

- Yes      No

For the following sector, please select the most appropriate response (strongly disagree, disagree, neutral, agree and strongly agree) : (Tick the most appropriate box)

		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>13</b>	Is the community directly included in the regeneration plans of urban brownfield lands?					
<b>14</b>	Do different stakeholders in the community play a role in the regeneration of brownfield lands?					
<b>15</b>	Does including the community in the regeneration of brownfield lands lead to better executed projects than those that are only government based?					
<b>16</b>	Does the government help to better community participation the regeneration of the urban brownfield lands?					
<b>17</b>	Does the inclusion of the community in the regeneration of brownfield lands lead to outputs that are more based on the society's needs?					
<b>18</b>	Is the lack of public awareness for these brownfield land regeneration processes affecting the participation of the community in such projects?					
<b>19</b>	Does the community trust that their ideas will be implemented if they					

	participate in the urban brownfield regeneration projects?					
<b>20</b>	Are there any financial implications that the community bears when involving itself in these urban brownfield regeneration projects?					

**Thank You. ☺**