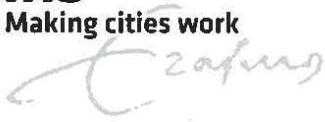


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Thesis

Title: Public Land Leasing as a value capture instrument for financing road infrastructure on Federal Government Land in Gwarinpa, Abuja-Nigeria

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Specialisation: Urban Land Development

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Title

Public Land Leasing as a value capture instrument
for financing road infrastructure on Federal
Government Land in Gwarinpa, Abuja-Nigeria

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UMD 9 Report number:
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Summary

The primary goal of this research was to study public land leasing as one of the instruments of Land Value Capture and applied it on how it could generate revenue to provide and maintain road infrastructure within the Federal Government Land in Gwarinpa, Abuja-Nigeria from 1999-2012. The main objective of the this study was to identify how the lease of public land could be used to capture land values and its increments to provide and maintain road infrastructure on federal government land using Gwarinpa as a case study. In order to answer the research question, four major dimensions were identified and examined so as to answer the sub-questions that will provide answer to the main question. These dimensions include; (i) legal, (ii) financial, (iii) economic and (iv) social.

In this research, a qualitative approach was employed which considered the collection of primary and secondary data targeted at appropriate professionals and organisations. The primary data consisted of conducting fourteen different interviews with the government officials of Lands Department responsible for public leasing and the Engineering Department responsible for roads infrastructure. Moreover, secondary data used in this research includes the constitution of the Federal Republic of Nigeria 1999 as amended, the Land Use Act, records of revenue from public lease and expenditure on road infrastructure among others.

This research has two critical variables; Public land leasing and road infrastructure. Under the public land leasing, premium and ground rent were considered as the revenue sources to provide and maintain road infrastructure. Premium which is a onetime payment from lease was compared with cost of road investment which is also a onetime project while ground rent which is an annual income from lease was compared with road maintenance which is also an annual expenditure on road in order to determine if the revenue from the lease of public land can provide and maintain road infrastructure on federal government land in Gwarinpa, Abuja.

The main result of this study revealed that revenue generated through premium was very successful because it was able to cover more than the cost of road investment by 115% while revenue from ground rent was unable to cover the cost of road maintenance throughout the years. When considering the total revenue that was generated through ground rent from 1999-2012, it only covers 10.3% of the total cost of expenditure on road maintenance. However revenue generation through ground rent revealed some existence of administrative challenges such as the inability of the responsible institution to collect the full revenue because only few plot owners pays ground rent which led to an inefficient revenue generation. Therefore when considering the maximum amount of revenue that should be generated from the entire plots on annual basis, it was only in the year 2010 and 2011 that the revenue from ground rent would have been able to cover the maintenance cost of road. Furthermore, the total revenue that was supposed to be generated on ground rent from 1999-2012 would have only cover 51.4% of the total expenditure spent on road maintenance. In that instance, the lease of federal government land in Gwarinpa, was only able to provide roads through revenue from premium but was unable to maintain roads through the revenue from ground rent.

Finally, from this research, recommendations were made in relation to the ways the entire revenue generation could be improved in order to assist the Federal Government in making this land instrument more efficient so that the revenue generation potentials could be increased in order to cover not only road infrastructure but set of other infrastructures.

Keywords: Gwarinpa, Premium, Ground rent, Public Land Leasing, Road infrastructure, Land Value Capture.

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This research work is dedicated to Jahzeel J. Guyimu (Jay-boy)

Joshua Guyimu
Rotterdam, The Netherlands
September, 2013

Abbreviations

AMAC	Abuja Municipal Area Council
C. of O.	Certificate of Occupancy
FCDA	Federal Capital Development Authority
FCSC	Federal Civil Service Commission
FCT	Federal Capital Territory
FMLHUD	Federal Ministry of Lands, Housing and Urban Development
FELIS	Federal Lands Information System
FGN	Federal Government of Nigeria
GDP	Gross Domestic Product
GR	Ground rent
IHS	Institute for Housing and Urban Development
LFN	Laws of the Federal of Nigeria
LGA	Local Government Area
LUA	Land Use Act
LUAC	Land Use and Allocation Committee
LVC	Land Value Capture
M ²	Meter Square
₦	Nigerian Naira
NFP	Netherlands Fellowship Programme
PA	Per Annum
PTCLR	Presidential Technical Committee on Land Reform
Sq. Km	Square Kilometres
USD	United States Dollar
UMD	Urban Management and Development

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Chapter 1: Introduction

1.1 Background

Nigeria is located in West Africa, it shares boundary with Niger Republic, Chad, Cameroon and Benin Republic and was a colony of the Great Britain. It operates a federal system of government with thirty six (36) states and a Federal Capital Territory (FCT) otherwise referred as Abuja. Nigeria's land mass is approximately 923,768 square kilometres (sq.km) in size with approximate population of about 170 million and over 250 ethnic groups. It is the most populous country in Africa with a population growth rate of 3.2% and accounts for 2.4% of the world population. It is ranked as one of the largest economy in the Sub-Saharan Africa (National Population Commission, 2013). Nigeria is a petroleum-based economy and is among the topmost oil producing countries in the world. Oil provides 20% of its Gross Domestic Product (GDP), 95% of foreign exchange earnings and about 80% of government revenues (Arogie, M., 2013).

In 2009, there was a presidential directive on the need to diversify the economy in order to reduce the over dependence on the petroleum sector as the main economic driver of the economy and at the same time the major source of national revenue generation. The directive was targeted at reviving all the sectors of the economy so that every sector can generate revenue for the government. To achieve this objective under the land sector, a special committee was set up by the President in April 2009 known as Presidential Technical Committee on Land Reform (PTCLR). This Committee was given the mandate of transforming the entire land administration system in the country with a special focus to guarantee an improved efficiency in land administration especially in revenue generation for the government. This was necessary because land resources in Nigeria have greatly remained untapped but with quality control and guided investment it may unlock the dead capital and prove to be more valuable than the wealth in the oil sector of the economy due to the fact that land does not deplete like oil reserves, but rather value appreciates with time and it could still be reclaimed if it goes derelict.

Before the colonial government in Nigeria land was held on regional basis mainly Northern, Western and Eastern Regions under the customary land tenure system. Family members usually held land subject to the approval and control of family heads and Traditional Rulers. With the amalgamation of the three (3) regions in 1914, there was need for the unification of the land tenure system, the Federal Government set up a Land Use Panel in 1977 under the Military Government to undertake an in-depth study of the different tenure systems, land use and land conservation practices that existed in the country and recommend steps that should be taken to streamline them. With the coming of democracy in the country thereafter, the Land Use Decree enacted by the military government was repealed and what exist today is the Land Use Act, Cap L. 5 of 2004, (originally promulgated as Land Use Decree No. 6, 1978) which essentially adopted the Land Tenure Law of Northern Nigeria to nationalize all land in the country. The major factors that motivated the Federal Government to promulgate the Land Use Act include:

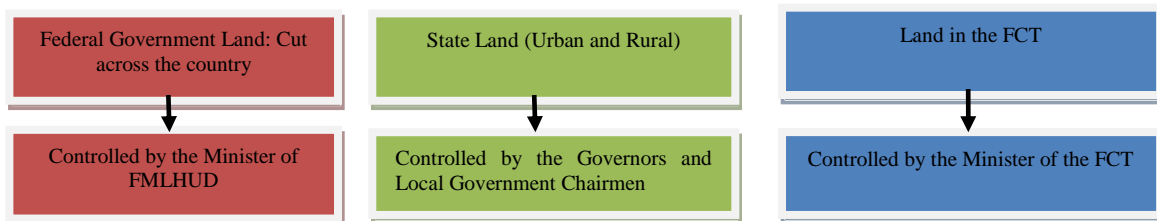
- a. The desire to improve access to land for all Nigerians in any part of the country; that is every citizen of the country irrespective of his or her region, state, ethnicity and religion should have equal access to land in any part of the country.
- b. The desire to introduce a uniform land administration system in the country; this is to have a single, unified and organised system of land holding throughout the country.

- c. To provide easy access to land by the federal and state government for public interest; land under the customary tenure or other forms of tenure are usually difficult and expensive for government to acquire the land for the provision of public services and infrastructure such as schools, hospitals and roads.
- d. To overcome the high cost incurred by government on land acquisition; the payment of compensation on land held under the customary tenure or other forms of tenure are sometimes very expensive and at times impossible to acquire due to some traditional beliefs or other values attached to the land by individual land owners and communities. (Nigerian Land Use Act, Cap L5, Laws of the Federation 2004).

The Land Use Act (LUA) therefore vests all land comprised in the territory of a State in the Governor of that State (except land vested in the Federal Government and its Agencies). This Act remains the official and guiding law for land administration in the entire country and is the most revolutionary land reform for its ability to change the tenure system by unifying the various land laws in force in different parts of the country. Section 1(1) of the Act vests all land to the State Governors while Part II Section 5(a) empowers the Governor to grant statutory rights of occupancy to any person who has been given land allocation by the state (Nigerian Land Use Act). This became the genesis of public land leasing in Nigeria. Public land leasing therefore is defined as a system through which the right to use, develop and transfer of land is done by the state to private individual while the state retains the ownership rights to the land (Hong, 1996).

Land matters in Nigeria is now handled at varying scales by the three tiers of government (Federal, State and Local Government) almost independent of one another but land policy and policy direction is provided by the Federal Government through the FMLHUD. As stated above and according to the Land Use Act, Section 1 (a & b) stipulates that all land in the states are under the control and management of the State Governors but for effective and proper management, the Governor control the lands in the urban areas while the Local Government Chairmen control the lands in the rural areas. Similarly the Federal Capital Territory operates more like a state, being the Federal Capital the entire land is under the control and management of the Honourable Minister of the FCT who is been appointed by the President. In the case of the Federal Government allocations which this research is concerned with, the land cut across all the states of the federation and the FCT, and the land is under the control and Management of the Federal Ministry of Lands, Housing and Urban Development headed by a Minister who is also appointed by the President.

Figure 1. 1: Diagram showing different system of holdings in Nigeria



1.2 Description of the study Area

The law establishing the Federal Capital Territory (FCT) as the capital city of Nigeria was promulgated on the 4th of February, 1976 through the Federal Military Government Decree No. 6 of 1976 now the FCT Act, CAP 503 Laws of the Federation of Nigeria (LFN) 1990. Given this mandate, the period of 1976-1979 was spent on planning processes which includes

physical and socio-economic studies culminating in the preparation of the city master plan, territorial regional plan and the expropriation, resettlement and compensation of the indigenous land owners. Physical development of the territory started in 1980 while the seat of government officially relocated from Lagos to Abuja in December 1991 (Federal Capital Development Authority, 1979). Abuja is divided into four phases and today the city is in phase two (second phase) of its development stages. Abuja is located close to the geographical centre of Nigeria. The FCT has a delightful view of rolling hills, isolated highlands and other enduring features like the Aso Rock which contributes to the increase in the values of land and properties within the city due to its serene and well locational advantage as a result of its centrality.

Several reasons were attributed for the movement of the capital city from Lagos to Abuja. Some of the reasons among others include:

- a. Heavy migration of people into Lagos with limited space for expansion which was leading to serious environmental challenges.
- b. The increasing pressure on the existing and the inadequate infrastructural facilities like road, water supply and electricity.
- c. The traffic situation in Lagos which was characterized by heavy congestion thereby affecting economic and government activities (Mabogunje, 2001).

However the major reason for the relocation was its skewed location at an extreme end of the country which is situated within the enclave of a major ethnic group. The Abuja recommendation satisfied the centrality criteria, appealing land terrain, adequate water supply, land availability and use, physical planning convenience, low population density, security and multi-access possibility and the area is not within the control of any major ethnic groups in the country (Obateru, 2004). Hence the neutrality and the centrality were the major consideration for the choice of Abuja.

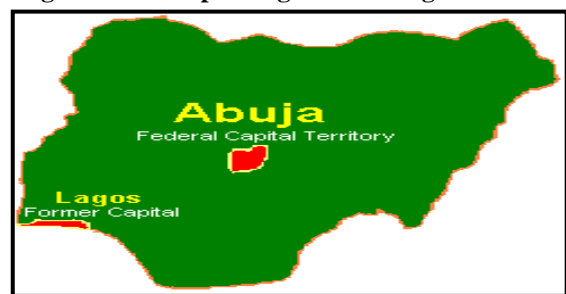
The Federal Ministry of Lands Housing and Urban Development (FMLHUD) is the federal organ responsible for the land matters in the country. It has offices in all the states of the federation with its head office in Abuja. Each of the offices in the states is responsible for the management and administration of Federal Government lands and properties within its territory. The FMLHUD has constitutional powers of allocating and management of all Federal Government lands in the country. It allocates land to members of the public in all the states of the federation and the Federal Capital Territory (FCT) on its designated layouts for different uses most of which are for residential and commercial purposes. The allocations within Abuja are found in Gwarinpa which is situated within the Abuja Municipal Area council (AMAC) one of the six area councils in Abuja. Gwarinpa is said to be the biggest housing estate in West Africa. It is strategically located because of its proximity to the Central Business District which is about 15 minutes drive.

Figure1. 2: Map of Nigeria showing the old regions



Source: www.google.com

Figure 1. 3: Map of Nigeria showing the FCT



Source: www.google.com

1.3 Problem Statement

The Central Government of Nigeria provides each federal sector with grants through budgetary provision to discharge their constitutional responsibilities. One of the responsibilities of the FMLHUD is the management and administration of the Federal Government land allocations which in return is expected to serve as a good revenue source for the government and also to meet the requirements for the diversification of the economy which is a major priority of the present administration in Nigeria. Unfortunately despite the amount of grants provided by the Federal Government to discharge these responsibilities, and with an estimate of over 180,000 land allocations spread across the country, the government could not generate substantial revenue from these leased allocations.

The FMLHUD is however experiencing serious problem in terms of its inability to generate enough revenue through public land leasing in the country and at the same time is spending huge amount of resources in the provision of basic infrastructures such as roads, water and electricity. For example revenue generated from lands and housing sector contributed less than 0.5% to Nigeria Gross Domestic Product (GDP) in 2010 (Federal Ministry of Lands, Housing and Urban Development, 2010) the figure is too minimal compare to other countries and cities of the world such as Hong Kong, China and Canberra. This clearly shows that the potentials of public land leasing in revenue generation has not yet been fully explored.

Revenue generation through the lease of federal government land remains a big challenge in Nigeria while the need for the provision of roads and other associated infrastructures are high and it requires a huge capital investment. Some of the associated problems related to the low revenue generation on the lease of federal government land amongst others include; lack of adequate provision of infrastructure such roads, electricity and water, lack of cadastral base map to enable the land to be beaconed, allocated and leased and the institutional related problems which may arise as a result of the lack of capacity training that results in flaws in lease administration. These problems affects the administration of public land leasing which may contributes to the poor lease administration and also may leads to low level of revenue generation. It is therefore important to investigate more to ascertain the underlining reason preventing the federal government from capturing sufficient revenue through the lease of public land in order to finance infrastructure, in particular to this research, road infrastructure so that adequate measures could be put in place to correct any mistake that could have been made.

Photograph 1. 1: pictures of road infrastructure requiring maintenance and construction in Gwarinpa



Source: Guyimu 2013. Based on field assessment on federal government land in Gwarinpa, Abuja

1.4 Research Objectives

The main objective is to identify how the lease of public land could be used to capture land values and its increments to provide and maintain road infrastructure on federal government land using Gwarinpa-Abuja as a case study. Therefore the specific objectives are:

- a. To examine how public land leasing has been used as a value capture tool to generate revenue.
- b. To examine the possibilities of financing road infrastructure from income generated through leasing public land.
- c. To contribute to a body of knowledge on how revenue generation through public land leasing could be improved to finance road infrastructure.

1.5 Main and Sub-Research Questions

1. How does public land leasing contribute to the financing and maintenance of road infrastructure on Federal Government land in Gwarinpa?

The sub-questions are further given below:

- a. How much revenue is generated from the lease of federal government land in Gwarinpa, Abuja that is used for road construction and maintenance?
- b. What are the increments in land values resulting from government investment on road infrastructure on federal government land in Gwarinpa, Abuja?
- c. To what extent has the revenue generated from public land leasing able provide and maintain road infrastructure on federal government land in Gwarinpa, Abuja?

1.6 Significance of the Study

This study intends to contribute to an improved process and a better understanding of public land leasing. It would study the existing system thereby improve it by making it better and more efficient in revenue generation. This research will also look at international experience and analyze how it is done in different parts of the world. Besides the federal allocations, the State and Local Governments with its vast supply of generating little or no revenue from the lease of their land may adopt the system if properly and clearly analyzed, it may become an important instrument for revenue generation by all the three tiers of government in Nigeria. The federal government allocation will then become a model and a good learning example for all the states in the federation and other neighbouring West African countries that intends to practice and generate revenue from the lease of public land in order to provide roads and other urban infrastructures.

1.7 Scope of the Research

This study is focused on public land leasing as a value capture instrument used to provide and maintain road infrastructure on federal government land allocation in Gwarinpa-Abuja, it will discuss the instrument in four major dimensions as follows: legal, financial, economic, and social dimensions. We shall also examine how public land leasing is been used by the Federal Government in order to enable us ascertain its possibilities as an alternative source of revenue generation and its contribution to the national economy in the provision and maintenance of road infrastructure on Federal Government Land in Gwarinpa, Abuja.

Chapter 2: Literature review

2.0 Introduction

This chapter describes the Public Land Leasing and will focus on the areas which are relevant to public land leasing as an instrument for revenue generation used in the provision of public good with a focus on road infrastructure. It will examine the experiences of different countries in the world practicing public land leasing as an alternative source of revenue generation for the government. It will also explain the concept and theories which are associated with public land leasing. Finally, this chapter provides a conceptual framework with key variables to be used for the fieldwork.

2.1 The Concept of Value Capture

The Concept of Value Capture is increasingly becoming a popular concept that seeks to capture all or part of the increments in land value for the public benefit which arises as a result of the public action, rather than private investment or actions (Smolka and Furtado, 2003). Value capture is seen as a system where the community takes “unearned increment” in land values for the use and benefit of the community that value which was created or attributed by the community (Booth, 2012). Despite different scholarly literatures, value capture remains an open-ended concept defined and used differently (Alterman, 2012)

Value capture therefore refers as a system through which government or community recoups a portion or all land value increments which have been attributed to the community by the government or community effort, this is achieved either through fees, exactions, taxes and other fiscal means (Smolka and Amborski, 2000). Another scholar shares a similar opinion with the above definition and also defines value capture as the process where all or portion of increment in the value of land which is attributed as a result of community and the public intervention are recouped by the public sector (Giles, 2011). The increase in land value may arise from land regulations, provision of infrastructure and population growth or urbanization which creates the demand for land and thereby increase in land prices. However, there are exceptional situations where private land owner’s action may directly contribute to the value of land. The general concept of value capture is on the premise that the increment in the land value results from the public or community action other than any action of the landowner. The public actions that could contribute to increase in land value other than that of the landowner according to this situation are where the public sector or community grants permissions for development, control land uses and densities, and through the provision of basic infrastructural investment which enhances the value of land or market forces due to an increase in urban population and urbanization. (Smolka and Amborski, 2000). It is clear that in this situation the landowner did nothing to contribute to the value of the land, so it will be economically desirable for the public sector to capture all or part of the increase in the land values for what it has contributed. It has however been argued by scholars that private funded improvements by land owners could increase the values of their land and properties without necessarily the support from the government so sometimes it will be difficult determining increment in land values attributed purely by the public sector and that of the private landowner. Sometimes the increment in the value of land may be as a result of the combination of both the private landowner and the public sector efforts.

2.1.1 Instruments used to capture Land Value

According to Smolka and Amborski (2000), land value capture policies depend on the following three categories of instruments: the fiscal instruments which comprises of Taxes and Fees and the regulatory instruments.

- The fiscal tools refers to the use of either taxes or fees that is required to be paid by a private landowner in order to facilitate and enhance the capture of value increment for the public sector
- Regulatory instruments entails the combination of diverse application of which results in land value increments due to changes in urban regulations, the increment may be returned to the public sector through some form of ‘in kind’ contributions by the property owner who is directly benefiting from the increment. It is a kind of instrument where the landowner finances from his increased in land values (Smolka and Amborski, 2000). Increment in land values in Nigeria has mostly been attributed as a result government’s constitutional responsibility of providing basic services and infrastructure for the citizens and this has resulted in increase in land value. It will be economically viable for government to capture the unearned increment in order to provide more public goods.

Ownership of land determines the amount of rights and control an owner could exercise on it. Before discussing government ownership of land which in turn makes government possess the bundle of rights amongst which are the right to lease and the right to benefit from increased land values, it would be necessary to discuss compulsory acquisition or expropriation which is the process that brings government into ownership of land and also to justify the need for such acquisition.

2.2 The Concept of Compulsory Acquisition of Land

Different names have been given to the power government uses to acquire and to have absolute ownership and control over land across the world. Expropriation also commonly known as compulsory acquisition, eminent domain or taking are different names given to the legal institution that has the power to expropriate land from private individuals or communities against their will for the public interest (Azuela and Herrera-Martín, 2009). Compulsory acquisition has traditionally been the major instruments government uses as a land policy.

The governments usually possess absolute ownership of land through expropriation and according to Payne (2001), public ownership comes as result of the perceived limitations of individual private ownership of land. The public ownership of land has the advantage that seeks to enable all sections of the country with an equal access to land even under the conditions of increasing land competition (Payne, 2001). Through expropriation of land, the governments in different countries are able to have absolute ownership and control of land which can be used to provide infrastructures that may add value to the land. Expropriation has been a major component for development strategies, however, these days there are a number of social resistance and criticisms against expropriation which has become the order of the day as a result of inadequate compensation. Provision of infrastructure has been one of the main justifications for of expropriation for example the highways, dams, and ports construction or development (Azuela and Herrera-Martín, 2009).

2.2.1 Justification for Land Expropriation

Expropriation or compulsory acquisition of land depends on legal, economic and social perspectives. The economic dimension for compulsory acquisition of land is for efficiency in the distribution of resources and to make land easily accessible to government from individuals and communities who may not want to dispose their land to the government at a reasonable price for public interest (Miceli and Segerson, 2009). Hence compulsory acquisition is the power used by the public authority to facilitate and enhance the access to land for the provision of public goods such as infrastructure and services thereby avoiding the delay in the provision of public services from land owners who may refuse access to their land for such public services. Expropriations are not done for the enrichment of single individuals at the expense of others but for a general and collective benefit for all the society. However, an individual loss of land due to expropriation is justified by the benefits that would be accrued through the project. The whole individuals and the community at large benefits from such public development such as compulsory acquisition of land for the provision of basic services and infrastructures such as roads which provides better accessibility for transportation system to their business locations and their homes, schools, hospitals are all benefiting the whole the society.

On the other hand, land acquisition cannot be complete without payment of compensation to the private individuals whom their land were compulsorily acquired for the public interest. Compensation is a form of payment for the loss or injury an individual suffered as a result of land that was compulsorily acquired or damaged by public authority. Compensation is referred as a “damage substitution” which means compensation is paid to the displaced whom something of value (land) was taken away from them. They are compensated for the losses which the public project has negatively affected them such as relocation disturbances and loss of livelihood. In Nigeria despite the whole land been nationalized by the government, it still acquires and pay compensation to the owners whenever there is the need for land to be provided for any public good.

2.3 Land Ownership and Property Rights

The nature is divided into (3) three different elements according to an old philosophical thought of nature, this include the water, air and land and all the three elements have the same kind of property rights (Epstein, 2011). This section of the literature review will focus on the legality perspective that deals with ownership and rights which will be drawn to understand the type of rights that government or public authorities has over land and how these right within the “bundle of rights” leads to public land leasing.

In the literature, it is argued and discovered that property rights determines the ownership (Anderson and Zerbe, 2011) at the same time the ownership of the property rights are established and recognized by an authority such as the government or community. This ownership rights are regulated by a decree or codification in some formal rule or instrument such as a constitution, statute, ordinance or regulation (Blomquist, 2012).

Property rights exist in different categories as it has been described by different scholars in theories. According to (Bromley, 1991) and (Needham, 2006), the major categories in existence include:(a) State property, (b) Private property, (c) Common property and (d) Non-property. State’s property right is a situation where the ownership and rights of the land is under the control of the state or government. This system of land right and ownership rights have frequently proved to achieve higher level of equity than the private system, although it

has not been able to achieve a higher level of efficiency due to bureaucratic inefficiency (Payne, 2001).

In the course of this review, it is discovered that the property rights are made up of different types of rights which scholars often referred to them as “bundle of right” or “bundle sticks” (Walters, 2011). Property rights are therefore defined “as a recognized interest in land or property vested in an individual or government and can apply separately to land or development on it” (Payne, 2001). The issue is determining what are included in the bundle that gives one the power to grant the right to use to another individual. Legal scholars and attorneys in law have come up with five different types of rights which include: (a) rights to access, (b) rights to withdrawal (c) rights of management (d) rights of exclusion rights and (e) rights of alienation. These are briefly explained below according to Blomquist (2012).

- Right to access: this refers to the right of entry into the physical property by a legitimate and recognisable person or authority and to distinguish with who does not have that right.
- Rights to withdrawal: this refers to the rights to harvest or extract resources from the land by a legitimate body or owner and the right to make use of the resources
- Rights of management: this refers to the right to regulate the use pattern and to participate and take decisions in the decision making process and the provision for repairs and improvements in the case of improved property.
- Rights of exclusion: this refers to determining those who and can and those who cannot have access to the land or benefit from the resources on the land.
- Rights of alienation: this refers to the rights to transfer, lease or sell. These rights are possessed by an individual, community or public authority that legitimately owned the land and can transfer such rights (Blomquist, 2012).

The rights of alienation may be inherent in some of the rights listed above but the distinction is that, in the case of a family or communal property a member could have the right to access the collective resources by virtue being a member of the community or family but may not have the right to transfer, sell or lease the property to another person. Studies by scholars revealed that individuals who possessed all the rights above could be referred as an owner (Ostrom, 2009).

According to Walters (2011) on secure land right for all, additional rights were added to the above property rights enumerated by Blomquist (2012) and linking it on how it gives the owner the rights to benefit from such rights. The elements of this rights altogether now include: (a) the right to exclude or restrict others, (b) the right to purchase, sell, mortgage and transfer, (c) the rights to use, enjoy and occupy, (d) the rights to cultivate and use productively, (e) the right to sublet or rent, (f) the right to improve or develop, (g) the right to bequeath or inherit, and (h) the right to benefit from rental income or increased property value (Walters, 2011)

Walters (2011), therefore argued that the entire elements in the bundle cannot be possessed by single individual or public authority but different rights may be held by different parties or individuals on the same parcel of land (Walters, 2011), other scholars also argued that no single individual, government or institution that has total and absolute control over all the rights in the bundle (Hong and Bourassa, 2003a). These argument is contrary to the earlier submission by Ostrom (2009) who said all the elements of the property rights could be possessed by single person or authority to become an owner. Ownership of property right could be distinguished depending on the type of land tenure system. Since public land leasing

falls under the public land tenure, it would be beneficial to understand the concept of public land tenure system.

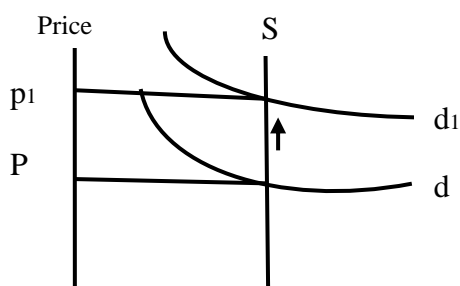
2.3.1 The Concept of Public Land Tenure

Land tenure system is a form of land holding and is defined as “the mode by which land is held or owned, or the set of relationships among people concerning land or its product (Payne, 2001). There are different forms of urban land tenure which include: customary, private, public, and religious tenure systems (Payne, 2001). The public land leasing falls under the rights of alienation within the “bundle of rights” as explained by Bomquist (2012) and public leasing is practiced under the public land tenure system. Virtually most countries recognize the concept of public land ownership or land rights to a certain extent. In most socialist states all rights in land are vested in the state while in the capitalist states are more of communal uses. The concept of public ownership of land came into existence largely because of the perceived limitation of private ownership of land. The public ownership seeks to encourage all sections in the state or country to have equal access to land. This system of land ownership has frequently proved to achieve higher level of equity than the private system, although it has not been able to achieve a higher level of efficiency due to bureaucratic inefficiency (Payne, 2001). The public land tenure system in Nigeria came into existence in order to unify multiple systems of land holding and to provide government with some powers to control and regulates land activities through granting of right to use, develop and transfer while retaining the right to lease and the ownership of the land in the country.

2.4 The theory of land rent

The economists described land as a resource provided by nature and it consist no any form of improvement on it. Payment is usually made to the owner of the land who grants the use right to another party because it is limited in supply. The price that is paid for the use of the land is known as land rent. In economics, land rent is determined by the intersection of the forces of demand and supply as it is applicable to any other economic price model. In this case, the supply of land is assumed to be fixed by nature (Eckert, 1990). The diagram below tries to depict the diagrammatic representation of the forces of demand and supply of land and how it affects the price. The supply curve is vertical meaning it is constant and limited in supply by nature.

Figure 2. 1: The demand and supply of land



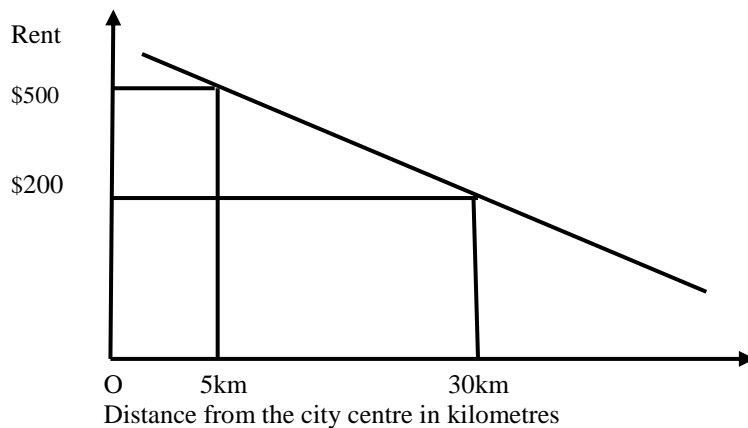
Source: Eckert, J. 1990

This diagrammatic illustration shows that when the demand for land increases, that is when there is a shift in demand from ‘d’ to ‘d1’, the price increases from ‘p’ to ‘p1’. However, all this occur when the supply ‘S’ of the land remained constant. This proves or shows that demand is the major determinant of value on land and property (Isaac, Balchin, et al., 2000). Scholars has however argued according to Von Thunen, the value of land and property

depends on market or economic rent, the rent also depends on location while location is influenced by convenience or accessibility or nearness (Alonso, 1964) from the above, it could be deduced that value is determined by the level of demand and accessibility.

Land rent therefore appears to be a charge paid for the use of an accessible land because of saving transport costs and distance which the location provides (Alonso, 1964). It is therefore observed that decrease in land rent is noticeable as one move away from the city centre. This drop is usually to compensate for the high cost of rent in the city centre but people living far from the city centre tend to incur high operating cost including transportation to the city centre (Alonso, 1964). This is represented diagrammatically below

Figure 2. 2: Rent and distance relationship



Source: Balcin, P. 2000

The diagram above shows that the closer to the city centre ‘O’ the higher the rent and the further the distance from the city centre the lower the rent. As represented above, 5 kilometers from the city centre the rent is \$500 while a distance of 30 km from the city centre commands a rent of \$200. This means that land closer to the city centre are mostly used in most appropriate ways to obtain the maximum rent and profit. The federal government land allocation in Gwarinpa is just 15 minutes drive to the Central Business district. This shows that maximum rent and profit could be obtained on land and properties from this location.

2.5 Concept of Land Leasing

Land leasing or ground leasing are often used interchangeably and refers to a system of long term lease on a vacant land or property from one party (lessor) to another (lessee). It is usually for a term of years ranging from thirty five (35) years to ninety nine (99) years. A land lease may include a vacant land or land with improvement on it (Michigan, 2005). A publication by the city of Amsterdam Development Corporation on the use of public ground lease in European cities defines ground leasing or land leasing as a market arrangement between an owner of a property and a lessee where the property owner transfer rights to the lessee for a period of time. This form of lease could be granted by an individual, community or a public authority. Two major types of leasing exist: (a) communal land leasing and (b) public land leasing.

2.5.1 Communal land leasing

Communal land leasing is a system where a community owns land and leases it to members for a term of years, it first started in the United States and is presently predominantly practiced in Africa. It is a form of tenure that combines the individual ownership of building

and the communal ownership of land. Community land leasing is a way of making land accessible to the public by assisting them in purchasing houses without necessarily paying much for the land, this is always achieved through the community land trust. The community owns the land while the land is leased to private individuals who own the structures on the land. The community and the lessee usually agree on a long term lease that clearly spells out the rights and responsibilities of both parties to the contract. The community land leasing has been successful in the area of securing affordable land for housing the low income families due to the high cost of land (Greenstein and Sungu-Eryilmaz, 2005). In community land leasing, the land is generally confined as a common heritage for all the members of the community. For the purpose of this research, we shall be concentrating on public land leasing.

2.5.2 Public Land Leasing

Studies by scholars revealed that land can be seen as both public and private good so it cannot be treated as an ordinary asset which is controlled by individuals alone because of its limited in supply and the crucial role it plays in human settlements, government therefore in some countries such as China, Hong Kong, Netherlands, Israel, Finland, Canberra, Ethiopia, Tanzania and Nigeria confers the ownership and control of such land to the state or government (Hong, 2003). Economists also described land as a resource provided by nature, it does not have any improvement on it. It is very unique because the supply of land is inelastic. As a result of the usefulness of land to mankind, payment is usually required from any individual who wants to make use and benefit from the land belonging to another. The payment for the use of land is known as land rent or lease fee and the public system of given out land to be used by another is known as public land leasing.

Public Land Leasing is therefore defined as process through which the state leases the rights to use, develop and transfers of land to the private individuals while retaining the right of ownership to the land is retained by the State (Hong, 1996). It has also been defined as “a voluntary transaction in which property rights such as user and income rights are transferred from the landowner to the tenant” (Slangen and Polman, 2008). From the definitions above, public land leasing should not be misinterpreted as a form of government’s absolute ownership of all interest in land thereby ignoring the important role of the market in facilitating the allocation and exchanges of leasehold rights within the private individuals, an example of private individuals changing public property rights can be found in Hong Kong and Canberra which has the most developed public leasehold system in the world (Hong and Bourassa, 2003b). This means public land leasing comprises of collection of rights which are mostly referred as “bundle of rights” that can be traded.

The exchange or transfer of the rights in the bundle varies with the type of the contractual arrangement. Since the property rights can be separated from the bundle of rights and traded separately, in this situation the government who is the land owner in principle has all the rights in the bundle but retains only the right to own the land and transfer other rights to use, inherit, transfer, develop and benefit from land to the private individual. The private individual enjoys the assigned rights for a length of time and as stipulated in the lease agreement (Hong, 1999).

According to Hong (1996) there are two important advantages of leasing public land: Firstly, certain land use regulations are made by the governments as part of the conditions for the lease contract, by so doing the government can manage and control urban growth and development. Secondly, the government through granting leases at below market value to special industries and non-profit organizations may stimulate economic development thereby

providing infrastructure services to the population. Scholars have however argued that there is no evidence of public land leasing that is all inclusive which if government adopt and followed diligently would lead them to an unprecedented path of prosperity (Hong and Bourassa, 2003b).

Expected increase in the future land values are been able to be captured through public land leasing and government uses the advantage of the revenue generated in providing public infrastructure. (Hong and Lam, 1998, Brown, 2006) The issue of who benefit from the increase in public land leasing is at the centre of much debate around equality and fair distribution of resources between private individuals and the government (Hong, 1996). But it has been made clear that since in theory, government is the landowner, it should retain a portion of increment in value of what it has contributed. One major objectives of public land leasing is its ability to capture the increase in the value of land as a government or community source of revenue (Hong, 1999).The success in achieving this income generation varies in different ways the instrument is used.

2.6 Public Land Leasing as a Value Capture Instrument

Scholars, analysts and policy makers believe that public land leasing system could allow governments to capture and benefit from the share of future increment in land value and also achieve the control of land uses and stabilize land prices (Hong, 1999) This argument is based on the assumption that the state retains full ownership right to own the land and then lease only the rights to develop and use of the land to the private individuals. Public leasing has the potential of generating income through the increment in land values as a result of public investment in infrastructures and regulating land uses. Although this assumption is persuasive at theoretical level as there are no insufficient evidence or research that can prove on how government could achieve this objective in practice because there is no generally accepted or agreed criterion upon which the success of land value capture under public land leasing system could be measured or determined (Hong, 1999).

Capturing the gains of land value increments has been a serious issue with the government of different countries practicing public leasing. The ability of a government to recover a portion or all increments in land value determines its financial capabilities in providing social services and provision of infrastructure for its citizens. There are various value capture instruments in use and scholars are still searching for different ways and possibilities of how public land leasing could best be used to generate revenue (Hong and Lam, 1998)

Public land leasing is a most powerful tool that government use to intervene in the land and housing markets. The government lease out multiple land rights to the private individuals instead of outright sale so that it could control and specify the amount and type of development right and the term of lease that could be granted to the lessee so that lessees can enjoy the rights to develop, transfer, use, inherit and benefit from the land (Hong and Lam, 1998)

Public Land leasing has great potentials in recouping or capturing a portion of land value increments from the lessees. Using the Hong Kong public leasing experience which is one of the world's most established public land leasing systems, there are four mechanisms used by government to recoup land value capture as follows; (a) initial payment of premium/public auction, (b) collection of annual land rent, (c) lease modification and (d) lease renewal (Hong, 2003)

- a. Initial payment of premium/public auction; this is a lump sum of money that the lessee is expected to pay to the government at the commencement of the lease. In the case of

Hong Kong, public auction is the most common way of capturing value of land. The premium is determined by the competition among the bidders where the successful bidder will pay the government a premium for leasing the land. The successful bidder pays a down payment of 10 percent of the premium at the end of the bidding while the remaining balance will be paid within 30 days. Leasing the public land gradually in this way, the government will be able to capture the increment in the value at the beginning of the lease and it has been the most transparent lease method compare with the private negotiation.

- b. Collection of annual land rent; this as an annual payment of rent by the lessees to the government for the use of the land leased. It is also referred as ground rent. Ground rent is regularly reviewed upward taking into account of increase in land values and inflation but in the case of Hong Kong, a certain percentage of estimated rental value of the property are used as a basis for the assessment of the land rent. There is a relationship between the ground rent and the premium, the higher the amount of premium paid, the lower the expected ground rent and the lower the premium the higher the annual ground rent to be paid by the lessee.
- c. Lease modification; this arises in a situation when plot owners want to improve, redevelop or alter their properties. They would first require some development restrictions to be removed by the government as a result of the conditions originally imposed on the development of the leased land as part of conditions contained in the lease contract. For the alteration to be approved, it will require the lessee paying additional premium for altering or modifying the lease contract and development restrictions/conditions. The premium to be paid is based on the type of modification to be carried out, potential increase in the value of the land after the development and the addition of the newly acquired land rights. This method has not been able to generate much revenue because of the problem of high negotiation and administration cost encountered during the process of redevelopment. However, when the premium to be paid for modification or redevelopment of properties is high, lessees may decide not to modify and also if the premium is low, the government may not capture the increment. This implies that without any request for lease modification by the lessees, government does not have the opportunity to capture increment in value using this method. This is the reason why the method does not seem to be reliable or dependable in generating revenue.
- d. Lease renewal; increase in land values are captured during the lease renewal. At the expiration of the original lease granted, when the lessee wants to continue or extend the lease of the land, he will be required to apply for a re-grant of a new lease. Before such approval is granted the government imposes new terms, condition and covenants. Therefore additional premium is required to be paid by the lessee for the grant of a new land rights. The premium that is usually paid for the re-grant of lease which is a full market value of the land this means that more land value will be captured at the time of re-grant of leases. This method has also not proven to be a good source of revenue generation considering the long leases of between 40-99 years may not be a dependable and regular source of income. (Hong, 1996, Hong and Lam 1998)

Huge amount of revenue could be generated using the methods above. The Hong Kong government was able to raise substantial amount of revenue through leasing public land with an intention to raise revenue using the above four methods to provide infrastructure and the provision of affordable housing. It was argued that high premium collected at the beginning of the lease will certainly increase the housing costs in the private housing market. The

government was able to achieve the revenue generation at the expense of provision of affordable housing for the poor and for the government to achieve the provision of the subsidized housing programs, it would not achieve the revenue generation. So this became a trade off between two competing policy goals.

Hong (1999) argued that in using above four processes to capture increment in land value, care must be taken while using the methods, for example high payment of premium and ground rent may tend to discourage investment and business opportunities in the state, this is one of the attributes that prevent some developing economies from using initial payment of premium to capture land values because the government is eager to attract business and investment both locally and internationally. This was the reason that contributed to Canberra's low lease revenue generation while Hong Kong government was successful in depending on the payment of initial premium because of the difficulties in demanding and collecting premium during lease modification and lease renewal has proven to be politically difficult. Scholars therefore asserts that for the government to be successful in using the initial payment of premium, it should lease the land slowly because if the whole land is leased at once it would not be able to capture any further increase in land value if the whole land was leased. This means rapid allocation of land when their values are low will prevent the authority in capturing value increment when the values are high and even the rapid allocations when the prices are high means further increment would not be able to be captured.

Using the above methods to capture land value, Hong Kong was successful in using public land leasing as a value capture instrument (Hong, 2003). He asserts that rapid increase in property values contributes to the increase in revenue from lease fee. Revenue generated through public leasing in Hong Kong from 1996-2000 was enough to finance and cover the cost of infrastructure and land development. Lease revenue contributed about 17 percent of total government revenue from 1996-2000 and was the second most important source of public fund. One of the reasons for the success is that Hong Kong leasing system is attributed to the scarce supply of land, it is a small Island with a total land area of 1,070 square kilometer and a total population of about 7 million (Hong, 2003). Arguably the criteria worked well for the Hong Kong case but same applicability in another location may not produce the same result.

It is argued that comparing the percentage of lease revenue generated with the total government budget may be misleading and not a good example for determining success of value capture through public leasing. For example if all land value in a country is increased by say 1 billion euro in a particular year and it was only able to capture 1% of the total land value which is 10 million euro. If the annual budget is small, the lease revenue generated will represent a larger percentage and become an important source of revenue but in reality only 1% of the large increased was captured. In this case it cannot be concluded that government has successfully captured the increased in land value by leasing public land. Similarly, it may capture a large percentage of the increment say 80% of the land value but if the budget is too large relative to the lease revenue generated, it will show a small percentage but in reality it has captured a large portion of the land value increment retained by the state. As a result of these inadequacies, Hong (1996) and Hong and Lam (1998) suggested two major criteria to be used for the assessment of the success of a land value capture mechanism under a public land leasing regime are: (a) Percentage of land value captured and (b) Percentage of public infrastructure investment financed by way of value capture. (Hong, 1996, Hong and Lam, 1998).

2.6.1 Major Public leasing payment methods

There generally two major types of public lease payment methods that could be used to capture the real increment in land value; they include the premium and the ground rent.

- i. The premium; this is the lump sum of money that the lessee is expected to pay to the government usually at the beginning of the lease or at the time of lease modification and or at lease renewal to extent their lease rights. It has proven to be one of the best ways to capture the increment in land value most especially in Hong Kong as a result of its ease of administration and collection of the revenue at the beginning of the lease. However this method has its challenge and has been argued that if the public officials discover that the auction or bidding price for the piece of land is too low which means they may not capture enough increment in land values from it, they may withdraw the land from the auction and similarly, if the bidders discover that the auction/bidding price is too much they may decide to withdraw or stop competing for the land (Hong, 2003)
- ii. The Ground rent: This is the yearly payments for the use of the land leased to the private individuals. The public lands are leased for a length of time rather than freehold. There are a number of reasons for this form of land holding, one of the reasons according to Needam (2003) is the unequivocal benefit from the expected increase in the values of land and to capture such increase for the state or community. The payment for the use of the leased public land is called ground rent.

To be able to capture the expected future increase in the value of land using the ground rent, it is periodically reviewed upward at periodic intervals or at the expiration of the lease in order to adjust the rate with the current market land values. In the case of Netherlands, the ground rent used to be a constant fee for the whole term of the lease but with rapid increase in land values, and for the municipality to capture such increment in land values, the ground rent is now been reviewed every five years (Needham, 2003) and in Sweden upward review in ground rent is every 10 years (Mattsson, 2003). This was done as a result of increase in the property values due to economic forces of demand and supply, inflation and the rapid population growth or urbanization which brings about the increase in land values. Example there in New York in 1984, the lease of a building (Times square) was granted for 99 years and the ground rent was expected to be reviewed every year in relation to the profitability of the building so that the authority could capture the increment in land values (Fainstein, 2012).

The situation in Sweden is almost similar to that of Netherlands, the main objective of ground rent is to provide financial return for the government or municipalities by capturing the increasing land values through the periodic increases in ground rent. To achieve this, the calculation of the ground rent is therefore very critical to the success or failure of this objective.

From the above Netherlands and Sweden experience, ground rent depends on the value of the land, in order to capture the increased land value through the use ground rent, one advantage for the government or the municipality is to improve the public infrastructure which may lead to the increase in the intensity of use of the land and these changes may result in the increase in values of land so that the government or the community would capture more land value from the increase.

Needham (2003) argued that the financial advantage of the government or municipality is not necessarily the benefit of the citizens some look at ground rents payment as only a means of raising money for the municipalities from the citizens. This is what makes most people in the Netherlands prefers a freehold ownership of land. Similarly, one good example of the advantage of the lease to the lessee is that in public leasing, acquisition of land requires less initial capital outlay as the lessee pay for the cost of land annually, so lessees do not need to tie up huge amount of capital on land at a time (Needham, 2003). Another argument by Needham (2003) is that in-between the period of the review of ground rent one can exactly predict the actual level of inflation that may take place so that the reviewed ground rent would capture the real increment in value. Therefore since the review is always upward, a situation where financial crisis occurs, it would be difficult for the government or municipality to capture any value. It is argued that payment of ground rent has a bearing on the premium as high amount of ground rent to be paid may lower the bidding price/initial payment of premium on the leased land because part of the payments for leasing the land has been shifted from the initial premium to annual ground rents (Hong, 2003)

2.6.2 Regulations and institutional framework on public land leasing

Public land leasing is controlled by a government institution and for an effective and efficient operation, there is need for an appropriate institutional body that would be clearly saddled with the responsibility for the administration of the public land leasing. Public land leasing would also be required to be backed by some constitutional provision in order to make it legitimate. As contained in Hong and Bourassa (2003), the constitution of a country determines the institution that should be responsible for the administration of public land leasing. Countries such as Israel, Hong Kong, Ukraine and China began their public leasing systems with constitutional provisions clearly stipulated in their constitutions stating explicitly the public leasing system and the amount of control the state should have over the leased land. However countries like the Netherlands, Sweden, Finland and Poland, have fewer restrictions on their constitution that allows the coexistence of private and public land leasing to operate together (Hong and Bourassa, 2003a). Therefore individual countries designs their unique constitutional rules and set the policy goals and the institution that will be charged with the administration of land leasing. In Nigeria a particular institution is given the full constitutional responsibility for administering public land leasing in the country.

2.6.3 The use of revenue generated through public land leasing

This refers to the use to which the revenue generated from land value capture is being used for. From international experiences different countries and municipalities dedicates such revenue generated in different ways based on their policy goals. Generally, the revenue generated from land value increment is used for three major objectives: (a) enhancing local revenue and autonomy (b) financing infrastructure and promoting development and (c) social redistribution (Furtado, 1997).

The use in which the revenue generated through leasing public land varies from country to country. Some of the countries around the world use this value increment generated in the provision of public infrastructural improvement for example Hong Kong is using the revenue for the provision of basic infrastructure and investing in social housing, Ethiopia use it for the provision of municipal infrastructural investment, China used it for provision of public infrastructure and in Bogota-Columbia it is used for social investment including social housing while Canberra is relying on the revenue from value capture for the building of

Australian Capital (Hong, 2003) and in the Netherland it is used for controlling development and at the same time to generate income (Needham, 2003). The justification here is that public infrastructural improvement increases the value of land and properties. It is therefore economically reasonable for government to capture part or all of the value increase in order to benefit from the increment in value it has created (Anderson, 2012).

From the above analysis, the use of revenue generated from public land leasing where unearned increment is meant for the use of the entire community falls in line with Henry George's popular argument of single tax on land. He contended that the value increase generated from the land should be meant for the society as a whole not to the single individual owners since urban land belong to all inhabitants and not only to those with ownership rights because the values were created collectively as a result of collective use of the land. Similarly, the concept of right to the city by Lefebvre is another form of equity where he emphasized on general participation and the right for everyone to partake in the enjoyment of the life in the city. Through public land ownership this allows the government or municipalities to plan development and benefit from the increasing land values by providing basic services (Fainstein, 2012). In Nigeria all revenue accruing from the government or public sector goes into the government coffers and is been used for general social redistribution.

2.7 Financing urban infrastructure through value capture

According to Smolka and Amborski (2000), the objective of land value capture is divided into three categories as follows: (a) value capture to finance infrastructure; (b) value capture to deepen land taxation and (c) value capture to control land use. This section shall focus on financing infrastructure. The fact that land has a long standing history as an instrument that can be used to finance urban infrastructure, this facilitated the need for most urban centres and other land developments to provide adequate urban infrastructure since this investment tends to generate land value increments that could later be captured for the benefit of the community. Planners in most cities consider it as financially and economically reasonable to prepare strategies that could facilitate the provision of the required infrastructures in most urban centres in order to benefit from the increment in values (Smolka and Amborski, 2000).

Peterson (2009) argued that the increase in population growth which leads to urbanization will create a huge demand and requirement for urban infrastructure. There are pressing demands for infrastructural investment needed to make urban centres an efficient location for economic production as well as provides the growing larger population with basic services which may increase or upgrade the public services in line with household incomes. Provision of urban infrastructure will facilitates the economic growth of its population which drives a rapid increase in land and property values within the urban centres. The ability of a state or government to provide and finance the needed infrastructure will largely depends on its ability to capture a portion or all of these value increments and channel it at financing urban infrastructure (Peterson, 2009).

Different value capture instruments are further explained by Peterson (2009) on how they can be used to capture the increased values of land to finance urban infrastructure such as: developers land sales, sale of development rights, betterment levies in Columbia, value capture via project related land sale, developers exactions and impact fees. We may not go in detail on each of the listed instruments above and explain how they are used in financing infrastructure by the author. But from the evidence provided by Peterson (2009) showed that these instruments are used to generate revenue to finance and provide infrastructure. For

example in Mumbai, India the revenue generated from land auction was used to finance transportation plan and also in Cairo, Egypt the government used the revenue generated from land auction to finance internal infrastructure and road infrastructure while the sale of development rights was used in Brazil to generate revenue for infrastructural development, large amount of income was generated which was later used in the construction of a new metro station at Faria Lima.

In another dimension public land leasing has also been used to finance the provision of infrastructure, for example in China public land leasing was tied to infrastructure investment where leasing land was meant to stimulate the local economic development through providing adequate infrastructure that will attract foreign investment and assist in providing investors with a stable and land occupancy rights which in return the government will capture and benefit the community with the increase in the land values. (Peterson, 2006)

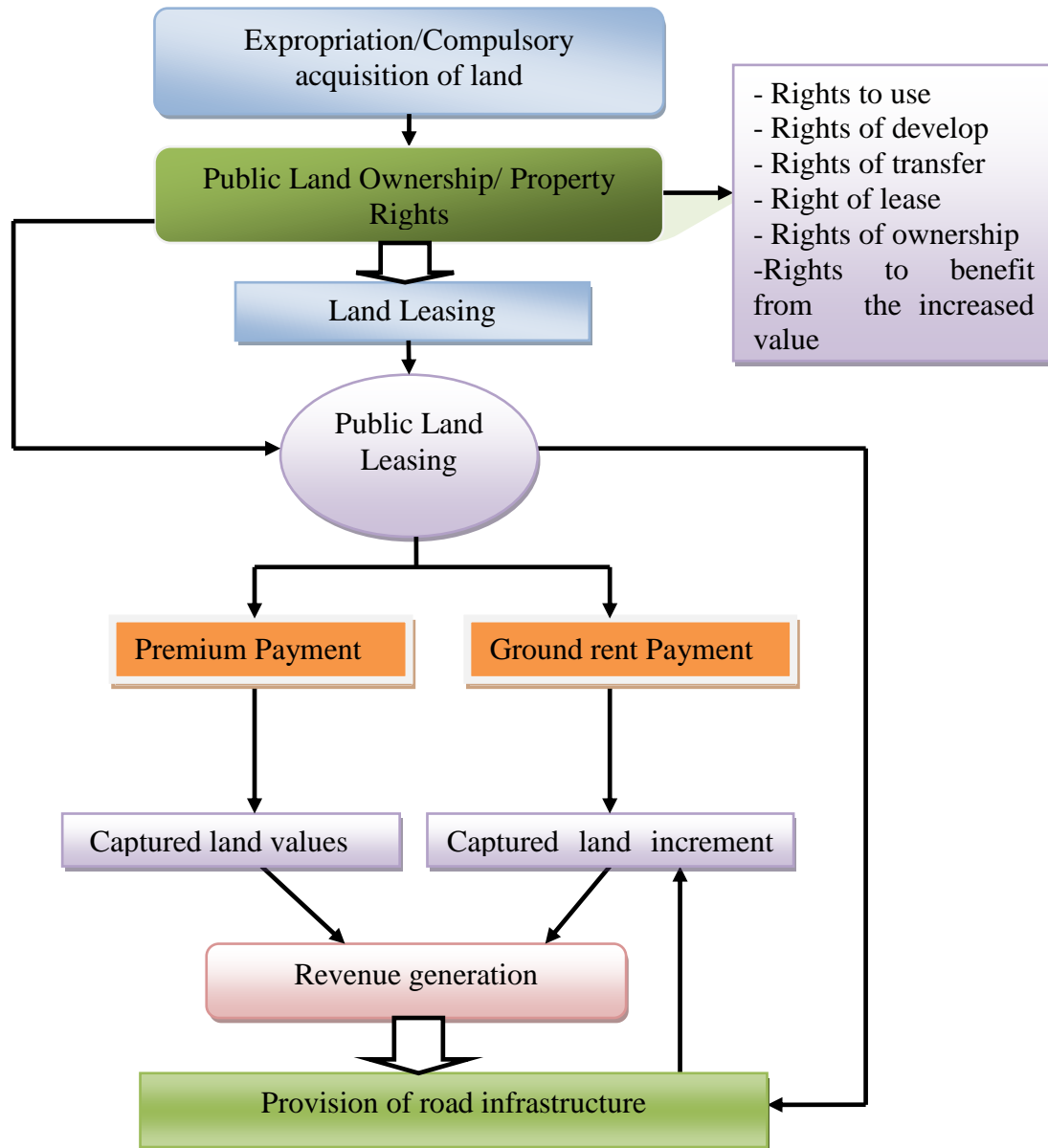
According to Peterson (2006) public investment in infrastructure such as road network, water supply and electricity supply increases urban land values. It is therefore economically appropriate for government to capture the increase in the urban land values it has created through this investment and use the proceeds to reinvest in providing more infrastructures.

Public land leasing has the advantage of generating and quickly producing more revenue which is easier to administer than other forms of value capture instruments such as betterment taxes, land readjustment and property taxation. As a result of its ease of administration and ability to generate more revenue, most cities in China have been financed and provided with urban infrastructure directly from the revenue generated from public land leasing (Peterson, 2006).

To focus specifically on road infrastructure which this research is concerned with, the government of Egypt in Cairo used the proceeds captured from the sale of land rights to provide a road infrastructure that is a new four-lane access highway road in Cairo, in the case of Bogotá and Cali in Columbia, betterment levies were used mainly for the provision of road construction and road improvements. In the same vain in China, the potential gain from the land-value gain has played a major central role in financing road infrastructure such as the Ring Road in the region of Changsha which is the capital of Hunan in the Central China half of the highway construction cost was financed through leasing land which values have been enhanced due to the road provision (Peterson, 2009). The road infrastructure is very important as it provides increase access to social infrastructures such as hospitals, schools and other public services.

2.8 Conceptual Framework

Figure 2. 3: Conceptual Framework



Chapter 3: Research Design and Methods

3.0 Introduction

This chapter presents the approach and techniques used in the research that assisted in answering the research questions and also to operationalized the conceptual framework. It will start by restating the research questions and then focuses on the variables and indicators, selection of sample and size, validity and reliability of the study, the methods used in data collection and the analysis and finally, the scope and limitations of the study will be stated.

3.1 Revised research questions

Throughout the period of this study, the research main and sub-questions have continuously been modified and revised at several stages of the research based on additional information gathered from related literatures and the fieldwork. The final research questions have been modified and presented in chapter one and can also be found below as a reminder.

Main research question:

How does public land leasing contribute to the financing and maintenance of road infrastructure on Federal Government land in Gwarinpa, Abuja?

The sub-questions are further given below:

- i. How much revenue is generated from the lease of federal government land in Gwarinpa, Abuja that is used for road construction and maintenance?
- ii. What are the increments in land values resulting from government investment on road infrastructure on federal government land in Gwarinpa, Abuja?
- iii. To what extent has the revenue generated from public land leasing able to provide and maintain road infrastructure on federal government land in Gwarinpa, Abuja?

3.2 Research approach and technique

a. **Research type:** A case study (single embedded) type was adopted for this research. Case study was adopted because it is an inquiry that tends to investigate a contemporary phenomenon within the context of real life. A case study is suitable when examining events and also when the relevant behaviours cannot be manipulated, it is also required in a research that arises from the need to understand a complex social phenomena such as examining the possibilities on how public land leasing is used as a value capture instrument to finance road infrastructure on federal government land in Gwarinpa, Abuja which forms the central focus of this research. Case study technique provides the researcher with a clear direction and approach to investigate or enquire into the actual occurrence of events. It also enables the researcher to conduct a more genuine and detailed investigation on the activities of the public land leasing which enables the researcher to make use of different data collection methods such as personal observation, in-depth interview and secondary data which goes beyond what is obtainable in historical or conventional study (Yin, 2002).

The challenges of using case study approach such as lack of scientific generalization or external validity, the extent of control or internal validity, lack of rigor which includes, sloppy, lengthy content, biased views and reliability (Yin, 2002) exist but this was overcome by the researcher focusing more on relevant content based on the interviews from experts, use of triangulation and the appropriate design of questionnaire to get the required and genuine

information, this necessitated the testing of the questionnaires before the official commencement of the interviews in order to ascertain the validity and quality of information and data to be obtained for this research.

b. Research approach: The research approach is a qualitative type with a combination of descriptive and exploratory approaches. Considering the focus of this study that deals with how public land leasing is used as a value capture instrument to finance road infrastructure on federal government land allocations in Gwarinpa, Abuja. It is descriptive because it described how revenue from public leasing was generated and used to finance road infrastructure while exploratory because it has explored the possibilities and potentials in using revenue from public leasing to finance road infrastructure on the federal government land. This type of research is completely a new dimension of research in public land leasing and most specifically on Federal Government land in Gwarinpa, Abuja.

Descriptive research usually examines a situation in order to establish the existing norm and also try to forecast or predict what could happen under the same condition. This could take several forms depending on the type of information one is looking for (Walliman, 2005). It is therefore a descriptive research because of the research objective and the nature of the research questions, which requires describing the lease of public land and how it is used to finance road infrastructure on the federal government land allocation in Gwarinpa-Abuja. As a descriptive research, it further described how public land leasing is used as a value capture instrument to generates revenue and compare such income generated with the cost of investment and maintenance of road infrastructure in order to determine if leasing public land is actually generating sufficient revenue to finance and maintain road infrastructure.

The technique of interview was used as a source of primary data in combination with observation which was found important during the field work, therefore the data was collected through a qualitative approach which was through the use of semi-structured interview on the respondents. The secondary data used include the records of revenue generated from ground rent and premium, record of expenditure on road investment and maintenance, laws, regulation, Land Use Act and the Constitution of the Federal Republic of Nigeria 1999 as amended. The use of the qualitative data collection method (Semi-structured interview) was adopted because of its advantage of being flexible in getting the required data for this research.

3.3 Operationalization: variables and indicators.

Table 3. 1: Variables, indicators and sources of data

<p style="text-align: center;"><u>Main objective</u></p> <p style="text-align: center;">To identify how the lease of public land could be used to capture land values and its increments to provide and maintain road infrastructure on federal government land using Gwarinpa as a case study</p> <p style="text-align: center;"><u>Main research question</u></p> <p style="text-align: center;">How does public land leasing contribute to the financing and maintenance of road infrastructure on Federal Government land in Gwarinpa, Abuja?</p>				
Sub-research questions	Variables	Indicators	Research methods	Data sources
<p>How much revenue is generated from the lease of federal government land in Gwarinpa, Abuja that is used for road construction and maintenance?</p>	<ul style="list-style-type: none"> • Revenue from ground rent Charged • Revenue from ground rent collected • Revenue from premium generated 	<ul style="list-style-type: none"> • Total ground rent that should be collected • amount of annual ground rent paid per plot/ square meter • amount of initial premium paid per plot 	<p>Analysis of primary and secondary data (Quantitative and qualitative analysis of data collected)</p>	<p><u>1. Primary data:</u> interviews with:</p> <ul style="list-style-type: none"> • Estate Management Unit responsible for revenue from ground rent and premium • Land use and allocation committee <p><u>2. Secondary data</u></p> <ul style="list-style-type: none"> • records of revenue from ground rent and premium • record of total land allocations from LUAC
<p>What are the increments in land values resulting from government investment on road infrastructure on federal government land in Gwarinpa, Abuja?</p>	<ul style="list-style-type: none"> • Increment in land values • Increment land values captured 	<ul style="list-style-type: none"> • market values of leased land before and after road construction • government values of leased land before and after road construction 	<p>Analysis of primary and secondary data (qualitative and Quantitative analysis of data collected)</p>	<p><u>Primary data:</u> Interview with:</p> <ul style="list-style-type: none"> • real estate valuers • estate brokers <p><u>Secondary Data</u></p> <ul style="list-style-type: none"> • Records of sales values obtained. • Records from the premium unit • Record from deeds registration unit.
<p>To what extent has the revenue generated from public land leasing able to provide and maintain road infrastructure on federal government land in Gwarinpa, Abuja?</p>	<ul style="list-style-type: none"> • cost of providing and maintaining road infrastructure • Social responsibility of the government towards roads construction 	<ul style="list-style-type: none"> • Cost of road construction per kilometre • Annual cost of road maintenance • Mandate of the FMLHUD 	<p>Analysis of primary and secondary data (Quantitative and qualitative analysis of data collected)</p>	<p><u>Primary data</u> Interview with:</p> <ul style="list-style-type: none"> • Legal unit • Engineering unit <p><u>Secondary data</u></p> <ul style="list-style-type: none"> • records of income from land leasing • records of expenditures on road infrastructure

3.4 Selection of sample and the size

Sampling: The Federal Government land exists in all the states of the federation but the choice of Gwarinpa as the unit of analysis was chosen because of the availability of road infrastructure compared with other federal government land in the country and also due to availability of data since I work with the federal agency responsible for land matters. In order to effectively analyze the unit of analysis, a purposive sampling technique was adopted targeted at the appropriate agencies and experts.

Purposive sampling technique: In order to answer the research questions by the researcher, and to be able to achieve the objective of the research, a purposive sampling was employed as selected experienced professionals and relevant staff/officials of the relevant organizations were interviewed to obtain both primary and secondary data. This included officials from the Federal Ministry of Lands, Housing and Urban Development Department that are responsible for public land leasing and the Engineering Department responsible for the provision and maintenance of road infrastructure on federal government land. In general a total of 14 officials and experts were interviewed. From the lands and housing development department, the specific officials that were interviewed include One (1) head of unit of the Land-Use and Allocation Committee (LUAC) which are saddled with the responsibility of federal land allocations, one (1) head of the legal unit, two (2) officers from accounts/revenue unit, two (2) officers from the estate management unit responsible for ground rent and premium, one (1) officer from urban and regional planning unit that deals with the preparation of the layout plan, one (1) officer from the deed registry in charge of land records, two (2) officers from the engineering department responsible for the provision and maintenance of road infrastructures on federal government land and experts which includes (2) private estate valuers and (2) estate brokers.

3.5 Data collection methods

Having formulated this research problem, it becomes paramount to decide on what kind of data collection method that would be most suited to carry out the study. For the purpose of this research, the major data sources that were employed are the primary and secondary data:

(a) **Primary data:** This refers to the data that were collected in the field during the fieldwork which was through both qualitative and quantitative approaches. The primary data sources that were employed in this research include: in-depth interview and observation.

i. **Interviews:** The interview was an in-depth semi structured interview targeted at responsible organizations and agencies with required type of data and experts aimed at obtaining particular answers to particular questions and allowing time for further development on the answers including more question that are open ended. This gave the researcher the opportunity to obtain more data and information relevant to this study.

ii. **Observation:** This is a method of taken note of events, conditions and activities through the non-inquisitorial involvement of the researcher (Walliman, 2005). The observation was done through a carefully observation of the information collected through the interview and secondary data and observing the whole process of the data collection by the researcher.

The primary sources of data in this research include interviews at the Legal Services Unit, Land Use and Allocation committee, Estate Management Division, accounts department, Expert: Estate valuers and Estate brokers, Deed registry, Road maintenance unit, and the

Layout unit. Table 3.2 below shows the breakdown of the primary data source, the number and positions of people that were interviewed.

(b) **Secondary data:** This data source includes published information from scholarly literatures, journals, text books and government documents which are related to the topic in order to obtain the necessary relevant and related theories and concepts on public land leasing. In respect to this research, the secondary data source include records and information relevant to leasing public land (premium and ground rent) and records of expenditures on road investment and maintenance that are most specifically related to the federal government land allocations in Gwarinpa, Abuja and the breakdown of the record on federal land allocation by the Land Use and Allocation Committee, and other secondary sources of data in general which include: The constitution of the Federal Republic of Nigeria 1999 as amended, Land Use Act, records of revenue from land leasing, records of expenditures on road investment and maintenance and other necessary published records. Table 3.3 shows the tabular representation of the secondary data source.

Table 3. 2: Primary data source

Department	Body to interview	Number to interview	Position of respondent
Lands and Housing	Legal unit	1 person	Head of unit
Lands and Housing	Land Use and Allocation committee Unit (LUAC)	1 Person	Secretary LUAC
Lands and Housing Dept (Estate Management unit)	Revenue collection, premium and ground rent unit	2 people	Schedule officers
Accounts	Accounts section	2 people	Head of Department and the schedule officer
Experts:	2-Estate Valuers and 2-Estate Brokers	4 persons	Head of the firm
Lands and Housing	Deed registry	1 person	Head of unit
Engineering	Road construction unit Road maintenance unit	2 person	Schedule officers
Urban and Regional Planning	Layout unit	1 person	Head of the unit
Total number of people interviewed		14 persons	

Table 3. 3: Secondary data source

Secondary data	Data source
	Constitution of the federal republic of Nigeria 1999 as amended
	Land Use Act 2004
	Records of revenue from public land leasing
	Records of expenditures on road infrastructure
	Records of leased allocations from LUAC
	Other necessary and relevant published records

3.6 Data analysis methods

This research is a qualitative research therefore analysing the data was done qualitatively. The quantitative elements of the research were analyzed quantitatively with the use of excel, this involves the conversion of the data collected into numerical form so that statistical calculations can be made and conclusion be drawn. Therefore the analysis is presented through tables, charts and pictures. Furthermore the analysis was done based on the records of revenue generated from public land leasing (ground rent and premium) from 1999 to 2012 and the expenditure on road investment and maintenance on federal government land in Gwarinpa, Abuja also from 1999-2012. The revenue generated was then compared with the cost of financing and maintaining road infrastructure in order to ascertain the extent to which this revenue from leasing was able to provide and maintain road infrastructure on federal government land in Gwarinpa, Abuja. This was done by analysing income from premium with expenditure on road investment which are one time projects and also analysing income from ground rent with expenditure on road maintenance which are both annual and periodic projects. The analysis would also determine the extent to which government investment on road infrastructure increases the values of the federal government land in Gwarinpa, Abuja. This would require analysing both the open market land values before and after road construction from the private market perspective and also the government values of land from the government perspective on the Federal Government Land in Gwarinpa, Abuja. From the above analysis, it would be able to determine from the perspective of land value capture either government or the individuals in the private sector are the ones capturing the increment in the value of land.

3.7 Validity and Reliability

i. **Validity:** Validity is the ability of the research to be able to measure what it is intended to measure. Therefore the validity of this research was ensured through the use of different data collection methods which includes; primary data (in-depth/semi-structured interviews), observations and the use of secondary data. For this research work to ensure high validity a purposive sampling was adopted which targeted at the most appropriate agencies and organization with the most accurate information, data and experts. This include the Lands Housing and Urban Development department that is responsible for public land leasing, the Engineering Department responsible for road investment and road maintenance both in the Federal Ministry of Lands Housing and Urban Development. Land and property experts which include estate valuers and estate brokers knowledgeable in the market land values of

the federal government land in Gwarinpa, Abuja were also involved and interviewed. A pre-test of the research instruments was also conducted before the official commencement, a research assistant was employed to assist in taking notes, and a good recording device was used to complement note takings in order to avoid missing valuable information. Through this process, validity of this research is highly sustained.

ii. **Reliability:** Reliability refers to the degree of consistency, stability and dependability. Reliability of this research was therefore ensured by the use of triangulation in which data collected were thoroughly checked through interviews in different offices by key professionals and experts and also the use of secondary data. The answers to the interviews conducted were also carefully observed and checked by the researcher. Reliability of this study will make sure a similar result will be able to be obtained when the same research is to be re-conducted.

3.8 Limitations of the study

- The limitation of this research on LVC is on the assumption or premise that the increase in land value is only as a result of government effort. In the real sense, there are private individual or communal efforts that may contribute to the increase in land value.
- Road investment is not the only public infrastructure that contributes to increase in land values, there are other infrastructures and services and other social reasons that may as well contribute to the increase in land value.
- Time Constraint: The Limited time scheduled for the fieldwork was a challenge for a comprehensive data collection, considering interviewing different government officials and experts within the time frame of four weeks.
- Financial constraint: A research assistant was hired and the cost of his transportation, feeding during the exercise and his allowance was too much to bear
- Administrative bureaucracies: Some of the respondents to be interviewed and to supply secondary data were apprehensive at providing information on condition that prior approval has to be giving to them from the authority of their organizations as it is a law in the public service in Nigeria which caused some delays in given out information.
- Corruption: Due to level of corruption in the system, some information was deliberately hoarded and the respondents were not willing to give out published records, and the demand for money/valuables in exchange for the information required.
- Poor record keeping: There was difficulty of getting some valuable information that were so many years ago due to the poor manual system of record keeping which are easily mutilated and destroyed
- Re-organisation of ministries and departments: Some data were not easy to be found as the departments had series of merging and demerging from different ministries. For example the Lands Department responsible for public land leasing and the Engineering Department responsible for roads investment and maintenance experienced 4 changes in different ministries from 2003-2009. This include Ministries of Housing in 2003, Environment in 2006, Works in 2008 and finally to FMLHUD in 2009

Chapter 4: Research Findings

4.0 Introduction

This chapter presents the analysis and discussions on the data that were collected during the fieldwork on Federal Government land in Gwarinpa, Abuja-Nigeria. The research was conducted in four different aspects and for the purpose of this research these aspects will be called dimensions relating to public land leasing these dimensions includes: the legal, financial, economic and social dimensions. Each of these dimensions will be discussed and analysed separately.

In the first section of this analysis, the legal dimension which deals with governments' rights and obligation over land will be considered, analysed and discussed. This study will therefore starts with the major document of the country that gives public authority the power and the rights upon which public land leasing operates which is the Constitution and laws of Nigeria. This Constitution and Laws will therefore provide the background and the foundation for public land leasing with a focus on the lease of federal government land. Furthermore, in this section, the Constitution and the Laws regulating land and public land leasing in the country which is the Land Use Act will be analysed and discussed extensively. Through a critical analysis of the Constitution and Laws of Nigeria, the legal and institutional framework on which public land leasing operates would be clearly understood.

Subsequently, the next section of this analysis will be focused on the financial dimension related to the lease of federal government land in Gwarinpa, Abuja. This dimension deals with the total amount of revenue that is generated and the maximum amount that is supposed to be generated and captured and the parameters that are involved in such calculation of the revenue. The revenue generated will be analysed and discussed with special emphasis on the federal government land allocations in Gwarinpa, Abuja. This dimension would enable us to find out how much revenue can be generated and the parameters used for such generation. The revenue generated will later be compared and analysed with the expenditure on road investment and road maintenance within the same federal government land in Gwarinpa in order to ascertain the extent of revenue from public land lease can provide and maintain road infrastructure on federal government land in Gwarinpa, Abuja.

The next dimension is the economic dimension of public land leasing which will also be analysed and discussed. This dimension deals with the Land Market and the analysis would ascertain whether increase in land values are realised as a result of government investment on road infrastructure within the federal government land in Gwarinpa. Finally the last part of this analysis will consider the social dimension which has to do with the use of the revenue generated through the lease of federal government land in providing a public good which is the road infrastructure within the federal government land in Gwarinpa, Abuja. The use of the revenue generated in this case will be able to ascertain the possibility through a simple comparison on the contributions of public land leasing as a LVC tool in the provision and maintenance of road infrastructure within the federal government land in Gwarinpa, Abuja.

4.1 Legal issues relating to public land leasing in Nigeria

It is important to start this section with the discussion and analysis of the legislative document that regulates land and land administration activities in the country which is the Land Use Act Cap L.5 of 2004 since the dimension deals with the government rights and obligation over land. This Act was originally promulgated as the Land Use Decree No 6 of

28th March 1978. Section 1 Sub-section 1 of the LUA vests all land in the country in the hands of the government which holds such land in trust for its citizens. The provision of this section therefore shows that government has full ownership rights over the land. The provisions of the LUA also went further to categorise the different tiers of government where such land are vested. Some parts of the land are vested in the State Governors and Local Government Chairmen while other parts are vested to the **Federal Government and its Agencies**. Since Nigeria operates a federal system of government, the LUA provides that all land comprised in the territory of each state is under the control of the Governor of that State **except land that are vested in the Federal Government or its Agencies**. In this case, the land designated or vested in the Federal Government or its agencies is what is referred to as Federal Government land which this research is concerned with and Gwarinpa land is one of such federal government held land in Abuja.

The Constitution of the Federal Republic of Nigeria 1999 as amended Chapter I part I Section 2(1) provides that the Nigeria is a Federal Republic. A federal republic is a form of government made up of federal state with a constitution governing the states. Nigeria has three (3) different tiers of government which comprises the Federal, State and the LGA's. Furthermore, in Chapter I, part I Section 3(1), contained the list of all the states in the country and sub-section 6 legitimises the LGA in the country. These are the evidence to proof constitutionally that Nigeria operates a federal state made up of Federal, States, and LGA's. Therefore in all the states of the federation there exists a federal government land allocations which are used mainly for the purpose of governance of the Federal Government and its agencies. The federal government land is a land that is acquired solely for the use by the federal government and its agencies. Such federal government agencies are therefore contained in Chapter VIII third schedule, part 1 in which all the federal government agencies that uses the federal government land in all the States of the Federation are contained, among the agencies is the Federal Civil Service Commission (FCSC) which is in charge of different federal government ministries that are statutorily mandated to function and discharge responsibilities on behalf of the Federal Government including the public land leasing and the road construction and maintenance which this research is concerned with.

In respect to the Federal Government land, the Federal Government has statutorily given the FMLHUD the mandate and responsibility of management and administration of all federal government lands in the Country. This includes all the federal government lands spread all over the states in the Country. The public land leasing of the federal government land falls within the purview of the Federal Ministry of Lands, Housing and Urban Development and is therefore responsible for the administration and management of all federal government's public land leasing. The FMLHUD is made up of six different professional departments which include the following:

- i. The **Lands and Housing department**
- ii. The Urban and Regional Planning Department
- iii. The Quantity Surveying department
- iv. The Building Technology department
- v. The Architectural Services department
- vi. The **Engineering Services Department** which comprises of the electrical, mechanical and Civil Engineering units

Each of these departments discharges their professional responsibilities when required on the federal government land. For instance in respect to this research, the Land and Housing Development Department deals with the allocation of federal government land otherwise known as the public land leasing while the Engineering Department, specifically the Civil Engineering unit deals with road construction and maintenance. In the course of an interview

in the respective departments, I was able to re-confirm their constitutional mandates as stated above.

With the establishment of the FMLHUD by the federal government, each of the six professional departments was given mandates to be responsible for. In an interview conducted at the legal unit of the FMLHUD in the course of the field work, the Head of the Legal Unit confirmed that “the Lands and Housing Development Department was given the full mandate of the management and administration of the federal government land all over the country and this include the public land leasing”. With this mandate given to the Lands Department, in this situation even when the name of the ministry changes or the department is demerged and merged with another ministry, the Lands Department still has the power to administer and manage all federal government land and its leases. This was proven when the department was formally under the defunct Federal Ministry of Housing and Urban Development in 2003, and to then Federal Ministry of Environment Housing and Urban Development in 2006, later to Federal Ministry of Works, Housing and Urban Development in 2008 and to the present Federal Ministry of Lands Housing and Urban Development from 2010 to date. In all these years it has been the same Lands Department that was responsible for all federal government land related issues including the public land leasing during the periods of merging and the demerging of the ministries and departments that occurred. In the same vein, in an interview conducted at the Engineering Department, the Head of the Civil Engineering Section also confirmed that the unit has the mandate to provide and maintain road infrastructure on federal government land even when the department was merged and later demerged from different ministries similar to the case of Lands Department above. From these explanations, it is clear that the Lands and Engineering Departments are the statutory institutions empowered to discharge these responsibilities in the context of this research. This has therefore shown that the Constitution and the Laws of the Federal Republic of Nigeria are the background and the foundation that made provision for the operation of public land leasing and the provision of road infrastructure in Nigeria.

4.1.1 Implementation of the legal dimension in Nigeria

Based on the above analysis of the relevant clauses from the LUA, the National Constitution of Nigeria and the legal mandates that empowers the FMLHUD to manage and administer public land leasing on federal government owned land, we shall go further and see how it is been implemented in the context of federal government land. The public land leasing of the Federal Government land is vested under the control of the Honourable Minister of the FMLHUD. The administration of the public land leasing is coordinated through the Land Use and Allocation Committee which is a unit under the Lands and Housing Department. The Minister by virtue of Section 2 sub-section 4 of the Land Use Act delegates such power to the Permanent Secretary of the FMLHUD to preside over as the Chairman of the LUAC which a body charged with the responsibility of advising the Minister on any matter connected with the administration and management of Federal Government land in the country.

The Federal Government allocates land through the LUAC which by virtue of section 2 sub-section 2 of the LUA stipulates that such committee should be established to handle public land allocations on behalf of the Government. According to section 3 sub-sections 1(a & b) of the LUA, it is provided that the LUAC is a committee which is made up of professionals that are knowledgeable in the field of land (Estate Surveyors and Valuers, referred as Land Officers in the Nigerian public service) and legal practitioners to handle cases of disputes connected with the federal land allocations. Therefore, the LUAC allocates all Federal Government land under the approval of the Honourable Minister of the FMLHUD. In the

course of an interview with the Head of Unit of the LUAC, he confirmed that “the major role and responsibility of LUAC is the allocation and issuance of federal government land allocations in all the states of the Federation including the Federal Capital Territory”. These allocations are usually done under the supervision and approval of the Permanent Secretary of the FMLHUD who is the Chairman of the Committee and whom the Honourable Minister has delegated such power and responsibility of presiding over the LUAC, subject to the directions given by the Honourable Minister in line with the provisions of Section 2 subsection 4 of the Land Use Act.

Concerning the granting of leases and revenue generation on federal government land, Section 5 subsection 1(a) of the Land Use Act provides that the government has the right to grant statutory rights of occupancy to individuals and corporate bodies for any purpose which in this case is the granting of leases. The Federal Government land allocations are usually done in accordance to the provision of this clause of the LUA and it is in line with this section of the Act that federal government has the power to grant leases. While in the case of revenue generation by the government, section 5(1c) of the LUA also provides that the government has the right to demand rent from any land allocation granted to individuals and sub-section (1d) of the same Section 5 provides the power of the of the federal government to revise the said rent at such interval as may be specified in the Certificate of Occupancy (C. of O.) and where no time frame is specified in the C. of O., the review could be done at any appropriate term of the lease as determined by the Honourable Minister.

The use and administration of the revenue generated through the lease of public land is also provided constitutionally. The Constitution therefore stipulates that the revenue collected through the lease of public land is public revenue and by virtue of section 162 of the Constitution of the Federal Republic of Nigeria 1999 as amended, it statutorily provided how public revenue is collected, kept and used by the federal government. Section 162 sub-section I stipulates that the country shall maintain a special account called “the Federation Account” this is an account into which all revenue collected by the government of the Federation including the income from public land leasing is paid into except the proceeds from the personal income tax of the personnel of the armed forces of the Federation, Nigeria Police Force, the Ministry of Foreign Affairs and the residents of the Federal Capital Territory, Abuja. Since the revenue from public land leasing is a public revenue, therefore all income generated by the government of the federation is basically paid into the Federation Account which would later be distributed to the three (3) tiers of government (Federal, State and LGA’s) and be used for general social redistribution in accordance with the provision of Sub-section 2 of Section 162 of the National Constitution.

4.1.2 Summary of the legal dimension

Based on the analysis of the Constitution of the Federal Republic of Nigeria 1999 as amended and the Land Use Act which serves as the foundation and background for the operation of public land leasing, the relevant clauses from the LUA and the National Constitution has determined and provided that the institution responsible for the lease of public land is the Lands and Housing Department of the FMLHUD while the Civil Engineering unit is responsible for road infrastructure. This shows that the Land Use Act, Constitution of the Federal Republic of Nigeria and the mandates of the FMLHUD are the guiding laws and legislation that provides the operation of both public land leasing and the operation and maintenance of the federal government road infrastructure in all federal government land in Nigeria. From the analysis my findings is that the law has provided the right for government ownership of land, right to lease out federal government land, right to generate and review

income from the land and the right for the responsible institution to administer public leasing and road infrastructure. This outcome is similar to the findings in chapter two according to (Hong and Bourassa 2003) where land leasing is administered by a specific government institution and there is a constitutional backing making it legitimate.

4.2 Amount of revenue generated from the lease of public land that is used for financing road infrastructure

This section deals with the financial dimension of public land leasing and the analysis will look into the amount of revenue generated and captured and also the parameters that are involved in the calculation of the revenue from the lease of Federal Government land in Gwarinpa, Abuja. According to Section 5(1c) of the LUA, the government is empowered to generate revenue from the leases granted to individuals. This analysis will also go beyond the amount generated but also analysing the mechanisms or parameters involved in the calculation of such revenue by the federal government in order to determine the amount of revenue that is been able and supposed to be captured by the government on the lease of federal government land in Gwarinpa, Abuja. This analysis will covers a period of fourteen (14) years commencing from 1999-2012 which is beginning from the year the allocations were originally made to the year 2012.

The parameters employed by the government in generating the revenue from the lease of federal government land are through the payment of **premium and ground rent**. From chapter two, it is understood that premium is usually a large sum of money paid by a lease holder to the government usually at the beginning of the lease and is a onetime payment. While ground rent is an annual payment for the use of the leased land allocated to private individuals by the government.

Therefore in an interview conducted during the fieldwork, The Head of unit of the Estate Management Services Division of the FMLHUD responsible for the administration and management of all Federal Government leases and the two schedule officers responsible for premium and ground rent were interviewed and were able to confirmed that “premium and ground rent are the two major sub-heads of payments under the public leasing system of the federal government land allocation in Gwarinpa”. Furthermore, it was also confirmed in the course of the interview that premium remained the lump sum of money usually paid at the commencement of the lease while the ground rent still remain an annual payments paid by the lessee for the use of the leased land. The outcome of this interview was in line with my findings in chapter two according to Hong (2003) in the theoretical chapter of this research.

Land allocations by federal government in Gwarinpa-Abuja

The Federal Government land allocation in Gwarinpa was first allocated in 1999 with government intention of providing affordable and accessible land to the citizens. At the time of such allocation, premium and ground rent were considered to be the major land charges or fees that were paid by plot owners. Therefore in other to make land more affordable to the public, the allocated plots were prepared in three (3) different sizes at the designed stage from the layout unit in the Town Planning Department which is the unit responsible for the preparation and designing of the layout plan. In an interview conducted with the Heads of Unit of the Layout designed unit and LUAC, it was confirmed that the three (3) different sizes of federal land allocation are (i) low density, (ii) medium density and (iii) high density. This was done in order to make government provide more affordable and accessible land to the citizens in different sizes and affordability. According to the Head of the layout design unit, the sizes of these three (3) different categories of land allocation vary, he also said at the

designed stage, the measurement are not exactly established but are merely done on an estimate. For an instance, a *low density* plots may range between 1500m² to 2000m², *medium density* ranges between 600m² to 900m² and *high density* ranges between 400m² to 500m². These ranges in the land area may not provide the specific measurement of the plot at the design stage. So in furtherance to ascertain the exact measurement from my findings at the Survey Unit which is a unit responsible for the surveying and beaconing of Federal Government land, it was discovered and confirmed by the Head of Survey Unit and the Land Use and Allocation Committee that the exact measurements for the 3 different sizes of the plots are as follows:

- i. Low density is 1500m²
- ii. Medium density is 900m²
- iii. High density is 500m²

This was done in order to make such land easily affordable to different categories of individuals in the society in order to have easy access to the Federal Government land in Gwarinpa, Abuja. The land charges for these allocations implies the higher the land area the higher the value of the premium and also the ground rent during the period of rent review.

Parameters for determining government value of land

In the course of the fieldwork, effort was made to find out how the parameters involved in the determination of premium and ground rent on federal government land was arrived at. Therefore in an interview with the Head of the legal unit and the Head of Land Use and Allocation Committee of the FMLHUD, the premium and ground rent are determined through a committee set up by the Honourable Minister of the FMLHUD. The composition of this committee includes professional Estate Surveyors and valuers employed in the Federal Civil Service who are referred as the Land Officers. They are government employed experts with vast knowledge and idea on land and property values. The Committee is usually assigned the responsibility of carrying out the valuation or the market assessment of land values due to their professional expertise with the approval of the Honourable Minister FMLHUD. The valuation or the market assessment of the land values carried out for the determination of premium and ground rent is usually based on the prevailing market forces which are based on the forces of demand and supply. In determining this values, government however bearing in mind the social responsibility and function it ought to providing to the citizens, adopts a lower value or percentage of the market value as the government value of land and 20% of that determined value of land is therefore used as the amount to be charged for premium and the remaining 80% is spread over the lease term as ground rent on federal government land. The lower values of government land compared to the market values and the minimal value of 20% charged as premium makes the federal government land more affordable and accessible to the public.

The lease of the Federal Government Land in Gwarinpa was spread over several years meaning the allocations were not done at once. From the outcome of an interview conducted with the Head of Land Use and allocation Committee on the reason for the lease of Gwarinpa land over several years was because most of the plots were not readily available to be leased at the same time. Therefore the land allocations were done in three (3) different years from 1999 to 2012. The specific years in which the land was allocated was in 1999, 2002 and 2012. The total land allocations leased in Gwarinpa from 1999-2012 was eight hundred and forty (840) plots. From the breakdown of the information supplied by the Land Use and allocation Committee, in 1999 a total of 620 plots were allocated, in 2002 a total of 178 plots were allocated and finally in 2012 a total of 42 plots were allocated. A further breakdown of the land allocation based on the land area or density is also provided. In 1999 out of the 630 plots allocated, 372 plots were low density, 155 plots were medium density and 93 plots were

high density. In 2002 out of the 178 plots that were leased out, 89 plots were low density, 53 plots were medium density and 36 plots were high density and finally in 2012 out of the 42 plots leased, 34 of the plots were medium density while 8 of the plots were high density. In 2012 land allocations there was no any low density allocation because of the limited number of plots and the government was trying to provide more plots to the public since the low density allocation takes a larger land area. This information can be simplified in a tabular form as presented below:

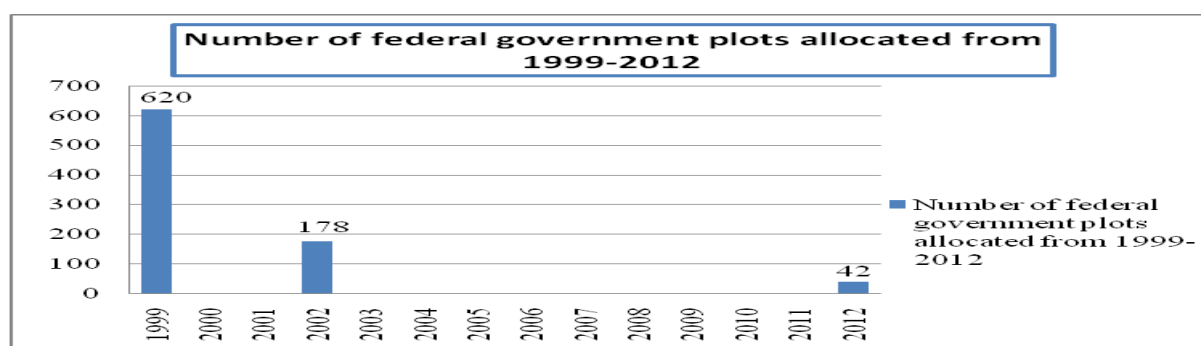
Table 4. 1: Breakdown of Federal Government Land allocations in Gwarinpa by the Land Use and Allocation Committee (LUAC) from 1999 to 2012.

S/no	Year of land allocation	Total Number of plots allocated	Number of low density plots	Number of medium density plots	Number of high density plots
1.	1999	620	372	155	93
2.	2000	-	-	-	-
3.	2001	-	-	-	-
4.	2002	178	89	53	36
5.	2003	-	-	-	-
6.	2004	-	-	-	-
7.	2005	-	-	-	-
8.	2006	-	-	-	-
9.	2007	-	-	-	-
10.	2008	-	-	-	-
11.	2009	-	-	-	-
12.	2010	-	-	-	-
13.	2011	-	-	-	-
14.	2012	42	-	34	8
Total		840	461	242	137

Source: Guyimu, 2013. Based on the records obtained from the Land Use and Allocation Committee office.

The table above shows a detailed breakdown of the land allocations done by the federal government in Gwarinpa, Abuja from 1999 to 2012. The table also shows the different types of land allocation ranging from low, medium and high densities. The land sizes in each of the density varies so the amount of premium and ground rent to be collected will depend on the type of density (land area in m²)

Chart 4. 1: Number of Federal Government plots allocated in Gwarinpa from 1999 to 2012.



Source: Guyimu, 2013. Based on the record of land allocation obtained from LUAC

The Chart 4.1 depicts a clearer view on the records of federal government land allocation in Gwarinpa, Abuja, accordingly the horizontal axis represents the years of allocations while the vertical axis represents the number of plots allocated. As we can see from table 4.1 and chart

4.1, it was only in 1999, 2002 and 2012 that the federal government allocates land in Gwarinpa, while there was no any land allocation in the rest of the years.

In order to enable us answer the question on how much revenue was generated from the lease of federal government land in Gwarinpa, Abuja, the two parameters used in arriving at the revenue generated include the premium and ground rent which would serve as the basis for the analysis. To be able to conveniently achieve this, the following basic component needs to be considered. The total number of all allocation made year by year, the type of densities because the total land area determines the type and amount of premium to be paid and also the ground rent during rent review. Since premium is a onetime payment at the time of allocation, from the chart 4.1 above these shows that only in 1999, 2002 and 2012 that allocations were made, therefore this implies that it was only in those years that the premium was charged and collected. On the issue of ground rent it is an annual payment and the payment commences immediately from the year of allocation and it runs throughout the term of the lease.

4.2.1 Determination of Premium and Ground rent

As already discussed in the introductory section of this dimension, the parameters used in the calculation of the revenue generated through public land leasing are through the payment of premium and ground rent. The approach in doing this will be discussed separately below.

4.2.2 Determination of Premium

In an interview conducted during the fieldwork on how to determine the amount of premium charged on federal government land in Gwarinpa, the schedule officer in charge of the premium explained the approach adopted by the committee assigned with the responsibility of determining the amount of government land charges on the Federal Government Land in Gwarinpa and he came up with the model below.

The premium that is paid on federal government land in Gwarinpa and all other federal government land allocations made over the years was 20% of the value of such land. In determining the government value of such land, the government usually adopts a certain value per square meter of land (cost/m²). This value is usually below the open market value simply because of government intension of providing social services to the public. The cost or the value of the land per square meter is multiplied by the total land area to arrive at the government value of the land. In order to determine the premium, 20% of the government land value now represents the premium which would be paid for the plot at the commencement of the lease. The value or cost of land per square meter is usually reviewed based on the market forces. These values as obtained from the scheduled officer was given as; from 1999-2002 the government land value per m² was N3,000.00, from 2003-2008 it was N4,000.00 and from 2009-2012 was N5,000.00¹. They are shown below when converted to US Dollars below²

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
90.00	80.06	75.00	65.44	76.25	67.00	57.50	50.75	46.00	43.50	48.75	43.73	38.44	34.69

¹ All the values converted to USD have been adjusted for inflation and brought to current values as at 2013

² Values of Dollars to Naira was converted at the rate of \$1=N160 as at 14th August, 2013

1999 allocations: In 1999 there were 620 land allocations in Gwarinpa with the breakdown³;

- i. 372 plots were low density with a total land area of 1500m²
- ii. 155 plots were medium density with a total land area of 900m²
- iii. 93 plots of high density with a total area of 500m²

Note: the government value of land per m² in 1999 was N3,000.00/m² same as \$90.00

Computation of Premium on 1999 land allocation

372 Low density plots: 1999 federal land allocations in Gwarinpa
1500m² X \$90/m² = \$135,000.00/plot (Value of land per plot)
372 plots X \$135,000.00 = \$50,220,000.00 (Value of the 372 plots)
Premium is therefore 20% of the land value
20% X \$50,220,000.00 = **\$10,044,000.00**

155 Medium density plots: 1999 federal land allocations in Gwarinpa
900m² X \$90/m² = \$81,000.00/plot (Value of land per plot)
155m² X \$81,000 = \$12,555,000.00 (Value of 155 plots)
Premium is therefore 20% of the land value
20% X \$12,555,000 = **\$2,511,000.00**

93 high density plots: 1999 federal land allocations in Gwarinpa
500m² X \$90/m² = \$45,000.00/plot (Value of land per plot)
93 plots X \$45,000 = \$4,185,000.00 (Value of the 93 plots)
Premium is therefore 20% of the land value
20% X \$4,185,000.00 = **\$837,000.00**

Sum of premium for 1999 allocations:

Low density plots + Medium density plots + High density plots
\$10,044,000.00 + \$2,511,000.00 + \$837,000.00 = **\$13,392,000.00**

2002 allocations: In 2002 there were 178 land allocations in Gwarinpa with the breakdown;

- i. 89 plots were low density with a total land area of 1500m²
- ii. 53 plots were medium density with a total land area of 900m²
- iii. 36 plots of high density with a total area of 500m²

Note: the cost of land per m² in 2002 was N3,000.00/m² equivalent to \$65.44/m²

Computation of Premium on 2002 land allocation

89 Low density plots: 2002 federal land allocations in Gwarinpa
1500m² X \$65.44/m² = \$98,160.00/plot (Value of land per plot)
89 plots X \$98,160.00 = \$8,736,240.00 (Value of the 89 plots)
Premium is therefore 20% of the land value
20% X \$8,736,240.00 = **\$1,747,248.00**

53 Medium density plots: 2002 federal land allocations in Gwarinpa
900m² X \$65.44/m² = \$58,896/plot (Value of land per plot)
53m² X \$58,896 = \$3,121,488.00 (Value of 53 plots)

³ All financial calculations in this research have been adjusted for inflation and corrected the values as at 2013 prices.

Premium is therefore 20% of the land value
 $20\% \times \$3,121,488 = \mathbf{\$624,297.60}$.

36 high density plots: 2002 federal land allocations in Gwarinpa
 $500\text{m}^2 \times \$65.44/\text{m}^2 = \$32,720/\text{plot}$ (Value of land per plot)
 $36 \text{ plots} \times \$32,720 = \$1,177,920.00$ (Value of the 36 plots)
Premium is therefore 20% of the land value
 $20\% \times \$1,177,920.00 = \mathbf{\$235,584.00}$

Sum of premium for 2002 allocations:

Low density plots + Medium density plots + High density plots
 $\$1,747,248.00 + \$624,297.60 + \$235,584.00 = \mathbf{\$2,607,129.60.00}$

2012 allocation: In 2012 a total of 42 plots were allocated on federal government land in Gwarinpa with the breakdown as follows;

- i. 34 plots were medium density with a total land area of 900m^2
- ii. 8 plots of high density with a total area of 500m^2

Note: There was no low density allocation in 2012 and the cost of land per Sq. M was reviewed to $\text{N}5,000.00/\text{m}^2$ which is equivalent to $\$34.69/\text{m}^2$

Computation of 2012 land allocations

34 Medium density plots: 2012 federal land allocations in Gwarinpa
 $900\text{m}^2 \times \$34.69/\text{m}^2 = \$31,221.00/\text{plot}$ (Value of land per plot)
 $34 \text{ plots} \times \$31,221.00 = \$1,061,514.00$ (Value of 34 plots)
Premium is therefore 20% of the land value
 $20\% \times \$956,250.00 = \mathbf{\$212,302.80}$

8 high density plots: 2012 federal land allocations in Gwarinpa
 $500\text{m}^2 \times \$34.69/\text{m}^2 = \$17,345.00/\text{plot}$ (Value of land per plot)
 $8 \text{ plots} \times \$17,345.00 = \$138,760.00$ (Value of the 36 plots)
Premium is therefore 20% of the land value
 $20\% \times \$138,760.00 = \mathbf{\$27,752.00}$

Sum of premium for 2012 land allocations in Gwarinpa:

34 Medium density plot + 8 High density plot
 $\$212,302.00 + \$27,752.00 = \mathbf{\$240,054.00}$

4.2.3 Determination of Ground rent

In order to determine the ground rent, an interview was conducted with the scheduled officer responsible for the ground rent on federal government land in Gwarinpa, I found out that the ground rent is paid annually at the beginning from the year allocation. The ground rent is usually reviewed after ten (10) years of allocation in order to capture the future increase in the value of land. The approach adopted by the federal government in arriving at the value of ground rent is given below as was obtained from the schedule officer.

When federal government made fresh land allocation in 1999, all the plot owners were made to pay the sum of five hundred Naira (N500.00) Nigerian currency which is equivalent to \$15

when converted to US Dollar at the rate of \$1 =N160 as at 14th August, 2013. This first payment of ground rent was a uniform rate and was based on per plot basis irrespective of the plot size and government would continue to charge this rate as ground rent up to the next ten years when a rent review will be due. However, the system of paying uniform ground rent on per plot basis is periodically reviewed after the first ten (10) years. From 1999 to 2002 a uniform rate of N500.00 Nigerian currency was collected as ground rent equivalent to \$15 in 1999 and \$10.90 in 2002 was charged on such allocations as ground rent for the first ten years each while in the 2012 land allocations, the uniform payment of ground rent was reviewed to N1,000.00 Nigerian currency which was equivalent to \$6.94 per plot. After the first 10 years of paying uniform ground rent on per plot basis, the subsequent payments of the ground rent was reviewed to per Square meter, in that situation the larger the land area in square , the more payments to be made.

Based on the information obtained during the fieldwork, I was informed by the schedule officer responsible for ground rent on federal government land that 100% payment of ground rent is usually achieved at the time of fresh land allocation because it is a precondition for the collection of the letter of allocation to the land, but after the first initial payments, the subsequent payments are not frequently made because there has not been any enforcement or any clause that would attract a penalty for non subsequent payments. This can be seen from the 1999 land allocations that were made, from the 620 plots that were allocated all the allottees paid their initial ground rent because it was a precondition for getting the allocation letter to the land. This can be simplified below:

1999 allocations was 620 plot X \$15 (ground rent on per plot basis) = **\$9,300.00**

2002 allocation was 178 plots X \$10.90 (ground rent on per plot basis) = **\$1,940.20**

In the 2012 land allocations, the amount charged as the first initial ground rent payment per plot was reviewed to N1,000.00 which was equivalent to \$6.94 when converted to US Dollar at the rate of \$1 = N160, this amount was charged as ground rent per plot for the first ten years. This implies that the total amount of first initial ground rent generated from the 2012 land allocation was 42 plots allocated X \$6.94 = **\$291.48.**

After the first ten years of paying uniform ground rent on per plot, a review of such payments was now changed to per square meter. The present value of the ground rent on per square meter obtained from the schedule officer after the first initial ten (10) years of uniform payment per plot is N6.50/m² Nigerian Naira which is equivalent to \$0.040625 or approximately \$0.04/m² when converted to US dollar. So in other to determine the ground rent for low, medium and high densities during the period of review on per meter square can be shown below.

Low density plot is 1500m² X \$0.04/m² = \$60.00pa/plot

Medium density plot is 900m² X \$0.04m² = \$36.00pa/plot

High density plot is 500m² X \$0.04m² = \$20.00pa/plot

This analysis has been computed and simplified in the table 4.2 below:

Table 4. 2: Income from Ground rent and premium on Federal government land in Gwarinpa from 1999 to 2012

year	Revenue generated GR payment	No plots that paid GR	No of plots the should pay GR	GR that should be generated	Premium generated
1999	\$9,296.79	620	620	\$9,296.79	\$13,387,380.34
2000	\$2,745.72	206	620	\$8,263.82	-
2001	\$1,827.23	146	620	\$7,759.45	-
2002	\$2,908.24	267	789	\$6,753.22	\$2,603,693.40
2003	\$2,384.48	250	789	\$7,611.25	-
2004	\$1,500.25	179	789	\$6,688.27	-
2005	\$964.03	134	789	\$5,741.00	-
2006	\$843.03	133	789	\$5,058.15	-
2007	\$900.59	157	789	\$4,577.51	-
2008	\$1,050.37	193	789	\$4,342.99	-
2009	\$634.53	130	789	\$3,895.06	-
2010	\$4,900.73	109	789	\$43,119.40	-
2011	\$4,048.61	103	789	\$37,857.24	-
2012	\$3,206.17	107	840	\$34,458.56	\$240,037.50
	\$37,210.76			\$185,422.73	\$16,231,111.23

Source: Guyimu, 2013. Based on the records obtained from the Estate Management Unit responsible for premium and ground rent and the Land Use and Allocation Committee (LUAC)

The table above summarises the income generated through public land leasing. The revenue from public land leasing is generated through the payment of premium and ground rent. In order to make a good analysis, the table presents the total amount of revenue that the federal government was able to capture and the total amount that should be generated from the payment of ground rent and premium. Furthermore, in order to ascertain the trend of such payment, the number of plots that paid ground rent and the total number of plots that should pay the ground rent are also provided in order make a good analysis and comparisons.

The information on table 4.2 above was obtained through an interview conducted during the fieldwork in the estate management unit that is basically responsible for all matters concerning premium and ground rent, the schedule officer was able to provide the records and methodology of arriving at the ground rent and premium values. Furthermore, in the office responsible for Land Use and Allocation Committee and in the course of an interview, the Head of Unit provided the breakdown of the number of land allocation on the Federal Government land in Gwarinpa, in order to enable me to generate and present the analysis on the total amount of revenue generated by the federal government land in Gwarinpa, Abuja.

The table 4.2 above provided us with the real land values of the total amount of revenue generated through leasing federal government land in Gwarinpa, Abuja from 1999 to 2012. The same table shows that a total of sum of thirty seven thousand, two hundred and ten dollars, seventy six cents (**\$37,210.76**) was generated from 1999 to 2012 as against one

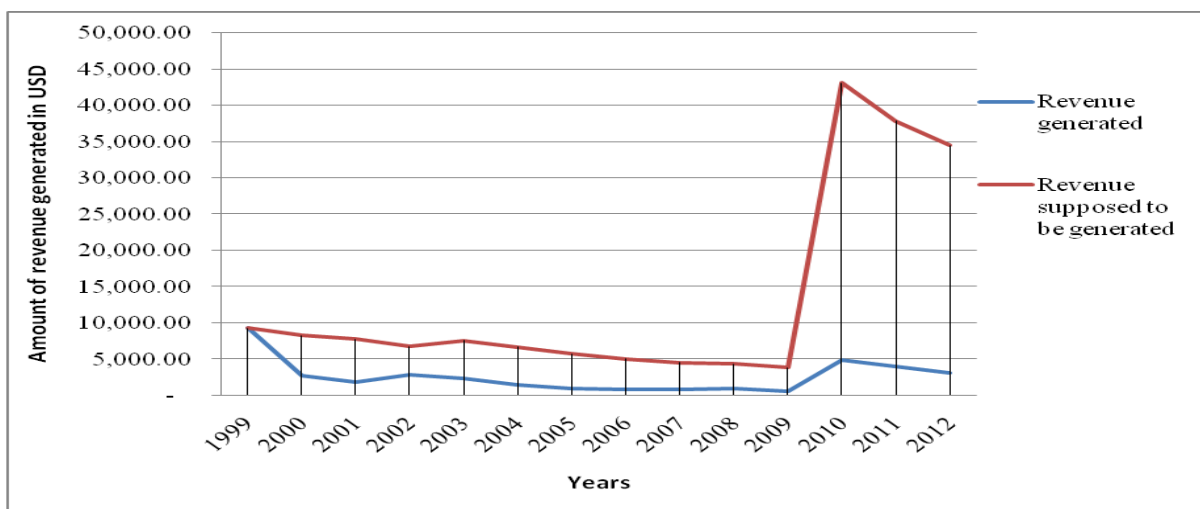
hundred and eighty five, thousand, three hundred and sixty eight dollars, seventy five cents (**\$185,368.75**) having a difference of **\$148,157.99**. This shows that government was only able to generate **20.1%** of the total revenue that should be generated from ground rent. *The reason for the low percentage of revenue generation is the fewer number of plot paying annual ground rent and the uniform payment of ground rent for a period of ten (10) years as depicted in table 4.2*, in that process future increment in land values were completely ignored and also with the effect of inflation rates, the values kept decreasing as it can be seen from the table on the total amount of revenue that should be generated. The payment of ground rent was only effective and at 100% compliance at the time of fresh allocation because the first year ground rent is paid in full before collection of the allocation letter to the land is made. On the income from premium, a total sum of sixteen million, two hundred and thirty one thousand, one hundred and eleven dollars, twenty three cents (**\$16,231,111.23**) was generated from the payment of premium and this represents a **100%** of what it should generate because it is compulsorily made to be paid in full before the land allocation is issued. Since revenue from public land leasing is an income from both ground rent and premium, this shows that the total revenue generated from the lease of federal land in Gwarinpa from 1999 to 2012 was:

$$\text{\$37,210.76} + \text{\$16,231,111.23} = \text{\$16,268,321.99} \text{ (what was actually generated)}$$

$$\text{\$185,422.73} + \text{\$16,231,111.23} = \text{\$16,416,533.96} \text{ (what was supposed to be generated)}$$

This shows that the the government was able generate **98.9%** from what it was supposed to generate from public land leasing in Gwarinpa from 1999-2012. *The success of the high percentage in the revenue generation is that premium tends to capture more land value and the system of collecting such revenue at the beginning of the lease has added more success to the process of the revenue generation.*The Chart below shows the visual representation of the amount of revenue from ground rent that the federal government was able to generate compare to what it was supposed to generate.

Chart 4. 2: Comparison of the total amount of revenue generated with the amount that should be generated on the payment of ground rent.



Source: Guyimu, 2013. Based on the analysis from the records of revenue generated and what should be generated on the payment of ground rent.

Chart 4.2 above shows the trends of revenue generation on leasing federal government land in Gwarinpa, Abuja. As you can see at the beginning of the lease in 1999, more revenue was generated compare to the subsequent years because at the commencement of the lease, every land allottee was made to pay his full amount of ground rent for the first year and the

premium before the letter of allocation to the land is issued. Thereafter, in the subsequent years after the allocation, *the reason for the decrease in the revenue generated is because there has not been any enforcement or provision that would make plot owners to pay their subsequent ground rent as at when due so only few number of land owners pays their ground rent and that was the reason for the sharp decrease in the revenue generated* as it can be seen from the table 4.2 and the chart above showing the number of plots and the amount generated from the payment of ground rent annually. The only exceptions are in the year land was allocated which was in 1999, 2002 and 2012 and can also be seen from the table and the chart above. In 2002 there were some land allocation made which shows a slight increase in the revenue generated and subsequently low payment of ground rent as earlier discussed because of the low number of plot owners paying ground rent. *This shows that ground rents are better collected at the beginning of the lease.* As from 2010 you may notice a sharp increase in the amount of revenue generated this was because there was a review on payments of ground rent on the land that were allocated in 1999 since the review of ground rent payment is usually ten (10) years and is done on per square meter which is almost 100% increment from what was originally paid at a uniform rate on per plot. *This shows that uniform payment of ground rent per plot does not enable government to capture more revenue but payment of ground rent on per m² has proven to capture more revenue despite the fewer number of plot (109) in 2010 that paid ground rent as compare to 620 plots that paid in 1999.* This shows that leasing public land has the potentials to capture more land values when ground rent is charged on per square meter but preferably at frequent renewals because of the forces of inflation.

Similarly, the trend of movements of the revenue that is supposed to be generated on the chart is similar to the revenue already generated as already discussed above. Although the chart still shows a gentle decrease in the revenue that should be generated, *the reason for this is that the uniform amount paid as ground rent for a period of ten (10) years was low compare to the prevailing rates of inflation within the years.* This means that government would not be able capture increment in land values using a uniform amount for a longer period of time due to unpredictable forces of inflation. However, from the year 2010 on the chart above, there was a sharp increase in the amount of revenue that was supposed to be generated, this was because there was a review of ground rents payments on land allocations done in 1999 which was reviewed on the meter square. This implies that generating revenue though ground rent would be done better if payment is done on per m² with a special consideration to the rates of inflation.

In conclusion, a total of **\$16, 268,321.99** was actually generated as against **\$16,416,533.96** that was supposed to be generated from the lease of public land in Gwarinpa, Abuja from 1999-2012 having a difference of **\$148,211.97**.

4.3 Increment in land values as a result of government investment on road infrastructure in Gwarinpa, Abuja.

This section deals with the economic dimension of public land leasing, therefore the analysis will look into the land market within the federal government land in Gwarinpa. The study will be aimed at identifying the increment in land values as a result of government investment on road infrastructure in the federal government land in Gwarinpa, Abuja. In order enable us analyse the land market, two most important variables which have to be considered in this analysis are the land values in the **open market** and the **government land values**. The key land experts in the private land market to deal with involves the Estate Surveyors and Valuers and the Estate brokers popularly known as Estate Agents. These

experts were consulted and interviewed in the course of determining the values of government land in the open market and they are knowledgeable in determining the values of land and buildings. This group of experts were interviewed in order to obtain the trends of land values of government land that were traded within the federal government land in Gwarinpa, Abuja in the open market. The land values obtained from these experts will be triangulated and authenticated with the values of sold land registered in the Deeds Registry⁴ in order to make a comparison of the land values obtained from these experts and to determine the level of increase.

The government value of land is usually determined by a committee set up by the Honourable Minister of the FMLHUD. The values are usually lower than the values in the open market because of the social services that the government is providing to the public. Therefore the value of land determined by the committee will be considered and used as a basis for the analysis as the government value of land. In order to determine whether there is an increase in land values as a result of government investment on road, it will require considering the land values on the Federal Government land in Gwarinpa from the perspectives of both open market and the government land values. *The analysis will be done by analysing the values of land in the land market before and after the road construction from both the private land market and the government land values on federal government land in Gwarinpa, Abuja.* Before going into the analysis it would be necessary to briefly explain the two most important variables of this dimension which are the Open Market Land Values and the Government Value of Land.

4.3.1 Open Market Land Values

Open Market Land values refers to the values of the federal government land which are determined by the economic forces of demand and supply. They are the values of the government land that the private individual owners and brokers trade through buying and selling as may be determined by demand and supply in a free market. In order to arrive at these values in the course of this research, Estate Surveyors and Valuers who are professionals in determining values of land and building and also the Estate Brokers or estate agents were consulted and interviewed in order to extract valuable and reliable information on land values within the federal government land in Gwarinpa, Abuja. *The land values obtained from these land experts are the open market values of the plots of land that were traded within the Gwarinpa federal land allocation before and after the road construction.* These values obtained would later be analysed and compared with the government values of land in order to ascertain the impact of government investment on road infrastructure on land values within the Federal Government land in Gwarinpa, Abuja.

In an interview conducted during the fieldwork, two Estate Surveyors and Valuers who have been in the practice of their profession for a very long time were interviewed, they include: T. A. and Co. Estate Surveyors and Valuers and P. N. and Co. Estate Surveyors. They were asked, what are the contributors to the increase in land values on the federal government land in Gwarinpa? Both confirmed that “the increase in land values was attributed to the location of Gwarinpa within the FCT”. In the same vein, the two estate agents or brokers which include Cardiff properties located in Gwarinpa and a firm of F. A and Partners, were also interviewed and when the same question was asked both confirmed that “the values of land in the federal government land in Gwarinpa was attributed to its location within the Capital

⁴ A table showing the land values of federal government plots registered in the deeds registry is found in the annex

City and also due to the availability of infrastructure within the Federal Government land in Gwarinpa”.

4.3.2 Government values of land

These are land values which government ascribed as the value of land within the federal government land in Gwarinpa. These are land values upon which the premium and ground rent is determined. With respect to the federal government land and as discussed in the computation of premium under the financial dimension, the government usually determine a certain value of land per m² which was eventually used to arrive at the value of land when the land value per m² is multiplied by the total land area to arrive at the government value of land. In an interview conducted with the schedule officer responsible for the calculation of premium on government land, he confirmed that *“the value of government land is usually below the market value because of the social services that the government is providing by making land affordable and accessible to the public which is a major government priority”*. This implies that government considers the affordability of the public in determining values of government land.

4.3.3 Analysis of the Land Market

From an interview conducted at the office of the Land Use and Allocation Committee, the Head of LUAC explained that the road project in the federal government land in Gwarinpa started in 2003 and it is an on-going project, which means it is a continuous project because of its capital intensive nature. Therefore this analysis will consider the buying and selling of the government land in the private market before and after year 2003 and also the government land values before and after year 2003. The analysis will enable us ascertain the trends in the increments of such land values as a result of government investment on road infrastructure. The two experts (2) estate surveyors and the two (2) brokers were both interviewed and supplied different land values traded on the federal government land in Gwarinpa in different years before and after road construction in 2003. These land values obtained will be carefully analysed and discussed based on the land values before and after the road construction in 2003 in order to ascertain the level of increase in values as a result of road investment in Gwarinpa, Abuja. Furthermore the values of sales obtained from the private land market will be authenticated through a comparison with the values of sold plots that were registered in the Deeds Registry before and after the road construction in order to compare such land values. The table below depicts the values of sold federal government land carried out by experts comprising two (2) Estate Surveyors and valuers and two (2) estate brokers which were obtained during an interview on the values of federal government land in an open market.

Table 4. 3: Records of land values in the open market obtained from Estate Valuers and Estate Brokers

year	Type of plot	Land area	Open market value	Cost per M ²	Source of record
1999	low density	1500m ²	\$216,000.00	\$144.00	Peter Ndole and Co
	low density	1500m ²	\$211,500.00	\$141.00	Cardiff Proprties
2002	medium density	900m ²	\$103,064.06	\$114.52	Tunji Adepoju & Co.
2003	low density	1500m ²	\$225,890.63	\$150.59	Tunji Adepoju & Co.
	low density	1500m ²	\$234,468.75	\$156.31	Peter Ndole and Co
	low density	1500m ²	\$234,468.75	\$156.31	Cardiff Proprties
	medium density	900m ²	\$133,818.75	\$148.69	Femi Alabi & partners
	medium density	900m ²	\$140,681.25	\$156.31	Femi Alabi & partners
2004	medium density	900m ²	\$135,675.00	\$150.75	Peter Ndole and Co
2005	low density	1500m ²	\$219,937.50	\$146.63	Tunji Adepoju & Co.
	medium density	900m ²	\$129,375.00	\$143.75	Cardiff Proprties
2007	Medium density	900m ²	\$133,515.00	\$148.35	Tunji Adepoju & Co.
2010	Low density	1500m ²	\$354,375.00	\$236.25	Peter Ndole and Co

Source: Guyimu, 2013. Based on the information provided by Estate Valuers and Brokers.

The table 4.3 above shows the breakdown of sales values of plots of land obtained from two firms of Estate Surveyors and Valuers and two firms of Estate Brokers in the open market sold by private individuals in different years before, during and after the period of road construction on Federal Government land in Gwarinpa, Abuja. The table further provides the names of the experts supplying the record, the year of transaction, type of plot transacted upon, market land values at the year of transaction and the cost per m². The table above analyses the values of land in an open market on federal government land in Gwarinpa before, during and after road construction. This was done in order to determine the breakdown of the land values using a measurable indicator which is the cost per m² so that the trend of land values before, during and after the road construction on federal government land from the private market perspective can be fully ascertained. It can be seen from the land values provided on table 4.3 above that the Open Market values and the land values per m² before the road construction from 1999 and 2002 was low ranging between **\$114.00 and \$144.81 per meter square**. During the initial road construction in 2003, the land values started increasing in cost per m² ranging between **\$150 to \$156 per m²**, after the road construction in 2004 and 2005 the land values subsequently went down with the cost per m² ranging between **\$143 and \$150**. In an interview conducted with the experts, on the reason for the increment in land values, they explained that the provision of the road infrastructure has increased accessibility and made the federal government land attractive which in return has led to increase in land values. With subsequent provision of more roads infrastructure, in 2010 the land value increased up to \$236.25 as the cost per square meter.

Based on the analysis of the records of land values obtained and analysed in table 4.3, this shows that an average land values on federal government land in Gwarinpa before road construction in 1999 and 2002 was **\$133/m²**, during the road construction the values

increased to an average of **\$153/m²** and after the road construction from 2004, and 2005 the land values decreased to an average of **\$146 per m²** which was as a result of inflation while in 2010 the value increased to **\$236/m²** as the cost per m². This trend of land values shows that there has been an increment in land values as a result of government investment on road infrastructure from the private market perspective at the year of the road construction. Although land values of some of the years were not obtained from these experts, this include year 2000, 2001, 2006, 2008, 2009, 2011 and 2012. In order to obtain the values for the years, I decided to use some of the land value registered in the deed registry in order to obtain the full land values for the missing years so that the whole land values from 1999 to 2012 can be complete. The table below shows the government land values and the values per square meter from 1999-2012

Table 4. 4: Summary of Government land values and the value per m² on the different categories of land allocation

S/n	Year	Plot type	Land Area	Land Value in Naira per M ²	Government value of land Per M ² in USD	Government value of Land
1.	1999	Low	1500m ²	N3,000.00/M ²	\$90.00/M ²	\$135,000.00
		Medium	900m ²			\$81,000.00
		High	500m ²			\$45,000.00
2.	2000	Low	1500m ²	N3,000.00/M ²	\$80.06/M ²	\$120,090.00
		Medium	900m ²			\$72,054.00
		high	500m ²			\$40,030.00
3.	2001	Low	1500m ²	N3,000.00/M ²	\$75.00/M ²	\$112,500.00
		Medium	900m ²			\$67,500.00
		High	500m ²			\$37,500.00
4.	2002	Low	1500m ²	N3,000.00/M ²	\$65.44/M ²	\$98,160.00
		Medium	900m ²			\$58,896.00
		High	500m ²			\$32,720.00
5.	2003	Low	1500m ²	N4,000.00/M ²	\$76.25/M ²	\$114,375.00
		Medium	900m ²			\$68,625.00
		High	500m ²			\$38,125.00
6.	2004	Low	1500m ²	N4,000.00/M ²	\$67.00/M ²	\$100,500.00
		Medium	900m ²			\$60,300.00
		High	500m ²			\$33,000.00
7.	2005	Low	1500m ²	N4,000.00/M ²	\$57.50/M ²	\$86,250.00
		Medium	900m ²			\$51,750.00
		High	500m ²			\$28,750.00

8.	2006	Low	1500m ²	N4,000.00/M ²	\$50.75/M ²	\$76,125.00
		Medium	900m ²			\$45,675.00
		High	500m ²			\$25,375.00
9.	2007	Low	1500m ²	N4,000.00/M ²	\$46.00/M ²	\$69,000.00
		Medium	900m ²			\$41,400.00
		High	500m ²			\$23,000.00
10.	2008	Low	1500m ²	N4,000.00/M ²	\$43.50/M ²	\$65,250.00
		Medium	900m ²			\$39,150.00
		High	500m ²			\$21,750.00
11.	2009	Low	1500m ²	N5,000.00/M ²	\$48.75/m ²	\$73,125.00
		Medium	900m ²			\$43,875.00
		High	500m ²			\$24,375.00
12.	2010	Low	1500m ²	N5,000.00/M ²	\$43.75/m ²	\$65,625.00
		Medium	900m ²			\$39,375.00
		High	500m ²			\$21,875.00
13.	2011	Low	1500m ²	N5,000.00/M ²	\$38.44/m ²	\$57,660.00
		Medium	900m ²			\$34,596.00
		High	500m ²			\$19,220.00
14.	2012	Low	1500m ²	N5,000.00/M ²	\$34.69/m ²	\$52,035.00
		Medium	900m ²			\$31,221.00
		High	500m ²			\$17,345.00

Source: Guyimu, 2013. Based on the analysis of information provided by unit responsible for premium on federal government land in Gwarinpa.

The table 4.4 provides the summary of the government value of land from 1999 to 2012 on the different plot sizes and the unit cost which is the value of land per m². Based on this table, it shows the values of government land is gradually decreasing on the per square meter because government land values usually remains fixed for certain number of years while the rate of inflation affects these values. As we can see from the column for land values in Naira in the table 4.4 above, *the land values are increasing while the values adjusted for inflation in dollars keeps decreasing, the reason is because inflation capitalisation factor was applied in order to adjust the values into real values taken cognisance of inflation by adjusting the nominal land values into real values as at 2013 prices.* This shows that the gradual increase in the land values by government is not actually increasing the values of land but rather the value is decreasing. This decrease is as a result of the prevailing inflation rate in the country at that time and it is an evidence to show that government was not capturing land values from the lease of its land.

Now based on the analysis of the information gathered on the land values on federal government land in Gwarinpa from the perspectives of the open market and the government

values before and after the road investment, it would now be analysed to in order to determine whether the increase in land values was purely attributed to the government investment on road. In order to validate this finding, in the course of an interview during the during the fieldwork, according to the Head of LUAC, “road infrastructure is usually the first and the most prioritised infrastructure to be provided on any federal government land in order to provide the allottees with immediate access to their plots and to facilitate the development of the land”. This analysis will be focused on the assessment of the increment in land values before and immediately after the road was provided in 2003 in order to determine the actual increment before the coming of other infrastructures such as water and electricity. In order to analyse the comparison between the values in the private market and the government land values, and also to determine the increments, the table below provides the breakdown of comparison between the government and open market land values in per m².

Table 4. 5: Analysis of comparison between government land values and the open market land values on per meter square after adjusted for inflation in USD

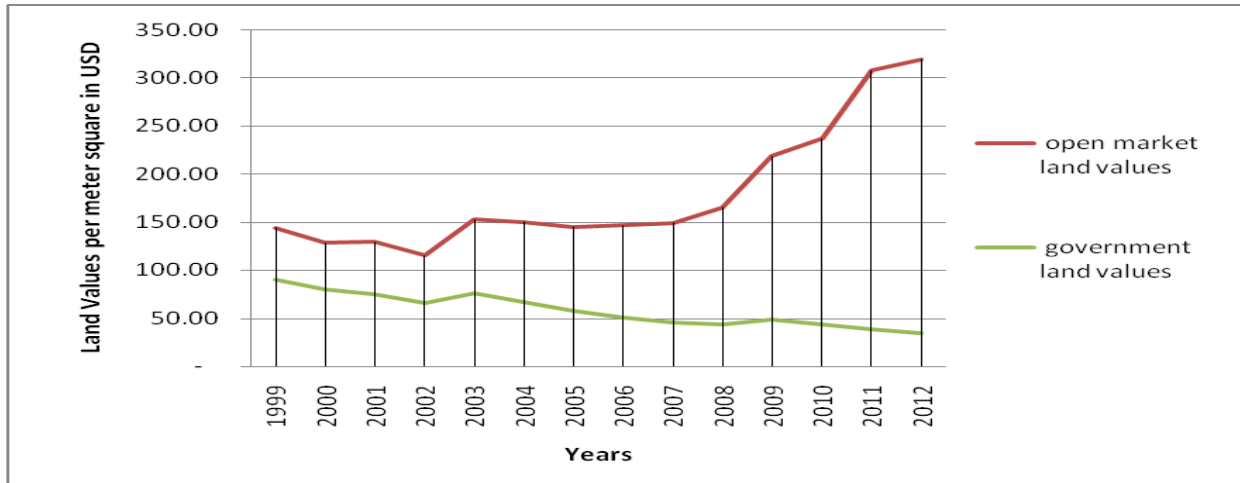
year	Market land values in Naira in M ²	Government land values in Naira in M ²	Inflation capitalisation factor (1+r) ⁿ	Adjusted open market value per M ²	Adjusted government land value /m ²
1999	N4,800.00	N3,000.00	4.80	\$144.00/m ²	\$90.00/m ²
2000	N4,800.00	N3,000.00	4.27	\$128.10/m ²	\$80.06/m ²
2001	N5,180.00	N3,000.00	4.00	\$129.50/m ²	\$75.00/m ²
2002	N5,280.00	N3,000.00	3.49	\$115.17/m ²	\$65.44/m ²
2003	N8,000.00	N4,000.00	3.05	\$152.50/m ²	\$76.25/m ²
2004	N8,960.00	N4,000.00	2.68	\$.150.08/m ²	\$67.00/m ²
2005	N10,080.00	N4,000.00	2.30	\$144.90/m ²	\$57.50/m ²
2006	N11,520.00	N4,000.00	2.03	\$146.16/m ²	\$50.75/m ²
2007	N12,960.00	N4,000.00	1.84	\$149.04/m ²	\$46.00/m ²
2008	N15,200.00	N4,000.00	1.74	\$165.30/m ²	\$43.50/m ²
2009	N22,400.00	N5,000.00	1.56	\$218.40/m ²	\$48.75/m ²
2010	N27,040.00	N5,000.00	1.40	\$236.60/m ²	\$43.75/m ²
2011	N40,000.00	N5,000.00	1.23	\$307.50/m ²	\$38.44/m ²
2012	N46,000.00	N5,000.00	1.11	\$319.13/m ²	\$34.69/m ²

Source: Guyimu, 2013. Based on the analysis of comparison between government land values and the open market land values.

The table 4.5 above analyses the increment in land values as a result of government investment on road infrastructure on federal government land in Gwarinpa Abuja. The road infrastructure was provided in the year 2003. The analysis shows a comparison between the market land values and the government land values on per m² in their nominal value in the Nigerian Naira and the real land values on per m² in USD for a better comparison and analysis. *The table above therefore shows that there have been an increment in the values of land due to the road infrastructures provided by the government in the open market only in the year the road infrastructure was provided in 2003 from both government and private markets.* Although the increments in land values of the government land was minimal compare to the values in the open market because the land values in the open markets are determined by the economic forces of demand and supply while the land values of government land is regulated and controlled by the public authority. The increase in the land value from 2002 to 2003 in the open market was **24%** while increase in the government land values from 2002 to 2003

was **14%**. Subsequently there have been a slight decrease as a result of the forces of inflation. The charts below further explains the table 4.5 above.

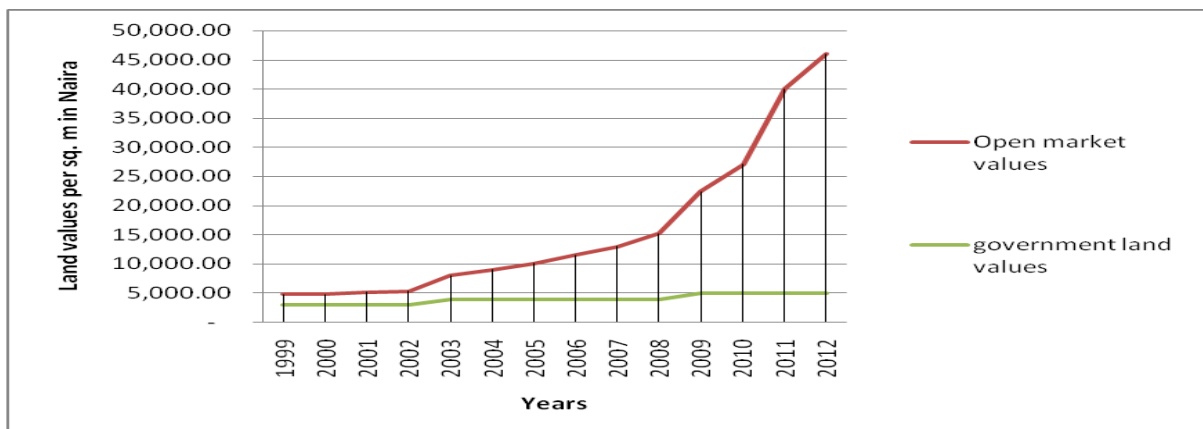
Chart 4. 3: Comparison between open market land values and the government land values as a result of government investment on road after adjusted for inflation



Source: Guyimu, 2013. Based on the analysis of comparison between government land values and the open market land values

The chart above shows the increase in land values in the year 2003 when the road investment actually began. Thereafter the increment was not stable as there was a gradual decrease in the government land values from the chart 4.3 because all the subsequent increases made by government was too minimal and the forces of inflation affected the possible increase in the land values. The open market value also experienced an increase from the the year the road investment started, this is an evidence to show that road investment brought about an increase in land values on the federal government land in Gwarinpa, Abuja. For the purpose of comparison lets also consider the chart below

Chart 4. 4: Comparison between open market land values and the government land values as a result of government investment on road using nominal values in Naira



Source: Guyimu, 2013. Based on the analysis of comparison between government land values and the open market land values using nominal values in Naira

Chart 4.4 shows the analysis using the nominal land values without making any adjustment for inflation, it will show a continuous increase in land values. Care should be taken because this type of analysis could be misleading and very deceptive showing gradual increase in government land values but in the real sense the value is decreasing. Even when considering the open market values you may notice the sharp increase in the curve on the chart which is slightly different from the original inflated land values on chart 4.3.

In conclusion, there was an increment in the land value from the year the construction started in 2003. 24% increment in the land values was noticed in the open market values while 14% increment was noticed in the government value having a difference of 10%. These increments was not stable as it was fluctuating because of inflation.

4.4 Extent of road provision and maintenance through revenue generated from the lease of public land in Gwarinpa.

This deals with the social dimension of the public land leasing and seeks to analyse the purpose for which the revenue generated through the lease of federal government land is used for, which is the provision of public good and for the purpose of this research is to provide and maintain road infrastructure on federal government land in Gwarinpa, Abuja. It would analyse the extent to which the captured land values are used in the provision and maintenance of road infrastructure and also look at the social responsibility of the government towards road construction. The social responsibility of the government has been analysed and discussed in 4.2 under the legal perspectives related to the lease of public land. In order to analyse this dimension properly in respect to this research, the components required for this analysis and discussion are **the expenditures on road investment and maintenance and the amount of revenue generated through the lease of public land in Gwarinpa, Abuja**. The photograph 4.1 below shows the pictures of road infrastructure in the federal government land in Gwarinpa, Abuja.

Photograph 4. 1: Road infrastructure within Federal Government land in Gwarinpa, Abuja.



Source: Guyimu, 2013 Based on fieldwork exercise in the federal government land, Gwarinpa, Abuja.

4.4.1 Road investment and maintenance on Federal Government land in Gwarinpa, Abuja

Road Investment and maintenance refers to the construction and maintenance of access roads within the housing estate of the Federal Government land in Gwarinpa. The construction is the initial provision of the road while the maintenance refers to regular inspection, sweeping, reshaping of the road shoulders, filling of pot holes, clearing of blocked drainages and culverts and controlling the growth of vegetation on the road. Photograph 4.2 shows the pictures of the road infrastructure requiring maintenance on federal government land in Gwarinpa. In an interview conducted during the fieldwork, I was informed by the Head of the Legal Unit that “the road construction and maintenance is solely the responsibility of the Engineering Department”. The FMLHUD is made up of different professional departments with mandates assigned to each department, the responsibility of federal government roads lies within the purview of the Engineering Department. In a further interview at the Engineering Department, the two schedule officers responsible for road construction and maintenance further confirmed that the road construction and maintenance is solely the mandate and statutory responsibility of the Civil Engineering Unit of the Engineering Department, FMLHUD. This can be seen as the social responsibility of government in providing roads infrastructure on federal government land.

According to the Head of the LUAC, after the land allocations in 1999 the land was only designed, surveyed and allocated without any infrastructure provided on it. Road was the first infrastructure to be provided on the land in 2003. When further asked in an interview on why road became the first priority and the first infrastructure to be provided, the Head of LUAC confirmed that “road has a great priority in order to provide the allottees with immediate access to their plots”. He also emphasised that accessibility through provision of road remain the first and most prioritized infrastructure on any federal government land. This is in line with the theory of land rent discussed in the theoretical chapter of this research which states that the greater the accessibility the higher the land values. With the government providing road infrastructure, it improves the accessibility which leads to the increase in land values.

After the commencement of the provision of road infrastructure in 2003, according to the Head of LUAC and the schedule officer responsible for the road construction, road investment is a capital project which cannot be done at a time, the road project in the federal land in Gwarinpa is an on-going project which runs for many years depending on when funds are made available by the federal government. In a further interview with the two scheduled officers responsible for road matters on the sources of funds used to finance the construction of the roads, they confirmed that the fund is normally provided by the federal government in form of grants to the responsible ministry with the mandate for road construction.

The total length of roads within the federal government land in Gwarinpa is 38.7 km according to the schedule officer when asked during an interview. The breakdown of the construction years and the length of the road constructed in different respective years when funds were made available for that purpose are given as follows: in 2003 Fifteen (15) kilometer length was constructed, in 2006 six (6) kilometer length was constructed, in 2008 and 2011 Five (5) Kilometers length each was constructed. This implies that a total of thirty one (31) kilometer length have been constructed out of 38.7 km. Remaining a length of 7.7 kilometer is yet to be constructed. Photograph 4.3 shows the pictures of the unconstructed sections of the road within the federal government land in Gwarinpa, Abuja.

Photograph 4. 2: Road infrastructures, requiring maintenance at Federal Government land, Gwarinpa-Abuja



Source: Guyimu, 2013 Based on fieldwork exercise in the federal government land, Gwarinpa, Abuja.

Photograph 4. 3: Unconstructed road infrastructure in the Federal Government land, Gwarinpa.



Source: Guyimu, 2013 Based on fieldwork exercise in the federal government land, Gwarinpa, Abuja.

4.4.2 Expenditure on road investment and maintenance

The table 4.6 below shows the breakdown of the expenditure incurred by government on road construction and maintenance on federal government land in Gwarinpa, Abuja that was obtained during an interview with the scheduled officers in the engineering department.

Table 4. 6: Breakdown of construction and maintenance cost on road infrastructure on federal government land in Gwarinpa, Abuja.

S/no	year	No. of kilometers of road constructed	Cost of road construction per kilometer as at 2013	Total amount spent on road investment as at 2013	Total amount spent on road maintenance as at 2013
1.	2003	15 km	\$381,250.00	\$5,718,750.00	-
2.	2004	-	-	-	\$41,875.00
3.	2005	-	-	-	\$35,937.50
4.	2006	6 km	\$431,375.00	\$2,588,250.00	\$44,406.25
5.	2007	-	-	-	\$40,250.00
6.	2008	5 km	\$543,750.00	\$2,718,750.00	\$43,500.00
7.	2009	-	-	-	\$39,000.00
8.	2010	-	-	-	\$39,375.00
9.	2011	5km	\$555,000.00	\$3,075,562.00	\$34,593.75
10.	2012	-	-	-	\$41,625.00
Total		31km	-	\$14,100,750.00	\$360,562.50

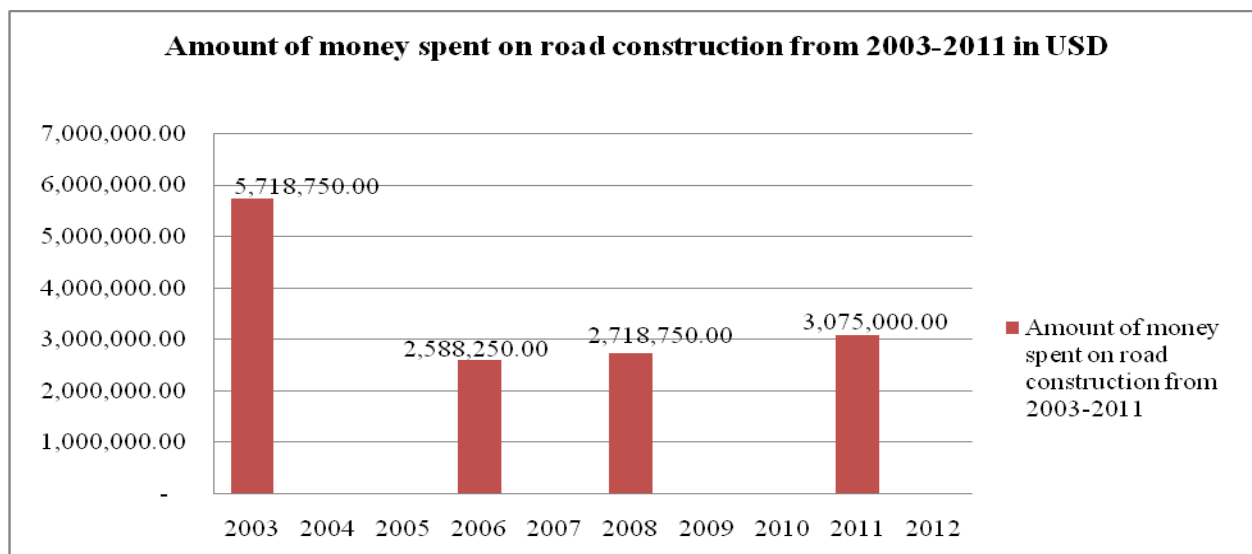
Source: Guyimu, 2013, Based on the analysis of the records of costs of road construction and maintenance obtained from the Civil Engineering Unit.

Table 4.6 above summarises the breakdown of the amount of money that was spent on road investment and maintenance. It shows that the road construction started in 2003 with the construction of fifteen (15) km length, this followed with the construction of another six (6) km length in 2006, and finally a length of five (5) km each in 2008 and 2011 respectively. This shows that in all, a total of thirty one (31) km road was constructed from the commencement of the project from 2003 to 2011. The cost of road construction per kilometre was used to determine the total cost of construction in each year. As we can see from the cost of construction per kilometre shown on table 4.6 above, the cost keeps increasing every year the construction takes place, this implied that the total construction cost would keep increasing in cost per kilometre as a result of the increase. From the table 4.6 it can be deduced that a total amount of fourteen million, one hundred thousand, seven hundred and fifty dollars (**\$14,100,750.00**) was spent on road construction from the inception of the project in 2003 to the last time the construction was held in 2011.

On the issue of road maintenance, the total amount that was spent on maintenance was obtained from the breakdown of the budget on capital investment which was made available by the engineering department. From the table 4.6, it therefore shows that there was no maintenance work carried out in 2003 because the road was still new and was under the defect liability period. A total sum of three hundred and sixty thousand, five hundred and sixty two dollars, fifty cents (**\$360,562.50**) was spent on the maintenance of road from 2004 to 2012. The schedule officer further explained that the funds required for maintenance work has been minimal and not adequate to carry out the maintenance work due to the poor maintenance culture of roads by the federal government. The Charts below shows the total

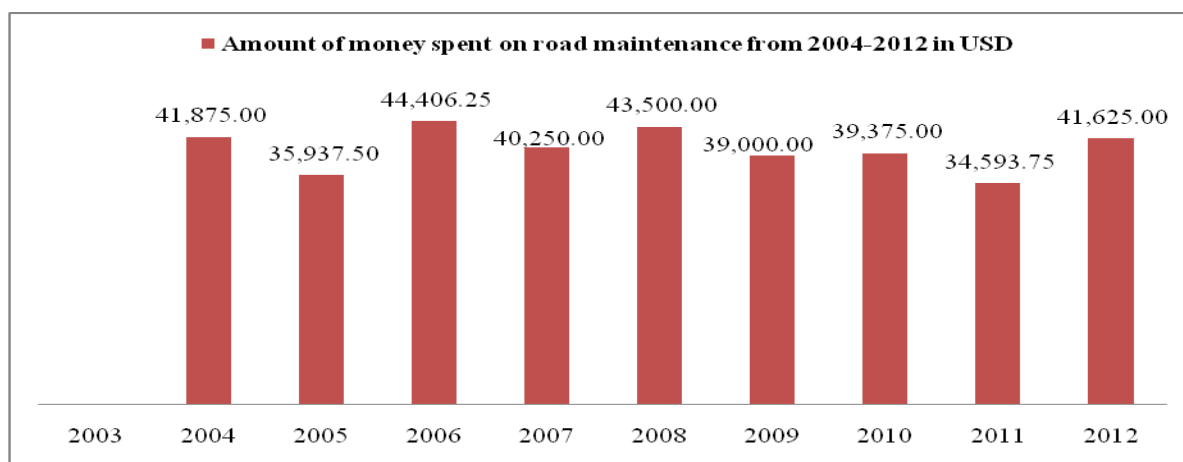
amount of money that was spent on road construction and maintenance on federal government land in Gwarinpa Abuja from 1999-2012

Chart 4. 5: Total amount of money spent on road construction on federal government land in Gwarinpa, Abuja.



Source: Guyimu, 2013. Based on the analysis of the amount spent on road construction from 2003-2011

Chart 4. 6: Total amount of money spent on road maintenance on federal government land in Gwarinpa, Abuja



Source: Guyimu, 2013. Based on the analysis of the amount spent on road construction from 2003-2011

4.4.3. Analysis on the extent to which revenue from public leasing is able to provide and maintain road infrastructure.

In order to enable us analyse the extent to which the revenue generated through the lease of public land could be used to provide and maintain road infrastructure on federal government land in Gwarinpa, this will requires analysing four important variables; *two from public leasing and the other two from road infrastructure. Under the public leasing, income from premium and ground rent will be considered while under the road infrastructure, expenditure on road construction and expenditure on road maintenance will be considered.*

In this analysis, income from premium which is a revenue generated at once usually at the beginning of a lease and it will be used to make comparison with the expenditure on road construction which is also a project executed at once normally at the beginning of the project and on the other hand, income from ground rent which is an annual revenue from lease will also be used to make comparison with the expenditure on road maintenance which is an annual maintenance work carried out on the road. Through these comparisons, the answer to the question to what extent does the revenue generated from public land leasing is able to provide and maintain road infrastructure will be provided. In order to continue with this analysis properly, the table below provides the amounts of revenue on ground rent and premium also the amount of expenditures on road investment and maintenance in order to proceed with the analysis.

Table 4. 7: Comparison between revenue generated from public land leasing and expenditure on road infrastructure on federal government land in Gwarinpa, Abuja.

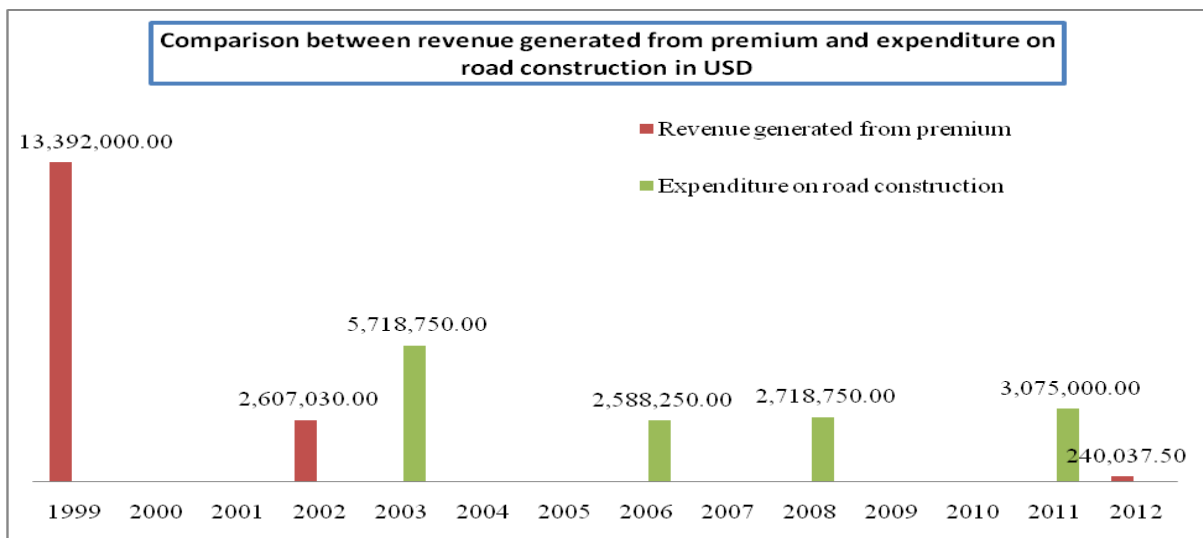
Year	Revenue from premium	Cost of road construction	Revenue from ground rent	Cost of road maintenance	Amount of GR that should be generated
1999	\$13,387,380.34	-	\$9,296.79	-	\$9,296.79
2000	-	-	\$2,745.72	-	\$8,263.82
2001	-	-	\$1,827.23	-	\$7,759.45
2002	\$2,603,693.40	-	\$2,908.24	-	\$6,753.22
2003	-	\$5,718,750.00	\$2,384.48	-	\$7,611.25
2004	-	-	\$1,500.25	\$41,875.00	\$6,688.27
2005	-	-	\$964.03	\$35,937.50	\$5,741.00
2006	-	\$2,588,250.00	\$843.03	\$44,406.25	\$5,058.15
2007	-	-	\$900.59	\$40,250.00	\$4,577.51
2008	-	\$2,718,750.00	\$1,050.37	\$43,500.00	\$4,342.99
2009	-	-	\$634.53	\$39,000.00	\$3,895.06
2010	-	-	\$4,900.73	\$39,375.00	\$43,119.40
2011	-	\$3,075,562.00	\$4,048.61	\$34,593.75	\$37,857.24
2012	\$240,037.50	-	\$3,206.17	\$41,625.00	\$34,458.56
	\$16,231,111.23	\$14,100,750.00	\$37,210.76	\$360,562.50	\$185,422.73

Source: Guyimu, 2013 Based on the records obtained from the Estate Management and Engineering units.

The table 4.7 above shows a detailed breakdown of comparison between income from public land leasing which is based on premium and ground rent on one hand and the expenditure on road infrastructure which is also based on road investment (construction) and maintenance. From the table we can see that when making a comparison between road construction with premium, government was able to generate a sum of sixteen million, two hundred and thirty one thousand, one hundred and eleven dollars, twenty three cents (**\$16,231,111.23**) on premium from 1999 to 2012. The highest payment been in 1999, the reason for the high

premium generated depends on the number of plots of land allocated. On the other hand, the total amount of money spent on road construction from 1999 to 2012 was amounted to fourteen million, one hundred thousand, seven hundred and fifty dollars (**\$14,100,750.00**). From these values obtained and as shown in table 4.7 above, the total amount generated from premium outweighs the amount spent for road construction which means that the revenue generated from premium can fully provide the road infrastructure on the federal government land in Gwarinpa with even an excess of **\$2,130,361.23** more than what was spent in providing roads. Although this analysis was intended to make a comparison between premium generated and the amount spent on road construction on each separate year in order to ascertain the extent to which premium payment has been able to provide road infrastructure every year the road construction took place. But from the table 4.7 above we can see that there was no any year when both premium and road construction took place the same year so that the analysis could be done on yearly basis. This limitation has now made the analysis to be done for the whole period from 1999 to 2012. Therefore the analysis of comparing premium generated with the amount spent on road construction for the period commencing from 1999-2012 showed that income from premium generated was more than enough to provide road infrastructure. The revenue generated from premium represents **115%** of what was spent on road construction this shows an excess of 15%.

Chart 4. 7: Comparison between revenue from premium and the cost of road construction on federal government land in Gwarinpa, Abuja



Source: Guyimu, 2013. Based on the analysis of the extent revenue generated from premium in able to provide road infrastructure in Federal Government land in Gwarinpa

In the same vein, analysing income from ground rent and the expenditure on road maintenance would be slightly different from the analysis done above. The payment of ground rent started in 1999 when the land allocations were initially made while road maintenance started in 2004 after the road construction was completed and the defect liability period was over in 2003. In this case since the revenue generated from ground rent and the expenditure on road maintenance are done annually, the analysis will be based on annual basis from the year 2004 to 2012 before a general analysis from 1999-2012. From the table 4.7, it can be seen that from the year 2004 to 2012, the total amount generated from ground rents in each year was low compared to the amount spent on road maintenance throughout the years. This shows that the government was not capturing enough land values through the

payment of ground rent in order to maintain road infrastructure on Federal Government land while considering the total amount of revenue that was supposed to be generated from the ground rent, only in the year 2010 and 2011 that the revenue generated could have maintain road infrastructure on federal government land.

Starting the analysis from 2004-2012, revenue generated through payment of ground rent was amounted to **\$18,044.89** while the total amount spent on road maintenance was **\$360,562.50** showing a shortfall of **\$342,517.61**. The amount generated through ground rent represents only **5%** of the total amount of the expenditure on road maintenance. Looking further at the total and maximum amount of revenue that was supposed to be generated from table 4.2, commencing from 2004 to 2012 was **\$73,704.45** still showing a short fall of **\$286,858.05**, this shows that the amount that was supposed to be generated represents **20.4%** of what was spent on road infrastructure.

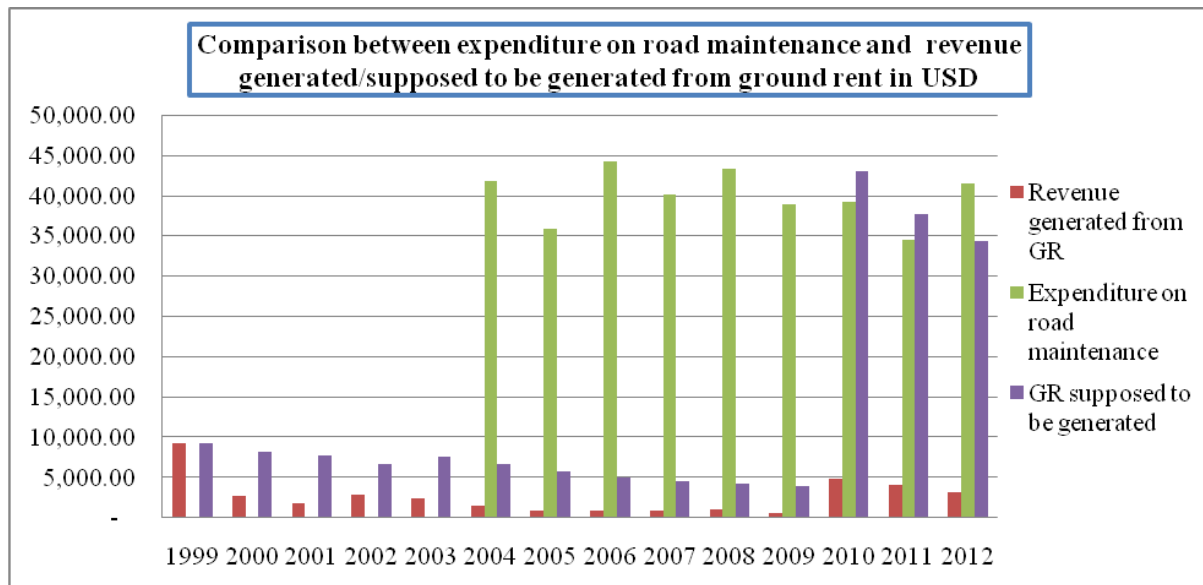
Now considering the whole amount of revenue generated from 1999 to 2012 which amounted to **\$37,213.48** showing a shortfall of **\$323,349.02**, the amount generated represents just **10.3%** of what was spent on the road maintenance. Finally, considering the whole amount of revenue that was supposed to be generated from ground rent from 1999 to 2002 amounted to **\$185,403.25** still, having a shortfall of **\$175, 159.25**, the total amount that should be generated represents **51.4%** of the total amount of expenditure that was spent on road maintenance. This analysis can be summarised in the table below.

Table 4. 8: Analysis on the extent of payment of premium and ground rent on road investment and maintenance.

Unit of income (Type of revenue generated)	Amount of Revenue generated	Expenditure on road	Shortfall	Extent of revenue generated to expenditure on road
<u>construction</u> Premium generated from 1999-2012	\$16,231,111.23	\$14,100,750.00	-	115% \$2,130,361.23 (Excess)
<u>Maintenance</u> GR collected from 2004 to 2012	\$18,044.89	\$360,562.50	\$342,517.61	5%
<u>Maintenance</u> GR supposed to be collected from 2004 to 2012	\$73,704.45	\$360,562.50	\$286,858.05	20.4%
<u>Maintenance</u> GR collected from 1999 to 2012	\$37,210.76	\$360,562.50	\$323,349.02	10.3%
<u>Maintenance</u> GR supposed to be collected from 1999 to 2012	\$185,403.25	\$360,562.50	\$175, 159.25	51.4%

Source: Guyimu 2013, Based on the analysis of the extent to which revenue from public leasing can provide and maintain road infrastructure on federal government land.

Chart 4. 8 Comparison between expenditure on road maintenance, revenue generated/supposed to be generated on federal government land in Gwarinpa, Abuja.



Source: Guyimu, 2013. Based analysis of the extent to which revenue from ground rent could finance the maintenance of road infrastructure on federal government land in Gwarinpa.

In conclusion, from the table 4.8 and chart 4.8 above showing the analysis on the extent to which revenue generated from premium and ground rent could be used to provide and maintain road infrastructure on federal government land in Gwarinpa, Abuja. As already explained above, we can see that the revenue generated though premium was able to provide road infrastructure while the revenue generated through ground rent could not maintain road infrastructure on federal government land. This therefore means that the government was not capturing enough revenue through the payments of ground rent in order to maintain road infrastructure.

The extent to which the revenue generated through premium and ground rent was able to contribute in the provision and maintenance of road in the federal government land in Gwarinpa is as follows; through the revenue on premium compare to road investment from 1999 to 2012 it generated **115%** while on the side of road maintenance, the revenue generated through ground rent compare to road maintenance from 2004-2012 it generated **5%** while the revenue from 1999-2012 was **10.3%**. In the same vein when considering the total revenue on ground rent that was supposed to be collected from 2004-2012, it would have contributed **20.4%** while the total sum that was supposed to be collected from 1999 to 2012 would have been **51.4%** of the total expenditure on road. This shows that government was capturing enough land values through payment of premium to provide road but was not capturing enough land values through the payment of ground rent to maintain road infrastructure on federal government land in Gwarinpa, Abuja from 1999 to 2012. Therefore, collection of revenue through premium has shown to be a good land value capture tool for its ability to generate maximum revenue to provide road while revenue generation through ground rent has not proven to be a good land value capture tool for its inability to generate enough revenue to maintain road infrastructure on federal government land in Gwarinpa, Abuja.

Chapter 5: Conclusions and recommendations

5.0 Introduction

This chapter concludes the research findings and gives recommendation based on the outcome on the results obtained in the course of the research. This research started with an investigation on the system of leasing federal government land to provide and maintain road infrastructure. The research was focused on how the revenue from the lease of federal government land in Gwarinpa, Abuja could be used for the construction and maintenance of roads within the federal government land. Therefore this chapter will discuss and highlight the conclusion of the research on how public land leasing can be used as a Land Value Capture tool on federal government land in Gwarinpa, Abuja.

5.1 Conclusions

This research was focused in answering how does public land leasing contribute to the financing and maintenance of road infrastructure on federal government land in Gwarinpa, Abuja? In order to answer this question, three specific sub-questions were specified in order to provide an answer to the main question. These sub-questions were framed on four (4) different dimensions of public land leasing and this include; legal, financial, economic, and social dimensions. We shall address these sub-questions one after the other analytically.

Legal dimension

This dimension dealt with governments' rights and obligation over land and this forms the core of this research which has to deal with government power over land. This dimension was discovered to be so important because it explained the basis on which public land leasing is operated in Nigeria and this became the background and foundation of this research. In order to answer all the sub-research questions, references has to be made to the legal or the constitutional provisions in the national constitution and the Land Use Act. An example can seen while answering the financial question which has to do with the amount of revenue that the government should generate from the lease of public land, this has to do with the clause in the constitution that empower the government to generate such revenue, the economic dimension has to do with the land market and the knowledge of government values which has to do with the premium and ground rent came into focus and the clauses that empowers the government determine this values has to be examined and finally the social dimension which has to deal with the use of the revenue generated in the provision of road infrastructure and the social responsibility of the government towards road construction has to do with the provision of the law and the mandates of the responsible institution in discharging such responsibilities. In essence, the legal dimension was analysed not as a sub-research question but as the background and foundation for the whole research in order to provide a legal base for the analysis because there is no way public land leasing could be discussed without making references to the laws and the constitution which is the foundation.

Findings in the field in case of Gwarinpa revealed that, by virtue of section 297 of the National Constitution which deals with government ownership of land and Section I Subsection I of the Land Use Act which provides that Government has full ownership rights of land in Nigeria and these rights include rights to use, right to lease, rights to generate revenue from it. This is in line with the definition of public land leasing by Hong (1996) discussed in the literature review as the process through which the state leases the right to use, develop and transfer land to the private individuals while retaining the ownership of the

land. On further findings through interviews, it was been discovered from the provisions of the Land Use Act in respect the federal government land in Gwarinpa that:

- In accordance to Section 2 sub-section 2 of the LUA the Federal Government has the right to lease out the land which is the foundation for the public leasing.
- Section 5 sub-section I (c) of the Land Use Act empowers the government the right to generate revenue from the land allocations which was also provided in the literature review by Hong (2003)
- Section 5 sub-section I (d) of the Land Use Act empowers the government to revise the land charges and this include the ground rent and premium which were the two major parameters for generating revenue through public leasing as provided in the theoretical chapters in the case of Netherlands by Needam (2003)
- The mandate of the Lands and Housing Department of the FMLHUD as the responsible institution to administer public land leasing and the Civil Engineering Department to provide and maintain road infrastructure on behalf of the federal government according to Hong and Bourassa (2003) was provided in the literature review that a particular institution should be given specific responsibility.

Financial dimension

In this part of the analysis, attention was focused on the amount of revenue that was captured and the amount which supposed to be captured by the government on the lease of Federal Government land through payments from ground rents and premium from 1999-2012. In the literature review, Hong (2003) and Needam (2003) explained how bulk of revenue can be generated by the government through the collection of revenue from premium and ground rent. The premium captures the present land value while the ground rent captures the increments in the land value.

From the analysis on the amount of revenue generated, the total revenue generated through premium from 1999-2012 was **\$16,231,111.23** and this was the maximum amount that was supposed to be generated because premium is usually collected in full at the commencement of the lease while the amount generated through ground rent from 1999-2012 was **\$37,210.75** and if government was able to collect all the ground rent that was supposed to be generated, it would have generated **\$185,422.73** showing a difference of **\$148,211.99** that was unable to be captured through payment ground rent. This shows that the government was only able to generate **20.1%** of the of the total revenue that was supposed to be generated from ground rent while revenue from premium has recorded a **100%** generation since it was paid at the beginning of the lease in exchange of the allocation letter to the plot. The low revenue generated from ground rent was attributed to the fewer number of plot owners paying their subsequent ground rent as a result of non-existence of any penalty for non payment by the plot owners.

Therefore the answer to the research question on financial dimension which says – **how much revenue is generated from the lease of Federal Government Land in Gwarinpa, Abuja that is used for road construction and maintenance?** – My findings showed that **\$16,268,321.99** (total revenue generated from premium plus total revenue from Ground rent) was generated from 1999-2012. If all the plots owners were able to pay their complete ground rent, it would have generated **\$16,416,533.96** from 1999-2012. This shows a difference of **\$148,211.99** which was unable to be captured through payments of ground rent. This implies that premium collection has been successful as a land value capture tool for its ability to capture its full amount of revenue it is supposed to generate while revenue collection through

ground rent has not been successful as a land value capture tool for its inability to capture its full amount of revenue it is supposed to generate.

Economic dimension

Under this dimension, attention was focused on analysing the land market in order to determine the increase in the values of land as a result of government investment on road infrastructure on federal government land in Gwarinpa, Abuja. In the literature review under the theory of land rent according to Alonso (1964), improvement in accessibility leads to the increase in land value. This dimension therefore tests whether the government investment on road, has led to the increase in land values on the federal government land. In order to ascertain whether there was an increase in the land values, two the critical variables are considered; the land values in the open market and the government land values. Experts in the open market such as Estate Surveyors and valuers and the Estate brokers who are knowledgeable in the values of land were consulted and interviewed while the premium and ground rent units responsible for government land values were also consulted and interviewed in order to obtain relevant data to enable a more detailed comparison in order to assess the possible increase in land values. The units of increment in the land values used was based on per square meter and from the analysis, the increase in the land values was noticed from the year the road construction took place both in the open market and the government values. Subsequently after the year of construction, the land values started decreasing gently in both the open market and the government values as a result of inflation. Thereafter from 2006, the land values in the open market started rising again as a result of the increase in the land values, while the decrease in the government land values continue because the rate of increment in the land values was not commensurate with the rate of inflation at that time.

Therefore in order to answer the research question on economic dimension which says – **what are the increments in the land values resulting from government investment on road infrastructure on federal government land in Gwarinpa, Abuja**—My findings showed that there was an increment in land values in 2003 when the construction started. The open market values experienced an **increment of 24% per meter square** between 2002 and 2003 while the government land values also experienced an **increment of 14% per meter square** between 2002 and 2003 showing a difference of 10% that was captured by the private market, this implies that the individual allottees were capturing more land values than the government. Both the open market and the government land values experienced slight decreases in values shortly after the year 2003 which was attributed to inflation.

Social dimension

This perspective analysed the use to which the revenue generated through the lease of public land is used for. In respect to this research is the provision and maintenance of road infrastructure within the federal government land in Gwarinpa, Abuja. Findings during the fieldwork revealed that the government has the social responsibility of providing roads through the mandate of the Civil Engineering department of the FMLHUD. This was also provided in the literature review according to Peterson (2009) where revenue from public leasing was used to provide road infrastructures in Cairo-Egypt and Changsha in China. The variables used in analysing this dimension were the revenue from premium and ground rent and expenditure on road investment and road maintenance. An income from premium which is a onetime payment on the lease of a public land was used to compare and analyse the extent to which it can provide road which is also a onetime project while the revenue from ground rent which is an annual income generated from the lease of public land was also used to make comparison with road maintenance which is an expenditure incurred annually.

The focus of this dimension was centred on revenue from the lease of public land and the expenditure on road infrastructure. The lease of the federal government land started in 1999 while road infrastructure was provided in 2003. The construction of the road infrastructure is capital intensive, therefore road construction in the federal government land in Gwarinpa is an on-going project which means the execution of the road was spread across many years. The total length of the road in the federal government land is 38.7 km and so far 31km length have already been constructed with a length of 7.7km yet to be constructed.

Therefore in order to answer the research question on the social dimension which says – **to what extent has the revenue generated from public land leasing able to provide and maintain road infrastructure on federal government land in Gwarinpa, Abuja?** – My findings showed that; under road investment, revenue from premium (\$16, 231,111.23) was able to cover the cost of road investment (\$14,100,750.00) with even an excess of (\$2,130,361.23). **This implies that the extent of the revenue generated through premium was able to provide road infrastructure with 115% of what was spent on road investment from 1999 to 2012.** Therefore revenue generation through premium can be considered as a successful land value capture tool for its ability to cover more than the cost of road construction

On the issue of road maintenance, none of the revenue generated annually from ground rent was able to cover the cost of road maintenance for all the years. Therefore the total amount of revenue generated from ground rent from 1999-2012 (\$37,210.76) was unable to cover the cost of road maintenance (\$360,562.50) from 2004-2012. **This shows that the extent of revenue generated through ground rent from 1999-2012 only covers 10.3% of the total amount that was spent on road maintenance and cannot maintain roads because only few allottees paid their ground rent and also the amount charged as ground rent was too low to cover the cost of road maintenance.**

However when considering the total amount of revenue that was supposed to be generated if government was able to collect the entire amount that was supposed to be generated every year on ground rent from 1999-2012 on annual basis, **only in the years 2010 and 2011 that the revenue generated would have been able to cover the cost of road maintenance because more income was able to be generated through the payment of ground rent on per m².** Considering the total revenue that was supposed to be generated from 1999-2012 (185,422.73) and the total cost of road maintenance (\$360,562.50), **this shows that the amount that was supposed to be generated still cannot cover the cost of road maintenance because the amount charged as ground rent was low, this amount only represents 51.4% of the total expenditure on road maintenance.** Therefore this shows that government was not generating enough revenue through ground rent to maintain roads on federal government land and therefore revenue generation through premium has not been successful as a land value capture tool because the amount charged as ground rent has been too minimal.

Finally the answers to these sub-questions have answered the main research question which says – **how does public land leasing contribute to the financing and maintenance of road infrastructure on federal government land in Gwarinpa, Abuja?** My findings showed that - **revenue from premium contributed 115% to road investment and was able to cover more than the cost of roads provision because it is collected in full at the beginning of the lease while revenue from ground rent contributed 10.3% and if the entire revenue from ground rent was able to be generated it would have contributed 51.4%, this was unable to cover the cost of road maintenance because of the low charges on ground rent.**

5.2 Recommendations

Based on the conclusions in chapter four, the case study, concepts and theories in public land leasing, the following recommendation were made.

1. The federal government should not be making bulk allocations at a once because when such allocations are made, it only captures the present land values while the future land values cannot be fully captured since ground rent was not that effective.
2. The over-dependence on the income from the petroleum sector in financing national project has made the land sector not proactive and not given the necessary attention in generating the required amount of revenue, therefore strong measures need to be put in place in respect to public leasing since the federal government wants to diversify the economy.
3. In order to enable the federal government improve its revenue generation through the lease of public land, the government procedure of arriving at the values of land which forms the basis for revenue generation should be reviewed in order to capture more revenue since the value of land depends on market rent according to Von Thunen in the literature review and not the social value.
4. Revenue from ground rent has proven not to capture enough income to maintain roads since the maximum amount that could be generated when the entire plots paid their ground rent was 51.4% of the expenditure on road maintenance. This shows that revenue from ground rent cannot maintain roads infrastructure, therefore the mode of payment needs to be reviewed.
5. Ground rent is meant to capture the increments in land values, but collecting a uniform amount irrespective of the plot sizes for the first ten years is not only inequitable, but fails to captures the land values and also the increments in values are completely ignored.
6. The duration of ten years for the rent review is too long and should be reduced because of the rapid increase in land values, population growth and inflation in order to capture the future increase in land values just like in the case of the Netherlands according to Needam (2003)
7. Payment of ground rent should be based on per m² from the beginning of the lease as you can see from the findings of this research beginning from 2010 when the payment of ground rent was commenced on per m² more revenue was able to be generated.
8. A penalty should be imposed on plot owners who refused to pay their ground rent annually in order to reduce the rate on non payments of ground rent so that more revenue can be generated in order to provide road maintenance.
9. Demand notice requesting land owners to pay their outstanding ground rent in advance should be introduced and sent to the land owners as a reminder to pay their ground rent.
10. Federal government should use market value of land as a basis for the determination the premium in order to increase its revenue potential. This is because even though the allocations are made below market value but the same land in the open market are sold at market values. This shows that the private individuals are the ones capturing the real increments in land values and not the government.

11. Revenue generated from public leasing should be allowed to be utilised by the institution responsible for the lease or a certain percentage of the amount generated be reserved by the institution administering the public leasing in order not to depend completely from the allocation by the central government so that funds for regular and unplanned maintenance could easily be accessed.
12. It is advisable that separate account be created for the revenue generated from the lease of public land rather than it going into the federation accounts if the revenue generated is to be used solely for the provision and maintenance of road infrastructure.

Bibliography

- Alonso, W., 1964. *Location Land Use: Towards a general theory of land rent*. Joint centre for urban studies of the Massachusetts Institute of Technology and Harvard University.: Cambridge, Mass.: Harvard Univ. Pr.
- Alterman, R., 2012. Land-Use Regulations and Property Values: The "windfalls capture" idea revisited. In: N. Brooks, Donaghy, K. and G. Knaap eds. ed., 2012. Oxford University Press. pp. 755-786.
- Anderson, J., ed., 2012. Collecting land value capture through public land leasing, Value capture and land policies. Lincoln Institute of Land Policy. pp. 123-148.
- Anderson, L. and Zerbe, R. 2011. Psychological Entitlement, Reference Levels, and Valuation Disparties. The Case of Native American Land Ownerhip. In: D. Cole and E. Ostrom eds., 2011. *Property in Land and Other Resources*. Cambridge, Massachusetts: Lincoln Institute of Land policy. pp. 295-313.
- Arogie, M., 2013. The Nigerian Content in the oil and gas industry: Reality or a Mirage. Available at: <http://www.thisdaylive.com>.
- Azuela, A. and Herrera-Martín, C. 2009. Taking land around the world: International trends in expropriation for urban and infrastructure projects. *Urban Land Markets*. Springer. pp. 337-362.
- Blomquist, W., 2012. A Political analysis of property rights. In: D. Cole and E. Ostrom eds., 2012. *Property rights in land and water*. Lincoln Institute of Land Policy. pp. 357-369.
- Booth, P., 2012. The Unearned Increment: Property and the of betterment value in Britain and France. In: G. K. Ingram and Y. Hong eds., 2012. *Value capture and land policies*. Lincoln Institute of Land Policy. pp. 74-96.
- Bromley, D. W., 1991. *Environment and economy: Property rights and public policy*. Basil Blackwell Ltd.
- Brown, M., 2006. *Land Value Capture in the Third World - selected Case Studies from Asia, Africa and Latin America*. pp. 1-44.
- Eckert, J. K., 1990. *Property appraisal and assessment administration*. Property appraisal and assessment administration. 1990. International Association of Assessing Officers Chicago.
- Epstein, R., 2011. Playing by Different Rules? Property Rights in Land and Water. In: D. Cole and Ostrom. E. eds., 2011. *Property in land and other resources*. Lincoln Institute of Land Policy. pp. 317-356.
- Fainstein, S., 2012. Land Value Capture and Justice. In: G. Ingram and Y-H Hong eds. eds., 2012. *Land value capture and land policies*. Lincoln Institute of land policy. pp. 21-40.

- Federal Capital Development Authority, 1979. The Master Plan for Abuja, The New Federal City of Nigeria. FCDA, Abuja. FCDA.
- Federal Ministry of Lands, Housing and Urban Development. (unpublished) 2010. Year 2010 Annual Report of Lands, Housing and Urban Development Department. Departmental annual report for the year 2010.
- Furtado, F., ed., 1997. Instrumentos Para la recuperación de Plusvalías en América Latina: Debilidad en la Implementación, Ambigüedad en la Interpretación, Land Lines, [Presentado en el XX Congreso de LASA (Latin American Studies Association), Guadalajara, mimeo]. pp. 1-37.
- Giles, R., 2011. Ethical Implications of Land Value Taxation. In: e. R. Sietching ed., 2011. Innovative land and property taxation. UN-Habitat. pp. 55-64.
- Greenstein, R. and Sungu-Eryilmaz, Y. 2005. Community Land Trusts: Leasing land for affordable housing. *Land Lines*, 17 (2).
- Hong, Y., 1996. Can Leasing Public Land Be An Alternative Source of Local Public Finance? Lincoln Institute of Land Policy. pp. 1-26.
- Hong, Y., 1999. Myths and Realities of Public Land Leasing: Canberra and Hong Kong, *Land Lines* Article. 11 pp. 1-5.
- Hong, Y., 2003. Policy dilemma of capturing land value under the Hong Kong public leasing system. In: S. C. Bourassa and Y. Hong eds., 2003. Leasing public land: Policy debates and international experiences. Lincoln Inst of Land Policy. pp. 151-176.
- Hong, Y. and Bourassa, S. C. 2003a. Why public leasehold? Issues and Concepts. *Leasing Public Land: Policy Debates and International Experiences*, Steven C. Bourassa and Yuhung Hong, Eds., Cambridge, MA: Lincoln Institute of Land Policy, .
- Hong, Y. and Bourassa, S. C. 2003b. Why Public Leasehold? Issues and Concepts. *Leasing Public Land: Policy Debates and International Experiences*, Steven C. Bourassa and Yuhung Hong, Eds., Cambridge, MA: Lincoln Institute of Land Policy, pp. 3-36.
- Hong, Y. and Lam, A. H., 1998. Opportunities and Risks of Capturing Land Values Under Hong Kong's Leasehold System. Lincoln Institute of Land Policy.
- Isaac, D., Balchin, P. N. and Chen, J., 2000. Urban Economics: A global perspective. Palgrave MacMillan.
- Mabogunje, A., 2001. Abuja: The Promise, the Performance and the Prospects. *The Review of the Abuja Master Plan*, Fountain Publications, Ibadan, pp. 1-10.
- Mattsson, H., 2003. Site Leasehold in Sweden: A tool to capture land value. In: S. C. Bourassa and Y. Hong eds., 2003. Leasing public land: Policy debates and international experiences. Lincoln Institute of Land Policy. pp. 83-98.

- Miceli, T. J. and Segerson, K. 2009. Takings, *Journal of economics and the law. American Law and Economics Review*, pp. 328-357.
- Michigan, T., 2005. Negotiating the ground lease for a commercial development project. pp. 1-21.
- National Population Commission, N., 2013. Statement of the Senate Chairman, Chairman on Population on 7 Billion World Population day. Available at: www.population.gov.ng.
- Needham, B., 2003. One Hundred Years of Public Land leasing in the Netherlands. In: Steven C. Bourassa and Yu-Hung Hong, eds., 2003. *Leasing Public Land: Policy Debate and International Experiences*. Lincoln Institute of Land Policy. pp. 1-76.
- Needham, B., 2006. *Planning, Law and Economics: An investigation of the rules we make for using land*. Taylor & Francis.
- Nigerian Land Use Act, Cap L5, Laws of the Federation 2004 with Cases and Materials (Originally promulgated as Land Use Decree No 6. of 28 March, 1978), 2004. Nigeria:
- Obateru, R. I., 2004. *The genesis and future of Abuja*. Penthouse Publications Nigeria.
- Ostrom, E., 2009. Design principles of robust property-rights institutions: What have we learned? *Property Rights and Land Policies*, K.Gregory Ingram, Yu-Hung Hong, Eds., Cambridge, MA: Lincoln Institute of Land Policy.
- Payne, G., 2001. Urban land tenure policy options: Titles or Rights? *Habitat International*, 25 (3), pp. 415-429.
- Peterson, G. E., 2006. Land leasing and land sale as an infrastructure-financing option. *World Bank Policy Research Working Paper*, (4043).
- Peterson, G. E., 2009. Land-based infrastructure finance in developing countries. Land-based infrastructure finance in developing countries. 2009. *Unlocking land values to finance urban infrastructure*. Washington: World Bank Publications. pp. 55-80.
- Slangen, L. H. and Polman, N. B. 2008. Land Lease Contracts: Properties and the value of bundles of property rights. *NJAS-Wageningen Journal of Life Sciences*, 55 (4), pp. 397-412.
- Smolka, M. O. and Amborski, D. 2000. Value Capture for Urban Development: An Inter-American Comparison. *Research Paper of the Lincoln Institute of Land Policy*.
- Smolka, M. O. and Furtado, F. 2003. 6. The Value Capture Debate in Latin America. pp. 1-4.
- Walliman, N., 2005. *Your research project: A step-by-step guide for the first-time researcher*. Sage Publications Limited.
- Walters, L., 2011. *Land and Property Tax: A Policy Guide*, United Nations Settlements Programme (UN-HABITAT), Nairobi, Kenya. UN-Habitat.

Yin, R. K., 2002. Case study research: Design and methods. SAGE Publications, Incorporated.

Annex 1-Interview guidelines

Interview Questions for the **Legal Unit** of the institution responsible for Public land leasing Federal Government land

1. What is the major role and responsibility of your unit?
2. Please can you explain what federal government land means?
3. How does the federal government come into control of its land?
4. What institution or department that is constitutionally responsible with the administration of federal government land?
5. Is there any law that empowers the department responsible for such land leasing?
6. Please state the law?
7. Does the power to manage and administer the land include the right to grant leases and generate income from it?
8. Who determines how much to be charged from the public leasing?
9. Is there any legal provision for calculating amount of revenue to be charged to the public?
10. What unit is legally responsible for the collection of the revenue from the public leasing?
11. After collection of the revenue by the institution responsible what other procedures follows with the fund?
12. What is the revenue collected from public land leasing used for?
13. Is the revenue generated kept and used by the institution responsible for the collection?
14. Why is the revenue generated not kept and used by the institution that is administering the public leasing?
15. Would you like to make any additional comments?

Interview Questions for the **Land Use and Allocation Committee (LUAC)** of the institution responsible for public land leasing on Federal Government Land

1. What is the major role and responsibility of your unit?
2. What type of land allocation is your unit responsible for?
3. What areas do your organization have land allocations in Abuja?
4. How and when did your organisation acquire the federal land at Gwarinpa, Abuja?
5. What is the land area of the entire federal government land in Gwarinpa, Abuja?
6. When was the federal government land in Gwarinpa land leased?
7. How many number plots are in federal land at Gwarinpa?
8. Are the allocations of equal sizes? If not what are the different categories of the sizes?
9. How is land allocation done? (a) Premium (b) Ground rent (c) Auction
10. Based on the answer above, why is the choice made?
11. What is the duration of the lease allocation?
12. Were all the allocations made the same time? And why?
13. May I know the breakdown of the allocation year by year?
14. How is the premium and ground rent calculated?
15. Who determines the amount of premium and ground rent?

16. What is the revenue collected from leasing used for?
17. What kind of infrastructure does the government provide on the land at Gwarinpa?
18. Does the government provide infrastructure on the land before allocation?
19. When was road infrastructure provided on the allocated land?
20. How is the road infrastructures provided on the federal government land in Gwarinpa?
21. Kindly rank the listed infrastructure in government's order of priority (a) Road (b) water (c) Electricity
22. What makes the selected priority choice to the government so important?
23. Would you like to make any additional comments?

Interview Questions for the Estate Management Division dealing with the collection of revenue and calculation of Premium and Ground rent on Federal Government Land In Gwarinpa, Abuja

1. What are the major roles and responsibilities of your unit?
2. What are the payments categories under public land leasing your unit charges on Federal Government land in Gwarinpa?
3. How is the ground rent and premium calculated?
4. What is the intention behind government collection of Ground rent and premium?
5. Is the calculation based on (a) market value with subsidy (b) future market value (c) agric land value (d) below market value?
6. Can you please tell me the coefficient that is considered while calculating premium and ground rent?
7. Who determines the coefficient used in arriving at the values of ground rent and premium?
8. Who collects the revenue accruing through from ground rent and premium?
9. Is the fund generated from the public leasing earmarked?
10. What is the revenue collected from the public land leasing used for?
11. What unit is responsible for the provision of infrastructure on federal government land in Gwarinpa?
12. Can you explain how government finance road infrastructure in Gwarinpa?
13. Is there any increase in ground rent and premium when infrastructures are provided on the federal land?
14. Does the infrastructure provided on the layout increase the value of the land?
15. How do you make provision for inflation and increase in land value vis-à-vis annual ground rent?
16. Where does the money used to provide the infrastructure comes from?
17. Please can you tell me some of your challenges/constraint in collecting land revenue from public leasing?
18. Would you like to make any additional comments?

Interview Questions for the **Engineering Department responsible for Road construction and Road maintenance** on Federal Government Land Gwarinpa, Abuja.

1. What are the major roles and responsibilities of your unit?
2. What department is responsible for the provision of road in the federal government land?
3. Where does the fund for financing road infrastructure comes from?
4. When was the road within the federal government land allocation in Gwarinpa constructed?
5. What is the total length (in Kilometer) of the road?
6. What is the difference between highway road and roads within an estate?
7. What are the major maintenance problems on road?
8. How frequent is maintenance work carried out on the road? Annually or biannually?
9. Can you please estimate how much you spent monthly/annually on road maintenance in Gwarinpa?
10. Is the funds provided for the maintenance adequate to finance the road maintenance works?
11. Would you like to make any further additional comments?

Interview Questions for the Experts: **Estate Valuers and Brokers** that have the knowledge of market land values on Federal Government Land Gwarinpa, Abuja.

1. How long have you been in the business of land and property market?
2. What are the major factors responsible for the increase in value of federal government land in Gwarinpa?
3. How can you compare the values of land within the federal government land and the other part of Gwarinpa
4. How many land transactions of land sales have you done on federal government land in Gwarinpa?
5. What is the cost/ plot or cost / m² of land in the federal government layout in Gwarinpa?
6. Can you provide me with the available records on the sales of land carried out on Gwarinpa land allocations in the recent years?
7. Do you have information on the prices of government land allocation land?
8. How can you compare the price of government land allocation and the prices in the open market?
9. Do you have any additional comments to make?

Interview questions for the **Accounts Department** of the FMLHUD dealing revenue from the lease of public land

1. What is the major role and responsibilities of your department?
2. Under public land leasing, what are the categories of payment does your unit receives?
3. Can you please tell me how the ground rent and premium is calculated?
4. Is the revenue from public land leasing earmarked?
5. Can I have the breakdown of the records of income from ground rent and premium paid into the Federation account from 1999 to 2012?

Interview questions for the **Layout design unit** of the FMLHUD dealing with designing of the layout of Federal Government land.

1. What is the major role and responsibilities of your unit?
2. When was the federal Government layout in Gwarinpa designed?
3. Can you please tell me the total land area of the entire federal government land in Gwarinpa?
4. How many of plots were originally designed in the Gwarinpa layout?
5. When was the federal land at Gwarinpa leased?
6. Are all the plot sizes the same?
7. What are the plot sizes of the densities

Annex 2-Templates for information on revenue from lease, cost of road construction and maintenance and number of land allocations from 1999-2012.

Template for Estimated **revenue generated from the collection of Ground rent and Premium** on Federal Government Land in Gwarinpa from 1999-2012

S/no	year	Amount of revenue generated from ground rent payment	Total amount that should be generated (government rate)	Total Amount of revenue generated from premium payment	Number of plot allocated
1.	1999				
2.	2000				
3.	2001				
4.	2002				
5.	2003				
6.	2004				
7.	2005				
8.	2006				
9.	2007				
10.	2008				
11.	2009				
12.	2010				
13.	2011				
14.	2012				

Template for the estimated amount of expenditure spent on **road investment and maintenance** on Federal Government Land in Gwarinpa Abuja from 1999-2012.

S/no	year	Total amount spent on road investment (Cost of road construction)	Cost of road construction per kilometer	Total amount expended on road maintenance in Gwarinpa layout
1.	1999			
2.	2000			

3.	2001			
4.	2002			
5.	2003			
6.	2004			
7.	2005			
8.	2006			
9.	2007			
10.	2008			
11.	2009			
12.	2010			
13.	2011			
14.	2012			

Template for breakdown of Land Allocations on Federal Government Land in Gwarinpa Abuja from 1999-2012 by LUAC.

S/no	year	Number of plots allocated	Remarks
1.	2001		
2.	2002		
3.	2003		
4.	2004		
5.	2005		
6.	2006		
7.	2007		
8.	2008		
9.	2009		
10.	2010		
11.	2011		
12.	2012		

Annex 3—Aerial map showing the location of Federal Government land in Gwarinpa, Abuja.



Source: www.google.earth

Annex 4- Values of selected sold Federal Government land in the open market registered in the Deeds Registry.

S/n	Year of transaction	Plot No	Plot type	Open market value of land	Open Market value per M²
1.	1999	Block VII plot 2	Low	\$216,000.00	\$144.00
2.	2000	Block XIV plot 5	low	\$192,150.00	\$128.10
3.	2001	Bock V Plot 3	Low	\$194,250.00	\$129.50
4.	2002	Block XI Plot 6	Low	\$172,755.00	\$115.17
5.	2003	Block II Plot 18	Low	\$228,750.00	\$152.50
6.	2004	Block I Plot 21	Low	\$225,120.00	\$150.08
7.	2005	Block III Plot 19	Low	\$217,350.00	\$144.90
8.	2006	Block V plot 13	Low	\$219,240.00	\$146.16
9.	2007	Block IV plot 10	Low	\$223,560.00	\$149.04
10.	2008	Block II Plot 3	Low	\$247,950.00	\$165.30
11.	2009	Block VI Plot 18	Low	\$327,600.00	\$218.40
12.	2010	Block X Plot 12	Low	\$354,900.00	\$236.60
13.	2011	Block XI Plot 17	Low	\$461,250.00	\$307.50
14.	2012	Bock IV Plot 21	Low	\$478,695.00	\$319.13

Annex 5-Computation of the inflated land values on Federal Government land on per M²

Inflated Land values in the federal government land in Gwarinpa Abuja									
s/no	year	open market values per sq. m in Naira	government land values per sq. m in Naira	Inflation capitalisation factor (1+r) ⁿ	open market values per sq. m as at 2013 prices in Naira	government land values per sq. m as at 2013 prices in Naira	Exchange rate \$1 to 160 Naira	open market values per sq. m converted to dollars	Government land values per sq. m converted to Dollars
1	1999	4,800.00	3,000.00	4.80	23,040.00	14,400.00	160.00	144.00	90.00
2	2000	4,800.00	3,000.00	4.27	20,496.00	12,810.00	160.00	128.10	80.06
3	2001	5,180.00	3,000.00	4.00	20,720.00	12,000.00	160.00	129.50	75.00
4	2002	5,280.00	3,000.00	3.49	18,427.20	10,470.00	160.00	115.17	65.44
5	2003	8,000.00	4,000.00	3.05	24,400.00	12,200.00	160.00	152.50	76.25
6	2004	8,960.00	4,000.00	2.68	24,012.80	10,720.00	160.00	150.08	67.00
7	2005	10,080.00	4,000.00	2.30	23,184.00	9,200.00	160.00	144.90	57.50
8	2006	11,520.00	4,000.00	2.03	23,385.60	8,120.00	160.00	146.16	50.75
9	2007	12,960.00	4,000.00	1.84	23,846.40	7,360.00	160.00	149.04	46.00
10	2008	15,200.00	4,000.00	1.74	26,448.00	6,960.00	160.00	165.30	43.50
11	2009	22,400.00	5,000.00	1.56	34,944.00	7,800.00	160.00	218.40	48.75
12	2010	27,040.00	5,000.00	1.40	37,856.00	7,000.00	160.00	236.60	43.75
13	2011	40,000.00	5,000.00	1.23	49,200.00	6,150.00	160.00	307.50	38.44
14	2012	46,000.00	5,000.00	1.11	51,060.00	5,550.00	160.00	319.13	34.69

Annex 6-Computation of the income generated from premium and Ground rent on Federal Government land from 1999-2012.

S/no	year	Amount of revenue generated from GR payment in Naira	Number of plots that paid GR	Number of plots that should pay GR	Total amount that should be generated from GR in Naira	Total Amount of revenue generated from premium payment in Naira	Inflation rate	Inflation Capitalisation factor (1+r) ⁿ
1	1999	310,000.00	620	620	310,000.00	446,400,000.00	0.125	4.80
2	2000	103,000.00	206	620	310,000.00		0.065	4.27
3	2001	73,000.00	146	620	310,000.00		0.149	4.00
4	2002	133,500.00	267	798	310,000.00	119,520,000.00	0.142	3.49
5	2003	125,000.00	250	798	399,000.00		0.138	3.05
6	2004	89,500.00	179	798	399,000.00		0.165	2.68
7	2005	67,000.00	134	798	399,000.00		0.135	2.30
8	2006	66,500.00	133	798	399,000.00		0.105	2.03
9	2007	78,500.00	157	798	399,000.00		0.054	1.84
10	2008	96,500.00	193	798	399,000.00		0.115	1.74
11	2009	65,000.00	130	798	399,000.00		0.115	1.56
12	2010	559,750.00	109	798	4,925,000.00		0.139	1.40
13	2011	526,700.00	103	798	4,925,000.00		0.108	1.23
14	2012	462,150.00	107	840	4,967,000.00	34,600,000.00	0.11	1.11
15	2013						0	1.00
		2,756,100.00			18,850,000.00			

Amount of revenue generated from GR payment as at 2013 prices In Naira	Total amount that should be generated from GR as at 2013 prices in Naira	Total Amount of revenue generated from premium payment as at 2013 prices in Naira	Exchange rate 1USD to 160 Naira as at 14/08/2014	Revenue generated converted to dollars	Revenue that should be generated converted to Dollars	Premium generated converted to Dollars
1,487,486.70	1,487,486.70	2,141,980,854.16	160	9,296.79	9,296.79	13,387,380.34
439,315.07	1,322,210.40		160	2,745.72	8,263.82	
292,356.08	1,241,512.12		160	1,827.23	7,759.45	
465,318.70	1,080,515.33	416,590,943.41	160	2,908.24	6,753.22	2,603,693.40
381,516.35	1,217,800.17		160	2,384.48	7,611.25	
240,040.16	1,070,123.18		160	1,500.25	6,688.27	
154,244.52	918,560.67		160	964.03	5,741.00	
134,884.09	809,304.55		160	843.03	5,058.15	
144,094.19	732,402.31		160	900.59	4,577.51	
168,059.67	694,878.85		160	1,050.37	4,342.99	
101,525.39	623,209.73		160	634.53	3,895.06	
784,116.45	6,899,104.10		160	4,900.73	43,119.40	
647,777.80	6,057,159.00		160	4,048.61	37,857.24	
512,986.50	5,513,370.00	38,406,000.00	160	3,206.17	34,458.56	240,037.50
5,953,721.67	29,667,637.11	2,596,977,797.57		37,210.76	185,422.73	16,231,111.23

Annex 7-Computation of the Comparison between the revenue generated from public and expenditure on road infrastructure

s/no	year	revenue from premium in Naira	Cost of road construction in Naira	Revenue from ground rent in Naira	Cost of road maintenance in Naira	Ground rent that is supposed to be collected in Naira	Inflation capitalisation factor
1	1999	446,400,000.00		310,000.00		310,000.00	4.80
2	2000			103,000.00		310,000.00	4.27
3	2001			73,000.00		310,000.00	4.00
4	2002	119,520,000.00		133,500.00		310,000.00	3.49
5	2003		300,000,000.00	125,000.00		399,000.00	3.05
6	2004			89,500.00	2,500,000.00	399,000.00	2.68
7	2005			67,000.00	2,500,000.00	399,000.00	2.30
8	2006		204,000,000.00	66,500.00	3,500,000.00	399,000.00	2.03
9	2007			78,500.00	3,500,000.00	399,000.00	1.84
10	2008		250,000,000.00	96,500.00	4,000,000.00	399,000.00	1.74
11	2009			65,000.00	4,000,000.00	399,000.00	1.56
12	2010			559,750.00	4,500,000.00	4,925,000.00	1.40
13	2011		400,000,000.00	526,700.00	4,500,000.00	4,925,000.00	1.23
14	2012	34,600,000.00		462,150.00	6,000,000.00	4,967,000.00	1.11
15		600,520,000.00	1,154,000,000.00	2,756,100.00	35,000,000.00	18,850,000.00	

Exchange rate 1USD to 160 Naira as at 14/08/2014	revenue from premium converted to Dollars	Cost of road construction converted to Dollars	Revenue from ground rent converted to Dollars	Cost of road maintenance converted to Dollars	Ground rent that is supposed to be collected converted to Dollars
160.00	13,392,000.00		9,300.00		9,300.00
160.00			2,748.81		8,273.13
160.00			1,825.00		7,750.00
160.00	2,607,030.00		2,911.97		6,761.88
160.00		5,718,750.00	2,382.81		7,605.94
160.00			1,499.13	41,875.00	6,683.25
160.00			963.13	35,937.50	5,735.63
160.00		2,588,250.00	843.72	44,406.25	5,062.31
160.00			902.75	40,250.00	4,588.50
160.00		2,718,750.00	1,049.44	43,500.00	4,339.13
160.00			633.75	39,000.00	3,890.25
160.00			4,897.81	39,375.00	43,093.75
160.00		3,075,000.00	4,049.01	34,593.75	37,860.94
160.00	240,037.50		3,206.17	41,625.00	34,458.56
	16,239,067.50	14,100,750.00	37,213.48	360,562.50	185,403.25

Annex 8- Table showing inflation rates in Nigeria from 1999 to 2012

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
12.5	6.5	14.9	14.2	13.8	16.5	13.5	10.5	5.4	11.5	11.5	13.9	10.8	11

Source: Nigerian National Bureau of Statistics 2013