

Overview Of Cadastral System In The Dispensation Of National Sustainable Development In Nigeria

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Abstract: *An investigation into understanding of the principles cadastral systems and land administration in the dispensation of sustainable development is the focus of this paper. This work examines land ownership and cadastral system management as it is applicable in Nigeria. The objectives of this paper therefore are to: understand what determines the ownership of land in the developing world; analyze the global trend of cadastral system; find out the existing situation and current performance of cadastral system in Nigeria; and suggest necessary measures to be taken in improving cadastral system in the developing nations. A critical review of literature on the subject matter and related issues was carried out. This study concludes by emphasizing the importance of cadastral system: cadastre is a very essential ingredient for effective management of the land resource. Cadastral system aids planning as they constitute a veritable land data base for identifying available land for development. The paper thus recommended as follows: Interaction between citizens and the relevant institution is necessary, as this would enhance sustainability of the whole process; Stability and transparency of the government and other institution is also need in sustaining good cadastral and land administration system; also mutual understanding and cooperation among operators and practioners in terms of sharing necessary data will help in achieving good cadastral Management. Finally, there should be capacity building among the relevant stakeholders.*

Keywords: *Land, Land Ownership, Cadastre; Land Administration; Land Reform; Sustainable Development*

I. INTRODUCTION

In the context of real estate, land is defined as a property or real estate, not including buildings or equipment that does not occur naturally. Depending on the title, land ownership may also give the holder the rights to all natural resources on the land. These may include water, plants, human and animal life, fossils, soil, minerals, electromagnetic features, geographical location, and geophysical occurrences (Investopedia, 2015). To the economists land comprises all naturally occurring resources whose supply is inherently fixed. Land as a factor of production is of immense importance. Suffix to say, everything that we use can be traced ultimately to land. Land may be rightly called the original source of all material wealth. The economic prosperity of a country is closely linked with the richness of her natural resources. However, it is possible that a country is what nature has made it. It is possible that a country, rich in natural resources, may

remain poor (Nigeria for instance) owing to some unfavorable factors. But if nature has been unkind and has not given rich resources to a country, it will not be easy to make it prosperous. Hence, all aspects of economic life, agriculture, trade and industry are generally influenced by land (Furzee & Minakshi, 2013).

However, the driving force of growth and sustainable development of any country around the globe is the nation's access to reliable and necessary geo-information, it is becoming essential to understanding what is happening and what will happen in geographic space. Hence, cadastral system ambiguously define the limit of land parcels on the earth's surface on the basis of law, rights and restrictions, title or deed registration based on the parcel of property. Central to all cadastral system is the "cadastre", which is a methodologically arranged public inventory of data concerning all legal land objects in certain country or district based on the survey of their boundaries (Kaufmann, 1998).

Thus, as noted by Lee (2006) the maintenance and management of the cadastral information in cadastral organizations are very important issues for the implementation of surveying and mapping. Many land-related activities, such as conveyancing, taxation, legal protection of rights are based on the cadastral information. Cadastral system therefore finds application in general land information management, fiscal planning, physical planning and legal land registration.

Accordingly, cadastral systems are designed and developed to offer support services within both the private and public domain of the society. Cadastral services are land related and can be described as the total facilities, provides input, process and output to the cadastral system i.e. land registration and cadastral surveying and mapping (Akpooyoware, 2003). Williamson (2000) contends that cadastral surveying is an important component of the land development or land subdivision process, and it is seen as a core task of the surveying industry and profession (UN, 1996). Cadastral surveying is primarily concerned with laws relating to the ownership of land, including rights and interests in land, as well as field surveys for the marking (re-establishment, definition) of property boundaries on the ground and the recording of such information on plans and maps and other cadastral documentation. It is concerned with the introduction of the legal framework of property boundaries, the land tenure system and the methods of performing cadastral surveys, including computations and documentation, as it is required for land acquisition, land compensation and land subdivision procedures. Cadastral Survey in simple term is the survey of individual property which eventually leads to the production of deed plans which could be used for the registration of title documents and other purposes like planning, designing, etc. (NIS, Ogun State Branch, 2013).

In the main, several studies have described sustainable development and its impacts in developing world such as Nigeria. By contrast, sustainable development in relation to land or property allocation within the context of developing world has been rarely explored. This study focuses on the comprehensive outline of Nigerian cadastral system in the dispensation of sustainable development. Sustainable development is an already well-established concept. This study is guided by the definition advanced by the Bundtland Commission – which is development that “meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987). Sustainable development, as amplified by the internationally acclaimed instrument Agenda 21, brings environmental issues and social forces into the realm of influence alongside and often in opposition to, traditional economic considerations (Williamson, 1999).

II. OBJECTIVES OF THE STUDY

The overall aim of this study is to review the fundamentals of land ownership and land boundaries in developing world with special reference to Nigeria especially in the dispensation of National sustainable development. The specific objectives are to:

- ✓ understand what determines the ownership of land in the developing world;
- ✓ examine land administration in Nigeria from independence till date;
- ✓ find out the existing situation and current performance of cadastral system in Nigeria;
- ✓ suggest necessary measures to be taken in improving cadastral system in the developing nations.

III. STATEMENT OF PROBLEM

As noted by Williamson (2000), the current global propellants for change include: sustainable development objectives, urbanization, globalization, economic reform and environmental management, with technology impacting across all areas. In times to come, we continue to witness disputes arising, over boundaries. The importance of control of land is more likely to be centred on rights of economic development, and control of important resources. Boundary lines (also commonly called property lines) define the extent of the legal limits of ownership of any parcel of land. Marked boundaries are *prima facie* evidence of the legal extent of ownership of property.

It has therefore become almost a household knowledge that a good cadastral and land administration system is vital to growth and sustainable development of any country. However, the problems of Cadastral Survey in Nigeria is traced to the operation, funding and public perception of the need or its desirability. Capital and funding has a great role to play since it has a direct impact on the mode of operation. There is a dearth of dynamic cadastral maps as well as inadequate up-to-date and accurate ground control system in the current system of land administration in the country. The curiosity about the possibility which a sustainable cadastral system stands to explore in Nigeria is constantly nagging, thus the work emanated on this ground.

IV. CONCEPTUAL CLARIFICATION

MEANING OF LAND

Land has a special meaning in real property law. Land is permanent, except in rare occasions, exists perpetually and has a fixed location (Robidoux, 2007). Land occupies a unique place in the development process of any individual or society. The supply of useable land is, however, limited (UNEP, 2002). Land is often referred to as “real property” which, in very basic terms, means property which is fixed and immovable, as distinct from personal property which, again in basic terms, means property (as in goods and chattels) which is not fixed and can be moved (ICSM, 2014). As defined by FAO (1995) “land is a delineable area of the earth's terrestrial surface, encompassing all attributes of the biosphere immediately above or below this surface including those of the near-surface, climate, the soil and terrain forms, the surface hydrology [including shallow lakes, rivers, marshes, and swamps], the near surface sedimentary layers and associated groundwater reserve, the plant and animal populations, the

human settlement pattern and physical results of past and present human activity [terracing, water storage or drainage structures, roads, buildings, etc..].”

According to the well-established principle of law, *quicquid plantatur solo solo cedit*, land consists of the surface of the earth, the subsoil and the air space above it, as well as all things that are permanently attached to the soil. It also includes streams and ponds (Olawoye, 1974). Ladan (2004) claims that statutory definitions of land in Nigeria include the following: “Land includes land and everything attached to the earth and all chattels real”. He further states that land includes land of any tenure, buildings or parts of buildings (whether the division is horizontal, vertical, or made in any other way), and other corporeal hereditaments; also a rent and other incorporeal hereditaments, and an easement, right, privilege or benefit in, over or derived from land. Furthermore, contended by Obaseki (1988), “land is a specie of property, and property has been defined to mean ownership or title and sometimes the res over which ownership may be exercised. The land comprised in the territory of each state of the Federation is the res over which the governor exercised ownership in trust in accordance with section 1 of the Land Use Act of 1978. It is an immovable property”

CONCEPT OF LAND OWNERSHIP

Ownership is not only confined to social and legal aspects but also gains political significance. The concept relates to a number of claims, liberties, powers, immunities in relation to, the things or property a person owns. Thus, ownership pertains to or denotes a multitude of claims which refer more to the ownership signifies the rights to exploit and utilize the wealth and resources provided by God and such right is transferable only through legitimate methods. The owner deserves the right of ownership as long as he utilizes the gift endowed to him properly. In the event that he ceases to do so, and exploits and does not put the wealth into proper and productive utilization, he will be induced or even forced to give up that right of possession (Siti, 1998). The term “property” is generally defined as everything which is the subject of ownership (Duhaime, 2004). The fundamentals of land ownership and land boundaries date back to the very roots of civilization and matters relating to possession and control “ownership” of land are well documented in historical records. Indeed, the territorial control of land has been a fundamental issue in the rise and fall of empires throughout history (e.g. the Roman Empire), and has been the cause of a great number of the world’s wars since civilization began (Donnelly, Undated). No society exists without a regulation of some kind peculiar to land, to rationalize the mode of ownership and the use of land (Ladan, 2004). The stated scripture provide the first detailed description of Israel's intended borders. In fact, the intention of the text is to specifically inform Israel where its borders would lie. Accordingly, Numbers 34:2 says

Command the sons of Israel and say to them, "When you enter the land of Canaan, this is the land that shall fall to you as an inheritance, even the land of Canaan according to its borders" (NASB).

There are two dimensions to border as state boundaries and as symbolic social and cultural lines of inclusion and difference, material and imagined, physical and cultural. Boundaries are partitions of space between states, and to the increasing extent, between regions and cities, because capital can circulate only between different legal spaces created within the states and/or regions and with the support of their guaranties (Nash & Bryonie, 2010). It should be noted that boundaries are subject to changes. In fact, the boundaries of the Middle Eastern States have changed regularly throughout history.

As Donnelly (1985) noted “ownership also involves a significant element of possession (refer Possessory Title), therefore it can be put forward that ownership of the land surface extends just so far in each direction upwards or downwards vertically as the owner is able to bring and retain under their effective control”. The general principles of ownership at common law have long been established in the courts of equity, although the concept of extent of ownership has changed significantly in interpretation from the nineteenth to the twenty first century. In addition, statutory law continues to place increasing restrictions on the rights and benefits which would otherwise accrue with land ownership. Estates in land define the temporal limits of property ownership. An estate grants a slice of ownership and is measured in time. It is a concept associated with interests related to possession of land (Robidoux, 2007). Estates in land may be classified as corporeal and incorporeal hereditaments. A corporeal hereditament refers to a tangible and physical aspect of the land, whereas an incorporeal hereditament refers to intangible rights that may be enjoyed in, over or in respect of the land. Collectively, corporeal and incorporeal hereditaments are referred to as 'realty', as distinct from 'personality' [which refers to personal or movable property] (Law Teacher, 2014). Parcel boundaries are therefore created for the purpose of identifying the physical extent of ownership of the parcel and for facilitating the transfer of ownership.

CADASTRAL SYSTEM

The concept of “the cadastre” is neither popular nor understood by most people. It is, however, a vital tool used by professionals involved in land and land related dealings (ICSM, 2014). As Hawerk (1997) claims, cadastre forms part of the base data required in any public land information system normally in digital form. A cadastral system is “the combination of a cadastre with its spatial focus and a land register with its legal focus” (Silva & Stubkjær, 2002), including all aspects of the juridical, fiscal and regulatory cadastres, and developed and assessed considering its political, legislative, economic, technological, and social aspects and relationships (Whittal, 2008). The cadastral system relies on four separate agencies: land tenure (surveying, mapping, and land registration), land valuation (related to taxation), land use control (incorporating spatial planning), and land development (Enemark, 2005; Williamson *et al.*, 2010).

Cadastre data is a daily maintained record system which contains description of the physical location and extent of a parcel of land as related to the land and information on the land (Dashe, 1987). Thus, cadastre plays very significant roles

in the development of society with the major aim of registering legality and rights associated with land. (Prooijen *et al*, 2011). The real property cadastre is designed to show the *de facto* status of a property. The cadastre therefor is the only register in which all parcels and buildings in a state are described. Normally the cadastre is a system of different forms of official documents mainly:

- ✓ the cadastral map, the geometric description of the parcels in different scales (1:10 000 to 1:500) depending the density of contents in the map,
- ✓ the cadastral records describing the parcels with the area, land-use, name of the land-owner and information linking to other data
- ✓ the collection of the results of all surveys to the parcels.

All these information are linked to each other by the unique parcel-identifier.

In the view of Williamson (2000), land administration and cadastral systems are not just rural activities, but are national activities. A cadastral system is not a monolithic block. It should be designed to fulfil the changing legal demands and demands of administration and the private sector. It should be able to develop it into a basic Land Information System (LIS) of great variety and flexibility for planning, environmental protection etc. (Cay *et al*, 2009). In Nigeria, Cadastre started in 1883, yet the problem of management has increased over the years. However, its present use is subject only to controls that even urban planning authorities have trouble in enforcing, reliable land information is necessary for many public programs, for land planning, and for infrastructure development (Usman, 2010).

Hawerk (1997) contends that the role of a land registration system like the cadastre should be regulated by laws and other administrative rules and guidelines for a uniform execution of the system. These regulations should content as well some technical demands and rules for using the system and for maintaining it.

- ✓ The cadastre should be a parcel-based system (a piece of land belonging to a defined person or group of persons), i.e. information is geographically referenced to unique, well-defined units of land. These units are defined by formal boundaries marking the extent of land. Each parcel is given a unique parcel-number.
- ✓ Parcels are described with graphical and textual data. The cadastre shows their scope and the part of the surface to which they extend. All relevant facts, such as designation, location, size and use, plus the boundaries are based on cadastral surveys in which technical way ever.
- ✓ All information should be stored in a retrievable way, maintainable and updated by using the most economic methods in surveying and storing the data. The cadastre should be the only basic information system in the country. All users should be committed to use it for their own parcel-based special information systems so interrelations between different systems are possible.
- ✓ The cadastre should be accessible to the general public in accordance to the rights of protection of individual interests.
- ✓ The users of the cadastre should pay the services offered by the cadastral agencies. The provision of information

from the system should be more or less based on cost recovery.

LAND ADMINISTRATION AND LAND REFORM

Land administration systems are complex often with no clear directions for reform, land administration reform is not simple systematic registration. Land administration reform, or cadastral reform are complex issues which require complex solutions, as has been shown in Indonesia. The design of any land administration project should understand the components of a re-engineering process. First, this requires an understanding of the impact of global drivers (sustainable development, urbanization, globalization, economic reform and technology) on the changing relationship of humankind to land in the context of the individual country (Ting & Williamson, 1999). Land administration is not land reform. Land administration reform should be if possible be non-political and should be concerned with putting in place an efficient land administration infrastructure to manage the humankind to land relationship. Land reform and land tenure reform, have by their very nature political objectives, such as re-distributing land between different groups, and as such should be kept separate from the development of a land administration infrastructure. In general the introduction of a land administration system should not change the land tenure relationships between people and land. On the other hand land administration systems will enable land tenure reforms to be introduced. In one sense a land administration infrastructure provides an inventory of rights, restrictions and responsibilities in a country (Williamson, 2000).

Land administration system is dynamic and of long term nature (Osman and Kueh, 2010). A land administration system includes the functions and operations of the cadastral system, but also higher level integration, management and dissemination of cadastral information and includes the institutions and operations that facilitate this (UNECE, 1996). Furthermore, land administration is “the study of how people organize land. It includes the way people think about land, the institutions and agencies people build, and the processes these institutions and agencies manage” (Williamson *et al.*, 2010). Osman and Kueh (2010) also claim land administration should focus on land management processes like adjudication, land transfer, subdivision, planning and valuation, rather than on institutions, legal and regulatory frameworks. The land administration system should incorporate a strategy for development reform in land administration accordingly to global factors that can affect the processes. They further noted that effective land administration systems need to manage the ever growing sophistication of rights, restrictions and ownership over land due to environmental and social pressures.

Land administration is the process of regulating land and property development and the use and conservation of the land, the gathering of revenues from the land through sales, leasing and taxation, and the resolving of conflicts concerning the ownership and use of the land (Dale & McLaughlin 1999). A land administration system provides a country with the infrastructure to implement land-related policies and land management strategies. Land Administration Systems are the

basis for conceptualizing rights, restrictions and responsibilities related to people, policies and places. Property rights are normally concerned with ownership and tenure whereas restrictions usually control use and activities on land (Enemark, 2009). Land Administration Systems (LAS) including cadastre as key component that enables the management of land information, which is fundamental for informing decisions about economic, environmental and social issues of priority. In modern society, LAS also underpins efforts in realizing Spatially Enabled Societies (SES), where location and spatial information are regarded as common goods and made available to citizens and businesses to encourage creativity and product development (Rajabifard, 2014)

Rajabifard (2014) defines spatial enablement is a concept that adds location to existing information, thereby unlocking the wealth of existing knowledge about land and water, its legal and economic situation, its resources, access, and potential use and hazards. It uses the concept of place and location to organize information and processes and is now consistently part of broader government strategies. This promotes innovation, transparency and democracy by enabling citizens and we are therefore, potentially at the start of a spatial information revolution. Societies and their governments need to become spatially enabled in order to have the right tools and information at hand to take the right decisions. The concept of Spatially Enabled Societies (SES) is offering new opportunities for government and the wider society.

On the other hand, Land reform as defined by Parsons (1996) "is the aggregate of ideas and courses of action designed to resolve tenure problems." Land Reform generally involves the changing of laws, regulations or customs regarding land ownership. It may consist of government initiated or government backed approach to property redistribution of agricultural land or as in the case of Nigeria, an outright transfer of ownership of land from the citizens to the state. The common characteristic of land reforms is usually the modification or the replacement of existing institutional arrangements governing possession, use and title (Umezulike, 2011). Williamson (2000) states that land administration reform should focus on processes such as adjudication, land transfer and mutation (subdivision and consolidation), rather than on institutions, legal and regulatory frameworks or specific activities such as land registration or cadastral surveying and mapping.

The objective of the "ideal" land administration system is to create an open market economy in which land is transformed into an economic commodity. As Dale (2007) noted, the major goals objective of any ideal land administration reforms are among others, to ensure that:

- ✓ There are secure dealings in land.
- ✓ The cost of transactions is kept low.
- ✓ There is access to credit.
- ✓ There is transparency in all dealings.
- ✓ There is easy access for all participants, poor or rich.
- ✓ Minority rights are protected.
- ✓ Environmental sustainability is supported.

The development of a vision for a future land administration system is an integral part of any land

administration reform strategy. For example the cadastral vision adopted by the UN-FIG Bogor Declaration on Cadastral Reform (1996) is to "...develop modern cadastral infrastructures that facilitate efficient land and property markets, protect the land rights of all, and support long term sustainable development and land management." In more generic terms, land administration is about managing the relations between people, policies and places in support of sustainability and the global agenda set by the MDGs (Enemark, 2009).

HISTORICAL DEVELOPMENT OF LAND ADMINISTRATION IN NIGERIA

The precolonial era in Africa, witnessed the era of absolute traditional land tenure system where lands were either owned by individuals, communities and in some areas by the traditional chiefs. However, the period from 1890s to the early 1900s witnessed the partitioning of Africa by the European colonial masters into smaller territories for the purpose of exploitation and easy control for governance (Kofele-Kale, 2010). This arrangement presented some challenges to the indigenous population as most of their ancestral homes were lost to the colonial masters, who became the custodian of the land on behalf of their individual governments. Some of these lands were awarded on concessionaries to private individuals for development purposes. The intent was to exploit Africa's mineral and other natural resources to service the growing Western industries. In Nigeria, the footprints left by the colonial masters were occupied by the colonial masters' representatives who took over the mantle of leadership after they were granted loose sovereignty through the award of political independence. The former crown land held in trust for and on behalf of the Queen now became federal lands.

Subsequently, the lands were handed to the various states, where the state governor is the custodian of the land for and on behalf of the people of the state. These rights given to the governors were called 'statutory rights', at the local levels; traditional 'stools' were given the customary rights. Over the years, there have been constant clashes of interest between the government statutory rights and the traditional customary rights over control of community lands owned by the tribal entities as a result of improper documentation, also lands expropriated by the colonial masters is now greatly contested by traditional or customary institutions, there is also the awareness attached to the control of resources by the local communities who suffer from environmental degradation as a result of the exploitation of these resources. The quest for spatial documentation of traditional land tenure therefore becomes imperative as a result of the stated problems above (Tumba & Mash, 2014).

Famuyiwa & Omirin (2011) note that one of the earliest legislations introduced by the Colonial Administration is that dealing with acquisition of land for public purposes. The first of such legislation was the Public Lands Ordinance of 1876 later re-enacted as Public Lands Acquisition 1917. The Act empowered the Government to acquire land compulsorily for public purposes subject to the payment of compensation to the land owners. The land acquired becomes state (formerly

crown) land, and therefore becomes property of the state. This strategy helps the government to free land from the prevalent customary land tenure which restricts the land ownership and holding strictly to the family and communal and hardly individual. In effect land needed for developmental purposes must be compulsorily acquired by government for this purpose. Thus, a number of Ordinances were passed with the aim of acquiring land for use of government and private developments, these include Native Lands Acquisition Proclamation 1900, the Native Lands Acquisition Proclamation 1903, the Crown Lands Management Proclamation, 1906, as amended, the Native Acquisition Ordinance 1917, the Niger Lands Transfer Ordinance 1916 and the Crown Ordinance 1918. In 1935, the Registration of Title Act of that year was enacted. This act provided for the registration of land instruments recognized under the Act, Land Registration Act Cap 99 and the Registered Land Act 1965 was also enacted for the purpose of registration of titles to land.

In 1958 the State Lands Act Cap 45 was enacted which vested the ownership of all public lands in the state. In the Western Region, the Region enacted the Property and Conveyancing law, Cap 100, other laws are Land Instruments Preparation Law cap. 55, Land Instruments Registration Law, cap 56, Administration of Estates Law, Cap. 2, Public Lands Acquisition Law, Cap 105, Registration of Titles Law Cap. 57, Native Lands Acquisition Law Cap. 80, Recovery of Premises Law, Cap 110. In the Eastern Region, the Land Tenancy Law 1935 was enacted. Others include, Acquisition of land by Aliens Law, 1957, Land Instrument Registration Law 1963, Land Instrument Preparation Law, 1963 and Recovery of Premises Law, 1963. Furthermore, various Decrees and edicts were promulgated during the military government affecting land in Nigeria we shall mention a few of these legislations. The Federal Military Government in response to public outcry promulgated the Rent Control Decree No. 15 of 1966; this Decree was repealed by the Rent Control (Repeal) Decree No. 50 of 1971. The impact of this Decree on the soaring rents in the country was doubtful. The Requisition and other Powers Decree, No. 39 of 1967 was promulgated to empower the Army and Police to requisition land and other property during the period of the emergency. The Decree was amended in 1975 to create the central and state compensation committee to deal with matters of compensation. This was followed by the state lands (compensation) Decree No. 38, 1968, which deals with issues of compensation in respect of land acquired by the state. It was repealed in 1976 by the Public Lands Acquisition (miscellaneous Provisions) Decree No. 33 of 1976.

Oboli & Akpoyoware (2010) reaffirm that the current legal framework guiding land administration in Nigeria is the Land Use Act (Decree No.6 of 1978). The law adopted the nationalization of all lands in Nigeria as introduced by the Land Tenure Law of 1962 (of the old Northern Region). Under the law, all lands within a State (except land belonging to the Federal Government and its agencies) are vested in the Governor of that State who holds the land in trust for all Nigerians. The regime was expected to encourage land acquisition and transfer as well as facilitate development with access to land. However the Act restricts the size of land permitted for development in the urban areas to half a hectare

per person. In 1977, in order to further streamline the various enactments and land tenure systems existing in Nigeria, the Military Government set up Land Use Panel with the following terms of reference (Otubu, 2009):

- ✓ To undertake an in-depth study of the various Land Tenure, Land Use, and land conservation practices in the country, and recommend steps to be taken to streamline them,
- ✓ To study and analyze all the implications of a uniform land policy for the entire country;
- ✓ To examine the feasibility of a uniform land policy for the entire country and make necessary recommendations and propose guidelines for implementation;
- ✓ To examine steps necessary for controlling future Land Use and also opening and developing new land for the needs of Government and Nigeria's population in both urban and rural areas and to make appropriate recommendation.

The panel's report led to the promulgation of the Land Use Act of 1978, which was later provided for in the constitution of Nigeria 1989. Section 326(5) thereof.

LAND ADMINISTRATION FOR SUSTAINABLE DEVELOPMENT

The notion of sustainable development relies on the environment and the pressures of human activity. It is an approach of recognizing, controlling and mediating rights, restrictions and responsibilities over land and resources that forms the fulcrum. Thus "land administration" should play an important role in the infrastructure for sustainable development. In this context, "Sustainable development means development that effectively incorporates economic, social, political, conservation and resource management factors in decision-making for development. In attaining this objective of sustainable development, information technology, spatial data infrastructures, multi-purpose cadastral systems and land information business systems will play a critically important role. Unfortunately modern societies still have some way to go before they will have the combination of legal, institutional, information technology and business system infrastructures required to support land administration for sustainable development" (Ting and Williamson, 1999b).

The theoretical concept of a land administration role in delivery of sustainable development relies on the using of land management paradigm to guide the selection of tools for managing common processes. Within this framework, a wide of options and opportunities is available to Land administration system designer and land use policy makers. One tool, however is fundamental: cadastre (Williamson et al, 2008), it is a register in which all parcels and buildings in a state are described. In developed countries, the value of land registration systems has expanded from being primarily a mechanism to quiet titles, reduce disputes and support efficient land markets, to being an important source of land information essential for the support of good governance and sustainable development. While this recognition and reality will most probably not be seen for some time in most developing countries, again there is an inevitability in the

trend and as such developing countries should be aware of the need and the trend (Williamson, 2000).

Furthermore, Williamson (2000) alludes that a sustainable development objective requires all land to be included or recorded in the land administration system. This means the cadastre must be complete. In other words the land administration infrastructure should include all rights, restrictions and responsibilities with regard to all lands in a country. This means all state, private, traditional or customary, and forest lands, should be identified in the one land administration system. Without a complete cadastre, land can be "stolen", land tax processes are open to corruption, transparency in land administration is lost and good governance is undermined. While the reality is that such a vision may not be possible in the short to medium term in developing countries, it should be the accepted policy which provides a road map for future development. Most land tiling, land administration or cadastral projects world-wide do not attempt to establish a complete cadastre. The adoption of a policy of a complete cadastre has only been adopted in many developed countries in the last 10-20 years. However to some degree the strategy of separate projects, say focused on adjudicating private lands, was promoted in an era prior to the recognition of the key role that land administration plays in promoting sustainable development.

CHALLENGES OF CADASTRAL SYSTEM IN NIGERIA

As noted by researchers such as Oboli & Akpoyoware (2010); Burns *et al* (2007) the problems of Cadastral Survey in Nigeria relates to factors such as: the operation, funding and public perception of the need or its desirability. Funding has a great role to play since it has a direct impact on the mode of operation. There is a distinct lack of dynamic cadastral maps as well as inadequacy of up-to-date and accurate ground control system in the country. The cadastral surveying problem in implementing the land reform agenda is how to meet the requirements of the legal cadastre with maximum efficiency and minimal cost. The low government budgetary allocation accorded to surveying and mapping has not improved the situation.

However, for land reform to achieve any meaningful results, it must be based on accurate representation of features in their correct locations on the Land Cadastre. This can only be achieved through well trained and technically competent personnel, availability of necessary modern technology, speedy update of land status with development trends amongst others. The development for cadastral datasets in a digital environment is both technically complex and capital intensive. Majority of Surveyors in private practice lack the capacity (both in trainings and funds) to undertake such complex projects. The technology available for the execution of survey and mapping projects is rapidly changing and requires a lot of resources to acquire. The current practice where every Surveyor owns a Firm will not provide a strong capital base to procure these advanced equipment such as aerial photography; satellite imagery; geographic information systems [GIS] or the global positioning system [GPS] for effective service delivery.

V. CONCLUSION AND RECOMMENDATION

CONCLUSION

As noted by Atilola (2010), there is no country in Africa and developing countries whose land tenure system satisfies any of the objectives of the above ideal land policy. At best what some of these countries have is "urban cadastre" for the affluent. The inadequacies of the current land tenure system as embodied in the Land Use Act, informed the agitation for its review by many stakeholders. Apart from the need to overhaul the land tenure system, the present administration in the country was made to realize that there could be no true development without the economic empowerment of the rural dwellers through the conversion of their natural asset, land, to capital by granting those titles to their land holding and creating an open land market economy.

Thus, cadastre is a very essential ingredient for effective management of the land resource. Cadastral system aids planning as they constitute a veritable land data base for identifying available land for development. It is imperative that credible progress is made towards Land reform, if Nigeria is to become one of the major players in the world economy. The Cadastral system and its evolutionary trend have not achieved the ultimate purpose of serving as a ready tool for good governance, more commitment from government in terms of funding and proper planning for the population growth, urban sprawling, and environmental management. However, there is a significant correlation between good governance and good Cadastre Management.

Furthermore, most governments should realize that the benefits being to be derived from this policy, especially in the land administration context include:

- ✓ development of a spatial information marketplace,
- ✓ subsequent dealings within the land administration system,
- ✓ economic development,
- ✓ social stability,
- ✓ reduced land disputes, and
- ✓ improved environmental management

The plan for the future can be enhanced by examining current trends of capacity building in the world to bring the system in Nigeria in line with modern developments. Up to date Large Scale/Cadastral maps will be required for planning and economic development. Hence the surveyor will play a very important role in the data acquisition, preparation and updating of Cadastral Maps and plans. Thus, the need for Digital Mapping of the country should be identified by several concerns and the issue now is how best to provide this cost effectively. Acquisition of digital aerial photography of Nigeria with collaborative efforts of both government and private individual, then production of Orthophoto map to assist in identifying boundaries of land holdings in the country appears to be the procedure envisaged by the Committee on Land Reform.

Ideal land reform would require reliable and modern land information infrastructure. The modernization of Cadastral and Land registration systems would lead to a substantial improvement in development of a land market economy and sustainability of the land reform process. Land reform in

Nigeria must include land use mapping and land policy reforms to increase efficiency and growth in the sector. Land Reform should remove barriers to access and use of Cadastral data to service land markets and therefore usher in a new era of land market economy.

RECOMMENDATIONS

- ✓ As Arnold Meltsner describes “an analyst or policy maker as a man the wear three caps, he must be a technician, a politician and an entrepreneur”. Accordingly, a technician is a policy maker with superb analytic skill, but weak political skills, who would rather be right than on time. A politician is a person who has eschewed an analytic role for the role that is more overtly political. While, an entrepreneur is both very adept at analysis and skill politically, one who know how to work with both number and people, does not let it immediate client has strong normative views of the scope of government activity, is concerned about distribution as well as efficiency. It is therefore required of the surveyor and other relevant professionals involved in land administration and cadastral system to be fully endowed with these necessary skills.
- ✓ For the sustainability of the systems to be ensured, there should be cordial and mutual interaction between the professional and the people, so as to build their confidence, particularly by negating disputes and managing points of tension relating to land ownership, use and availability.
- ✓ There should be a fair and transparent process on the part of the government. Lopsided governmental process in land administration leads to conflicting and gap-ridden bodies of laws, standards and documents, but with little cohesion and mutual reinforcement of legal and economic norms.
- ✓ Free access to Geo-spatial information and data will enhance the smooth running and the survival of the systems, professional in GIS and other relevant specialists should engage in mutual relationship, hence, this will promote and facilitate easy exchange of needed information and data.

Whereas Geo-spatial Information System (GIS) is fast becoming a vital tool in land administration system, technical capacity must be built in GIS, Remote Sensing and other related areas.

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