



- **DEVELOPING CAPACITY FOR LAND REFORMS THROUGH GEOSPATIAL COMPETENCIES AND EDUCATION(8353)**

- ***(TS05G-TEACHING & LEARNING FOR THE FUTURE)***

**BY**

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## RESEARCH OVERVIEW

- **THIS STUDY WILL BE OF TWO PARTS:**
- **-(A) CAREFUL REVIEW OF LAND DEVELOPMENTS IN NIGERIA**
- **-(B) DEVELOPMENT OF THE APPROPRIATE MODELS AND TECHNICAL REQUIREMENTS FOR AN EFFICIENT LAND REFORM AGENDA (GEOSPATIAL PERSPECTIVE)**



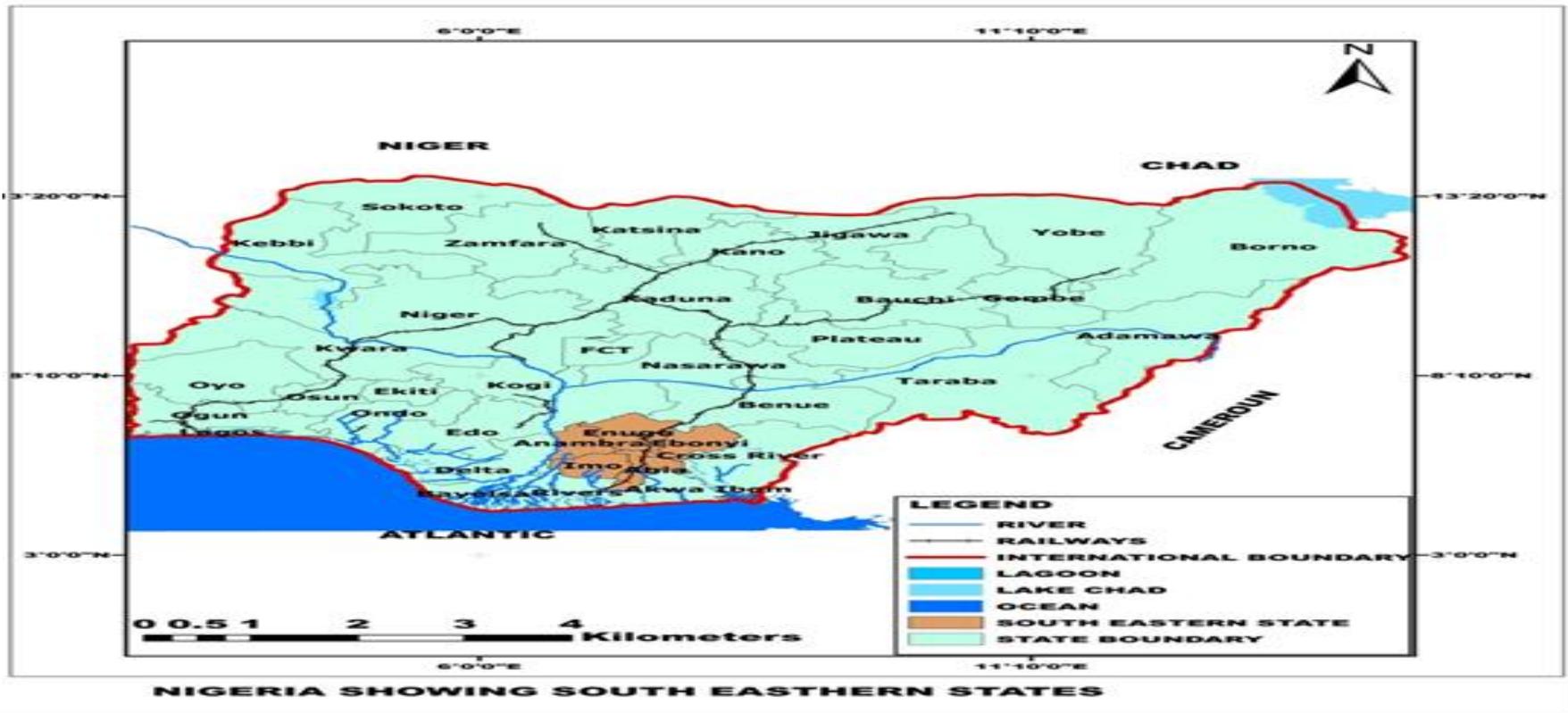
# FIG Working Week 2016

CHRISTCHURCH, NEW ZEALAND 2-6 MAY 2016

Recovery

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## THE FOCUS OF THIS WORK IS NIGERIA





## NIGERIA IN PERSPECTIVE

- **LOCATION** : West Africa bordering the Gulf of Guinea between Benin and Cameroon.
- **CAPITAL** : Abuja.
- **POPULATION**: 175,031,164 estimated.
- **Ethnic Groups**- over 250 including Hausa& Fulani, Yoruba, Igbo, Ijaw, Kanuri, Ibibio, Tiv.
- **Religion**: Muslims, Christians, Indigenous religion.
- **Language**-Official English, Major national languages- Niger-Congo(Yoruba, Ibo), Afro-Asiatic(Hausa & Kanuri).
- **National Pride**-Giant of Africa, Vast endowment with natural resources. Land Area: 910770 sq. km in 2014( World Bank records, excluding inland waters boundaries, National claims to continental shelves, Exclusive Economic Zones).



## INTRODUCTION

- Throughout civilization, land remains the most important asset of any individual or society.
- It is the basis of human existence on which all economic, political, social and cultural activities thrive.
- use and management of land determine greatly the extent and nature of development of all societies, including Nigeria (**Draft National Land Policy, 2015**).



## INTRODUCTION

- It is the resource that has no cost of production and, although its usage can be switched from a less to more profitable one, its supply cannot be increased (**Adeniyi, 2013**).
- The term 'land' includes all physical elements in the wealth of a nation bestowed by nature such as climate, environment, fields, forests, minerals, mountains, lakes, streams, seas, and animals



## INTRODUCTION

- **The central role of land in the economic, social, political and socio-cultural development of the country cannot be over-emphasized.**
- **Land can be used in the following areas:**
  - **i. For Sustainable housing delivery**
  - **ii. For accelerate growth of urban economies**
  - **iii. For rural planning and development (agricultural land).**
  - **(iv) For farming, livestock production, and related activities.**



## INTRODUCTION

- v. For transportation sector of the economy
- vi. As forest land to provide for many households sustenance
- vii. For tourism which contributes significantly to Nigerian GDP
- viii. For sports infrastructure
- ix. For educational infrastructure
- x. For grazing reserve.
- xi. For industrial development.



## INTRODUCTION

- For energy infrastructure which is a critical driving force of economic growth and development of any country by enhancing productivity and quality of life.
- xiii. For coastal, maritime, wetlands and water resources management.
- xiv. For security infrastructure. This covers military, paramilitary, financial, economic, and social security infrastructures **(Draft National Land Policy.2015)**



## INTRODUCTION

- Most elements of the Act are disregarded by the majority of the land owners. Sale of land, forbidden by the Act, has been reoccurring unabated.
- The Act has not mitigated land speculation; rather it has driven it underground with attendant under development of the country.



## INTRODUCTION

- This has led to overall under development of Nigeria; furthermore, there had been total neglect or selective neglect of the impact of geospatial competencies in the realization of the land reform agenda and efficient land administration.



## TRADITIONAL LAND TENURE SYSTEM

- Traditional tenure system placed major constraints upon the achievement of efficient agricultural production and physical development, which led to **land use act-promulgation by the government in 1978.**
- This land use act promulgation by the government thirty years ago failed to take into sufficient consideration the modifications that have taken place in the traditional tenure system by treating land as free good.



## RESEARCH ISSUE AND GAPS HOPED TO BE FILLED

- In **Kenya**, according to Njuguna and Baya (2013), the structural framework and principles for the management and administration of land inherited from colonial times has largely failed to instill confidence in the land market.
- Some of the problems within the land sector in Kenya may be attributed to its colonial history and proliferation of statutes governing ownership and use of land, the quality and security of tenure, environmental issues, broad socio-economic patterns and demographic trends.



## RESEARCH ISSUE AND GAPS HOPED TO BE FILLED

- According to Njuguna & Baya, Kenya does not have a clearly articulated national policy that spells out the relationship between the people, the STATE and the land. This problem(lack of national land policy) led to haphazard manner of land administration in **KENYA**.
- **In Rwanda**, for many years ago, rights over land for women and female orphans were not recognized. The causative factors were the existence of inefficient land administration system and the prevalence of traditional system of land tenure which were unfavorable and female gender discriminatory (**Uwayezu & Mugiraneza, 2011**).



## RESEARCH ISSUE AND GAPS HOPED TO BE FILLED

- The land administration situation in **Ghana** prior to the implementation of the Land Administration Project has been aptly described in the **National Land Policy of 1999** as follows:
  - (i) **General indiscipline in the land market characterized by a high spate of land encroachments.**
  - (ii) Indeterminate boundaries of customary owned lands resulting directly from lack of reliable maps/plans, and the use of unapproved, old or inaccurate maps, leading to land conflicts and litigation.



## RESEARCH ISSUE AND GAPS HOPED TO BE FILLED

- (iii) **Compulsory acquisition** by government of large tracts of lands, which have not been utilized to the full and for which payment of compensation has been delayed.
- (iv) **Inadequate security of land tenure** due to conflict of interests between and within land-owning groups and the state, land racketeering, slow disposal of land cases by the courts and a weak land administration system.
- (v) **Difficult accessibility to land for agricultural**, industrial, commercial and residential development purposes due to conflicting claims to ownership, and varied and outmoded land disposal procedures



## RESEARCH ISSUE AND GAPS HOPED TO BE FILLED

- **Weak land administration system characterized by lack of comprehensive land policy framework, reliance on inadequate and outdated legislation, lack of adequate functional and coordinated geographic information systems and networks, as well as of opaque guidelines; poor capacity and capability to initiate and coordinate policy actions, let alone resolve contradictory policies and policy actions among various land delivery agencies.**
- **The net effect of these constraints is a distorted and dysfunctional land market that is not investor and development oriented and which cannot guarantee security of tenure, resulting in high transaction costs and high incidence of poverty.**



## THRUST OF THIS WORK-ADVOCACY

- Based on the **identified gaps** and inherent shortcomings of land administration in Rwanda, Kenya, Ghana and Nigeria, **“the thrust of this research”** is to trace the long history land administration before and during the land use act in Nigeria, the land reform process so far and and the grains to be harnessed from the application of geospatial competencies and education in the overall Land Reform Programme in Nigeria.





## WHAT IS LAND REFORM?

- Puja Mondal([www.yourart.com](http://www.yourart.com)) in the article titled “ Land Reforms in India, defined Land reforms as the redistribution of property rights in land for the benefit of small farmers and agricultural labourers. In a broader sense, land reforms include two types of institutional changes. One relates to agrarian relationship and the other to the size of the unit of cultivation.



## WHAT IS LAND REFORM?

- A United Nations publication has defined land reforms as measures concerning the reform of the land tenure only. All other measures are included in agricultural reorganization.
- Hence, according to Lipton, land reforms are only those reforms in land which improve the distribution of income among the persons affected by these measures.



## OBJECTIVES OF LAND REFORMS

- The following are the major objectives of land reforms:
- (i) increasing productivity (ii) Ensuring social justice (iii) Attaining a planned growth (iv) Providing incentives (v) Employment creation.
- Philip Raup noted that land reforms should be a synergy of redistribution of rights in land and supporting measures that are necessary to achieve three objectives of land reforms-social, political health and agricultural output expansion. However, some of thought had argued that these three core objectives can not be achieved at the same time.



## OBJECTIVES OF LAND REFORMS

- Sanket Suman opined in his work entitled “Land Reforms: Meaning, Objectives and Different Measures” that land reforms constitutes the most important package of measures to improve the economic conditions agricultural tenants.
- He noted that land reforms aims at the redistribution of land ownership in favour of the cultivating class, regulation and rationalization of rent, improving size of farms and providing security of tenure in order to transfer in traditional agriculture and raise cultivators to new pedestals.



## OBJECTIVES OF LAND REFORMS

- He further stated that in the ultimate analysis, agricultural development and rise in productivity depends upon two factors- technological and institutional.
- Land reforms become indispensable to this end and thus help to move towards establishing an egalitarian society by ending the exploitation of the poor by the rich and narrowing economic inequality.



## GEOSPATIAL SCIENCE AND LAND REFORMS ??

- **Geospatial science is a discipline that focuses on using information technology to understand people, places, and processes of the earth. Spatial analysis of human and physical variables is fundamental to the discipline.**
- **Remote sensing, Geographic information system, and Global positioning systems technologies are commonly used as measurement , observation and analysis tools.**



## GEOSPATIAL SCIENCE AND LAND REFORMS ??

- The discipline is a science of foremost because the scientific method is used to answer questions and draw conclusions( evidence based). Tools of inquiry in geospatial science include formulating hypotheses, collecting data, conducting statistical analysis of the data, and making conclusions that are supported by data and evidence.
- What differentiates geospatial sciences from other disciplines is the conclusion made include spatial component(<http://www.radford.edu/contents/csat/> accessed on 15/02/2016).



## WHAT IS GEOSPATIAL DATA & ANALYSIS?

- **Geospatial data is a record if it is created or received in the course of doing mapping, surveying or EPA business, and it provides evidences of the Agency's actions, programs, and other activities. For example, maps( vector, raster, thematic) used to examine developments patterns and conduct scenarios for growth management and transportation planning.**



## WHAT IS GEOSPATIAL DATA & ANALYSIS?

- Thus, geospatial analysis is the gathering, display, and manipulation of imagery, GPS, Satellite photography and historical (iconic) data, described explicitly in terms of georeferenced coordinates, or implicitly in terms of street address, postal code, forest and identifier as they are applied to geographic models.



## WHAT IS GEOSPATIAL DATA & ANALYSIS?

- Geoinformatics (classically called Surveyors), are responsible for using geographic data that supports military/civilian operations for Disaster Relief and Homeland Security.
- They collect, analyze and distribute spatial information to represent the terrain and its possible effects (anthropogenic factors).



## WHAT IS GEOSPATIAL DATA & ANALYSIS?

- The task of having a sustainable national development has become so complex, that the demand for current and up-to-date geospatial information is increasing on daily basis (Igbokwe, 2010).
- Traditionally, Surveyors are legally responsible for acquisition of geospatial data for mapping in national planning and development using classical survey techniques.



## WHAT IS GEOSPATIAL DATA & ANALYSIS?

- **These classical survey techniques include chaining with tapes, traversing with theodolites, trilateration, triangulation, Astro-fix, etc.**
- **These classical survey techniques are tedious and time consuming, they used survey algorithms that invariably affect the data acquisition, processing, storing and sharing processes**



## LAND REFORM IN NIGERIA-THE JOURNEY SO FAR!!

- Chigbu et al.(2016)-Gender land policies in Sub-Saharan Africa: Panacea Hunger and Poverty(<http://www.conftool.com>), World Bank Annual Conference on Land and Poverty,2016, Washington DC, the authors identified that, land globally provides house holds with basic necessities for living.
- It provides the basic starting point for shelter, subsistence and market production in developing countries like in Sub-Saharan Africa. Despite the importance of land in S/A women land rights are still being treated with kid-gloves.
- Therefore, there is an advocacy for the scaling-up of gender sensitive land policies and reforms as a panacea for hunger and poverty.



- **LAND REFORM IN NIGERIA-THE JOURNEY SO FAR!!**

- Based on the above truism, a quick x-ray of the land reform process in Nigeria is made here:
- 1883-Registration ordinance enacted in Nigeria
- 1910-Ordinance mandating Governor to hold and administer land for use and common benefit of the native.
- 1912-Special land committee to investigate land systems in W/A
- 1923-land instrument registration ordinance enacted
- 1925-land instrument registration law passed (Inherently faulty in rights registration)
- 1978-the land use Act came into force( No clear guidelines exists today for the registration of rights of occupancy held by Nigerians as envisaged by sections 34(3) & 36(3) of the Act in Nigeria today(Presidential Technical Committee on land reform,2012).
- 2009-Setting up of the Presidential Technical Committee on Land



## LAND REFORM IN NIGERIA-THE JOURNEY SO FAR!!

- The PTCLR(2012) noted strongly that attempt made by some states to address continued land registration have always been equated to mean the computerization of the Registration process and nothing more. They observed that in spite of the various computerization projects embarked upon by states, land registration remained cumbersome, with low patronage by the people. This is also a common phenomenon all over the world where computers alone are deployed with no actual process in place to attract land owners for registration. In the absence of any transparent and participatory land registration process, the acquisition of all types of GIS system of different specifications is leaving the system more chaotic.



## LAND REFORM IN NIGERIA-THE JOURNEY SO FAR!!

- **SLTR-ADVOCACY**: In the midst of the chaos on the land registration process in Nigeria, the PTCLR identified the SLTR-Systematic Land Titling Registration as the reasonable and preferred method for the rapid and transparent registration of interest in land under the land use Act.
- **HOWEVER, the SLTR, REQUIRES the following for success:**
- (i) Has been in existence in other countries since 1980
- (ii) Requires collaborative participation by land owners to identify their boundaries with the endorsement of their neighbouring landowners giving credence to the transparency and validity of the outcome( clear cadastral/legal surveying).
- (iii) Incorporates a community-based process to resolve disputes( crowd sourcing/fit-for-purpose principle).



## LAND REFORM IN NIGERIA-THE JOURNEY SO FAR!!

- **Most importantly, the SLTR process ensures that parcels of land are not registered any more in isolation but that the process ensures that all land comprised in the registration area is registered at the time, thereby making the process secure and cost-efficient. This is where the role of geospatial science and the contributions of surveyors in Land reforms Agenda of Nigeria would be harnessed.**
- **The big question is , can there be any proper land REFORM without proper Geospatial Competency and Education?**



## 8-MAN PRESIDENTIAL TECHNICAL COMMITTEE

- On April 2, 2009, the president inaugurated an 8-man Presidential Technical Committee on Land Reform with 7 mandates:
- (i) to collaborate and provide technical assistance to state and LGAs to undertake cadastral survey nationwide.
- (ii) to determine individuals' "possessory" rights using best practices and most appropriate technology to determine the process of identification of locations(xyz) and title registration of title holdings.
- (iii) to ensure that cadastral land boundaries and title holdings are demarcated in such a way that communities, hamlets, villages areas, towns , etc. will be recognized



## 8-MAN PRESIDENTIAL TECHNICAL COMMITTEE

- (iv) to encourage and assist state and local Governments to establish an arbitration / adjudication mechanism for land ownership conflict resolution;
- (v) to make recommendations for the establishment of National Depository for Land Title Holdings and Records in all states of the Federation and the Federal Capital Territory.
- (vi) to make recommendations for the establishment of a mechanism for land valuation in both urban and rural areas in all aspects of the Federation; and
- (vii) to make any other recommendations that will ensure effective, simplified, sustainable and successful land administration in Nigeria.



## PLACE OF GEOSPATIAL COMPETENCY/EDUCATION IN LAND REFORM PARADIGM

- **The seven thematic mandates of the PTCLR presupposes that a careful plan should be made to train, develop and sustain the required technical capacity (in Surveying and Geoinformatics Discipline and allied fields) in providing the technical requirements for the Land Reform programme in Nigeria**



## GEOSPATIAL COMPETENCY AND EDUCATION IN L/R

- Thus, Igbokwe (2010) opines that the acquisition of geospatial data in Nigeria, has not kept pace with the tremendous development so far witnessed in the country. Consequently, map data and other forms of geographic information existing in various government institutions are old and outdated because they are not regularly updated (Igbokwe, 2010).



## GEOSPATIAL COMPETENCY AND EDUCATION IN L/R

- This daunting problem calls for the use of a robust technique that will help in speedy acquisition of geospatial information for a sustained national development. Thus, remote sensing, which is geospatial science and technology that plays important role in the generation and distribution of geoinformation in a timely manner and at the required scale and quality (Igbokwe, 2010) comes to mind.



## PART B- TECHNICAL REQUIREMENTS & CAPACITY DEVELOPMENT

- The Land reform seeks “ to ensure that land cadastral boundaries and title holdings are demarcated in such a way that communities , hamlets, villages, village areas, towns, etc. will be recognized. This mandate requires a comprehensive cadastral survey of virtually the whole country.
- A cadastral survey is the mapping of a country on a scale large enough to show the land holdings of individuals or groups of individuals or entities.
- This involved: (i) Field survey (ii) Time-defined process of clarification or adjudication (iii) confirmation of claims (rights) through the registration of the title documents or statutory certificates of occupancy in the appropriate land Registry.



## OUR ADVOCACY-

- **Development of Appropriate/Competent Technical Know-how(through careful Education Planning)**
- **Adequate Curriculum Development(Schools, Polytechnics, Universities)**
- **Development of Synergy with appropriate Technical/Educational Regulatory bodies(NBTE-National Board for Technical Education in Nigeria, NUC-National Universities' Commission in Nigeria, SURCON-Surveyors' Council of Nigeria( Statutorily mandated to regulate Surveying in all ramifications in Nigeria)**
- **Industry Based training**
- **Graduate work/Internship/Pupillage**
- **Professional Qualification/Practice**



## CONCLUSION AND RECOMMENDATION

- **CONCLUSION:**
- **No country in this world can develop beyond the street or pedestal level without careful educational planning in all spheres of the National life. The efforts of the Presidential Technical Committee on Land Reform is commendable in selecting eight(8) universities for the preparation of the “customized” curriculum for the “training of the trainers”. However, a lot needs to be done in synergizing with other stakeholders in the “walking the talk”.**



## RECOMMENDATIONS

- **The following are recommended:**
- **Training of adequate geospatial capacity in the areas of Remote sensing, GPS, Specialized Surveying equipment, Hydrography, and Mapping generally. This will be a form of win-win strategy.**
- **Encouragement of Educational Institutions in terms of provision of the Hi-tech Equipment for training, grants, increased Educational Trust Funds, etc. Efforts of the Surveyors' Council of Nigeria (SURCON) is highly commendable for yearly providing academic scholarships, grants and equipment to deserving Polytechnics and Universities in Nigeria.**
- **Attracting Young ones to the profession in order to maintain a continuous life cycle. Any profession that refuses to procreate will go into extinction.**



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- **BINLOGRAPHICAL NOTES**

- **Chigbu NJIKE (*mnis*) is the Head of Department of Surveying and Geoinformatics of Abia State Polytechnic Aba, Abia State, Nigeria (An Academic Member of FIG). He holds a Ph.D in Surveying and Geoinformatics and presently appointed to the office of Director of Physical Planning of Abia State Polytechnic, Aba, Nigeria. Chigbu is a regular participant at FIG Working Weeks and World Bank Annual Land and Poverty Conferences in Washington District of Columbia (DC). He has many scholarly works to his credit. He is an active member of Nigerian Institution of Surveyors (NIS) and also a member of the Surveyor's Council of Nigeria (SURCON). Dr. Chigbu, Njike is a Seventh-day Adventist Christian, married to Mrs Jennifer Eziaku Chigbu and the marriage is blessed with three Children. His research interest is in Landuse and Land cover Mapping and Environmental sustainability using Geospatial techniques. He has a great passion in taking the Young Surveyors to the next level through constructive engagement and capacity building.**



## BIBLIOGRAPHY

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