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19-24 May

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LAND ADMINISTRATION SYSTEM- NIGERIA CONTEXT GNSS CORS AND EFFECTIVE LAND ADMINISTRATION

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21st May, 2024

@ La Palm Royal Hotel, Accra Ghana

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PRESENTATION OUTLINE

- INTRODUCTION
- LAND RIGHTS IN PRE-COLONIAL ERA IN NIGERIA
- ACCESS TO LAND
- PROBLEMS ASSOCIATED WITH THE PRE COLONIAL LAND RIGHTS
- MODERN METHOD OF LAND RIGHTS IN NIGERIA
- MODERN LAND TITLING AND OWNERSHIP IN NIGERIA
- CONTENTS OF CERTIFICATE OF OCCUPANCY (C OF O)
- PROCEDURES OF ACQUIRING CERTIFICATE OF OCCUPANCY (C OF O)
- CHALLENGES OF THE MODERN LAND TITLING IN NIGERIA
- DEFINITION OF CONTINUOUSLY OPERATING REFERENCE STATION (CORS)

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PRESENTATION OUTLINE CONTD

- ❑ APPLICATIONS OF CONTINUOUSLY OPERATING REFERENCE STATION (CORS)
- ❑ CORS CONTRIBUTION AS A PART OF A SUSTAINABLE LAND ADMINISTRATION POLICY
- ❑ HOW GNSS CORS NETWORKS CAN SUPPORT LAND ADMINISTRATION NEED FOR RELIABLE MAPPING
- ❑ CONCLUSION

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SUSTAINABLE DEVELOPMENT GOALS

International Federation of Surveyors supports the Sustainable Development Goals

Commission 5

Commission's name: Positioning and Measurement

SDG GOALS 9: SUSTAINABLE CITIES & COMMUNITIES AND 11: INDUSTRY, INNOVATION & INFRASTRUCTURE

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□ INTRODUCTION

- At common law, land is defined as the earth surface, subjacent things of a physical nature, everything attached to the earth surface and incorporeal rights (Onah, 2022).
- Land Administration Systems entail the management of land as a natural resource to ensure its sustainable use and development.
- In other words, they are concerned with the social, legal, cultural, economic and technical framework within which land managers and administrators operates.

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❑ INTRODUCTION CONTD

- The processes of land administration include the transfer of rights in land from one party to another through sale, lease, loan, gift and inheritance; the regulating of land and property development; 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 the use of land. (Land tenure and Rural Development, FAO Land Tenure Studies, No 3, Rome, 2002).
- Finally, Land Administration is the way in which the rules of land tenure are applied and made operational.

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❑ INTRODUCTION CONTD

- Land tenure is the relationship, whether legally or customarily defined, among people, as individuals or groups, with respect to land.
- Rules of tenure define how property rights to land are to be allocated within societies.
- They define how access is granted to rights to use, control, and transfer of land, as well as associated responsibilities and restraints.
- In simple terms, land tenure systems determine who can use what resources for how long, and under what conditions.

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❑ LAND RIGHTS IN PRE-COLONIAL ERA IN NIGERIA

Land rights in pre-colonial era were recognized under Native law and custom as;

- Communal ownership
- Family ownership
- Individual land holding
- Chieftaincy, traditional ruler or stool land ownership

➤ ACCESS TO LAND

People can have access to land through the following means;

- Purchase
- Leasing, or gaining access to land by paying rent to the owner.



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❑ ACCESS TO LAND CONTD

- Inheritance
- Loan
- Gift
- Adverse possession or prescription (the acquisition of rights through possession for a prescribed period of time)
- Share cropping
- Tenant at Government will

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❑ PROBLEMS ASSOCIATED WITH THE PRE COLONIAL LAND RIGHTS

- Lack of uniformity in the laws governing ownership
- Lacks formal documentation required for land ownership and title
- No proper demarcation of property boundaries which leads to conflicts and disputes and land use
- Non equal access to land rights by Nigerians on legal basis; people from other state cannot own a land outside their state.
- Communal clashes
- The issue of uncontrolled speculation in urban land
- Declination in socio-economic development
- Women and young people are not considered in land ownership due to tradition

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❑ MODERN METHOD OF LAND RIGHTS IN NIGERIA

Due to the challenges associated by the previous method of land tenure systems in Nigeria, and also for a uniform land Administration system across the country, the Land Use Act (LUA) of 1978 was promulgated by then Head of state; Olusegun Obasanjo, on the 29th of march 1978 and was enshrined in the 1999 Constitution;

➤ An Act to Vest all Land comprised in the territory of each State (except land vested in the Federal government or its agencies) solely in the Governor of the State , who would hold such Land in trust for the people and would henceforth

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❑ MODERN METHOD OF LAND RIGHTS IN NIGERIA CONTD

- be responsible for allocation of land in all urban areas to individuals resident in the State and to organizations for residential, agriculture, commercial and other purposes while similar powers will with respect to non urban areas are conferred on Local Governments.

❑ MODERN LAND TITLING AND OWNERSHIP IN NIGERIA

- The Minister of the Federal Capital Territory (FCT) and the State Governors in a bid to provide legal titling for organizations and citizens, they issue certificate

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❑ MODERN LAND TITLING AND OWNERSHIP IN NIGERIA CONTD

- of Occupancy (C of O) to land owners in the fulfilment of the procedures involved in gaining such title to land.
- A certificate of occupancy is a document issued by the Nigerian government to a land owner as legal proof of ownership.
- According to Section 9 of the Land Use Act of 1978, every state Governor in Nigeria is the custodian of all the Land in his/her state. The Governor also reserves the exclusive right to issue a certificate of occupancy.

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Fig.1: Certificate of Occupancy



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- ❑ **CONTENTS OF CERTIFICATE OF OCCUPANCY (C OF O)**
- **Certificate of Occupancy number**
- **Size of the Plot**
- **Date Issued**
- **Plot Number**
- **File Number**
- **Location of the Plot**
- **Survey Plan (Title Deed Plan)**
- **Terms and Conditions**
- **Term of Lease and purpose of land use**

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❑ PROCEDURES OF ACQUIRING CERTIFICATE OF OCCUPANCY (C OF O)

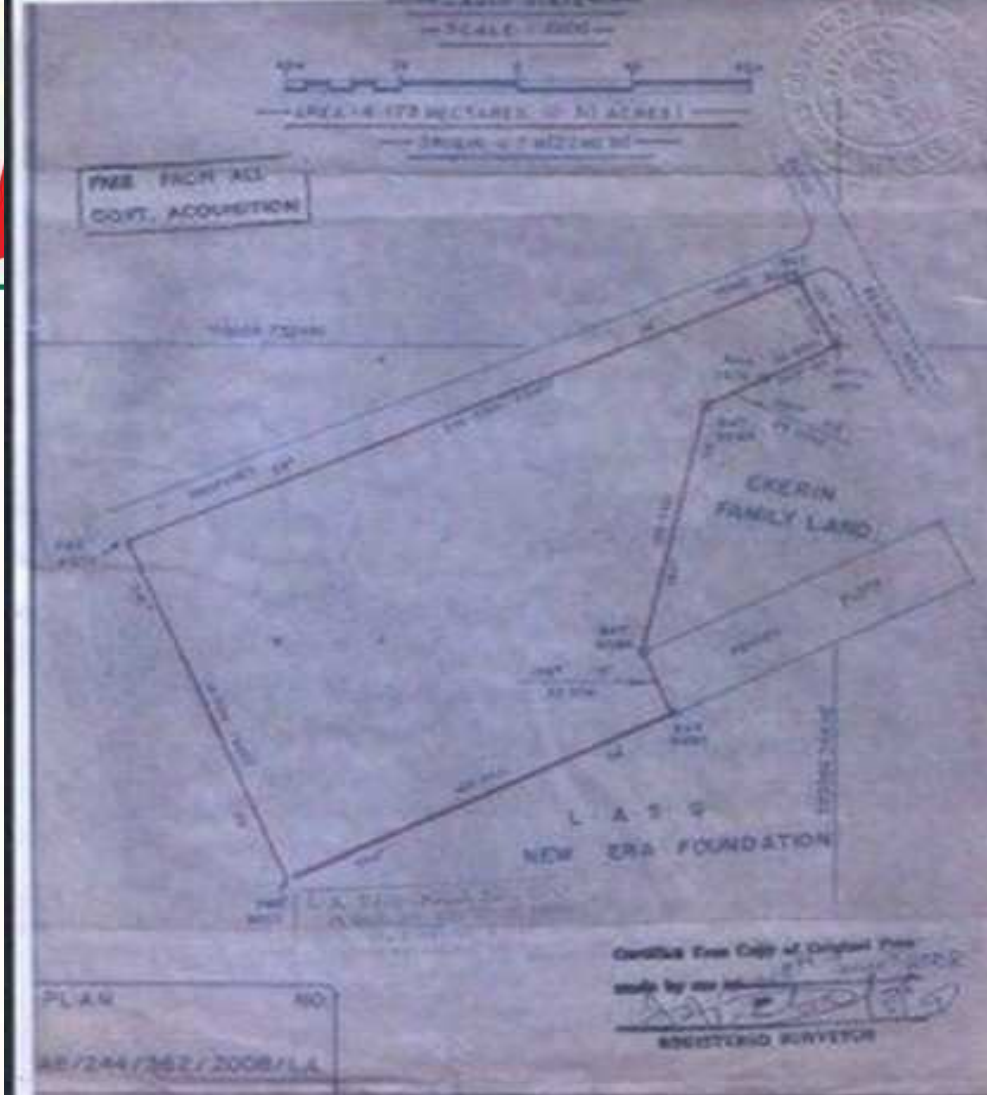
- Submission of forms and documents; offer letter, Title Deed Plan (TDP), Deed of Assignment/Purchase receipts, passport photograph, site photograph, approved building plan, evidence of tax payment/clearance, EIA report, Soil test report, NIN, BVN.
- Payment of Government assessment fees
- Publication of names in the national dailies
- Site inspection
- Processing of the C of O title
- Signing of the C of O by the FCT Minister or State Governors
- Registration and the collection of C of O; stamping, registration and documentation for future references.

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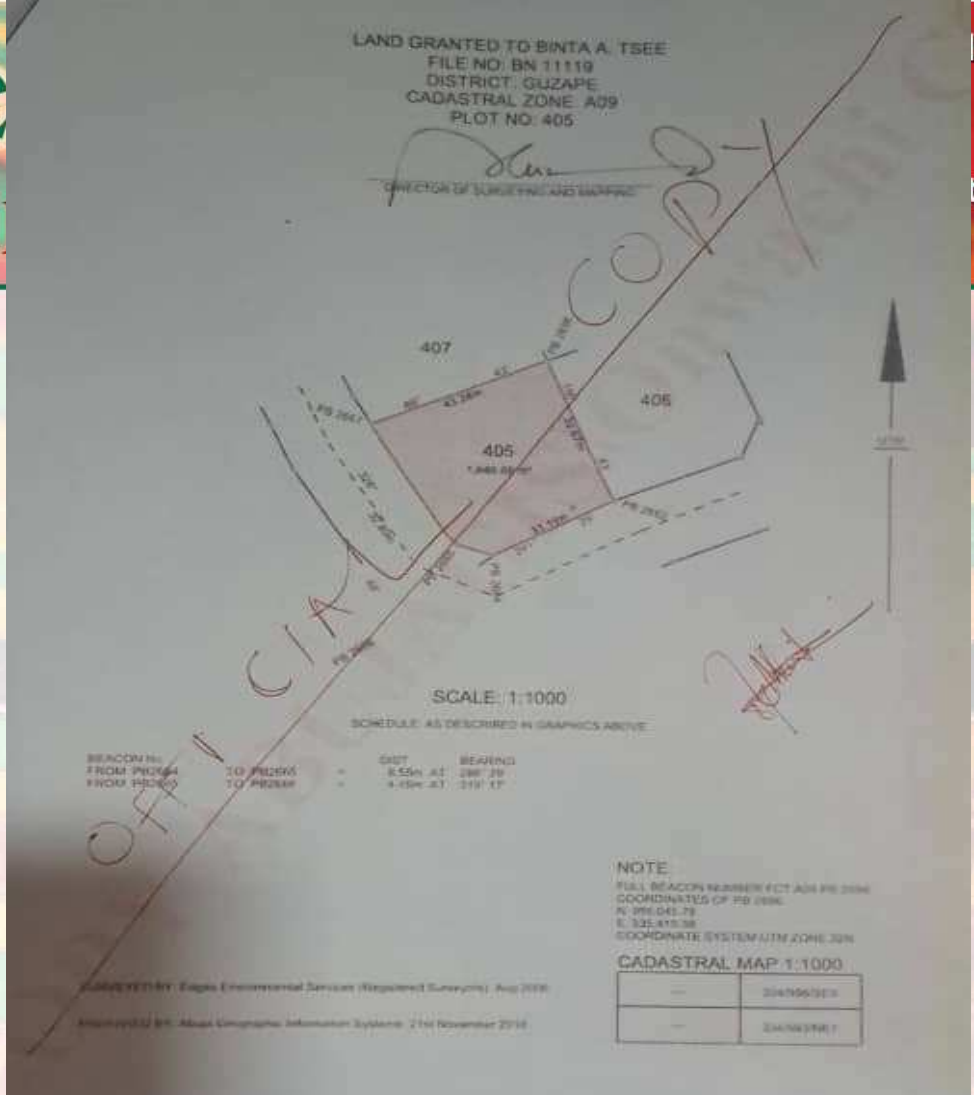
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Recent Update: Since November 2023, National Identification Number (NIN) and Bank Verification Number (BVN) are needed to get C of O in FCT.

Fig.2: Title Deed Plan produced by a Land Surveyor



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- ❑ **CHALLENGES OF THE MODERN LAND TITLING IN NIGERIA**
- **Government bureaucratic processes**
- **Delays in the issuance of C of O (long duration of land registration)**
- **High cost of land registration**
- **Gathering of the land documents are time consuming, stressful and expensive**
- **Processing fee for C of O is highly costly**
- **Low turn out in land registration**
- **The women and the young people find it difficult to own a land because of the high cost of purchasing land and the registration as well**
- **Lands for agricultural purposes are reduced**

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- ❑ **DEFINITION OF CONTINUOUSLY OPERATING REFERENCE STATION (CORS)**
- A CORS is a GNSS reference station that provides continuous and permanent real-time positioning information for a specific area.
- A COR station is occupied by a GNSS receiver that collects GNSS data continuously.
- CORS is a permanently installed geodetic quality receiver and antenna positioned over a survey monument which collects GNSS data 24/7.
- The station is useful for three dimensional position determination, climate change prediction, tectonic plate movement monitoring, deformation monitoring, precision agriculture, meteorology, erosion and desertification monitoring.

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Fig 3. CORS at OSGoF roof top Abuja

Source: OSGoF

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**Fig 4. MGBO OSGoF CORS
AT MAIDUGURI BORNO STATE**

Source: OSGoF



**Fig 5. LAGOS OSGoF CORS
AT LAGOS STATE**

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User's Manual



Site name	Location	Agency	Action
ABFCOONGA	Abuja - Nigeria	OSGoF	Details Daily Hourly
AKDNOONGA	Akure - Nigeria	OSGoF	Details Daily Hourly
ASDEOONGA	Asabo - Nigeria	OSGoF	Details Daily Hourly
BOLAONGA	Iworo - Nigeria	OSGoF	Details Daily Hourly
BEKEDONGA	Birin Kebbi - Nigeria	OSGoF	Details Daily Hourly
CBCROONGA	Calabar - Nigeria	OSGoF	Details Daily Hourly
EKAKOONGA	Eket - Nigeria	OSGoF	Details Daily Hourly
ENENONGA	Enugu - Nigeria	OSGoF	Details Daily Hourly
EPLADONGA	Ibomwon - Nigeria	OSGoF	Details Daily Hourly
IBOYONGA	Ibadan - Nigeria	OSGoF	Details Daily Hourly
KNKNOONGA	Kano - Nigeria	OSGoF	Details Daily Hourly
LGLADONGA	Lagos - Nigeria	OSGoF	Details Daily Hourly
MGBOONGA	Maiduguri - Nigeria	OSGoF	Details Daily Hourly
OWIMONGA	Owerri - Nigeria	OSGoF	Details Daily Hourly
PHROONGA	Port Harcourt - Nigeria	OSGoF	Details Daily Hourly

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Fig 6.OSGOF
CORS
WEBSITE

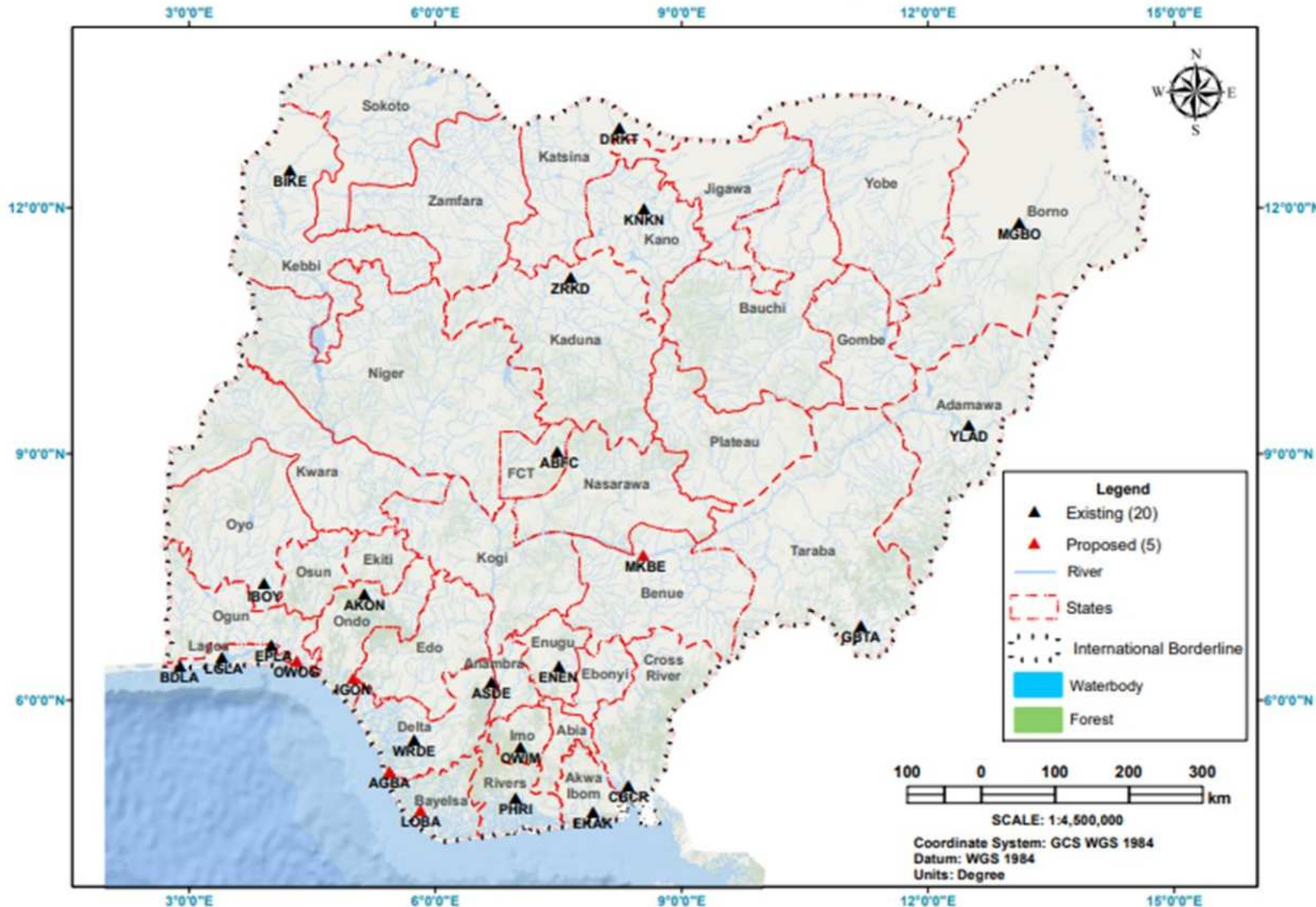




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MAP OF OFFICE OF THE SURVEYOR GENERAL OF THE FEDERATION
CONTINUOUSLY OPERATING REFERENCE STATION (CORS) IN NIGERIA



Website to access CORS Data
miranet.nignet.net

- 20 Existing CORS
- 5 proposed CORS

Fig.5: OSGoF CORS

Source: OSGoF

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- ❑ APPLICATIONS OF CONTINUOUSLY OPERATING REFERENCE STATION (CORS)
- ❑ Surveying and Mapping: Cadastral, topographic, property, hydrographic etc.
- Monitoring of the motion of critical structures such as dams, bridges, etc.
- Monitoring horizontal and vertical crustal motion, plate tectonics for earthquake prediction.
- Construction and engineering
- Land Management
- Fleet Management
- DEM Generation and Precision Agriculture

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- ❑ **CORS CONTRIBUTION AS A PART OF A SUSTAINABLE LAND ADMINISTRATION POLICY**
- **Accurate delineation of property boundary**
- **Eradication of ambiguity in the preparation of Title Deed Plan for land registration; Real-time data for positioning and accurate production of Title Deed Plans**
- **Proper topo delineation of the area**
- **Improved tenure security**
- **Professional authentication of the survey**
- **Reduced communal crisis/clashes**
- **Mitigate boundary disputes**

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- ❑ **CORS CONTRIBUTION AS A PART OF A SUSTAINABLE LAND ADMINISTRATION POLICY**
 - Efficiency and cost-effectiveness for proper land demarcation
 - Standardization and interoperability
 - Transparency and accountability
 - It is essential for ensuring accurate, efficient, and transparent land management practices.
 - Improved accuracy in cadastral and property boundary definition.
 - By leveraging the benefits of GNSS technology, Land Administrators can improve the reliability of land surveying and mapping data, enhance

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❑ CORS CONTRIBUTION AS A PART OF A SUSTAINABLE LAND ADMINISTRATION POLICY

- decision-making processes, and promote sustainable land use and development.

❑ HOW GNSS CORS NETWORKS CAN SUPPORT LAND ADMINISTRATION NEED FOR RELIABLE MAPPING

- GNSS data can be integrated with other mapping technologies such as LiDAR and photogrammetry to create multiple source data sets for accurate and detailed maps.

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- ❑ HOW GNSS CORS NETWORKS CAN SUPPORT LAND ADMINISTRATION'S NEED FOR RELIABLE MAPPING CONTD
- GNSS is used to measure the Earth's shape, size, and orientation in space, as well as to determine the precise position of points on the Earth's surface. This information is used to create accurate maps, measure land boundaries, and perform geodetic surveys.
- CORS reference network uses high-precision GNSS receivers and antennas, which are able to provide accurate positioning information to within a few centimeters.

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- ❑ **HOW GNSS CORS NETWORKS CAN SUPPORT LAND ADMINISTRATION'S NEED FOR RELIABLE MAPPING CONTD**
- **GNSS has allowed low-cost automatic processes for the capture of georeferenced data for mapping purposes.**
- **Aids in the preparation of GIS database of a specific area.**
- **Aids in the generation of orthophoto, DSM and DEM**
- **Georeferencing of maps using accurate GNSS CORS geodetic coordinates.**

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❑ CONCLUSION

- A fit for purpose land administration system is required where the cost of acquiring land titling will be minimal for all citizens to benefit in Nigeria.
- Harmonization of the cost of processing C of O in all states of Nigeria and the Federal Capital Territory should be done.
- The Survey content of the Land Use Act where Surveyors are seen as professionals should be enshrined in the Land Use Act when room for amendment arises.
- Land grabbing should be discouraged by government for accessibility of land to all.

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❑ CONCLUSION CONTD

- Adequate funding should be provided by Government for CORS densification which ensures more accurate position fixing.
- Higher density provides good reception coverage for positioning results, prediction and monitoring of natural disasters.
- CORS should be a priority area of government to ensure unification of datum which is in line with African geodetic Reference Frame (AFREF) initiative.
- “African initiative is to unify the Geodetic Reference Frames of Africa based on the ITRF through a network of GNSS base stations at a spacing such users will be

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❑ CONCLUSION CONTD

- at most within ~ 500km of a base station.” (Windhoek Declaration 2002)
- Currently Nigeria has migrated from Minna datum to a geocentric datum referenced to International Terrestrial Reference Frame (ITRF).
- Land Administration practices should be referenced to geocentric datum in Nigeria, for data homogeneity across the country.
- GNSS CORS Network is inevitable in terms of navigation, positioning and timing both in land administration practices and other application areas.

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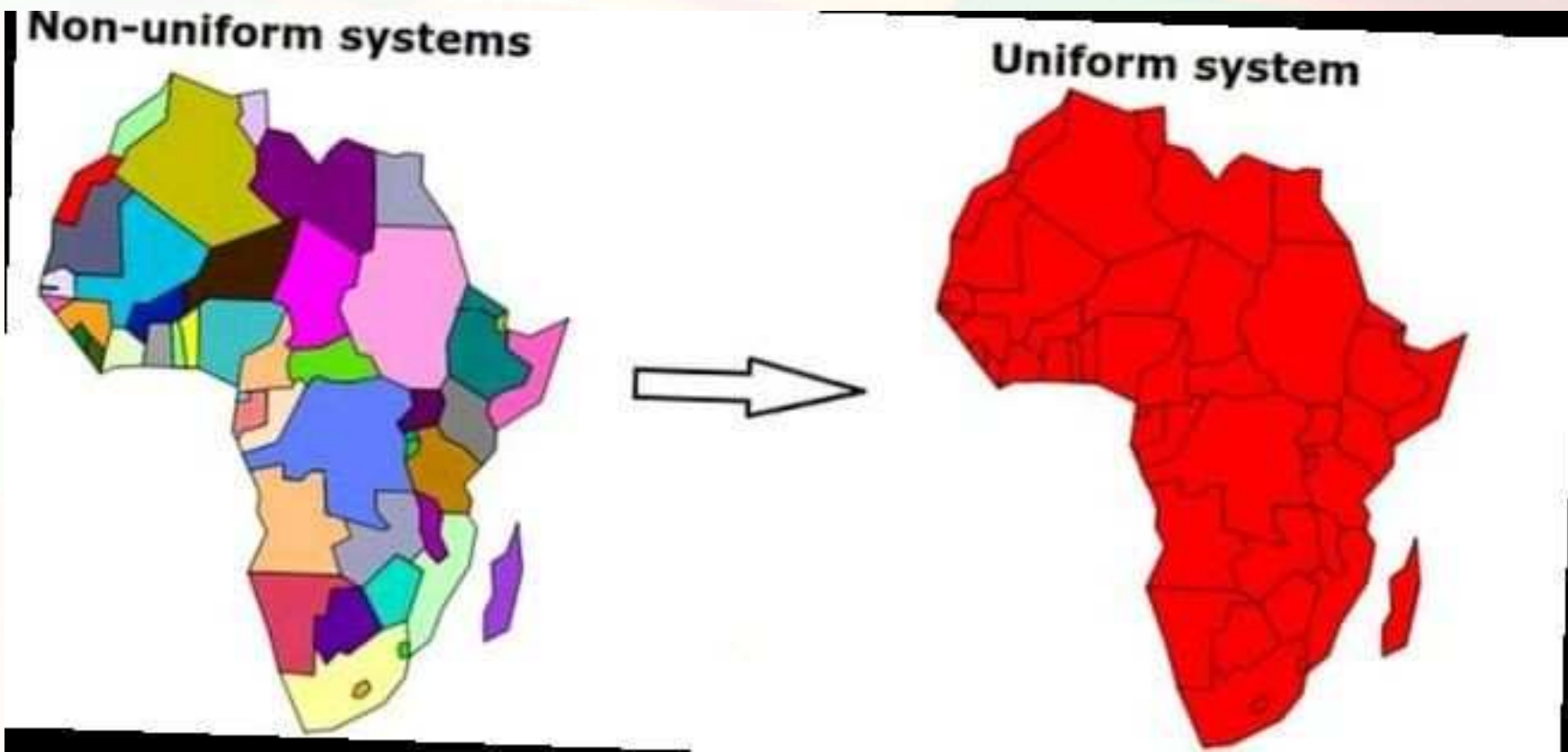


Fig.6: AFREF

Source: Muramira Syllion Regis



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