

**SYSTEMATIC LAND TITLING AND REGISTRATION IN NIGERIA:  
GEOINFORMATION CHALLENGES**

Presented at the

**FIG WW 2013  
ENVIRONMENT FOR SUSTAINABILITY  
ABUJA, NIGERIA, 6-10 MAY, 2013**

By

**Olusola ATILOLA, Nigeria**

## SUMMARY

The Paper discusses the following:

- Various aspects of the Land Reform Agenda
- The Mandates Presidential Committee on Land Reform
- The pivot of the land reform programme: systematic land titling and registration of all lands in Nigeria
- The role of appropriate geoinformation in the implementation and Reform Agenda
- Adequate mapping of the the entire country and the creation of digital database to drive the land reform agenda
- The adoption of fixed boundary system using GNNS and CORS for the cadastration in systematic land titling and registration
- Use of appropriate professionals and best practices

## NEED FOR LAND REFORM

- ❑ The current land tenure system concentrates on titling of the urban land which constitutes about 3% of the country's national space.
- ❑ Thus, about 900,000.00 square kilometres of Nigerian land is effectively locked up as "dead capital".
- ❑ To unlock this "dead capital" as asset and create a land market economy the Federal Government of Nigeria on 2<sup>nd</sup> of April 2009 inaugurated a President Technical Committee on its Land Reform.
- ❑ The Committee is charged with the task of establishing a roadmap for improving existing institutional and legal framework of land tenure with a view to developing a land market economy for the country.
- ❑ The terms of reference of the Committee forms a framework from which a comprehensive land policy and management are to be formulated for the nation.

## TOR OF TECHNICAL COMMITTEE ON LAND REFORM

- To review pre-land Use Act and land tenure in existence in different parts of the country with a view to putting the land tenure system in Nigeria into a historical perspective.
- Collaboration with and provision of technical assistance to states and local government areas to undertake land cadastral nationwide.
- Determination of individuals' "possessory" rights using best practices and most appropriate technology to determine the process of identification of locations and registration of title.
- Ensuring that land cadastral boundaries and title holdings are demarcated in such a way that community, hamlet, village, village areas, towns etc will be recognizable.
- To assist and encourage States and Local Governments to establish an arbitration mechanism for land ownership conflict resolutions.
- To establish a National Depository for Land Title Holdings and Records in all states of the Federation and the Federal Capital Territory.
- To establish a mechanism for land valuation in both urban and rural areas, in all parts of the Federation and
- To undertake any other activity that will ensure an effective, simplified, sustainable and successful land administration in Nigeria.

## IMPLEMENTING THE LAND REFORM AGENDA

- ❑ Systematic land titling and registration has been adopted by the PTCLR rather than sporadic
- ❑ **In systematic registration**
  - a specific location is steadily worked upon so that all adjacent land parcels within the area are adjudicated upon, surveyed, issued title to and registered
  - Registration is compulsory
  - Initiating country is usually supported by international development partners such as World Bank, UN(FAO)
- ❑ Currently the PTCLR is undertaking a pilot project in Ondo and Kano states in collaboration with Development Agencies.
- ❑ The pilot project is to test the technical aspects of the implementation of land reform
- ❑ The workshops on Draft Regulation are to guide and ensure the implementation of the land Reform within the ambit of the laws and regulations of the nation.

## GEOINFORMATION DIMENSION OF SYSTEMATIC LAND TITLING AND REGISTRATION

- ❑ The PTCLR is given the mandate to *“ensure that Land Cadastral Boundaries and Title holdings are demarcated in such a way that community, hamlet, village, village areas, towns etc will be recognizable.”* This possible if:
  - The country is mapped at relevant scales to provide large scale topographical database.
  - All parcels of land are properly surveyed and title deed plans are prepared and issued to land owners (Systematic Land Titling).
- ❑ Thus the need for reliable geoinformation and developed cadastre

## CADSTRAL INFRASTRUCTURE

- ❑ Define each land parcel holding unambiguously
  - Approximate boundary on orthophoto maps by non-professionals: [General boundary system](#)
  - Systematic boundary demarcation by field survey methods; [Fixed boundary system](#)
- ❑ General Boundary System:
  - Problem of boundary definition in forest areas and areas near permanent cloud cover in the southern part of the country.
  - Expensive to make improvement and administer when creating land data bank driven by GIS

## Large Scale Mapping

- ❑ For field identification, charting and registration
- ❑ Creation of Topographical database for the entire country and creation of land information management system
- ❑ Currently not available but needed in all sectors of the economy
- ❑ Take the opportunity of the Land reform to map the entire country.

## CADASTRAL SURVEY

The primary function of the cadastral survey is the definition of parcels that is, the spatial location of the land: on ground as well as definition on the map

- Graphical approach or systematic land survey method?
- Graphical method suitable only in countries adequately mapped and boundaries marked with hedges
- Not suitable in countries where vegetation and foliage prevent visibility of boundary physical features.
- The extant laws on cadastral surveys in Nigeria provide for the fixed boundary system
- In SLTR the national land cadastre should be executed in accordance with the existing survey laws deploying relevant professionals and using best practices that will deliver within shortest period possible

## GENERAL OR FIXED BOUNDARY SYSTEM

- Fixed boundary system is one in which the precise line of the boundary has been determined; while a
- General boundary is one for which the precise boundary line can only be established by adjudication.
- The choice of the use of either boundary depends on tradition, availability of large scale maps and cost.
- With the advancement in space and digital technology and the availability of adequate geospatial infrastructure in the country, there is no reason to resort to general boundary system in the implementation of systematic titling and registration

### AVAILABILITY OF ADEQUATE GEOSPATIAL INFRASTRUCTURE

- ❑ The argument against systematic survey in systematic titling and registration is that it is expensive and slow
- ❑ The technology and survey infrastructure that can be deployed to rapidly carry out cadastral mapping employing best practices is currently available.
- ❑ Thirty five (35) Continuously Operating Reference Stations (CORS) are planned for the country by the federal government. Fifteen (15) are already installed at strategic locations in the country, while others are being implemented.
- ❑ Some states of the federation, such as Lagos, Ogun and Cross River States, are also installing CORS as part of the large scale mapping of their respective states.
- ❑ With this infrastructure in place, land parcel boundary data can be systematically collected by rapid survey methods using Global Navigation Satellite System (GNSS) receivers as rovers.

### COST OF SYSTEMATIC SURVEY

- ❑ In systematic land titling, systematic survey is usually viewed as slow and cost intensive
- ❑ Advances in technology had changed all the factors that make systematic survey slow and expensive
- ❑ In our situation the cost of systematic survey will be reduced as a result of the following factors
  - Number of plots: for contiguous plots cost is as low as 20% of sporadic survey
  - Simple markers that can be placed during adjudication.
  - **Method of survey:** Cost of survey is further reduced by fit-for-purpose survey using GNSS rovers with CORS
  - The Nigerian land surveyors have identified with government on the land reform agenda and are ready to make professional sacrifices towards the realization of the goals of the reform.
  - Availability of survey personnel

## CAPACITY AND CAPACITY BUILDING

- ❑ The success of the systematic land titling will to a large extent depend on capacity (human and technical) and overall strategy employed.
- ❑ Current Survey Personnel Base:
  - 2400 Professionals; 32,000 Pupil Surveyors , Technologists and technician
  - 8% increase rate per annum based on 30 tertiary institutions
- ❑ Train the available manpower base formally and informally for systematic survey for land titling using the use of GNSS and CORS rather than recruiting fresh hands without prerequisite survey background.
- ❑ Professional challenges: adaptation to fit-for purpose rapid survey; investment in digital equipment; survey fees to be based professional input and readiness to make concessions as contribution to national development

## CONCLUDING REMARKS

- ❑ The major objective of the land reform is to transform Nigeria into a land market economy by issuing land titles to all land owners especially the rural dwellers who cannot use their asset –land – to raise capital because they do not have titles.
- ❑ The major objective of the land reform is to transform Nigeria into a land market economy by issuing land titles to all land owners especially the rural dwellers who cannot use their asset –land – to raise capital because they do not have titles.
- ❑ Nigeria is well endowed but poorly mapped, the land administration reform programme and other sectors of the economy will benefit immensely from large scale mapping and creation of topographical database, driven by GIS.
- ❑ It is therefore recommended that large scale topographical mapping of the entire country should be carried out to drive the land reform programme and other sectors of the economy.
- ❑ Nigeria is well endowed but poorly mapped, the land administration reform programme and other sectors of the economy will benefit immensely from large scale mapping and creation of topographical database, driven by GIS. It is therefore recommended that large scale topographical mapping of the entire country should be carried out to drive the land reform programme and other sectors of the economy.

- ❑ In implementing the systematic land titling it is argued that the fixed boundary system should be adopted.
- ❑ In Nigeria boundaries are not generally marked by permanent hedges except in urban areas. Where they are so marked, maps showing the features are not available, and in southern part of the country vegetation cover prevent visibility of boundary physical features on orthophoto maps.
- ❑ It is also suggested that the appropriate cadastral survey using GNSS rapid survey method, rather than graphical method will be most appropriate and will be in line with the existing cadastral protocol and regulation. The survey personnel and infrastructure for the rapid survey method are available.
- ❑ Advances in technology have changed all the factors that make systematic survey to be slow and expensive. In addition surveyors are ready to partner with and make concessions to government in executing the land reform agenda
- ❑ SLTR is carried out using best practices and involvement of relevant professionals. It is argued that the personnel and spatial infrastructure that will ensure the timely execution of the SLTR at minimum cost to government are available.

## BIOGRAPHICAL NOTES

**Olusola ATILOLA, Ph.D. FNIS** was President of the Nigerian Institution of Surveyors. 2008 - 2010. He holds the Bachelor of Science degree in Land Surveying, Ahmadu Bello University Zaria, 1973; Diploma Photogrammetric Engineering, ITC, Enschede, Netherlands, 1975; Diploma and Master of Science, Photogrammetry, University of London in 1976; and Doctor of Philosophy, Surveying Engineering, UNB, Canada, 1984. He obtained his registration as a surveyor of the Federal Republic of Nigeria in 1978 and has worked for 33 years as a consultant surveyor in private practice and currently the Managing Director, Network Geomatics Limited. He worked briefly with Federal Surveys Department 1973 – 1974, University of Lagos 1976 – 1980 and 1985 – 1997. He is a Fellow of the Nigerian Institution of Surveyors (NIS). He was Treasurer and Secretary General of the Institution. He was also Chairman of the Lagos State Branch of NIS. He has a number of publications to his credit some published in international journals, and some invited to-, presented at local and international conferences.

**CONTACTS**

Dr. Olusola Atilola

Network Geomatics Limited

MAN House 4<sup>th</sup> Floor

77 Obafemi Awolowo Way, Ikeja

Lagos, NIGERIA

Tel. +234-802-330-7887

Email: [netgeomatics@yahoo.com](mailto:netgeomatics@yahoo.com),

[solaatilola@yahoo.com](mailto:solaatilola@yahoo.com).