

Agricultural Cadastral Mapping of Oil Palm Trees in Delta State of Nigeria for Youths Empowerment and Poverty Eradications

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Key words: Agricultural Cadastral Mapping; Youths Empowerment; Poverty Eradications

1.0 SUMMARY

Delta State of Nigeria is a land of Oil Palm Trees. The Landscape of the state is populated with Oil Palm of high density distribution particularly in the rain forest parts of the state. Per Hectare grid lines box of the rain forest are Oil Palm trees of high population density. They grow naturally through natural dispersal over the years and by human agricultural endeavors.

With all the multi million US Dollars potentials in Oil Palm Agriculture; the Federal; State and Local Governments have no database of Oil Palm Trees. No record of Agricultural Cadastral Mapping for a good and effective Land Management. The inherent opportunities for Youths Empowerment and Poverty Eradication are not within the focal nodes of the governments and policy makers.

This Paper will explore the need for the Oil Palm Agricultural Cadastral Mapping: to be used as a cost effective methods of fit for purpose; to be used as simple advocacy for the adaption of this work for Private Public Partnership platform for Youths Empowerment and Poverty Eradication Projects in Delta State of Nigeria and beyond.

2.0 INTRODUCTION

Delta State of Nigeria is a major oil and agricultural producing state of Nigeria, situated in the Western Flank of Niger Delta; with a Population of 4,098,291 (Males: 2,674,306; Females: 2,024,085). The estimated area of the state is 16,842 square kilometers.
(Sources: www.deltastate.gov.ng)

The Delta State Government has planned to establish 1.2million hectares of Oil Plantation between 2019 and 2023. This, is stated, would be done through the Central Bank of Nigeria (CBN) Oil Palm Development Initiative to increase wealth and promote economic growth in the state. (Sources: punchonline@punchng.com).

Looking at 1.2 million hectares of Land as stated will give 12,000,000,000 square meters which is 12,000 square kilometers, with Delta State Total Area being 16,842 square

kilometers bearing in mind the Geography of Delta State there is a problem of poor land management and administration.

The CBN Oil Palm Development Initiative was geared toward creating an oil palm belt in Nigeria and to revive the dwindling fortune of the commodity using the efforts of individuals, communities and investors.

The State Ministry of Agriculture and Natural Resources is the policy driver of the initiative with little input from the Ministry of Lands, Survey and Urban Development. Office of the State Surveyor General is a fulcrum of big importance for this initiative. We intend to use this work as a support for the initiative; to fill up the gaps in the poor land management and administration aspect of this laudable project.

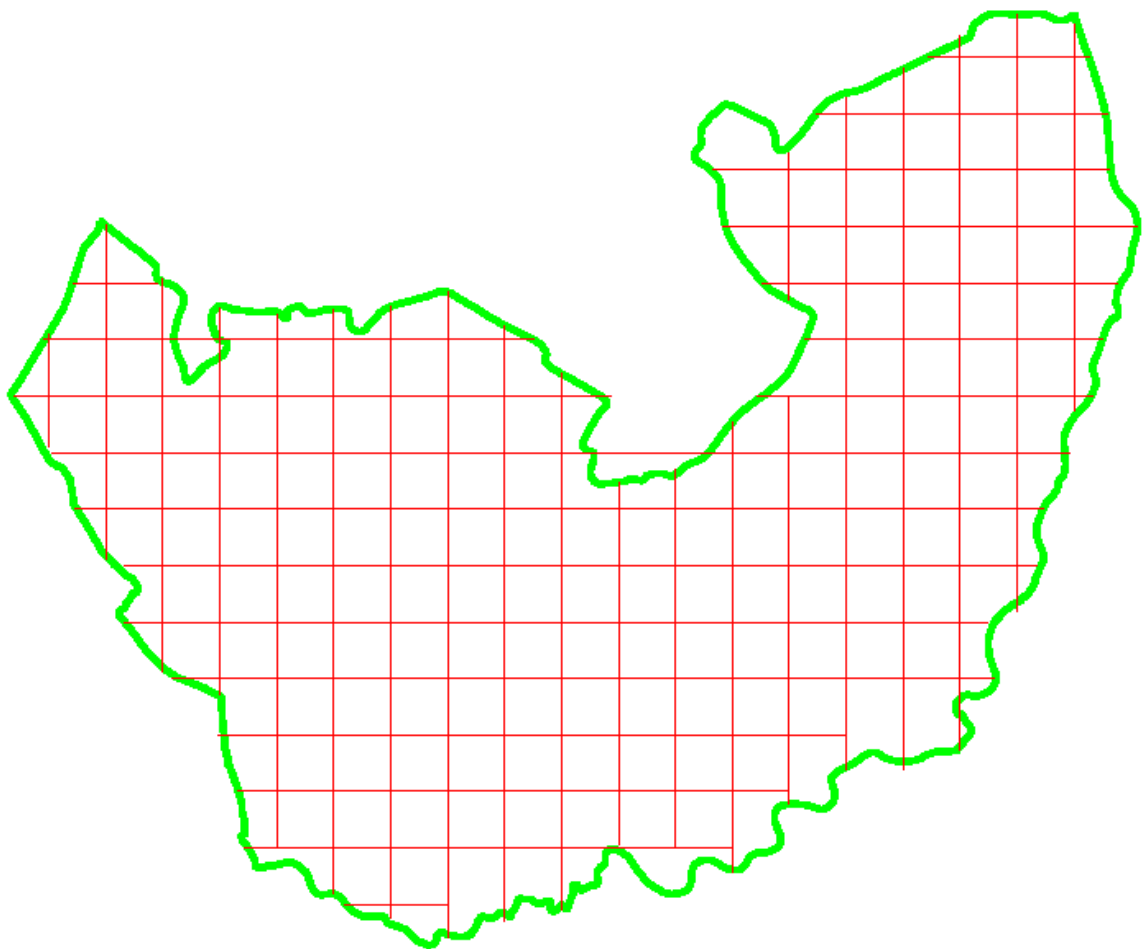


Figure 1: Delta State Grid Map. (Sources: Hydroark Project Library 2019)

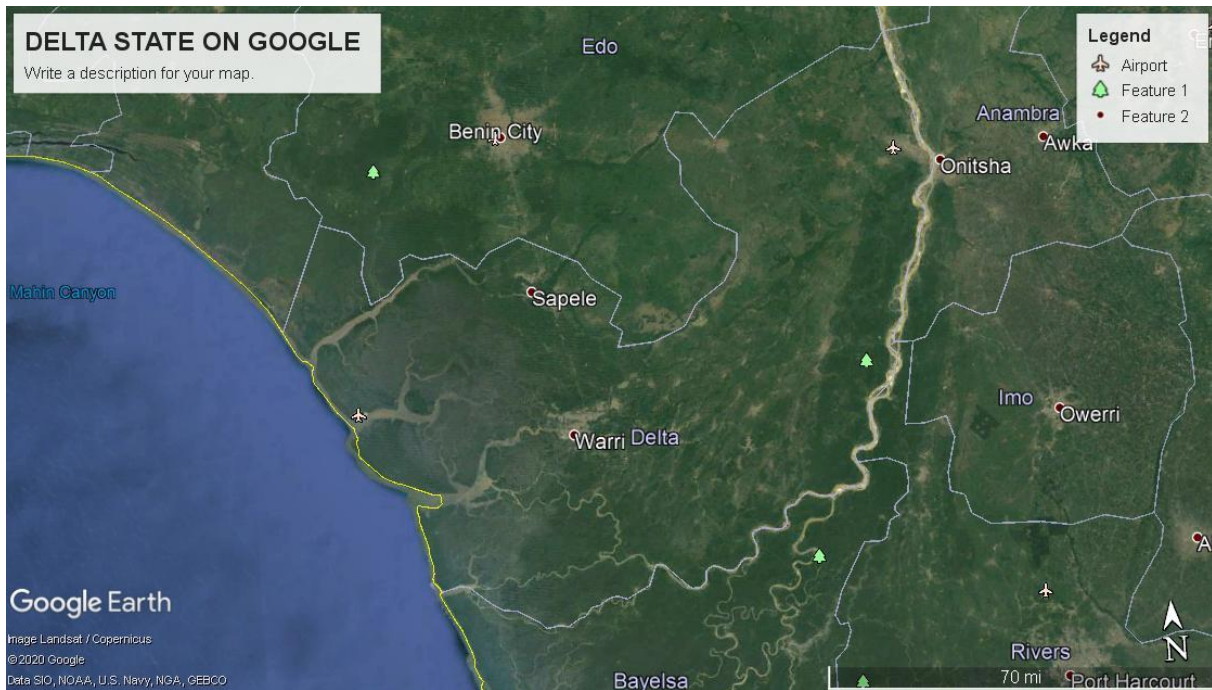


Figure 2: Delta State on Google Earth

3.0 DELTA STATE AGRICULTURAL CADASTRAL MAPPING

The General Cadastral in the state is purely for Housing and Property management; Lands for Agriculture are not usually captured separately for Cadastral Survey and Management. Big investors in Agriculture are not many; peasants farmers are numerous but cannot afford cost of survey that stands at average of 1000USD per Acre.

The cost of Survey is a major concern for the state government; bearing in mind that Scale of Fees are usually with Professional Ethics and sundry punitive measures.

The need to make survey fees affordable is imperative. Fit for Purpose Agricultural Cadastral Mapping is the way out of this big challenge.

The State Surveyor General is on top of this with serious efforts to move forward with the initiative without cost of survey standing as a showstopper.

Land Administration and Management with Population growth and the associated urban sprawl have made Cadastre Data and Infrastructural Development a necessity for the citizens and government. There are many varied interests in land, which may be owned by individuals or groups of individuals.

These interests can be documented in instruments such as deeds, leases, wills, mortgages, exchange and gifts which are then recorded in special registers. (Dashe 1987)

4.0 FIT FOR PURPOSE APPROACH

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The idea behind “Fit for Purpose” is that land administration should be designed to meet the needs of people and the environment; that is, land administration should be affordable, fast and designed to meet the people’s needs. (Sources: www.kadaster.com)

The fit for purpose approach includes four key principles:

1. General boundaries rather than boundaries.
2. Aerial imageries rather than field surveys.
3. Accuracy relates to the purpose rather than technical standards.
4. Opportunities for updating, upgrading and improvement.

The fit for purpose approach also includes the following elements:

1. Flexible
2. Inclusive
3. Participatory
4. Affordable
5. Reliable
6. Attainable
7. Upgradeable



Figure 3: PRESCO Oil Palm Company Plantation in Delta State

4.0 TEMPLATE FOR AGRICULTURAL CADASTRAL MAPPING

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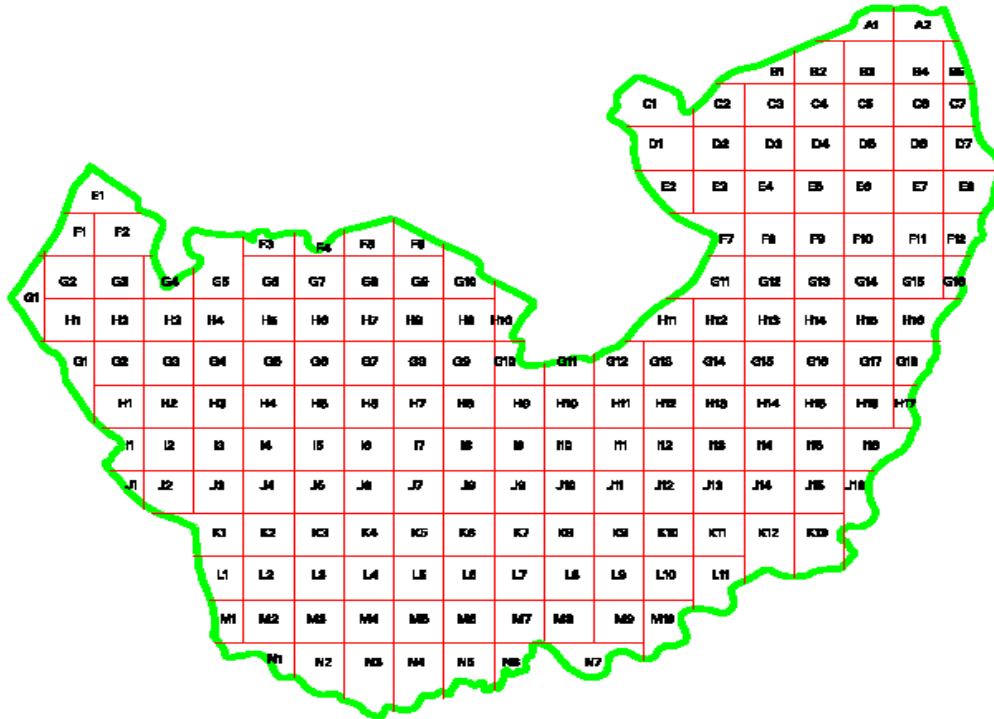


Figure 4: Delta State Grid Map in Alphanumeric. (Sources: Hydroark Project Library 2019)

- To acquire imagery of each of the cells
- The dimension is 10km x 10km.
- With suitable scale and resolution
- Auto-detect palm trees in each cell using image algorithm.
- Using GIS

The Template presented there up will use the Grid Map in Figure 2. Each Grid Cell shall be mapped cell by cell using the key principles of fit for purpose. The existing Palm Trees in each GRID CELL shall be mapped with other environmental attributes.



Figure 5: Palm Trees with Oil and Gas Pipeline Right of Way. (Sources: Hydroark Project Library 2018)



Figure 6: Oil Palm Trees by River Bank. (Sources: Hydroark Project Library 2019)

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5.0 METHODOLOGY

- To Collate the Geographical Coordinates of the Four Corners of each cell base on WGS 84 DATUM.
- To Identify Rural and Urban Area per grid cell
- To Identify Palm Trees Plantation in each grid cell
- To Define each Plantation as Minor or Major
- To Identify peasant farmlands of subsistence farming and palm trees production
- To map other attributes both human and natural that can have impact on palm trees production
- To Define Oil Palm Belt for the state
- To map oil palm mills
- To do on ground confirmation where needed
- All work to be on imagery grid by grid
- All other existing maps and plans shall be serially loaded grid by grid
- Training of end users in the office of State Surveyor General and Ministry of Agriculture and Natural Resources

6.0 DATA PROCESSING AND UTILITY

All data as stated in the methodology shall be processed using GIS template of storage for easy access and utility.

Website shall be put in place for easy access and utility by all and sundry.

The website shall be interactive and easily accessible.

All lands acquired but in dispute shall be compiled.

This shall be used for conflict resolutions and compensations.

Land Grabbing will be prevented and monitored.

Where Palm Trees are of old and too tall for harvest shall be encouraged to be replaced by high yielding types.

Palm yields monitoring and easy access to loans and support from the Governments.

Data shall be used for easy access to land with good capacity building for youth empowerment.

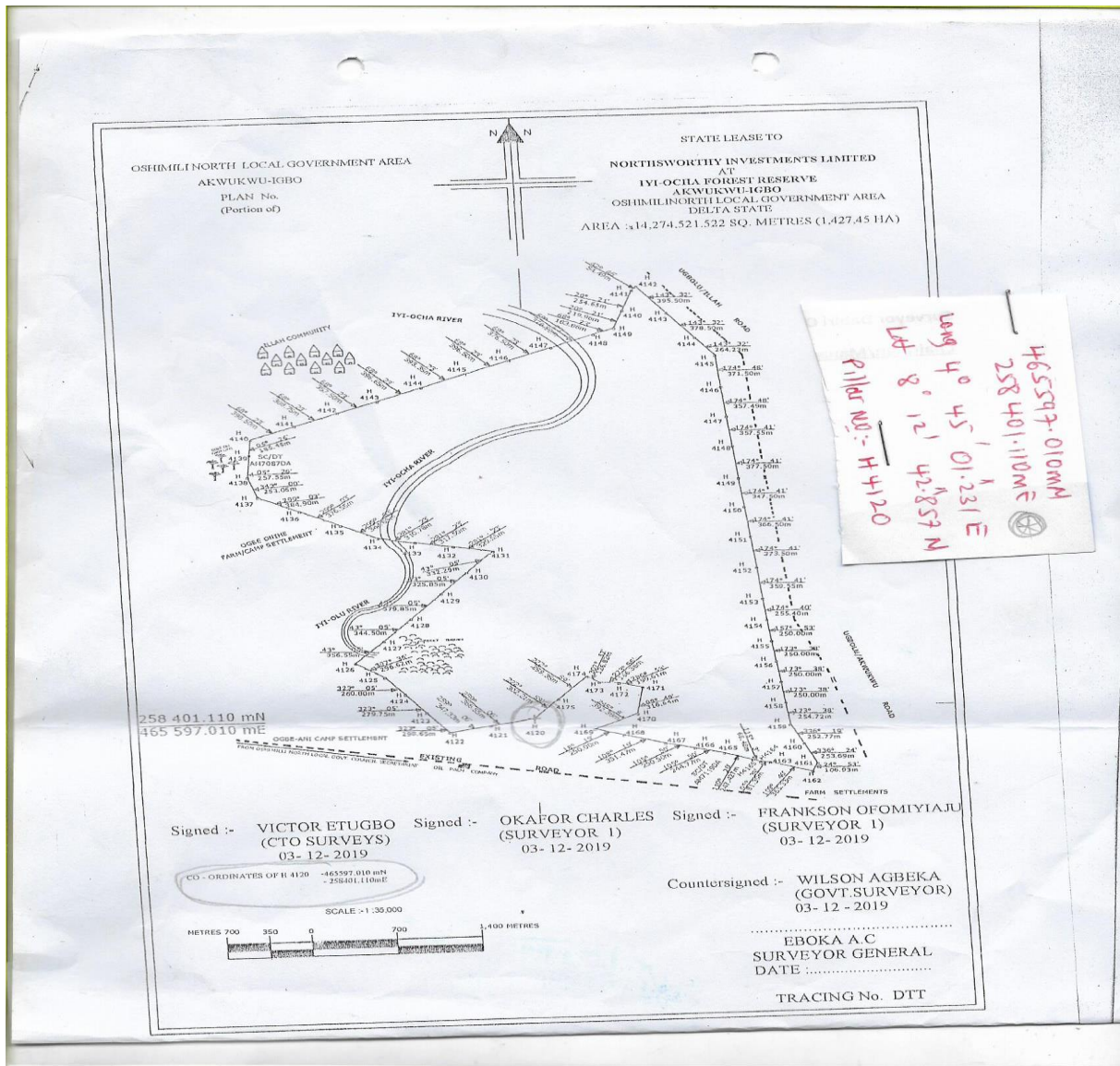


Figure 7: A Survey Plan showing land acquired for Oil Palm Plantation. (Sources: Office of Delta State Surveyor General)

7.0 CONCLUSION

Institutional Governance Concepts of good governance and good citizenship provides the opportunity for maintain transparency, accountability and responsiveness for the management and sustainability of any INITIATIVE. Land Registration and Cadastre should be seen as part of the operational level of Land Administration. (Marrakech Declaration 2004); Agricultural Cadastral Mapping of Oil Palm Trees in Delta State of Nigeria for Youths Empowerment and Poverty Eradication is a project of prospect for a positive support for the government in service to humanity on the platform of professionalism development; with this, the CBN Oil

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Palm Development Initiative will not be hanging in the valley of dearth of data and good planning.

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BIOGRAPHICAL NOTES

Oluseye Thomas DABIRI obtained Bachelor of Science in Geography Science from the Nigerian Premier University of Ibadan in 1987. He worked in Geography Department of University of Lagos as a Graduate Assistant on the Desertification Monitoring Project of Canadian Waterloo University support/exchange project from 1987 to 1988. Obtained Post Graduate Diploma in Land Surveying from Federal School of Surveying in Oyo Town in Nigeria in 1990; became a Registered Surveyor under Decree 44 of 1989 in 1992; started Private Practice late 1993 with special interest on General Cadastral Survey and Land Administration Consultancy Service in Delta State. Presently the Founder and Managing Director of Hydroark International Limited since 2001; one of the leading Survey Firms in Delta State and in Nigeria; member of Nigerian Institution of Survey since 1989; member National Geographic Society since 2002; National Vice Chairman of the Association of Practicing Surveyors in Nigeria since 2018; Fellow of Nigerian Institution of Surveyor since 2015; active member of FIG Commission 7; Chairman of Delta State Branch of the

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Association of Practicing Surveyors in Nigeria since 2016 and a member of Rotary International (Paul Harris Fellow).

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