Nasarawa Development Platform: A Progress Report on the Development of Spatial Data Infrastructure in Nasarawa State - Nigeria

Presented at

XXV FIG CONGRESS 2014

Kuala Lumpur, Malaysia 16 – 21 June 2014
"Engaging the Challenges
Enhancing the Relevance"

By
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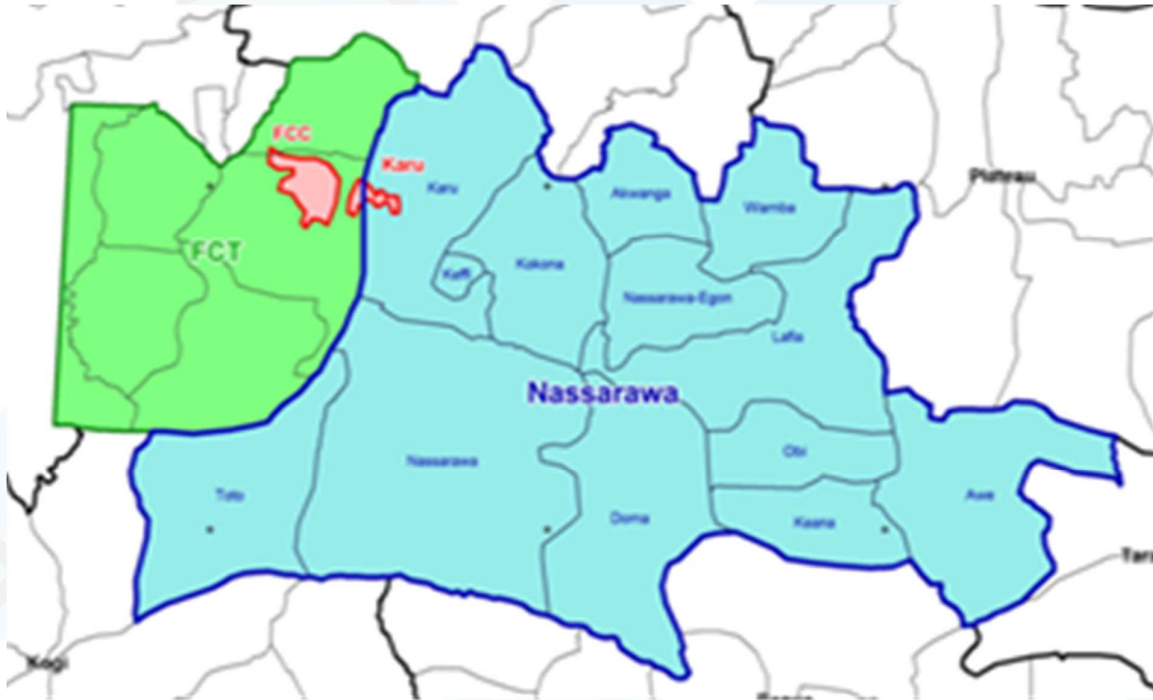

Introduction

- State Created in 1996
- Population of about 2.5 million
- 27,000 sq. km in close proximity to Abuja
- Impact of the FCT on population growth - Slum Areas

Project Overview

Abuja 1:10,000

Karu 1:10,000

Project Overview – Cont…

- Address problems of land administration and management issues in the state
- Address problem of urban poor in respect of land ownership, its attendant social consequences
- The NDP has three components:-
  - Digital Aerial Mapping of the entire State Landmass
  - Nasarawa Geographic Information Services (NAGIS)
  - Urban Renewal & District Planning of 3 Townships.

Digital Aerial Mapping

Seq	Area	GSD	Overlap	Area (km2)	GCP	Frames	Altitude(ft)
1	Karu & Keffi	10	60/30	769	20	3,286	3,852
62	North West	25	60/30	2,322	6	1,644	9,628
23	Lafia & Doma	10	60/30	544	20	2,340	3,852
4	Akwanga	10	60/30	144	10	686	3,852
75	North East	25	60/30	9,161	6	6,760	9,628
36	Nasarawa	10	60/30	144	10	686	3,852
57	Loko Corridor	25	60/30	5,357	6	3,568	9,628
8	West	25	60/30	1,980	8	1,478	9,628
9	South	25	60/30	4,071	6	2,941	9,628
10	East	25	60/30	2,808	8	2,000	9,628
Total				27,300	100	25,388	

Table 1: Detail Sequence of Flight Operations & Data Acquisition for Nasarawa State (Source:- Aeroprecisa /MLUD, 2012)

Digital Aerial Mapping

Digital Aerial Mapping

- Flying 6 major cities at 10cm resolution

- The entire state at 25cm resolution

- Production of orthophoto maps and 1m contour lines

- Images to help in setting up a rural cadastral system, regional development plan of the state, assist in sustainable planning

Planning & Urban Renewal

- Address issues of existing unplanned settlements & the environment in the state,
- Dearth of infrastructure in most of the townships
- Aid urban renewal, general land use plan & development control activities.

NAGIS

- Develop a spatial data infrastructure for the state
- To serve as a center for geospatial data that will guarantee easy access to information
- Capability to generate property titles
- Generate massive revenue to the state
- Ensure proper land titling for most or all land holders
- Computerized land administration in a robust GIS environment.

Before the NDP

- Total or Near collapse of land administration infrastructure in the state
- Unplanned settlements and absence of development control activities
- Lack of reliable cadastral maps, untrained survey personnel, lack of modern survey equipment e.t.c.

The Result So far….

- Digital Aerial Mapping
  - Flying of the entire State Completed in December 2013
  - Images processed and now embedded in the NAGIS data base
  - Line & Land cover maps produce for the state
  - Images in use for roof top count of existing buildings & properties

Sample ....

Samples...
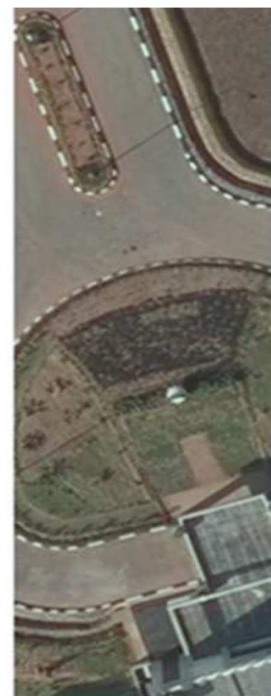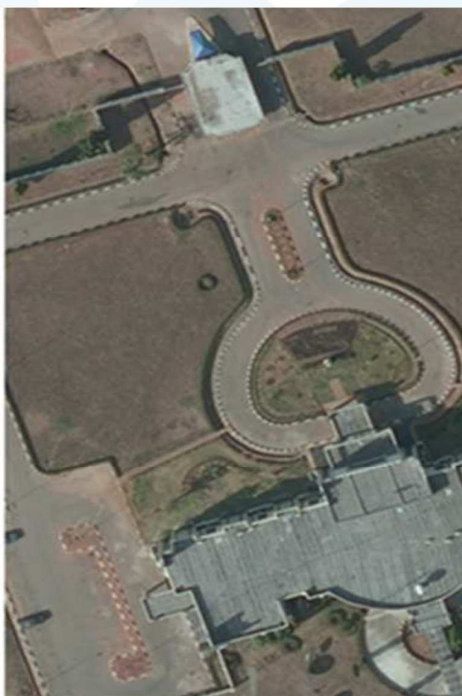
Building count---

#	Town	Area Surveyed in km²(Ortho Coverage)	Building Count	Buildings per SQM
1	Akwanga	158	30,184	191
2	Doma	158	27,230	172
3	Karu	650	229,341	353
4	Keffi	148	48,310	326
5	Lafia	406	113,239	279
6	Nasarawa	147	26,014	177
	Total	1667	474,318	
	Preliminary Results of Building Counts from Orthophoto 10cm of Six Townships (Source: NAGIS, 2014)			

Prelim Result of Building Count…
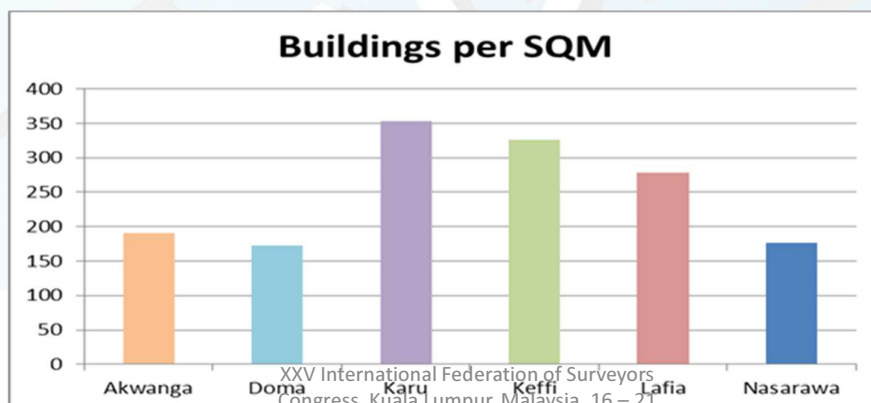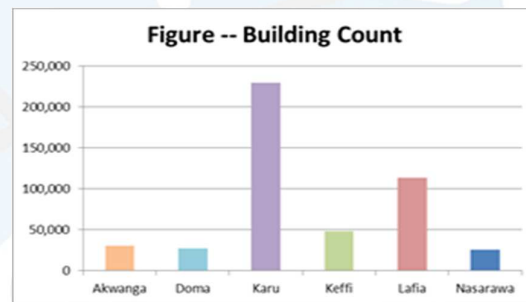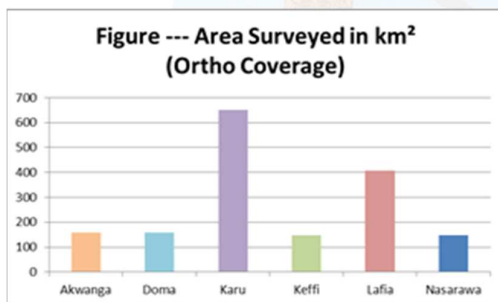
Figure --- Area Surveyed in km² (Ortho Coverage)

Figure -- Building Count

Buildings per SQM

Planning & Urban Renewal

Conceptual frame---

District Planning---

NAGIS---

- 23,074 files out of 25,000 captured into the LIS database,

- 21,750 files captured into the DMS,

- 519,675 pages of scanned land documents

- About 464 cadastral maps have been indexed and scanned and are been geo-reference.
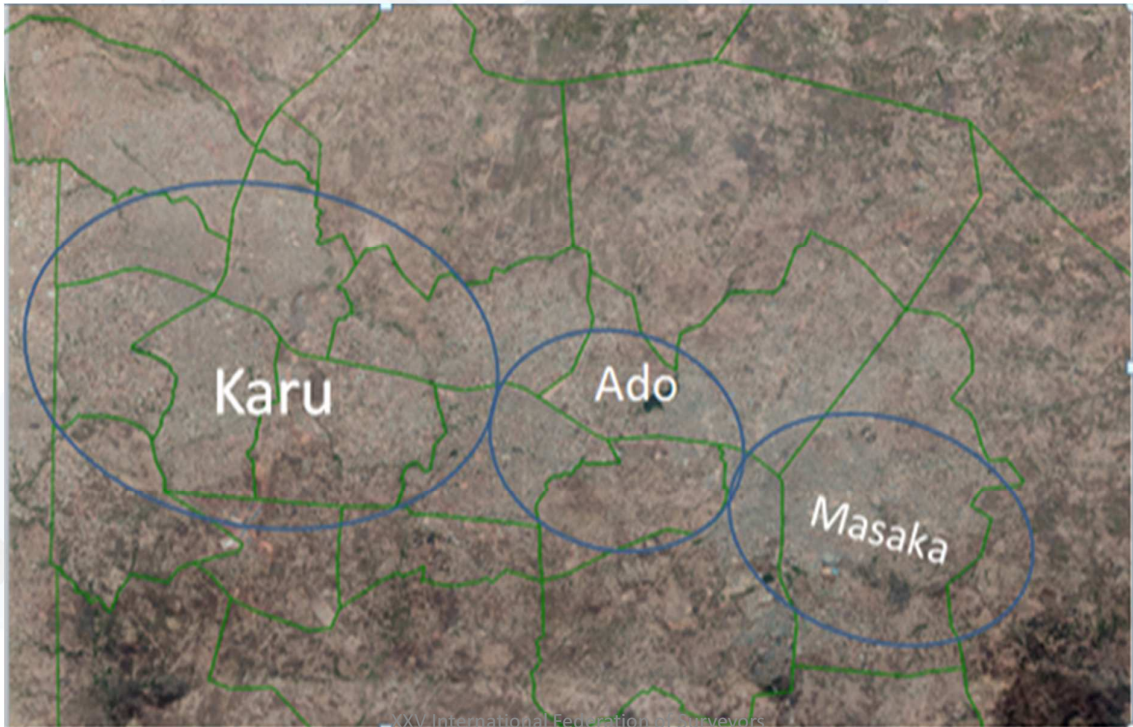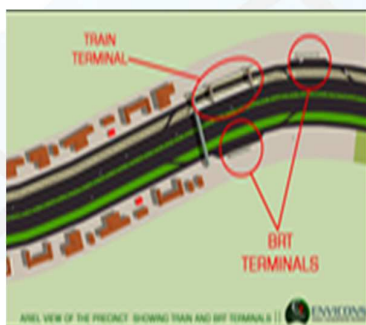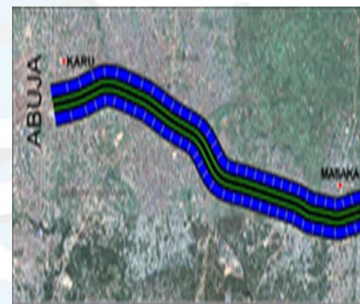
Land Titling

Period	No. of Titles Issued	(%)
1997 – 1999	310	37.43
1999 – 2007	214	25.84
2007 – 2011	24	2.90
2011 – 2014	280	33.82
Total	828	100
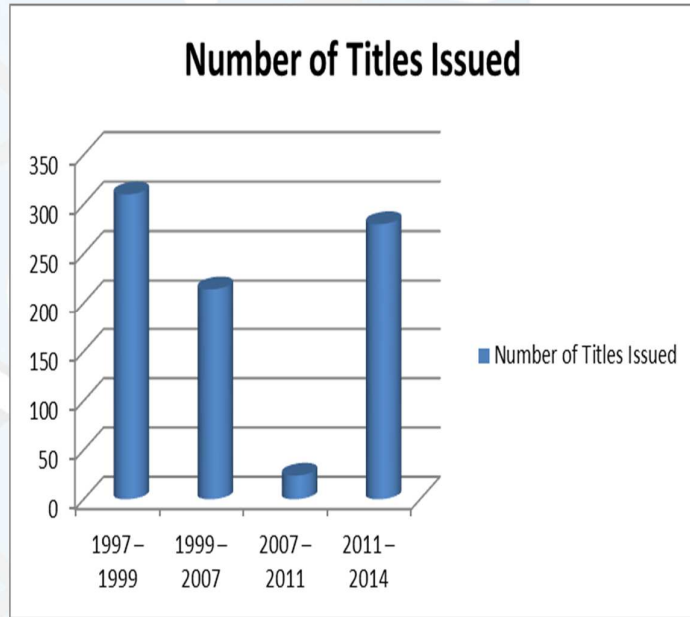
Table 2:- Land Titles Issued by the MLUD Since 1997 (Source:- MLUD 2014)

Number of Titles Issued

Revenue Generation

MONTH	2011 (US$)	2012 (US$)	2013 (US$)
JANUARY	27,879.62	52,247.16	197,275.23
FEBRUARY	53,670.88	54,839.65	273,305.99
MARCH	28,670.88	143,443.57	244,288.60
APRIL	8,115.99	154,251.21	202,642.87
MAY	16,233.51	132,228.88	149,924.09
JUNE	8,600.31	141,364.61	232,984.68
JULY	11,871.63	107,883.36	130,835.22
AUGUST	5,111.09	242,962.23	185,849.57
SEPTEMBER	14,527.95	294,716.36	433,807.36
OCTOBER	13,494.98	174,995.91	307,381.17
NOVEMBER	14,417.90	117,942.88	218,508.94
DECEMBER	16,274.72	367,036.48	223,264.06
TOTAL	218,869.46	1,983,912.30	2,800,067.78

Table 3: Land Revenue Generation for 2011 - 2013 in US$(Source MLUD, 2014)

Revenue Generation

Conclusion
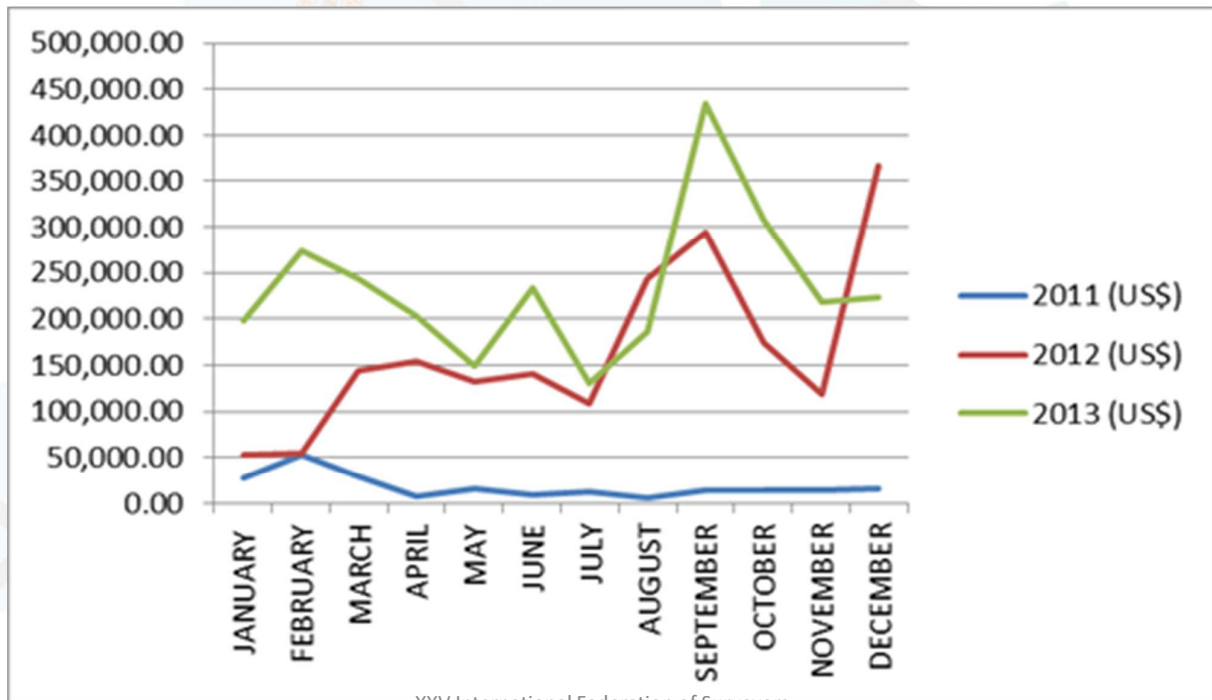
- Expert Design and Implementation
- Transparent
- Efficient
- Secure
- Stimulates Economic Development