Land Information System as new instrument for Land Administration: Case Examples

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Background

- Growth of population and fast urbanization in many countries in SSA;
- Growing demand of land and inadequate land administration services;
- Lack of reliable land information;
- Diversity of land tenure, low number of formalized land property in the countries;
- Decades on negligence of the land administration sector;
- Attempts to keep or update legacy systems from colonial past and need of innovation;
Need of Innovative approach

- Huge number of potential non registered land properties and demand of land services;
- Need of innovative approach, development of new tools for diverse conditions of countries required;
- New conditions: advances in ICT, modern technique of land survey (GNSS, CORS), availability of HR Remote Sensing data etc.;
- Land Information System (LIS) focused on land administration as tool to improve land services;
- Efforts of Sub-Saharan Africa countries, to establish LIS;
LIS general approach

- LIS development affects many aspects of land tenure and land administration and it is not just a technical or technological exercise;
- LIS is a long term intervention and requires a holistic vision, clear strategy and systematic approach;
- Long term political, administrative and financial support is prerequisite of the success in LIS development;
- Lessons and experience of LIS implementation are important for understanding of complexity of LIS and the ways forward;
LIS initiatives

Many countries started LIS implementation as a tool to improve land administration sector information, including:

- Uganda Land Information System under the Private Sector Competitiveness Project (PSCP, WB) – start 2007 - in progress;
- Ghana GELIS – under Ghana Land Administration Project (LAP1 -2004 and LAP2 - 2011) – in progress;
- Tanzania Integrated Land Management Information System (ILMIS) under RCIP and PSCP now – started 2012 – in progress;

Results: Operational LIS implemented in Uganda as Result LIS Pilot Stage 2010-2013; Roll-Out stage in progress;
Ghana LIS

- Ghana design and development LIS phase 1 completed in 2012;
- Different platforms approach tested - use of COTS and use of FLOSS (FAO SOLA);
- Prototypes of the LIS developed and tested;
- Tool for Land Use Planning (LUPMIS) developed and is in use;
- Lessons learned and strategy proposed;
- New stage 2014+ - Ghana Enterprise Land Information System (GELIS) – bid documents completed and bid under progress
Tanzania LIS

- Integrated Land Management Information System (ILMIS)
  - Design started in 2012 within RCIP initiative;
  - Developed Conceptual Design of the ILMIS
  - ILMIS Bid Documents developed;
  - Phased Approach (two phases);
  - Phase one – Two Stages – i) Pilot Stage and ii) Development Stage;
  - ILMIS bidding process is starting and expected project start - January 2015;
Uganda National LIS Infrastructure

- System Conceptual Design and Strategy Development 2007-08
- Project design and Bid – 2009
- Project Implementation - Feb. 2010-13;
- System Maintenance and Support – 2013-14
- System Roll-Out design and Bid -2013-14
- National Land Information System Infrastructure (NLISI) establishment – December 2014 – 17
- NLISI maintenance and Support 2017-20
Uganda Strategy 2008 diagram

**Financing of LIS Development:** International Financing Institutions, Donors and National Budget

- National Budget, Cost Recovery Basis

- Security of land transactions

- Land property formalization and First registration completion for majority of properties

**Basic LIS Infrastructure**

- LIS Roll-out first to 7 and then to 8 zonal offices;
- Improvements of LIS, incorporating support of other land procedures;
- Base Map for entire country;
- Enhancement of Land Survey and Geodetic Infrastructure;
- Condition for electronic property conveyance and cost-recovery basis financing;
- Enhancement of NLIC and on-line services;

**National LIS Supporting property E-conveyance**

- Improvement of the LIS services and access to land information;
- Transition to electronic property conveyance;
- Digital land records management and procedures in land administration

**1. LIS Pilot Stage**

- Finalization of LIS detailed design;
- Software customization and reengineering of business process;
- Establishment of base map data;
- Conversion and integration of cadastral and land records;
- Implementation of LIS in 6 zonal offices;
- Strategy and plan of system roll-out;

**2. LIS Roll-out and Basic Infrastructure Stage**

- Zonal LIS Offices (6) operational, Land and Cadastral Records Secured, LIS ready for roll-out

**Phase 1 - LIS Basic Infrastructure**

- Phase 2 – LIS Enhancement

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Uganda Results:

Pilot Phase:
- 6 Ministry Zonal Offices;
- National Land Information Centre (NLIC)
- SMD and HQ Office;
- Base Map - Pilot areas

Roll-Out Phase:
- +15 Zonal Offices;
- LIS Solution Upgrade;
- NLIC upgrade;
- NLISI and Corporate Services;
- Base Map – Entire Territory;
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Uganda LIS Main Achievements

- Practical decentralization of the Land Administration Services;
- Pilot Stage Ministerial Zonal Offices concept implemented;
- Up-to 70% of the land titles in the country converted and secured in LIS;
- Reduction of transaction time, corruptive practices and increasing of tenure security;
- Registering Property ranking from 155th ranking in 2011 to 125 in 2014
- Revenue (fees and stamp duties) collection increased 5 times to about $12M USD per year;
- National Land Information Center - as main element of NSDI established;
Lessons - general

- Need of comprehensive, coherent and all inclusive approach to system design;
- Phased implementation of the LIS project, based on the realistic road map;
- Buy-in from different stakeholders and support is required;
- Project organization and tailored Public Information and Awareness Campaign;
- FLOSS versus COTS careful consideration and decision (in some countries ICT policies priority to FLOSS is given recently);
- Need of Base Map and Reference Framework to improve land data reliability (no LIS without legacy Data will be functional);
- Conceptual design before Bid Documents and Project supervision by designer as any engineering project;
- LIS as a major Component of a wider national land administration reform program;
Lessons – project structure

- Inclusive approach - not only hardware purchase and software development;
- Project as combination of components under responsibility of single supplier;
- Project components design including at minimum:
  - C1. Detailed Design, Business process Re-engineering, LIS Software development and validation;
  - C2. Legacy data conversion to digital (titles, land records, cadastral records and maps) bar-coding;
  - C3. Cadastral and Registration, land records and base map data Integration;
  - C4. LIS Deployment, Installation and Implementation;
  - Training, Capacity Building and Public Information Campaign (including information of stakeholders and management of expectations)
- Need of detailed and comprehensive technical requirements and specifications (more than just IS specifications)
LIS Solution – some requirements

- **LIS to be efficient for land administration services improvement should be:**
  - Workflow based system with computer guidance for users;
  - Designed to ensure high system and data security to maintain valuable legal data and information on land;
  - Processing and management documents (land records), textual data, spatial data (including vectors and raster type of spatial data);
  - Unified data base ensuring data integrity;
  - Preferably **FLOSS based**, to reduce licensing and maintenance cost, secure further “in house” development and independence from supplier;
Risks

- Long term (up-to ten years) intervention makes the project vulnerable to lose the focus and support, unless it underpinned by strong political commitment;
- Delays in infrastructure (office and internet) establishment, need of resources;
- Securing qualified staff in the office and capacity of personnel to work in computerized environment;
- Measures to ensure financial sustainability of the system;
Some Conclusions

- LIS project are still under development in different countries in SSA;
- Observed increasing of number of LIS development initiatives;
- No conclusive results yet but implemented LIS projects demonstrated improvement of the land administration services;
- Need of strong political and administrative support and further development;
- Considering FLOSS platform versus COTS depending of the capacity and conditions in the country;
- LIS Project Implementation supervision;
Thank you