

GIS –BASED NATIONAL LAND INFORMATION MANAGEMENT SYSTEM (NLIMS)

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INTRODUCTION

The Core mandate of the Ministry of Lands in Kenya is to manage and administer the land resource in Kenya. The Ministry's effectiveness and efficiency in discharging quality services to Citizens through improved processes remain key in this era of Public Sector Reforms, implementation of the provisions of the New Constitution, the National Land Policy Sessional Paper No. 3 of 2009 and the radical paradigm shift towards achieving the Kenya Vision 2030 initiative.

Further, the Structure and the core functions of the Ministry are spelt out in the Presidential Circular No. 1/2008 of May 2008 on Organization of the Government of the Republic of Kenya. The functions are broadly defined to include the department of Physical Planning; Survey and Mapping; Land Adjudication & Settlement, Land administration, Registration and department of administration.

Over the years, the Ministry of Lands has relied on Paper-based System to discharge its mandate to citizens. A scenario that has generated millions of paper records both at the headquarters and the field offices distributed Country-wide has been in operation since the colonial era to date. In the midst of ever increasing population, economic development needs sky=rocketing, this has had direct impact on land Use. Consequently, the service delivery to citizens have gradually deteriorated, accumulated large volumes of paper records to an unmanageable. A situation that is not tenable in this era of reforms and constant demands for citizen focused services and the quest to achieve the Vision 2030 initiatives while delivering the provisions of the Kenya's Constitution August 2010.

The processes of administering and managing Land over the last over 100 years has mainly relied on a paper-based manual system. The hundreds of records generated by the four technical departments have since posed a great challenge, and unbearable to effectively refer to records and retrieve them timely while serving citizens, institutions and other key stake-holders. As a result therefore, the entire process has become inefficient, time consuming, unreliable, restrictive, occasioned repetitiveness, unaccountable and costly, undermining efficiency and effectiveness in service delivery.

In order to address these daunting challenges owing to the legacy Paper-Base Systems dating back into the 1900, the Ministry embarked on the effort to computerize its functions. The National Land information system (NLIMS) was conceived in the year 2008 as the only solution to the foregoing challenges.

The NLIMS aims at converting the existing land records into digital records that will be used electronically while the paper records are stored into an archive. The electronic records will be used in day to day transactions, while the archive records are preserved and will only be used as reference records.

Concurrently, the NLIMS also aims at re-engineering the Ministry Business Processes that are that were put into operations over 100 years, and hence achieve simplified, harmonized, effective and efficient processes that are sustainable within the framework of the Ministry strategic plan 2008-2012, and the Kenya Vision 2030 initiative.

Consequently, The NLIMS – system is divided into five (5) components that are inter-linked and interrelated, as follows:

1. Safeguarding and digitization of Land Paper Records
2. Business processes re-engineering and databases
3. Information Technology and Communications infrastructure at the Ministry headquarters and field offices
4. Geo-Spatial Systems
5. Change management and Capacity building

The Overall Objective of developing and implementation of the National Land Information Management System (NLIMS) is to establish quality Land management and administration system that facilitates efficient and effective service delivery in–line with the, the provisions of the Kenya Constitution- 2010, Vision 2030 and the National Land Policy. Further, the specific objectives include the following;

- Establish the NLIMS institutional framework
- Develop and implement an integrated GIS based NLIMS
- Safeguard and digitize existing land paper records in registries Country-wide.
- Establish a modern geodetic reference framework-KENREF
- Develop and implement an online platform to facilitate access to land information
- Undertake Capacity building for a sustainable NLIMS.
- Develop a monitoring and evaluation system for NLIMS.

1 ACHIEVMENTS SO FAR

The vision and mission of Ministry of Lands, Kenya:

Vision:

Excellence in Land management for sustainable development of Kenya

Mission:

To facilitate improvement of livelihood of Kenyans through efficient administration, equitable access, secure tenure and sustainable management of the land resource.

The Ministry has so far registered good progress as a result of joint efforts between the Project on Improving Land Administration in Kenya (PILAK) through an implementation structure that has nine(9) components :

1. Safeguarding Land Paper Records
2. Developing Business and IT Architecture
3. Modernising the Geodetic Framework
4. Parcel Identification Reform
5. Develop Land Rent Collection system
6. Systematic Conversion to RLA Titles
7. Develop other Land Administration Systems
8. Public Awareness'
9. Capacity building

2 MAIN OBJECTIVE OF PILAK

The main objective of the PILAK project ((Project of Improving Land Administration in Kenya) is to support the Ministry of Lands (MoL) in developing efficient land administration, based on simplified procedures, correct and secure information on land parcels, rights to land parcels, as well as robust and interoperable information systems that can be sustainably maintained and supported

2.1 Impact of the PILAK project

Reduced poverty

- having more adequate spatial data for decision-making
- hence being able to have better data for proper planning and thereby
- provide a better living environment

Transparency and accountability

- being able to access information in a proper way
- being able to know about the processes for the MoL

Better confidence in the land administration of Kenya

- being able to rely on the information with the MoL
- information is available when needed
- information is trustworthy and processes are swift

Better image of the Ministry

- carrying out the changes needed and being, e.g. as to the safeguarding of records

Improved revenue generation by collection of land rent

- being able to have a better land rent collection system which is also user friendly

Better investment climate by more secure land tenure

- being able to have a secure title and knowing that the information is trustworthy

Less land conflicts

- having a modern geodetic framework whereby being able to both solve and prevent boundary disputes

3 SAFEGUARDING & DIGITIZATION OF LAND PAPER RECORDS

The main objectives in this process are:

1. Stop further deterioration of paper records in the four (4) technical departments
2. Preserve valuable Land records
3. Secure Land records from misuse and other related threats
4. Ensure timely access to Land records
5. Implement records management best practices of records appraisal, classification, archiving and preservation
6. Secure information on Land use, ownership and security of tenure that will be used in building the GIS-Based NLIMS.
7. Develop a standard of safeguarding and digitizing Land paper records both at the Head quarters and the field offices commonly known as a analogue and digital Model archive
8. Set up a Land Records Conversion Centre (LRCC) and equipped with enterprise high end scanners
9. Introduce a document management system (e-archive) To facilitate electronic access to the digitized records in a shared approach set-up.

3.1 ACHIEVEMENTS

3.1.1 Developed an analogue and Digital model

A model analogue and digital archive has been established and will be replicated Nation-wide. This is commonly referred to as the digitization of Land Paper Records.

The Nairobi and Central registries have gone through the processes of records appraisal, verification of documents and records put into bar-coded boxes as shown below. The state of records before safeguarding began and after, creating **ANALOGUE MODEL ARCHIVE**. The

boxed records are ready for Scanning commonly known as digitization creating the **DIGITAL MODEL ARCHIVE**

Arrange Files in the Strong Room



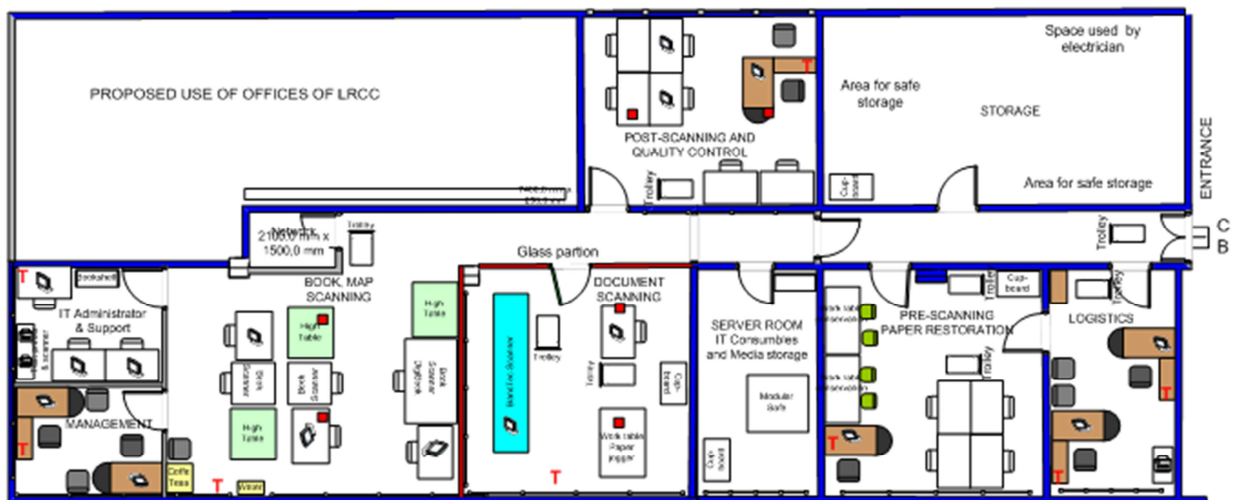
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High edge production scanners have been installed and reconfigured, tested to suit the Ministry specifications and with a capacity to scan maps and ordinary Land paper

3.1.2 Safeguarding records at the LRCC

The LRCC has been equipped with scanners that have the capability of scanning books, maps, development plans and A4,A3,A5, A0 paper sizes.

Here is a plan over the office space:



3.1.3 Acquired an enterprise document management system software

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The d-3 Enterprise document management system (DMS) developed by a Germany company D.velop has been acquired, configured and customised. This Software will facilitate the centralised retrieval of electronic archived land records. **Multi-users** in the ministry will access and share files records through the Local area network connections.

Re-engineered the registration processes, clear work flow defined and documented

Procured Mobile shelving systems for the strong room and Land department records office

4 CAPACITY BUILDING

4.1 Established a modern training ICT Laboratory on 7th floor –wing c

Setting up of a modern ICT training Lab in the Ministry's 7th Floor with the assistance of both GOK and PILAK Project to:

- Trained ministry staff on the document management system use of the scanned records
- Trained ICT Officers in the maintenance and operation of the heavy duty scanners
- Trained ten (10) officers on records Conservation and restoration at the Ministry headquarter and Mombasa

5 ESTABLISHED Geodetic Network for Kenya (KEREF),

Modernizing the Geodetic Network for Kenya (KEREF), where three (3) Zero order Monumentation pillars were build up to improve the network that facilitates and supports the use of modern methods and technologies including the Global Positioning System (GPS). Twenty more pillars are in the process of being built.

This will provide faster and easier access to geo-spatial information necessary for GIS systems for NLIMS

6 ICT EQUIPMENT procure to empower field offices

The Ministry procured four hundred (400) Desktop computers and their related accessories towards empowerment of field offices in-line with the computerization project of the Ministry processes

7 UPDATED LOCAL AREA NETWORK AT THE MINISTRY

The Local Area Network infrastructure will enable the system sharing and connectivity by all staff of the ministry and to facilitate decision making process and daily operations

8 DEVELOPMENT PARTNERS SUPPORT

Currently, the Ministry has received support for actualizing the NLIMS FROM DEVELOPMENT PARTNERS AS BELOW

- 1 SIDA/Lantmateriet in Sweden
- 2 World Bank - Kenya Transparency & Communications Infrastructure Project (KTCIP).
- 3 The World Bank Financial and Legal Support Technical Assistance Program (FLSTAP)

9 CHALLENGES

Challenges for the Ministry are:

1. Digitization of records is relatively a new technology and hence few experts and, Heavy duty Scanning equipment in the Market.
2. Unavailability and expensive of materials necessary for paper conservation and restoration locally.
3. Dilapidated Land records and lack of adequate records storage facilities
4. Inadequate records management officers in the ministry Registries
5. Lack of required skills in scanning and safeguarding of paper records
6. Lack of adequate space to set up the LRCC as the ministry requires more space to store and occupy other functions demands.
7. Lack of Ministry personnel to work in this additional yet important processes since the work entails skilled personnel and unskilled labour in the process of records verification & authentication, records conservation and restoration respectively
8. Lack of necessary funds to support the planned activities and meet the agreed up targets by the Ministry.
9. Lack of full time staff to sphere head the activities of safeguarding and digitization of Land paper records and give results as expected.
10. Lack of local experts to undertake preventive maintenance and servicing of the heavy duty high end scanners in the LRCC in the event of breakdowns.
11. Lack of complete and accurate records and information regarding land parcel

10 BENEFITS

Here follow some of the benefits from different project etc:

- The Successfully deployed tested analogue and digital archives model and operationalised in the department of Lands will now be replicated in the remaining three (3) technical department
- Over ten (10) thousand Miss- filed and Missing records were identified in both the Nairobi and Central registry DURING THE RECORDS APPRAISAL process
- Improve retrieval and access to records in the registries
- Un necessary records declared for destruction as per the requirements and provisions of the Kenya National Archive and Documentation Services, cap 19 laws of Kenya where
- Preservation of valuable records was actualised
- Disposal of valueless records done
- Decongestion of records storage areas achieved
- More space created, Economy and efficiency in managed of Public records
- Fast and efficient retrial of records

- This process has since enhance decision process making and gone a long way in restoring the Ministry image and
- Re-branding of the Ministry -Confidence re-build in serving Customers
- More **development partners** are on board to partner with the Ministry in the effort to improve service delivery through leveraging technology. The Adoption of the NLIMS implementation Master plan and subsequent Automation Roadmap that spells out the key milestones in the **Strategic plan 2008-2012** has attracted more development partners in to partnering with the Ministry in the computerization effort. The list is as follows;

11 MINISTRY BUSINESS PROCESSES RE-ENGINEERING (BPR)

As a prerequisite for full automation and implementation of the GIS –based NLIMS, the Ministry senior staff were involved through a participatory process and went through a defining moment to review and give a critically analysis of its business processes that date back to the 1900 with the assistance of PILAK project . The motivation of this undertaking was to subject the processes to a critical redesigning and also rethinking given the radical shift towards enhancing performance of the Public sector organizations and the desire to improve service delivery to the Citizens through leveraging of information communication technology. The proceedings of the workshops comprised of change management sessions, group discussions and presentations that culminate into a BPR implementation document out-lining all the processes in the four technical departments as they are and the desired processes after re-engineering. This output and recommendations will further be polished by benchmarking of best practices from re-known institutions, countries that have successfully implemented a computerised Land management and administration systems.

Finally, the request for proposals to automate the re-engineered processes and further the procurement of expert (s) to translate the re-engineered manual processes into an automated platform that addresses and satisfies the requirements of the Ministry in responding to its Vision and the provisions of the Kenya Constitution 2010, the Vision 2030 and the National Land Policy is the ultimate NLIMS product.

11.1 KEY ACHIEVEMENTS IN BPR

The Ministry processes were documented as they are currently. In recognition of the pivotal role of BPR in injecting efficiency and effectiveness in service delivery and further a requirement for automation if computerization is to succeed in the contemporary organization, the Ministry institutionalised through the Permanent Secretary a the institutional structure for BPR implementation was put in place and officers appointed respectively as follows;

- The steering Committee
- The BPR implementation Committee
- The Project Manager

- The Technical Working Group/ Committee
- The Technology team

11.2 CHALLENGES IN BPR

- Lack of clear documented Ministry processes function by function
Lack of adequate ICT skills in the Ministry among staff
- Lack of standard operating procedures for every process
- Out-dated processes that are a combination of once partially documented processes (Acts of Parliament) and practice over the years.
- The legacy manual systems create information losses, dilapidated paper records, misplaced records.
- Numerous Paper records that pose a challenge in storage and retrieval.
- Poor records Management practise



Figure: Poor records storage

12 BENEFITS OF BPR

- Implemented Quick win Solutions - i.e Online database system, File tracking system, queue Management System,.
- The Ministry of Lands is among the first Ministry in Government to successfully review Business processes Re-engineering being sphere headed by the Ministry of State for Public Services and implemented related systems
- The Ministry officials understands and appreciates the urgent need of implementing the BPR review and its overall impact in transforming the Ministry and remain relevant
- The BPR review unleashed the Ministry potential to undertake a processes modelling exercise.
- The participatory approach by ministry officials in handling the process of BPR was the genesis of breaking silo operations by the various technical departments
- Promoted the staff morale by recognising their role in influencing the direction the Ministry ought to take and the structures that need to be implemented for the Ministry to deliver the requirements of the Vision 2030 and the provisions of the Constitution.
- Self appointed Change champions and effective BPR team became functional during this process of BPR

- The “AS IS” business Processes for the four technical departments has been documented.
- The “TO BE” processes for the four technical departments has been documented

13 CHALLENGES OF BUDGET ALLOCATION

The small amounts allocations by Government occasion delays in executing planned activities and hence prolongs the period of attaining the set targets

The funds by the development partners are not reliable for it takes too long to issue a NO Objection for the funds to be utilized as per the planned activities. As such very little is achieved when relying on these funds

13.1 Way forward on Budget provisions for the NLIMS

For the Ministry to make the planned targets in-line with the Kenya Vision 2030, the issue of consolidated, reliable source of funds to support the activities of the NLIMS is of paramount importance and urgency. A deliberate decision ought to be made to address constant flow of funds into this flagship project under the Kenya Vision 2030 FRAMWORK

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