

EMPOWERING LAND AUDIT IN ZAMBIA THROUGH TECHNOLOGY



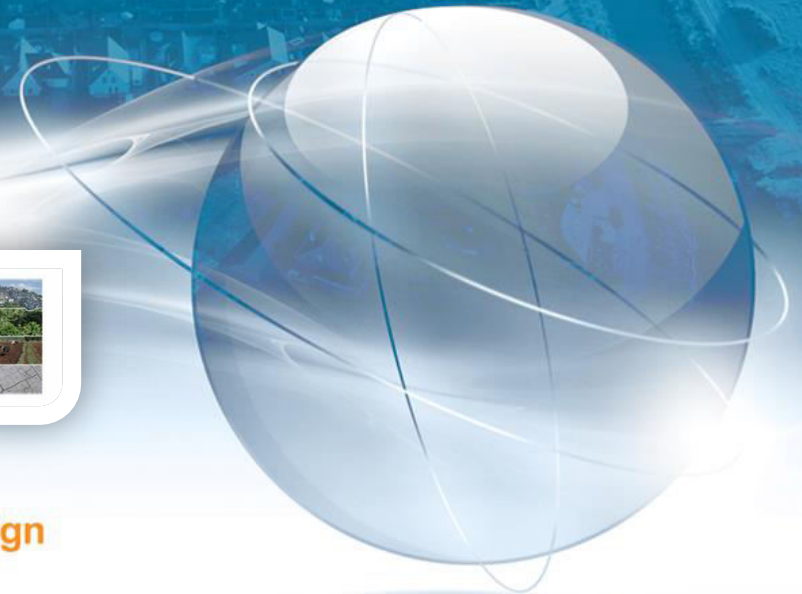
Scaling up Responsible Land Governance

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 14-18, 2016



March 2016

Sivan design
www.sivandesign.com



Background

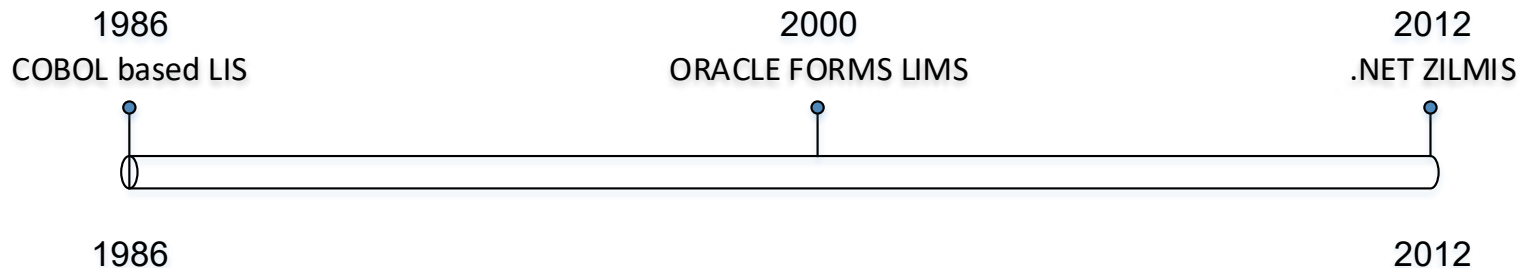
- Population ~ 13M.
- Total area ~ 753K SQ/KM.
- Zambia is divided into 10 provinces.
- Land and Land statutory rights (tenures) are vested and managed by the Zambian government through the Ministry of Lands, Natural resources and Environment Protection.
- The ministry is divided into 3 land operational departments – Lands (headed by the commissioner of land), Lands & Deeds (headed by the chief registrar) and Survey department (headed by the Surveyor General).



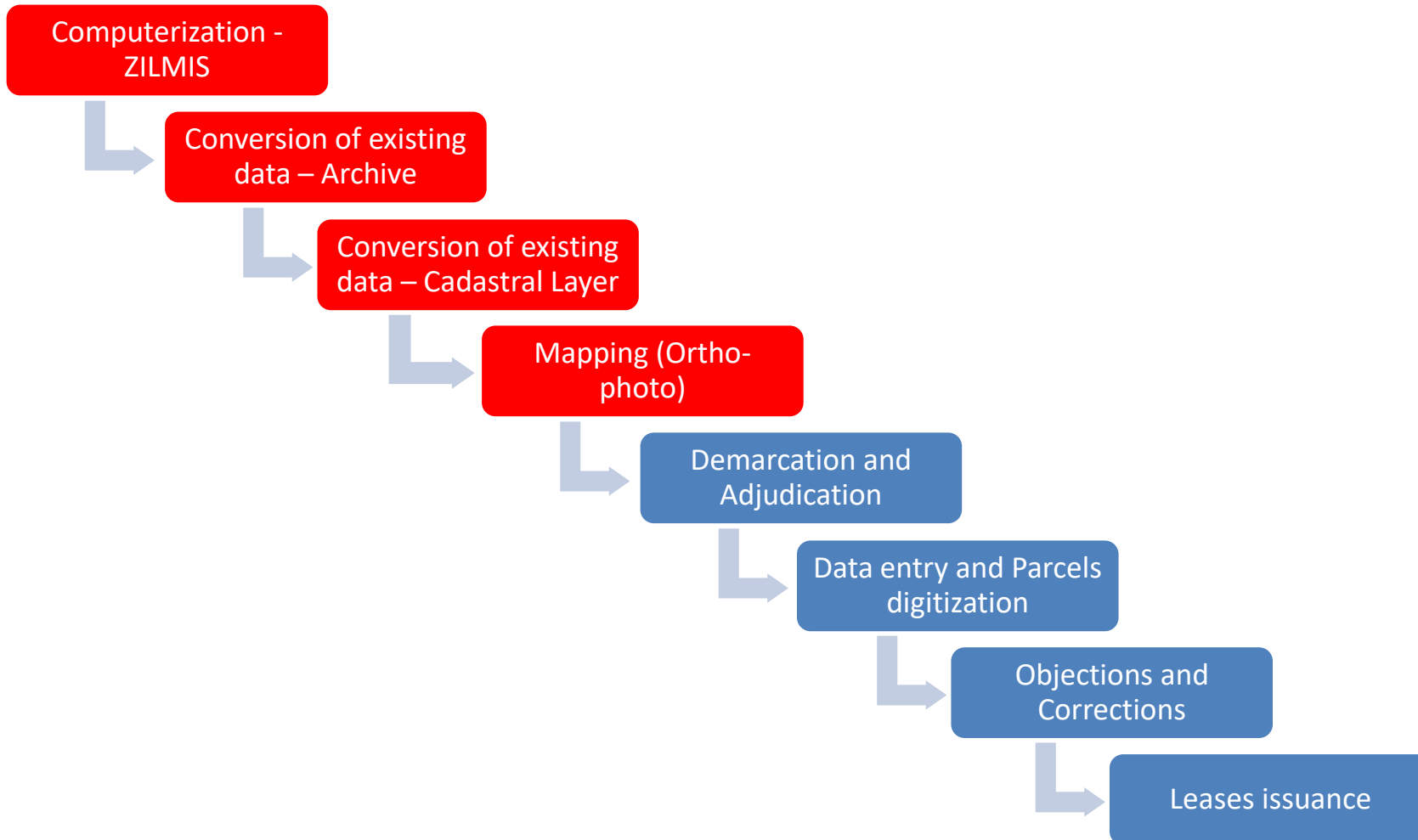
Computerization history in the ministry

- 1986 – 2000 – Cobol based LIS.
- 2000 – 2013 – ORACLE Forms based LIS.
- ~ 2009 – a failed attempt to migrate for a new system.
- 2013 – Today – ZILMIS.

Goal - comprehensive solution – All sub-systems works as a unified solution through the main middleware



Land audit efforts



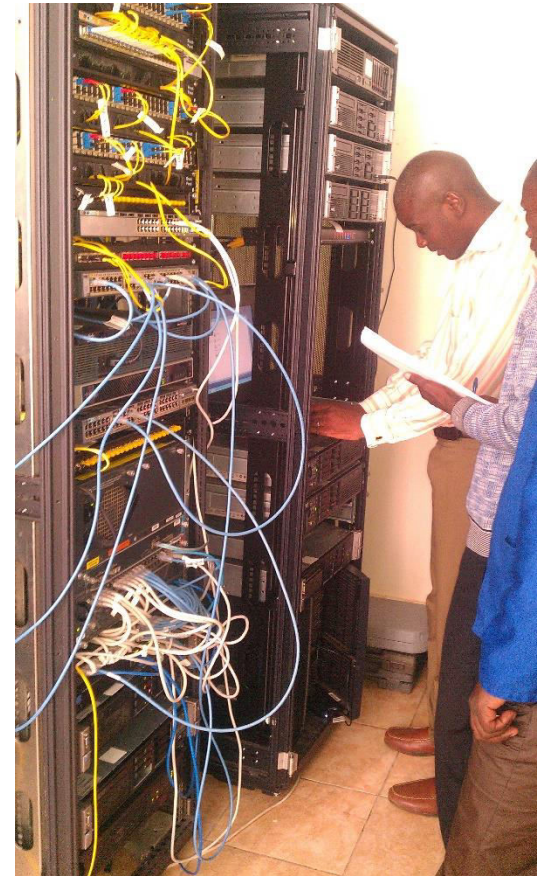
ZILMIS objectives

- Institutional Assessment (Workflows, Capacity building).
- Review the current Land Information Management System (LIMS).
- Systems Requirement Specification (SRS) and system design.
- Records migration from the former system to the new system.
- To design and develop ZILMIS.
- Change management and capacity building.
- interoperability with other relevant government information systems.
- Develop an accounting and billing system to enhance revenue collection.



ZILMIS technical highlights

- Middleware – based on GeoERP/LAPS technology - Sivan Design's unique technology for LIS.
- Thin client approach (auto-updater).
- hybrid system – "heavy tasks" Desktop application (.Net), "light users" Web interface.
- ORACLE DB.
- SharePoint EDMS (with SQL Server DB).
- Cadastral using ESRI GIS & OSGearth.
- Centralized/de-centralized system.
- On-line/Off-line.
- Encrypted messaging.



ZILMIS functional highlights

- ERP like UX and workflows derived system.
- In built workflows and file tracking mechanism.

The screenshot displays the GeoERP (admin) interface. On the left, a sidebar contains navigation options: Main Tasks, General, Land / Property, Owner/Stakeholder, Titles, Map, Billing, and Reports. The main area features a 'Pending & Checked-In Files' table with the following data:

Property No.	File number*	Temp file number	Workflow	Action	Assign date	Assigned from	Notes	Check-In
L/25004/M		202820	lodgement of sun	Drawing office ple	04/09/2014	JMINANGO	Drawing office please deal	<input checked="" type="checkbox"/>
F/28a/A/24/A		202833	Lodgement of Sun	Approved for your	09/09/2014	JMINANGO	Approved for your consid...	<input type="checkbox"/>
F/5100		202671	lodgement of sun	Approved for bind	09/09/2014	JMINANGO	Approved for binding	<input type="checkbox"/>
F/279a/A/1		202823	Lodgement of Sun	Cadastre Drawing	11/09/2014	phirpo	ready for diagram numbe...	<input type="checkbox"/>
LN_234	LN_234	203751	Lodgement of Sun	ready for diagram	11/09/2014	amwiinga	ready for diagram numbe...	<input checked="" type="checkbox"/>
L/22962/M	L/22962/M	203524	lodgement of sun	frame diagrams a	12/09/2014	ngulubeesa	frame diagrams as per ar...	<input type="checkbox"/>
L/25833/M	L/25833/M	203566	lodgement of sun	assign diagram n	12/09/2014	ngulubeesa	assign diagram numbers	<input type="checkbox"/>
L/24005/M	L/24005/M	203568	lodgement of sun	assign diagram n	12/09/2014	ngulubeesa	assign diagram numbers	<input type="checkbox"/>
L/40120/M		202826	lodgement of sun	Assign diagram n	12/09/2014	RMUSONDA	Assign diagram number...	<input type="checkbox"/>
L/12183/M	L/12183/M	203651	lodgement of sun	Facilitate	12/09/2014	JMINANGO	Facilitate	<input type="checkbox"/>
L/28413/M	L/28413/M	202568	lodgement of sun	assign diagram n	16/09/2014	ngulubeesa	assign diagram numbers	<input type="checkbox"/>
LN_266	FF/2303	204372	Application for Ne	Plan Room numb	17/09/2014	jchalila	PROCEED WITH NUMB...	<input checked="" type="checkbox"/>
L/23588/M		202739	lodgement of sun	Kindly diagram n	18/09/2014	RMUSONDA	Kindly diagram number a...	<input type="checkbox"/>
L/23564/M	L/23564/M	204030	lodgement of sun	Amend and add o	18/09/2014	RMUSONDA	Amend and add on diagr...	<input type="checkbox"/>
500163	L/CHI/200007	L/CHI/200007			29/10/2014		6TR5Y7	<input type="checkbox"/>

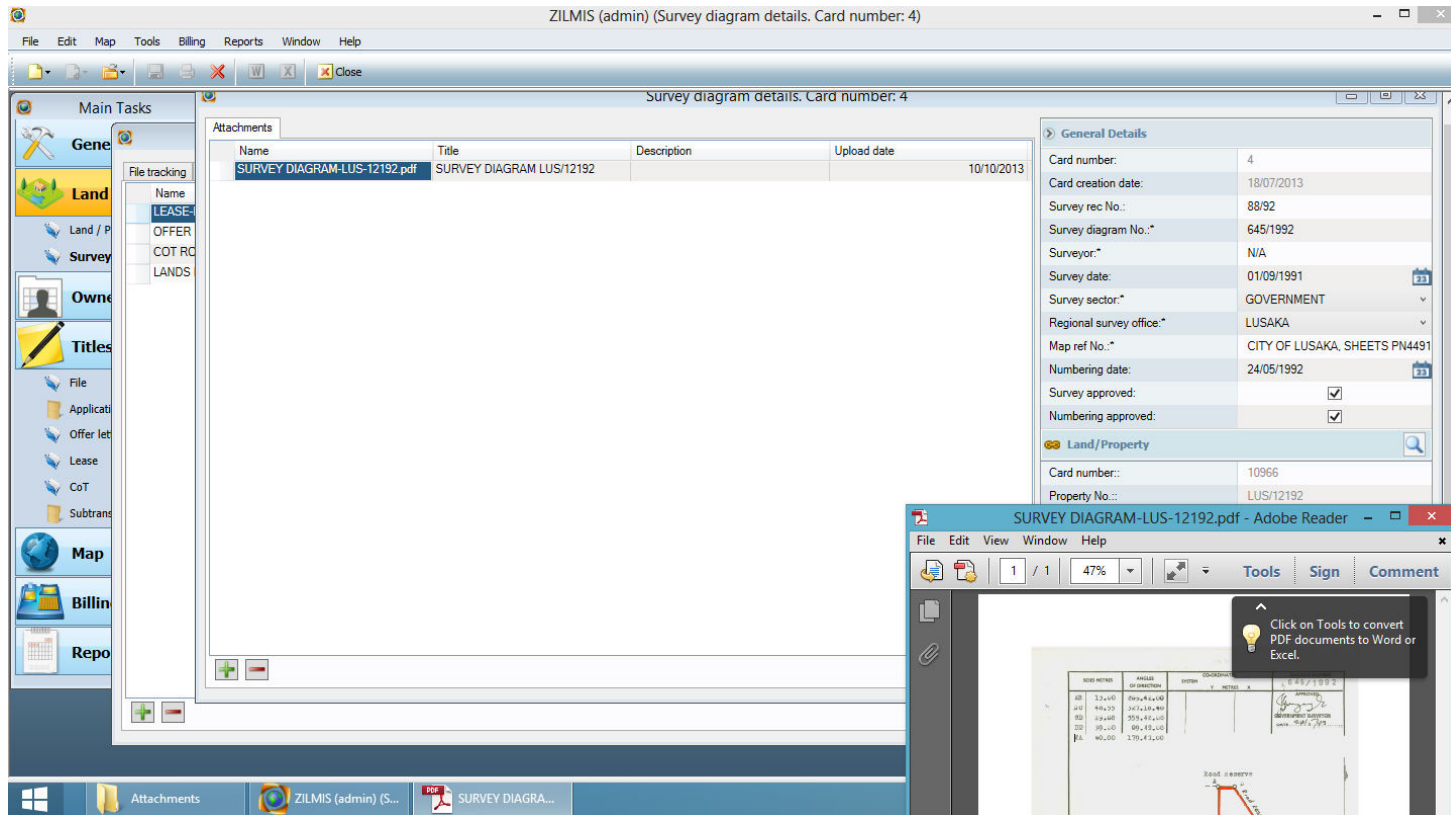
Below the table is a 'New version available' notification: 'New GeoERP Client version is available. Click to update.'

On the right, the 'Workflow diagram' for 'Application for state land' is shown. The workflow steps are: 'Customer applies for land at customer service' (oval), 'Land registry opens file' (oval), 'Land officer checks documents availability' (oval), 'Folio/Surveyor checks property' (oval), 'Commissioner approves' (oval), and 'Estate approves data before numbering' (oval). A decision diamond 'Commissioner approved / not approved' branches the flow. A 'Properties' dialog box is open over the 'Estate approves data before numbering' step, showing fields for Name, Unit (Chief Land Officer / Commissioner), Description, Related action (Optional), and Days to complete.



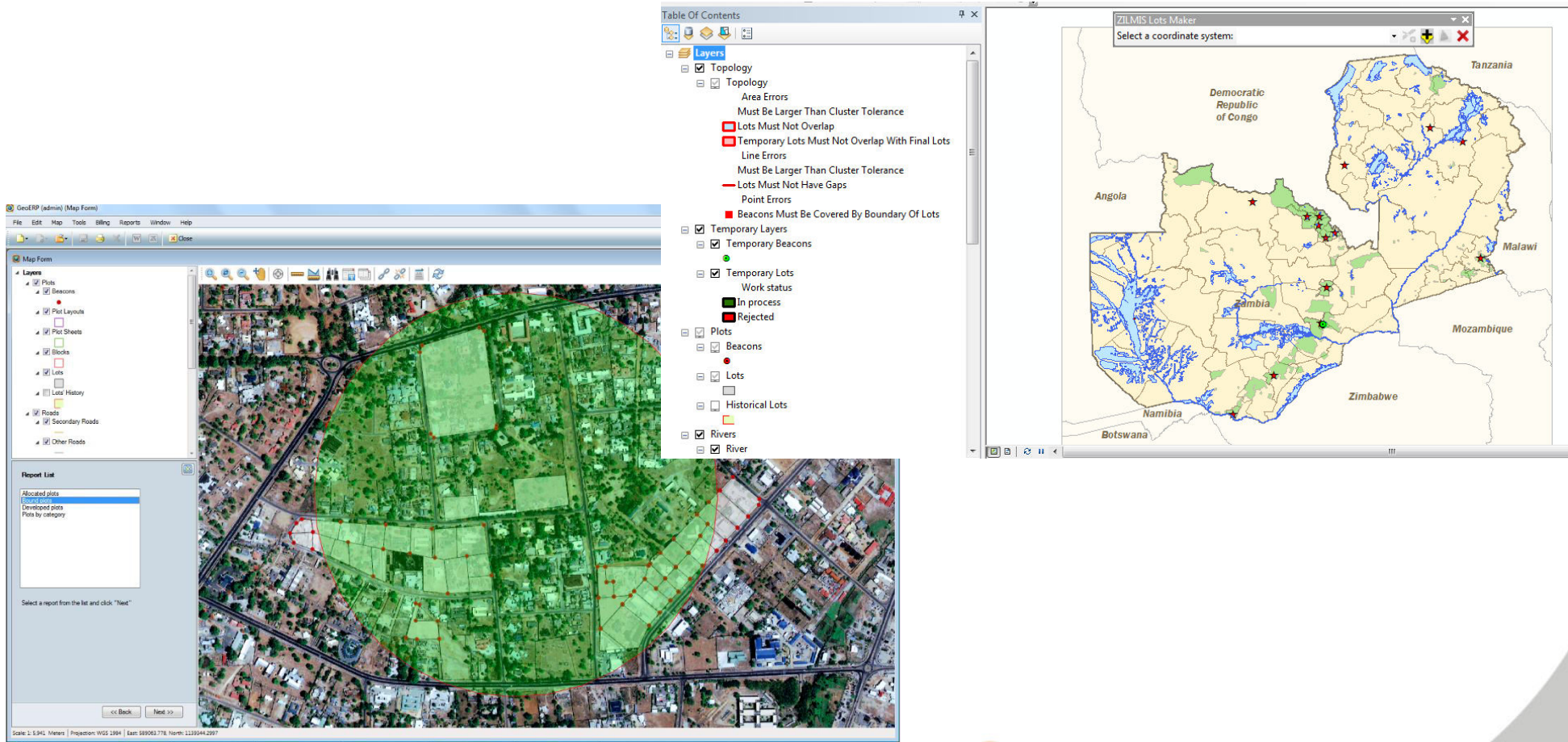
ZILMIS functional highlights

- Registration module.
- Integrated EDMS.



ZILMIS functional highlights

- Cadastral GIS as an embedded component.



ZILMIS functional highlights

- Enhanced permissions module.
- Audit trail.

Service Center Group Permissions

Forms	Forms content	Tools	Reports	Miscellaneous	
Permission Item	Search/View	Create	Edit	Delete	Print
Land / Property	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Land / Property	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sub - Property	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Survey Diagram	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Owner / Stakeholder	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Person	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Company	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Titles	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
File	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applications	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
State land allocations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Customary land allocation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
New creation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
*****	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Offer letter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Lease	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CoT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Subtransactions	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Assignment/Transfer/Gift	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Subdivision/Consolidation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
*****	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Billing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Payment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Voucher	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Receipt	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Cancel Save

Log Management

From: 10/03/2015 To: 10/03/2015 Object Type: Refresh

Property No	Time	User Name	Object Type	Object ID	Action	IP address	Data
	10/03/2015 09:52	admin admin	Application Withdrawal of Offer letter	17798	Delete	127.0.0.1	<Data>
	10/03/2015 09:55	admin admin	Application Withdrawal of Offer letter	17800	Delete	127.0.0.1	<Data>
	10/03/2015 09:55	admin admin	Application Withdrawal of Offer letter	17800	Delete	127.0.0.1	<Data>
	10/03/2015 10:18	admin admin	Application Withdrawal of Offer letter	17802	Delete	127.0.0.1	<Data>
	10/03/2015 11:20	U_COL	Application Withdrawal of Offer letter	17802	Update	127.0.0.1	<Data>
	10/03/2015 11:21	admin admin	Subtrans. Withdrawal of Offer letter	618488	Insert	127.0.0.1	<Data>
	10/03/2015 11:22	admin admin	Subtrans. Withdrawal of Offer letter	618488	Delete	127.0.0.1	<Data>
	10/03/2015 11:25	admin admin	Subtrans. Withdrawal of Offer letter	618490	Insert	127.0.0.1	<Data>
IT/305	10/03/2015 11:43	U_COL	LandProperty	82145	Update	127.0.0.1	<Data>
IT/305	10/03/2015 11:44	U_COL	Offer letter	136674	Insert	127.0.0.1	<Data>
	10/03/2015 11:44	U_COL	Offer letter	136674	Delete	127.0.0.1	<Data>
U19282M	10/03/2015 11:45	U_COL	LandProperty	285443	Update	127.0.0.1	<Data>
U19282M	10/03/2015 11:46	U_COL	Application Documents from commissioner of lands	13939	Update	127.0.0.1	<Data>
U19282M	10/03/2015 11:46	U_COL	Offer letter	136676	Insert	127.0.0.1	<Data>
LN_2564	10/03/2015 12:06	U_COL	Layout	529262	Insert	127.0.0.1	<Data>
LN_2564	10/03/2015 12:07	SG Assistant	Layout	529262	Update	127.0.0.1	<Data>
LN_2564	10/03/2015 12:08	U_COL	Application Lodgement of survey records	17804	Insert	127.0.0.1	<Data>

Row 1 to 18 of 18 1000 Results per page

Print OK



ZILMIS physical architecture



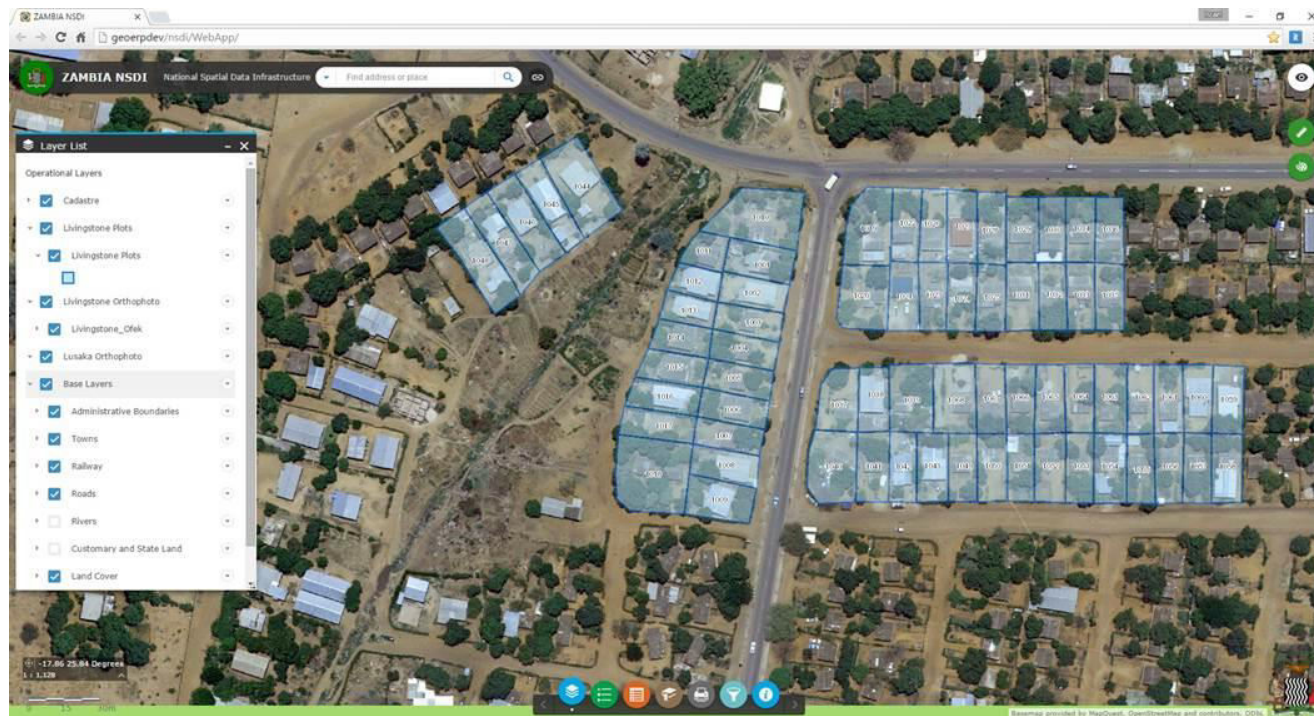
ZILMIS current status

- Serves as the hub for the Land Audit program.
- In full operation since 06-2014 (1.5 years after commencement).
- Old LIMS was officially shut down on 07-2014.
- Currently being used by more than 200 con-current users daily - service center, cashiers, Land officers, Surveyors, Deed officers, Auditors and more.
- Populated with 550,000 Land records, about 120,000 Leases and less Cadastral information.



Mapping & NSDI

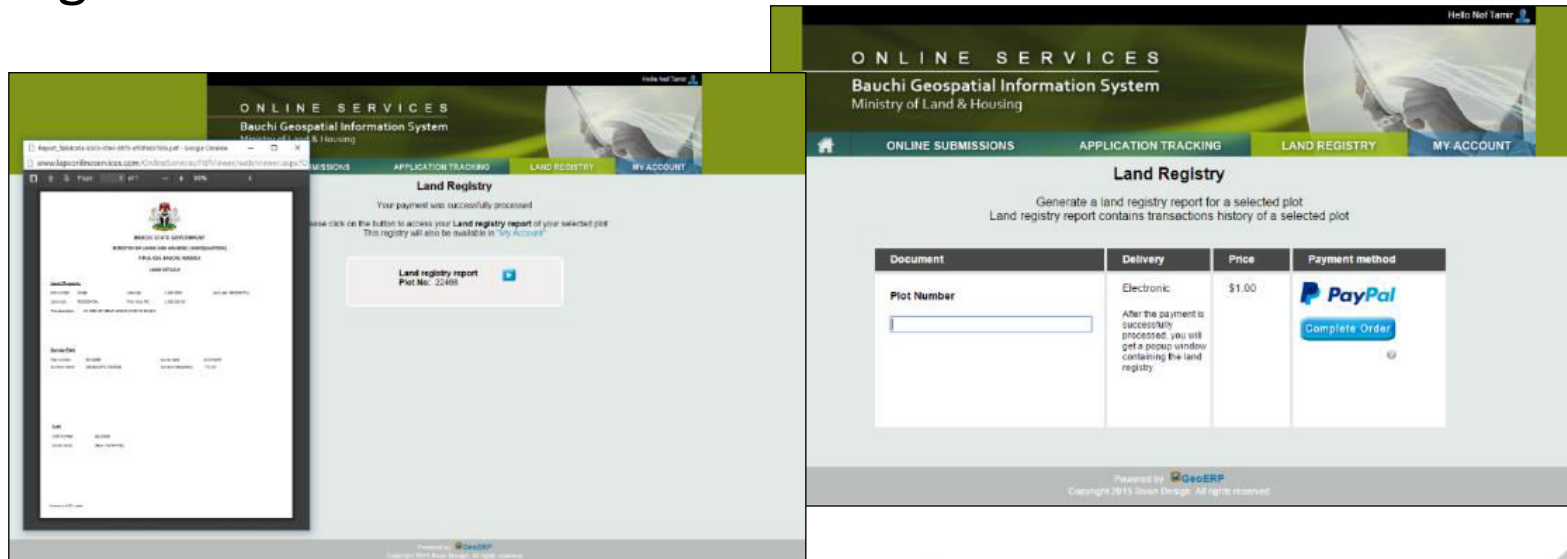
- Mapping the entire nation at high accuracy – Satellite and Aerial (1:1,000, 1:2,000, 1:5,000, 1:10,000 – 1:25,000).
- NSDI - Geo Spatial Database, WMS & National GIS web portal.



Future initiatives

Focus on accessibility to the public

- On-line services - monitor application status, print land register, print financial statement.
- Payments – E-payments, interface to commercial banks.
- Improving the service center.



Summary and conclusions

- ZILMIS is a success story, greatly due to client's full commitment for successful implementation.
- Key elements for success:
 - Full compliance with client's requirements.
 - System security and stability.
 - Change management and client's commitment.
 - Strong ICT unit.
 - Project coordinator <-> Project manager.
 - A well tested technology.



Thank you



Shlomi Sivan, CEO. Sivan Design D.S Ltd

+972-9-7778104, +972-52-2806372, shlomi@sivandesign.com

