THE

NATIONAL SPATIAL DATA INFRASTRUCTURE
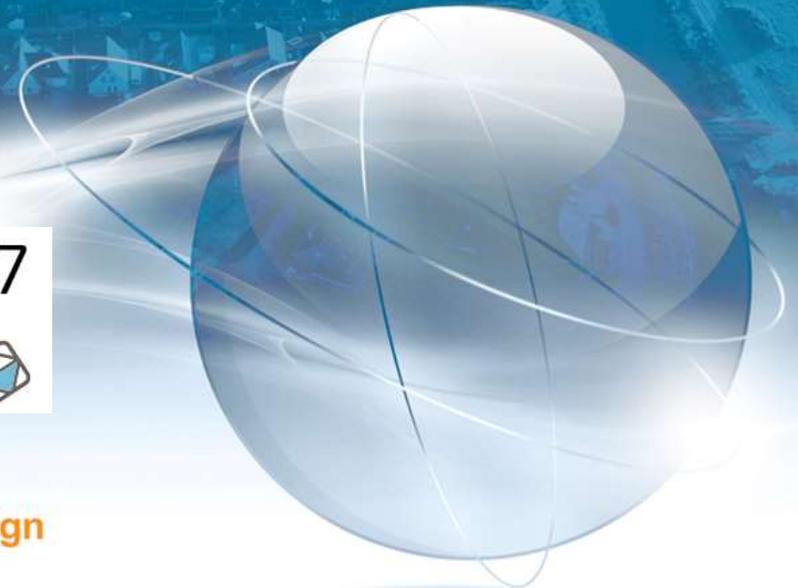
OF ZAMBIA

FIG WORKING WEEK 2017
Surveying the world of tomorrow –
From digitalisation to augmented reality
May 29 - June 2 **Helsinki Finland**

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May 2017

Background

- Land and Land statutory rights (tenures) are vested and managed by the Zambian government through the Ministry of Lands & Natural Resources.

- The above is supported by ZILMIS (Zambia Integrated Land Management Information system) which is up and running since 2014 (612,000 Plots and Ownerships).

- To execute an overall Land Audit, better maps and accurate spatial data are necessary, hence the initiative of creating a NSDI.

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Mapping & NSDI

Mapping at high accuracy (Cadastral Scale) is required to serve as the hub for the National Land Audit and Land Titling, and national development in areas of development of infrastructure like roads, water reticulation and waste disposals, electricity utility power lines and other usages
in physical
planning and land
use.

Aerial Photography

- Main cities at 10cm resolution of about 1,800 square km comprising the total area of the 15 main cities.

- State land at 20cm resolution of about 36,500 square km.
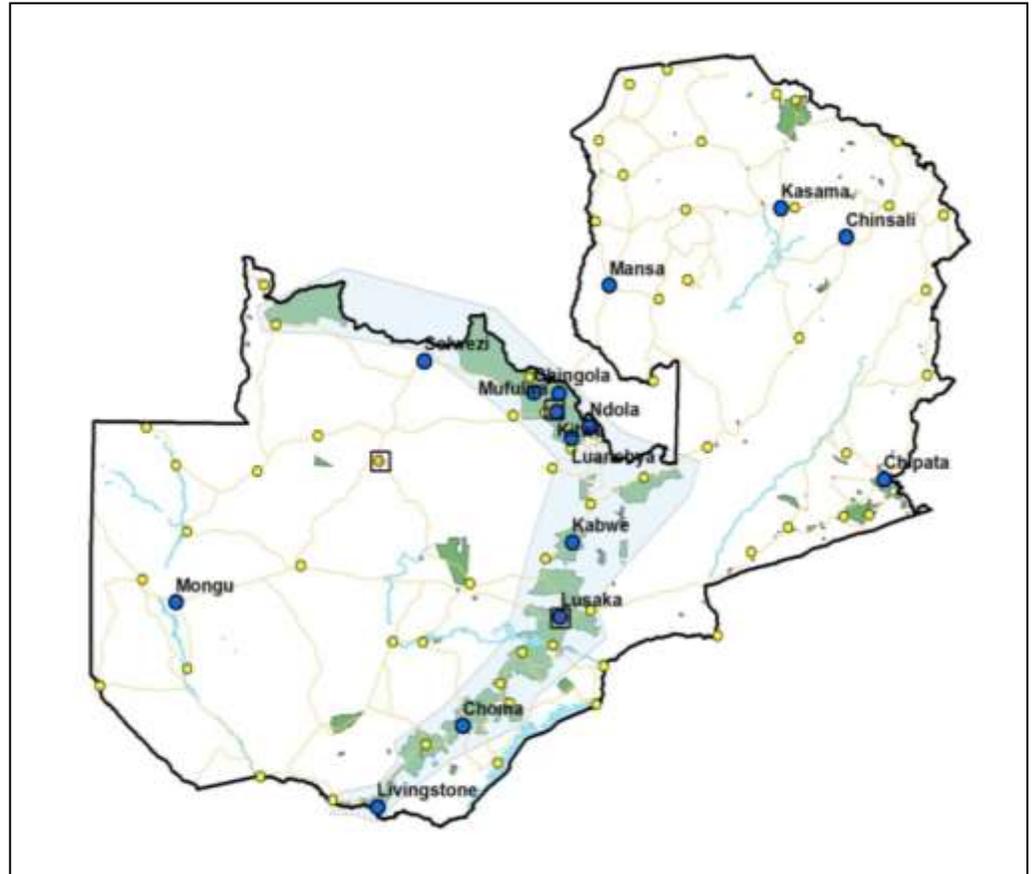
Satellite Imagery

- Pleiades satellite imageries of 88 townships nationwide at 50cm resolution with a coverage of 25 SQKM per township. (2,225 SQ KM).

- Spot 6/7 Satellite Imagery of the state wide area covering the entire country area at 250cm resolution for 712,089 SQKM.

Data Terrain Model

Generation of Digital Terrain Model ("DTM") at 10m grid for the Cities Areas, 25m grid for the State Land Area and provision of SRTM DTED-1 (1Om-20m accuracy) DTM for the area covered by the satellite imageries.
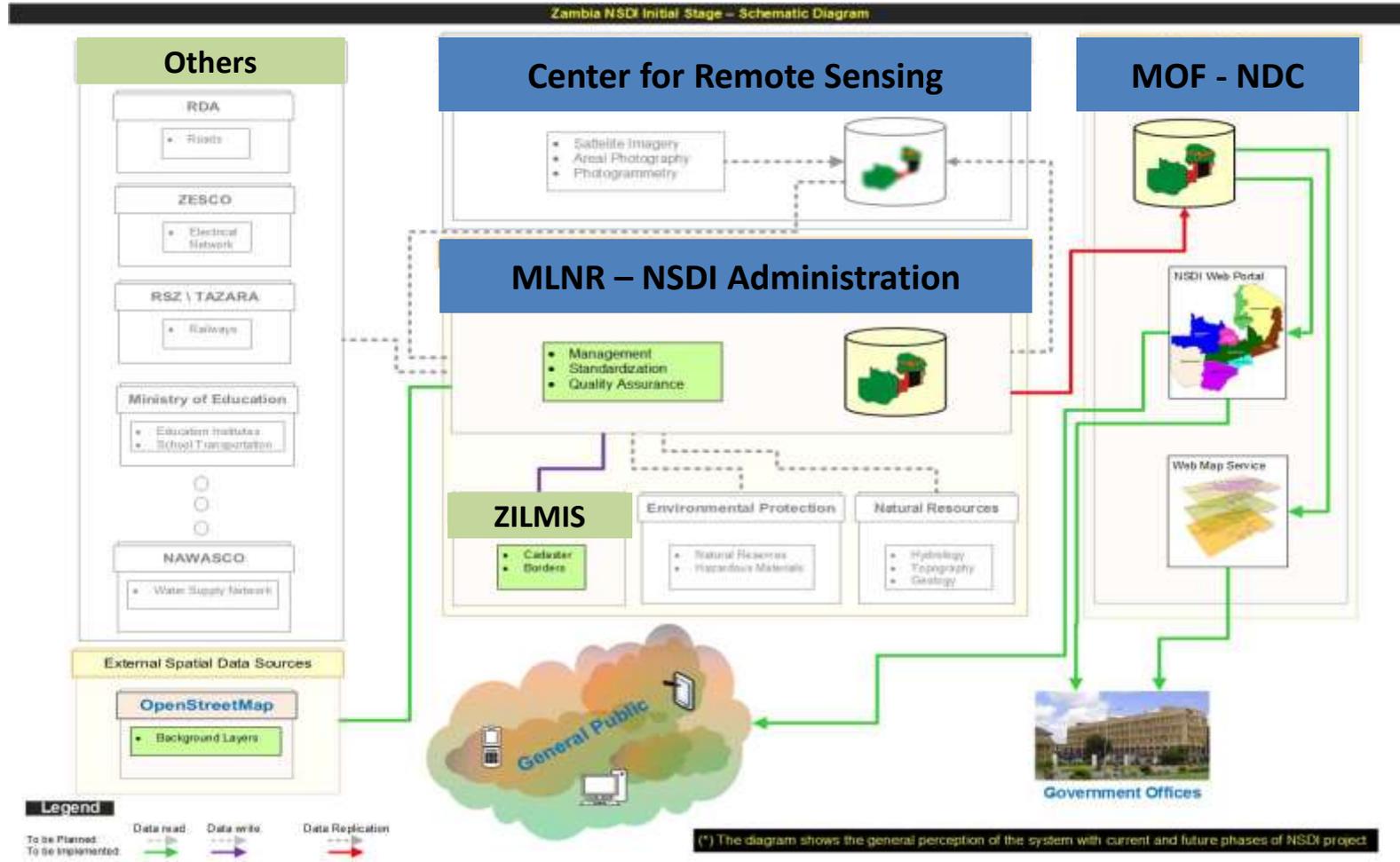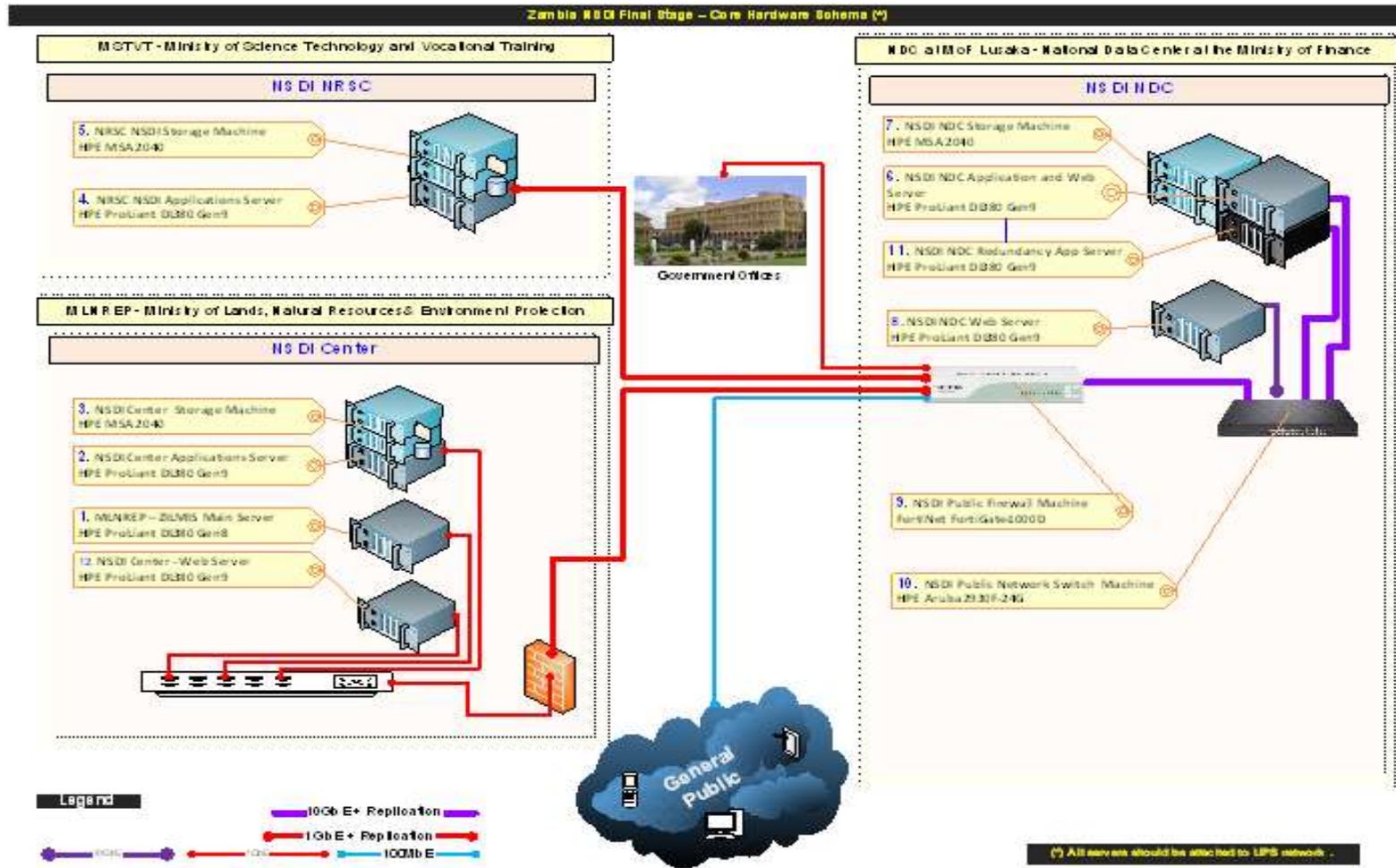
New Ground Control Points

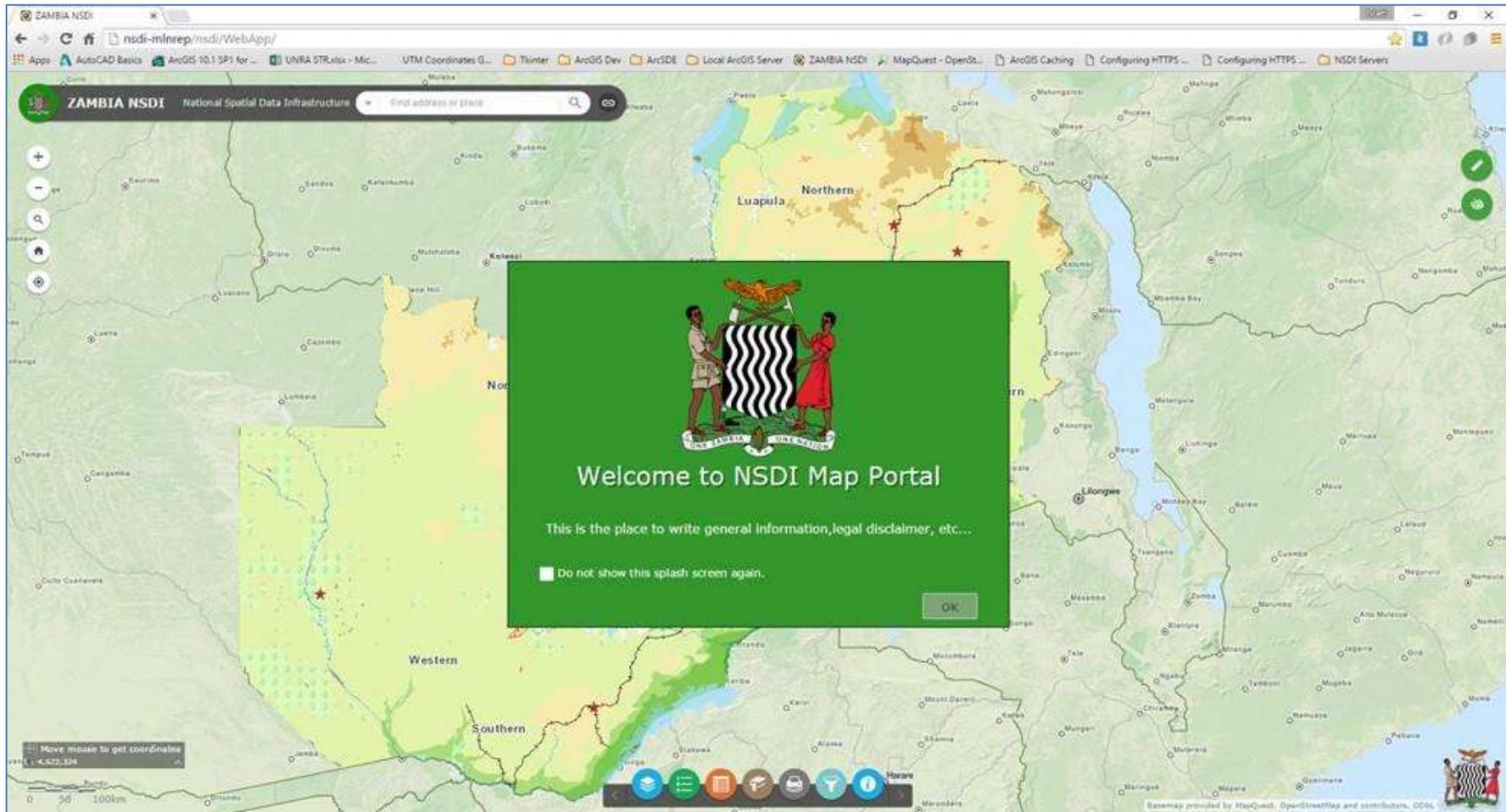The National Geodetic Network is augmented by the Ministry's Survey teams guided and trained by Israeli Project staff.
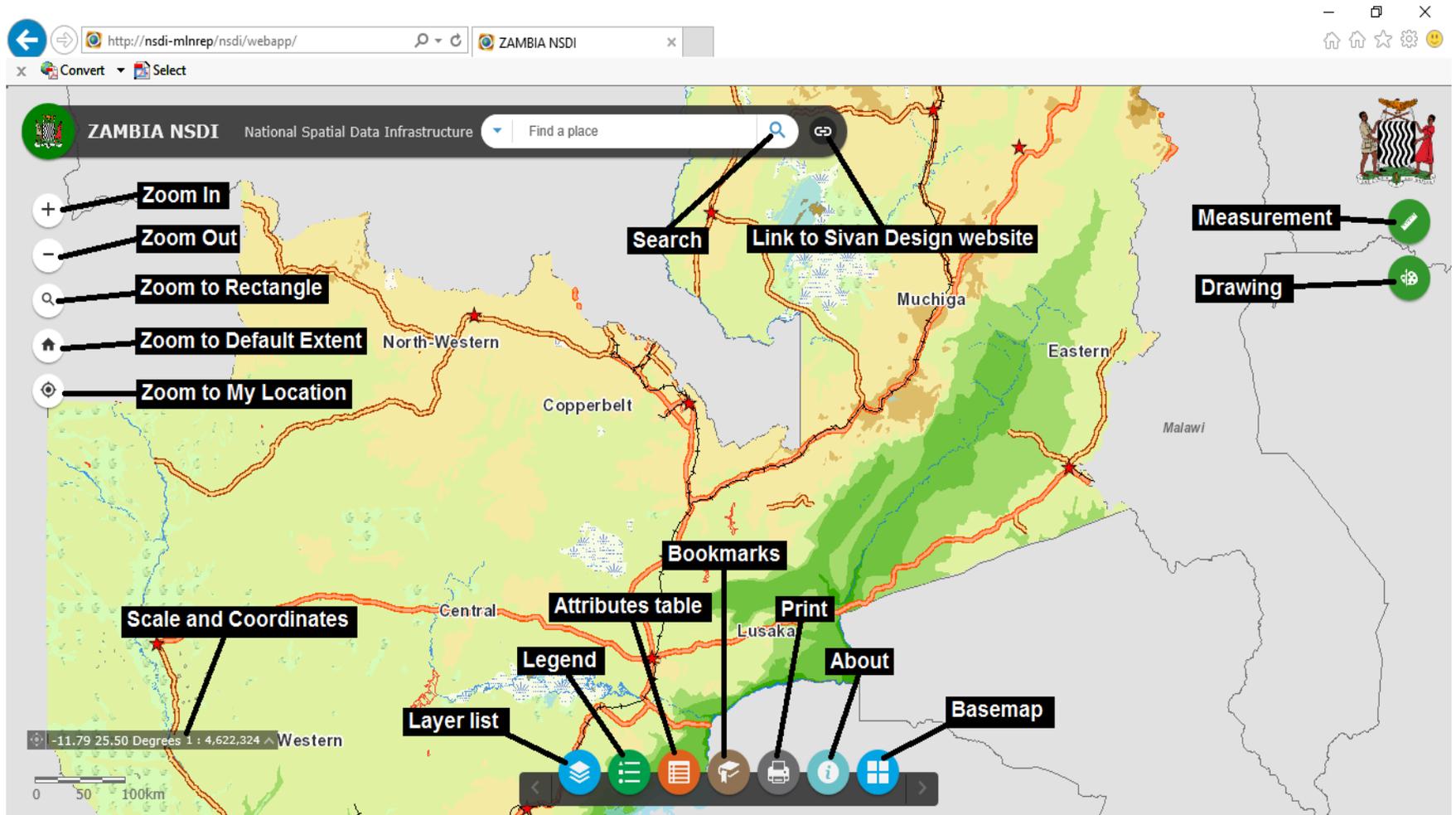
The Technology

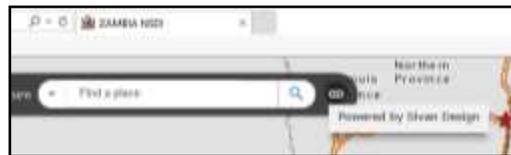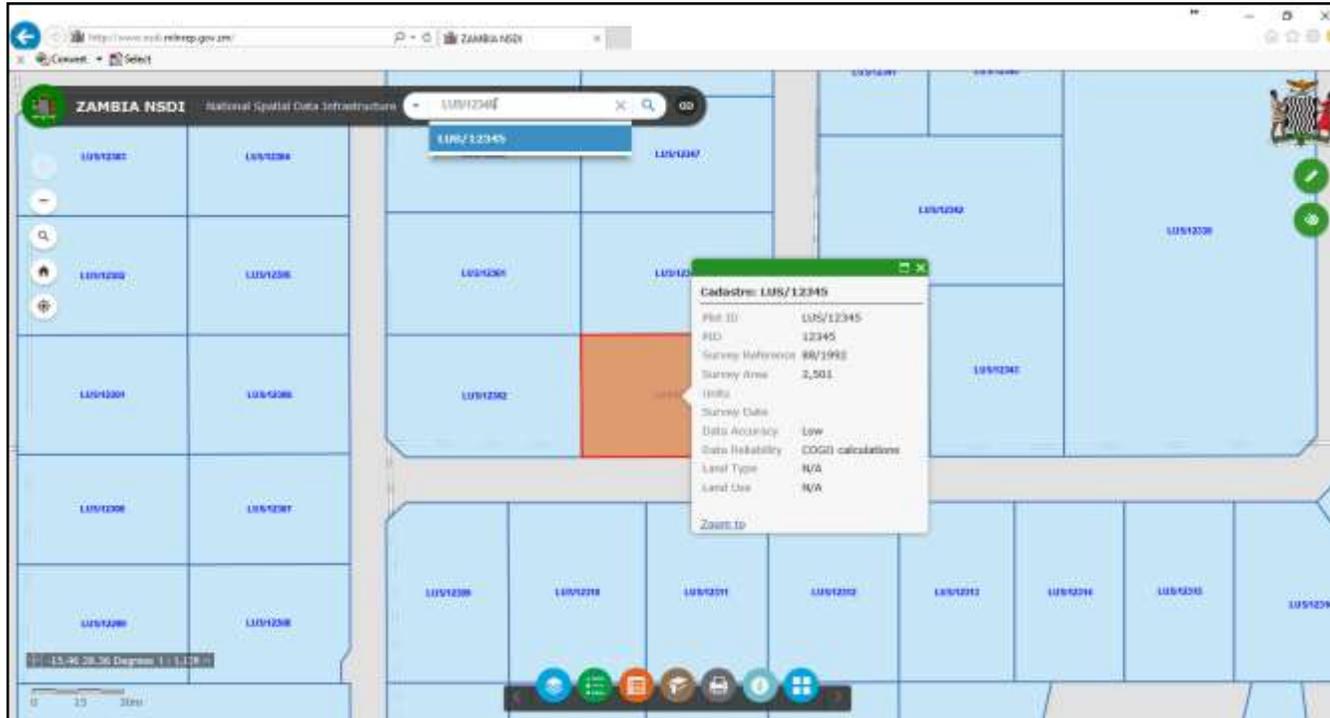Zambia NSDI Initial Stage – Schematic Diagram

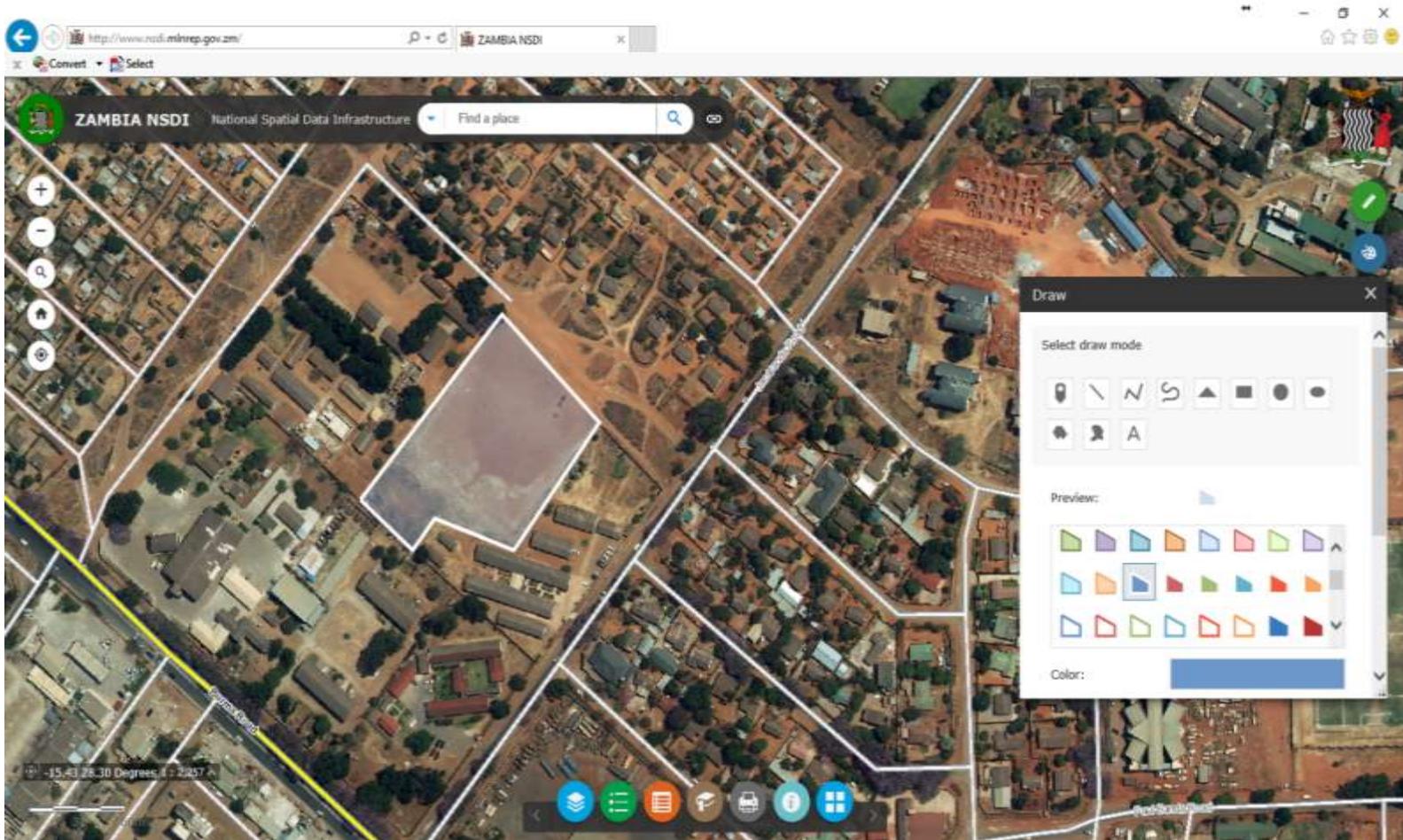# The Technology

The NSDI Map Portal

The NSDI Map Portal

Searchable Data from the LIS

Cartographic Tools for Laymen

Capacity Building and Governing Committees

Involvement of the Ministry and Stakeholders at all stages of the Project through workshops, training and Inter-Governmental committees.

A User's Guide for Laymen

Figure 1: Moving to a new city.

Image credit: Chisenga Abel Musuka

How Do I???

Understand the Terminology

Navigate around the map

Zoom in and Zoom out

Use the portal on a mobile device

Find my location

Search

Work with the Scales

Understand the coordinates

Work with layers

Understand legends

Work with attributes table

Add and remove bookmarks

Print or save a map

Understand the NSDI

Measure area, distance or coordinates of a point

Draw on the map

How to get in touch with the NSDI Support Team

Figure 2: Finding your way around.

Image credit: Chisenga Abel Musuka

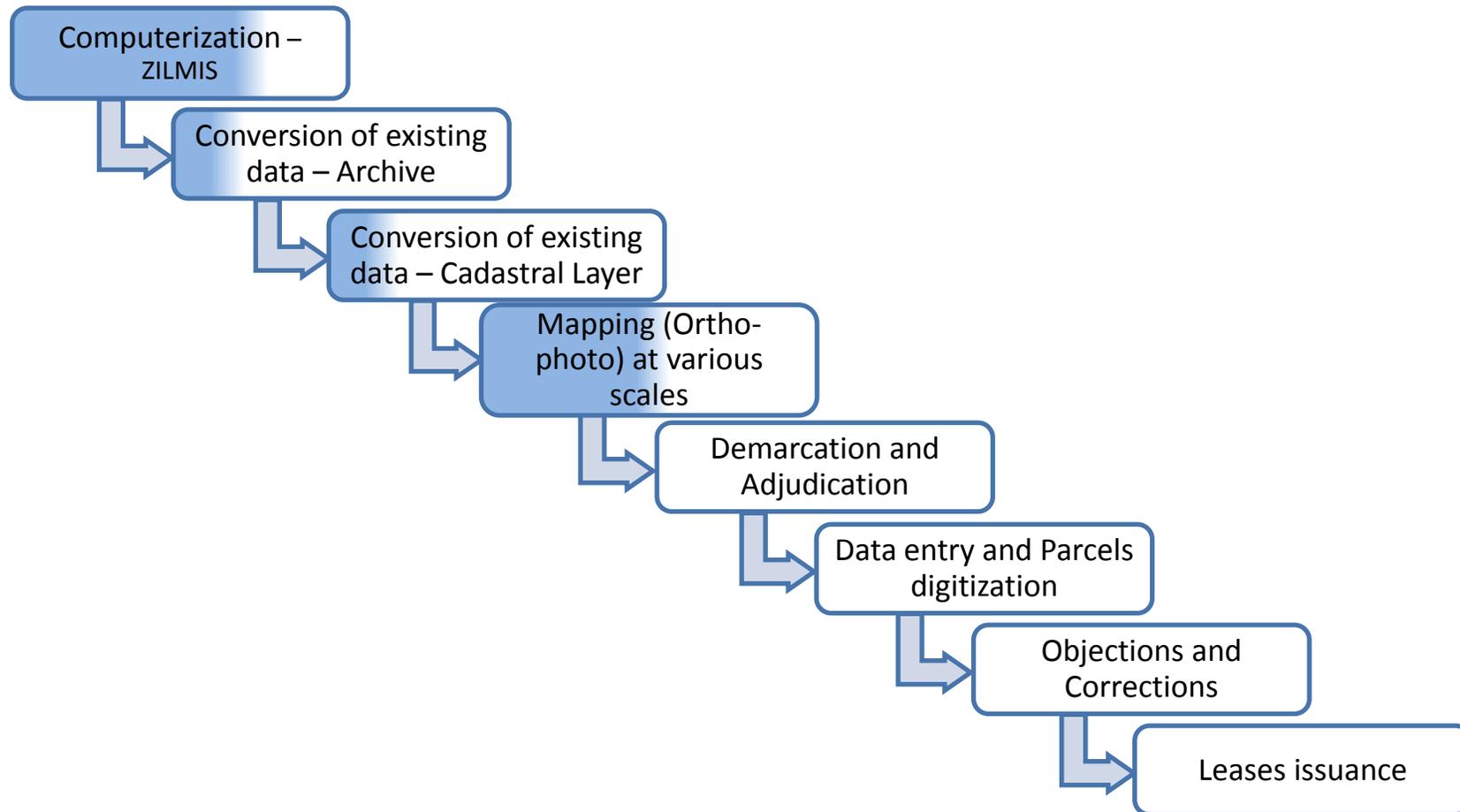# A User's Guide for WMS Consumers

NSDI Web Map Service Manual

Web Map Services (WMS)
using OGC and ArcGIS standards

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The Roadmap to the National Land Audit

Computerization – ZILMIS

→ Conversion of existing data – Archive

→ Conversion of existing data – Cadastral Layer

→ Mapping (Ortho-photo) at various scales

→ Demarcation and Adjudication

→ Data entry and Parcels digitization

→ Objections and Corrections

→ Leases issuance

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Summary and conclusions

- After ZILMIS's success story, the second stage of providing the infrastructure to the National Land Audit and Titling is under way.

- Key elements for success:

  - A good well tested technology.

  - Interfaces with the LIS.

  - Involvement of Stake holders from early stages.

Thank you

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