Land Administration System Eswatini

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Agenda

Introduction

Current Data Collection SLAM project

Future Land Administration System

- *feedback*

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Introduction

- Sustainable Land Administration & Management Project
- Pilot phase – October 2016 – May 2019
- European Union funding of Euro 1.8 million?

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Introduction

› **Project result areas (terms of reference)**

1. Tools are developed and used for more efficient Land Administration of Swazi Nation Land.
2. Relevant stakeholders capacitated to use the cadastre and manage Swazi Nation Land more efficiently and sustainably.
3. Institutional arrangements for non-Title Deed Land / SNL are reviewed and stakeholders accept the recommended revised arrangements.

Introduction

› Project outputs (terms of reference)

1. Tools are developed and used for efficient administration of SNL.

    a) Maps of chiefdom landholdings and land use

    b) Documented landholding recording tools

    c) Computer-based land records system

    d) Documented Alternative Dispute Resolution Tools

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Introduction

- **Computer-based land records system**

  a) System not specified in terms of reference.

  b) TA proposed to support design, procurement, and installation by the project.

  c) Project procured hardware and some software.

  d) Computer tools developed by the TA team.

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SLAM Data Collection

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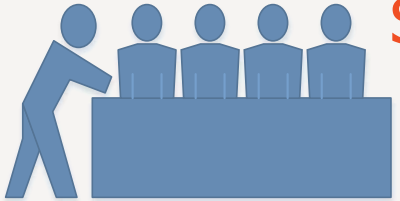
SLAM Data Collection



Surveyor General's Department

Provide changes to land information

Provide final result

Chiefdom Landholding Register

Chiefdom

Laptop

Desktop GIS

QC Editor

Server

Central Database

upload to central database

Mobile Device

Enumerator

Collected Homestead Forms

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Data Collection Form

- Interview
  - Design
  - MS Word

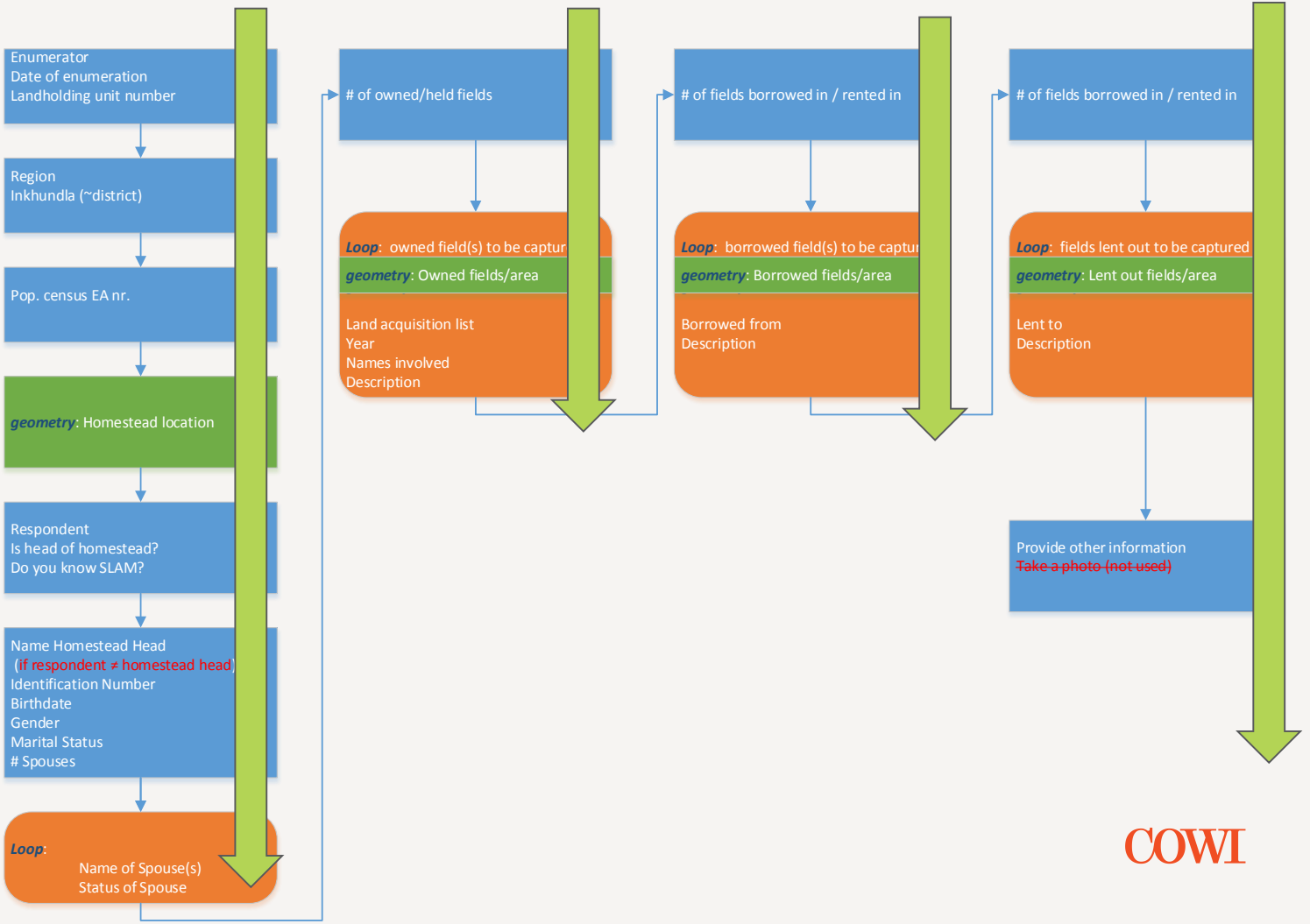
LANDHOLDING & LAND USE DATA FORM	
Version F (13 August 2018)	(LUR Data Form (F).docx)
A. INTERVIEW INFORMATION	
1. Enumerator	Select name from list (13 entries), or specify other & type name.
2. Date of interview	default: today.
3. Landholding unit number	Project ID number for homestead unit which is created by the enumerator, for example as a personal sequence number for interviews performed. *E.g. Johnson * 2018/02/13 * 1*
B. HOMESTEAD LOCATION	
1. Region	Selected from list by enumerator.
2. Inkhundla	Selected from list within selected region.
3. Population census enumeration area nr.	Can be found on the homestead house e.g. 112411040-007-001.
4. Homestead location coordinate (select a point on map)	Select homestead house on an orthophoto stored on mobile device in mbtiles format.
C. RESPONDENT	
1. Person interviewed a. Family name b. Given name c. Other names	Given name as in the passport (or offici documents), other names may be used alternative names.
2. Id Number	Personal Identification Number.
3. Birthdate	Only required if Id Number would not b
4. Gender	
5. Contact information	Means of communication to respondent phone number.

D. HOMESTEAD HOLDER (person who is recognised as head of the homestead)	
1. Homestead head a. Family name b. Given name c. Other names	Given name as in the passport (or official documents), other names may be used for alternative names. (copied from respondent if same as homestead head).
2. Id Number	Personal Identification Number (copied from respondent if homestead head).
3. Birthdate	Only required if Id Number would not be available
4. Gender	Select: ***Male, Female.***
Is Homestead head deceased ?	The deceased homestead head will be entered (if a new head has not been assigned), set this attribute to 'No'
5. Marital status	Select: ***Married / Multiple / Single / Widowed / Divorced*** (if multiple spouses select Multiple).
6. Amount of spouses of homestead head a. Spouse name b. Spouse status	After indicating the amount of current and former spouses, this amount of spouse name(s) can be entered (in a programmatic loop). Select spouse status, default ***Married***, or else ***Deceased*** or ***Divorced***
E. HOMESTEAD LANDHOLDING	
1. Land held by or allocated to the homestead. a. On the map, digitise the *geometry* of land parcels or field(s) held or 'owned'. b. *Description* of land c. Land use	The total land area (that may be multiple fields) that the homestead was allocated and perceive as being "owned". After indicating the amount of land, held in one or more separate parts, 'parcels' or fields, the geometry of each part is entered with help of the orthophotomap (in a programmatic loop). If needed, a description of the land area (e.g. number of field strips) can be added. Land Use select **Grazing, Arable/farming, Commercial, Residential, Forest, Wetland, Community**

F. DISPUTES	
1. Is the landholding situated in an area with a chiefdom dispute or overlapping chiefdoms?	Select: ***Yes, No***
2. Is the landholding subject to any current land disputes (not chieftaincy disputes)?	Select: ***Yes, No***
a. If "Yes", is the dispute related to:	Select: **inheritance / family matter / umphakatsi / other (specify)**
b. Year when dispute first arose	Between 1900 and 2025
c. What is the status of the dispute?	Select: **nothing happening / being resolved**
1. If being resolved, how?	Select: **by family / by umphakatsi / by others (specify)**

Interview

- Guided
  - Workflow
  - Process



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Android App

- Spatial data
  - homestead location
  - land holdings
  - land borrowed in/out

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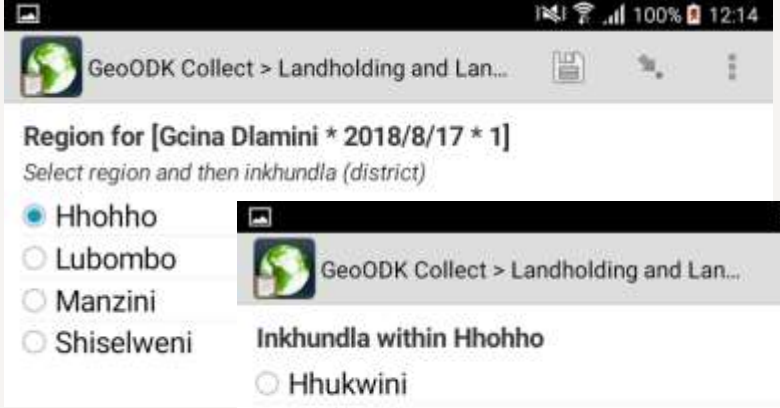
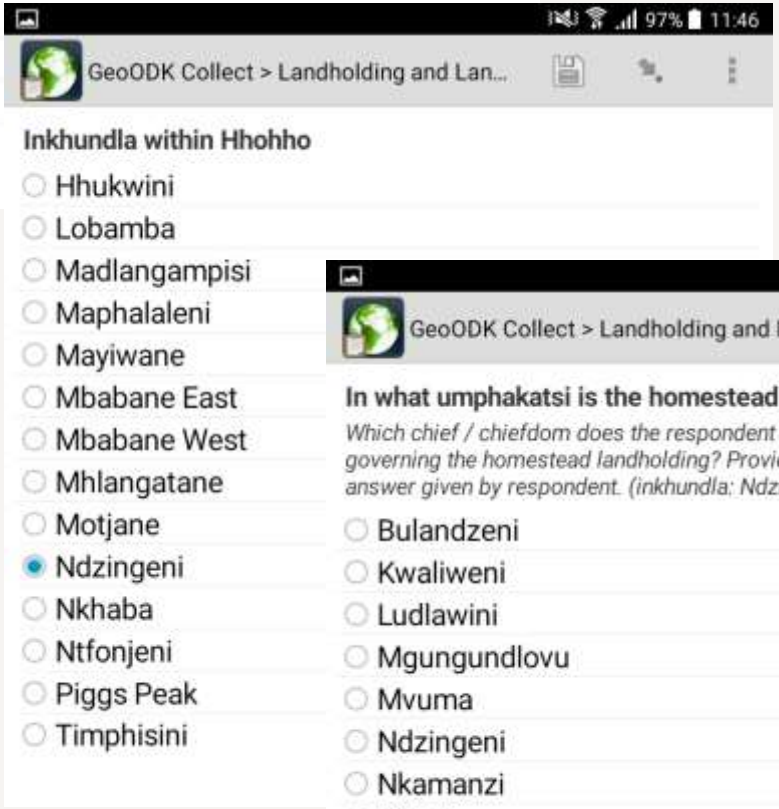
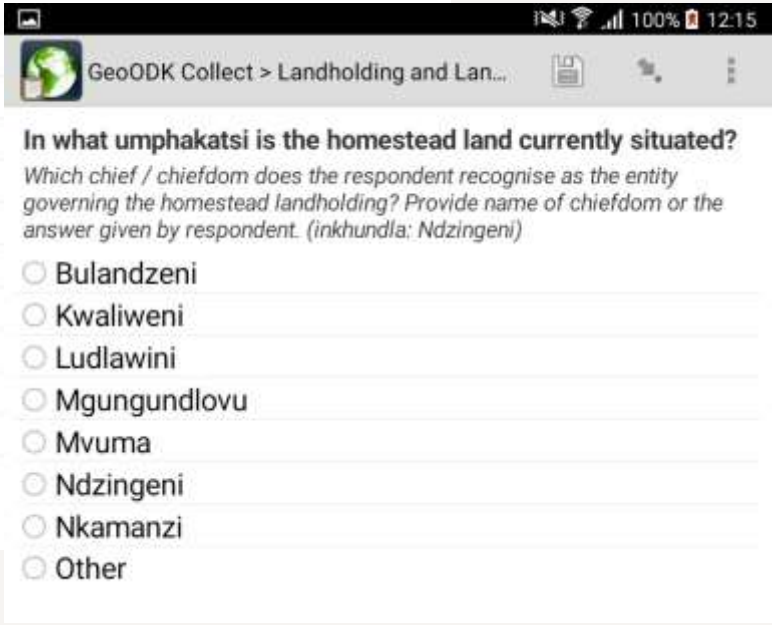
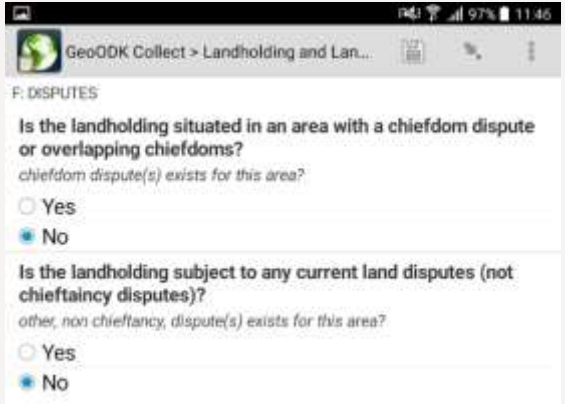
Android App

- Interview
  - Automated
- Open Source Data Collection
  - ODK Collect
  - GeoODK Collect
  - Open Source



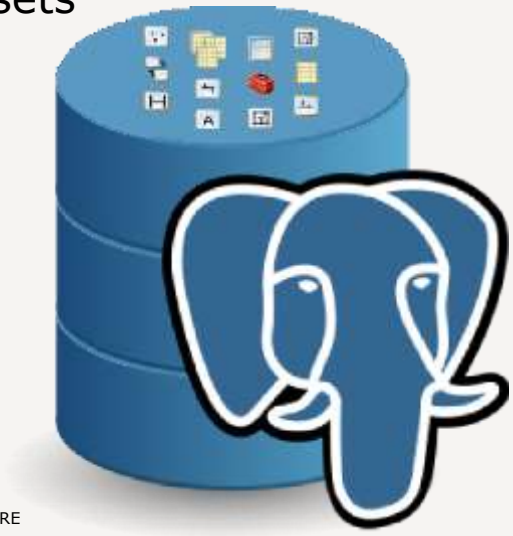






Central Database

- Open Source Database
  - PostgreSQL
- 4 core datasets



Homestead
Homestead Head
Spouses
Chiefdom

Land holding
When acquired
By whom?

Land borrowed out
To whom?

Land borrowed in
From whom?

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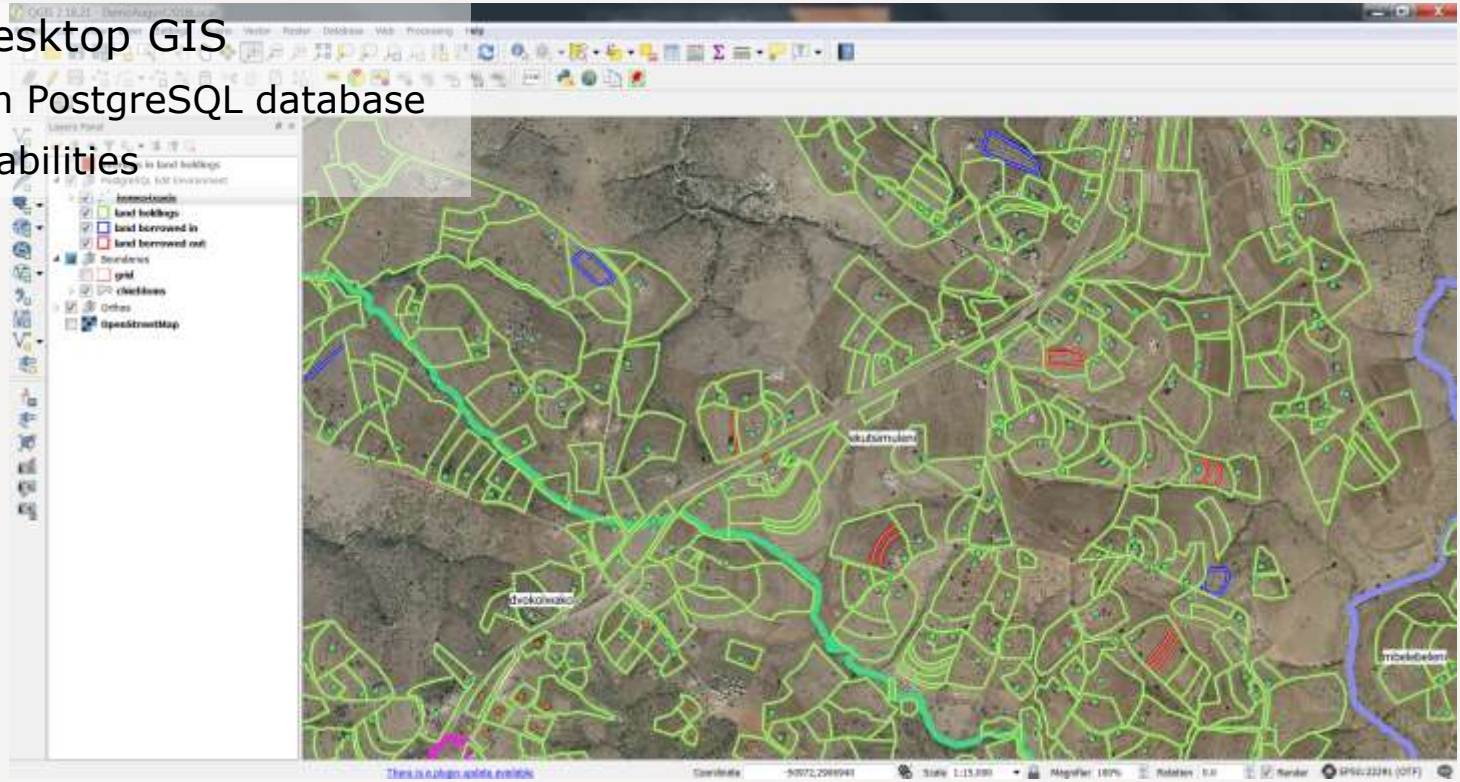
Desktop QGIS

- Open Source Desktop GIS
  - Editing data in PostgreSQL database
  - Extended capabilities
- Demo



Progress Reports

- Statistics on central database
  - amounts of homesteads collected
  - averages & percentage of total

id	sub	title	unit	unit_amount
1		Homesteads		
1	a	Homesteads collected (edit environment)	total	3467
1	c	Homesteads average amount land holdings	average	1.4
1	d	Homesteads borrowing or renting in land	%	3.8
1	e	Homesteads lending or renting out land	%	3.5
2		Homestead fields		
2	a	Homestead landholdings collected	total	4770
2	b	Homesteads landholdings collected area	km2	103

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Slam awareness & Gender Homestead Head

id	sub	title	unit	unit_amount
3		SLAM		
3	a	Communications effectiveness (% respondents aware of SLAM?)	% yes	46.6
3	b	Communications effectiveness (how aware of SLAM?)	% community_meeting	30.5
3	b	Communications effectiveness (how aware of SLAM?)	% community_member	8.6
3	b	Communications effectiveness (how aware of SLAM?)	% family_member	5
3	b	Communications effectiveness (how aware of SLAM?)	% brochure	1.7
3	b	Communications effectiveness (how aware of SLAM?)	% other	0.7
4		Gender		
4	a	Gender Homestead Head	% male	70
4	b	Gender & Marital Status Homestead Head	% male, married	53.9
4	b	Gender & Marital Status Homestead Head	% female, widowed	20.9
4	b	Gender & Marital Status Homestead Head	% male, single	7.9
4	b	Gender & Marital Status Homestead Head	% male, widowed	6.3
4	b	Gender & Marital Status Homestead Head	% female, married	4.3
4	b	Gender & Marital Status Homestead Head	% female, single	3.7
4	b	Gender & Marital Status Homestead Head	% male, divorced	1.2
4	b	Gender & Marital Status Homestead Head	% female, divorced	1
4	b	Gender & Marital Status Homestead Head	% male, multiple	0.7
4	b	Gender & Marital Status Homestead Head	% female, multiple	0.2

Disputes

id	sub	title	unit	unit_amount
5		Disputes		
5	a	Homesteads with chiefdom disputes	total	273
5	b	Homesteads with other disputes	total	143
5	c	Homestead Disputes	% Homestead without disputes	89.4
5	c	Homestead Disputes	% Homestead with chiefdom disputes	6.4
5	c	Homestead Disputes	% Homestead with disputes (not chiefdom)	2.7
5	c	Homestead Disputes	% Homestead with chiefdom & other disputes	1.4
5	d	Homestead with disputes (not chiefdom)	% other_homestead	39.2
5	d	Homestead with disputes (not chiefdom)	% family	18.2
5	d	Homestead with disputes (not chiefdom)	% umphakatsi	7
5	d	Homestead with disputes (not chiefdom)	% other	0.7

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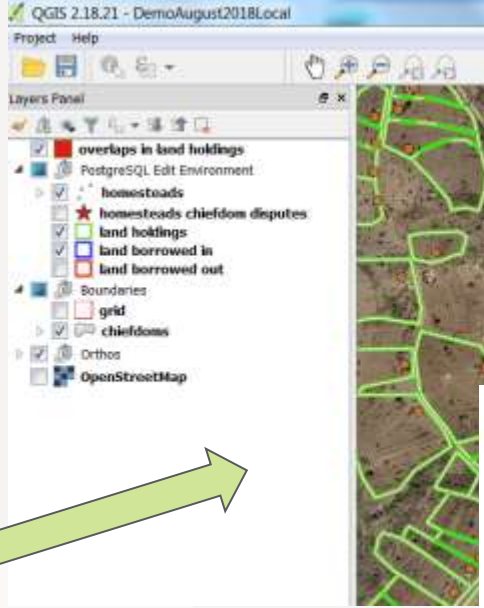
Chiefdom

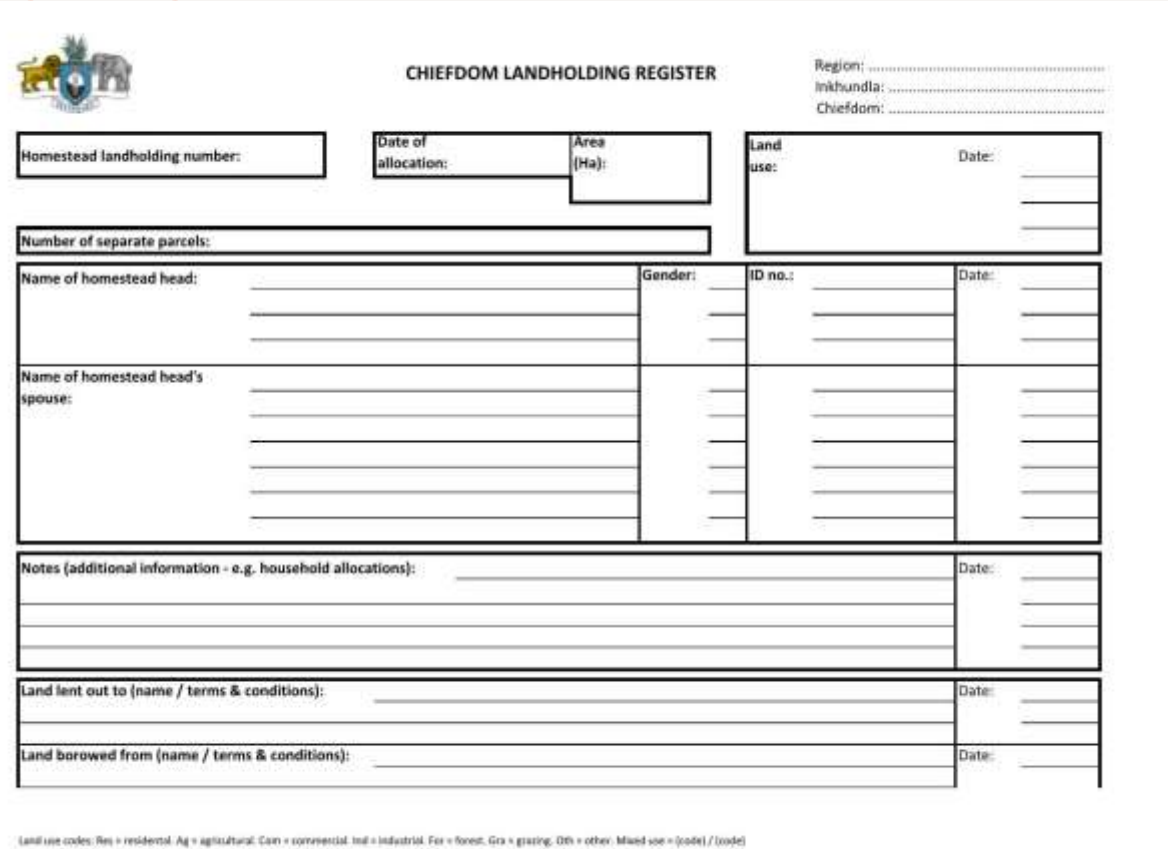
- Laptop
  - Lists
  - Spatial Data
  - FileGeoDataBase
  - QGIS (simple version)
- Chiefdom Landholding Register
  - changes



List of Homestead Data Collected

Chiefdom Landholding Register

- Homestead
  - changes
  - new allocations
- Maintenance
  - SG's department



CHIEFDOM LANDHOLDING REGISTER

Region: .....
Inkhundla: .....
Chiefdom: .....

Homestead landholding number:	Date of allocation:	Area (Ha):	Land use:	Date:

Number of separate parcels:

Name of homestead head:	Gender:	ID no.:	Date:
Name of homestead head's spouse:			

Notes (additional information - e.g. household allocations):	Date:

Land lent out to (name / terms & conditions):	Date:
Land borowed from (name / terms & conditions):	Date:

Land use codes: Res = residential, Ag = agricultural, Com = commercial, Ind = industrial, For = forest, Gra = grazing, Oth = other, Mixed use = (code) / (code)

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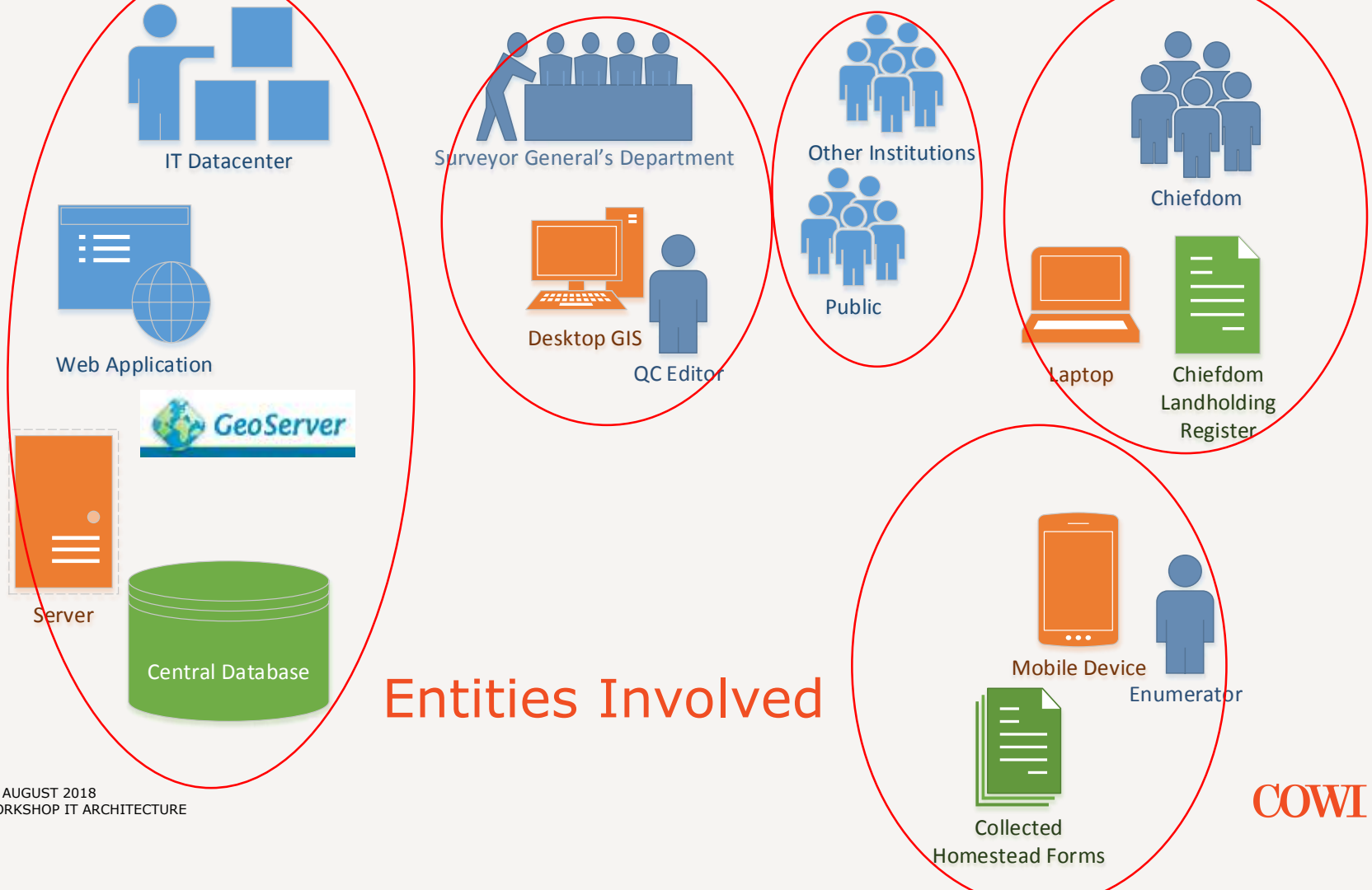
Future Land Administration System



Entities Involved

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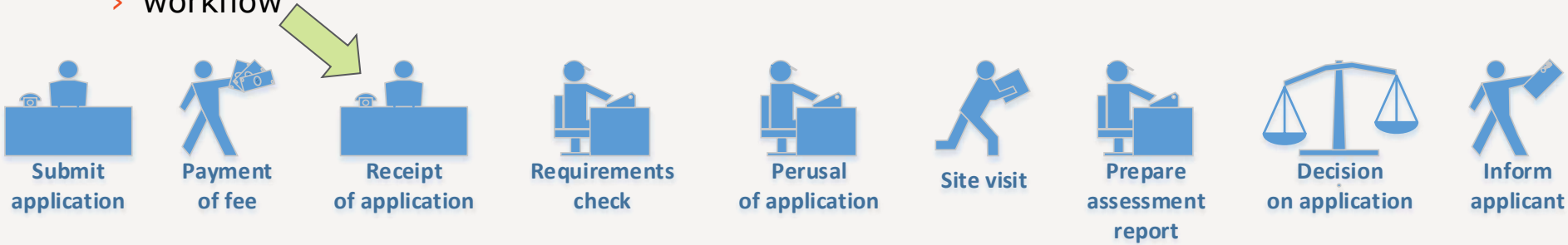
Web Application

- Information via Internet
  - Alphanumerical & Spatial Data
  - Central
- Start changes and applications
  - on-line access (via Web Application)
  - workflow



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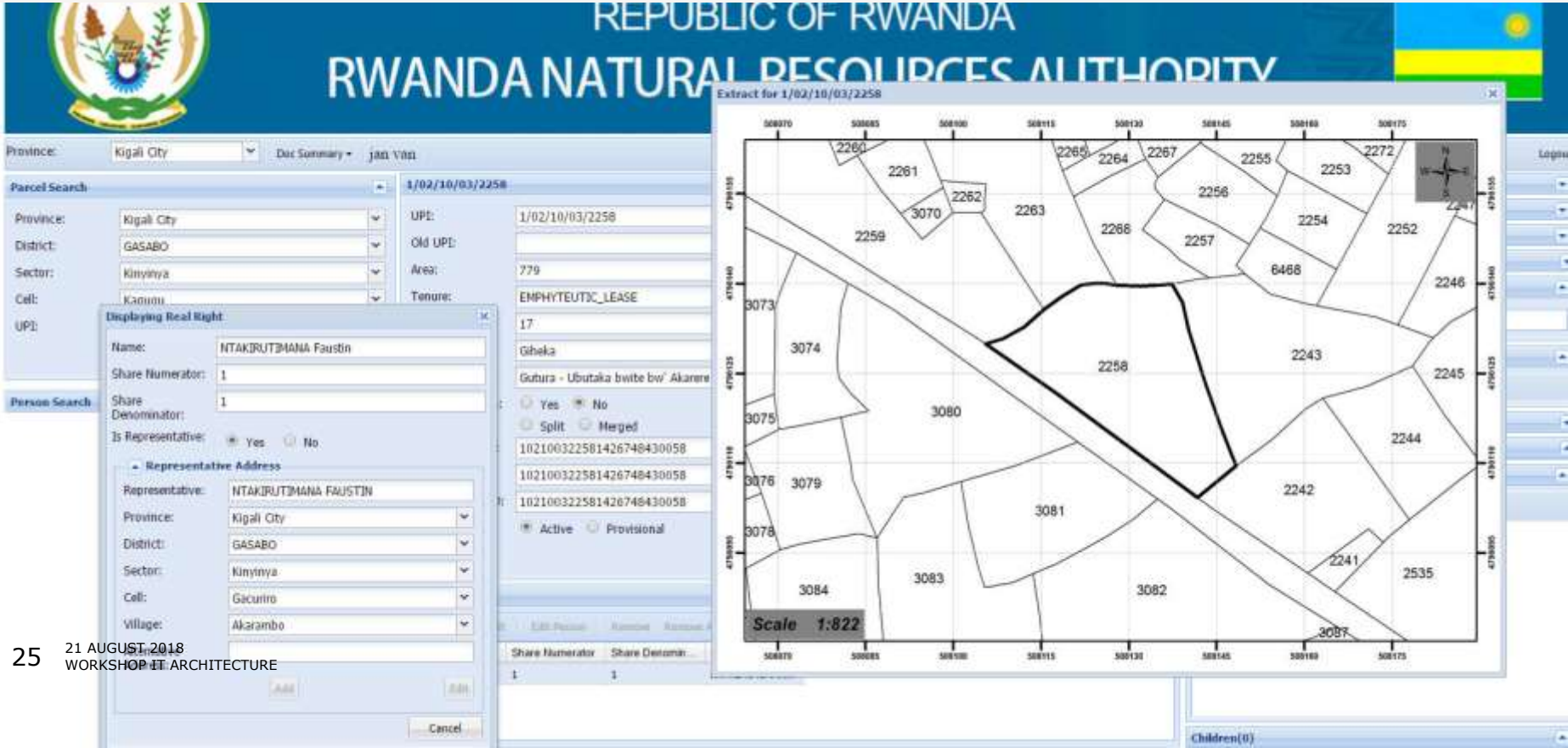
Examples
Web based systems

Rwanda Land Information System (Web)



Kenya Mining Cadastre

- Users - online requests

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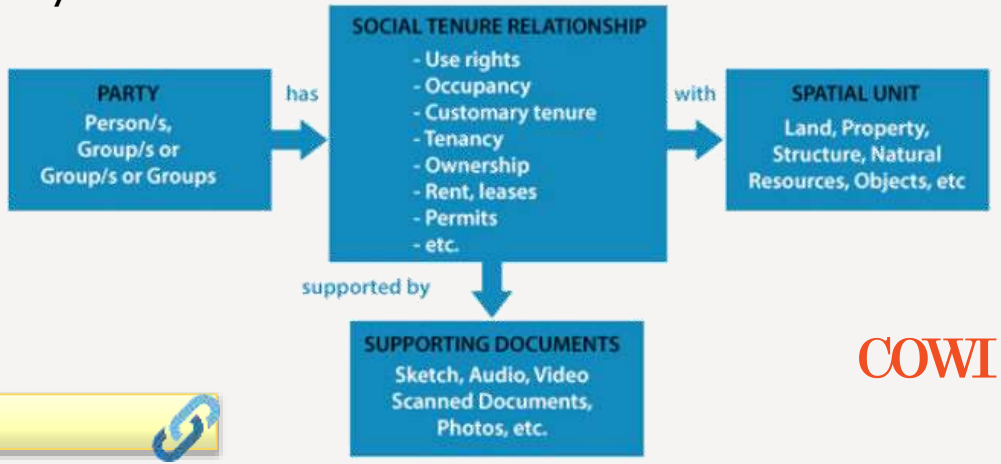
Zambia – NSDI (web)

Denmark Railway Expropriation

Examples Desktop based systems

STDM Social Tenure Domain Model

- GLTN
  - Global Land Tool Network
- Plugin to QGIS
- Support
- a fit-for-purpose land registration system



STDM: https://stdm.gltn.net/

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SOLA Solutions for Open Land Administration

- FAO
  - Food and Agricultural Organisation
- Complex deployment
  - Support ?
- Comprehensive land registration system
  - land admin workflow tested
  - field data collection
- Implemented in developing countries

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SOLA: http://www.flossola.org/

What system do we need in the future ?

- Location of data ?
- Access to data ?
- Software ?

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Location of Data

- Central Integrated Data
- One Database

- Internet
- Web Application

- Cloud ?
  - stored with professional hosting company

- Distributed datasets
  - within maintaining organisation
- Original data stored in multiple locations
- Uniformity of data
  - standards

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Access to & Maintenance of Data

- Transparent / Open ?
  - Authorisation
- Chiefdoms
  - initiate changes
- Surveyor General's Department
  - maintain changes
- Other Institutions
- Ministries /land management board
  - view only
  - selected parts of the data
  - aggregate data (statistics)
- Public
  - view only
  - start applications ?

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Software (1)

- Web application
  - Internet
  - Central
  - changes provided via Internet
  - sharing / viewing of data
- Desktop software
  - internal / local area network (LAN)
  - changes provided via forms

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Software (2)

- Open Source
  - degree of custom development
  - free software ≠ no costs
  - control over software changes
- Proprietary
  - license costs
  - vendor lock-in
  - proven
  - no influence on functionality

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