BACKGROUND

- **Only 30% cadastral coverage** (versus 70% tenures off register) – *Need to secure tenure ASAP to all citizens.*

- **Only 2-3% ownership by women** – *how to increase?*

- Dealing with the **affordability issue** - *how to modernize systems in a pro-poor way?*

- **Complexity of land rights, claims, and records** - *how to capture the information in a participatory, affordable and acceptable way?*
THE KEY CHALLENGE

How to support various tenure types & systems at scale to enable land reform and secure land and property rights for all?

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GLOBAL LAND TOOL NETWORK

WHAT IS THE SOCIAL TENURE DOMAIN MODEL (STDM)?

• Perspectives:
  a. Concept – flexible ‘people-land’ relationships
  b. Model – specialization of ISO-approved LADM

  c. Information tool – implementation of the model as a software package

• Applications areas – urban areas with slums, rural customary areas, post crisis context
TOOL SELECTION CRITERIA

- Based on free and open source
- Provides core GIS functionality
- Extensible framework
- Multiplatform programming language
- Multiuser capabilities
- Integration with external applications

STDM APPLICATION COMPONENTS

- **Database Server = PostgreSQL**
  
  **Rationale:**
  - Best DBMS with regard to total cost of ownership (TCO)
  - Supports database replication
  - Custom functions in multiple languages e.g. Python, R, Ruby, V8 JavaScript
  - Short cycle of new releases ~ 15 months
  - Confidence by top tech companies: Microsoft, Apple, Fujitsu, etc.

- **Spatial Extension = PostGIS**
  
  **Rationale:**
  - Provides over a 1000 functions for storing, querying, manipulating spatial data.
  - Standards compliant (OpenGIS specification)
STDM APPLICATION COMPONENTS (2)

- Desktop GIS = **QGIS**

  **Rationale:**
  - Rich feature set of vector editing functions for managing spatial units
  - Ever growing number of users and developers
  - Huge volume of support manuals and tutorials
  - Built-in support for PostgreSQL/PostGIS spatial databases
  - Provides a sophisticated plugin architecture that supports customization using Python or C++
  - New stable version releases every 4 months

APPLICATION ARCHITECTURE

- STDM Plugin
  - UI
  - Security
  - Navigation
  - Data
  - Settings

- Quantum GIS
  - Python
  - GDAL/OGR
  - GRASS
  - Spatialite
  - GEOS
  - PostgreSQL/PostGIS

- Qt Framework

- STDM Database
  - PostgreSQL
  - PostGIS

- Bundled together in the STDM installer.
- Installed in the workstations and laptops connected in the LAN.

- Database server
FUNCTIONAL DESIGN PROCESS

How do we determine which features to incorporate into STDM?

- Internal peer review
- Feedback from training events
- Common functional needs in country implementations

Criteria for determining the feature-set of STDM

STDM CAPABILITIES

- Users can design or extend existing data management forms
- Create a custom hierarchy of administrative units
- Manage permissions of users to specific modules
- Simple report builder for generating tabular reports
- Design and share custom templates of map-based documents/reports
- Generate map-based documents in batch using default or custom templates
- Import and export wizards that support the both textual and spatial data
WHERE IS STDM BEING APPLIED?

<table>
<thead>
<tr>
<th>Country</th>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uganda</td>
<td>Settlement improvement</td>
</tr>
<tr>
<td></td>
<td>Agriculture and natural resource management</td>
</tr>
<tr>
<td>Kenya</td>
<td>Settlement improvement</td>
</tr>
<tr>
<td>Haiti</td>
<td>Alternative cadastre in post-crisis context</td>
</tr>
<tr>
<td>Colombia</td>
<td>Settlement improvement</td>
</tr>
<tr>
<td>OECS</td>
<td>Family land and squatting</td>
</tr>
</tbody>
</table>
ROADMAP

• More applications in other contexts:
  • Land and property tax information
  • Dispute resolution/Tenure security
• Strategic development and release of new versions
• Kickoff and implement recommendations of advisory committee
• More strategic partnerships (i.e. OSGeo, developer community)
• Documentation and assessment of STDM
• More capacity development initiatives
CONTRIBUTION TO SUSTAINABLE DEVELOPMENT...

Provision of a flexible, unconventional land administration i.e. ‘extension’ to existing LAS

- Poverty reduction – land rights and claims of the poor are brought into the system over time
- Improve security of tenure
- Increase conflict resolution
- Limit forced evictions
- Help poor engage with land industry in undertaking land management e.g. slum upgrading, rural land management

TERIMA KASIH!
THANK YOU!
NEED TO KNOW MORE?

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SECURING LAND AND PROPERTY RIGHTS FOR ALL