Local Government Revenue Initiative

An initiative of the ICTD, based at the Munk School of Global Affairs & Public Policy

Effective IT Systems for Property Tax Administration – A Case Study from Mozambique

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Core Challenges of Property Tax Administration

- Across low-income countries property tax systems frequently remain manually administered.

- IT systems hold enormous potential to strengthen administration, including but not limited to: Mapping, Valuation, Improved data management, Simple and transparent billing, Facilitating payments and compliance, Transparency and access to information, Performance Management

- Despite that potential it is rarely realized in practice. This is not only about non-adoption, but the adoption of systems that fail to fully deliver.

Core Challenges of Property Tax Administration

Unsuccessful reform can take several different forms:

- **Inadequate systems:** Systems are poorly designed owing to bugs or lack of key functions
- **Overly complex/poorly aligned systems:** Systems are difficult to use or do not fit local workflows and circumstances, leading to limited use
- **Unsustainable systems:** Systems function adequately initially, but support/training/updating prove problematic
- **Threatening systems:** Systems work effectively but are undermined by political or administrative opposition that prevents effective deployment

→ Critically, IT failures are often not about technology: they reflect problems with underlying processes, administrative resistance, financial demands or a lack of political support.

Context Matters

- Context analysis is crucial to define requirements of effective property tax administration systems as there is **rarely a one-size-fits-all solution**

- Analyze **legal requirements** with regards to valuation approach, assessment, payment deadlines, and tax bill delivery

- Existing **administrative processes:** analyze what is necessary and efficient and where adjustments could benefit effective revenue mobilization

- What is the **IT infrastructure** already in place and what scope for improvement is possible?

- Can **local resources** be used to increase the long-term sustainability?

Case Study: Mozambique

- Two projects in Beira and Chimoio with support from VNG International with the goal to sustainably increase property tax revenue

- Beira has a cadastral IT system that mainly functions as an electronic archive of existing and new land and property titles and a rudimentary tax and administration software – both developed locally. Systems are not interoperable.

- Chimoio developed a unique tax and administration software with a local partner that administers property taxes, land and property title processes, and a variety of other fees and taxes. There is no geospatial database or association.

- Could there be synergies between the two municipalities?

Context Analysis

Legal:

- Knowing ownership as a requirement to levy property taxes
- Legally prescribed valuation formula with little wiggle room

$$Vp = \left(Ae * P * Fa + 0.05 * Al * P\right) * Fl$$

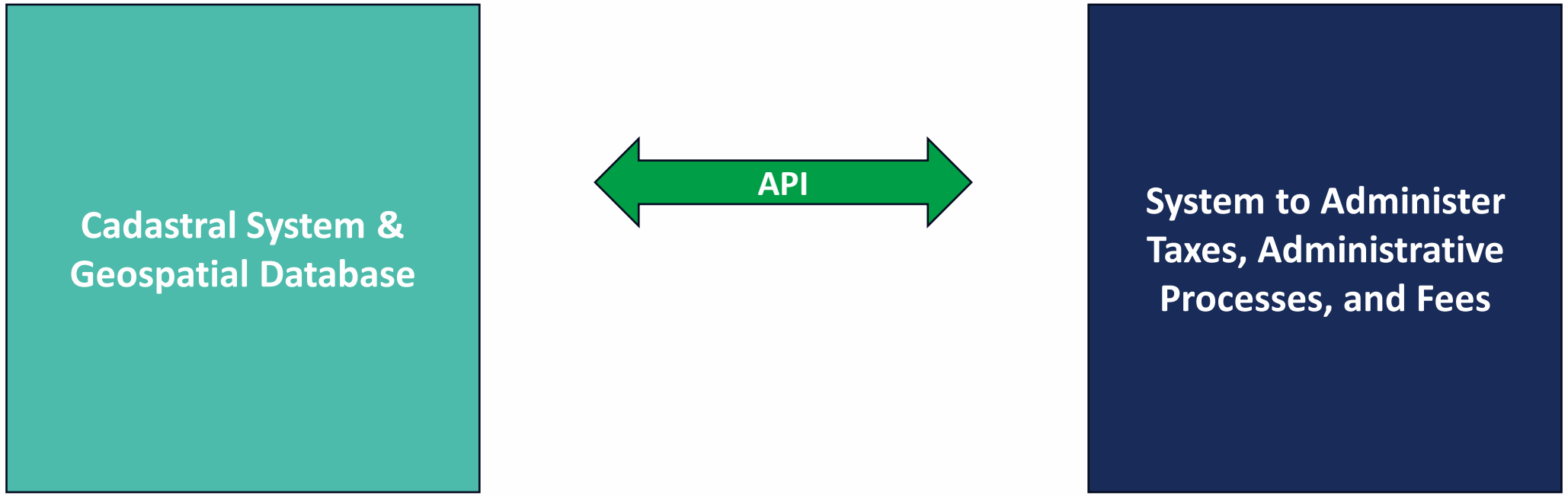
Administrative:

- Clearly defined processes to obtain property title required for ownership declaration

→ *Challenge: how can we comprehensively assess property value with data required and associate properties with owners?*

Approach to Maximizing Property Tax Potential

Integrated Software Solution for Effective Property Taxation



Approach to Maximizing Property Tax Potential

- Clear distinction of tasks conducted in both systems
- Cadastral system with visualization of map serves as a **geospatial database** and includes layers for buildings, parcels, Plus Codes addresses, administrative zones, and urban planning
- Cadastral system thus provides missing link to georeferencing all buildings and validating part of the valuation formula
- Tax and administration software **connects to geospatial database** and serves as a register for citizens, parcels, and buildings, while also administering processes to obtain titles, fees, and taxes
- Property valuation is conducted in tax and administration system through CAMA with data collected in the field and geospatial data read through the API

How to Get There

- Develop clear vision for interoperating IT systems
- Liaise with developers and request proposals how they want to achieve this vision
- Local coordination of development efforts to streamline systems
- Geospatial data collection through high-resolution plane imagery and AI-mapping of buildings, creation of parcel and administrative layers
- Field data collection informed by geospatial database to collect information missing for property value calculation, picture of buildings, and contact details of resident/owner
- Launch system and invite citizens to confirm their details and property at the municipality or via citizen portal

Cadastral System and Geospatial Database

- Systems linked through API using unique identifiers for buildings and parcels
- Georeferencing all data
- Reading information from underlying layers

Property & Parcel Information; Owner Information; Administrative Information

Tax and Administration System

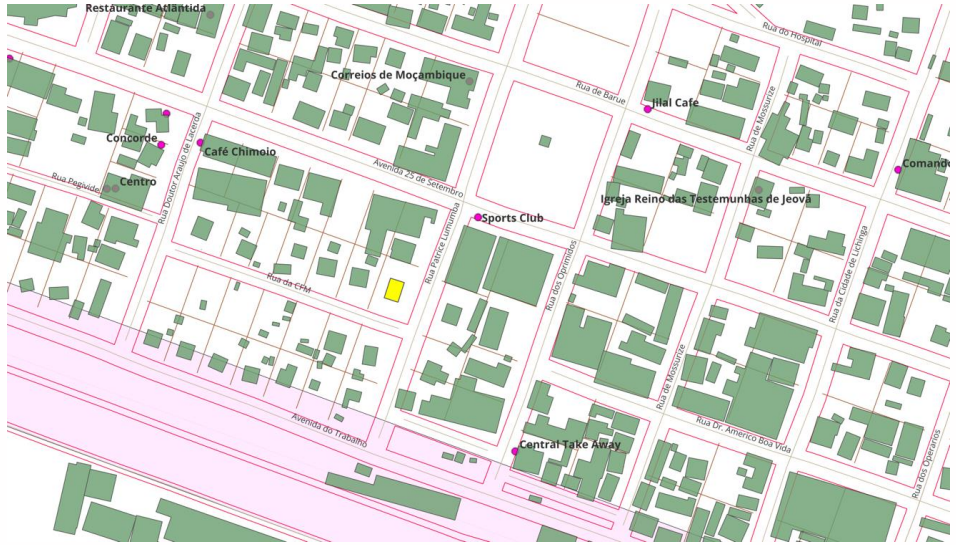
Individual Record View

- Citizens
- Buildings
- Parcels
- Taxes
- Fees
- Dashboard
- Map
- Admin Panel
- Reports
- Finance

Search

Contact | Pictures | Map | Properties | Processes | Documents | Payments

General | *Detailed*



Pluscode
Building ID
Parcel ID
Admin Zone
Neighborhood

!

Print *Appeal*

Citizen Portal

Confirm Contact Details

Name: João Oliveira ☑ Edit

Phone Number 1: 099 255 68 79 ☑ Edit

Phone Number 2: 085 654 23 47 ☑ Edit

Address: Edit

Relation to property: Owner | Tenant Edit

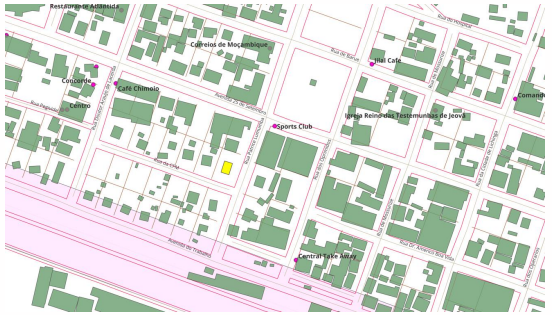
ID / Voter ID: Edit

Property Confirmation

Is this your property?

☑ ☒

Find correct property if rejected before



Search | Filter

☑ ☒

Confirm Property Details

Floors: 2 ☑ Edit

Characteristics 1: X ☑ Edit

Characteristics 2: Y ☑ Edit

Characteristics 3: Z ☑ Edit

Year of Construction: 1997 ☑ Edit

Type of Property: Domestic ☑ Edit

Summary of Solution

- Integrated systems developed by local partners in collaboration with municipalities
- Systems are complementing each other and highly configurable to account for differences across municipalities
- Comprehensive implementation of property tax system as all buildings are identified
- Effective data collection, tax bill delivery, and enforcement due to known location of buildings
- CAMA for property value calculation with data stored in the two systems → no more need to individually assess property value
- Simple registration and association of citizens with properties for more effective property taxation in line with legal requirements
- Streamlined processes allowing simple maintenance of the data in the systems

Lessons Learned

- Context matters! → analyzing and understanding the environment increases fit of property tax administration system
- Highly configurable software allows for local adjustments to context
- Interoperability of systems provides municipalities with more flexibility
- Simple solutions paired with user-friendliness increases likelihood of adoption and sustainability
- Use local resources and/or ensure software administration can be done locally
- Software development is time- and resource-intensive → alternatively, find highly configurable, modular, and interoperable software that can be adapted to the environment

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Thank you for listening!

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