

# ADDRESSING THE INFORMATION REQUIREMENTS OF THE URBAN POOR

## STDM PILOT IN UGANDA



© UN-Habitat / Danilo Antonio

## INTRODUCTION

The benefits of implementing effective land administration and information systems are enormous and include contributing to poverty alleviation, securing tenure, managing land disputes, improving inclusive planning, managing natural resources and protecting the environment. However, in

developing countries, 70 per cent of land parcels or ownership units are not covered by any formal land registration and information systems. Land occupied by slum dwellers is part of this 70 per cent as they have no legal, documented and registered land rights.

“The Social Tenure Domain Model (STDM) is a flexible land information tool that can incorporate information about different land rights and claims.”

## INTRODUCTION

Conventional land titling approaches to secure tenure have largely failed to deliver the expected results because the approaches and related technical solutions are expensive, inappropriate for the range of tenure arrangements found in developing countries and unsustainable financially or due to lack of capacity. An appropriate approach is to consider a range of land tenure options.

In this context, Global Land Tool Network (GLTN) promote the concept of a continuum of land rights rather than emphasizing individual ownership titles as being the most desired type of tenure security.<sup>1</sup> While the concept of the continuum is becoming widely accepted in the global discourse, a new set of land administration and appropriate information management systems are necessary to implement and support the concept.

The Social Tenure Domain Model (STDM) is a flexible land information tool that can incorporate information about different land rights and claims.

It is a specialized tool based on the newly approved ISO Standard – the Land Administration Domain Model (LADM) and, through it, standardized data integration is possible.

## LAND GOVERNANCE AND THE CHALLENGE OF SLUMS

Complex global challenges such as climate change, rapid urbanization, food, water and energy insecurity, natural disasters and conflicts

have underlying land dimensions. Land-related challenges include unequal access to land and other natural resources, unsustainable land use, insecurity of tenure, weak institutions to resolve conflict, dysfunctional land markets and institutions, and inefficient and inappropriate land administration systems. These challenges are more pronounced in slums or informal settlements particularly in developing countries.

UN-Habitat reports that the world's urban slum population is expected to increase to 1.4 billion by 2020. Urban population growth in developing countries is characterized by informality, illegality and unplanned settlements which are in most cases associated with urban poverty.

The development of STDM is to support and implement the concept of the continuum of land rights. It has long been argued that various tenure arrangements do not fit within conventional land registration systems and the parcel-based spatial description of rights. GLTN in collaboration with its partners like the University of Twente (Faculty of Geo-Information Science and Earth Observation (ITC)), the International Federation of Surveyors (FIG), the World Bank and other key professional bodies, developed the STDM prototype, which was launched in 2010. Since then, UN-Habitat/ GLTN has continued working with partners to enhance the tool and develop it further in three areas: adding more functionality, improving the user-friendliness of the tool, and reshaping



Typical market place within informal settlement in Uganda.  
© UN-Habitat/Daniilo Antonio

1. The concept features a range of rights to land that lies along a continuum. At one end are formal land rights held by an individual and enshrined in law, at the other end of the continuum are informal rights held by a group or by individuals who may have traditional rights. In between the two extremes is a wide range of land rights.

STDM to cater for the information needs and requirements of informal settlements, mainly in collaboration with Slum Dwellers International (SDI).

## INFORMATION REQUIREMENTS OF POOR URBAN SETTLEMENTS

It is recommended that in choosing an appropriate and fit-for-purpose technology, one should consider that it should be easy to use and facilitate interactions and inter-operability among the various information systems and key stakeholders. Efforts to develop records and land information management systems are now starting to benefit from advances in technology, digital information storage in databases, including the development of new models and approaches. This is particularly true with the introduction of satellite images for cadastral and planning applications, the use of mobile phones for data capture, data sharing and mapping, access to internet applications including the free access to a wealth of high resolution maps, as well as the use of hand-held global positioning systems (GPS) for mapping and faster processing.

One example is satellite imagery; current resolution from satellites is good enough to be

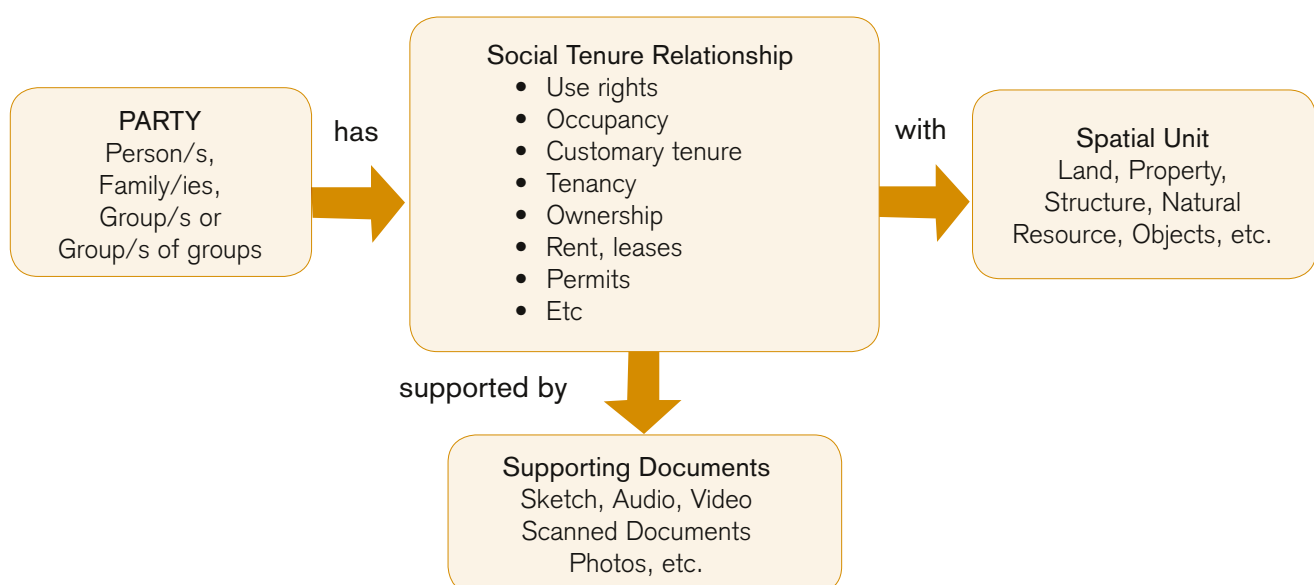
used for various purposes, including in the land rights and claims recognition. The use of mobile phones for data capture, mapping and geographic information systems (GIS) applications is also becoming common practice. Access to mapping data has now improved with ever emerging one-stop-shop online services and repository for GIS data, shifting focus from overreliance on technical and costly process for data acquisition.

In fact, the use of internet technology systems, satellite imagery, and handheld GPS and GIS systems to create a land information system is no longer the exclusive privilege of the elites. Organized marginalised communities and their networks are already learning to use these "high-tech" land information approaches and find them to be a vital tool.

## STDM AS A SPECIALIZATION OF THE LAND ADMINISTRATION DOMAIN MODEL (LADM)

The STDM, a 'specialization' of the ISO-approved LADM, provides a standard for representing flexible 'people-land' relationships. Specialization means that there are some differences, which are mostly in the terminology and application area. Any form of right, responsibility or restriction

FIGURE 1: STDM CONCEPTUAL MODEL



STDM emphasizes the relationships between people and land, independent from the level of formalization and legality of these relationships.

in a formal system is considered as a social tenure relationship in STDM. STDM emphasizes the relationships between people and land, independent from the level of formalization and legality of these relationships.

The most basic way of defining any form of right, responsibility or restriction represented through STDM is – *a party has a social tenure relationship with a spatial unit supported by formal or informal documentations (refer to Figure 1)*. A party can be a person, household, cooperative society; a parcel, informal structure, natural resources or building can be used to represent a spatial unit; supporting documents can be scanned copies of agreements, identification cards, audio or video recordings or even photographs that can be used to support the social tenure relationship.

The two models are in most cases complementary being the LADM as the general concept while STDM has specific applications and focus

particularly in situations where conventional cadastral systems are not adequate to support tenure security such as in post conflict/disaster situations, informal settlements and customary tenure areas. The table below describes STDM in relation to LADM.

## PARTICIPATORY ENUMERATIONS – AN ENTRY POINT FOR STDM

Various GLTN partners have incorporated the idea of participatory enumerations in their data collection approaches, particularly in the urban context. A book entitled “Count Me In – Surveying for tenure security and urban land management” outlines the idea of “participatory enumerations” - a data-gathering process that is significantly designed and conducted by the people who are being surveyed.<sup>2</sup> It is an innovative approach also known as community mapping, people’s census and self-surveys. It is useful for various reasons, i.e. Participation can provide transparency and

### THE RELATIONSHIP BETWEEN LADM AND STDM

| LADM Class Name                          | Corresponding Class Name in STDM | Description  |
|--|----------------------------------|--|
| Party                                    | Similar name                     | This is a person or organization that plays a role in a rights transaction. An organization can be a company, municipality, state, tribe, farmer cooperation or even church community where each organization can be represented by a delegate, director, chief.   |
| SpatialUnit                              | Similar name                     | A single area (or multiple areas) of land and/or water, or a single volume (or multiple volumes) of space. Spatial units may be described in text (e.g. ‘from this tree to that river’), or based on a single point, or represented as a set of unstructured lines.  |
| RRR (Right, Responsibility, Restriction) | Social Tenure Relationship       | This can be a: <ul style="list-style-type: none"> <li>• Right - An action, activity or series of actions that a party may perform on or using an associated resource such as grazing, fishing or ownership.</li> <li>• Responsibility - Formal or informal obligation to do something such as to maintain a monument.</li> <li>• Restriction - Formal or informal obligation to refrain from doing something.</li> </ul> |
| SpatialUnitGroup                         | AdminUnitSet                     | This is made up of one or more spatial units, or constitutes a larger spatial unit group or can even be a combination of spatial units and spatial unit groups.  |

2. UN-Habitat (2010). Count Me In – Surveying for Tenure Security and Urban Land Management. Nairobi.

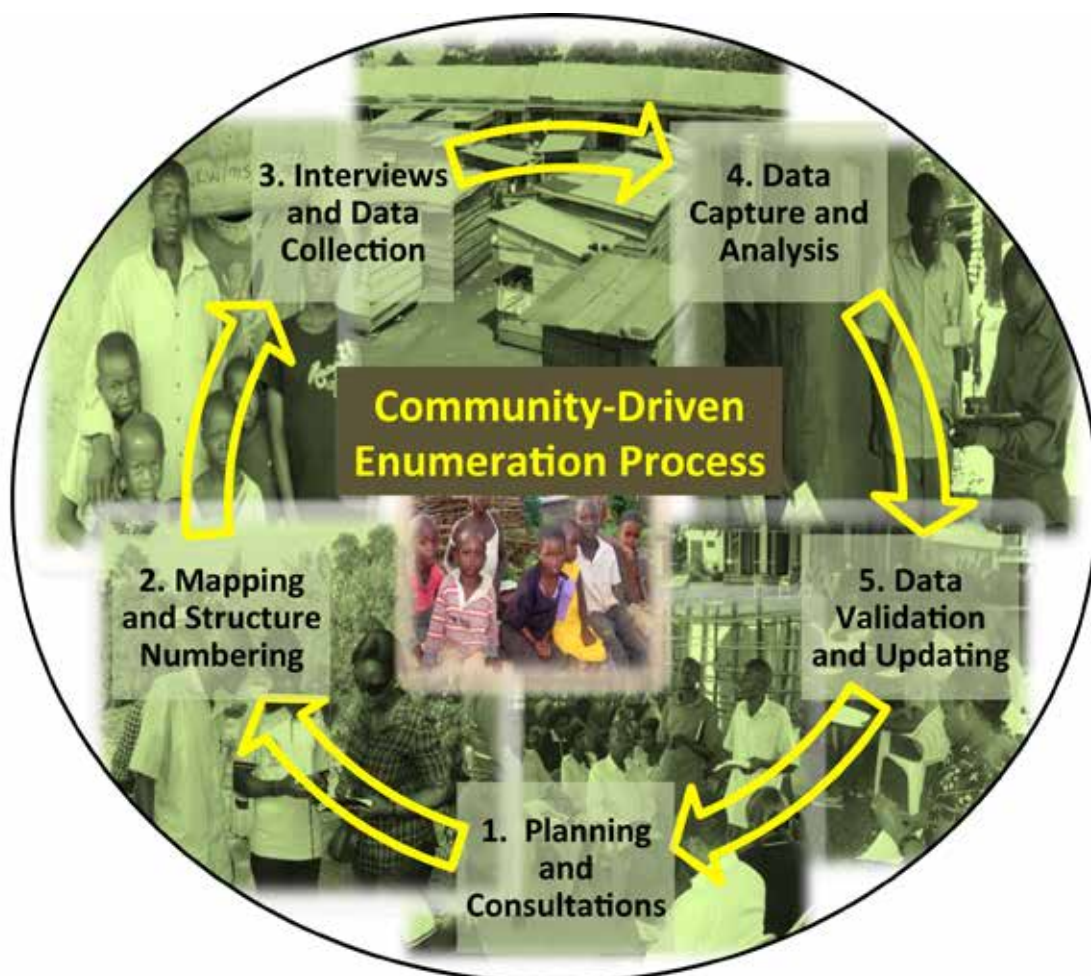


build trust in the exercise; once it is accepted, residents will cooperate and provide the information required, thus resulting to improved data gathering and better data; and participation also means self-empowerment. Residents can initiate, retain control of the process and “own” the process.

Data on informal settlements are needed to enable residents to demand their rights as citizens, to improve land tenure, to plan for the provision of infrastructure and services, to redevelop/upgrade slums, to guide housing improvement, land re-adjustment, land allocation and to use in land administration and information systems. Women in particular have a critical role in participatory enumerations, as it allows them to assess and record the community’s needs and assets and suggest solutions to problems.

A participatory enumerations approach is attractive and potentially effective tool because it is flexible and can be adapted to different needs and contexts, so much so that apart from NGOs and community organizations, development projects or international bodies (such as UN-Habitat), national and local authorities and other stakeholder groups have implemented the approach.

The implementation of STDM fits the co-management approaches inherent in participatory enumerations process and STDM can viably complement its huge potential applications in inclusive planning, tenure security improvement, slum improvement and land information management initiatives.



## STDM PILOT IMPLEMENTATION IN UGANDA

### Background

An “intermediate version” of STDM was developed out of the prototype version and used some data from a Kenya-based urban NGO called Pamoja Trust. The intermediate version replaced the Integrated Land and Water Information System as the GIS component with Quantum GIS and the STDM system was developed as a QGIS plugin. In June 2010, a joint project proposal was developed between UN-Habitat/GLTN and SDI aimed to pilot STDM in Uganda to address the information requirements of the urban poor for wider learning purposes. With Cities Alliance financial support, the project was implemented in 2011-2012 alongside with an existing larger project called Transforming the Settlements of the Urban Poor in Uganda (TSUPU). The TSUPU project aimed to re-enforce the linkages between various urban sector programmes and initiatives by introducing systemic changes in delivering urban services, improving urban management and developing planning and policy frameworks. The Government of Uganda, through the Ministry of Land, Housing and Urban Development (MoLHUD), is facilitating the TSUPU project. The Municipality of Mbale was chosen as a pilot area.

The project design had two main criteria: strengthening partnerships at all levels, and building from community strengths and processes. Cities Alliance, SDI, UN-Habitat/GLTN Secretariat, MoLHUD, ACTogether and the Mbale Municipality provided advisory, technical and capacity development inputs, with much of the work done by the National Slum Dwellers Federation- Mbale and the community members.

### Pilot objectives

The specific objective of the project was to pilot test the STDM and to document the process and capacity building requirements around its use and application for wider learning and implementation. The long-term objective was to address the land information requirements of women and men living in slum communities in order to build their capacity in the use and application of the land information systems based on free and open source software packages and mainstream the thinking behind the continuum of land rights. This will form the basis for dialogue between local communities and cities to improve tenure security, inclusive planning and enhance access to basic services and infrastructure.

### Implementing partners and their roles

There are various partners in the project and they can be classified according to their roles and responsibilities such as: the facilitators, the supporters and the implementers. The various partners and their corresponding roles are described below:

#### The ‘Facilitators’

**Cities Alliance** – Aside from being the funding agency for the Project, Cities Alliance strategically placed the Project to coincide with the TSUPU programme implementation and link the Project with the national and local authorities. Cities Alliance



Planning and consultation meeting © ACTogether





Community holds sensitization meetings © ACTogether

also assisted the Project in its national and global advocacy efforts.

### International Federation of Surveyors (FIG)

– Since the STDM inception, FIG has been supporting the development of STDM and the promotion of continuum of land rights. Moreover, through its Foundation, FIG has provided some grant funds to support data capture and documentation and provided a set of handheld GPS receivers from Trimble, Inc. – a member of FIG Foundation. The support facilitated field work implementation.

### The ‘Supporters’

UN-Habitat/GLTN Secretariat – Aside from co-financing the Project, UN-Habitat/GLTN Secretariat facilitated the planning and consultation workshops and meetings, provided technical support and facilitate capacity development initiatives. Specifically, GLTN Secretariat led in the customization of STDM to suit the local context and facilitated the implementation of the associated capacity development initiatives.

### Shack/Slum Dwellers International (SDI)

– As the key implementing partner of the Project, SDI provided the necessary political, technical and administrative support in the over-all project implementation. It mobilized the

support of its national network (Actogether and the National Slum Federation) on policy dialogues, advocacy and project implementation. It also co-financed the Project.

### Ministry of Land and Housing and Urban Development (MoLHUD)

– The Ugandan Ministry provided the needed political and technical support to the Project through the Office of the Commission on Urban Development. It enabled the Project to be mainstreamed in TSUPU project as well as it supported its implementation on the ground particularly by strengthening the linkages with Mbale Municipal Council.

### Actogether

– As a leading urban NGO in Uganda, Actogether served as the technical arm of project implementation in Uganda. It provided the necessary and continuous technical and information support to National Slum Federation, Mbale and community leaders and members in its project implementation. It also provided the liaison and communication work between the global, national and local implementing institutions and stakeholders.

### Municipality of Mbale

– The Municipality through its leadership particularly the Town Mayor, Town Clerk, Municipal Council and

FIGURE 2: STDM TOOL



Customized STDM tool to manage collected data © UN-Habitat/Solomon Njogu



Mapping of structures using handheld GPS  
© UN-Habitat/ Danilo Antonio

Community Development Officers have provided enormous technical, coordination and logistical support. Aside from hosting the slum federation office, it even allowed its limited staff and some council members to participate in the advocacy, community mobilisation and sensitisation and field implementation.

### The 'Implementers'

National Slum Dweller Federation, Mbale – With the key support from SDI and Actogether, the leaders and members of the National Slum Dweller Federation, Mbale took the lead in policy and consultative dialogues with national and Mbale local authorities, community mobilisation, sensitization, capacity development, mapping, household interviews, enumeration and data collection and analysis. They served as the steady bridge between the technical and political partners and community members.

Community Leaders and Members – At the core of the project implementation are the community leaders and members of the two informal settlements. Most of them are active members of the National Slum Dweller Federation, Mbale. Most of the field enumerators are also coming from their communities. They participated in the whole enumeration exercise and actively engaged from the project preparation, community mobilisation, data collection up to data analysis and validation.

## Key processes and activities

**Planning and consultations.** SDI and the GLTN Secretariat consulted with authorities (at national and municipal levels), ACTogether, the National Slum Dwellers Federation of Uganda (NSDFU) and community members about STDM and its objectives, the enumeration questionnaire, the development of an implementation plan, agreement on the roles and responsibilities as well as the identification and mobilization of the needed support and resources.

**Mobilization and sensitization process.** Community leaders and members were mobilized through sensitization and awareness building processes led by NSDFU, Mbale municipal officials and ACTogether. This generated support from the targeted communities and council members. Enumerators were identified from the community who were given training.

**Customization of STDM.** The GLTN Secretariat adjusted the STDM tool to fit the local context following the agreement with stakeholders and community members on the enumeration questionnaire and identification of the resources available, such as satellite imagery and handheld GPS (refer to Figure 2).

**Mapping and structure numbering.** NSDFU and community members with guidance from ACTogether, digitized existing structures from the available satellite imagery and produced initial maps. Using the printed map, enumerators numbered existing structures in the slum settlements using a unique code. They used handheld GPS units to identify community facilities such as water points, public toilets, dumping grounds etc. and updated the map accordingly.

**Interviews and data collection.** Enumeration teams administered the questionnaires, usually accompanied by local leaders and municipal officials. They also collected information, such as supporting documents and photos, with the unique code painted or written on the structure as a background.



**Data entry and analysis.** The enumeration teams entered all the collected data, documents and photographs into the STDM tool. Initial digital maps were also updated. The Slum Federation leaders and enumerators were trained to use STDM to analyze the data and produce reports.

**Data validation and continuous updating.** Community members validated the collected information, which increased its credibility. After this validation period, enumeration teams and Slum Federation leaders updated the information in the STDM plug-in. Community members could also go to the Slum Federation office to update the data. Some Slum Federation leaders and members were trained to manage the tool and to continue the updating process.

## SAMPLE DATA GENERATION AND ANALYSIS

For the STDM pilot, satellite imagery was used to produce a settlement map on which structures, houses, roads, water points, etc. were digitized. Data from the completed questionnaires was entered into Excel for further processing. The imported data could be checked with the data management window, as described below. This window is also the STDM module for editing, updating and managing non-spatial data.

With the STDM plug-in, almost any type of document, scanned images and text, photos and videos can be uploaded into the tool. These supporting documents can link tenure status to a specific spatial unit, such as a structure (as used in the pilot), land and other properties (refer to Figure 3).

One of its main advantages is a powerful tool called Report Builder, an easy to use tool which can be used for data analysis and report generation. With this, various tenure relationships can be presented.

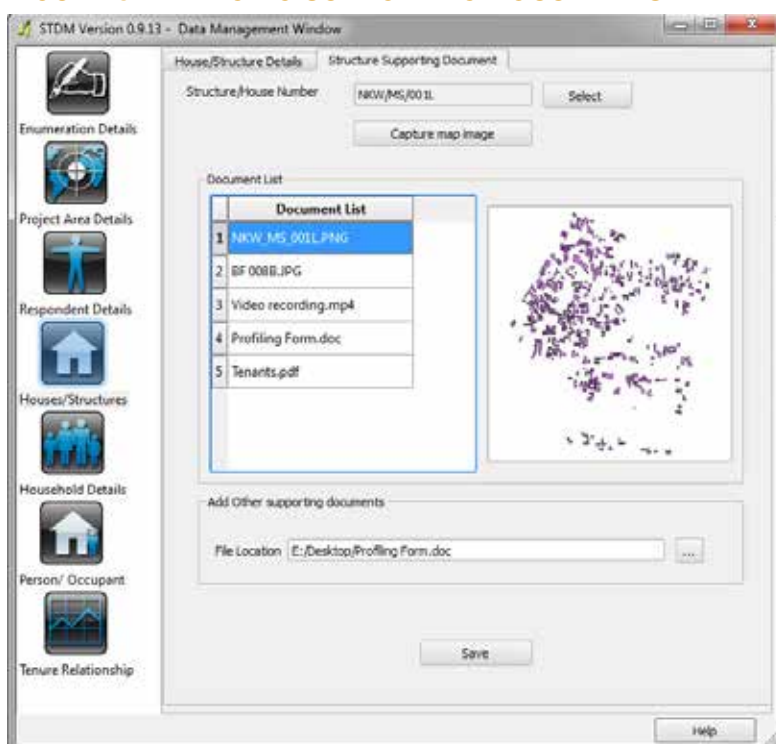
Report Builder can generate reports automatically, including a matrix of the information or a specific map showing the selected data/information.



Validation of the collected data by community members increases credibility © UN-Habitat/ Danilo Antonio

An STDM plug-in can produce a “certificate” or a tenure instrument that combines gathered information and the generated map. STDM promotes the continuum of land rights and this

FIGURE 3: MANAGING SUPPORTING DOCUMENTS



All kinds of documentations are supported by STDM © UN-Habitat/Solomon Njogu

The STDM process offers authorities and slum communities to discuss inclusive planning, access to basic services and infrastructure, and potential tenure security improvement.

“certificate composer” will be of great use once the legal arrangements are in place and authorities have decided what tenure instrument to provide. In the pilot area, communities and authorities are discussing producing certificates of residency. While this may not be an instrument for tenure security, community members find it useful. It will open up more development opportunities for them and they believe that this instrument is the first step on the tenure ladder.

## INITIAL RESULTS AND IMPACTS

Most stakeholders, including slum dwellers, appreciated the benefits of STDM in addressing their information requirements. Some stakeholders, including government officials, also appreciated STDM as a potential tool for larger urban development objectives. In summary, here are the initial impacts/achievements of the project.

- STDM compliments the participatory enumerations in addressing information

requirements of informal settlers and government authorities.

- Community members are able to use and interact with the STDM tool and have the confidence to continuously manage and update the information.
- Data analysis informed community plans to pursue priority projects. Communities are negotiating with local authorities on possible development initiatives as informed by collected data using STDM.
- The STDM process offers authorities and slum communities to discuss inclusive planning, access to basic services and infrastructure, and potential tenure security improvement.
- Data generated, for instance the house numbers, will be used as a physical address system that will then enhance slum dwellers' access to other services.
- An international training workshop on STDM use and application was conducted and trainers will form part of the group to champion STDM.
- A regional learning centre was established in Kampala, Uganda, for capacity development and future requirements of STDM use and application, particularly in the region.
- Increased demand to use and apply STDM for several purposes in various situations.

International acknowledgement of the STDM pilot experience and international recognition of STDM as a tool to promote continuum of land rights and inclusive urban planning.



Tenure status can be analyzed using STDM © UN-Habitat/Solomon Njogu

## CHALLENGES

While the pilot project was perceived highly successful by most stakeholders, it encountered the following challenges:

- Coordination issues - transition in management within ACTogether as key project partner during data

collection caused some coordination challenges that led to delayed completion of the process with the agreed time.

- Difficulty in synchronizing timing and interventions from various related projects.
- Apprehension about using a new tool such as STDM by some technical staff.
- More time are needed for sensitization and training.

## LESSONS LEARNED

### **Partnerships are key for the successful execution of STDM;**

The partnership between the international organizations, national institutions, local authorities and community stakeholders proved to be the “facilitating” agents of change and innovations. The project was well received because all stakeholders were part of the implementation, and existing projects/ initiatives were considered in the design and implementation.

**The STDM proved to be technically sound, simple to use and it reflects the realities on the ground;** Stakeholders appreciated STDM’s ability to capture information on informal settlements using simple technology and using community members’ existing capacities. Also, slum dwellers and government stakeholders appreciated STDM’s capacity to generate reports and undertake analysis as soon as the data is captured or entered into the STDM plug-in. As slum dwellers were able to interact with the STDM system, it showed that the system is simple to use and can be replicated.

### **A combination of pro-poor land tools and approaches can be effectively implemented;**

The project demonstrated that multiple tools and approaches can complement each other. In this case, the community mobilization and sensitization approaches by the Slum Federation/ SDI, the participatory enumeration process and



Daniel Woniala, and other slum dwellers from Mbale, Uganda demonstrate STDM at an international event © UN-Habitat/Danilo Antonio

STDM complemented each other and were effective.

**Government recognition and support;** the success of the tool will hugely depend on the readiness by the government and relevant authorities to embrace the tool. The participation of Ministry of Lands, Housing and Urban Development (MoLHUD) and the officials of Mbale Municipality added significant value to the process and enhanced the acceptability of the process without serious contestations from all leaders and communities.

### **At community level: ownership of the process by the community is critical for success.**

Building from community network of SDI and the saving schemes mobilized by the NSDFU, the project has demonstrated that a community-driven approach is vital to its implementation. Community members are central to the mapping and enumeration process from the planning stage to implementation and post-implementation activities (i.e. validation of results). In this context, the community easily accepted the results as they owned the process and they were the core players during the data collection process (i.e. enumerators also are community members).





STDM pilot accelerated the implementation of community priority projects © UN-Habitat/Solomon Njogu

**Capacity development is a catalyst for sustainability.** The project is clear that one of the most important elements of sustaining the development of a land information system like STDM is about capacitating the users on its use and on data updating and management. Apart from designing the information system in a simple manner for the slum dwellers to be able to comfortably use it, the project was able to provide enough capacity development among the various stakeholders including government authorities, community leaders and Slum Federation members through various meetings and orientation/briefings. Similarly, select Slum Federation members were formally trained to act as STDM operators. The project was also able to establish a Regional Learning Centre for the use and application of STDM. The Centre will serve as the regional training hub for STDM use by other interested slum federations in Uganda and from other countries.

**Pro-poor solutions have huge potential to impact on the lives of the poor.** The project has

illustrated that a combination of pro-poor and affordable tools plus strategic partnership have a huge potential to impact on the lives of the poor. The results of the engagement of various actors in the project and the information being generated by STDM have strengthened the dialogues and partnership, particularly of that of the slum dwellers and government authorities and among the members of the communities. It also showed that the use of information technology, GPS, GIS and land information systems is not anymore the monopoly of the experts and professionals, and that slum dwellers themselves can benefit from its advantages and use such technologies to articulate their needs and priorities, amongst other things.

### OPPORTUNITIES FOR SCALING UP

With the successful implementation of the STDM pilot in Mbale, the demand for its application and implementation has steadily increased particularly by GLTN partners working in the urban sector.

In Uganda, the STDM implementation is being rolled out in four municipalities and potentially, with additional municipalities. Its potential uses and applications in other situations and contexts like natural resource management, applications in post-crisis situations and customary tenure are increasing recognized.

With further development of STDM as an information tool, it is envisioned that more partnerships will be forged. While STDM can be transformed or customized into a functional land information system for cadastre and land registration systems and other conventional approaches, its development will focus on bridging the information divide and targeting the information requirements of the urban and rural poor. This is line with the GLTN core values and objectives. In general, STDM development is expected to address affordability issues, scalability, user-friendliness and simplicity, participatory and inclusive process and build on communities' strengths and capacities.

STDM development is expected to address affordability issues, scalability, user-friendliness and simplicity, participatory and inclusive process and build on communities' strengths and capacities.

At present and aside from Uganda, STDM is being implemented in several countries with specific contexts and objectives. Mostly, GLTN partners are taking the lead in the implementation.

In Colombia, the Habitat for Humanity International (HfHI) particularly its local network is implementing STDM in the context of improving settlement infrastructure, housing conditions of community families and tenure security of community households in Ciudadela Sucre located in the Municipality of Soacha, Colombia. The data that will be generated will inform them to provide targeted infrastructure, housing and health services. The information will also be used





to identify any existing issues on tenure security improvement as well as potential interventions based on the outcomes of the data analysis.

For the rural part of Uganda, the Government of Uganda and International Fund for Agricultural Development (IFAD), through the Vegetable Oil Development Project (VODP), have partnered with GLTN in applying the STDM framework to map out farm landholdings linking tenure security and productivity of smallholder farmers in Kalangala District, Uganda. By undertaking an extensive spatial mapping of farms and the corresponding tenure status of farmers, and linking this information to the farmer information system, it is expected that there will be reduced land disputes, improved land tenure security and a more targeted interventions can be identified.

In Haiti and Eastern Caribbean, the use of STDM is being tested and/or implemented in partnership with the Government, UN-Habitat regional office and GLTN partners. In the coming months, STDM

will be further tested and implemented in Zambia in the context of customary-urban settlements with Huairou Commission as the lead partner and in Fiji in the context of citywide upgrading and slum improvement with Asian Coalition of Housing Rights (ACHR) and Habitat for Humanity International as lead partners. Also, STDM capacity development initiatives have increased and will, without doubt, continue to increase.

Moreover, it should be noted that STDM is not just an information system or a land tool. It embodies some fundamental principles about helping poor people and calls for a paradigm shift in the thinking about bridging the information divide and recognizing the continuum of land rights approach. It is a new way of thinking and perhaps will be a new way of doing business in the land sector. The pilot experience shows that the implementation of STDM is changing the mindsets of technical people in various institutions and getting them to embrace the concepts behind STDM and start working outside “conventions”.



STDM will soon shows the relationship between tenure security and farm productivity, Kalangala, Uganda  
© UN-Habitat/Danilo Antonio



## UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME (UN-HABITAT)

UN-Habitat helps the urban poor by transforming cities into safer, healthier, greener places with better opportunities where everyone can live in dignity. UN-Habitat works with organizations at every level, including all spheres of government, civil society and the private sector to help build, manage, plan and finance sustainable urban development. Our vision is cities without slums that are livable places for all, which do not pollute the environment or deplete natural resources.

## THE GLOBAL LAND TOOL NETWORK (GLTN)

GLTN aims to contribute to poverty alleviation and the Millennium Development Goals through land reform, improved land management and security of tenure. The Network has developed a global land partnership. Its members include international civil society organizations, international finance institutions, international research and training institutions, donors and professional bodies. It aims to take a more holistic approach to land issues and improve global land coordination in various ways. For further information and registration visit the GLTN web site at [www.gltn.net](http://www.gltn.net).

## ACKNOWLEDGEMENTS

Implementing Partners: Slum/ Shack Dwellers International, Cities Alliance, Mbale Municipal Council National Slum Dwellers Federation of Uganda, ACTogether, Ministry of Lands, Housing and Urban Development (MoLHUD), Uganda, International Federation of Surveyors, University of Twente (Faculty of Geo-Information Science and Earth Observation).

Authors: Danilo Antonio, John Gitau, Solomon Njogu

Contributors: Angella Nuembe, Arthur Abigaba, Clarissa Augustinus, Cyprian Selebalo, Daniel Woniala, Denis Kidega, Fiona Nshemerirwe, Francis Madoi, Fredrick Mugisa, Hassan Kiberu, Jack Makau, James Nakiza Wanzaga, Jean duPlessis, Joseph Kimbowa, Katana Goretti, Lutwama Muhammed, Mafabi Mutwalibi Zandaya, Medie Balikowa, Richard Wandoba, Samuel Mabala, Sarah Ibanda, Sarah Nambozo, Semanda Twaha Bin Musa, Skye Dobson, Solomon Haile, Teo CheeHai, Asa Jonsson.

Editing: Victoria Quinlan

## CONCLUSION

The Social Tenure Domain Model offers practical solutions and opportunities for land professionals, researchers, grassroots organisations and government authorities. These opportunities include the empowerment of the grassroots communities to develop and manage their own information systems (and their own data), with all the benefits of the advanced technologies can offer, with less investment in resources and with less reliance on highly paid experts. Land professionals can also make their services available to all and offer people-centred and affordable solutions. They can also contribute to the further enhancement of the STDM framework. With STDM, it is possible to bridge the information divide, to serve all members of society and to undertake development interventions such as tenure security for all at scale.



If done at scale, future generations will benefit from STDM use  
© UN-Habitat/Danilo Antonio

By June 2014, STDM source codes will be disseminated to the general public to openly provide more information about STDM and its use and application, to allow more interaction with users and potentially to attract more developers for its enhancement and further development. STDM will evolve and improve over time with more and more partners. It will explore more opportunities by being implemented in other contexts (e.g. customary areas) and other countries. The lessons and experience of STDM work in the months ahead will inform its strategy for implementation in the coming years.

HS Number: HS/017/14E

### For more information, please contact:

UN-Habitat  
P.O. 30030, Nairobi 00100, Kenya  
Tel: +254 20 76 23120  
Fax: +254 20 762 4266  
Website: [www.unhabitat.org](http://www.unhabitat.org)

GLTN Secretariat, Facilitated by UN-Habitat  
P.O BOX 30030, Nairobi 00100, Kenya  
Tel: +254 20 76 5199  
Fax: +254 20 762 4256  
E-mail: [gltn@unhabitat.org](mailto:gltn@unhabitat.org)  
Website: [www.gltn.net](http://www.gltn.net)