



Scaling up Responsible Land Governance

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COMMUNITY SOURCED LAND INFORMATION INFLUENCING UPGRADING PROGRAMS AND STRATEGIES IN COLOMBIA, KENYA, PHILIPPINES AND UGANDA: EVIDENCES WHERE THE TOP-DOWN AND BOTTOM-UP APPROACHES MEET

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Abstract

Despite the enormous advances in information and communication technologies in capturing and accessing data, the positive impact on urban land management is still limited. Information in real-time for land management and urban development is unachievable in most cities in developing countries. When the information is available, it is of poor quality, and fails to account for realities such as informal settlements, basic services for the poor, and access to land for the disadvantaged, especially women. This hinders sustainable urban development projects and initiatives for upgrading informal settlements. In response to these challenges, new approaches harness local knowledge, and support local people in taking responsibility for data collection and management. Policies that recognize local data, pro-poor land institutions, and participatory approaches create an enabling environment for this.

This paper presents the experiences from four countries in three continents (Colombia, Kenya, Philippines and Uganda), where poor urban communities have collected land information pertaining to their settlements, livelihoods, tenure (in)security and shared community collected and validated data with the national or local authorities to support implementation of urban development projects. These initiatives indicate that costly programs with high levels of spatial accuracy and sophisticated data are not always required, for they do not necessarily offer better quality. The following country case studies will highlight these phenomena:

Colombia

In Colombia, Habitat for Humanity Colombia (HfHC) introduced a participatory process to collect information regarding settlement and household level conditions including tenure options; and replacing a system which did not have precise nor up-to-date information. The data was collected through community mapping workshops in ten neighbourhoods and detailed household and housing surveys that provided new insights into the socio-economic, tenure situation, livelihood and housing profiles of the community. Community engagement and mobilization through the participatory process as well as more visible community needs and opportunities resulting from this process provided the basis for initial dialogue with public and private actors which will contribute to joint efforts for neighbourhood upgrading and increased investments in Ciudadela Sucre.

Kenya

Projects in informal settlements in Mombasa County, Kenya demonstrated that the existence of affordable geo-spatial tools and technologies present a solid opportunity to expand and explore the various routes for

secure land tenure for the poor. As part of the intervention to develop a national land information management system and to conduct an inventory of all informal settlements within the Mombasa County, Pamoja Trust (Pamoja Trust) and the Mombasa County Government supported the adoption and implementation of the geo-spatial tools and technologies combined with participatory data collection approaches and capacity development in informal settlements in Mnazi Moja and Kwa Bulu. Residents of both have faced threats of evictions, and have struggled to gain tenure security for a long time. The community driven process of mapping and enumerations enabled communities in Mnazi Moja and Kwa Bulu to be actors in developing land information management, and negotiate for their occupancy and tenure rights with authorities. The process has provided a way to document all residents and their tenure rights, including the vulnerable groups who had not been documented under the conventional cadastre. In addition to strong community involvement, the county government in Mombasa has expanded the approach to other settlements.

Philippines

Projects in the Philippines show the benefits of maintaining land information systems in urban poor communities, and sharing such information with local and national governments to promote inclusion in the planning process, national and local upgrading programs, and selection of the best ways to provide tenure security for the urban poor under existing regulations. To date, these land information systems are present in urban poor communities in various barangays (or villages) of Valenzuela City and Muntinlupa City within the Metro Manila. Such information is gathered through inclusive approaches like citywide mapping, participatory enumeration and settlements profiling. With the aid of the existing geo-spatial tools and within the framework of collecting data through a participatory process, the information gathered by the community has been stored, validated and analyzed to provide local familiarity of the community with regards to its boundary, population, types of tenure, types of structures, land uses, existing utilities, among others. This information greatly helped the communities as well as the government authorities to prioritize interventions and to inform settlement planning. The tools used have greatly helped in documenting tenure rights of informal settlement occupants, which normally are not captured by any national land information system. Communities who are able to manage and be familiar with their own land information bring with them that knowledge in negotiating with local and national governments regarding development programs on upgrading and enhancing the prevailing situation in the community including tenure security. Lessons from the pilot areas are shared with other communities in other regions in the country like in Visayas and Mindanao. This initiative to inform and enhance

community development interventions initiatives is implemented by Homeless Peoples Federation, Inc. (HPFPI), a grassroots organization supported by academic and professional organizations.

Uganda

Uganda has a number of success stories that describe how community-sourced land information has been instrumental in influencing the decision making of relevant authorities to improve living conditions in informal settlements. These successes have resulted in the expansion of the community sourcing of land information data from four to fifteen Municipalities in Uganda. The results and availability of this data is supportive for other planning and decision making processes, such as those based on National Statistics Office. The latest success story has been where the Kampala Capital City Authority has collaborated with ACTogether, an NGO supporting these land information data acquisition processes, to issue certificates of occupancy to informal settlers within Kampala. The essence is to recognise the rights of the urban poor occupants while not restricting the Authority to implement future development work.

The paper argues that trained professionals are no longer the only ones who can effectively harness existing affordable geo-spatial technologies to collect and manage land information. Pilot projects in these four countries have demonstrated that community members can be mobilized, especially when supported by land professionals and government authorities. The paper concludes that geo-spatial technologies and participatory approaches with community members and government authorities can go a long way in assisting sustainable urban development and improving tenure security.

Key words: Land Information, informal settlements, affordable geo-spatial technologies, local and national governments, community led enumeration, participatory mapping, pro-poor land administration tools

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I. Land Administration Systems

Land Administration Systems (LAS) provide the infrastructure for implementing land policies and land management strategies in support of sustainable development. This infrastructure includes the institutional arrangements, a legal framework, processes, standards, land information, management and dissemination systems, and technologies required to support land markets, allocation, valuation, control of uses, and development of interests in land. LAS are dynamic and evolve to reflect the people-to-land relationships, to adopt new technologies and to manage a wider and richer set of land information. Conventional cadastral and land registration systems cannot supply security of tenure to the vast majority of the low income groups (Enemark, 2010).

It is imperative that innovative and scalable new approaches are developed to solve this escalating global issue. LAS must be modified to accommodate a wider range of levels of tenure security and integrate customary systems of tenure. New low-cost surveying tools should be integrated into cadastral surveying processes. LAS should reflect the understanding that land tenure is a matter of human rights and social justice.

Land titling programmes which promote absolute land ownership are being implemented in most Least Developing Countries. However, the situation on the ground indicates that there are areas where these titling programmes are not applicable since they do not always recognize traditional, customary or collective types of tenure; and are very costly (long administrative process and high-precision surveys). It is estimated that there are around 6 billion land parcels/plots or ownership units world-wide, but currently only 1.5 billion are formally registered, allowing residents to enjoy security of tenure (Zimmerman, 2011). Within many of the 4.5 billion unregistered parcels/plots, 1.1 billion people live in slums (RICS, 2011).

Urban centers are characterized by a prevalence of informal settlements, and information on these settlements is missing from national land information systems. Government interventions are minimal due to the lack of available data, leading to the worsening of situations in informal settlements.

The UNDP and UN Habitat emphasize the social and economic integration of slums and informal settlements. This requires formal recognition of legal pluralism regarding tenure, and of the diversity of land markets. UN-Habitat/GLTN advocates to incorporate informal settlements into formal systems of

land management with an improved city-wide cadastre and land registration system, and an incremental system of land regularisation, infrastructure improvements and community services.

The continuum of land rights approach recognizes different forms of land tenure. Land rights are not restricted solely to registered rights, nor to individual property rights. Rather, land tenure involves a complex set of formal and informal rights, ranging from conditional rights to full rights to dispose of land.

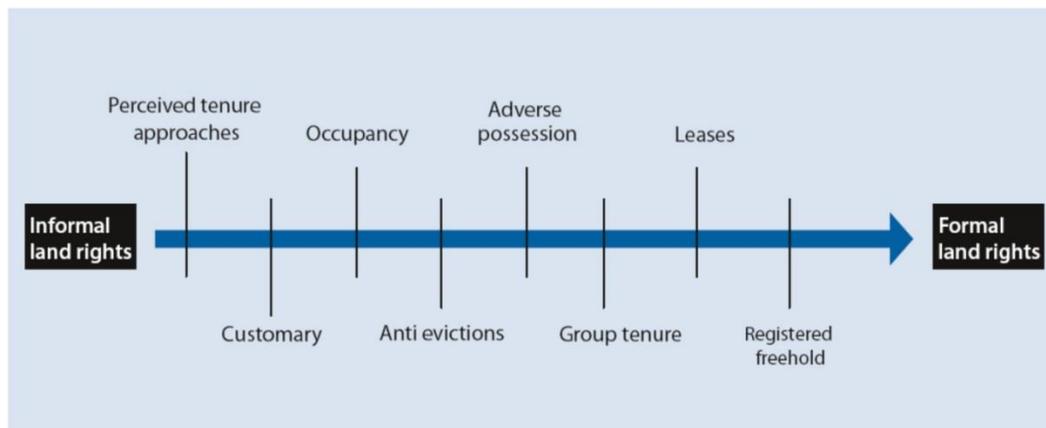


Figure 1. The Continuum of Land Rights

Another principle that is relevant in designing land administration systems is “fit-for-purpose land administration”. Land administration systems in less developed countries should be flexible and focused on citizens’ needs, rather than focusing on very technical solutions and highly accurate surveys. A fit-for-purpose approach is flexible, inclusive, participatory, affordable, reliable, attainable and upgradeable. This system of land administration fits perfectly the situations within informal settlements, customary lands and even rural areas where high accuracy surveys still have not been undertaken.

The purpose of land administration systems is to provide tenure security and spatial information (Augustinus, 2003). Tenure security does not only refer to absolute ownership but recognizes the different ranges of rights that people have over land over time. Spatial land information, which includes identification of plot boundaries and structures, helps relate a person’s right to a particular plot or structure.

One component of LAS is an effective Land Information System (LIS) for recording land-related data to support decision-making on various aspects of development. An initial step for this is community-based

data gathering exercises on land tenure information, which may also include other data on basic and public services in the locality. In this way, communities are able to become familiarized with its profile and determine which issues they could resolve themselves, and which issues should be relayed to the higher-ups for possible assistance.

II. Prevailing Land Challenges

Urbanization

Globally, more people live in urban areas than in rural areas, with 54% of the world's population residing in urban areas in 2014. By 2050, continuing population growth and urbanization are projected to add 2.5 billion people to the world's urban population, with 90% of urban population growth taking place in Asia and Africa (WUD, 2014).

Prevalence of Slums and informal Settlements in Urban Areas

This increasing population in urban areas causes competition among urban dwellers over access to land, adequate shelter, housing, basic services and public infrastructure and space, resulting in the proliferation of slums. More than a quarter of the world's urban population lives in slums, which UN Member States describe as, "communities lacking one or more of the following conditions: (1) access to improved water, (2) access to improved sanitation facilities, (3) sufficient living area – not overcrowded, (4) structural quality/durability of dwellings, and (5) security of tenure". In the State of the World's Cities 2012/2013, UN-Habitat estimated the number of people living in the slums of the world's developing regions as 863 million

Lack of information about the informal sector and its dynamics hinder city officials in formulating and implementing an urbanisation strategy and increases the ecological, economic and social problems and risks, such as the threat of disasters. A new set of urban indicators is needed. This should be supported by a new information collection and management paradigm with tools, techniques and policies to monitor and model growth and change across the urban area – all within shorter timeframes than previously accepted (Enemark et al., 2010).

III. Some Global Responses

Global Goals

There has been growing global concern about slums, as reflected in the Millennium Development Goals (2000-2015) and the new Sustainable Development Goals (2015-2030). The Millennium Development

Goals included a target to significantly improve the lives of at least 100 million slum dwellers by the year 2020. Although this target was met, and the proportion of slum dwellers in the global urban population fell, the absolute numbers of urban residents living in slums continue to grow, partly due to accelerating urbanization, population growth and the lack of appropriate land and housing policies.

In September 2015, the UN General Assembly adopted the Sustainable Development Goals, which includes Goal 11 to “make cities and human settlements inclusive, safe, resilient and sustainable” and a target to “ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums” by 2030. Hopefully, these high-level commitments will spur further progress.

Habitat III

To support measurable, actionable implementation of the post-2015 Global Goals, Habitat III, the third United Nations Conference on Housing and Sustainable Urban Development, will take place in Quito, Ecuador in October 2016. The main outcome of this summit will be a New Urban Agenda to ensure that the goals for sustainable urban development are met. Habitat III is meant to be an inclusive process, involving parliamentarians, civil society organizations, regional and local government representatives, professionals, researchers, foundations, women and youth groups, and the private sector.

IV. Participatory Enumeration, Mapping and STDM for Sustainable Urban Development

Government data collection on informal settlements is often inadequate for planning and programming purposes. As a result, informal settlement dwellers are excluded from citywide plans and programmes, and governments use the lack of information to justify their failure to install basic services (IIED, 2014). Implementing strategies for urban sustainable development requires more information about the informal sector.

Therefore, community and land-related information gathered from participatory enumeration and mapping exercises can be used as a political tool to mobilize communities, and the starting point for dialogue with development actors and data-based development initiatives that contribute to comprehensive neighborhood upgrading, better land use management, expansion of infrastructure and basic services, and overall integration of disenfranchised communities into the city fabric with increased access to opportunities. Community led data collection, mapping and planning provides the basis for fair, informed and equitable partnerships between communities, public institutions, development partners and the local private sector.

Participatory Enumeration

Current initiatives are being undertaken by community-based organizations of the urban poor and civil society organizations in gathering land-related data on settlements and its members, with the objective of improving baseline data that can be used in improving the prevailing situation in poor urban communities which demonstrates the lack of access to improved water, access to improved sanitation facilities, sufficient living area, structural quality/durability of dwellings, and security of tenure.

Participatory enumerations directly, and to a significant extent, involve the people who are too often simply considered subjects or beneficiaries. In some cases the entire process is participatory, including the design, management, implementation, analysis and use of the data. In other cases, participation occurs at specific points in the process, such as through an initial consultation or information sharing event, when boundaries are identified, or through a process of public data verification (UN-Habitat, 2010).

The following types of data are collected: 1) settlement profile (including community demographics, land use and density infrastructure, services, and risks); 2) household-level enumeration data (including, demographics, socioeconomic status, education and health, and housing conditions); and 3) maps (including sketches, maps generated from or, digitized parcel maps).

Community Mapping

The mapping component involves identification of structures or parcels of land, and the measurement of boundaries. It includes a range of activities, such as sketch-map projects (hand-drawn maps showing community information on specific issues or themes), transect walks to develop sections of the community, or cartographic projects (accurate depictions of areas, to-scale).

Accurately-surveyed parcels should not be the only spatial units for land management and administration of informal settlements, because: 1) the location of informal settlements on privately owned land does not always precisely match the cadastral parcels and is likely to cover many properties in one spatially contiguous unit; 2) often, informal settlement takes place on customary land and/or state land which is generally not parcelled in developing countries; and 3) the boundaries of the informal settlers' properties often do not accord with the cadastral layout, and this can vary across the settlement and between settlements (Augustinus, 2003). It is recommended to use aerial satellite images for spatial units in land recording.

Modern technology allows local residents to access basic GPS services, whether through an application on a smart phone or a separate handheld GPS unit, to map roads, pathways, structures, parcels, and points of interest in communities, and then import the data into a public database which generates dynamic and editable maps.

The principle behind the enumeration and mapping exercises is the importance of a community process in which data is gathered by members of the community, and also owned and managed by them. Community members take responsibility because their participation empowers them, with the knowledge and capacity to undertake enumeration and mapping, and with information to plug into the political process.

Social Tenure Domain Model

The Social Tenure Domain Model (STDM) captures the different forms of relationships of people to land, with user-friendly software. As a concept, STDM captures the different forms of land rights not usually included in formal land administration systems, such as informal settlements and customary tenure. STDM is designed to support the recording of land rights in areas where regular or formal registration of land rights is not the norm. It describes the relationship between people and land through the different forms of land rights, social tenure relationships and overlapping claims or rights over land (Augustinus, 2007). Members of the community can understand the importance of their data being collected when they see the practical application of how their community can use data to improve their means.

As a tool, STDM software was developed to meet the need for a data management tool which can store and easily update the community-sourced land information. The software also provides a visualization to make analyzing various data from the community easier. Spatial data is linked to attribute data, and a Geographic Information System makes it accessible and updatable.

Members/partners of the GLTN have piloted STDM in informal settlements in Colombia, Kenya, Uganda and the Philippines, complementing and adding value to the participatory enumeration and mapping exercises which were undertaken. The STDM yields a land information system which now provides the basis for identifying beneficiaries for tenure regularization programs, prioritization of needs and services, access to basic services, settlement planning, among others.

V. Practical Applications and Country Experiences

This section will show the experiences of four countries (Colombia, Kenya, Philippines and Uganda) on their initiatives to capture land-related information from settlements and its dwellers, analyse the data, and come up with valuable information that will help improve the situation of their own settlements. The initiatives were mostly from grassroots organizations employing the bottom-up approach. Initiatives to gather data from the grassroots result in greater inclusion and alignment with the local or national government's strategy for urban development.

The following studies will illustrate how bottom-up and top-down approaches to collect land information from communities have helped to improve the conditions of informal settlements with the support of local and national governments.

VI. Colombia

Background

Habitat for Humanity Colombia (HfHC) is supporting the implementation of a comprehensive Neighborhood Upgrading Program in Ciudadela Sucre, an area of the Municipality of Soacha (metropolitan Bogota) with more than 6,400 households in 10 distinct settlements. This area was originally built as an illegal settlement during the late 1980's, by a politician who subdivided his land to grant to poor families as means of increasing his political capital. The main settlers were families displaced by the armed conflict from the rural areas of Colombia.

Socioeconomically, Ciudadela Sucre remains as one of the poorest areas of metropolitan Bogota. From the 21.000 inhabitants currently living there, 72, 5% lives under the poverty line (less than US\$103 per month). In nearly 30 years of existence, the families themselves, using modest materials and construction techniques progressively built their houses in this settlement, but their living conditions are in many cases technically unsafe and/or hazardous to their health. Likewise, the settlers have struggled to access basic services, infrastructure and facilities, but collective infrastructures remain very basic and are insufficient. The project was designed to address the main problems identified in the community:

- *Land tenure uncertainty:* due to the informal origin of the settlement, the formalization of land tenure is a long and complicated issue. Most of the settlers are currently paying for the land titles that once were informally granted - through private transactions - by the political leader who owned the land. It is still unclear whether these titles were registered and a critical area for further follow up with the community. According to HfHC's surveys in Ciudadela Sucre, at least

27% of households are “possessors”, who rely on receipts from utilities to exercise a claim to the land. While the current law protects the settlers against eviction as “possessors” of the land, most of them were not aware of this law at the time of the enumeration and mapping processes. Land administration had been neglected by the Municipality.

- *Poor housing and living conditions:* as a result of the use of low quality materials and construction techniques, respiratory diseases had increased among children under five as reported by doctors at the local health center. HfHC’s surveys found that about 53% of households (3,392 households) prioritize housing improvements and expansions as their most important need. These would include building a slab for a second floor, strengthening the housing structure, changes in building materials, flooring finishes, and roofing improvements.
- *Poor or non-existent public facilities and infrastructure:* Although most of the houses have access to running water and electricity, collective infrastructure such as paved streets, an adequate sewage system and some public facilities are inexistent.

Partnership and Implementation

Ten neighbourhoods in Ciudadela Sucre have capitalized on available geospatial technologies to undertake a detailed territorial needs assessment to determine the specific requirements to implement a neighbourhood upgrading program, which includes four main components: 1) community engagement and capacity building through a participatory assessment process, 2) healthy housing improvements and training, 3) settlement planning and upgrading of collective infrastructures, and 4) legal advice for securing tenure.

This STDM program is possible through the active participation of the community, partners, donors, and additional stakeholders. Implementing partners include the Hospital Order of St. John of God, through its communal centre in Ciudadela Sucre; St. Benito Menni, which had a key role in the process of community mobilization; the Catholic University of Colombia, whose students assisted in the community during the field activities and helped develop technical proposals for settlement upgrading; the Colombian NGO COLNODO, the IT partner, which assisted HfHC throughout the process of adaptation of the STDM tool.

Data has been collected to create profiles at the level of the settlement, neighbourhood, household, and individual household member, with the following categories of analysis:

1. Settlement

2. Housing
3. Socio-demographic features
4. Socio-economic features
5. Health conditions
6. Community organization

In addition to this diagnostic review, the adoption of affordable geo-spatial tools and technologies combined with participatory approaches has allowed for the codification of around 7,000 structures. HfHC developed a numbering system, with codes based on the neighbourhoods, blocks, plots, house units, and households in Ciudadela Sucre. This labelling provides a systematic methodology for uniquely tagging related entities from the neighbourhood level down to the household level.

How the Bottom-Up and Top-Down Approaches Meet - Lessons and Outcomes

Feeding Ciudadela Sucre's spatial and baseline information into an STDM community-sourced land information system represented a significant step in terms of facilitating access and future updates to data. Information from the analysis helped to increase the visibility of historical needs in the community to the government and enlist allies engaging with local government entities, private sector and other CSO groups. For example, the data collected is the prioritization of areas for investment in the municipal infrastructure plan. The project also contributed to the establishment of the "Mesa de Mejoramiento de Vivienda", a space for various civil society organizations to create a common agenda to address housing quality problems in Colombia. The project is elevating the topic of housing improvements and neighborhood upgrading at both the local and national level, which is critical since 2 million households in Colombia (or 15.3% of households in the country) live with inadequate living conditions.

Following this experience and the methodology developed in Soacha, territorial diagnostic tests and housing market assessments were also conducted in five neighborhoods in the city of Cali, where there are around 20,000 informal homes. It is anticipated that similar processes will be replicated in other cities in Colombia and countries in the region before they undertake neighbourhood upgrading.

Furthermore, the information collected through a participatory process are also supporting three key advocacy themes:

- Review and development of existing titling programs to increase efficiency, reduce costs and support delivery at scale in informal settlements

- Develop a regulatory framework for financial services for housing improvement that can also support access to public financing and resources
- Develop innovative mechanisms facilitate compliance with housing and settlement basic development standards, building codes and permits, licenses and building permits.

These three themes are being discussed and negotiated with local actors such as the mayor of Soacha and the agency that issues building permits as well as the Bank of Opportunities, a national government entity that is currently promoting the development of adequate and affordable financial services for housing improvements.

Other key outcomes were:

- STDM has captured territorial knowledge and spatial information, including environmental concerns. This is particularly important in the case of Soacha's polluted mining areas. STDM has also documented social issues that are important to communities, such as security concerns and health.
- Families and communities better understand the needs, conditions and opportunities in their communities,
- This knowledge helps community members to identify more targeted solutions, and strengthens their positions with relevant actors to catalyze improvements and changes. Community action plans with prioritized interests and needs support a more comprehensive process of settlement upgrading and housing improvements.
- Community mobilization around STDM has also created an opportunity to bring together the older and younger generations, and enhance engagement within the community.
- Transaction times and costs have been reduced through community-sourced work. The information can be organized more efficiently and faster with bigger impacts.
- A partnership has been established with ECLOF microfinance for housing improvement loans and construction technical assistance for families.

VII. Kenya

Background

The National Land Policy 2009 categorically identified informal settlements as a critical sector that requires special attention. The first recommendation was that the Government should carry out an inventory of all informal settlements as a basis of planning for further intervention. In the recent years,

Government institutions have increasingly cooperated with CSOs and have taken a more pro-poor and participative approach in upgrading programmes. This new approach took shape in upgrading programmes and policies such as the Kenya Slum Upgrading Programme (KENSUP) and the Kenya Informal Settlements Improvement Project (KISIP) which involved community members in the planning and actual implementation of the activities. The two initiatives did not tackle slums as informal areas that should be cleared or evicted but as residential areas that needed house upgrading, improvement of infrastructure and tenure regularization.

Against the background of these positive political and legal developments, Kenya is still facing the challenge of low cadastral coverage. The recommendations and plans clearly point out the need of an inventory of all informal settlements in the country and a digitized land information management system that does not only include formally registered areas but also informal settlements. When it comes to mapping informal settlements and their residents the relationship between the land and the people is not based on ownership but on other aspects such as access rights or length of stay. There is need for an efficient land information management system that can reflect the realities as they are.

Partners and Implementation

In order to provide an efficient land information system, with input coming from data collected during participatory enumeration and mapping exercises, the project, "*STDM Implementation in Mombasa and Nairobi in Support of Informal Settlements Improvements*" was implemented in selected informal settlement areas in Kenya. The implementing team consisted of three partners, namely Pamoja Trust (PT), the Technical University of Kenya (TU-K) and UN-Habitat/Global Land Tool Network (GLTN).

In Mombasa County, STDM was implemented in two informal settlements, namely, Mnazi Moja and Kwa Bulu. In the selected areas, each household's geospatial location was captured and the residents gave their households' information to be documented. The enumeration and mapping exercises were conducted using the participatory approach which included members of the communities fully cooperating in undertaking the activities.

How the Bottom-Up and Top-Down Approaches Meet - Lessons and Outcomes

To implement the National Land Policy 2009, the Mombasa County Government (MCG) carried out a tenure regularization exercise in Kwa Bulu using the STDM framework to further show their commitment on improving the conditions of informal settlements. The County Government expressed the wish of

documenting more informal settlements within the STDM framework as the county has exerted full efforts in undertaking an inventory of informal settlements within its jurisdiction. Having a data management tool to keep the data collected altogether and come up with easier ways to do analysis of these data would help the county in providing support to the improvement of the conditions of these informal settlements.

During consultation meetings among the Kwa Bulu Community, PT and the MCG, it is not only the STDM work that is being discussed, but also the connection of this to the overall land management in the county, including consultations of community members regarding the County Land Management Policy which aims to address land issues concerning absentee landlords, tenants-at-will, informal settlements, land use planning and revenue collection on land. The policy also includes the provision of conducting an inventory of all informal settlements in the county. The legislation has gained the support of the Mombasa County Assembly (MCA), including the adoption of STDM as a tool to manage the county land.

Recently, the Kwa Bulu community, PT and the County Government conducted verification of party data, collection of points for the plots using GPS-devices and took photo cards. Out of the verified plots, there will be around 700 certificates which will be distributed to the community members in January this year.

The consultation among the community members, PT and the MCG also paved the way for a dialogue with the Mombasa Water Supply & Sanitation Co. Limited (MOWASCO) on accessing water supply and sanitation. MOWASCO is currently preparing proposals to distribute water and water lines to low income areas, promoting household connections rather than the water kiosk or yard taps. The data collected out of the STDM framework can provide them with the potential areas for household connections.

It was a process to be able to understand and accept the concept of STDM at the community level. To be able to successfully go through the process, there were lessons learnt along the way:

- STDM provides a chance of documenting all people who have not been documented under the conventional cadastre. However, the success and acceptance of STDM depend strongly on political and administrative goodwill as well as appreciation by the target community.
- STDM complements the approach of participatory enumeration and mapping. The participatory process that involves the residents in data collection, verification and management of the targeted area is crucial when using the tool because it ensures the quality and reliability of the data.

- Sensitization and awareness creation among community members is very critical in the application of STDM in the context of informal settlements. Slum communities might mistakenly associate STDM with automatic security of tenure and confuse the STDM certificates of residency with official land ownership documents. Mobilization of all community members and sensitization are crucial so that all residents understand the concept very well.
- Apart from the database in the community resource centre, it is advisable to have a back-up database in a safe and neutral place, e.g. in an NGO or government office. This would allow for follow-ups on irregular changes and in case of hardware problems, the database would still be accessible to the community.

Some positive outcomes in the implementation of STDM were as follows:

- The Mombasa County Government adopted the STDM tool in documenting more informal settlements in their county.
- The Mnazi Moja residents who have been facing eviction threats presented their case to the NLC in 2013. The community submitted the updated STDM database (information on structures and residents) to petition to the MoIHUD and the NLC to address their case. Plans are now underway to implement a resettlement plan.
- The National Land Information Management System Department of the NLC appreciated the potential of STDM to capture information on rural areas and informal settlements on public land.

VIII. Philippines

Background

The proliferation of informal settlements in the Philippines has become a phenomenon associated with big cities and expanding urban centres. Current estimates using the broader definition used by the National Housing Authority (NHA) in coordination with local governments place the number of informal settlement families at about 1.5 million or about 15% of the Philippines' total urban population. Informal settlements upgrading in the Philippines has become a formidable challenge—one that can only be initiated with a more accurate and up-to-date system of estimating the number of informal settler families to properly determine the scope and magnitude of the problem.

Top-down approaches include the National Informal Settlement Upgrading Strategy (NISUS), which the Philippine Government designed in 2012, as a comprehensive shelter plan for informal settlements. NISUS is being funded by the World Bank through a grant from Cities Alliance, a global partnership

aimed at reducing urban poverty worldwide. Another top-down initiative orchestrated by the Housing and Urban Development Coordinating Council (HUDCC) is capturing data for informal settlements, with a Computer-Aided Socialized Housing Beneficiary Registration System for Local Government Units (LGUs).

There are also ongoing initiatives undertaken by CSOs like the Homeless Peoples Federation of the Philippines, Inc. (HPFPI) and the Philippine Action for Community-led Shelter Initiatives, Inc. (PACSII), organisations which espouse community-led secure tenure initiatives with local and national governments. Among the initiatives is the participatory enumeration and mapping currently being undertaken with partner communities in informal settlements in Metro Manila and other urban centres in Visayas and Mindanao.

Partnership and Implementation

The STDM implementation started with ongoing initiatives within partner communities of the Homeless Peoples Federation in the Philippines, Inc. (HPFPI) and involves a number of stakeholders contributing to in-country capacity enhancement, including the Geodetic Engineers of the Philippines (GEP)-National Capital Region (NCR) and its Young Geodetic Engineers of the Philippines (YGEP) unit and the University of the Philippines (UP)/FEATI Geodetic Engineering Department. The following activities were conducted:

- Data processing and analysis techniques using STDM in “Brgy. Mapulang Lupa” in Valenzuela City where intensive citywide mapping, survey and informal settlements profiling have been undertaken.
- Planning and Actual Field Enumeration/Mapping and Community Training on Data processing using STDM in communities in selected barangays in Muntinlupa City subjected to citywide mapping and profiling of informal settlement communities by HPFPI.

How the Bottom-Up and Top-Down Approaches Meet - Lessons and Outcomes

The implementation of STDM enhanced the community mapping and profiling activities undertaken in the communities in the said cities. These activities have become tools to organizing communities and empowering them to negotiate with local government and other urban stakeholders using the information gathered. In Valenzuela City, for instance, the results of the mapping activities in Barangay Mapulang Lupa has prompted two adjacent communities to pursue an onsite land acquisition project which the city government has supported by way of facilitating the survey of the relocation site. Meanwhile, in

Muntinlupa City, the mapping results in Barangay Sucat has aided the shelter development planning held in the area and has helped the local government identify priority projects for informal settlement communities.

IX. Uganda

Background

The Social Tenure Domain Model (STDM) intervention in Uganda commenced in July 2011 and was initiated by UN Habitat/Global Land Tools Network (GLTN) in partnership with the Government of Uganda (GOU) through the Ministry of Lands, Housing and Urban Development (MoLHUD) and Slum/Shack Dwellers International (SDI) through local partners ACTogether Uganda and the National Slum Dwellers Federation (NSDFU) – hereafter referred to as the Uganda Alliance. The intervention was a complementary initiative to the ongoing Transforming Settlements of the Urban Poor in Uganda (TSUPU) program, implemented by the Government of Uganda, the Uganda Alliance and others and funded by Cities Alliance.

The project on the STDM implementation focuses on 3 main accomplishments as follows:

1. Strengthened land-related policy, institutional and technical frameworks and tools and approaches to address the challenges in delivering security of tenure at scale particularly for the urban and rural poor;
2. Improved global knowledge and awareness on land-related policies, tools and approaches that are pro-poor, gender appropriate, effective and sustainable to-wards securing land and property rights for all; and
3. Strengthened capacity of partners, land actors and targeted countries, cities and municipalities to promote and implement appropriate land policies, tools and approaches that are pro-poor, gender appropriate, effective and sustainable.

Partnership and Implementation

To start off the piloting of STDM in Mbale, two settlements, Bufumbo and Mission in Namakwekwe Ward, Northern Division were selected. After a series of meetings aimed at understanding ground realities and building local partnerships with both the local communities in Mbale and Mbale Municipal Council a community enumeration was conducted in these two cells. The process revealed gaps in terms of accessibility to basic community services and how these were interlinked to tenure security issues. After analysis of the data collected, the most pressing needs as expressed by the locals of the two cells included

sanitation services, need for clean water, need for electricity and the need for a health centre, in that order. With these information, the Mbale federation started negotiations with the Mbale municipal council to improve sanitation in the settlements.

How the Bottom-Up and Top-Down Approaches Meet - Lessons and Outcomes

With this project, the community had shown it could gather information to identify planning gaps and come together to develop and implement solutions in partnership with the council. They were no longer merely beneficiaries of upgrading initiatives. Through the municipal and settlement forums in the region, the federation continued to lobby for quality services in the informal settlements. In the second and third phase of the TSUPU project, local communities in Mbale were granted funds to implement capital projects aimed at improving upgrading slums. The community implemented eight water point projects benefitting slum settlements. To ensure proper maintenance and sustainability of these projects, the Mbale municipal council gave the federation the right to manage all the 8 water points to ensure they continue serving the Mbale informal communities.

With the success of the pilot implementation of STDM in the municipality of Mbale in Uganda, scaling up initiatives were conducted in three more municipalities (Masaka, Entebbe and Tororo) in 2014. This year, further scaling up in 9 municipalities is being undertaken to support the Uganda Support to Municipal Infrastructural Development (USMID), an extension of TSUPU in which 14 municipalities are being supported by the World Bank and Cities Alliance to address the infrastructural challenges.

Four learning centres will be established in the municipalities of Mbale, Masaka, Entebbe and Tororo to serve as anchors of activity and learning support to STDM application in other municipalities covered by USMID. These centres are tasked to become the Trainers of Trainers for the other 9 municipalities.

The community-sourced land information using participatory process and technology is a very critical input to development initiatives not just at the local/municipal level, but on the national level as well. Lessons learned on the application of the STDM software to come up with a computerized community land information system were the following:

- Partnership between slum dwellers, non-government organizations, and the Ministry would result in a holistic and well-coordinated approach which holds promise for future urban interventions. Municipal officials such as the Mayor and Town Clerk of Masaka identified the STDM tool as a

best practice aimed at assisting cities manage the challenges presented by uncoordinated urban growth.

- The Community now sees the potential in creating and strengthening partnerships with their local governments rather than acting as passive citizens as it was at the initial stages of this project. Residents now realize they can deal with their local issues using local solutions. More so, local governments are more appreciative of community solutions.
- Experiences and best practices from Mbale where STDM was first implemented helped build confidence in communities who now believe that their input in the transformation of their settlements and towns will be considered as compared to the past where they felt extorted and exploited to give information as a formality in development programs.
- Municipal and Settlement forums are being used as platforms to discuss development needs in settlements while generating solutions and holding the responsible parties accountable. In Entebbe for instance, the Municipal Development Forum discussed the issue of the airport expansion and how this would potentially result in the eviction of the people in Kigungu settlement which is adjacent to the Airport. The physical planner of Entebbe municipality used this platform to share the airport plans and Kigungu community would not suffer eviction.
- Communities are eager to take on the STDM tool to use it to engage different stakeholders and to address service gaps among other issues in the informal settlements.
- The involvement of the academic institutions such as the Institute of Surveys and Land Management and Makerere University in the STDM project has added value to the data collected by the community through enumerations. The planning students working together with community members from the settlements understood the dynamics of land ownership and the importance of recognizing the different land rights that exist in planning.

X. Challenges and Opportunities

Key challenges identified during the process of implementation are the following:

- *Social Acceptance by the Community.* The success and acceptance of STDM depend strongly on the appreciation by the target community. Often, there are members who would not want to be involved in the process for fear of using the information which could be disadvantageous to them. It is important that there is a common understanding that what is being done is for the welfare of the community and its residents.
- *Institutional Acceptance by Government.* For the bottom-up process to meet with the top-down approach, there is a need for the process of gathering community land information and for the

information itself to be accepted by local/national governments. There are also some reservation from the government, particularly on the possibility that the STDM process may encourage squatting/illegal occupation and may also encourage and legitimize informal development and construction. There is a need for a dialogue between the community and the government to discuss and thresh some issues and to align government's initiatives in involving and including informal settlements in their plans.

- *Fear of Misuse of Household/Community Information.* Some community members are at the start of the process not very much cooperative in giving out their information for fear of information to be misused at their disadvantage. Sensitization and dialogues may be conducted to provide basic information to the community members on the use of information collected from them.
- *Awareness of the concept of STDM.* There is low awareness of the concept of STDM both at the community and local/national government level. There is a need for more awareness activities for STDM to be introduced not just as a concept but an operational system which could help communities improve their prevailing situation in terms of access to basic services and also to improve their security of tenure.
- *Technical issues when using STDM software.* Since there is a software for STDM, there is a need for a technical training before operationalizing it. Most community members are technically-challenged and so there is a need for continuous in-depth learning sessions
- *Technology.* There will always be the challenge in keeping-up with technology, as there are always new versions of software coming out every now and then. And STDM is no exception to this cycle of technology. It is continually being improved and therefore new versions are released regularly.
- *Manpower issue for Data Management and Updating.* It sometimes becomes a human resource issue if there is no existing executive body or operational unit at the community level. One action point for this is encouraging volunteerism from members of the community who can devote time for the data maintenance and updating. Another one is involving the youth who may be able to give their time and skills in performing said tasks.
- *Language.* STDM initially came out in the English version. The need to translate into other languages is recognized and is being undertaken. Since community members will be managing the tool, it is also important to consider translating the tool into the local language for better understanding.

The successful demonstration of STDM in these countries has led to further opportunities to engage with other actors:

Country	Opportunities
Colombia	<ul style="list-style-type: none"> • Support from the municipal government – the municipal government is using the information collected through STDM to prioritize areas of intervention and investment to improve living conditions in Soacha. • Engagement with the national government – recommendations have been made for the national government to undertake a review of the land titling process, in order to expedite and streamline it, to increase efficiency, reduce costs and support delivery at scale in informal settlements • Ongoing Mobilization and Coordination of Civil Society actors and communities – The project in Soacha contributed to the establishment of “la Mesa de Mejoramiento de Vivienda”, a space for CSOs and CBOs to create a common agenda to address housing quality and neighborhood upgrading issues in Colombia.
Kenya	<ul style="list-style-type: none"> • Support from the national government - The Government selected Mashimoni for tenure regularization under KISIP. STDM provides a basis for identification of beneficiaries under KISIP. • Support from the Mombasa County in terms of scaling up use of the STDM tool in collecting data of other informal settlements within the County. • Support from NLC - The National Land Information Management System Department of the NLC appreciated the potential of STDM to capture information on rural areas and informal settlements on public land.
Philippines	<ul style="list-style-type: none"> • Support from the local government of Valenzuela City - Results of the mapping activities in Barangay Mapulang Lupa has prompted two adjacent communities to pursue an onsite land acquisition project which the city government has supported by way of facilitating the survey of the relocation site. • Support to shelter development planning of Muntinlupa City - The mapping results in Barangay Sucat has aided the shelter development planning held in the area and has helped the local government identify priority projects for informal settlement communities.
Uganda	<ul style="list-style-type: none"> • Support from MoLHUD - The Government of Uganda through the Ministry of Lands Housing and Urban Development (MoLHUD) is studying the STDM tool to establish how it can inform and modernize the Land Information System in six zonal land offices as well as the establishment of a national land information centre

Country	Opportunities
	<p>to facilitate and improve the delivery of basic land services to Ugandan citizens and improve land tenure security.</p> <ul style="list-style-type: none"> <li data-bbox="448 394 1435 978"> <p>• Integration of STDM application to support national land policies towards enhancing land rights and security of tenure - The Draft National Urban Policy Statement 47 asserts that “<i>the Government shall create a framework to enhance land rights and security of tenure for low income earners in urban areas</i>”. One of the strategies to achieve this policy statement is the upgrading of slums and regularization of illegal settlements. Closely related to the above is Policy Statement 49 which asserts that the Government shall improve urban land administration, land use and land management processes to make them more efficient. The STDM process has the potential to support these policies because of its ability to capture overlapping claims to land, the recordation and recognition of all people living on a particular piece of land and the generation of planning data which could help in urban planning.</p> <li data-bbox="448 999 1435 1419"> <p>• New collaboration with KCCA on the Issuance of Certificates of Occupancy using STDM - Collaboration between Kampala Capital City Authority (KCCA) and the SDI alliance in Uganda on a program to improve slums in Kampala teaming up with the Physical Planning Directorate is also ongoing. The alliance plans on engaging the authority on the issuing of Certificates of Occupancy using the STDM process, to those residing in areas identified for joint development in the spirit of in situ upgrading while at the same time providing for their continued occupancy on the land at the time of the said development rather than their displacement or eviction which automatically distorts their lives.</p>

XI. Conclusion

Knowledge and expertise on existing and affordable geo-spatial technologies are not anymore limited to educationally trained professionals. As shown by the experiences in these four countries, it is proven that this is the case and that its true potential can be further strengthened if supported by land professionals and government authorities. The paper concludes that complementing the strengths of communities and government authorities with some help from geo-spatial technologies and participatory approaches can go a long way to assist in sustainable urban development and in improving tenure security.

XII. References

Augustinus, Clarissa, Peter van Oosterom, Paul van der Molen and Christiaan Lemmen (2007). The Social Tenure Domain Model – Specifications of a First Draft Model, FIG Working Week Hong Kong 2007.

Augustinus, Clarissa (2003). Surveying and Land Information Management for Secure Land Tenure. In the Regional Seminar on Secure Tenure, Nairobi, 12-13 June 2003. At http://mirror.unhabitat.org/downloads/docs/1523_80316_land_information.pdf

Citiscoppe (2015). What is Habitat III? Retrieved 13 Dec. 2015, from <http://citiscoppe.org/habitatIII/explainer/2015/06/what-habitat-iii#sthash.mdVRNc8d.dpuf>

Durand-Lasserve, Alain (2006). Informal Settlements and the Millennium Development Goals: Global Policy Debates on Property Ownership and Security of Tenure. Global Urban Development Magazine, Volume 2, Issue 1, March 2006. <http://www.globalurban.org/GUDMag06Vol2Iss1/Durand-Lasserve.htm>

Enemark, et al. (2010). Land Governance in Support of the Millenium Development Goals: A New Agenda for Land Professionals. Retrieved 14 Dec. 2015, from <https://www.fig.net/resources/publications/figpub/pub45/figpub45.pdf>

FIG (2014). Fit-for-Purpose Land Administration Retrieved 8 December 2015, from <https://www.fig.net/resources/publications/figpub/pub60/figpub60.pdf>

ICF (2014). Developing a National Informal Settlements Upgrading Strategy of the Philippines. Retrieved 15 Dec. 2015, from http://www.hudcc.gov.ph/sites/default/files/styles/large/public/document/NISUS%20Final%20Report_July2014.pdf

IIED (2014). Know Your City: Community profiling of informal settlements. Briefing (2014). Retrieved 14 Dec. 2015, from <http://pubs.iied.org/pdfs/17244IIED.pdf?>

Mackau, et al. (2012). The five-city enumeration: the role of participatory enumerations in developing community capacity and partnerships with government in Uganda. doi: 10.1177/0956247812438368

Environment and Urbanization April 2012 vol. 24 no. 1 31-46. Retrieved 13 Dec. 2015, from <http://eau.sagepub.com/content/24/1/31.full.pdf+html>

RICS (2011). Crowdsourcing Support of Land Administration
http://www.clge.eu/documents/events/105/16310_RICS_Crowdsourcing_Report%20final%20WEB.pdf

World Bank (2002). Urban upgrading in Africa: A summary of rapid assessment in ten countries, <http://web.mit.edu/urbanupgrading/upgrading/case-examples>

World Habitat Day 2014 Background Paper <http://unhabitat.org/wp-content/uploads/2014/07/WHD-2014-Background-Paper.pdf>

UN DESA (2014). World Urbanization Prospects: The 2014 Revision. Retrieved 13 Dec. 2015, from <http://esa.un.org/unpd/wup/highlights/wup2014-highlights.pdf>

United Nations Human Settlements Programme (UN-HABITAT) (2010). Count Me in - Surveying for tenure security and urban land management