Flexible mobile land technology applications: demonstrations and lessons learned

Abstract:

USAID has developed and piloted a suite of low-cost, open-source Mobile Applications to Secure Tenure (MAST) in different countries and contexts, providing flexible tools that help people and communities secure land and resource rights. At the Innovation Fair, USAID will demonstrate technology and present lessons from the evaluation of the original MAST pilot, which used an Android-based app to map and record customary land rights in three villages in Tanzania and its follow-on, which has been scaled to 41 villages in Tanzania. USAID will also showcase the latest version of MAST, which was recently launched in Burkina Faso following the initial positive results from Tanzania, and discuss next steps for this technology. USAID will also present two mobile applications for improving conservation and resilience through better land-use planning and land management currently being piloted in Kenya and Namibia. Key to all of these efforts is working closely with local partners to ensure that the tools are context-appropriate, flexible, sustainable, and effective at making improved land management and land tenure administration more transparent, accessible, and affordable for all.

Lighting Talk:

Ioana Bouvier will discuss the genesis, technology, methods, results, and next steps from MAST.

Around the world, millions of people lack documented land rights. In many countries, land surveyors are rare and demand exorbitant prices for their services, mapping and land registry systems do not work properly, and land titles or certificates can take years to issue and cost hundreds if not thousands of dollars to obtain.

USAID's Mobile Applications to Secure Tenure (MAST) program is using low-cost mobile technology and participatory methods to upend this paradigm, first in Tanzania, and now in Zambia and Burkina Faso.

Through an easy to use, open-source mobile application, the project empowers villagers with the training and tools to map the boundaries of their land and gather the demographic and tenure information that government officials can then use to issue formal land rights documents.

The MAST pilot launched in 2015 in Tanzania, where land rights documents and formal property maps were rare. Villagers were first trained on land laws and land rights, with a special focus on women's land rights. Then, village youth — called trusted intermediaries — were trained to use a data capture app installed on low-cost Android phones, which allowed them to map the parcels of everyone in the village. Neighbors and village adjudicators were on hand to verify boundaries and resolve disputes. Then, the information was uploaded to a secure cloud-based database, and downloaded by the District Land Office, which cleaned it, verified it, and used it to issue land certificates.

In total, the project mapped 4,000 parcels. The technology, combined with the participatory process, allowed the trusted intermediaries to map at a rate of almost 2,000 parcels a month.

Perhaps the most staggering outcome revealed from the evaluation of the pilot was the jump in women's land registration. Prior to MAST, many villagers in the project area believed it was illegal for women to own land. USAID's work on training and empowerment dramatically changed these perceptions: by the end of the pilot, 50 percent of the newly registered land was documented in women's names.

MAST was so successful in Tanzania that it is now being scaled up as part of a larger Feed the Future program, which is working in 41 Tanzanian villages to help deliver up to 70,000 land certificates.

MAST is also moving across the continent, to Burkina Faso. There, the local government, with the help of the National Land Observatory, is currently piloting MAST in Boudry Commune, near the nation's capital, Ouagadougou. The MAST app has been translated into French, and updated to fit stricter GPS mapping accuracy requirements, in line with Burkina Faso's laws.

And, in Eastern Zambia, USAID is using MAST with five chiefs and two local NGOs to record boundaries and certify customary land rights in over 300 villages. Farmers and their neighbors walk the boundaries of their fields together, recording the borders once all parties agree. The resulting maps are validated by the wider community before land certificates are issued by customary authorities.

Bio:

Ioana Bouvier is a senior geospatial analyst in the Land and Urban Office at USAID. She has over 15 years of experience in applying geospatial analysis, data science and technology solutions worldwide. At USAID, Ioana leads the development of "fit-for-purpose" land technology applications that have the potential to improve efficiency and reduce costs associated with land clarifying land tenure and systematic land registration. She focuses on building capacity for geospatial analysis and sustainable technology solutions that advance land and resources governance, support resilient cities and foster integrated development planning. She also uses geospatial analysis to generate and apply evidence for programs that improve land transparency, identify key rural-urban links, promote responsible land investments and safeguard vulnerable populations, and support land and resources governance for climate change, biodiversity and natural resources initiatives. Ioana has a master's degree in Geographic Information Science for Development and Environment from Clark University, Worcester, MA and a bachelor's degree in Geography and Environmental Science from University of Bucharest, Romania.