

Its4land - Challenges and Opportunities in Developing Innovative Geospatial Tools for Fit-For-Purpose Land Rights Mapping

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SUMMARY

Mapping millions of unrecorded land rights in large parts of Sub-Saharan Africa is an ongoing challenge. The results of many existing ICT-based approaches for recording these rights have often proven to be inappropriate; therefore, a new generation of tools needs to be developed to map land rights faster, cheaper, easier, and more responsible. This is the main goal of its4land, a European Commission Horizon 2020 project that aims to develop innovative tools that respond to the continuum of land rights, fit-for-purpose approach, and provide cadastral intelligence. To deliver innovative, scalable, and transferrable ICT solutions, the its4land project is using strategic collaboration between the EU and East Africa.

The innovation process incorporates a broad range of stakeholders and emergent geospatial technologies including smart sketch maps, Unmanned Aerial Vehicles (UAVs), automated feature extraction, as well as sharing and publishing through geocloud services. The aim is to combine these innovative technologies with the specific needs, market opportunities and readiness of end-users in the domain of land tenure information recording in East Africa. Moreover, the tools target both top-down and bottom-up approaches and thus support formal land registration processes, as well as informal community based land resource documentation. The project consists of a four year work plan, €3.9M funding, and eight consortium partners collaborating with stakeholders from six case study locations in Ethiopia, Kenya, and Rwanda that cover different land uses such as urban, peri-urban, rural smallholder, and (former) pastoralists. Major technical tasks include tool development, prototyping, and demonstration for local, national, regional, and international interest groups. However, equal emphasis is placed on needs assessment, as well as governance, capacity and business modelling.

This paper reports recent achievements, findings and challenges faced during the first half of the

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its4land project. As a result, a multi-disciplinary approach to capture and share land tenure related land use information is presented. Stakeholders' needs, readiness, and market opportunities regarding the application of the four geospatial innovative technologies, namely smart sketch maps, UAVs, automated feature extraction and geocloud services are described based on data collected from almost 60 different organizations and community groups. The paper outlines the challenges faced in developing: 1) software tool for recording land tenure information based on hand-drawn sketch maps, 2) UAV-driven workflows for land tenure data acquisition and 3) a tool for automated delineation of visible cadastral boundaries from UAV data, and it highlights the potential opportunities of integrating all developed tools and workflows into a unique its4land toolbox. Future plans and ideas for a development of sustainable business model for commercialization of the integrated suite of land tenure recording tools within the end-user markets are shared in the paper.

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