Social Tenure Domain Model: an Implementation of a Pro–Poor Land Rights Recordation Tool Using Open Source Technologies

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SUMMARY

Recent developments in Geo-Information and Communication Technology (ICT) have had a positive impact on the development of cadastral systems and geospatial data infrastructures (GSDI). These developments such as database management systems (DBMS), information system modeling standard UML (Unified Modeling Language), free and open source software (FOSS), and positioning systems have greatly improved the quality, cost effectiveness and performance of cadastral systems. However, there still exists a gap in the development of tools that model people-land relationships independently from the level of formalization, or legality of these relationships. This paper discusses the design choices and development processes of a geographic information system (GIS) that implements the Social Tenure Domain Model (STDM). STDM provides a land information management framework that integrates formal, informal and customary land systems, as well as the corresponding administrative and spatial components. By doing so, the model describes relationships between people and land in an unconventional manner, and as such it has the power to tackle land administration needs in communities, such as people in informal settlements and customary areas. The paper describes the development and implementation of STDM version 0.9.5 tool, which has been specifically customized to address land information requirements of the urban poor in the context of undertaking settlement upgrading initiatives in Mbale Municipality, Uganda. The tool is a GIS desktop-based client-server application with capabilities of capturing social tenure relationships between households and structures; generating simple reports, charts and certificates for analytical purposes. It is built on top of Quantum GIS and PyQt APIs using Python, and connects to a PostgreSQL/PostGIS spatially-enabled data repository. The tool is primarily aimed at community leaders and local municipality officials, who can use it to identify the tenure status of community members including any existing supporting documents such as scanned copies of agreements, audio or video recordings; it also provides the socio-economic standings of the community members based on various variables that are captured during the data collection stage in the field. The potential scope of additional users may include private real-estate developers or national governments wishing to undertake critical infrastructural projects that may require compensation of affected community members hence, the tool can be used to identify specific households that are going to be affected and their corresponding tenure status in order to compute the appropriate compensation required.

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