Identification and Characterization of Informal Settlements Using Satellite Images in Support of Land Administration

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SUMMARY

A huge task is waiting to realize the global agenda in relation to tenure security as recognized by the sustainable development goals (SDGs) set by the UN. The SDG, goal 1, target 1.4 aims for security of tenure for all, especially for the poor and the vulnerable (UNDP, 2015). Methods that could provide cheap, fast and effective solutions to speed up cadastral boundary mapping can assist and thus, are actively being investigated. With the advent of very high resolution (VHR) images, satellite remote sensing offers tremendous advantage as it has potential to utilize automatic feature extraction tools/methods for boundary extraction. These methods could be used for Fit-For-Purpose land administration solutions, specifically for informal settlements – most global south countries have either incomplete or no concrete data about such areas. So far, there has been limited attention and trials to explore the feasibility of using VHR satellite images and extraction tools for cadastral mapping. Thus, the main objective of this study is to explore the use of feature extraction methods, specifically object-based image analysis (OBIA) methods, for identification and detection of boundaries in the context of informal settlements using VHR satellite imagery. The generated knowledge can potentially be useful for inclusive planning in cities where informal settlements and slums are an integral part of the urban fabric.

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