

3D Cadastral Surveying in Rwanda

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Key words: Access to land; Cadastre; Digital cadastre; Land management; Legislation; Professional practice; Young surveyor

SUMMARY

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Abstract

Cadastral surveying is the discipline of land surveying that relates to the definition or re-establishment of land parcel boundaries. It is undertaken to produce plans of property showing

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boundaries and other data for legal purposes to enable registration of ownership or other entitlement to land. Cadastral surveying is also an activity that uses or generates cadastral evidence to produce an outcome whose primary purpose is boundary determination on the ground, survey of the boundaries and demarcation of the boundaries.

The benefits of an efficient land registration system are recognized in most developing countries. Rwanda has built a systematic land registration system by considering general boundaries using 2D Cadastral Surveying. This paper challenges this method by investigating the move from 2D to 3D Cadastral Surveying while highlighting the importance of having 3D cadastral information for the resolution of conflicts related to parcel boundaries.

This study concludes that introducing a third dimension into the Rwandan cadastre would have its challenges, but the uses and benefits that are observed globally would also benefit Rwanda. This paper illustrates how 3D Cadastral Surveying would provide more clarity in boundary definition than the current 2D paradigm. However, the land tenure regularization which took place in Rwanda have been failed to adequately consider the advantages of new technology. There will therefore be some challenges on introducing 3D Cadastral Surveying in Rwanda and inclusion of this into the Land Information System.

During the systematic registration process in Rwanda, general boundaries were used. However, it is recommended that 3D Cadastral Surveying is used in future, with fixed boundaries rather than general boundaries in Rwanda.