

Aerial Survey Solutions for Encroachments and Informal Settlements: Case Studies in Trinidad and Tobago

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SUMMARY

Monitoring and controlling informal settlements, and illegal occupation and use of land have long been difficult tasks for the state and public sector in many developing countries with human resource and economic limitations. The situation becomes increasingly problematic in cases where high valued mineral and other land resource rights are involved as this impacts on fragile economies. It is an ongoing exercise for both the state and private land owners to manage not just the occupation of the land, but activities such as illegal quarrying and mining. Managing the environmental impacts of these activities is also progressively more important for the sustainability of developing countries. While it is sometimes clear that these activities are taking place, the question that arises is exactly how the genesis, extent, and growth of encroachment, and occupation can be ascertained and monitored in a cost effective and timely manner in locations that are either remote or potentially hostile, and environments where physical safety is of concern.

This paper presents case studies conducted in Trinidad and Tobago, where, through the integration of digital photogrammetric and LiDAR techniques with cadastral surveys and the idiosyncrasies of the local cadastral practice, these concerns are directly addressed. From the results obtained, it can be demonstrated that aerial surveys would not only meet the technical requirements for monitoring occupation and use of land, but when applied in the appropriate context, can provide rapid, cost effective alternatives to several of the challenges of monitoring of informal occupation.