THE SUITABILITY OF HIGH RESOLUTION REMOTE SENSING IMAGES FOR CADASTRAL MAPPING

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Land is a limited resource, which demands responsible usage and management. Increase of population and environmental pollution are factors which evidently raises the need to good planning to be able to continue using this resource. Information such as who own the land, ownership type, how to it is being used etc. is required to these things raises the necessity of a well designed cadastral system and title certificate issuing system.

Since 1998 government of Sri Lanka is making efforts to issue title certificate to the land instead of existing deed registration to each and every land parcel in the country should be surveyed and mapped. Sri Lanka is divided in to nine provinces, which all provinces are divided in to 25 administrative districts. It has been estimated that there over six millions of land parcels in Sri Lanka. That all the land parcels have to be brought in to the cadastre which on average will be more than 250000 land parcels per district. To prepare a proper cadastre plan, either we have to survey a large amount of land parcels by using normal survey method. But it is costly and time consuming task. Therefore, to accelerate this task, we have to use alternatives. One alternative is to use the High Resolution Satellite Images for the cadastre system.

A cadastral map shows the boundaries of all land parcels on large scale maps together with the village registers which contains the ownership, land use and area details. Updating the cadastral information is very essential. So that transformations/changes of ownership of parcels etc. can be recorded in an orderly manner for documentation and further use. Presently, the cadastral maps are being updated with high resolution remotely sensed imageries using Geographical Information Systems (GIS) and Global Positioning System (GPS).In this research discusses quantification of the accuracy of the geo-referenced Google Earth imageries of Julpallama village of Hambanthota District, Walgama-North and Madiha-East villages of Mathara District. After mosaicing the Google Earth downloaded imageries of the study area, georeferenced and rectification has been carried out using Ground Control Points (GCPs) collected from SOKKIA 350. Cadastral map and rectified imagery of the study area are overlapped. The accuracy assessment of the rectified Google Earth imageries and Cadastral maps has been carried out. From the observation of mean percentage deviation, standard percentage deviation and parcel area deviation, it is seen that large area parcels have more accurate and less distortion than small area parcels. The methodology presented in this research is useful to update the cadastral maps with low to medium accuracy.