

## **Geospatial information system of karst land use evaluation in Kinta Valley, Malaysia**

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Remote sensing and Geographic Information System (GIS) have been proven to be powerful tools for mapping analysis. In contrast, the conventional methods of mapping land use changes are costly and low in accuracy. Remote sensing provides updated information on land use changes. With the spatial and temporal imaging capability of remote sensing, changes in land use due to natural events and human interferences can be monitored using current and archived remotely sensed data. Kinta valley have been deteriorating dramatically as a result of changes that have occurred in the past and continues due to the close relationship between the fast rate of lateral urbanization and extensive dimensional expansion of mining activities (tin and quarrying). The segmentation classificatio method is based on various scales determined by range of scale parameters, leading to the formation of a hierarchical network of objects. Geospatial technology and Remote Sensing have opened up opportunities for qualitative analyses of landuse changes and can be helpful in managing this sensitive area. The objective of this paper is to highlight the usefulness of Geospatial Information System as a tool to visualize and defin the karst degradation changes. It was found that quarry operation has increased from 1991 to 2004 (12.70% - 20.76%) due to human activities. The urban area has been increased from 15.70% to 18.10% during the period from 1991 to 2004 especially in the northern part of the Kinta Valley. New occurrences of sinkhole are detected spatially after tsunami earthquake 26 of December 2004. The results will assist local authorities, urban planners, and citizens to avoid potential hazardous areas by using the occurrences of sinkholes map.