

## **The Application of GIS AND Satellite Images for Land Use Change Detection**

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As the dynamics of economic development and complication of the environmental protection, the land use has suffered from a large amount of mismanagement in Taiwan. In addition, due to the geographic position and geological structure, Taiwan has been constantly affected by the potential disasters of typhoon, flood, debris flow and earthquake. To prevent the land from over exploitation and assess the post-disaster damage of the land, a long-term project entitled "Land use monitoring program" has been jointly conducted by both National Central University and the Ministry of the Interior since the year 2001. The main aim of the project is to use satellite images along with GIS to regularly monitor the land use change of Taiwan soil. Besides, the monitoring system is also employed to detect and assess the land use damage after the natural disaster. Basically, the project develops two systems to perform change detection and distribute the change information to the government administrations. The first system employs both image processing techniques and GIS data to detect the change spots in the temporal satellite images. The second system integrates both web-GIS and Management Information System to circulate the change information and report the field investigation result under an on-line environment. On the whole, because of the successful operation of the project, the government administrations are able to receive the land change information regularly and the land damage assessment after the natural disasters.