

# Analyzing Forestland Changes of the Liukuei Area Using GIS and Logit Models

Li-Ta Hsu<sup>1</sup>, Chi-Chuan Cheng<sup>2</sup>

[Summary]

This study took the Liukuei area of Kaohsiung County as the study area. Data on historic land uses, as well as the environmental and socioeconomic conditions of the study area were collected to develop a GIS database, and logit models were used to examine the possible factors contributing to the observed forestland changes. Comparisons of the land use conditions of Liukuei area in 1977 and 1994 showed that the major change during the period was the recovery of forestlands from farmlands. However, some of the forestlands were also converted into farmlands during the same time. Results of the logit models showed that forestlands located at lower elevation, without steep slope, and in the proximity of roads were more likely to be converted into farmlands. The probabilities were further increased at villages having more agricultural families. On the other hand, farmlands located at higher elevation, with steeper slope, and at villages having fewer farmers were more likely to be abandoned or reforested.

Keywords: Liukuei, Forestland, Land use, Logit model.