

## 1. INTRODUCTION

Land-use/ land-cover change is central to the interests of the science of global environmental change. In recent year, both LUCC and IGU-LUCC highlight the significance of comparative case studies of land use/cover changes. In order to gain a better understanding of land use change, the approach of case study comparison is thought to be a major tool to derive generalization on land-use/land cover change research. (E. F. Lambin & H. J. Geist,2002) Besides, there are different formats of data related to dynamics of land use change, such as raster based land use data and vector based socioeconomic data. How to convert published socioeconomic statistics with raster land use studies is still one great challenge in the study of land use change. Also, the integration of biophysical and social data is an important issue in the field of GIS.

This study follows the science plan of LUCC project by using a comparative perspective in the study of agricultural land use change between Japan and Taiwan. In the past few decades, land use of some high economic developed areas (e.g. Japan and Taiwan) has changed greatly that was reflected in urban expansion, losses of paddy fields and spatial concentrated in 'hot spots'. The loss of paddy fields was supposed to have high relation with economic development in Japan and Taiwan. It also reflects the urban expansion and related to the issues of food supply and environment change. This study aims to declare the relationships of economic development and losses of paddy fields in Japan and Taiwan and to develop an integrated model between different regions. The designing model follows the hypothesis that different regions can experience similar land use changes on the basis of passing through comparable stages of economic development at different times. The loss of paddy field was chosen as the core part of the modeling work.

This paper is organized as follows: the first is the review about what we have learned from LUCC projects in recent years which related to the approach and methodology used in this study. Secondly, the author analyzed the regional characteristics between Japan and Taiwan by statistical publishes and GIS mappings. Then, the concept of constructing an integrated model will be presented. The last part is the conclusion and expected result of this study.

