

Land use analysis considering transition probability: A case study of Tsukuba Science City

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Land use transition is one of the most significant indices for understanding the phenomena which has occurred on the globe. It is necessary to capture and estimate the land use transition from the view point of land use management. The purpose of this study is to analyze land use transition structure. The study area is Tsukuba Science City which is known to be a well-planned city in Japan. The whole city has been controlled as a city planning area. There are many national research institutes and the Science City has experienced some big events. Some of these include: establishment of Science City, the international Exposition Tsukuba, Japan 1985 (Tsukuba Expo'85), and installation of a new rail system, the Tsukuba Express (TX). Considering these human factors, our land use transition model shows the impacts from socio-economic perspective.

Land use data for the year 2000, 2005 and 2008 show land use development related to the construction of the new rail system. Some areas show land use improvements as a result of land use planning. At the same time, we can see land use transition for urbanization in the land use controlled area.