

Developing land use scenario dynamics using cellular automata and agent integrated model

Abstract

An integrated model of Cellular Automata (CA) and Agent is developed to model land use scenario changes and its potential impact on the structure and function in typical region which are helpful to understand the mechanism between land use system and population growth. This model makes a fusion of agent and CA self organization models for flexible computing in order to developed a system of urban land use simulation in Malaysia Kedah state in next 50 years. The system makes three simulations under different scenario to model the land use demand in Kedah by using Agent Integrated module in the system. The results shows that the system have the ability to reflect the complex behaviors of land use system at different scales to some extent and be a useful tool to access the potential impact of land use system on population growth and ecosystem.

Keywords — Cellular automata, scenarios, land use, agent, simulation