

Agent-based Model Analysis of Landowner's Motivation in Land Use Change from Home Garden at Kandy City in Sri Lanka.

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Abstract: Kandy was old capital of Kingdom of Kandy and is one of main cities in Sri Lanka. While this city is famous as a sacred place for Buddhist and a world heritage, it is an important point for traffic and economy. Therefore, land use of Kandy is drastically changing these days. In some case, home garden, multi-storied vegetation plot established by rural families, change to cash cropland or other type of land use as its economical growth. Our research's objective is to investigate the motivations and the causes of these land use change from the landowner's point of view in the economical growth. Firstly, we capture the land use change, especially home garden to other land cover, of Kandy from 1970s to now by Landsat satellite data. Secondly, we conduct a sample survey of the landowners about family structure, economic situation, communities belong to, background, and so on. Thirdly, we gather GIS and remote sensed data such as biophysical characteristics, mobility impedance, and so on. Finally, we apply Agent-based model to the land use change with the datasets we wrote above. As the result of this research, hidden parameters that influences the land use change can be shown, and why some home gardens has distinguished and some home gardens remain now can be investigated.

Oral presentation is preferred