

Comparison of Dyna-CLUE and Land Change Modeler software for predictive modelling in the suburban area of Prague

Abstract

The objective of this work was to predict the development of the suburban area of Prague, using Dyna-CLUE and Land Change Modeler (LCM) software, and based on the results compare the capabilities of both these software tools. In this work I used time series of land cover data obtained by the department of applied geoinformatics and cartography, local plans of the municipalities, and information about soil protection provided by the Research Institute for Soil and Water Conservation. Based on these data, a predicted land cover map for 2020 was created in both software tools. The results were then compared and showed that the models respect the restriction of development in predetermined areas. In accordance with local plans, new residential development was properly allocated. For commercial development, the requirements were not completely fulfilled. It is evident that both models are able to create a correct map of future land cover based on specified requirements. However, the instability of LCM and the necessity of using other software while working with Dyna-CLUE somewhat complicated the work.

Keywords: Dyna-CLUE, Land Change Modeler, predictive modelling, land cover, residential and commercial development