Spatial Data Analysis and Simulation Modelling

~~Short paper~~

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~~Short paper assignment~~

Introduction

One of the major current challenges for the future is how to deal with the constant growth and changes of land use caused by for instance urbanization. To create accurate predictions and simulations of urban expansion patterns is complicated and requires temporal and spatial modelling, which has been done extensively in recent studies. Using cellular automata models (for example Markov Chain), we can enhance the simulation capabilities in changing land use through the incorporation of economic, spatial and environmental driving forces and variables. This results in a more dependable model and correctly estimates certain driving forces leading to a more balanced urban expansion and a better protected agricultural region, which plays an important role in sustaining food security in critical regions. Since there is already research on this topic, this study aims to compare their methodology and corresponding results and expand.

Research questions:	
1)	How could Dutch (farm) ground be reallocated to maximize the farmable land area whilst complying to the current environmental restrictions?
2)	What are the environmental effects of reducing farms compared to not reducing farms in the Netherlands?