

Research 3

An urban growth model for strategic urban planning on a regional level: a proposed model prototype for Greater Cairo in the year 2050

Understanding and simulating urban growth patterns is the first objective for urban modelling. The goal of this paper is to propose a model prototype for urban growth on the regional planning level, which could show what will be the pattern scenarios for Greater Cairo urban growth in the year 2050; using a multi dimensional system that can deal with spatial, temporal and decision-making complexity. While system thinking has been widely accepted by urban planners and other decision-makers engaged in urban planning, we consider urban growth as a complex system. The exploration is conducted by answering the most important questions which are: Where is urban growth occurring? And what are its trends? The methodology consists of three approaches: first the theoretical approach including: the most important definitions of the study problematic, defining the variables of the urban growth, second, the paper links the theoretical the major analytical approaches through model dimensions, finally proposing model prototype based on geographic information systems (GIS) with visual basic programming language within mathematical models.