North Brabant population dynamics analysis for pursuing regional sustainable development

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and geography of population change over the past two decades in the United States. The data used are at the tract and county levels, for the 1990-2010 period.

12.3 North Brabant population dynamics analysis for pursuing regional sustainable development
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Population dynamics is of much importance for a region because of its close relationship with three domains of sustainability, namely environmental, economic and social sustainability. It is essential to analyze reasons behind population change in order to pursue regional sustainable development. North Brabant is facing decreasing population growth rate since 1990s. This trend would cause population decline in the near future if it continues. The aging and declining population would cause problems for sustainable development. As the North Brabant region has many famous companies and research organizations, researchers, students and highly-skilled migrants from other countries or regions constitute a significant part of the whole population and contribute tremendously to the regional development. As a result, more emphasizes should be put on this issue for analyzing population change in North Brabant, especially under current restrict migration and education budget policies. Besides, population dynamics would exert impacts on several aspects of regional sustainability, which is listed after literature review. This paper presents a system dynamics model with feedback structure and delay time consideration for identifying the casual links between different variables related to population dynamics. These variables are not only driving forces behind population change, but also the important aspects that are listed. The result increases comprehensiveness of understanding of population dynamics in North Brabant and gives clues on predictions for the future trends of the listed aspects under different scenarios. Based on the results, an assessment of population dynamics impacts on regional sustainability is practiced. Several policy suggestions are also given according to the evaluation results.

12.4 Time for change: how population decline contributes to new (spatial) planning styles
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Most policy-makers, politicians and other parties experience population decline as a negative process. For them it has a negative impact on the economy, number of citizens, municipal budgets, standard of facilities (schools, transport, etc.), which all together complicates policy-making in general. In meanwhile a counter-current is becoming visible: some see new possibilities arising from the challenges of population decline. Whereas traditional top-down, growth-oriented, formal planning styles do not seem to fulfill in declining regions anymore (as not cost-efficient, too rigid), other ways of spatial planning are emerging. One of these ways is informality. Informality is characterized by deregulation, informal interaction amongst stakeholders and foremost planning initiatives started and realised by other stakeholders than