Kennis voor Klimaat

Knowledge for Climate

Theme 8 Decision Support Tools for Adaptation

PhD research by Chris Jacobs-Crisioni
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Geographical analyses of accessibility and urban land-use

Urbanization may affect future flood risks, biodiversity and the carbon cycle. In order to better forecast urbanization patterns, Chris's PhD research analyzes those forces that determine the locations of future urbanization.

Work done in KfC theme 8:

Implemented potential accessibility measures in Land Use Scanner

Integration of spatially continuous potential accessibility measures in the Land Use Scanner model. That model can now compute present and future accessibility levels, which are ultimately used to define the suitability of locations for urban land-uses.

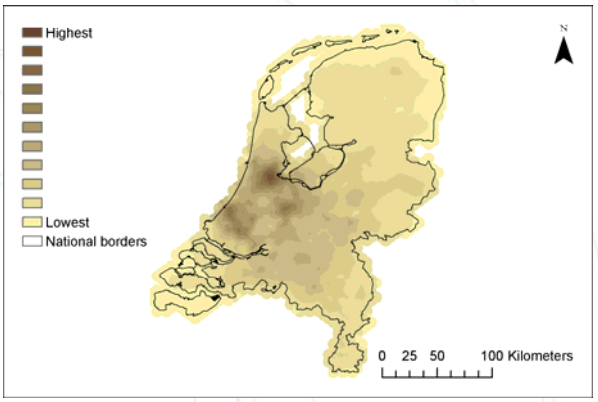

Fig. 1: exemplary accessibility measure

Researched the role of spatial aggregation on urban development analyses

The integrated accessibility measures have been used to research the impact of spatial data aggregation on quantitative urban development analyses. This has shown that the size and shape of areal units impacts urban development analyses. However, the effect of spatial aggregation can be greatly reduced when analyses are appropriately weighted, and if variables at varying scale levels are included.

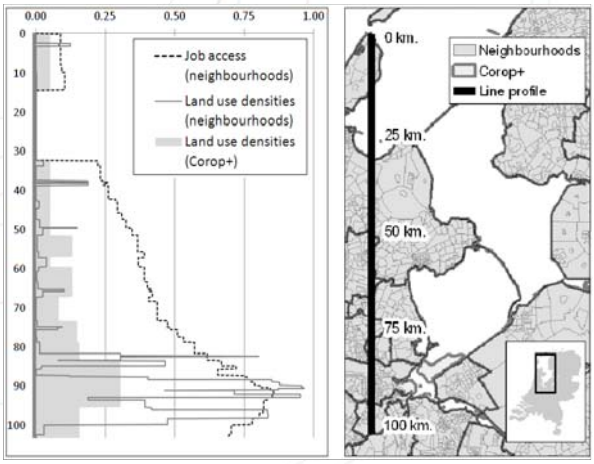

Fig. 2: scale effects in urban density and accessibility

Other topics researched by Chris Jacobs-Crisioni

- the influence of national borders on urbanization patterns in the Rhine-Meuse area;
- the effect of land-use density and land-use mixing on the intensity and duration of human presence in Amsterdam; and
- railway construction decisions during the development of the Dutch railway network.

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