

## AESUS – Results

The AESUS-project improved existing and developed new planning support tools that integrate knowledge on societal development and urban processes. These tools are used to better understand the complexity of reality, help shed light on potential future developments and evaluate possible impacts of alternative development strategies. This is especially relevant in view of contemporary spatial development issues (e.g. increasing regional differences in urban development) and recent changes in the policy context (e.g. deregulation, decentralisation).

The project focussed on:

1. Analysing regional differences in growth (and shrinkage) of population and employment;
2. Studying new planning and design concepts to deal with contemporary urban development processes and current changes in policy context;
3. Developing and integrating spatial decision support tools that can be used in national and regional spatial development processes.

A binding element in the project was the hinterland corridor around the A2 motorway that connects Amsterdam with Maastricht and from thereon with destinations further south, aiming to understand the relative success of some parts and the lagging behind of others.

The project provided new insights in some of the general forces that drive urban development, the changing planning context and ongoing processes of urban densification. An international comparative study into the relevant importance of international borders and language boundaries revealed that even within the historic heartland of the European Union accessibility of national destinations is more important for urban development than international accessibility. A similar image arises from our study into Dutch regional wage differences using micro data on incomes and that highlighted that individuals with identical personal characteristics and type of work can earn substantially more by moving from Zuid-Limburg to Amsterdam. Detailed studies into urban development in Dutch cities reveal that residential densities are increasing in historic city centres, upposing international trends. Spatial policies can help steering urban development by channelling it to large scale development locations (e.g. VINEX-locations in the Dutch context) or by restricting green field development.

The changing role of planning and design in spatial development was analysed in two case studies that indicated a shift from spatial concepts (what/where) to process (who/how). Design is now used as a communicative rather than prescriptive instrument.

Our empirical analysis and subsequent simulation modelling using scenario-based projections for future demand for housing suggest that current ambition levels for urban densification are not very realistic. An option for accommodating the future demand in new houses is offered by the locations that are currently used for empty office buildings. A closer look at office vacancy rates showed that vacancy relates much more to building characteristics (most notably building age) than to spatial conditions. Redevelopment efforts should thus mainly focus on specific types of buildings rather than their locational qualities. Additional insight into attractive urban locations was obtained by analysing detailed, time and location specific accounts of mobile phone usages in the city of Amsterdam. Diverse and dense areas are shown to generate activity, thus empirically underpinning the selections of attractive urban areas previously proposed by urban planners.

The obtained knowledge was shared with national, regional and local stakeholders and applied in different planning support systems. Knowledge on urban densifications was used to develop a new residential density module for the Land Use Scanner model with PBL Netherlands Environmental Assessment Agency. PBL used the revised model to assess flood-risk impacts for different socio-

economy scenarios and national policy strategies. In addition new tools were developed for local spatial development processes. These tools were tested with citizens and other stakeholders in public participation sessions to make inventories of perceived local problems and jointly elaborate solution strategies.

**List of publications**

- <https://spinlab.vu.nl/research/spatial-analysis-modelling/spatial-planning/sustainable-urban-development/>

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