

# **Multi-Criteria Assessment of Socio-Environmental Aspects in Shrinking Cities**

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## **ABSTRACT**

Demographic change and economic decline produce modified pattern, densities and dynamics of urban land use. Compared to the beginning of the 90ies after the reunification, nowadays massive vacancies in the housing and commercial sector followed by demolition and perforation come to pass in Eastern Germany. In consequence, a considerable surplus of urban brownfields has been created. Further, the decline of the urban fabric affects local livelihoods, social infrastructures and urban green systems. In case of both, urban planning enters “undiscovered terrain” since it is in need to assess the socio-environmental impacts of shrinkage.

In order to carry out such an assessment quantitatively, a respective multi-criteria assessment scheme was developed and applied. Firstly, infrastructure and land use changes related to vacancy and demolition were identified. Secondly, demolition scenarios for the coming 20 years were applied. The multi-criteria indicator matrix quantifies the socio-environmental impacts on both land use and urban residents.

Scenarios of urban shrinkage are set against urban “quality of life” targets. Empirical evidence comes from Leipzig, Eastern Germany, a representative case study for urban land use change induced by shrinkage.

The results show that shrinkage implies socio-environmental changes of residential livelihoods but, however, does not simply improve or decline the overall urban quality of life. The integrated assessment of all indicators identifies environmental and social opportunities (gains) as well as challenges (losses) a shrinking city is faced with.

**Key Words:** urban environment, green spaces, shrinkage