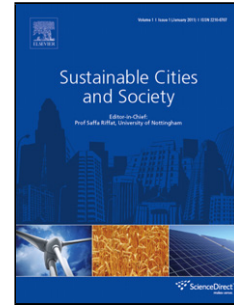


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Abstract

Sustainable urban densification is one of the main challenges of European post-industrial cities. In Switzerland, a recent adaptation of the federal law on spatial planning reinforces the limitation of urban sprawl. Hence, public authorities are confronted with the challenge of exploiting the densification potential of the existing urban fabric.

In order to develop realistic, yet ambitious projects, the neighborhood scale is considered as the most appropriate for urban renewal planning. At this scale, projects can follow a larger urban vision for the city, and at the same time, adapt to the specificities of the existing buildings, business, and inhabitants. Therefore, urban renewal projects at the neighborhood scale seem necessary for a sustainable urban development. In this context, adopting an evaluative approach offering a decision-making support appears relevant to contribute optimizing urban renewal projects.

This paper presents a new spatial decision support system (SDSS): URBIUS, specifically developed for urban renewal projects at the neighborhood scale. It provides an assessment based on six sustainability objectives for existing neighborhoods. In addition, it offers assessment thresholds are adaptable for each neighborhood through a dynamic approach taking into account the actual situation of the neighborhood and its expected long-term evolution. Finally, URBIUS is tested on a case study, “Les Moulins” neighborhood in Switzerland, showing its potential to foster sustainable urban renewal at the neighborhood scale

Keywords: neighborhood, urban renewal scenarios, sustainability assessment, tool, multi-criteria decision making (MCDM), spatial decision support system (SDSS).

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