Researchers have recently compared strategies to limit urban sprawl in four European city regions. The ‘compact city’ concept in spatial planning is used to improve sustainability, but there can be trade-offs, especially between environmental and social aspects of sustainability, which vary according to the planning strategy used.

The concept of the compact city emerged as a reaction to the mass increase in sprawling suburbs after the Second World War. Its broad goals are to limit the spread of cities, improve land use efficiency, improve public transport, protect the countryside and ecological diversity, and increase social mixing and cohesion. The concept has become popular as a means of improving urban sustainability, but research is needed to investigate how it has been applied to real cities to ensure its success and share best practices for future planning.

The study, conducted under the EU PLUREL project, is the first to compare international examples of compaction strategies in city regions. Four case study regions were explored: Leipzig-Halle (Germany), Greater Manchester (UK), the Montpelier Agglomeration (France) and The Hague Region (the Netherlands).

To compare urban compaction, it analysed data from interviews and discussions with stakeholders in land use development and planning, as well as policy documents, statistical data and scientific studies.

The case study regions have different urban layouts, population dynamics and planning histories. However, they all applied some form of compact city thinking in their planning. The strategy of densification was applied in all cases, as was inner-city building and brownfield development. Other strategies varied between the regions, for example, Greater Manchester implemented a green belt, which restricts development on a band of surrounding countryside, whilst The Hague applied Transit Oriented Development, which integrates transport into urban planning and concentrates development around accessible locations.

The trade-offs for sustainability were also diverse. The Hague Region illustrated that strong preservation of the peri-urban area (the transition zone between urban and rural areas) carries risks, as it can reduce green space in dense urban districts and increase traffic congestion. In Greater Manchester, the green belt policy worked well to protect the peri-urban area, but did not necessarily improve the quality of inner-city areas which suffered from social problems. In Montpelier, attempts were made to prevent urban sprawl by introducing agricultural hamlets, with building rights for farmers only, but the differences in building rights and housing prices that this created led to social conflict among farmers and other residents.

These trade-offs were recognised by local authorities in all cases and strategies have been put in place. All have criteria to improve the quality of residential areas, which can vary from requiring a variety in housing to promoting inner-city revival. Leipzig is improving its network of green spaces and The Hague is focusing on the multifunctional land use concept whereby, for example, green space is used to improve water drainage, recreation and public health.

The study provides no clear conclusions on the sustainability of compact cities and demonstrates that there is no fixed template or design for a compact city, but that the concept must be adjusted for each region. As such, the study suggests that the concept’s definition must remain flexible and adaptable, and should not focus on one strategy, such as high density, in order to tackle trade-offs.