

6.7. Urban agriculture

Urban agriculture can be an important aspect of the green transition in cities, as it contributes to reducing greenhouse-gas emissions, enhances local food security, and promotes biodiversity within cities. It can also foster community resilience and sustainable practices.

The [URBAG](#) project, led by Gara Villalba, Autonomous University of Barcelona, Spain, investigates how green infrastructures can be a source of sustainable food, reduce environmental impacts, and promote a more efficient use of resources in urban regions. The project explores what combinations of urban, peri-urban agriculture and green spaces result in the best performance in terms of local and global environmental impact.

The project's innovation lies in integrating the life cycle impacts of the resources required for green infrastructures, with an understanding of how those green infrastructures impact the urban atmosphere interactions. URBAG has introduced an assessment framework focusing on vulnerability to steer the implementation of nature-based urban solutions (NbS). Effective planning of NbS can accelerate the green transition by maximising the positive effects and minimising the negative ones, while also ensuring the efficient use of resources for their implementation and maintenance. The prioritisation of NbS based on a spatially differentiated understanding of social and ecological needs, breaks with the common paradigm in green infrastructure planning (to assess and maximise net ecosystem service benefits). It operationalises spatial justice from a human and more-than-human perspective in a concrete manner that has shown relevant for strategic spatial planning.

Villalba and her team find that main barriers to implementation of greening and local agriculture include the high water requirements and the potential increase in greenhouse gas emissions from land-cover change and fertilisers usage, and the complexity of managing trade-offs between land use for agriculture versus conservation of nature. Significant opportunities arise such as enhancing urban resilience through better integration of green infrastructures in urban planning, particularly by optimising the placement and types of vegetation in urban landscapes.

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Policy frameworks that incentivise the expansion of green infrastructure, promote sustainable agricultural practices, and support community involvement can serve as critical leverage points.

Opportunities lie in cost-effective solutions demonstrated through case studies, such as cool roofs that increase rooftop albedo.

Gara Villalba, ERC project URBAG

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Siloed approaches are still at the forefront of most planning, design and management decisions, with a single challenge addressed by a single solution. This common practice hampers the flourishing of nature-based approaches, which by definition are multi-functional, and more adaptive to diverse and changing societal needs. More holistic approaches are needed to unleash nature-based solutions full potential, Villalba concludes.

