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Editorial

From Smart Urban Forests to Edible Cities: New Approaches in Urban Planning and Design

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Abstract
In recent years, the pressing environmental, social, and economic problems affecting cities have resulted in the integration of the disciplines of landscape architecture and urban forestry via a transdisciplinary approach to urban planning and design. Now, new urban forestry approaches and concepts have emerged for more sustainable city planning. The discipline is using different methods and approaches to address many pressing issues such as human well-being and also food security. But, research on these topics is still limited and not available for many cities in the world. To fill this gap, we present this thematic issue "From Smart Urban Forests to Edible Cities: New Approaches in Urban Planning and Design." The findings from this thematic issue offer new insight to policymakers and practitioners, as well as contribute to the emerging literature on edible and forest cities. Furthermore, the findings spanning different cities from different geographies can be used towards achieving the 2030 Agenda and Sustainable Development Goals of making cities and human settlements more resilient, inclusive, safe, and sustainable, as well as ending hunger, achieving food security, and improving nutrition. However, further studies are still needed, especially in developing countries and the Global South.

Keywords
ecosystem services; environmental justice; green infrastructure; urban agriculture; urban food forests; urban forests; urban green space

Issue
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1. Introduction

According to the latest United Nations (UN) estimates, the world's population will increase to 8.5 billion in the next 10 years, rising to 10.9 billion in 2100. Furthermore, by 2030, cities will house 70% of the world's population (UN, 2019). The 21st century is being marked by several challenges affecting more sustainable urban development as the urban population continues to grow. In the 21st century, urbanists have paid little attention to a city's food security, but recent events such as the Covid-19 pandemic, armed conflicts, and climate change have brought this problem to the forefront. Therefore, more research is now required to aid the food revolution in cities and to be capable of feeding 10 billion people (Russo & Cirella, 2019). According to Sustainable Development Goal 11, by 2030, we should "make cities inclusive, safe, resilient, and sustainable" (UN, 2022). Urban planning has a long tradition in addressing design and livability issues in cities (Ruth & Franklin, 2014). Similarly, nature-based solutions, forest cities, smart cities, biophilic cities, eco-urbanism, blue-green cities, garden cities, and other approaches that use green spaces, urban agriculture, and vegetation have also been proposed to address complex societal challenges in metropolitan areas (Escobedo et al., 2019; Russo &

Cirella, 2018; Sardeshpande et al., 2021). To address the recent problems associated with issues such as rapid urbanization, the Covid-19 pandemic, in-situ densification in cities, poverty and environmental justice, progressive environmental degradation, and climate change effects; new solutions and approaches are required (Escobedo et al., 2019). Thus, to address such complex problems more transdisciplinary approaches must be taken. One first step is an urgent need to better understand cities as social-ecological systems.

2. Thematic Issue: From Smart Urban Forests to Edible Cities

Accordingly, this thematic issue contains five peer-reviewed articles and two commentaries spanning different cities and many of these problems from across the world. Three main themes were addressed in this suite of works: 1) urban agriculture and urban food forests; 2) environmental justice aspects of urban green space; and 3) urban forest planning and citizen participation. Figure 1 shows the most frequent words found in these articles and commentaries. With urban as the central theme of these publications, we see that issues related to planning, green spaces, forests, environment, and food were the central pieces of this thematic issue.

In the opening piece, Cariñanos et al. (2022) provided a reflective commentary on the importance of urban food forests (UFFs) in cities of the 21st century. According to the authors, urban planning should provide frameworks for effectively, and transparently, implementing land-use regulations to encourage a wider use of UFFs. They should, in particular, ensure that green spaces, including those designated for urban UFFs, are given equal weight in the urban planning process as are other built-environment elements. As such, green space planning should be viewed as an opportunity to create multifunctional spaces that benefit a wide diversity of city dwellers (Cariñanos et al., 2022).

Rockwell et al. (2022) study the role of tree species richness, stem density, and canopy cover and its role in food forest gardens in subtropical landscapes in Miami-Dade County's Public Schools. The food forest canopy was comparable to urban tree cover in adjacent neighborhood, according to the authors. They also found that food forests had higher arborescent species richness (including an increase in edible taxa) and stem density than nearby neighborhood plots. Instead of focusing on large individual street trees, planting edible species in small spaces (e.g., empty lots or residential yards) could improve local food production. They also argue that rather than focusing on ornamental taxa, local food production could be improved by planting a diversity of edible species as well. Their research emphasizes the importance of using mixed edible tree species plantings to meet urban forestry and agricultural goals proposed by city planners and managers (especially in terms of several ecosystem services; Rockwell et al., 2022).

France (2022) contributes a more nuanced perspective that is different from many of the other quantitative, analysis-based articles in the thematic issue. In their piece, the author points out that indeed, the urban

Figure 1. The 100 most frequently used words in this thematic issue, using NVivo 12 Pro.

agriculture literature has primarily focused on landscapes as biophysical spaces in which to grow food, rather than as humanized spaces in which to grow experience, making the case for different dimensions of what is well-being and consideration for achieving outcomes, such as the UN's Sustainable Development Goal 11. Specifically, in order to invigorate case study descriptions through the reflexive tool of narrative scholarship, it is necessary to leave the desk behind and enter the field (France, 2022).

Das (2022), in their contribution from India, found that in organized green spaces, environmental justice must be developed and managed. In Das' study, the factors that contributed to environmentally unjust development and management of organized green spaces were examined, and various strategies that would lead to reversing environmental justice were evaluated, using the context of three Indian cities. The findings suggested that factors related to organized green space, such as community features and infrastructure, the economics of development and management of organized green space, linking green space to environment and health, spatial development, land use and accessibility, and land availability and governance of the supply of green space, all contributed to environmental injustice (Das, 2022).

Birks et al. (2022) investigated the role of a key process in transdisciplinary and governance processes in cities: citizen participation and the public's role in urban forests, in the Metropolitan Area of Rouen, France. Here, the authors' use of different survey instruments and quantitative analyses shed new light on these frequently used instruments processes that are key to effectively managing and planning urban forests and cities. Given the high degree of ambivalence and contrast in how population groups relate to urban forests and to representative/participatory systems, the findings highlight the challenges, difficulties, and limitations of a participatory approach (Birks et al., 2022).

Lewis et al. (2022) used a structured content analysis to look into the evolution of urban green space planning in Europe and the US by using two case study cities: Buffalo, New York, and Porto, Portugal. Although located in two different continents, both cities experienced suburbanization and shrinkage, but their green space planning histories were very different. The goal of their study was to see how objectives and priorities for planning green spaces change during a period of urban shrinkage, and specifically what functions these cities have assigned to green space. They found that over time, green spaces were expected to produce more ecological functions in both cities, as well as contribute to the city's economic and demographic outcomes, particularly in Buffalo. Finally, the authors suggested that general green space planning studies should take demographic change into account as a relevant context factor (Lewis et al., 2022).

Finally, Muñoz Sanz et al. (2022), using a mixed-methods approach, compared how three cities (Almere, Madrid, and Boston) approach urban forest project planning and their alignment with different organizational and typological interpretations of an urban forest. Through the analysis of project documents and expert interviews, their study provides an approach that can be used to learn about a project's main goals, its organizational structure, and the planning process that was used. Their findings suggest that environmental issues are being effectively mainstreamed among actors, but they also point to a lack of objective criteria that can be used to evaluate urban forest success. Interestingly, the authors found that municipal planners were able to circumvent existing internal rigidities and barriers by relying on intermediaries and local academia as sources of external knowledge or by facilitating experiments. Studies such as these indicate the socio-ecological complexities of cities and suggest that there may not be a single type of urban forest that can achieve the desired environmental and social goals while also overcoming implementation challenges (Muñoz Sanz et al., 2022).

3. Conclusions

This thematic issue addresses an important and timely topic for the design of future cities. But, as several authors point out, there is a need for a more nuanced and global perspective that provides insights into alternative approaches to urban greening. Similarly, although several studies in this thematic issue were based on methods from the biophysical and ecological science or urban planning, other perspectives and methods can equally contribute to more effective, efficient, and equitable urban planning and UFF. Accordingly, the studies we presented demonstrated the importance of doing this in regions where soon most of the urban residents will be residing in the near future, and highlight the need for more experiences and studies from the Global South. And although most of our studies were from high income countries, we feel the results and lessons do have implications for other cities who strive for more effective governance. Indeed, the thematic issue's articles and commentaries provided different insights on how cities change as societies and economies transition from industrial to service-based sectors. In conclusion, as transdisciplinary approaches are being touted as being key in cities, rarely are they studied using an applied research and planning lens. Here, we hope this thematic issue contributes towards this, by providing experiences and research from cities in France, the US, India, Portugal, the Netherlands, and Spain.

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Conflict of Interests

The authors declare no conflict of interests.

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