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# Editorial: Urban greening for ecosystem services provision: A Latin-American outlook

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## Editorial on the Research Topic

Urban greening for ecosystem services provision: A Latin-American outlook

Planning for ecosystem services provisioning through urban greening is one of the key strategies to move toward more sustainable and resilient cities (Geneletti et al., 2020). While the last years have been prolific on urban ecosystem services research, the studies have been mainly focused on developed regions (Luederitz et al., 2015), leading to a gap in knowledge regarding the particularities of urban ecosystem services in highly-urbanizing regions, such as Latin America.

Urbanization in Latin America is highly dynamic, showing complex patterns of informality and inequalities due to the interaction of multiple drivers, such as political shifts, weak governance and planning, national and international migration processes, and persistent poverty (United Nations-Habitat, 2014). Given these characteristics, the contribution of research on urban ecosystem services from Latin America can enrich generalizations in urban ecology generated from studies in developed regions and allow to design locally tailored strategies for improving the sustainability and resilience of Latin American cities.

Publications on ecosystem services provided by urban vegetation in Latin American countries have experienced an exponential growth in the last decade (Figure 1). Nevertheless, and as has been previously reported by Dobbs et al. (2019), urban ecosystem services research within Latin America also suffers from a geographical bias. This bias is particularly relevant, because the large differences in climatic conditions, urbanization stages, political stability and economic development, among other factors, can produce contrasting relationships between urbanization and greening trends (Ju et al., 2021).

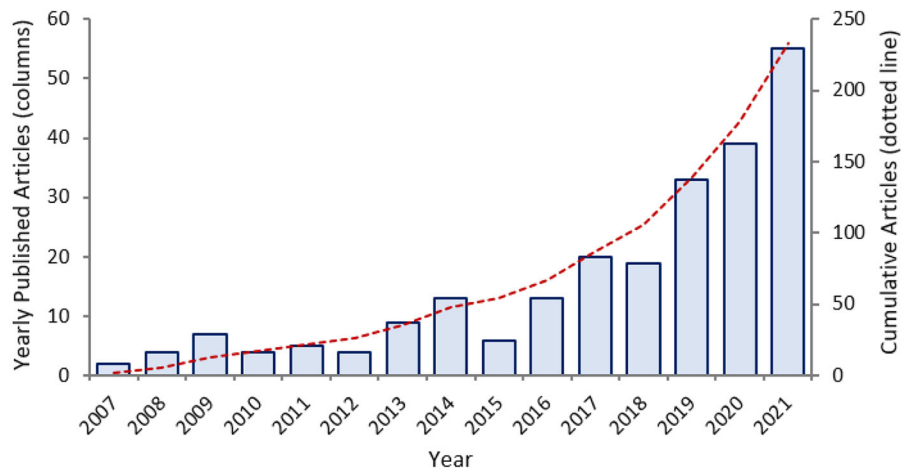


FIGURE 1

Temporal trends of articles indexed by Scopus covering the topic of ecosystem services provided by urban vegetation in Latin American countries within the 2007–2021 period.

The present Research Topic, “*Urban Greening for Ecosystem Services Provision: A Latin-American Outlook*,” is particularly aimed to reduce this gap of knowledge by incorporating new research covering underrepresented cities and emerging regional themes. The selection covers the multiplicity of ecosystem services types: regulating, provisioning and cultural in relation to different social dynamics.

Research developed by [Meléndez-Ackerman et al.](#) is among the few published studies on urban ecosystem services in the city of Santo Domingo (Dominican Republic) where they analyzed the relationship between ecosystem services provided by urban vegetation and sociodemographic characteristics. They provide very rich data on urban forest structure, as well as ecosystem services and how those relate to population density, low-income houses and gender. Differently from other studies in urban settings, they only found weak evidence of the luxury effect on their study area.

[Castellarini](#) contributes with one of the first review papers on urban agriculture in Latin America, and the first using the ecosystem services framework. The author found a total of 205 study cases belonging to cities located in 18 different Latin American countries. The article provides an extensive analysis of the type and bundles of ecosystem services, their governance structure, and the strength, weakness, opportunities and threats for the development of urban agriculture in Latin America. This topic can be highly relevant for marginalized communities and for supporting circular economy in developing regions.

The article by [de Brito Sousa et al.](#) analyzes the historical degradation of the watercourses crossing the city of Lavras (Brazil), and how this process relates to socio-cultural, natural and policy drivers. Using a mix of quantitative and qualitative

analysis, they found that the city watercourses have suffered several alterations since the 80s, even though the current legislation prioritizes the preservation of their natural functions. While residents are aware of the multiple ecosystem services provided by the watercourses and their surrounding vegetated areas, the government has not yet managed to reconcile their natural, social, and economic benefits, still allowing the sealing and canalization of watercourses. Analysis of socio-temporal dynamics of ecosystem services, especially in relation to policy implementation is still scarce in the region and this study discloses interesting findings on the weakness of governance for ecosystem services in urban areas from Latin America.

[Montoya-Tangarife et al.](#) analyze the accessibility to green spaces with different greening characteristics in Cartagena de Indias and Medellín (Colombia), Valparaíso (Chile), and Quito (Ecuador). They found that, except from Valparaíso, more than half of the urban residents were located at <15 min walking from a green space. These results were not directly related to the form and topography of the cities, but to the spatial distribution of green spaces. Furthermore, proportion of vegetation within these areas were significantly different, implying that city planners do not only have to focus on the accessibility but also on the potential ecosystem services provided by urban green spaces.

Finally, the work by [Rojas Quezada et al.](#) applied online surveys to evaluate the accessibility and how well-prepared were green spaces in the medium cities of Talca and Chillan (Chile) to receive visitors during the COVID 19 with the assumption that confinement and movement restrictions increases the demand for recreational and sports activities in green spaces. While they found high levels of accessibility to green spaces for both cities, people felt that the preventive measures

taken in green spaces for avoiding COVID spread were not sufficient, and therefore reduced the perceived accessibility to green spaces.

The works included in this Research Topic represent a small selection of the diversity of studies that are being undertaken by Latin American scientists on the topic of urban ecosystem services provided by green infrastructure. While succinct, the range of covered topics, including urban forests, urban agriculture, urban watercourses, urban green areas, and COVID Pandemic, reflect the relevance that studies from Latin America may have for advancing the knowledge of urban ecosystem services. Such knowledge is essential to inform local decision-makers to promote urban greening for ecosystem services provisioning in Latin American cities, and will certainly also offer key information to researchers and decision makers from other highly urbanized regions. We hope that research on urban ecosystem services in Latin America will continue growing, and that this region will become an active contributor to our understanding on how to move toward more sustainable and resilient cities.

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## Author contributions

IF, CD, and FD conceptualized and wrote the manuscript. IF generated the figure. All authors contributed to manuscript revision, read, and approved the submitted version.

## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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