

# Introducing the Special Issue on Urban Sustainability Futures

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## 1. Introduction

The city represents a focus of study that could be utilized to compile sustainability research. As an object, it comprises both physical entities common all over the world; as well as a subject matter, or subject, to examine from different perspectives. When combined with sustainability, urban environments can be scrutinized across different scales and provide unique entities and frameworks to investigate.

Existing literature conveys diverse approaches to planning for the future of urban sustainability. In particular, previous publications have come from a variety of places and exhibited the importance of a key theme, namely that of urban greening [1], which has included urban agriculture [2]. This aspect was encapsulated in contemporary research conducted in cities like India [3], Australia [4,5], Argentina [6], Italy [7], and so on.

The vision of the current special issue was to address the cities of tomorrow from the perspective of sustainability. By adopting a wide lens for scrutiny it was anticipated that different disciplines and approaches could be reached and relayed in this special issue. Importantly, authors were asked to consider the following question in their research: What would you change in the city if it helped to achieve sustainability? This question is an important one since it can unite different perspectives and disciplinary approaches, converging on one temporal projection into the future, while not limiting the location or case under consideration. The overwhelming ambition here was to connect a variety of scenarios and frameworks under one umbrella as part of urban sustainability futures.

## 2. Methods

In addition to the focal research question targeted to align the submissions, it was requested that paper submissions consider future “utopias” for cities based on human impacts on the urban environment. Authors were asked to envision the optimal future relating to their areas of (urban) expertise and relate these to long-term (future) temporality. A wide range of topics can be encapsulated in this scoping approach within the auspice of a city with integrated (environmental) sustainability. Other spatial scales could also have been accommodated here based on multiscalar and integrated approaches; and cross-temporal approaches that were also well-suited to this special issue. Submission types included both original research articles and comprehensive reviews.

As a follow-up to the call-for-papers, this introduction to the special issue used a Web of Science search based on the word string “urban sustainability futures” to search for any trends as context in the published literature without imposing any temporal or geographical limitations. In particular, information was sought on places publishing such work in addition to research topics covered since the onset of relevant publications addressing urban sustainability futures.

## 3. Results

### 3.1. Contributions

Six papers are included in this special issue. The article by Han et al. [8] focused on age-friendly policy integration employed in urban development as a win-win solution to



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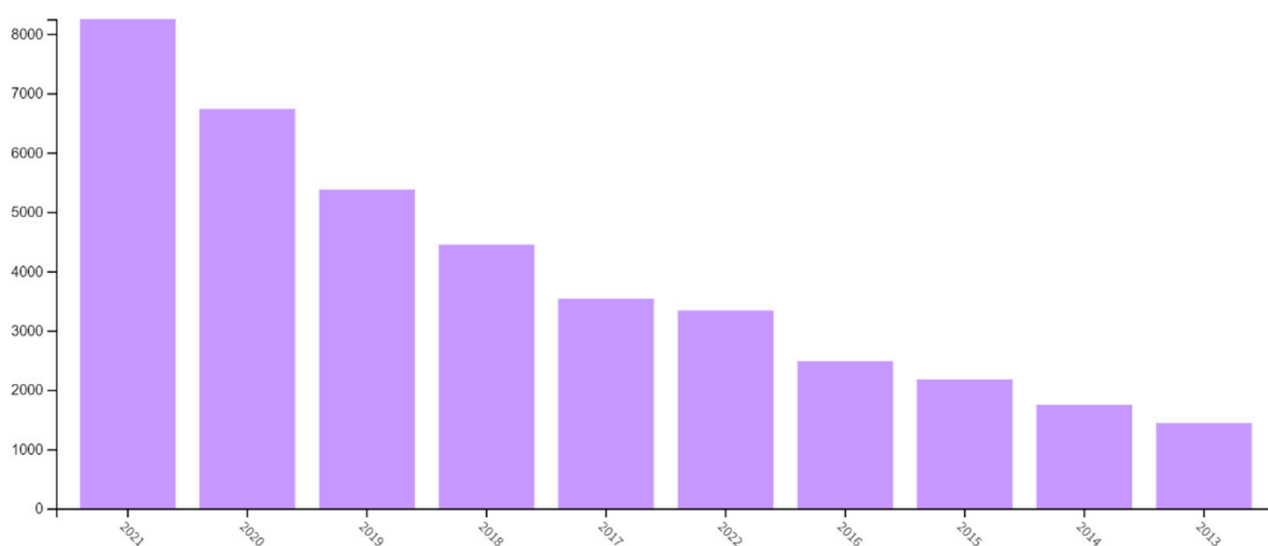


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derive balanced socioeconomic benefits, illustrated for Hong Kong's precincts development. The study found economic sustainability to be linked to diverse care services. Three papers addressed urban greening. This included the paper by (1) Santosa et al. [9] who, examining the distribution nationally in Indonesian cities, found cities to house 21 species of fruit trees. This study indicated the importance of urban sites for the genetic conservation of local fruit. These authors also uncovered nonfruit tree species to be more diverse in smart cities. (2) Pan et al. [10] considered ecosystem services in the LanXi (LX) Chinese region, finding a negative relationship between rapid urbanization and multiple ecological services. However, with the implementation of ecological protection and restoration projects, including nutrient purification, it was possible to greatly offset the decline caused by urban expansion. (3) Cooke [11] considered the ghost city post-COVID-19 and advocated an open model of (green) city design. Such a vision of the "open" city entails unsegregated and non-segmented use of the city center. Authors [12] also considered the "smart city" design based on integrated hard (technocratic) and soft (societal) approaches. Accordingly, this integration makes it possible for the emergence of global cyber-physical-social spaces, with the hybridization of the digital, governance, and sociocultural domains. Finally, Pilipczuk [13] examined large scale event perception based on her research performed in Poland on sustainable smart cities.

### 3.2. Publication Trends

There were 47,514 results from the Web of Science Core Collection. A six-fold increase in the number of publications relevant to this query has been evident since 2013 (Figure 1), with publication years going back as far as 1990 (0.011%). Of those fields interested in such a query, accordingly, the research areas represented include environmental sciences and ecology (19,261), science technology and other topics (14,203), engineering (7921), business economics (5520), energy fuels (3251), computer science (1822), water resources (1703), agriculture (2365), education and educational research (1528), and public administration (1482). Among the publication outlets, this journal *Sustainability* has had the most publications of the 47,514 total records (15.69% in Table 1). Most content was published in the US (10,400), China (5261), and England (4908) as well as Australia, Germany, Italy, Spain, Canada, Netherlands, and India. These publications mainly encompassed research articles (33,359), proceedings papers (7953), and review articles (6428), but have also entailed early access, editorial materials, book chapters, book reviews, letters, data papers, and meeting abstracts.



**Figure 1.** Publication years of 47,514 publications (frequency distribution between 2013 and 2021, in reverse chronological order) selected from Web of Science Core Collection (accessed on 13 June 2022).

**Table 1.** Journals publishing content relevant to “urban sustainability futures” according to the Web of Science (accessed on 13 June 2022).

Journal	Record Count	% of Total Records
<i>Sustainability</i>	7455	15.690
<i>Journal of Cleaner Production</i>	1326	2.791
<i>Renewable Sustainable Energy Reviews</i>	422	0.888
<i>Environment Development and Sustainability</i>	395	0.831
<i>Sustainability Science</i>	327	0.688
<i>Science of the Total Environment</i>	321	0.676
<i>Current Opinion in Environmental Sustainability</i>	279	0.587
<i>Energies</i>	246	0.518%
<i>Ecological Economics</i>	197	0.415
<i>Journal of Environmental Management</i>	182	0.383
<i>Water</i>	182	0.383
<i>Energy Policy</i>	173	0.364
<i>International Journal of Sustainability in Higher Education</i>	173	0.364
<i>Ecological Indicators</i>	167	0.351
<i>Resources Conservation and Recycling</i>	167	0.351
<i>Futures</i>	165	0.347
<i>Land Use Policy</i>	165	0.347
<i>WIT Transactions on Ecology and the Environment</i>	157	0.330
<i>IOP Conference Series Earth and Environmental Science</i>	153	0.322
<i>Ecology and Society</i>	152	0.320
<i>PLOS One</i>	152	0.320
<i>Energy Procedia</i>	144	0.303
<i>Environmental Research Letters</i>	143	0.301
<i>Sustainable Cities and Society</i>	141	0.297
<i>Environmental Science and Pollution Research</i>	139	0.293

#### 4. Discussion with Conclusions

Using the “urban sustainability futures” search string, it is evident that as well as an emphasis on sustainability, reduced environmental pollution and cleaner energy production, policymaking is also at the core of the publications. Studies have, for instance, addressed the way that stormwater management is executed in the US with a lack of policy transfer [14] and the way that data can support policy implementation [15]. Using urban greening in this context has been justified to achieve an environmentalism that goes beyond techno-fixes [16] to involve communities in “soft” approaches. This is pertinent since individuals as well as communities are affected by their environments [17]. Therefore, an integrated sustainability is required that is inclusive and draws from community as well as individual involvement in the making of socially-inclusive, equitable future environments. This needs to involve multilevel governance and policymaking down to the individual level, including people’s inputs into the development of tomorrow’s cities.

The breadth of this topical search includes an array of categories, as denoted by the query in the Web of Science. This encompasses environmental sciences and studies as well as other related topics, such as green sustainable science technology, energy fuels, environmental engineering, management, business, economics, ecology, and civil engineering. For this reason, the current special issue addresses wide-spanning studies that are diverse in their approaches and consideration of the shared research question.

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## References

1. Thornbush, M. Urban greening for low carbon cities—Introduction to the special issue. *AIMS Environ. Sci.* **2016**, *3*, 133–139. [\[CrossRef\]](#)
2. Thornbush, M. Urban agriculture in the transition to low carbon cities through urban greening. *AIMS Environ. Sci.* **2015**, *2*, 852–867. [\[CrossRef\]](#)
3. Mell, I.C. Establishing the rationale for green infrastructure investment in Indian cities: Is the mainstreaming of urban greening an expanding or diminishing reality? *AIMS Environ. Sci.* **2015**, *2*, 134–153. [\[CrossRef\]](#)
4. Robinson, G.M.; Liu, Z. Greening and “un”greening Adelaide, South Australia. *AIMS Environ. Sci.* **2015**, *2*, 511–532. [\[CrossRef\]](#)
5. Chen, D.; Thatcher, M.; Wang, X.; Barnett, G.; Kachenko, A.; Prince, R. Summer cooling potential of urban vegetation—A modeling study for Melbourne, Australia. *AIMS Environ. Sci.* **2015**, *2*, 648–667. [\[CrossRef\]](#)
6. Coronel, A.S.; Feldman, S.R.; Jozami, E.; Facundo, K.; Piacentini, R.D.; Dubbeling, M.; Escobedo, F.J. Effects of urban green areas on air temperature in a medium-sized Argentinian city. *AIMS Environ. Sci.* **2015**, *2*, 803–826. [\[CrossRef\]](#)
7. Magliocco, A.; Perini, K. The perception of green integrated into architecture: Installation of a green facade in Genoa, Italy. *AIMS Environ. Sci.* **2015**, *2*, 899–909. [\[CrossRef\]](#)
8. Han, J.; Chan, E.H.W.; Qian, Q.K.; Yung, E.H.K. Achieving sustainable urban development with an ageing population: An “age-friendly city and community” approach. *Sustainability* **2021**, *13*, 8614. [\[CrossRef\]](#)
9. Santosa, E.; Susila, A.; Widodo, W.; Nasrullah, N.; Ruwaida, I.; Sari, R. Exploring Fruit Tree Species as Multifunctional Greenery: A Case of Its Distribution in Indonesian Cities. *Sustainability* **2021**, *13*, 7835. [\[CrossRef\]](#)
10. Pan, X.; Shi, P.; Wu, N. Spatial–Temporal Interaction Relationship between Ecosystem Services and Urbanization of Urban Agglomerations in the Transitional Zone of Three Natural Regions. *Sustainability* **2020**, *12*, 10211. [\[CrossRef\]](#)
11. Cooke, P. After the Contagion. Ghost City Centres: Closed “Smart” or Open Greener? *Sustainability* **2021**, *13*, 3071. [\[CrossRef\]](#)
12. Golubchikov, O.; Thornbush, M.J. Smart Cities as Hybrid Spaces of Governance: Beyond the Hard/Soft Dichotomy in Cyber-Urbanization. *Sustainability* **2022**, *14*, 10080. [\[CrossRef\]](#)
13. Pilipczuk, O. A Conceptual Framework for Large-Scale Event Perception Evaluation with Spatial-Temporal Scales in Sustainable Smart Cities. *Sustainability* **2021**, *13*, 5658. [\[CrossRef\]](#)
14. Dolowitz, D.P. Stormwater management the American way: Why no policy transfer? *AIMS Environ. Sci.* **2015**, *2*, 868–883. [\[CrossRef\]](#)
15. Drake, L.; Ravit, B.; Dikidjieva, I.; Lawson, L.J. Urban greening supported by GIS: From data collection to policy implementation. *AIMS Environ. Sci.* **2015**, *2*, 910–934. [\[CrossRef\]](#)
16. Bowd, D.; McKay, C.; Shaw, W.S. Urban greening: Environmentalism or marketable aesthetics. *AIMS Environ. Sci.* **2015**, *2*, 935–949. [\[CrossRef\]](#)
17. Söderlund, J.; Newman, P. Biophilic architecture: A review of the rationale and outcomes. *AIMS Environ. Sci.* **2015**, *2*, 950–969. [\[CrossRef\]](#)