

## Chapter 1.13

# Sustainable Urban Development: An Integrated Framework for Urban Planning and Development

**Suharto Teriman**

*Queensland University of Technology, Australia*

**Tan Yigitcanlar**

*Queensland University of Technology, Australia*

**Severine Mayere**

*Queensland University of Technology, Australia*

### **ABSTRACT**

Sustainable development has long been promoted as the best answer to the world's environmental problems. This term has generated mass appeal as it implies that both the development of the built environment and its associated resource consumption can be achieved without jeopardising the natural environment. In the urban context, sustainability issues have been reflected in the promotion of sustainable urban development, which emphasises the sensible exploitation of scarce natural resources for urbanisation in a manner that allows future generations to repeat the process. This chapter highlights attempts to

promote sustainable urban development through an integration of three important considerations: planning, development and the ecosystem. It highlights the fact that spatial planning processes were traditionally driven by economic and social objectives, and rarely involved promoting the sustainability agenda to achieve a sustainable urban future. As a result, rapid urbanisation has created a variety of pressures on the ecosystem upon which we rely. It is believed that the integration of the urban planning and development processes within the limitations of the ecosystem, monitored by a sustainability assessment mechanism, would offer a better approach to maintaining sustainable resource use without compromising urban development.

DOI: 10.4018/978-1-60960-472-1.ch113

## **INTRODUCTION**

Urban planning can be defined as the intentional interventions of a local authority in the urban development process, utilising a variety of mechanisms, including regulations, collective choice, and stakeholder participation (Hopkins, 2001). It has been widely acknowledged that urban planning originated as a response to the appalling living conditions widespread throughout the cities of the 19<sup>th</sup> century (Adams, 1994). From this public health-oriented beginning, planning started to shift towards promoting a more efficient use of land for human settlements and associated development activities. Ebenezer Howard's garden cities concept was instrumental in this shift. The garden city concept proposed urban and rural magnets in the form of self-contained, employment-generating communities surrounded by agricultural activities. Cougill (2008, p. 42) acknowledges that Howard's garden cities transformed urban planning 'from public health exercise to one which considered the detailed spatial arrangement of urban activities... for the first time, the neighbourhood became an integral part of urban planning activity'. Within the modern urban planning context, such measures were introduced to achieve a desired outcome—improvement of the built environment.

As more than 50 percent of the world's population are currently urban dwellers, the concept of sustainable development and the examination of human settlement problems involve looking deeply into urban issues and seeking solutions that can facilitate the establishment of urban sustainability (Devuyst et al., 2001). Concerns about the unsustainability of modern urban development patterns have existed since the early 19th century when rapid growth in industrial cities led to an unsustainable consumption of the world's scarce resources (Wheeler & Beatley, 2004). From growth of these industrial cities in Europe through to current urbanisation trends in Asia, the continuous expansion of cities and human settlements has resulted in an increasing consumption of

resources; and whilst some are renewable, others such as land and minerals, are not. These trends also generated waste and pollution which have further increased environmental stress (WCED, 1987). Although the term 'sustainable development' has been in use since the early 1970s, its wider application within the urban planning profession was only recognised less than two decades ago (Choguill, 1993). This recognition followed the Brundtland Report, which stated that humankind is consuming the world's resources unsustainably and called for more egalitarian and sustainable use of existing resources.

## **SUSTAINABLE URBAN PLANNING AND DEVELOPMENT**

Sustainable development is 'a process of change in which exploitation of resources, the direction of investments, the orientation of technological developments and institutional change are all in harmony and enhance current and future potential to meet human needs and aspirations' (WCED, 1987, p. 47). This term has generated mass appeal as it implies that the development of both the built environment and its associated resource consumption can be achieved without jeopardising the natural environment (Berke et al., 2006). With sustainability concerns currently in advanced stages, especially in developed countries, sustainable development has become a major influence in the physical planning of the built environment and should be examined more closely. In this context of physical planning, the concept of sustainable development is strongly absorbed in the urban framework, which is comprised of centres of active economic, social and cultural development. Thus, cities are at the core of this urban framework, and are characterised by strongly transformed natural environments and highly developed complexes of infrastructure (Kavaliaukas, 2008).

Whilst the Brundtland report has generated much literature on the centrality of urban sus-

12 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

[www.igi-global.com/chapter/sustainable-urban-development/51696](http://www.igi-global.com/chapter/sustainable-urban-development/51696)

## Related Content

---

### Ecosystem Valuation of Agricultural Land Use Change

Dimple Behal (2022). *Addressing Environmental Challenges Through Spatial Planning* (pp. 90-126).

[www.irma-international.org/chapter/ecosystem-valuation-of-agricultural-land-use-change/290877](http://www.irma-international.org/chapter/ecosystem-valuation-of-agricultural-land-use-change/290877)

### Implications of Heavy Metal on Legume-Microbes and Accumulation in Plants

David Olusoji Alabi, Asogan O. Gounden, Kuben K. Naidoo, John Mellemand Vimla Paul (2026).

*International Journal of Agricultural and Environmental Information Systems* (pp. 1-24).

[www.irma-international.org/article/implications-of-heavy-metal-on-legume-microbes-and-accumulation-in-plants/398365](http://www.irma-international.org/article/implications-of-heavy-metal-on-legume-microbes-and-accumulation-in-plants/398365)

### Agricultural Environment Information Management

Xi Cai (2020). *International Journal of Agricultural and Environmental Information Systems* (pp. 48-60).

[www.irma-international.org/article/agricultural-environment-information-management/256990](http://www.irma-international.org/article/agricultural-environment-information-management/256990)

### Relation Between the Iteration of Planar Retractable Plate Structure and Plane Symmetry Group

Aylin Gazi Gezginand Koray Korkmaz (2021). *International Journal of Digital Innovation in the Built Environment* (pp. 17-28).

[www.irma-international.org/article/relation-between-the-iteration-of-planar-retractable-plate-structure-and-plane-symmetry-group/283114](http://www.irma-international.org/article/relation-between-the-iteration-of-planar-retractable-plate-structure-and-plane-symmetry-group/283114)

### Assessing the Hydrological Effect of Climate Change on Water Balance of a River Basin in Northern Greece

Panagiota G. Koukouli, Pantazis E. Georgiouand Dimitrios K. Karpouzoz (2018). *International Journal of Agricultural and Environmental Information Systems* (pp. 14-33).

[www.irma-international.org/article/assessing-the-hydrological-effect-of-climate-change-on-water-balance-of-a-river-basin-in-northern-greece/212658](http://www.irma-international.org/article/assessing-the-hydrological-effect-of-climate-change-on-water-balance-of-a-river-basin-in-northern-greece/212658)