



# Toward the sustainable development of urban areas: An overview of global trends in trials and policies



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## ARTICLE INFO

### Article history:

Received 4 November 2014

Received in revised form 5 April 2015

Accepted 29 April 2015

### Key words:

Sustainable urban development

Sustainable global policies

Asian sustainable trials

Land use policies

American sustainable development

## ABSTRACT

Achieving sustainable urban development (SUD) remains one of the most important goals for many countries. Numerous nations have made attempts to attain sustainable development (SD) by fixing one or more of the problems facing urban development, which has resulted in various approaches to SUD. However, a main issue that could help decision-makers deal effectively with SD needs to be emphasized.

This study covers 10 topics that have recently become highly relevant to SUD:

(1) A balanced approach to SUD, (2) Socio-cultural awareness, (3) Urban sprawl, (4) Economic urban development, (5) Transportation, (6) Urban renewal, (7) Mitigating greenhouse gases (GHG), (8) Urban vegetation, (9) Assessment systems, and (10) City structure and land use. The methodology is based on an overview of these themes via a critical reading of different publications, mostly from the last five years. This study classifies these topics both quantitatively and qualitatively in order to highlight hot-button issues at the domestic and international levels. The publications that were analyzed showed that Asian countries, especially China, are making changes towards SUD more than nations of other continents. The study concludes that transportation is the most prominent challenge in the field of SUD, followed by socio-cultural awareness. The concern of transportation and socio-cultural conscious issues can propel SUD forward and improve other problems related it.

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## 1. Introduction

The World Commission on Environment and Development (WCED) (WCED, 1987) defines sustainable development (SD) as growth based on the United Nations definition of sustainability. The UK government defined SD as providing people with a better quality of life (Choi and Ahn, 2013a,b). Berke and Manta (1999) describe SD as a dynamic process connecting local and global concerns, as well as linking local social, economic, and ecological issues, in order to fairly meet the needs of current and future generations. Thus, SD concepts are not static and their development is not finite; rather, they are changeable and complex (Zheng et al., 2014).

Issues of SD in urban areas and land use policies (which many states adopt for making transitions to sustainability) have become complex due to their intertwining with numerous obstacles that have emerged in modern times (Hassan and Lee, 2014b); these include intense urban sprawl, traffic congestion, problems with

transport, GHG emissions, and social segregation. Researchers and decision-makers are sometimes misguided in finding suitable remedies for today's urban challenges due to the lack of connection between different global policies and new scientific findings in the field of SUD. Many policies fail, leading to a loss of money, time, effort, and frustration toward achieving SUD.

This study aggregates diverse international experiences related to SUD, and makes them available to readers in an easy and appealing manner. In this way, practitioners of land uses policies can determine which issues should receive the most attention in order to attain SUD through potential solutions. By opening a window into global issues of land use policies that are prominent in the international arena, they can figure out how to make use of similar trials in different countries. This study poses and answers two questions:

- (1) What are the new findings worldwide in the field of SUD?
- (2) Which topics have received significant international attention, especially in terms of land use policies?

These questions can help researchers identify the foremost challenges to SUD; this study explored 10 themes that are highly linked to SUD. Some relate to the environmental pillar, such as miti-

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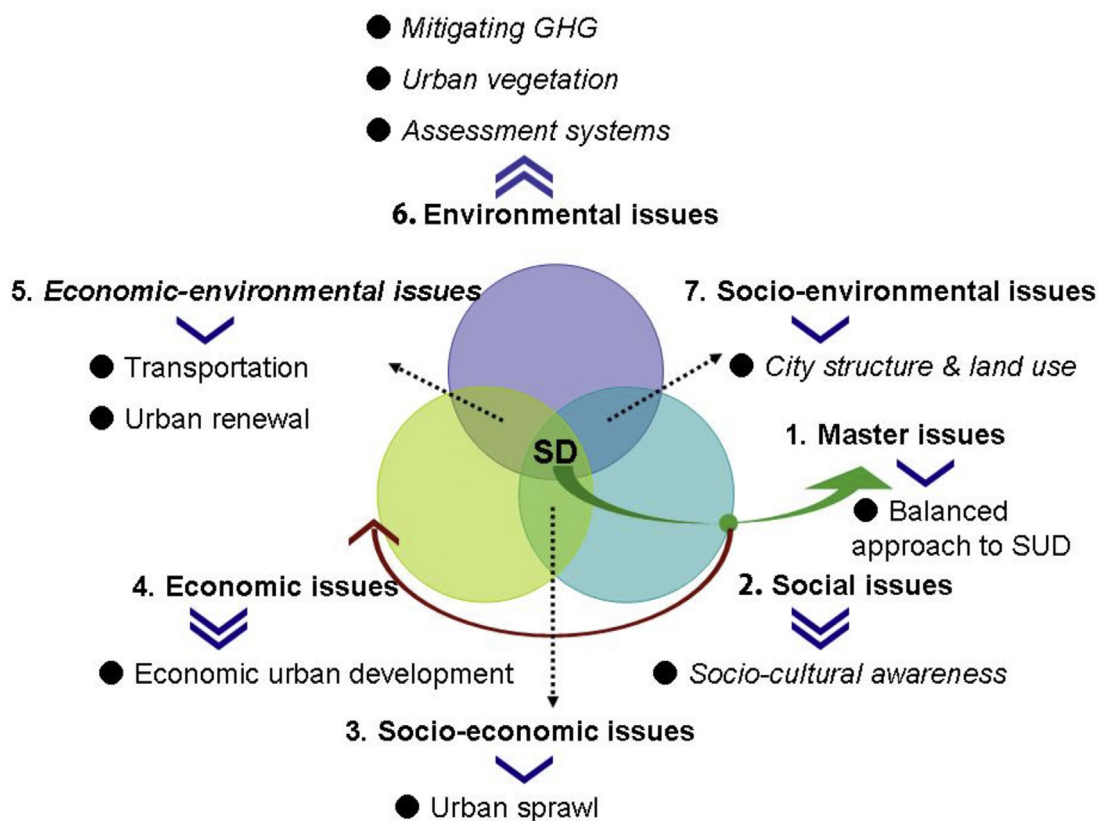


Fig. 1. Scope of issues relevant to SUD (based on the major pillars of sustainability and researched by the authors).

gating GHG, urban vegetation, and systems for evaluating SUD. Socio-cultural awareness is very pertinent to the social aspect, and economic urbanism is connected to the financial factor. We also examine challenges of the trinity of sustainability (environmental, social and economic aspects), such as a balanced approach to SUD (which is a matter of coordination and helps create a trade-off between SUD's various goals), city structure and land use (which connect the environmental and social factors), and transportation and urban renewal (which links environmental and economic dimensions). The relationship between social and environmental issues becomes clear when we consider urban sprawl. Fig. 1 shows the themes relating to SUD, and the connection to the main pillars of sustainability. We chose to study these 10 topics due to the strong link between SD and urban zones, and the impact of this connection on land use policies.

We conducted a critical review of the latest articles on the 10 themes in order to highlight the contemporary efforts of many countries toward realizing SUD. It is worth mentioning that most of these articles came from the database ScienceDirect; the majority of them have been published over the past 5 years. Following an analysis of these articles, based on the topics in question, we present informative models that involve SUD policies in some countries Fig. 2.

The 10 themes can be classified both quantitatively and qualitatively. The quantitative criterion is the maximum number of discussions on a specific issue, regardless of the study's location (if the issue was mentioned in a specific country once, it would be counted as 1 discussion; if it was mentioned twice, it would be counted as 2). However, this criterion cannot indicate the prevalence of a certain challenge on a global scale; it merely provides information on local policy. The quantitative gauge can help nations facing similar conditions and challenges to learn from each other's experiences.

In contrast, the qualitative criterion is the total number of discussions on a particular subject across different countries, without being repeated (if a topic has been duplicated somewhere, it should count for one discussion, however many times it was repeated). This benchmark helps identify the prominent issues that receive international attention, and could also aid scholars in exploring a new perspective on SUD. Table 1 shows the major steps this study adopts, along with the determinants for each phase.

The next section will cover our critical reading of articles on the 10 themes, according to the arrangement shown in Fig. 1.

## 2. Critical reading of the issues relating to SUD

This chapter will discuss 10 issues that are highly relevant to SUD, starting with a balanced approach to it.

### 2.1. Issues of coordination (primary issue)

This section focuses on a balanced approach to SUD, which connects the economic, environmental, and social pillars of sustainability in urban areas.

#### 2.1.1. A balanced approach to SUD

Grodach (2011) studied 15 cities in the Dallas and Fortworth areas in order to pinpoint the challenges to sustainable economic development. The main obstacle seems to be incorrectly defining economic development as merely referring to financial growth. Grodach believed that when considering sustainable living, economic development should maintain justice and a balance of environmental and social dimensions. Methods such as green technology, innovative tools, eco-planning, and legislation to create low-carbon cities are still insufficient because they might contradict at least one pillar of sustainability. Furthermore, eco-friendly

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