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Review Article

## Exploring sustainability of smart development initiatives in India

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## Abstract

Urban cities of developing countries are witnessing rapid urbanization that has elevated issues in the field of urban planning like a gap in demand and supply of infrastructure services and utilities, traffic congestions, pollution, reduction in natural green cover, peri-urban settlement typology, etc, thus affecting the natural and built environment adversely. These prevailing issues will worsen over the coming decades as the urban population is increasing at a phenomenal rate, thus highlighting the urgency to take appropriate actions.

Smart development has been identified as a sustainable world-wide solution to the existing urban planning issues, whose principles aims at providing a better quality of life and advertises livable communities; though the concept is vague to define, as no universal definition exists. The soul reason for the concept to be vague is the number of dimensions in which it is represented and therefore, the concept needs to be standardized in order to scale development worldwide.

India has undergone rapid urbanization over the last few decades and the witnessing cities are mostly of Class-I & II tiers. To cater the issues developed by this phenomenon, the governing authorities have taken up initiatives over the years, in the form of programmes that have mainly focused on providing basic infrastructure services and utilities to the cities and have not paid much attention in achieving sustainability in the approach. Recently, India has introduced the smart city mission, which is somewhat on the similar lines of smart development. Since the development is been interpreted differently among the nations due to no standardization of the concept, it's important to understand how the concept has been represented in the Indian context.

The paper intended to analyse the concept of smart development and explore the sustainability quotient in the smart city mission introduced by the Government of India. And, concluding that whether the initiative taken up, achieves sustainability in the field of urban planning. To achieve the above-mentioned goals, an in-depth analysis was conducted of the various concepts associated with smart development.

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**Keywords:** Urbanization; Smart development; Sustainability/sustainable development; Smart growth; Smart city

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## 1. Introduction

Over the last 50 years, the world has faced dramatic growth of its urban population. The number of megacities has increased tremendously, mostly in the less developed region (Rück, 2005). India's urbanization trend is nothing different from the rest of the world. India's urban population has increased from 222 million (26% of the population) in 1990 to 410 million (32%) in 2014 and is expected to reach 814 million (50%) by 2050, yet, India ranks second in the world in terms of urban population size. Its current urbanization ratio is low as compared to China (54%), Indonesia (53%), Mexico (79%), Brazil (85%) and Russia (74%) (United Nations, Department of Economic and Social Affairs, 2014).<sup>1</sup>

The number of Indian mega cities will increase from the current five (Mumbai, Delhi, Kolkata, Chennai and Bangalore) to seven by the year 2030 (new additions will be Ahmedabad and Hyderabad), when India will have the largest concentration of mega cities in the world (United Nations, Department of Economic and Social Affairs, 2016). This rapid urbanization has created a gap between the demand and supply of urban infrastructure and services among the major large and medium towns of the country (Ahluwalia, 2011). In some or the other way, the above phenomenon is promoting urban sprawl as the city cores are becoming congested and have seen degrading living quality (Fig. 1). Hence, the need arises to adopt an approach in order to diminish the gap between demand and supply of services to fulfil the goal of making cities compact, livable and sustainable.

Smart Development regarded as a solution to urban development issues which aims at achieving sustainability in the field of urban planning. It has been defined in many dimensions; therefore, the concept lacks a universal definition and varies from city to city, region to region and nation to nation. Some researchers regard smart development as the integration of ICT into everyday life and state functions (Komninos, 2011), while others highlight the

importance of knowledge management (Garcia, 2007). Still, others emphasize the coherence of infrastructure with objectives, the importance of learning, innovation, and networks (Allwinkle and CruickshankA, 2011).

In 2009, Brocke et al (2009) concluded that the difficulty in defining Smart development regards mainly two aspects:

- The **adjective** “smart”, because it depends on the meaning attributed to this word, intelligent, bright, sharp, etc.
- The **label** “smart”, because it is a fuzzy concept and it is used in ways that are not always in accordance with each other. There are many cities that define themselves as Smart without referring to a standard meaning.

Since the concept lacks a unified definition; few associated concepts have been identified to understand the meaning of smartness in the field of urban planning. The concepts are **Sustainable Development, Smart Growth, and Smart City**. These concepts have been studied over the years by various authors and researchers, concluding that the principles of each are overlapping in nature and thus are of uttermost importance to be understood. To lead the study further, the concept of Smart Development and urban development pattern of India needs to be understood. In this context, the study has been organized in the following way:

1. Exploring definitions of the concepts associated with the development from the worldwide literature
2. Exploring the smart development initiatives taken up by the GoI
3. Exploring indicators of the concepts adopted by the GoI
4. Concluding, whether the initiatives taken up by GoI are towards achieving sustainability

## 2. Smart development – Literature review

The objective of the literature study was to understand the concept of smart development through various associated concepts i.e. Sustainable Development, Smart Growth and Smart City, and analyse whether, these concepts achieve sustainability in their principles and strategies in the field of urban planning, based on the studies of various authors and researchers.

<sup>1</sup> UN DESA – United Nations Department of Economic and Social Affairs: The work promotes and supports international cooperation in the pursuit of sustainable development for all. It addresses a range of cross-cutting issues that affect people's lives and livelihoods, especially the most vulnerable.

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