Handbook on Smart Urban Innovations

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La Paz, Bolivia
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Foreword

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The COVID-19 pandemic has had a negative impact on all human development dimensions, but much of this impact has been felt in cities - which have seen 90% of reported cases, and major socio-economic impacts. However, the innovation and ingenuity of society has been a powerful asset in responding to these challenging times. Innovative approaches have been fundamental to

fights against the pandemic in cities all across the globe — including tactical urbanism to improve safe mobility, community networks to support vulnerable groups, or digital solutions to provide financial support.

Looking beyond COVID-19 recovery and towards 2030, decision-makers must be able to manage complexity and uncertainty - while strategically using their available resources. This also applies to city officials, who are managing the public administrations that serve more than half of humanity. Cities are the closest administrative actor to citizens and businesses, and they are leading and informing global policy efforts. It is estimated that, to be achieved, 110 of the 169 Sustainable Development Goal targets will require some direct engagement from cities or local government authorities.

Cities that use innovation and

technology in initiatives to improve their citizen's lives are successful in responding to global challenges. This is what it means to be a smart city. Any city can be a "smart city" if it adopts a citizen-centric approach and responds to both current and future needs and realities of its citizens and residents, while strategically mobilising available resources.

In this Handbook, we explore how different kinds of smart urban innovations are shaping urban spaces in cities across the globe and from different income settings. Each of these innovations is driven by a combination of multi-stakeholder partnerships, local resources, and strategic data usage. UNDP has grouped these unique combinations into four different frameworks, which aim to support city leaders, public officials, and citizens to find ways to catalyse innovation and identify solutions to problems faced by their cities. Users can delve into the different elements that enable innovations to emerge in cities. The Handbook also features an exciting set of case studies, setting out how to create the conditions needed for urban innovations to scale and generate long-lasting impacts. It also includes a wide-range of examples on how urban authorities have leveraged their current assets to deliver innovative solutions.

Urban authorities can leverage the benefits of global interconnectedness by exchanging impactful initiatives to combat present and future challenges. South-South, and triangular cooperation can enhance current efforts and replicate successful solutions in local contexts. This

Handbook aims to facilitate this exchange of ideas and knowledge. UNDP has supported local authorities in the implementation of the development agenda since the organisation's founding - including working closely with the leaders of Singapore following the country's independence. Through initiatives such as the City2City peer learning network, the NextGenCities programme, our new collaboration framework with UN-Habitat, and the UNDP Global Centre in Singapore, UNDP is connecting cities and providing targeted support in developing impactful solutions for urban challenges.

We hope that this reflection, in which we broaden the definition of a smart city beyond technology, will support the central role that cities play in international development and enhance the international exchange of practices between them. By focusing on how to build and deliver innovative initiatives with real impact, we expect this Handbook to help local governments and other development partners to identify and ideate new ways of solving urban challenges – toward 2030, and beyond.

Cities are complex systems, where we can find a diversity of actors, activities, needs and challenges. It is necessary to understand the context of each city, neighbourhood, and of their residents, to find the right solutions to their challenges.

Train Night Market Ratchada, Bangkok (Thailand)

Delivering the 2030 Agenda — Cities in development.

INTRODUCTION
- *SETTING THE CONTEXT*

Executive Summary

As evidenced by the COVID-19 pandemic, we are facing new social, economic and environmental challenges. We need to generate ways to advance towards a green recovery, achieve the objectives of the 2030 Agenda and ensure we can quickly respond to new challenges and crises. Cities play a central role in improving the lives of their residents, which account for more than half of humanity. As the closest administrative actor to individuals and businesses, cities need to quickly adapt to new situations. Technology and innovation can be powerful enablers of this adaptation.

However, the Smart Cities discourse has been too heavily focused on high tech - limiting its global application and relevance. The Smart City concept has gained significant traction globally, with many governments launching bold initiatives to make their cities 'smart'. Many of these initiatives are technocentric, and this narrow framing of the notion 'smart' solutions excludes other less technological - yet highly innovative - approaches from the Smart City toolkit. These include nature-based solutions, behaviour change-based interventions, new organisational approaches or experimental solutions. These are having significant and positive impacts on the cities where they have been implemented.

This handbook expands the definition of Smart Cities

to embody a broader set of features that can be used to characterize 'smartness'. We believe Smart Cities are defined by their bold vision for the future, sustained trust between government and residents, an embedded culture of continuous learning, deep partnerships and collaboration among actors and an unwavering commitment to creating and maintaining inclusive urban spaces and services. While important, technology and data are simply two in an array of other attributes that enable urban centres to evolve intelligently.
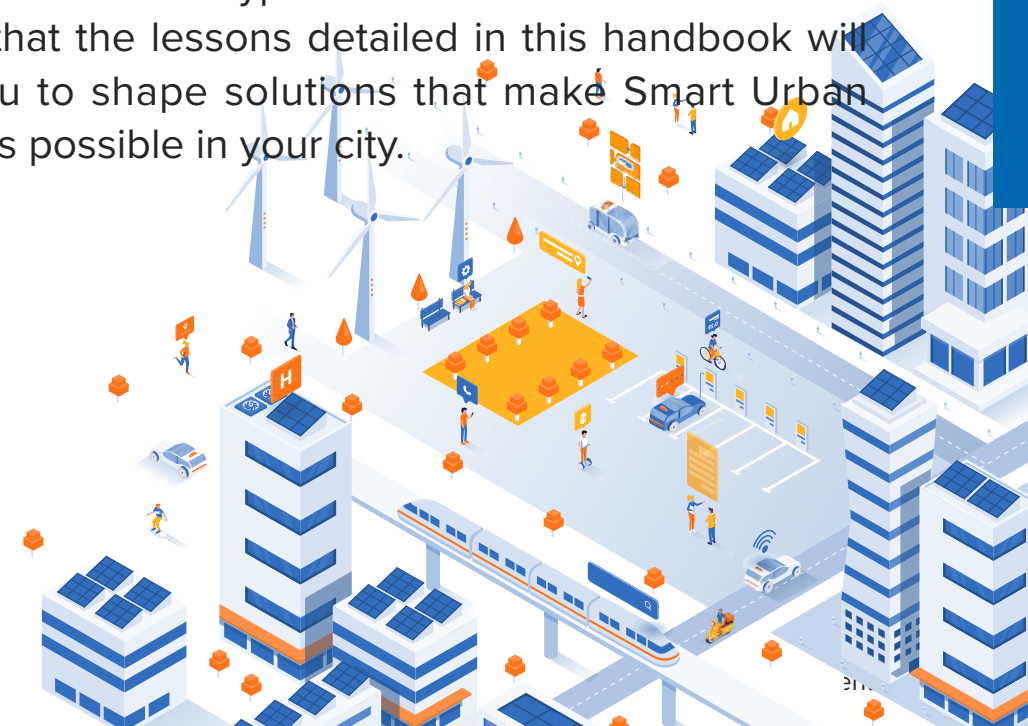
Smart Urban Innovations are the foundation of modern 'Smart Cities'. They are initiatives that transform cities through innovation and technology. Smart Urban Innovations represent the range of potential solutions needed for the myriad of urban challenges faced by cities. They also demonstrate many of the characteristics that define Smart Cities. As Smart Urban Innovations are implemented, they coalesce and evolve to guide cities on their 'smart' journey.
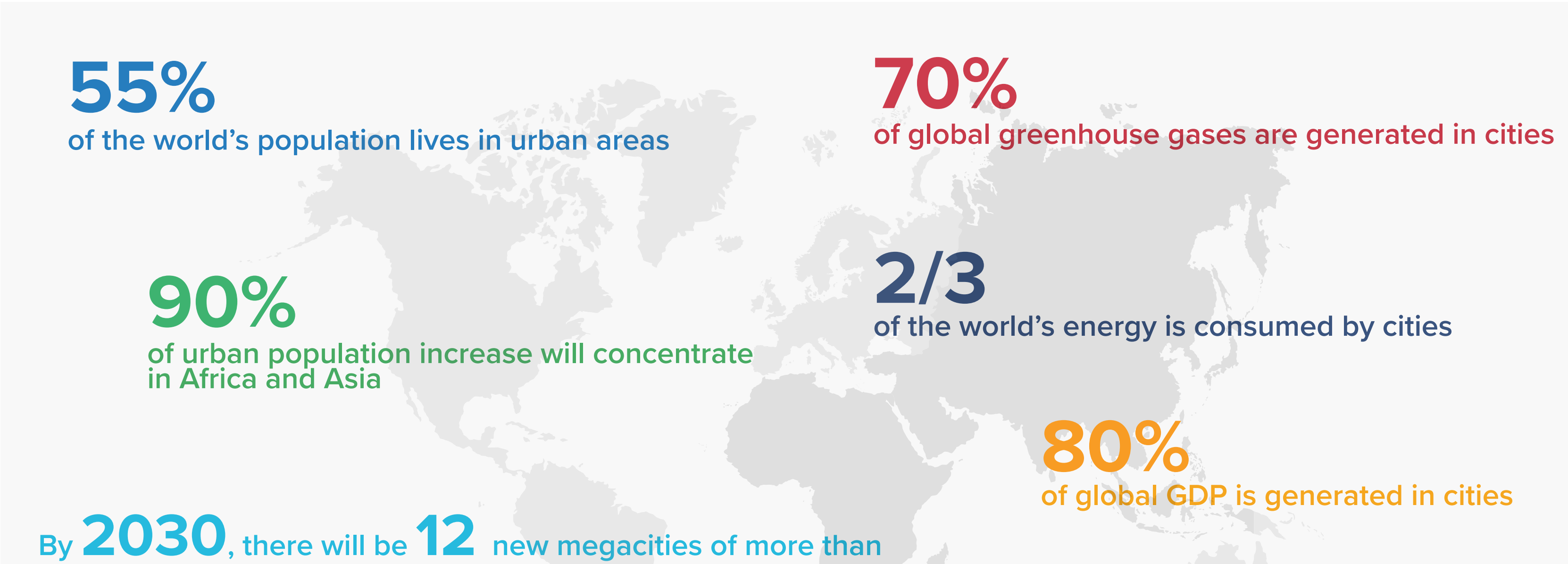
Through a global analysis, we identified more than forty innovations and grouped them into one of four types of Smart Urban Innovations. Each innovation type distils the essence of the journey from its conception to implementation. The classification was created using a bottom-up approach and consists of four dimensions: actors, the roles they each play in the innovation; their

use of data and information to diagnose, design and deliver solutions; and the tools that are leveraged throughout this process. The most important dimensions connecting and enabling this process are the actors and the roles that they play - and how these two components combine with the data, information, and tools available.

The four different Smart Urban Innovation types emerging from this analysis are summarized in the following pages and further detailed throughout this handbook.

The aim of this handbook is to kick-start an exchange of practices and strategies among city leaders about how to cultivate and implement Smart Urban Innovations in their diverse contexts. We encourage you to identify the best approaches for your urban solution from the four types of Smart Urban Innovations. We hope that the lessons detailed in this handbook will enable you to shape solutions that make Smart Urban innovations possible in your city.

55%
of the world's population lives in urban areas

70%
of global greenhouse gases are generated in cities

90%
of urban population increase will concentrate
in Africa and Asia

2/3
of the world's energy is consumed by cities

80%
of global GDP is generated in cities

By **2030**, there will be **12** new megacities of more than

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