

Building Smart and Resilient Cities and Communities: Role of Policy Makers and Planners

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21 May 2024

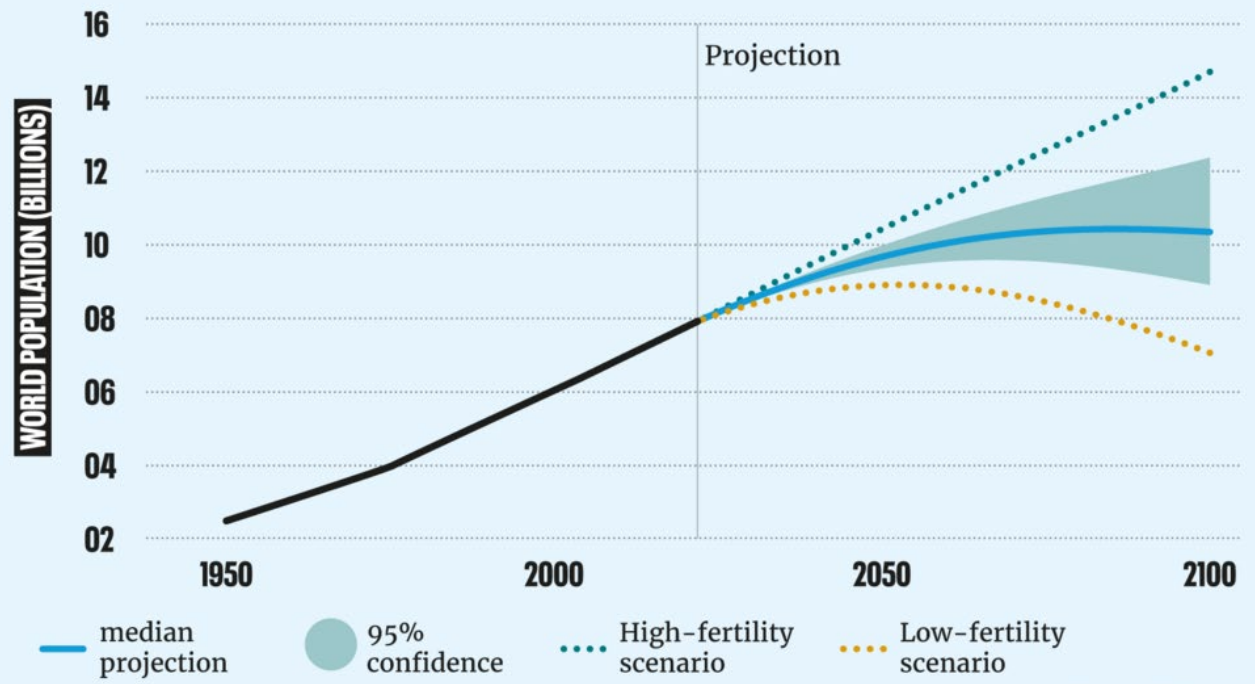


Rapid Pollution Growth



Approx. 44 million people are adding to Asian cities every year

UN POPULATION PROJECTIONS TO 2100



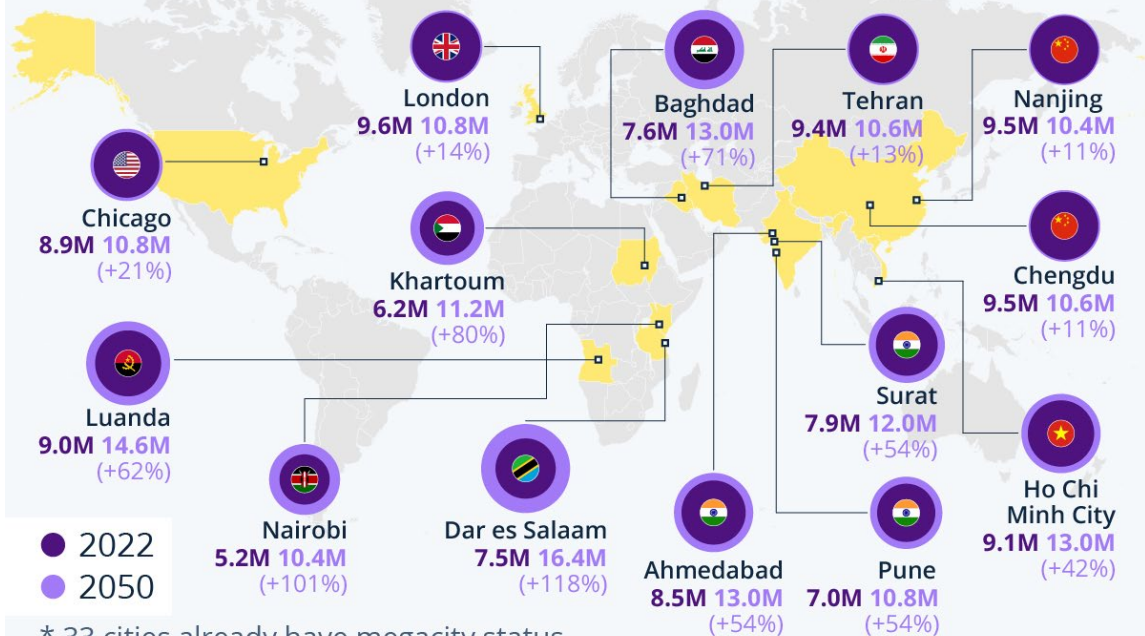
Source: UN, 2022

Urbanization & Motorization

By 2030, the world is projected to have **47 megacities with more than 10 million inhabitants**, most of them in developing regions in Asia and the Pacific.

These Will Be The World's Next Megacities

Population growth of the next cities expected to hit 10 million+ people by 2050*



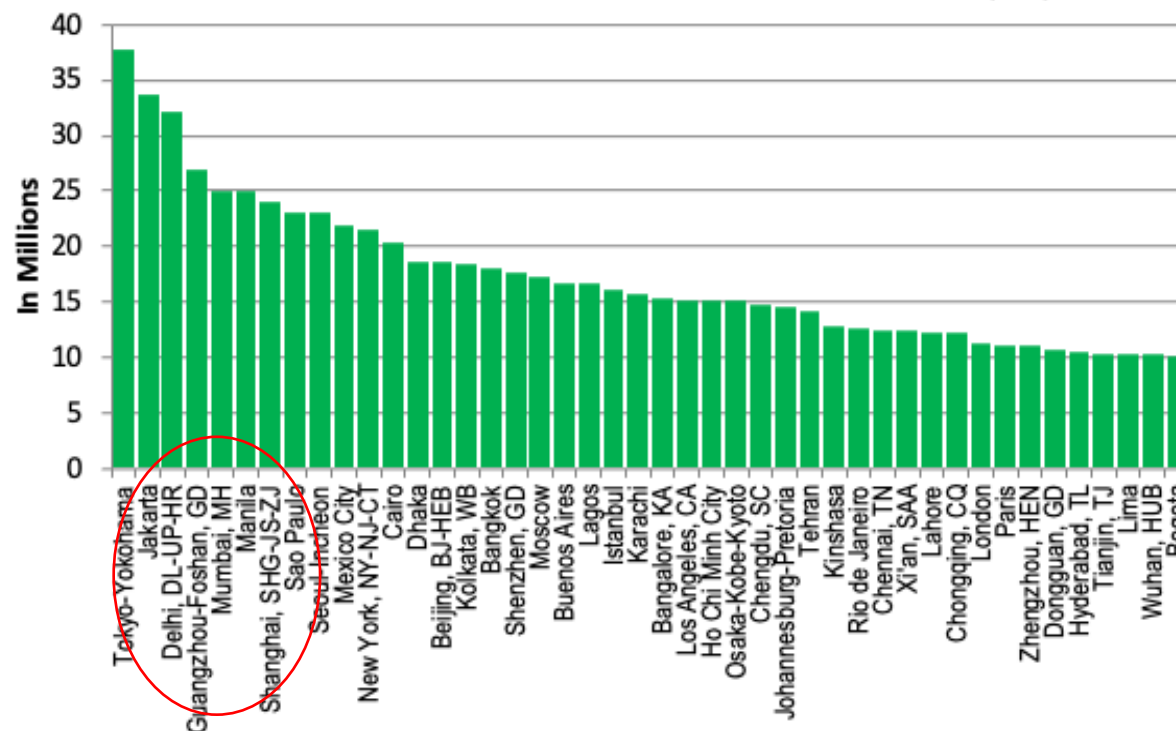
* 33 cities already have megacity status.

Source: 'Ecological Threat Report: 2022' by the Institute for Economics & Peace



World Megacities: 2022 Population

BUILT-UP URBAN AREAS OVER 10,000,000 (44)



Demographia World Urban Areas: 2022

95 % of urban expansion in the next decades will take place in developing world.

Urban Development in Asia and the Pacific



New Delhi, India Source: www.ndtv.com



Hanoi, Viet Nam Source: [kenh 14](http://kenh14.com)



Jakarta Indonesia Source: www.ndtv.com



Dhaka, Bangladesh Source: istockphoto.com



Bangkok, Thailand Source: www.bangkokpost.com



Source: www.pinterest.jp

Impact of the Unsustainable Urban Development: Air Pollution



99% of the global population live in places where air pollution levels exceed WHO guideline limits



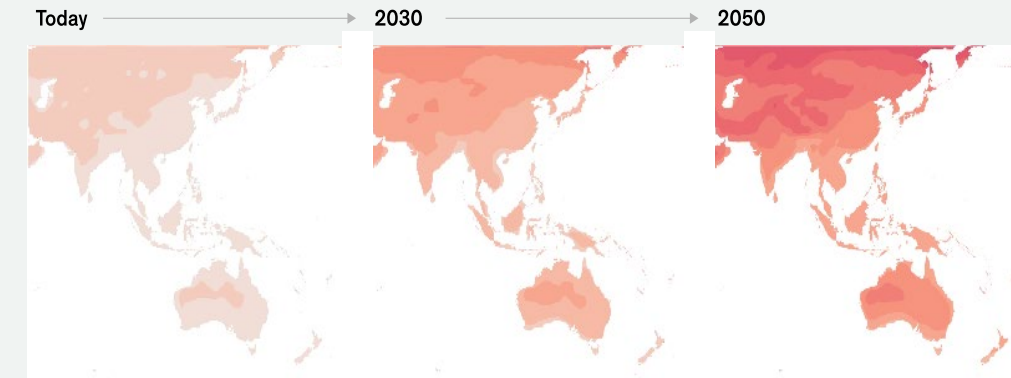
Climate Change and Global Warming

Over 800 million people live in 570 coastal cities and these areas are at high risk of causes coastal flooding.

Average temperatures are projected to increase in many parts of Asia.

Increase in average annual temperature,¹

°C shift compared with preindustrial climate (based on RCP 8.5)



Note: See Technical appendix, *Climate risk and response: Physical hazards and socioeconomic impacts*, McKinsey Global Institute, January 2020, for why we chose RCP 8.5. Projections based on RCP 8.5 CMIP 5 multimodel ensemble. Heat-data bias corrected. Following standard practice, we typically define current and future (2030, 2050) states as average climatic behavior over multidecade periods. Climate state today is defined as average conditions between 1998 and 2017, in 2030 as average between 2021 and 2040, and in 2050 as average between 2041 and 2060.

¹Taken from KNMI Climate Explorer, 2019, using mean of full CMIP5 ensemble of models. Preindustrial levels defined as period between 1880–1910. Source: KNMI Climate Explorer, 2019; Woodwell Climate Research Center; McKinsey/United Nations (disputed boundaries); McKinsey Global Institute analysis

McKinsey & Company

In a business-as-usual scenario, the global economy will losses from coastal flooding may exceed **US \$1 trillion annually by 2050** unless the major coastal cities prepare for it (C40, 2019).



Bangkok floods in 2011
Photo: www.asianews.it



Zhengzhou, PR China 23 July 2021
Source; asia.nikkei.com © Reuters



Flooding in Quezon City, 2021
Photo: Alamy Stock



Mumbai Floods in 2022
Photo: www.bbc.com

Impacts of climate change on Urban Infrastructures and Built Environment

IPCC estimates the costs of damage from global warming by 2100 for 1.5 C and 2°C are **US\$ 54 trillion and US\$ 69 trillion**

Urban heat Island

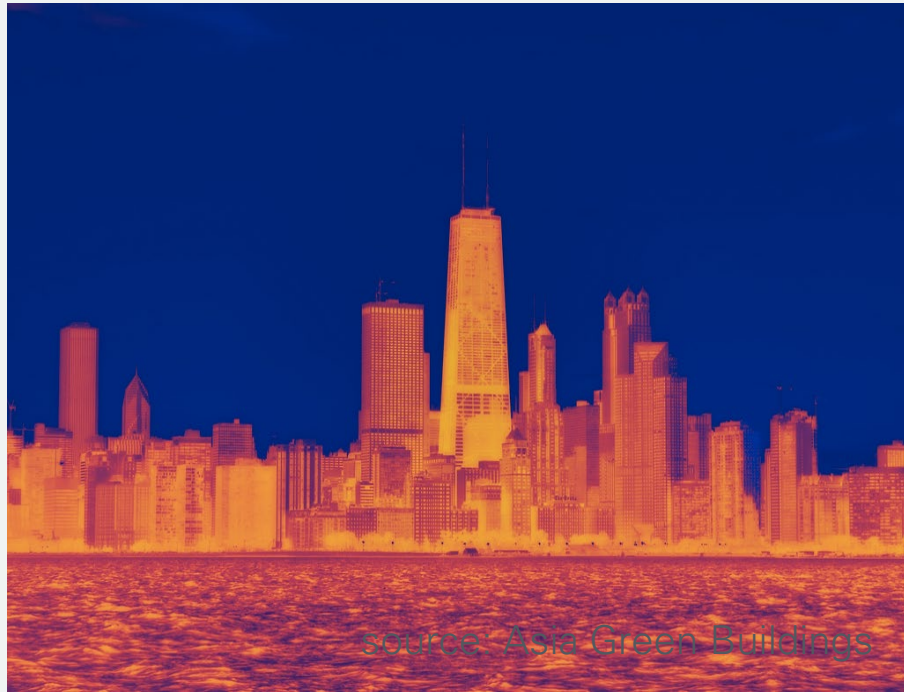


Photo: dhakatribune.com

Melting road infrastructure



Photo: telegraph.co.uk

Extreme weather and roads



Photo: climatechange.novascotia.ca

Natural Disasters

People in Asia are **4 times** more likely to be affected by natural disasters than in Africa, and **25 times** more likely than in Europe or North America.

Global economic losses from natural disasters in 2023 is USD 280 billion (Swiss Re Institute, 2023).

Number of recorded natural disaster events, 1900 to 2022

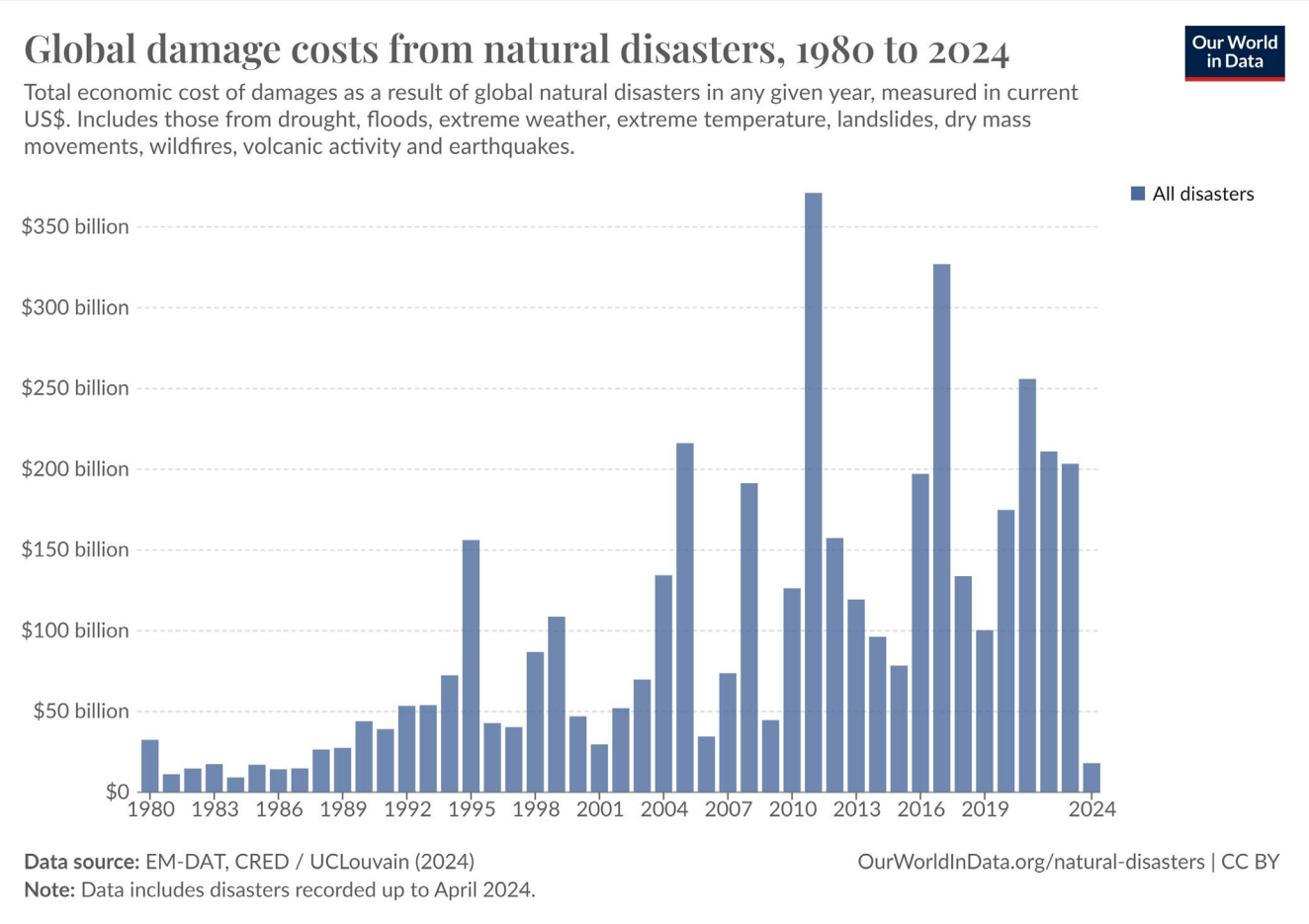
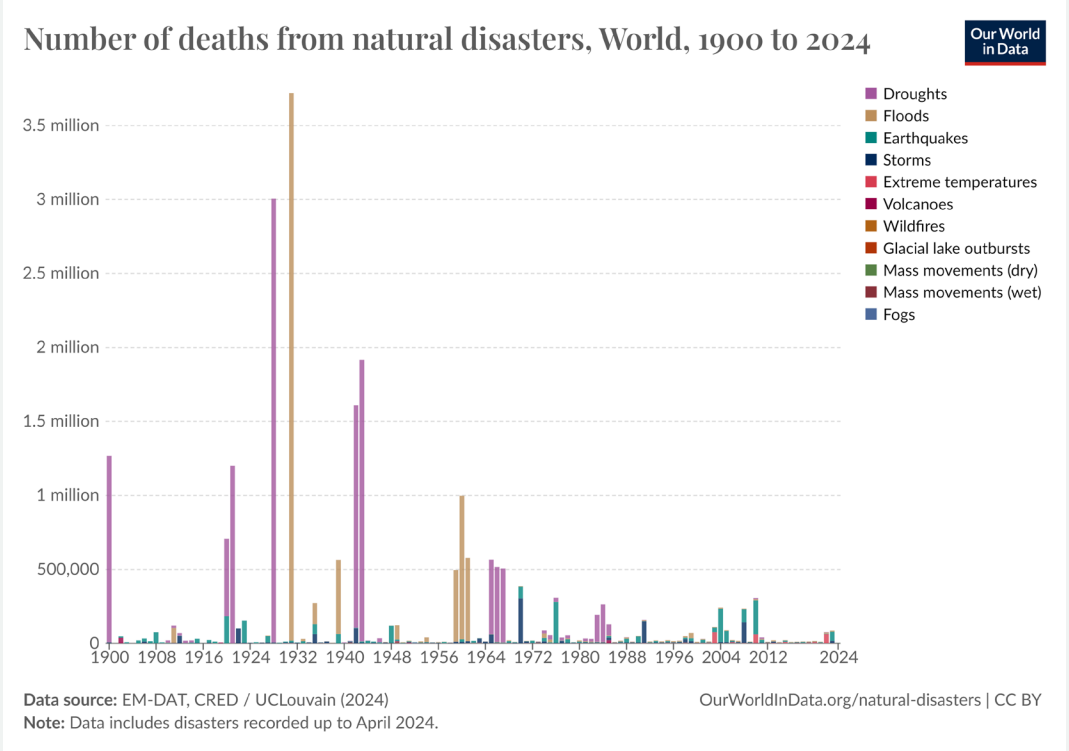
The number of global reported natural disaster events in any given year. This includes those from drought, floods, extreme weather, extreme temperature, landslides, dry mass movements, wildfires, volcanic activity and earthquakes.

Our World
in Data



Socio-economic Impacts of Natural Disasters

Between 1980 and 2024, more than 526 000 people died globally, and lost of US\$ 3.47 trillion.



A significant transformation is required



Wheelchair-friendly overpass in Osaka,

As many cities are struggling with chronic congestion, toxic air pollution, and road accidents, private car ownership is projected to increase by up to **500% outside the OECD regions by 2050**.

(Source: The Future of Urban Mobility Report).

How city designed, how they functioned, how they are managed, and how we live in these cities all determine our future survival.



Source: rediff.com



www.dreamstime.com



Source: www.businessinsider.com

Source: theherald.com.au

Integrated Urban Planning, Design & Development

BUILDING

- **Buildings are the most prominent elements of urban design** - they shape and articulate space by forming the street walls of the city. Well designed buildings and groups of buildings work together to create a sense of place.



PUBLIC SPACE

- **Great public spaces are the living room of the city** - the place where people come together to enjoy the city and each other. Public spaces make high quality life in the city possible - they form the stage and backdrop to the drama of life.



STREETS

- **Streets are the connections between spaces and places, as well as being spaces themselves.** They are defined by their physical dimension and character as well as the size, scale, and character of the buildings that line them.



TRANSPORT

- **Transport systems connect the parts of cities and help shape them, and enable movement throughout the city.** They include road, rail, bicycle, and pedestrian networks, and together form the total movement system of a city.



LANDSCAPE

- **The landscape is the green part of the city that weaves throughout** - in the form of urban parks, street trees, plants, flowers, and water in many forms. The landscape helps define the character and beauty of a city and creates soft, contrasting spaces.



Better Urban Design and Development



Project for an Elevated Park in Chapultepec, Mexico



Landscape Park in Copenhagen



Garden in Sicily, Italy.

- ✓ **Walkability:** A 10-15 minutes walking distance from home and workplace with pedestrian friendly street design.
- ✓ **Connectivity:** An interconnected street grid that dispersed traffic and enhance non-motorize transport.
- ✓ **Mixed-use & Diversity:** Mix of shops, offices and homes with people from different age, income levels and cultures



JAPANESE CASE

Shinjuku Expressway Bus Terminal, Tokyo, Japan

Japan largest bus terminal where more than 1,600 Bus operates every day connecting 300 cities in 39 prefectures across the Japan

Photo source: dreamstime.com

Shinjuku Station, Tokyo



Taxi Station



Main road

www.shutterstock.com · 671173549



Metro station

shutterstock.com · 1121285516

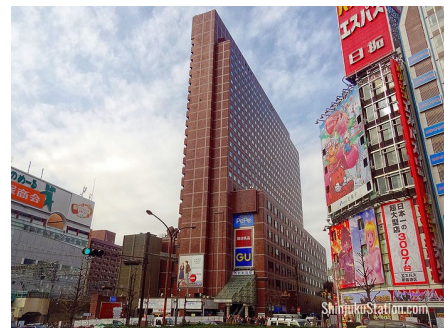


As per Guinness World Records, Shinjuku station used by about **3.59 million people per day (in 2018)** which making it the world's busiest station.



Shinjuku Station opened in 1885 which have a total of **53 platforms**, over 200 exits and many department stores and shopping malls which are well connected to the station.

Integrated land use planning, compact, mixed use and transit-oriented urban development and better public transport system can help to make cities more safe, smart, resilient and sustainable.



Visionary leadership should focus on the following aspects of urban development

- ❑ Citizens and people at the core
- ❑ Integrated urban planning & development
- ❑ Improve safety and security of the city
- ❑ Resourcefulness and resilience
- ❑ Efficient and livable
- ❑ Connected, accessible and coordinated
- ❑ Clean & green environment
- ❑ Equity and inclusiveness
- ❑ Disaster risk reduction

- ❑ Climate adaptation and mitigation
- ❑ Local & sustainable material use
- ❑ Low carbon & green growth development
- ❑ Better public spaces
- ❑ Promote 3R and circular economy
- ❑ Resource conservation
- ❑ Robust and high-quality urban infrastructure
- ❑ Public Private Partnership
- ❑ Transparent and good governance

Economic Benefit of the Smart Urban Design and Development



More compact, connected, and coordinated cities are **worth up to US\$17 trillion in economic savings by 2050** (New Climate Economy Report).

**“No one is
left behind”**

Thank you!