# Smart and Resilient City Implementation: Role of Policy Makers and Planners to Shape Urban Innovation



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# Population Growth and Urban Development

- As per UN, 55% of the world's population currently lives in urban areas, and this figure is projected to rise to 68% by 2050.
- This mean approximately 2.5 billion people will be added to urban populations by the middle of the century.
- The number of people aged 65 years and over is expected <u>2.1</u> billion in 2050.

#### Share of the population living in urban areas, 2023



Note: Because the estimates of city and metropolitan areas are based on national definitions of what constitutes a city or metropolitan area, cross-country comparisons should be made with caution.

#### The world's population is aging

The population of people aged 65 and above is rising in every country, and will continue to do so in the future



## **Urbanization in Asia & Pacific**

- Almost 95 % of urban expansion in the next decades will take place in the developing countries.
- By 2050, the urban population in Asia is expected to grow by 50% an additional 1.2 billion people.
- About 44 million people are added to Asia's urban population every year.



#### Ten largest cities in the world in 2024

### These Will Be The World's Next Megacities

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



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

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### The 10 Fastest-Developing Cities on Earth

Fastest-growing major cities by 2033, according to the Savills Growth Hubs Index



Based on the economy's future strength, the population's future dependency ratio and the growth of personal wealth, the economy and population/migration Source: Savills Resilient Cities Index

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## **Motorization**

By 2050, global transport demand is expected to increase by 2.6 times (ITF, 2021). Almost 95 % of urban expansion in the next decades will take place in the developing countries.

At the same time, the average time an urban resident spends in traffic congestion is projected to be three times compare today. Asian countries lose appx. 3 - 4 % of their GDP due to the costs associated with Air pollution, including lost time and fuel consumption.



### Many developing cities face similar challenges



Mumbai, India

Kuala Lumpur, Malaysia

Phnom Penh, Cambodia

Jakarta, Indonesia

The private car ownership is projected to increase up to 500% outside the OECD by 2050 (New Climate Economy Report ,2018). At the same time, 1.37 billion urban residents lack efficient access to urban public transit in Asia (Asian Transport Outlook,2022).



### **Current scenario of CO2 emissions**

During 2010-2021, Asia experienced the highest growth in transport CO2 emissions among regions,

Achieving low carbon transport pathways that limit global warming to 1.5°C will require a 59% reduction in transportrelated CO2 emissions by 2050, compared to 2020 levels.

**Source:** SLOSLOCAT-Transport-Climate-and-Sustainability-Global-Status-Report-2025



### Impact of Air Pollution & Road Accidents

- WHO data show that nearly 99% of the global population breathes air that exceeds WHO air quality limits, posing a threat to their health.
- A study reveals that air pollution kills more than 10 million people annually that cost world economy estimated US\$ 5.11 trillion in welfare losses (WHO, 2018).



Cleaning the air can avoid 650,000 premature deaths annually and save \$1 trillion in annual economic damage across 63 major cities by 2040 (Breathing Life into Cities, 2025).



- Road traffic crashes result in approximately 1.35 million death globally that cost global economy approximately \$1.8 trillion.
- 60% of total road accident occur in the Asia-Pacific region where road traffic crashes cost most countries around 3% of their GDP.

### Asia and the Pacific costal cities

As most of the megacities in Asia and the Pacific are located along the coastline, they are at high risk of global warming and sea levels rise.
Over 800 million people living in 570 coastal cities will be at risk of sea-level rise and coastal flooding (C40, 2019).

The key question is whether policymakers, urban planners, and communities are adequately prepared to manage the escalating risks.



Map of Asia showing the risk of populated coastal cities due to sea-level rise (Fuchs, 2010; Updated by Pintu Prusty)

# Climate Change and Global Warming

If sea levels rise by two meters, approximately 100 million
people in East Asia, and over
50 million people in South and
Southeast Asia could be
exposed to severe flooding.

- In a business-as-usual scenario, the global economic losses from coastal flooding may exceed **US\$14.2 trillion by the** end of this century (Young et al, 2020).



# **Climate hazards are emerging and intensifying**

Climate change may cause up to 77 million additional urban dwellers to live in poverty by 2030, and cities globally may lose \$314 billion annually due to a lack of serious measures to make them more resilient.

Between 2000 and 2019, nearly half of all global heatrelated deaths occurred in Asia and the Pacific. With rising temperatures and shrinking green spaces, risks are growing (https://news.un.org/en/story/2025/04/1162 451)



# Costs for climate disasters to reach \$145 billion in 2025

Natural catastrophic in 2024; Image source : Swiss Re Institute



### **Climate Change & Disasters impacting on Urban Infrastructures and Built Environment**

#### Extreme weathers and roads



Flooding in urban areas

source: Urban flooding in Indonesia, May 3, 2024. /CF





source: climatechange.novascotia.ca

## Why smart city is important?

"Smart city is an innovative city that uses ICTs and other means to improve quality of life, efficiency of urban operation and services, and competitiveness while ensuring that it meets the needs of present and future generations with respect to economic, social, environmental as well as cultural aspects".

International Telecommunication Union of the United Nations

### Integrated urban design & development

SPACE

PUBLIC

BUILDING

most prominent elements of street walls of buildings and groups of

Buildings are the



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

STREETS



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

**TRANSPORT** 



### The landscape is the green part of the city that throughout - in many forms. The landscape helps define the character and beauty of a city and creates soft. contrasting spaces.

ANDSCAPE



### **Smart City: Key Recommendations**

<u>Citizen-Centric Approach:</u> Prioritize the citizens, address real community needs to improve quality of life.

**Inclusive design:** Design for all especially vulnerable groups.

**Technology & Innovation:** Utilize digital technology and solutions to improve urban services.

**Inclusiveness & Equity:** Ensure access to opportunities, services, and digital tools for all.

**Data-Driven Governance:** Promote evidence-based decision-making, transparency, and accountability.

Enhance Urban Resilience: Integrate climate adaptation, disaster risk reduction, and low-carbon technologies.

Public-Private-People Partnerships (4P):

Encourage collaboration among governments, businesses, academia, and communities.

**Scalability & Replicability:** Design solutions that are modular and adaptable to different city sizes and contexts.

**Build Digital Literacy and Capacity:** Provide training for citizens to engage effectively with smart city tools and services.

**Strengthen Cybersecurity:** Establish strong safeguards to protect citizens' data and maintain public trust.

<u>Sustainability & Enviroment Protection:</u> Integrate sustainability into all aspects of planning, design, and development processes.

# **Thank You!**

## **Contact at**

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