

CREATING LIVABLE ASIAN CITIES

BOOK LAUNCH

Edited by

BAMBANG SUSANTONO

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(Top from left to right) Bambang Susantono, Jingmin Huang, and Jamie Leather
(Bottom from left to right) Yongping Zhai; Hisaka Kimura; and Neeta Pokhrel



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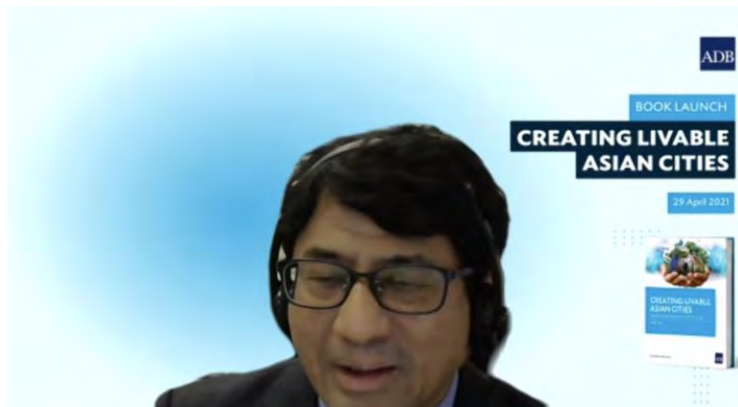
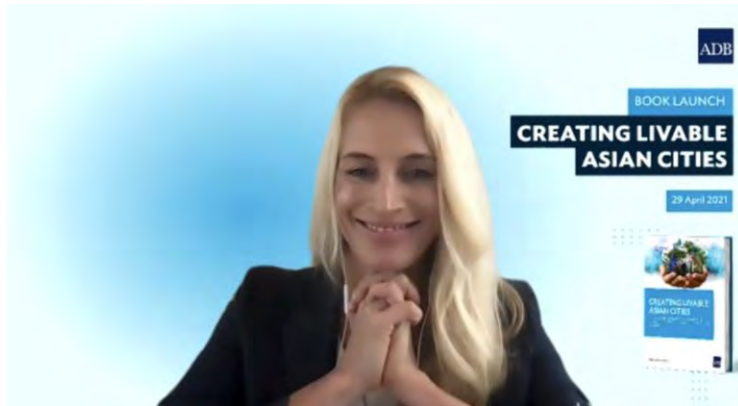
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(Top from left to right) Susann Roth; Stefanos Fotiou; and Bernadia Irawati Tjandradewi
(Bottom from left to right) Atsushi Koresawa; Maria Vassilakou; and Robert Guild



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SESSION 1 Presenters



JINGMIN HUANG

Director, Urban Development,
Water Supply & Sanitation
Division, PARD



JAMIE LEATHER

Chief of Transport
Sector Group, SDCC



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Chief of Energy
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1. Smart and Inclusive Planning

1A. An Analytical Framework and Guidance for Smart City Planning

Seok Yong Yoon, Hong Soo Lee, Thilo Zelt, Ulf Narloch, and Elliot Aguirre

1B. Housing Affordability and Adequacy in Developing Asia

Matthias Helble and Kwan Ok Lee

1C. Earth Observation for Planning and Resilience of Livable Cities

Paolo Manunta, Virinder Sharma, and Jiang Yi

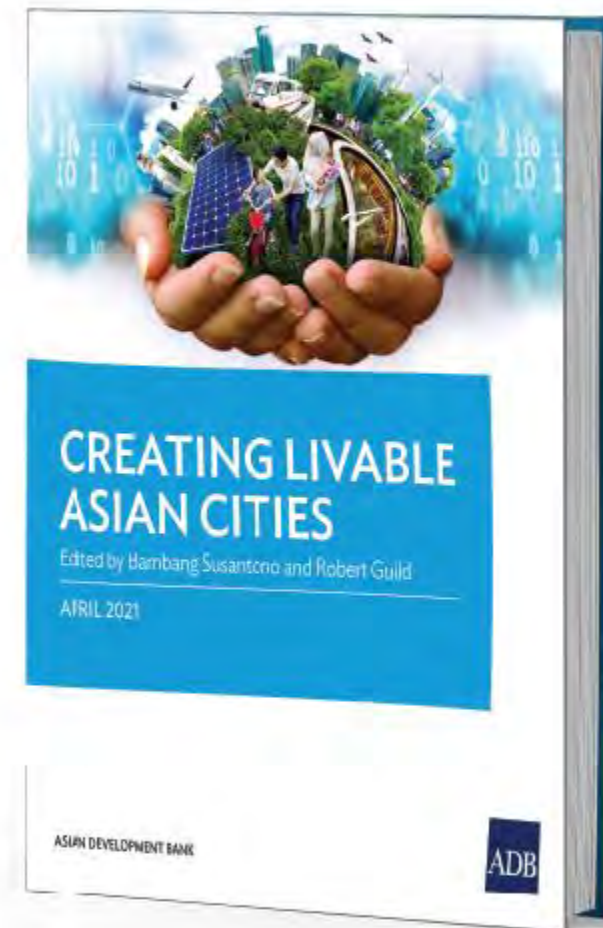
1D. Gender-Responsive and Inclusive Urban Planning

Gillian Brown, Prabhjot Khan, and Samantha Hung

1E. Urban Synergies Through Coordinated City Cluster Governance

Stefan Rau

Jingmin Huang
Director of PAUW, PARD



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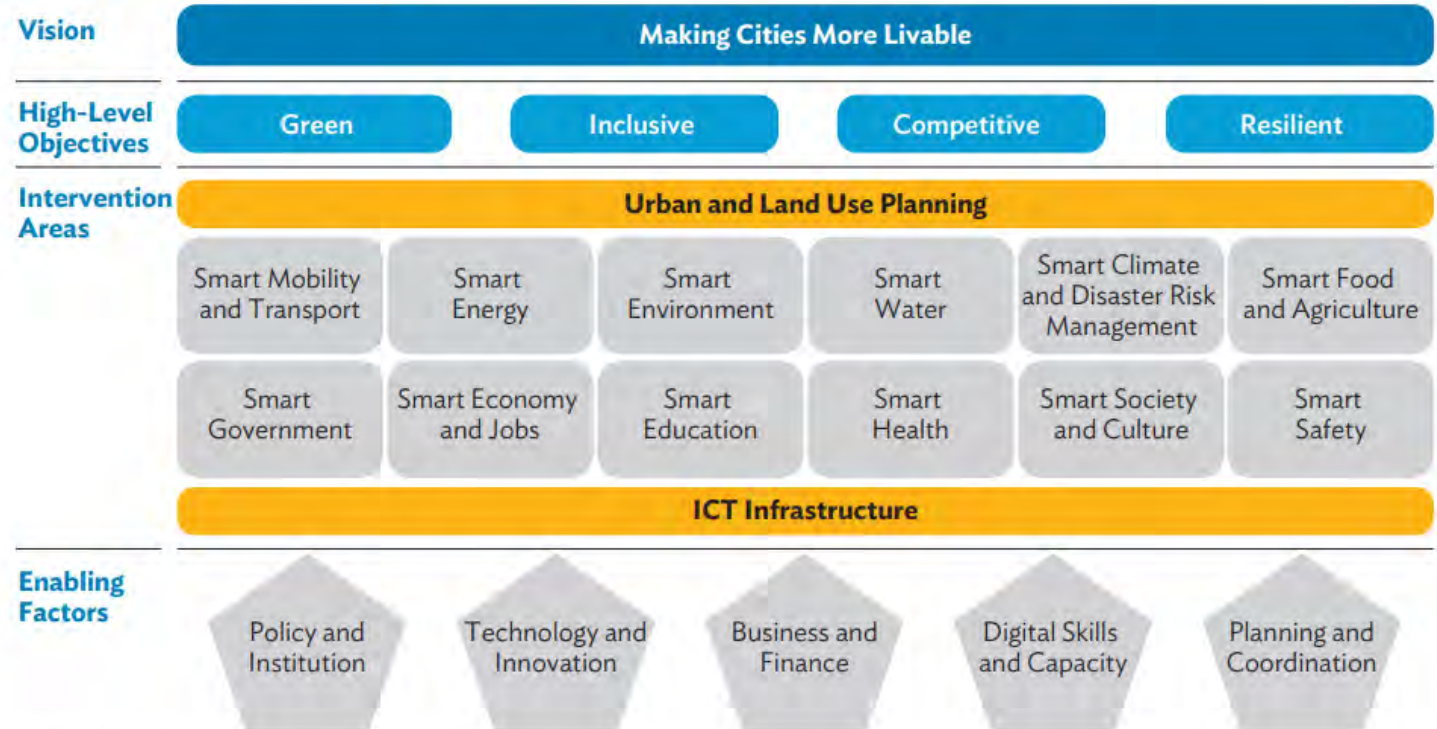


Smart City Planning: Analytical Framework and Guidance (1A)

- Analytical framework to assess, design, and implement a smart city concept in specific contexts in Asia and the Pacific

Smart city planning

Figure 10: Proposed Smart City Analytical Framework



ICT = information and communication technology.

Source: Asian Development Bank.

Inclusive City Planning: Affordable Housing and Adequacy (1B) and Gender Responsive Planning (1D)

- Ideas on how to pursue affordable and adequate housing in urban planning;
- Mainstream gender in urban planning through applying **PALMS** framework: **P**articipation, **A**ccess to services and facilities, **L**ivability, **M**obility, and **S**afety and Security



Source: Asian Development Bank.

How to Achieve: through Earth Observation (IC) and City Cluster Governance (1E)

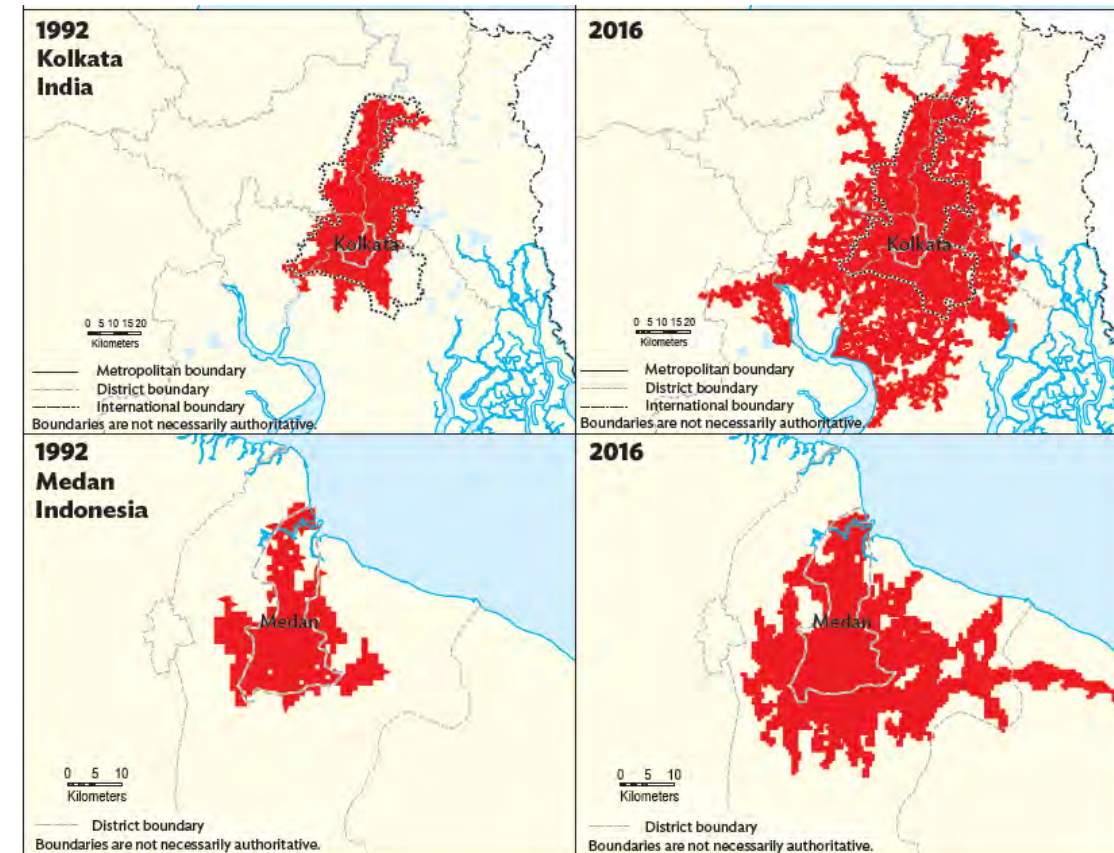
- Earth observation (EO) as a powerful tool for resilience planning and strategic decisions on project locations, design and investments across multiple scales and sectors (as demonstrated in SPADE)
- How to pursue more proactive and coordinated governance for city clusters



City Clusters with Populations Above 10 Million in DMCs, 2016

The numbers indicate rankings of the city clusters by population in 2016. Source: Asian Development Bank. 2019. A

Natural City Map, 1992 & 2016



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2. Sustainable Transport

2A. Transport and Urban Form

James Leather

2B. E-mobility: Transition to Sustainable Transport

Ki-Joon Kim and Ritu Mishra

2C. Intelligent Transport Systems for Livable Asian Cities

Susan Lim and Gloria Gerilla-Teknomo

2D. Mobility as a Service

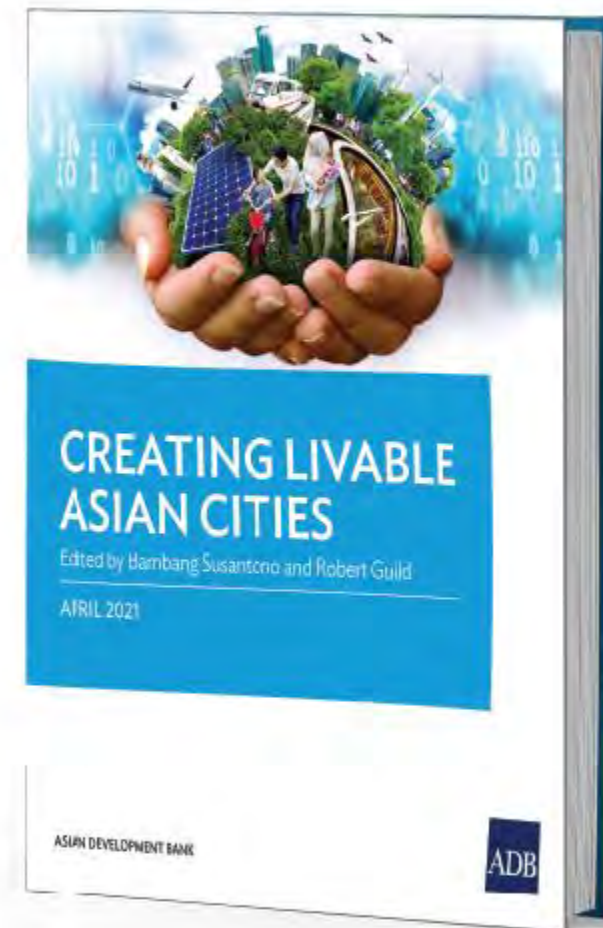
Robert Valkovic, Lidia Signor, Gayang Ho, and Clémence Morlet

2E. Road Safety in Asian Cities

Michael Anyala and Charles Melhuish

Jamie Leather

Chief of Transport Sector Group, SDCC

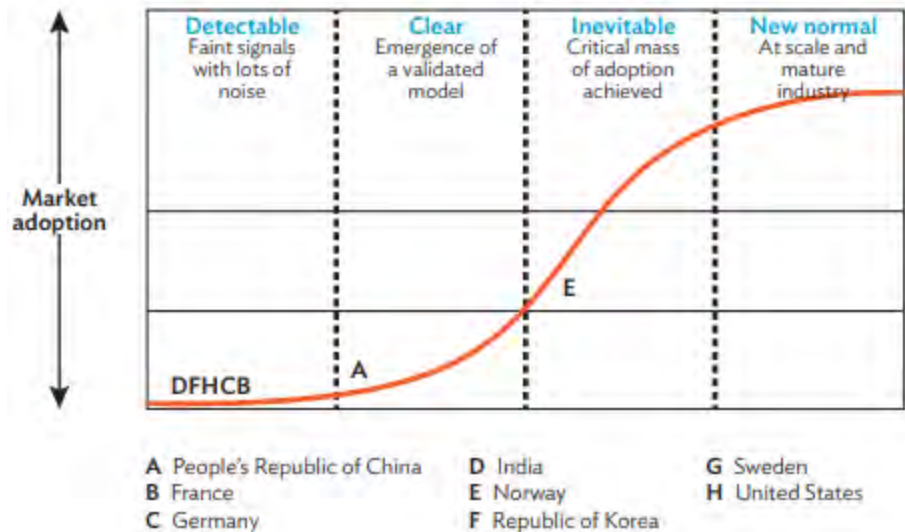


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2B E-mobility: Transition to Sustainable Transport

The electrification of transport is no longer a question of “should or should not”—it is an ongoing trend.



Asian leading in many aspects

- 1/3 of private cars (3 million cars worldwide in 2017)
- 2- and 3-wheelers (230 million 2-wheelers in PRC 2016)
- 99% of worldwide e-buses in PRC (385,000 in 2018)

Electric Vehicle Potential	Country
Low environmental impact	India
Low to moderate environmental impact	Indonesia, Kazakhstan, Mongolia, Pakistan, Philippines, Sri Lanka, Thailand, Viet Nam
Moderate environmental impact	Afghanistan, Armenia, Azerbaijan, Bangladesh, Bhutan, Cambodia, Kyrgyz Republic, Malaysia, PRC, Turkmenistan, Uzbekistan
Moderate to high environmental impact	Myanmar, Nepal
High environmental impact	Georgia, Lao PDR, Tajikistan

GHG = greenhouse gas, Lao PDR = Lao People's Democratic Republic, PRC = People's Republic of China.

2C Intelligent Transport Systems (ITS) for Livable Asian Cities



ITS apply information and communications technologies to improve safety, efficiency, and convenience for all users of the transport network

STEP 1

Develop ITS objectives

STEP 2

Identify stakeholders and establish the stakeholder working group

STEP 3

Develop regional ITS architecture with customized service packages

STEP 4

Allocate customized service packages to ITS Projects

STEP 5

Validate through the stakeholder working group

STEP 6

Publish ITS conceptual design

Integrated systems

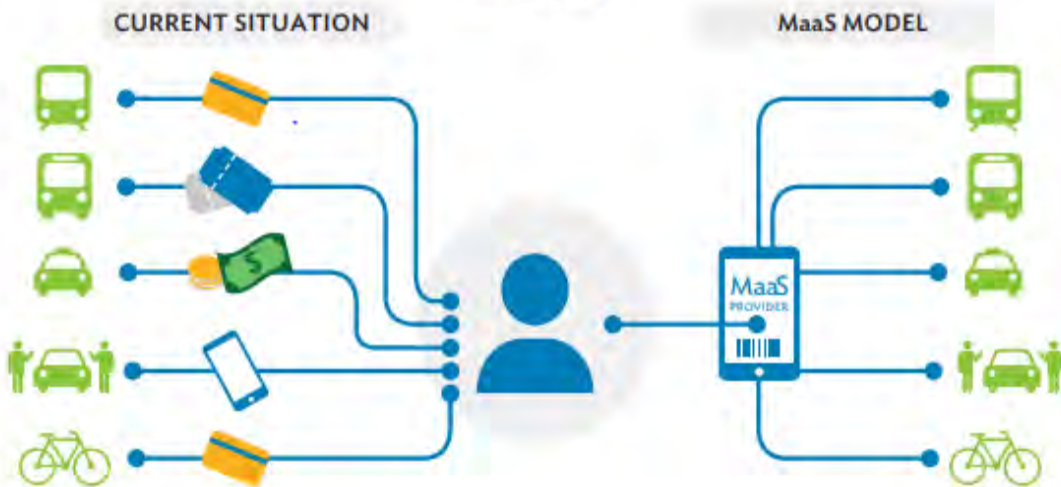
- Real-time traffic monitoring system
- Big Data Service Center
- Multimodal Transportation Systems Management
- Public transport management
- Parking management system
- Transport hub information management system
- Multimodal travel information service system
- Traffic and transportation law enforcement
- Maintenance and management system
- Traffic security and emergency management system
- Traffic Management Center
- Fleet and Freight Management Cent



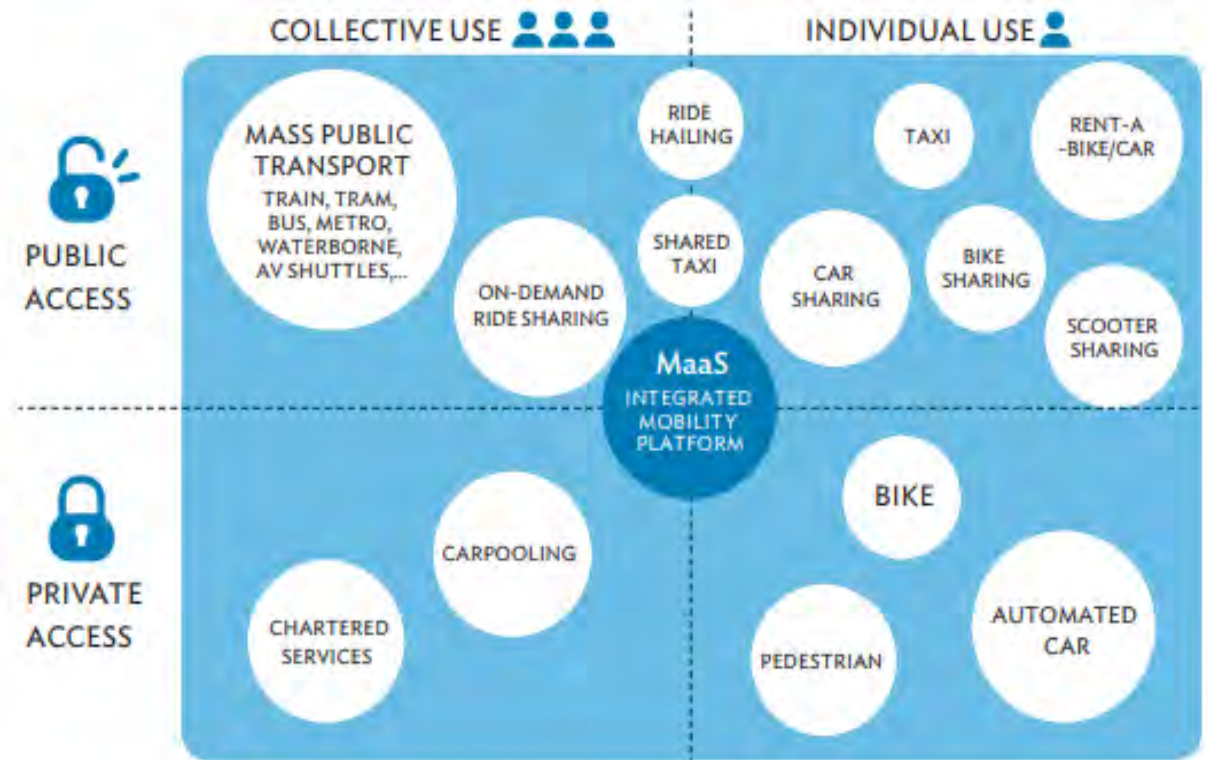
2D: Mobility as a Service (MaaS)

MaaS is a multimodal framework that enables optimum and people-centered transport choices, based on integrated multimodal information, booking, ticketing, and payment functions that make it easier to satisfy people's needs

MaaS – combining urban mobility, access and information
Urban Trips



Urban mobility services



2E: Road Safety in Asian Cities

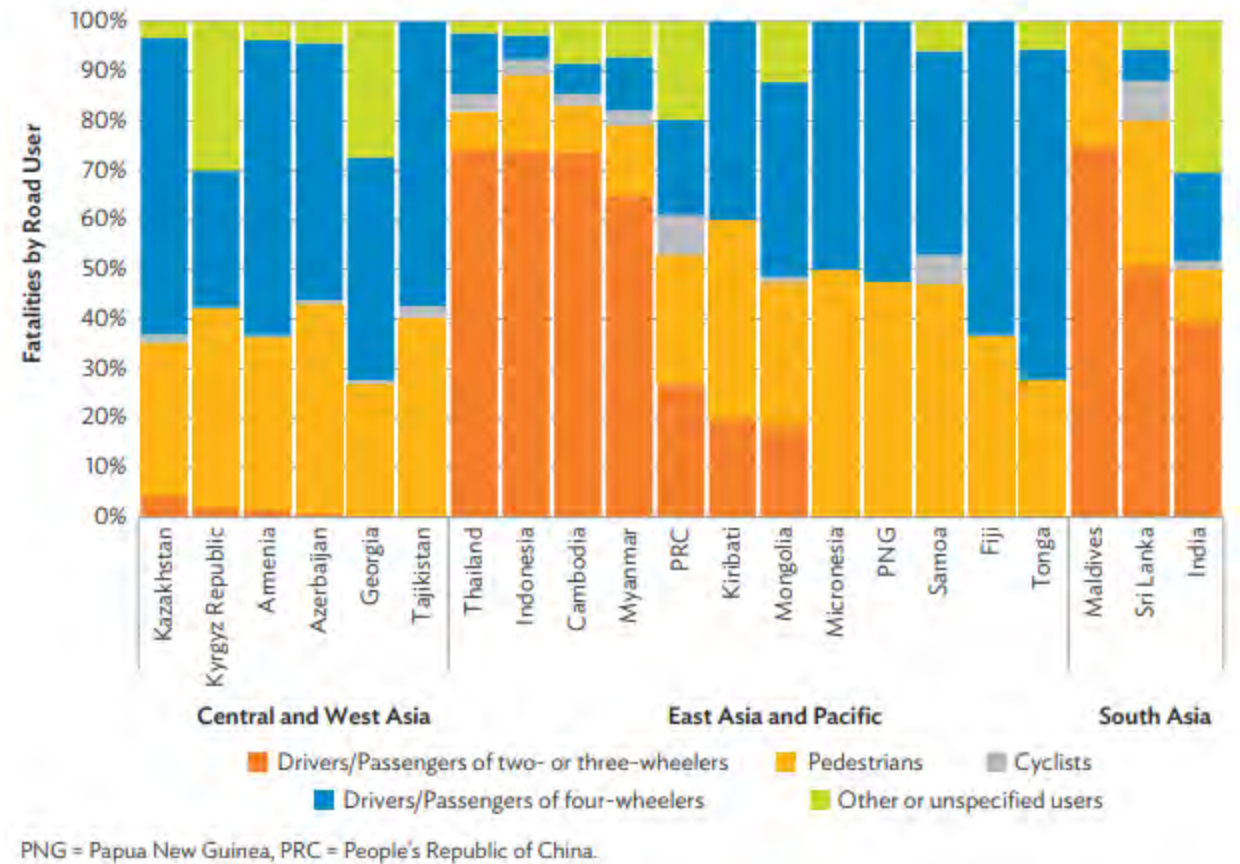
Safe system approach

- Road safety management
- Safer roads
- Safer vehicles
- Safer road users
- Post-crash response

Actions required

- Speed reduction
- Seatbelt wearing
- Child restraints
- Motorcycle helmets
- Alcohol and drugs
- infrastructure

Road crash fatalities by type



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3. Sustainable Energy

3A. Sustainable Energy Solutions for Livable Cities

David Elzinga and Okju Jeong

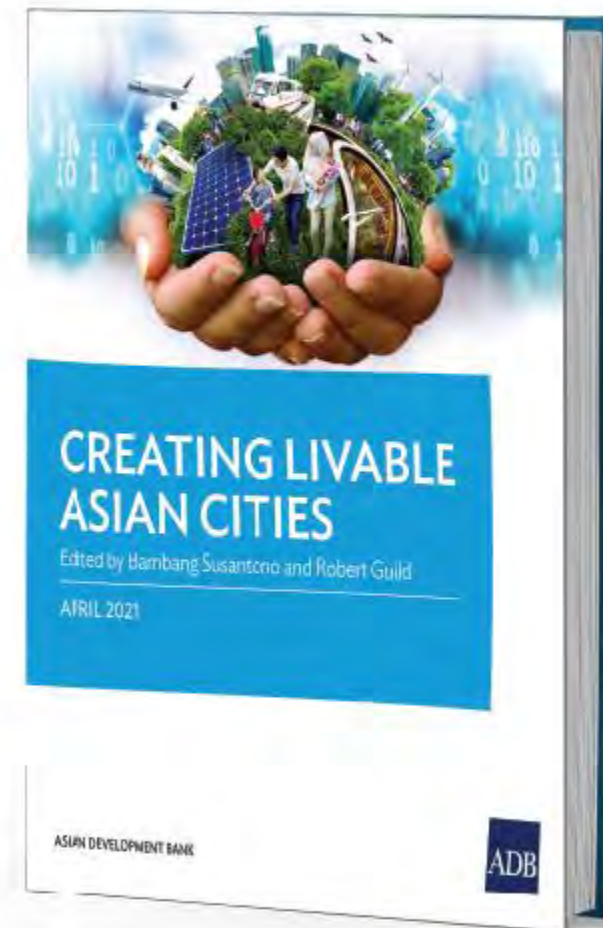
3B. The Role of Microgrids in 21st Century Urban Development

Susumu Yoneoka and Dan Millison

3C. Waste, Waste-to-Energy, and the Circular Economy

Stephen Peters and Keshan Samarasinghe

Yongping Zhai
Chief of Energy Sector Group, SDCC

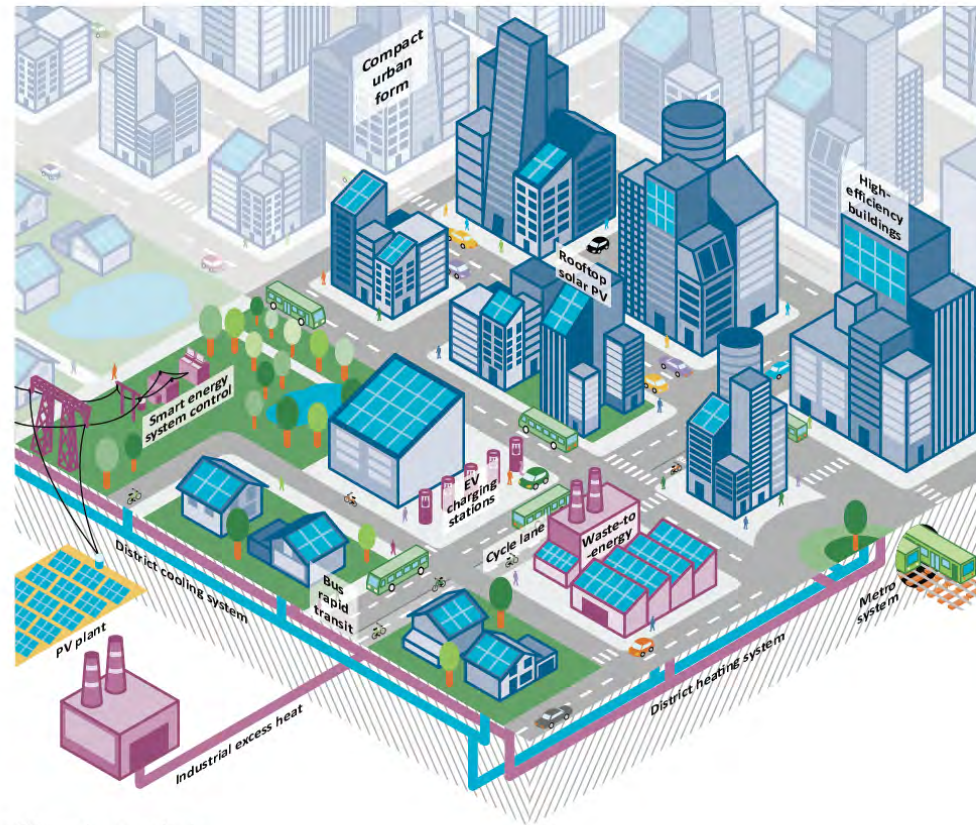


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3-A: Sustainable Energy Solutions for Livable Cities

Figure 1: Key Elements of Sustainable Urban Energy Systems

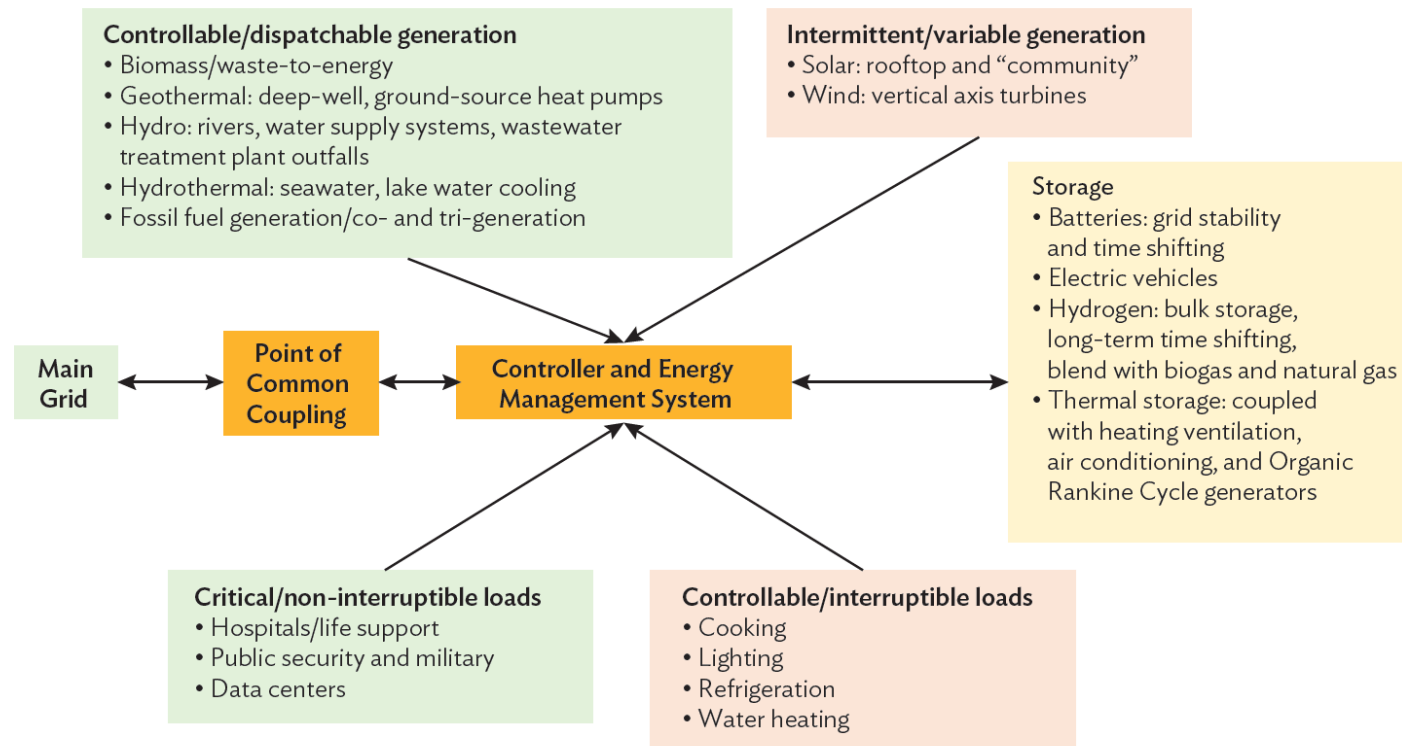


EV = electric vehicle, PV = photovoltaic.

Source: International Energy Agency. *Energy Technology Perspectives 2016*. Paris. <https://www.iea.org/reports/energy-technology-perspectives-2016>.

3-B: Role of Microgrids in 21st Century Urban Development

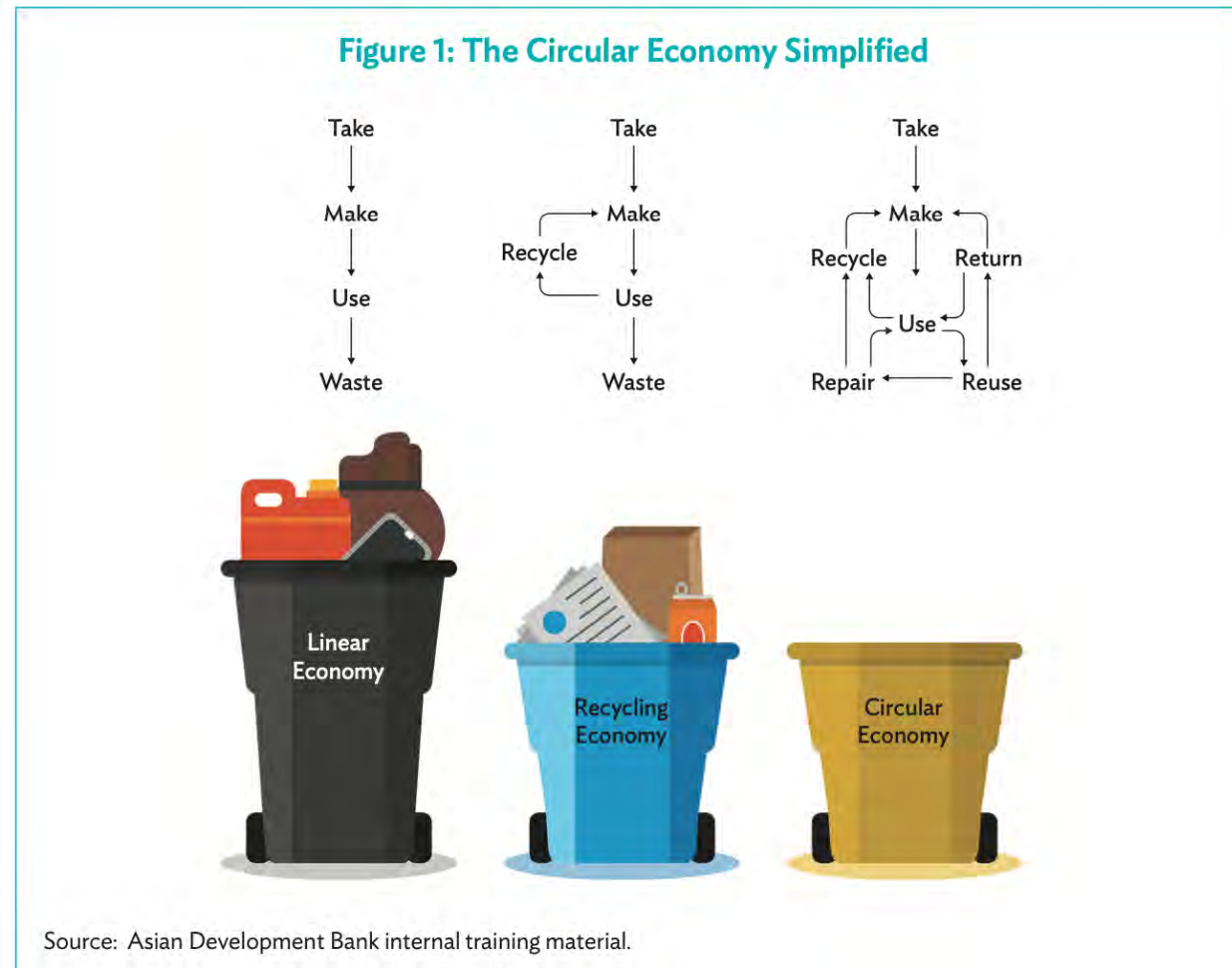
Figure 1: Urban Microgrid Conceptual Design and Key Components



Source: ENEA Consulting. 2017. *Urban Microgrids: Overview, Challenges, and Opportunities*. https://www.enea-consulting.com/wp-content/uploads/2017/02/Urban-Microgrids-Public-report_VF3.pdf.

3-C:

Waste, Waste to Energy and the Circular Economy



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4. Financial Innovation

4A. Advancing Financial Sustainability of Asian Cities

Manoj Sharma, Sarah Hui Li, and Renard Teipelke

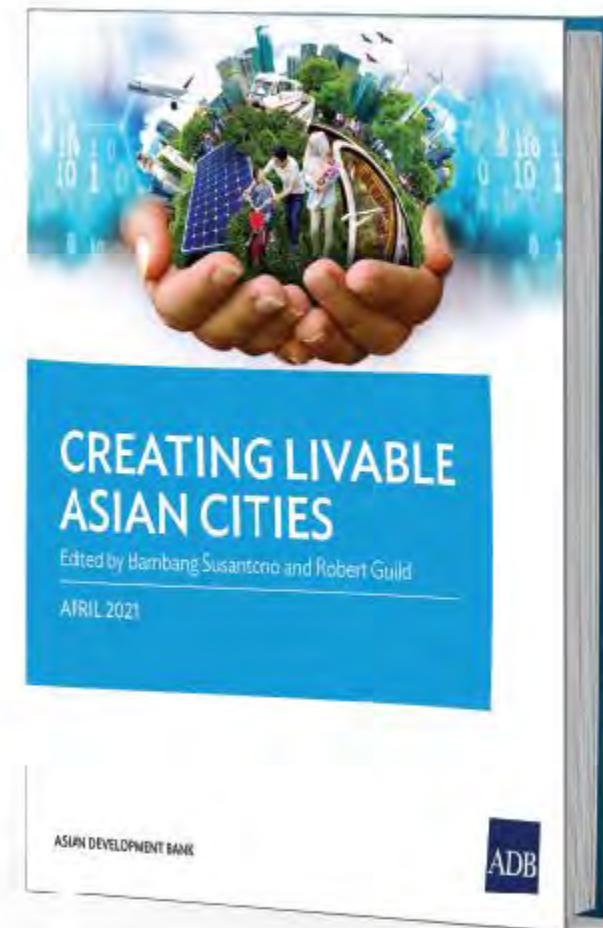
4B. Urban Housing Bond Market Development in Asia

Heejoon Jeong, Bambang Susantono, Donghyun Park, and Shu Tian

4C. Enhancing Infrastructure Investment through Value Capture

Abdul Abiad, Kathleen Farrin, Chris Hale, Matthias Helble, and Grant Stillman

Hisaka Kimura
Advisor, PSOD



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A: Advancing the Financial Sustainability of Asian Cities



Photo: PT. Rikaarta

Key Challenges in Municipal Financial Management



**Lack of
transparency**



**Limited local tax
revenues**



**Underutilized revenue
sources**



**Inefficient realization
of tariff and user
charges**



**Weak Estimation,
Budgeting, and
Budgetary Control
Systems**



**Quantitative Spending
Focus instead of
Effectiveness Focus**

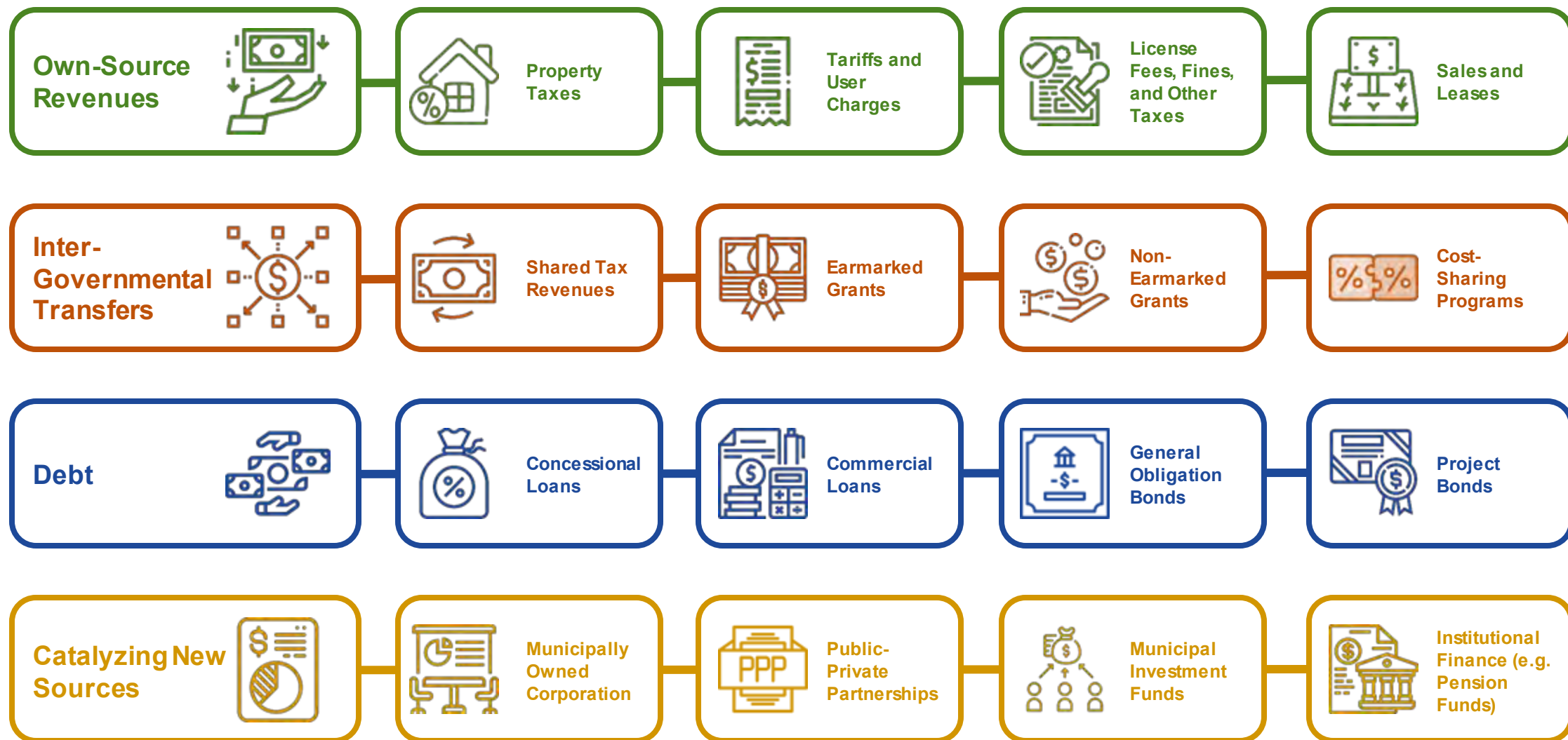


**Lack of Resource
Allocation Mechanisms
& Prioritization**



**Deficient Tendering,
Procurement, &
Accounting Systems**

Municipal Finance Options



Examples City-Level Public-Private Partnerships



- **Manila (Philippines) – Light rail transit extension project:** Estimated to reduce 40,000 tons of CO2 emissions per year
- **Jakarta (Indonesia) – Unilever Waste Bank Facilities:** Improving solid waste management capacities of 17 target cities
- **Kolkata (India) – Shukhobrishti Housing Project:** Caters housing needs of over 100,000 low-income and middle-income citizens through a cross-subsidy approach



B: Urban Housing Bond Market Development in Asia



Photo: PT MRT Jakarta

Urban Housing Bond Market Development in Asia



- Housing finance includes both the finance for housing supply as well as the mortgage market that enables consumers to borrow.
- A housing bond market brings about fundamental changes to structure of housing finance and is a pillar of the bond market that plays a role in financial deepening and economic growth.

U.S. and Europe

- U.S. mortgage-backed securities market experiences provided the knowledge to the economies which try to foster housing bond markets.
- Europe have been developing through the covered bonds – a product based primarily on the issuer's credit quality and secondly on the nature of mortgage collateral.

Asia

- A diverse selection of examples from Republic of Korea, Singapore, Thailand, Philippines, Malaysia, Indonesia, Hong Kong and the People's Republic of China.
- Including inspiring models achieving the goals through housing agency bonds.

C: Enhancing Infrastructure Investment through Value Capture



Photo: PT MRT Jakarta



Effect of public transportation on property values



Within the Catchment Area

30% premium
for commercial properties

5% premium
for residential properties

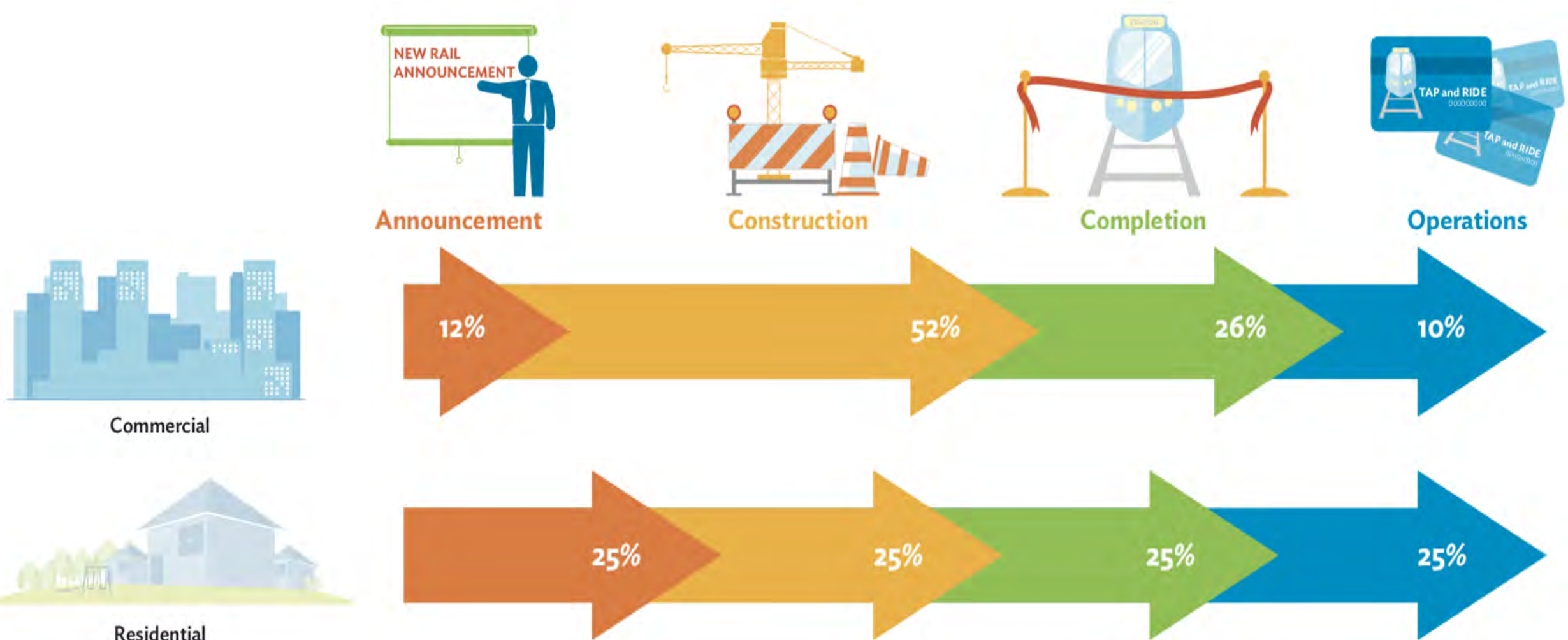
Beyond the Catchment Area

15% decline
in commercial property values
for each additional km.
of distance from a mass
rapid transit station

8% decline
in residential property values
for each additional km.
of distance from a mass
rapid transit station

Source: Abiad et al. (forthcoming).

Impact on property values starts well before project completion



Source: Abiad and Adona (forthcoming).

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5. Resilience and Rejuvenation

5A. Increasing Urban Resilience through Nature-Based Solutions and Total Asset Management

Lara Arjan, Stefan Rau, and Sonia Chand Sandhu

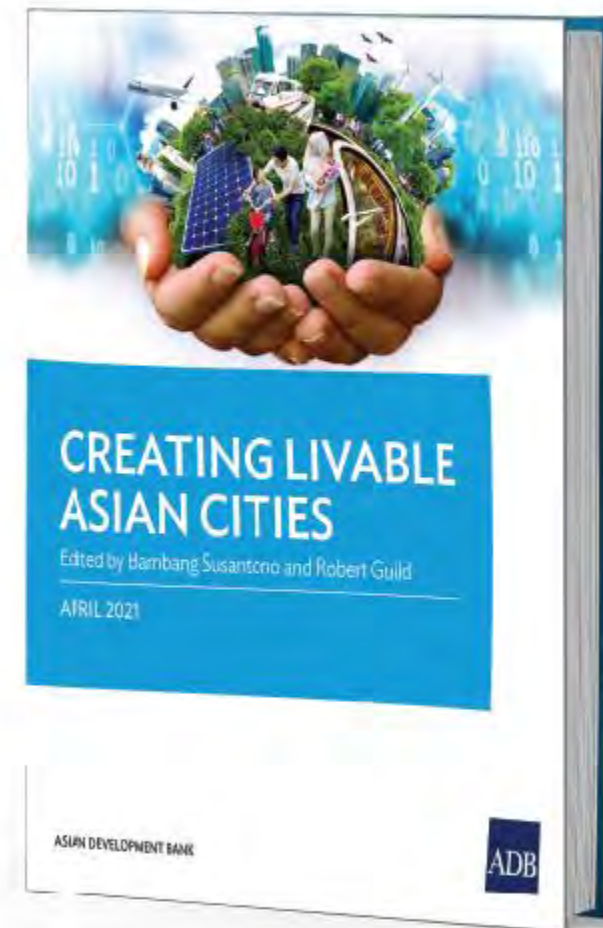
5B. Building Disaster Resilience in Cities in Asia and the Pacific

Thomas Kessler and Arup Chatterjee

5C. Post-Pandemic Response, Recovery, and Rejuvenation

Alexandra Pamela Chiang, David Elzinga, Hong Soo Lee, and Geoffrey Wilson

Neeta Pokhrel
Chief of Water Sector Group, SDCC



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5A. Increasing Urban Resilience through Nature-Based Solutions and Total Asset Management



Nature-Based Solutions (NBS) are pivotal actions for climate resilience and biodiversity and health.

They improve local environments by

- Improving health of communities
- Creating new jobs, livelihood resilience, and reducing poverty

NBS were explored at different scales

- Small-scale neighborhood intervention: WASH services in slum areas, highly participatory approach, rain gardens, green roofs
- Medium-scale: sponge and green city, wetlands and green parks as stormwater retention ponds discharging through bioswales
- Large-scale: reforestation, floodplain protection, coastal protection

Total Asset Management

- Considering natural assets within the asset management processes
- A practical way forward for NBS integration



5B. Building Disaster Resilience in Cities in Asia and the Pacific



BUILDING RESILIENCE

Physical

Eco-based

Social and Institutional

Financial

INTEGRATED DISASTER RISK MANAGEMENT

Disaster Risk Informed Decisions

RISK QUANTIFICATION

Opensource stochastic multi-hazard probability modeling tools accessible for the public sector

RISK PROFILES

Analyze the socio-economic impact of disaster risk considering future exposure growth and climate change

COST-BENEFIT ANALYSIS

Identify economically most efficient priority measures and investments to manage disaster risks

Disaster Risk Management Measures

DISASTER RISK REDUCTION

Proactive approach to encourage investments in developments that are sensitive to the risks

RECOVERY AND BUILD BACK BETTER

Incorporate current and future disaster and climate risk in planning, design, and implementation of recovery and reconstruction

DISASTER RISK FINANCING

Quickly provide needed liquidity when disaster strikes or predefined parametric thresholds are breached

Leveraging Technology and Innovation

New data sources, improved data analysis, and more effective communication tools

Enhancement of the Enabling Environment

To successfully be able to implement disaster risk reduction and financing solutions

5C.Post-Pandemic Response, Recovery, and Rejuvenation

COVID-19

A new normal will emerge

New ways of planning and operations.

Need for a cross-sector and thematic approach to tackle shared challenges, particularly economic recovery.

Investments in

- *More resilient systems,*
- *Decentralized solutions,*
- *Greener solutions and nature-based solutions,*
- *Digital and technological transformation of sector service providers,*
- *Facilitate innovative technologies.*

How to build resilience and create benefits for the most affected poor and vulnerable people.

URBAN DEVELOPMENT

- Seen more public health and sanitation investment
- Seen more incentives to resolve environmental problems
- Urban services and infrastructure need to be improved thru integrated urban planning and management

TRANSPORT

- Transport spread of the virus
- Transport enabled essential workers to get to work
- Transport will support the needs of the population throughout the different stages of recovery

WATER & SANITATION

- Priority : Universal access to water and sanitation
- Take advantage of the increased importance of WASH

ENERGY

- Continue to invest in and accelerate sustainable energy
- Improve energy sector resilience and security
- Accelerate energy access to the poor and vulnerable groups, particularly for clean cooking

Thank you!



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