MLIT
Ministry of Land, Infrastructure, Transport and Tourism

Japanese Experience for Building Smart and Resilient Cities and Communities

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Importance of Resilience in Japan and Asia and Pacific Countries

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- Climate change is causing more and more severe disasters.
- Improving resilience is an increasingly important global issue.
- Japan and Asia and Pacific nations have been working together on various initiatives for resilience.

Pasig-Marikina river channel improvement project, the Philippines

Erosion control dam in Mount Merapi, Indonesia

Today's Topic

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- Japan's smart city effort
- Smart JAMP

History of Urban Development in Japan

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	1960's~ Economic growth	1980's~ Stable growth	2000's~ Maturity
Issue	• Shortage of housing • Infrastructure (electricity, water etc.) shortage • Environmental issues (eg: water,air quality)	• Need for high quality living environment • Worsening of traffic congestion • Changes in land use patterns due to transformation of industrial structure • Increased environmental awareness	• Need for low environmental burden city planning • Decreasing social vitality due to falling birthrates, ageing society, and decreasing population • Utilizing deteriorating housing stock
Solution	1. Decentralize urban functions through "new-town" development in coordination with transportation system 2. Mass supply of housing 3. Legislation in order to realize urban policy	4. Improved housing performance standards 5. Expansion of traffic infrastructure networks 6. Redevelopment of existing city areas 7. Resource Circulation Efforts	8. Realization of Smart Cities 9. Compact City Plus Network 10. Rejuvenation of housing stock 11. Landscape protection

Characteristics of Smart City in JAPAN

Source：the materials of the 3rd ASEAN-Japan High-Level Meeting on Smart Cities Network,

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Eco-Cities
(Environmentally Symbiotic Cities)

TOD
(Transit-Oriented Development)

Building Disaster-Resilient Cities
(Resilient Cities)

Golden Rules

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- It is necessary to **maintain diversification of each** city by adapting to various circumstances and requirements which the city has.

- It is necessary to **involve various types of participants** from local governments, industries & companies, academics and citizens.

- It is necessary to **ensure openness and transparency**. At the same time, it is important for a wide range of people from various sectors and organizations to make reliable data freely available. Moreover, it is required to establish confidence in privacy, data protection, intellectual property rights and data security.

Smart City Projects in Japan

Source：the materials of the 3rd ASEAN-Japan High-Level Meeting on Smart Cities Network,

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FY2017-2020

about 200 Demonstration projects in about 160 areas were done

Implementation of City OS projects are in progress in 23 areas (at September 2020)

Implementation 100 areas by FY2025

Hokuriku region
7 areas, 11 projects

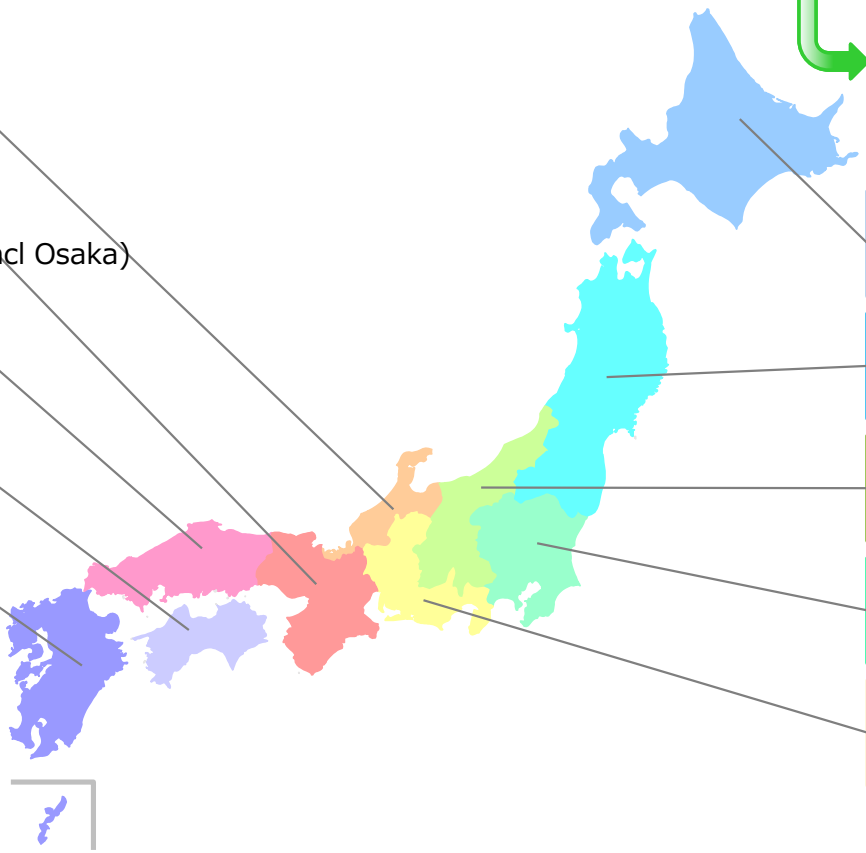
Kansai region*
26 areas, 29 projects

(*incl Osaka)

Chugoku region
17 areas, 19 projects

Shikoku Region
10 areas, 12 projects

Kyushu region
16 areas, 16 projects



Hokkaido region
9 areas, 12 projects

Tohoku region
7 areas, 10 projects

Shin-etsu region
5 areas, 7 projects

Kanto region**
44 areas, 58 projects

(**incl Tokyo)

Tokai region
19 areas, 26 projects

(Cabinet Office)

Examples of DX Initiatives in Resilience in Japan

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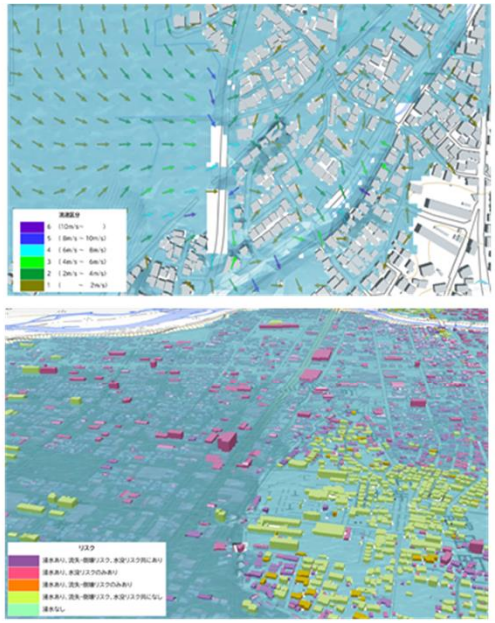
- DX can solve problems in all phases: normal times, pre-disaster, and post-disaster.

Normal times [Sophistication of evacuation planning by visualizing disaster risks]

3D model of the area around the Yahagi River (PLATEAU)



3D models allow simulation of water flow around buildings and the flooding/collapsing risk of each building.

Used in disaster preparedness discussions to examine advanced measures

Examples of DX Initiatives in Resilience in Japan

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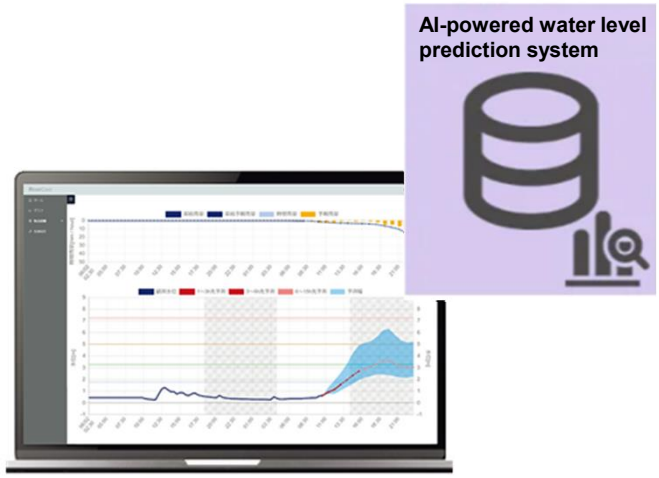
Pre-disaster [Speeding up flood response and evacuation with AI]

River water level gauge

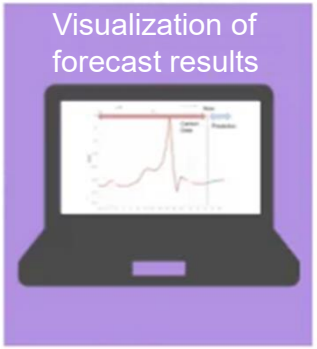
River level data

River rainfall data

Weather/ forecast data



AI-powered water level prediction system



Water level gauges, rain gauges, and inundation sensors are installed in rivers to acquire real-time data

AI water level prediction at each measuring point based on the acquired data and forecast rainfall

Early grasp of the situation
Evacuation preparations

Examples of DX Initiatives in Resilience in Japan

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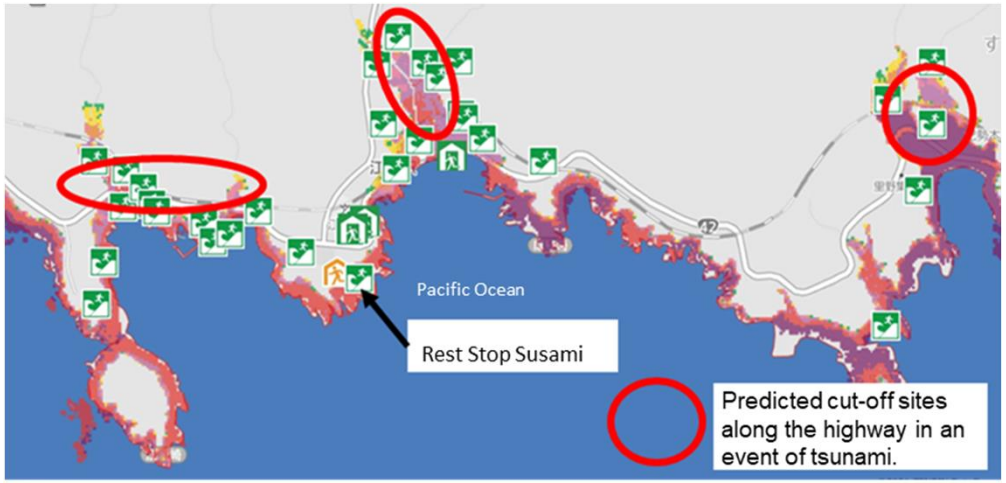
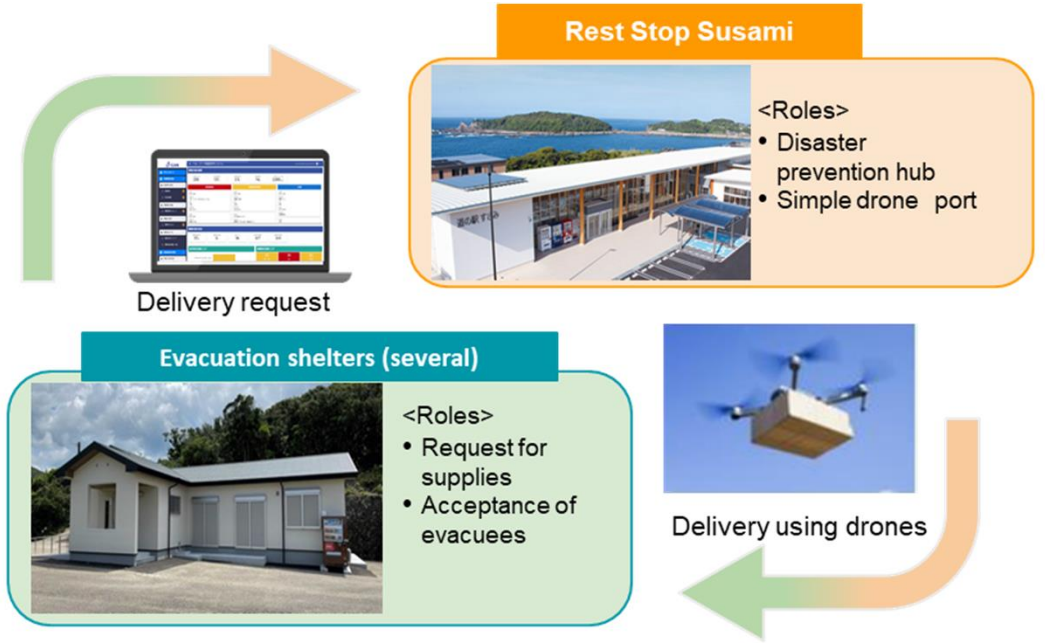
Post-disaster [Delivery of relief supplies using automated drones]





Japanese Urban Development in ASEAN

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Indonesia – Delta Mas City

Completed image drawing of Delta Mas City

Thailand - Urban Development Project around Bang Sue Station（TOD）

Image of urban development around Bang Sue Station

Vietnam - Smart City Development in Northern Hanoi

Image drawing of completed first
(※First stage is in the red dotted area)

Vietnam - Complex Urban Devlopment in Binh Duong Province

Becamax Tokyu

Tokyu bus
(Uses ICT technology, low environmental impact)

Thailand - EEC（Eastern Economic Corridor）AMATA Chonburi Smart City Development Project

Chonburi Smart City master plan drawing

Today's Topic

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- Japan's smart city effort
- Smart JAMP

“SmartJAMP” is a four-pillar support measure.

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Smart City supported

by Japan ASEAN Mutual Partnership

(Smart JAMP)

- Conducting Feasibility Studies contributing to the overseas development of smart cities.

Smart JAMP studies in 2022 (cont).

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6 Priority Area from "ASEAN Sustainable Urbanisation Strategy"

Civic & Social	Health & Well-being	Security	Quality Environment	Built Infrastructure	Industry & Innovation
Feasibility study for projects listed in Master Plan (Smart Tourism)		Feasibility study for projects listed in Master Plan (Traffic safety monitoring)	Pilot project of river environment monitoring system	Feasibility Study on Bus Operation Management System	Feasibility Study on Smart City Concept around Station Area (Utilization of Big Data)
Feasibility study for projects listed in Master Plan (Digitization of village functions)		Pilot project of river disaster prevention (river management, evacuation behavior)		Feasibility Study on Smart Road Management System	Feasibility study on road management system using AI image recognition app.
				Pilot project of for Smart Bus Shelter	
				Feasibility Study on Automated Traffic Control System	
				Feasibility study on MaaS※ apps	

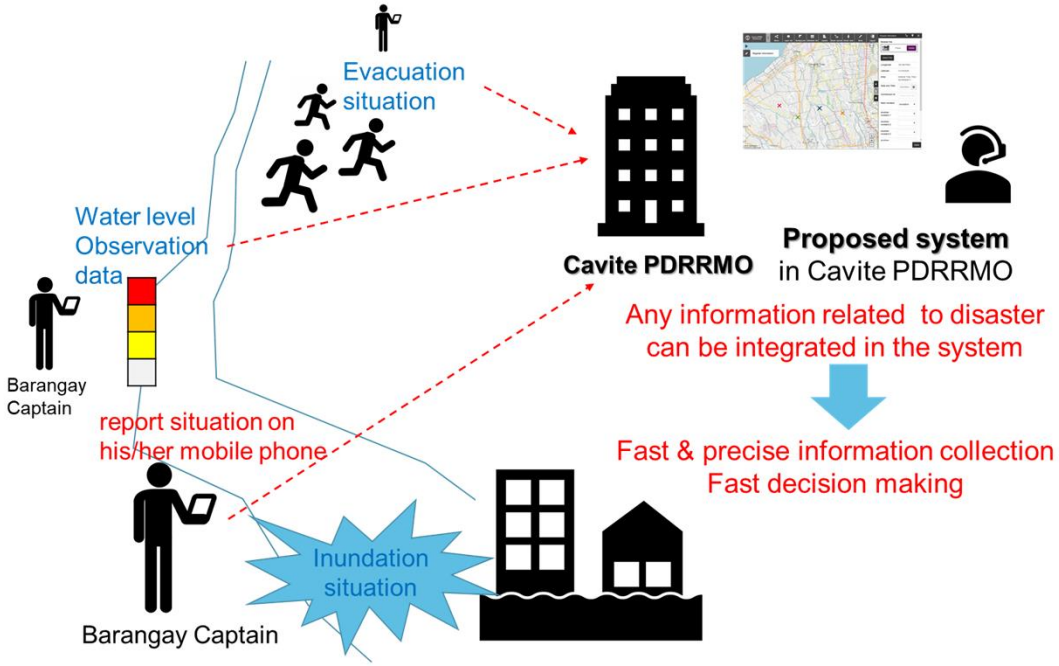
Wide range of surveys have been conducted.

※MaaS: Mobility as a service is a type of service that, through a joint digital channel, enables users to plan, book, and pay for multiple types of mobility services.

Pilot project of river disaster prevention (river management, evacuation behavior)

- Province of Cavite, Republic of the Philippines

- Pilot version of a disaster prevention dashboard system that streamlines the collection and organization of information in the event of a disaster was constructed, and disaster prevention drills were conducted using this system.

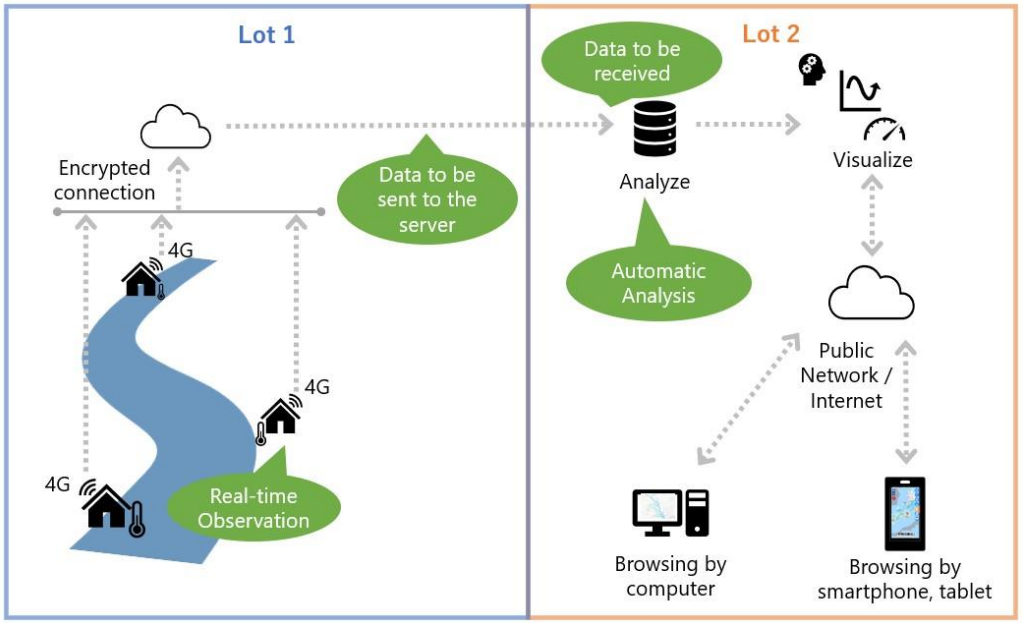


Conceptual diagram of the disaster prevention dashboard system

Pilot project of river environment monitoring system

- Johor Bharu, Malaysia

- Preparation for the procurement of equipment for the water quality monitoring system for the Skudai River, as well as a plan that includes everything from demonstration tests to maintenance and management.



Project Overview

Toward Social Implementation of Smart Cities

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Matching opportunities with service provider companies and capacity-building efforts are important.

Business matching

At the 5th Japan-ASCN High Level Meeting

Capacity building

UNCRD Training

JICA Training

About “ASEAN Smart City Planning Guidebook”

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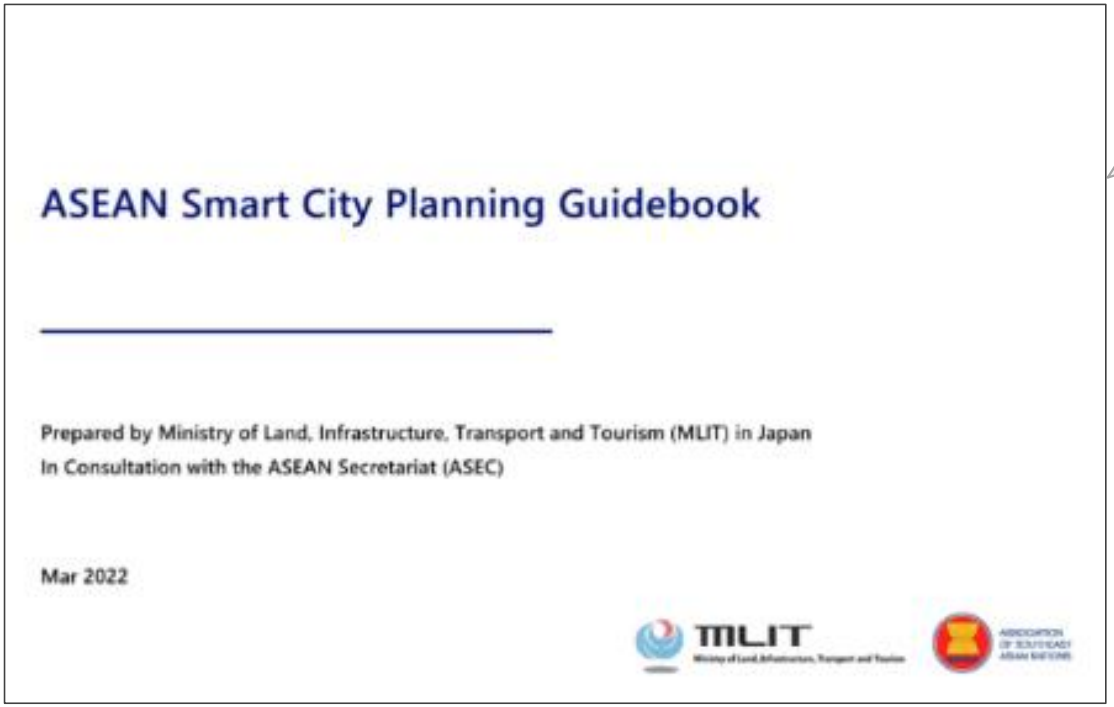
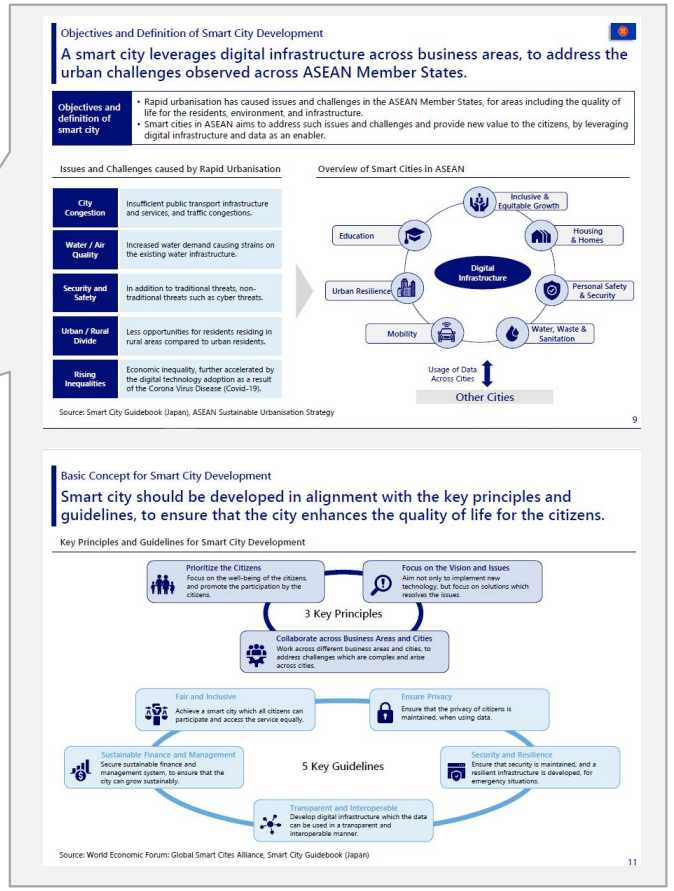
- ✓ Aimed to develop a reference for ASEAN cities to promote Smart City.
- ✓ Issued March 2022.
- ✓ Havng a common framework to be referred during project implementation.

Framework from ASEAN | **Best Practice from ASCN** | **Knowledge from JAPAN**

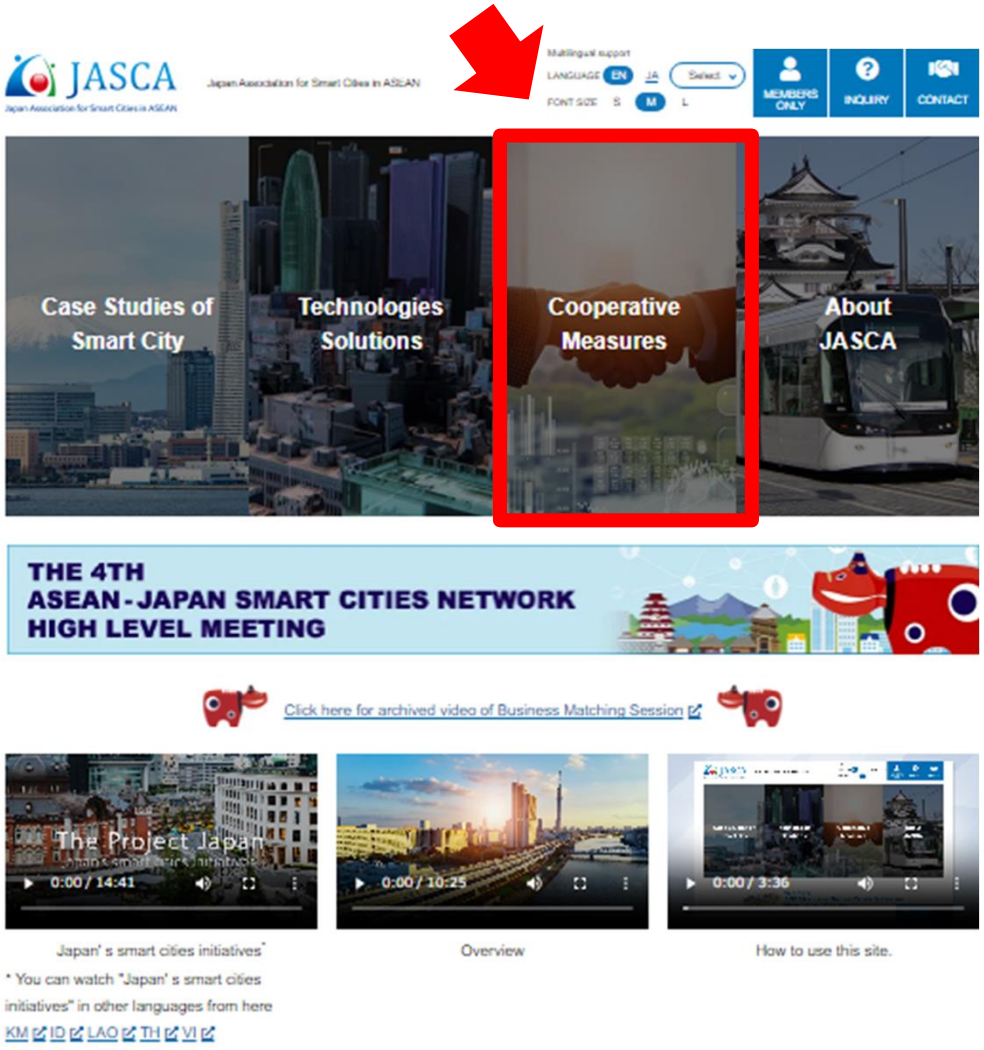




How to get “ASEAN Smart City Planning Guidebook”

Ministry of Land, Infrastructure, Transport and Tourism

Please Access to JASCA website



Thank you for your attention.