

JICA'S SUPPORT

JICA's approach : Cooperation for smart cities through "Co-creation" based on "Trust"

JICA will work together with a variety of partners - public, private, academia, and citizens - leveraging on the mutual trust developed through various cooperation activities, to facilitate the necessary initiatives for a sustainable smart city.



Leveraging knowledge and experiences in Japan and the world



Diverse domestic and international networks across industry, government, and academia



Combination of knowledge and expertise in urban development and management



Mutual "trust" developed through variety of cooperation activities

Specific cooperation

Below are the examples of supports and activities for smart city to be provided by JICA.

Country Level

City • Municipality / District Level

	Country Level	City • Municipality / District Level
Assessment	Data collection survey: Understanding the current situation, plans, and needs, and formulating a roadmap for implementation <ul style="list-style-type: none"> Comprehensive analysis and evaluation of the target country's upper-level plans, visions, strategies, and development plans of cities, as well as urban policies, systems, and organizations related to Smart City (SC) Diagnostic assessment of current issues in infrastructure and urban services, and future plans Formulation of a roadmap related to SC 	
Policy	Masterplan formulation survey, technical cooperation: support and dispatch of experts to Smart City organizations <ul style="list-style-type: none"> Formulating visions and strategies related to Smart City (SC) and Digital Transformation (DX) Building a national SC investment strategy (business model) 	Masterplan formulation survey, technical cooperation: support and dispatch of experts to Smart City organizations <ul style="list-style-type: none"> Formulating urban/ spatial development plans that incorporate SC and DX, and support for human resource development Formulating SC-related infrastructure (including ICT, city OS, etc.) development plans
Organization	Technical cooperation: Support and dispatch of experts to Smart City organizations <ul style="list-style-type: none"> Establishment of SC promotion organizations (promoting agencies, cross-ministry organizations) Human resource development for ICT related organizations Building an organizational structure for private, public, and academia; collaboration and human resource development 	Technical cooperation: Support and dispatch of experts to Smart City organizations <ul style="list-style-type: none"> Establishment and human resource development of SC promotion organizations (committee, supervisory organizations) for local governments and projects Procurement of services (technologies), such as: preparation of Terms of Reference, technical evaluation, contracts
System	Technical cooperation: Support for operation of SC, dispatch of experts <ul style="list-style-type: none"> Establishment of institutional framework for SC (evaluation system, incentives, deregulation) Establishment of ecosystem (including funding system) 	Technical cooperation: Support for operation of SC, dispatch of experts <ul style="list-style-type: none"> Establishment of institutional framework (evaluation system, demonstration project scheme) for SC in local governments Formulating business plans and schemes
Technology	Technical cooperation: Support for SC technologies, dispatch of experts <ul style="list-style-type: none"> Supporting policies for data utilization and data governance Cyber security measures Implementation of national-level initiatives (e.g., E-Government) 	Technical and Financial assistance / SME Partnership and SDG Business program: Feasibility and Verification survey, infrastructure support <ul style="list-style-type: none"> Building data platforms and city OS Procurement of technologies for SC implementation and support for establishing testbed Infrastructure development and smart service demonstrations
Operation	Technical cooperation: Building a platform for knowledge sharing <ul style="list-style-type: none"> Sharing of knowledge and lessons learned, while strengthening of cooperation among relevant entities Modification and improvement of systems, organizations, and mechanisms Establishment and strengthening of wide-area relationships including other cities (including expansion to other cities) 	

* SC = Smart City | DX = Digital Transformation

*This material is prepared based on the Study: "Data Collection Survey on Application of Smart City Approach." Full report is available through JICA Library Portal Site. (<https://www.jica.go.jp/english/about/organization/library/index.html>)



Japan International Cooperation Agency

Nibancho Center Building 5-25, Nibancho, Chiyoda-ku, Tokyo 102-8012, JAPAN
E-mail: imgge@jica.go.jp



Visit our site for further information on our activities
www.jica.go.jp/activities

Japan International Cooperation Agency (JICA) is in charge of administering all Japanese ODA such as technical cooperation, Finance and Investment Cooperation and Grants in an integrated manner. JICA, works in over 150 countries and regions and has some 90 overseas offices.



SMART CITY APPROACH TOWARDS SUSTAINABLE URBAN MANAGEMENT

An approach for transforming the emerging cities into smart cities



JICA'S MIND

Cities in developing countries are undergoing rapid urbanization and this poses numerous urgent challenges in terms of infrastructure, basic services, economy, health, education, security, and natural resources, among others.

In addressing these challenges, while also ensuring sustained and inclusive economic growth; social and cultural development; and environmental protection, improvement of the city management is vital.

Smart cities – urban management practices utilizing ICT and urban data - are increasingly drawing attention to their potential to transform how cities provide infrastructure and basic services, enhance citizen participation, strengthen city governance, and enable leapfrogging evolution. On the other hand, the disruptive innovations brought about by these initiatives must not be undesirable to the citizens; the security and reliability of the data must be ensured.

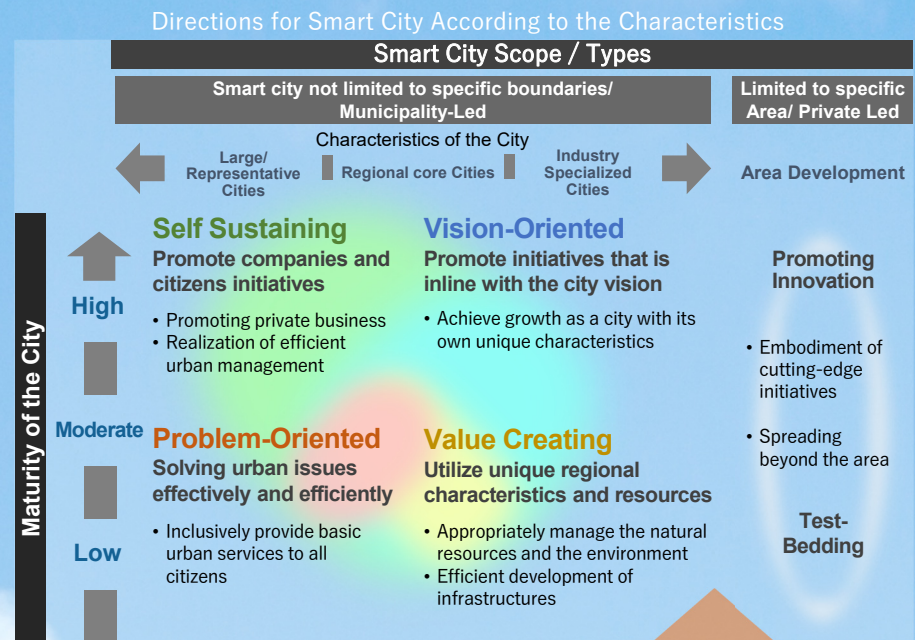
In the context of emerging cities, it is important to emphasize: making sure infrastructure and basic services are equally and inclusively provided to all citizens; catalyzing new solutions through co-creation among various stakeholders including the public, the private, the academia, and the civic; and facilitating mutual communication between citizens and government. JICA envisages that the initiatives towards the smart city will help to nurture trust among the stakeholders and in the system itself, thereby creating a firm foundation for sustainable urban management.



WHERE IS YOUR POSITION

Directing development according to the unique characteristics and challenges of each city

The situation of each country and city varies in economy, size, and attributes, among others. It is important to identify and implement initiatives based on the individual situation to resolve challenges under a shared vision with various actors and the citizens. The content of the initiatives shall also differ greatly depending on the implementing entities (national government, local government, private sector, etc.), therefore it is important to consider approaches tailored to the given situation.



Action!

Smart city approaches according to their stage

After assessing the status of the city in terms of five smart city domains of “policy”, “organization”, “system” “technology”, and “operation”, as well as the conditions unique to each city, the optimal initiatives shall be implemented. Appropriate programs shall be considered for cities that are just starting their smart city initiatives.

Countries and cities that already have the basic elements

Sustainable Growth

Working across multiple disciplines towards a comprehensive smart city. Realize well-functioning urban management

Countries and cities where initiatives are ongoing

Accelerate

Identify and strengthen areas and sectors to focus on. Flexibly mobilizing investments, resources, and technologies.

Countries and cities where initiatives are being launched

Small Start

Start with feasible initiatives by making maximum use of existing assets. Accumulate small and swift success (Quick Win) as an initial foothold.



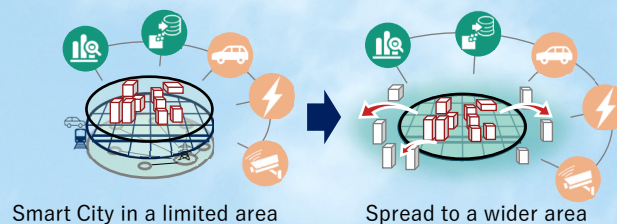
HOW TO SCALE-UP

Two perspectives in scaling-up smart cities

There are two perspectives in scaling-up smart cities: area-based approach and sector-based approach. These two approaches could be combined.

AREA-BASED APPROACH TYPE

Spreading to a wider area
This approach entails realizing smart city solutions or technologies in a specific area, and then spreading the system or the knowledge over to a wider area.



SECTOR-BASED APPROACH TYPE

Connecting and extending the sector
This approach entails starting with a specific sector (e.g., government services, mobility services, etc.) and gradually connecting and extending through open API or data platforms.



WHAT ARE SMART CITY ELEMENTS

Using the smart city elements as reference

It is vital to strengthen the enabling environment for efficient urban management and urban transformation along the smart city framework presented in 5 domains consisting of 21 elements shown below:

Policy	01	Philosophy and Vision of Smart City	The philosophy and the vision are envisaged to create new value for the city, improve the wellbeing of its citizens, and achieve sustainable development.
	02	Comprehensiveness of Vision and Policy	The vision is positioned as a strategic and comprehensive approach that encompasses multiple disciplines.
	03	Specifics of Vision and Policy	A clear message, purpose, direction, and measurable targets for smart city are presented.
	04	Policy Alignment	The target domain of smart city is clear and consistent with urban planning and Digital Transformation strategies.
	05	Sustainability of Vision and Policy	Sustainability of the policy is ensured by adequate budgeting plan and functional business models.
Organization	06	Sharing and Promotion of Visions and Concepts	Each related entity, including the citizen, shares and support the concept, vision, and values of smart city.
	07	Promotion Body	A competent organization or organizational structure is in place to take on a leading and pivotal role in the implementation of smart city strategies and policies.
	08	Triple / Quadruple Helix Partnership	A triple-helix system of public, private, and academia (or quadruple-helix, adding citizens to this) is incorporated into the smart city ecosystem.
	09	Organizational Effectiveness and Capacity	An internal or an external organization capable of drafting specifications; managing selection and steering implementation is in place.
System	10	Building Ecosystems	An effective, functional, and sustainable ecosystem has been formed to promote Smart City.
	11	Creating Trust	Trust is established among stakeholders relevant in process of planning, implementing, operating, and promoting a smart city.
	12	Setting of Laws, Regulations, and Systems	Norms regarding legal and administrative processes necessary for smart city is clearly defined, and incentive mechanisms and facilities for promotion are in place.
	13	Citizen Participation and Co-creation	A mechanism for citizen participation and co-creation is considered and is in place.
	14	Cross-disciplinary	Smart City is linked to decarbonization, digitalization, economic growth, environmental consideration, crisis response, and improvement of the quality of life of citizens.
Technology	15	Urban Infrastructure Platform	ICT platform (City OS) that connects the infrastructure for the Smart City solutions and data collaboration is planned or established, either partially or at full scale.
	16	Data Utilization	City open data is organized and is being used (or being planned to be used) as big data for Smart City, while also sufficiently accounting for data privacy.
	17	Digital Security	ICT infrastructure (servers, database, network, sensors, various control systems) is secure from cyber attacks and contingencies.
	18	Social Systems Design and Implementation	The aspect of social design is introduced in the formulation of a smart city, and the selection and implementation of smart technologies are harmonized with civil society.
Operation	19	Flexibility of Promotion System	A system is designed to flexibly accommodate and respond to changes in the political situation, social environment, and technological trends, as well as to the needs of citizens.
	20	Strengthening Collaboration and Partnerships	Inter-city partnerships with neighboring regions and other countries to share the latest knowledge is established.
	21	Ensuring Sustainability	A mechanism for making medium- to long-term commitments to smart cities is established.

MAKING SMART CITIES SUSTAINABLE

APPROACH for your SMART CITY