

# Urban management for livable and sustainable cities

Through strengthening the capacity of urban administration and working with diverse stakeholders, including private sector, academia, and the community, we promote livable cities.

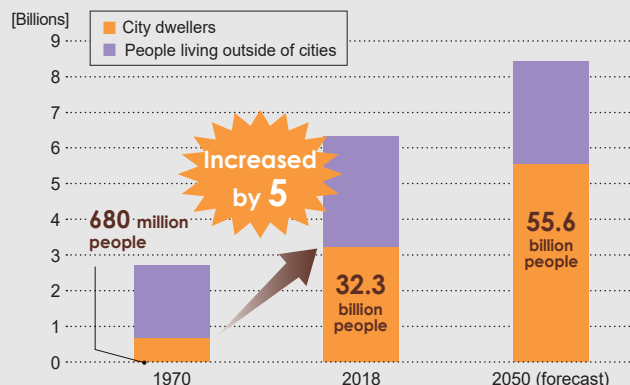
With an eye on desirable cities, we devise appropriate land use while utilizing the latest geospatial information. We involve and coordinate various stakeholders in planning, implementation and operation and management of urban environment. We support to strengthen the urban administration's ability to conceptualize and manage attractive and sustainable cities.



**Rapid urbanization is worsening the environment and threatening our livelihoods.**

The rapid population growth in developing countries is escalating urbanization at an unprecedented level. In many cases, the government agencies are unable to respond adequately to the emerging issues such as traffic congestion, air pollution, flooding due to heavy rain, and dumped solid waste. It tends to spread low level settlements in tandem with expansion of towns and cities. The social friction caused by the disparity of residents and the deterioration of public safety cannot be overlooked. In order to realize a sustainable city, it is necessary to control the urban expansion in advance and to arrange facilities systematically.

**Urban population in developing countries dramatically increased by 5 times between 1970 and 2018**



**Typical urban problems**



**Disparities in Livelihoods**

Rio de Janeiro stands out for the difference between slums and skyscrapers



**Inadequate housing**

Dharavi, a poor district of Mumbai, India, where low-wage workers live.



**Traffic jam**

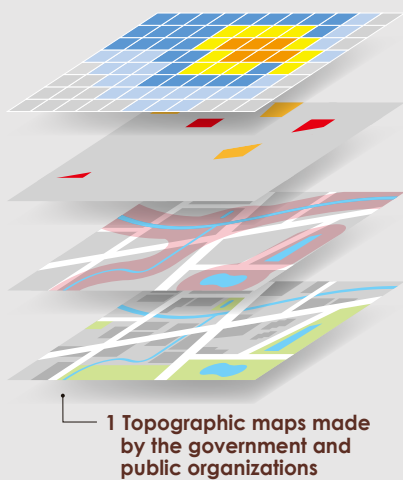
Traffic congestion in India. Convenience is compromised and the air is polluted.



**Solid waste problem**

A region in South Africa where massive amounts of plastic waste collect on shore.

photos: Getty Images



- 4 Weather Information
- 3 Information on Location of public facilities such as town halls and schools
- 2 Prediction of river flooding

**What is Geospatial (G-spatial) Information?**

It is a location information with its associated information. For example, G-spatial information that overlays river flooding prediction, facility locations, and weather information on topographic maps can be used as flood countermeasure information.

**G-spatial information necessary to solve urban and regional challenges has not been maintained.**

G-spatial information is essential for the development of cities and regions. It enables us to analyze the causes of urban problems, examine potential solutions, and formulate appropriate action plans. However, in developing countries, G-spatial information is not collected sufficiently, inaccessible, even if it exists, it is unusable due to lack of compatibility.

**Utilizing Japan's experience in dealing with development issues for problem solving in developing countries**

As Japan has rapidly industrialized and urbanized after the World War II, the country built its comprehensive medium- and long-term plans to solve emerging problems like unrestricted expansion of urban areas, housing shortages, and environmental degradation. Additionally, JICA has been providing a wide range of support, which are formulation of urban development

plans, the improvement of legal systems, and promotion of public participation mainly in Asia's big cities. Moreover, JICA has a long history in developing maps and improving G-spatial information by taking advantage of the continuous observation reference station network and the Quasi-Zenith Satellite System MICHIBIKI.

Approach 1

Collaborate with various stakeholders to strengthen "urban management" capacity

In order to respond to various urban challenges, it is necessary that each sector collaborate to manage the entire city and establish a system to support its development. JICA supports the formulation of policies and plans by sharing visions and setting city-wide development goals with urban administrative agencies in developing countries. To realize these goals, JICA establishes development management systems and promotes the introduction of development methods that meet the needs of the times, such as smart cities and transit-oriented development (TOD). In community development and urban management and administration, it is essential to build networks and collaborate with a wide range of stakeholders, including not only government agencies but also private companies in addition to residential communities. JICA contributes to the advancement of autonomous "urban management" capabilities that bring together the diverse strengths of the people of the city to realize a livable and sustainable city.



Under the autonomous urban management...

- Diversification of development funds**  
The investment environment will be improved, attracting not only international organizations and aid donors, but also private funds.
- Data Application**  
Reliable data supports government planning. Data will be shared with residents.
- Diversification of ideas**  
Under appropriate planning and development management systems, diverse business ideas from companies and residents will be utilized.
- Smooth consensus building**  
Opportunities for consultative bodies and resident participation will create communication and build trust.

**GOAL** → We aim for autonomous and sustainable development of the city by bringing diverse forces together.

Approach 2

Supporting the development and utilization of G-spatial information

First, we introduce the internationally standardized world datum. Second, we support the construction of satellite-based continuous observation reference station networks, necessary for high-precision measurement that can locate positions down to the centimeter level. In addition, we develop digital topographic maps and elevation data (DEM) as base maps. Furthermore, we create web map platforms and data sharing platforms for the effective use of G-spatial information, providing clear rules for open data policy to ensure the quality and compatibility of the platforms.



We utilize the highly accurate location data service provided by Japan's Quasi-Zenith Satellite System MICHIBIKI, compatible with the U.S. GPS (Global Positioning System).

**GOAL** → With an accurate G-spatial information, we make it possible to create livable cities

## 1 Helping to create a better living environment in rapidly expanding city, Ulaanbaatar

In Ulaanbaatar, the capital of Mongolia, nomads set up gers (mobile dwellings) around the city due to severe snow damage. It was problematized because they settled down without sufficient living infrastructure.

JICA has been providing technical cooperation for more than 10 years, starting with the formulation of an urban master plan and listening to the voices of local residents. JICA has also collaborated with Asahikawa City in Hokkaido to create a livable environment even in cold regions, including measures against icy road surfaces and energy-saving measures through highly insulated and airtight buildings.

Gers were randomly set up around downtown Ulaanbaatar.



## 2 Landscape improvement in Vientiane that citizens recognized its benefit.

In Vientiane, Laos, the "Vientiane's Trial" event was held as one of the activities of JICA's Urban Development Management Project in 2015 to preserve and utilize the attractive cityscape. Many citizens and tourists came to the event, in which the streets of the historic district were pedestrianized and Laotian universities and businesses participated in exhibitions and performances. The event drew interest and deepened citizens' understanding of how landscape improvement can revitalize the local economy.

A traditional Lao dance and an art exhibition in cooperation with a local university were performed on the streets of Vientiane's historic district. The event provided an opportunity to change the public opinion on the benefits of landscape improvement.



## 3 Cooperating for the integration of satellite-based continuous observation reference station networks throughout Thailand.

In Thailand, since the satellite-based continuous observation reference station networks required for the development of G-spatial Information was established by multiple government agencies, the system was not unified nor comprehensively operated by the government. Therefore, JICA started cooperation to integrate 240 satellite-based continuous observation reference stations in Thailand from 2020 to ensure stable operation of high-precision positioning services through the data center. In the future, highly accurate real-time positioning service will be usable throughout the entire country, and it is expected to be used for remote operation of agricultural and construction machinery and for automatic driving.



A satellite-based continuous observation reference station in Thailand. It houses antennas, receivers, and communications equipment that receive satellite signals.

### Working with Partners

## Expand network with Japanese local governments and private companies to provide multifaceted support

We share the knowledge of Japanese local governments with developing countries and build relationships to learn together. In collaboration with Kamaishi City in Iwate Prefecture and Higashimatsushima City in Miyagi Prefecture, we shared our experiences and lessons learned from the Great East Japan Earthquake recovery with Indonesia, the Philippines, Mozambique, and other countries, which was used for their local

recovery plans. We also support the promotion of private investment in urban development by utilizing the real estate development know-how and smart technology of Japanese companies.

Moreover, we are working with Japanese universities to accept international students from developing countries and build a network for urban research and practice.



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Japan International Cooperation Agency (JICA) is an international cooperation organization that is centrally responsible for the implementation of bilateral assistance among Japan's Official Development Assistance. JICA cooperates with about 150 countries and regions around the world.

### What is JICA Global Agenda

JICA's cooperation strategies for global issues. JICA, with its partners, aims to show global impacts realizing the goals set under JICA Global Agenda. JICA Global Agenda and its goals will be shared among partner countries and various actors, enhancing dialogue and collaboration, therefore, maximizing the development impacts. Through these efforts, JICA will comprehensively contribute to the achievement of the SDGs by 2030 as well as realize Japan's Development Cooperation Charter which focus on "human security," "quality growth," and "addressing global challenges".