Infrastructure

Realizing Resilient and Sustainable Societies

*Of the 17 Sustainable Development Goals (SDGs), strongly associated goals are shown.

Urban and Regional Development

Cities in the developing world are faced with a range of challenges due to rapid urbanization and population growth, such as (1) inadequate urban infrastructure, (2) a deteriorating living environment, (3) growing vulnerability to natural disasters, and (4) widening economic disparities. At the same time, some developing countries are transforming into stable and mature urban communities as the process of urbanization and population growth are subsiding.

JICA addresses these challenges and problems by capitalizing on Japan's experience in overcoming powerful natural disasters and rapid urbanization that have no parallel in the world. Based on the strategies described below, JICA also seeks to achieve (1) urban policy and management for sustainable cities, (2) balanced national and regional development, and (3) an inclusive society.

1. JICA provides holistic cooperation covering everything from master planning to infrastructure development for growing cities in **Asia** and other regions that are showing strong development needs. JICA's assistance for maturing cities in upper-middle income countries involves (1) improving the urban environment, (2) increasing convenience and comfort, (3) addressing future urban challenges such as how to cope with an aging population, and (4) adopting the Smart City approach and other new solutions in cooperation with the private sector.

2. For **Africa**, which is experiencing rapid urbanization while remaining underdeveloped, JICA pushes for the corridor development approach that puts the economy on a sustainable growth track by forming a "conurbation" comprising of adjacent cities and urban rural areas. JICA also takes a comprehensive approach that involves urban development master planning, core infrastructure development, institution building, and organizational and human resources capacity building.

3. For **Latin America and the Caribbean**, a region with a high percentage of urban population, JICA assists in building the capacity to cope with urbanization through locally adaptive urban development and management techniques.

To provide fundamental solutions to the problems cities and regions are facing in developing countries, JICA will analyze the actual situation and issues in the city or region in question and put forward strategies and approaches as a comprehensive program that suits that city or region. To this end, JICA will flexibly combine various available aid modalities.

Furthermore, in order to meet diverse needs for urban and regional development in developing countries, it is also essential to establish necessary legal systems and develop the capacity of the implementing agencies responsible for

The Philippines: Supporting capacity development for the Philippine Coast Guard through joint exercises with the Japan Coast Guard under the Project for Comprehensive Practical Capability Improvement for Maritime Law Enforcement

such development and their staff. Accordingly, JICA addresses these aspects as well. To "establish a collaborative system with diverse actors involved in urban development," JICA will also offer collaborative platforms that involve authorities, communities, and private companies.

Transportation

For the eradication of poverty and sustainable economic growth, it is indispensable to provide transportation services that facilitate the efficient movement of people and goods. Conversely, insufficient transport services often constitute a cause of poverty.

Given that demand for transportation infrastructure remains to be fulfilled, it is necessary to deliver stable transportation services through closer partnership with the private sector or by making transportation infrastructure more durable and efficient. Sustainable utilization of infrastructure urgently requires improving and consolidating operation and maintenance arrangements as well as training government officials.

The main aim of JICA's cooperation for the transportation sector is to contribute to improvement in the living environment by vitalizing socioeconomic activities through attainment of swift, smooth, and safe transportation of people and goods.

In order to efficiently develop the transportation and road sector, building ports, bridges, and railways alone is not enough. It is also necessary to involve assistance designed to make wise use of developed infrastructure. For the development and effective use of infrastructure, JICA is engaged not only in technical cooperation in infrastructure development but also in the development of related human resources. This involves training personnel responsible for operating and maintaining the developed infrastructure and building organizational structures for raising the awareness of infrastructure users .

In addition, to help achieve the Sustainable Development Goals (SDGs), JICA has been extending assistance in infrastructure development under principles promoting "quality infrastructure" that have been set out at international forums and high-level meetings.

JICA will provide cooperation at multiple levels to close the global infrastructure gap in transportation. This will involve international transportation that spans national borders, national transportation that ensures balanced development, urban transportation that supports sustainable urban development, and rural transportation that improves living standards of rural areas [➡ see the case studies on pages 23, 50, and 71].

Under Japan's vision "Free and Open Indo-Pacific," JICA will continue to assist in improving connectivity of the Indo-Pacific region and ensuring the freedom of navigation based on the rule of law, thus contributing to the social and economic prosperity and development of Asia and Africa.

Information and Communication Technology (ICT)

ICT is common infrastructure and an effective tool to solve social issues; it is used in administrative, social, and economic fields. ICT has a broad range of possibilities. In particular, offering ICT-based solutions is expected to advance X-Tech, an innovative approach that creates new values and systems.

In many developing countries, the rapid spread of broadband Internet and mobile Internet services has primarily been seen in urban areas. However, the spread of ICT infrastructure and utilization of ICT have been slow in rural and other areas. This leads to a digital divide with developed countries and an ICT gap between urban and rural areas within countries, resulting in a structure of widening economic disparity.

Furthermore, in recent years, developing countries have been facing the issue of how to address cyber security—a global challenge that is difficult to tackle only at the national level. Inadequate policies, institutional arrangements, and security measures render developing countries more vulnerable to cyber threats. They have difficulty building protection against such threats on their own.

In light of these circumstances surrounding ICT, JICA's development strategy in the ICT sector comprises four components: (1) improvement of ICT policy-making capacity, (2) development of human resources to support ICT, (3) development of ICT infrastructure, and (4) promotion of use and application of ICT.

This development strategy has been translated into specific measures, including (1) developing backbone communication networks; (2) delivering assistance with the use and application of ICT in sectors such as education, industrial promotion, and disaster risk reduction; (3) supporting the training of cybersecurity engineers; (4) dispatching advisers on digitalization of terrestrial television broadcasting; and (5) extending assistance in the outer-space sector based on Japan's two relevant policies: the Space Industry Vision 2030 and the Infrastructure Systems Export Strategy. In the cyber security sector, in particular, JICA works with the framework of cooperation between the Japanese government and ASEAN member states, namely the Japan-ASEAN Ministerial Policy Meeting on Cyber Security Cooperation, to assist these countries in building their cybersecurity capacities, thereby contributing to safe and secure cyberspace.

In addition to supporting the overseas deployment of Japanese technologies in line with the Japanese government's initiatives, JICA will continue its efforts to make its development work more efficient and effective by utilizing ICT in its programs and projects.

Road Asset Management Platform

Utilizing Japanese expertise and experience to bring preventive road maintenance to developing countries

Bangladesh: OJT on how to operate the bridge inspection robotic camera developed under the SIP research program on infrastructure

Developed and developing countries alike are facing a common challenge of how to maintain roads, bridges, and other infrastructure, including how to cope with aging infrastructure—areas where Japanese technology excels in the world.

In October 2017, JICA launched the Road Asset Management Platform, which has paved the way for effective mobilization of expertise, experience, and talent in Japan toward developing countries' road administration that builds on preventive infrastructure maintenance and asset management methods.

JICA has been working to promote the overseas deployment of Japan's cutting-edge technologies in cooperation with the national program titled "Infrastructure Maintenance, Renovation and Management," one of 11 programs under the Cross-ministerial Strategic Innovation Promotion Program (SIP) launched by the Cabinet Office. To date, JICA has successfully undertaken a number of new initiatives, including the adoption and utilization of Japanese cutting-edge technologies for its projects.

Going forward, JICA will work mainly with the Japan Society of Civil Engineers to deploy Japan's technology and expertise in developing countries for the longer life of infrastructure and asset management. The aim is to support the strategic development of human resources that will play a key role in having road asset management technology take root in developing countries for quality infrastructure.