

# Economic Infrastructure Development

— Infrastructures that Fulfill the Hopes of People



Of the eight Millennium Development Goals (MDGs), relevant goals are shown in color.

Infrastructures contribute to the sustained improvement in the quality of life by supporting the economic growth of a country or region and redistributing wealth. In today's era of globalization, low-income countries as well must become part of the global infrastructure network through measures like building more highways, ports and airports. Once these countries join the ranks of medium-income countries, they need to build even more expansive infrastructures due to urbanization, modernization, industrialization and other forms of progress. The result is a massive demand for infrastructure projects.

JICA provides assistance for infrastructure needs that differ for each stage of economic growth. One way is by preparing urban and regional development plans that include studies to determine the most suitable social systems and institutional frameworks. Transportation infrastructures, information and communication networks and other projects are then implemented based on those plans. JICA also extends cooperation for strengthening organizations and training people needed for the maintenance and operation of these infrastructures.

## Urban and Regional Development

### ● Overview of Issue

The world's population is currently estimated to be 7 billion. In developing countries, the urban population has grown from 680 million in 1970 to 2.6 billion in 2010. By 2030, about 80% of the world's urban population is expected to be concentrated in developing countries. Growth of urban areas is vital to a country's economic development. However, large cities in developing countries cannot provide enough housing, infrastructure and employment institutions to keep up with the rapid inflow of people who are seeking jobs. As a result, many people are forced to live on unstable incomes in poor living environments. Furthermore, growth of urban populations causes pollution due to traffic congestion and the large volume of garbage, a decline in public security, and many other urban problems that are becoming more complex and serious every year.

### ● JICA Activities

In the postwar years, Japan as well experienced urbanization at an unprecedented pace that caused a variety of urban problems. To solve these problems, Japan constructed infrastructures and developed housing while establishing the standards required for urban development. Japan also focused on the development of new technologies in order to reduce pollution and boost productivity. In addition, Japan quickly began taking actions for disaster preparedness and recovery in order to reduce risks associated with earthquakes, typhoons and other natural disasters. JICA uses Japan's experience and technologies involving urbanization to support urban and regional development in developing countries in the following six sectors.

1. Establish a basic infrastructure that contributes to economic activities
2. Establish quality housing
3. Establish low-carbon urban areas
4. Establish urban areas that can withstand natural disasters
5. Establish sound city management systems
6. Achieve the revitalization of urban areas

### Inclusive and Dynamic Urban Development

JICA provides support for the creation of cities that can generate a positive cycle of economic growth and poverty reduction. Activities are based on rapid responses from medium- and long-term perspectives to the problems encountered by urban areas in all developing countries. JICA is guided by the vision of "inclusive and dynamic urban development." JICA provides support by placing priority on development projects in which all types of people can participate.

### Comprehensive Support from Creating Development Concepts to Human Resources Training

JICA is dedicated to meeting the diverse needs associated with urban and regional development in developing countries. Meeting these needs requires assistance at many stages, including the preparation of development plans, implementation of development programs in line with plans, and operation and maintenance of the completed facilities. To execute these processes in a self-reliant manner, the capacities of organizations and people involved in implementing urban and regional development plans must be increased, the necessary legal systems must be improved, and other measures are needed. JICA uses a diverse aid menu that includes Technical Cooperation, financial cooperation, volunteer programs and other activities in order to provide comprehensive aid for urban and regional development.

## Report of the Final Accomplishments of the Greater Yangon Urban Development Master Plan

Rapid population growth in Yangon has created pressure to establish a social infrastructure that can support people's lives in a sound urban environment. JICA started the Preparatory Study on the Project for the Strategic Urban Development Plan of Greater Yangon in order to help formulate an urban development master plan for the Yangon metropolitan area.

### The Development of Yangon Equates to the Development of Myanmar

With a population of about 5.1 million, Yangon is the commercial center of Myanmar. The Yangon metropolitan area, which includes six neighboring townships, covers 1,500 square kilometers. The population of this area is expected to grow to more than 10 million by 2040.

Economic and social development has not progressed in Yangon because of restrictions in place for decades on investments and technological updates from overseas. The economic and social infrastructures that back the sound lives of Yangon's residents are aged and often do not function. Furthermore, there has been little progress with establishing urban planning laws and regulations or with updating statistics and maps, both of which support planning and construction activities. As a result, urgent actions are essential to tackle these issues.

In response to this need, JICA started the Preparatory Study on the Project for the Strategic Urban Development Plan of Greater Yangon in August 2012. The study, which ended in March 2013, created a proposal for a medium and long-term comprehensive development vision for the Yangon metropolitan area and a Greater Yangon Urban Development Master Plan with a target year of 2040.

Following completion of this master plan, the JICA-Myanmar Seminar "Ideas for the Development of the Yangon Metropolitan Area" was held at the International Conference Hall, JICA Ichigaya Building in Tokyo on March 21, 2013. The purpose was to present a Master Plan with information about the constantly changing conditions in Yangon. The seminar included the results of a survey of 10,000 households in the Yangon metropolitan area and an explanation of the concept for economic and social infrastructure development activities. Twelve delegations from the Myanmar government associated with various sectors involving the development of Yangon attended the seminar. These officials were headed by H.E. Hla Myint, the mayor of Yangon, who also serves as the Minister of Development Affairs, Yangon Region Government. Strong interest was shown in this seminar by the government ministries and agencies, people involved in development activities, private-sector companies, NGOs and academics. Overall, more than 200 people attended the seminar, making it an extremely worthwhile event for everyone.

Opening remarks were given by JICA Vice President Toshiyuki Kuroyanagi. "JICA and Myanmar have a very long history of interaction," he noted. "In the past, the focus has been emergency aid and humanitarian aid. But now that democratization is progressing in Myanmar, there is a rapid increase in the quality

and quantity of aid. We are now providing a broad range of assistance for the infrastructure and other areas." The keynote speech was given by Yangon Mayor Hla Myint, who wants to utilize lessons learned from urban development in Tokyo. His address covered the history of the construction of Yangon and the city's current problems. He went on to list seven targets of the Yangon Urban Development Committee (YCDC), including infrastructure construction and urban development. "There is an urgent need for infrastructure and social development in order to create an even larger economic metropolitan area and improve Yangon's urban environment. The highest priority should be the construction of water and sanitation facilities in the Greater Yangon area."

Dr. Takashi Onishi, the chairman of the Science Council of Japan and a professor at Tokyo University, is the chairman of the Domestic Support Committee for JICA's Yangon urban development program. Dr. Onishi gave a speech at the seminar about the development of the Yangon metropolitan area and lessons learned in Tokyo. Using examples of successes and failures of Tokyo's urban development history, Dr. Onishi talked about limiting the expansion of cities, inducing pressure for development, the balance between preservation and redevelopment (urban development strategy), and other key subjects.

There was a presentation by Mr. Koji Yamada, who is deputy general manager of the Development Business Division of Nippon Koei Co., Ltd., about the activities of the preparatory study team for the creation of a program for development of the Yangon metropolitan area. Mr. Yamada provided an overview of the master plan called 'Yangon 2040 - The Peaceful and Beloved Yangon'. For the development vision that looks ahead to 2040, the goals are peace in Myanmar, where democratization is advancing, and the creation of a Yangon that will be loved by its residents. The development program uses as its images the city's abundant greenery and the light shining from the golden Shwedagon Pagoda in central Yangon. Mr. Yamada explained that the plan's four central elements are to make Yangon an international hub city, a city where residents can live with ease, a city with a sound infrastructure, and a city that is well governed. He went on to say that the most suitable structure for Yangon is a dispersed city with a central business district along with several secondary business centers and islands of greenery (parks).

The second half of the seminar focused on water and sanitation and waste management, which Mayor Hla Myint views as urgent issues. On this topic, there was a presentation by Mr. Kazufumi Momose of TEC International, who is the chief consultant of the JICA preparatory study team, concerning cooperation for

programs to improve water and sanitation. For the waste management sector, there was a presentation by Mr. Than Lwin Oo, who is the head of the Pollution Control and Cleansing Department of YCDC. To provide information about the urban transport sector and its issues, there was a presentation by Mr. Takashi Shoyama of ALMEC Corporation, who is chief consultant of the JICA study team, about the activities of the Preparatory Study on the Project for the Strategic Urban Development Plan of Greater Yangon (Urban Transport).

### Contributing to Progress in Myanmar

The seminar ended with an expression of appreciation to all participants from Kazunori Miura, Director General of the Economic Infrastructure Department, JICA. In his remarks, Mr. Miura stated that "JICA wants to work together with every stakeholder in both Myanmar and Japan so that Japan as a whole can make an efficient contribution to progress in Myanmar."

Phase II of the Preparatory Study on the Project for the Strategic Urban Development Plan of Greater Yangon started in March 2013. Other studies are under way for master plans for water and sanitation and urban drainage systems, urban transport, and other sectors. In addition, preparations have started for Loan Aid projects in areas where there are urgent needs. This seminar was also held in Myanmar in June 2013 and there were many participants from the government, media, academics, private sector and NGOs. JICA will continue to extend cooperation to enable the Yangon metropolitan area to consistently create an even better urban environment for its residents.

Dr. Kyaw Lar is the urban development advisor for YCDC. Regarding the JICA project, he remarked that "it has been an honor to do such a decent work up to now with the Japanese expert team. We have discussed different views and opinions in the process of creating this master plan. However everything we did was to achieve a higher goal for development of the city of Yangon. I would like to continue to be involved in this project."



The majestic Sule Pagoda is located in the central business district of Yangon, which is called the garden city. The Yangon River is visible behind the pagoda.

## Transportation

### ● Overview of Issue

In developing countries, the slow development of transportation infrastructure, including roads, railways, ports and airports, has impeded economic growth and contributed to poverty. Transportation infrastructure is the means for the movement of people and goods, and its development is indispensable to sustainable growth.

The demand for transportation infrastructure development is high worldwide, and the need to maintain, repair and upgrade aging structures has been rising rapidly. Securing funds is a big challenge because these projects require significant financing. The limited public funds available are not sufficient to develop all necessary infrastructures. Other funding sources need to be secured, including private capital, in order to provide transportation services without waste in a sustainable manner.

Furthermore, assistance is needed for initiatives which

enhance the environment and society of the counterpart country. This includes initiatives for the elimination of traffic congestion through the introduction of modes of public transportation and changes in transportation methods; CO<sub>2</sub> reductions through more efficient distribution means; and air pollutant control.

### ● JICA Activities

JICA's main goal for cooperation in transportation is the swift, smooth and safe transportation of people and goods in order to energize socioeconomic activities and to ultimately improve income levels and enrich people's lives.

When developing transport infrastructure in developing countries, it is not enough to simply build roads and bridges. Establishment of a plan to ensure an efficient transportation system, development of human resources and the strengthening of organizations that will appropriately maintain and manage the infrastructure, and creation of social and

## Case Study Ensuring the Safety and Security of Sea Lanes: Cooperation for Maritime Safety and Security

### Protecting the World's Oceans

Since water covers about 70% of the earth's surface, oceans are veritable highways that reach every part of the world. Maritime security officers are responsible for the safety and security of the oceans. By working with the Japan Coast Guard, JICA is cooperating with the maritime security officers of developing countries.

The economy of Japan, a country surrounded by the sea, depends on the preservation of maritime safety and security. More than 99% of Japan's foreign trade based on tonnage relies on ships. Furthermore, more than 80% of Japan's crude oil is transported on ships from the Middle East that pass through Southeast Asia. In the Gulf of Aden, which is traversed by approximately 18,000 ships every year, about 1,700 of these ships are associated with Japan in some way.

To ensure the safety and security of sea lanes, JICA works with the Japan Coast Guard to extend support to the maritime security agencies of developing countries. Past activities have included conducting training, installing channel markers and giving countries patrol vessels. These programs have taken place primarily in countries along the Strait of Malacca and Singapore. Malaysia established the Malaysian Maritime Enforcement Agency



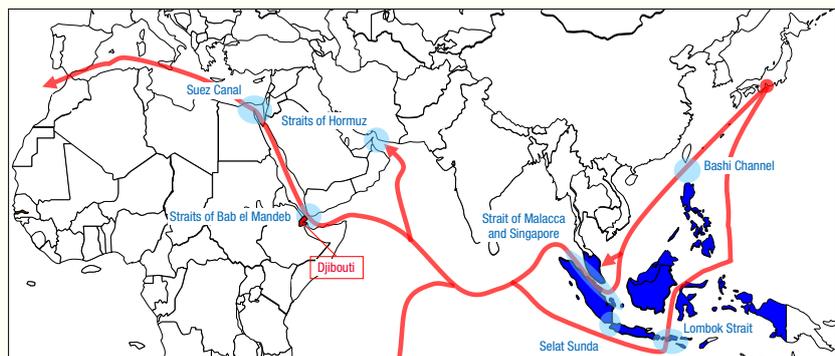
JICA sent experts for a short time to work with the Philippine Coast Guard.

(MMEA) in 2002 by separating this organization from its navy. JICA has extended support to MMEA that includes strengthening the organization, such as by sending experts and providing training, and upgrading skills for boarding inspections. Currently, MMEA has a workforce of about 4,000 and a fleet of patrol vessels that are as large as 63 meters in length. All these activities help improve the safety of the sea near Malaysia.

In recent years, piracy in offshore Somalia and the Gulf of Aden has become an international problem. In 2011, this region accounted for more than half of the 439 acts of piracy worldwide. Many countries, including Japan, are working together to fight piracy. JICA is inviting people from countries in the Middle

East and East Africa to participate in training sessions on specific themes. Furthermore, in May 2013, JICA started The Project for Capacity Development of Djibouti Coast Guard, a Technical Cooperation program in Djibouti. As part of this project, JICA plans to start supplying this technical assistance to the maritime security agencies of other countries in the Middle East and East Africa.

Safety and security of sea lanes cannot be achieved through the actions of a single country. Collaboration among countries and agencies is vital to accomplishing this goal. JICA will use the global networks established through past aid activities for activities aimed at reinforcing cooperative ties among projects and ultimately countries.



Upgrading the capabilities of maritime security agencies in coastal countries is vital to preserving the safety and security of the world's sea lanes. JICA Technical Cooperation projects are under way in all of the countries shown in color. In other countries, many people have participated in training programs on specific themes.

institutional arrangements that support the organizations are necessary. JICA actively promotes participatory cooperation with residents and collaboration with NGOs with a focus on the beneficiaries, including users and residents, based on who will use the system and for what purpose.

In addition, cooperation for the transportation sector needs to consider a variety of perspectives. Examples include “international transportation” for promoting the international flow of goods and people and the development of regional economic zones which transcend borders; “national transportation” for ensuring people’s fair access to transportation and balanced national development; “urban transportation” for supporting sustainable urban development and enhancing living standards; and “rural transportation” for improving the living standards of rural areas which tend to be left behind from development. The aim of JICA is to pursue “inclusive and dynamic development.”

### Contributing to the New Growth Strategy and Benefits for Japanese Companies

The New Growth Strategy, which was announced by the Japanese government in 2010, includes the goal of using ODA to support the entry of private-sector companies in developing countries and provide aid for sustainable economic growth in these countries. At the Fourth Keikyo Infrastructure Strategy Conference that took place in May 2013, the decision was made to implement the infrastructure system export strategy. This strategy entails increasing connectivity within the ASEAN region and Africa by establishing regional international corridors. JICA will take actions that are also linked with the Fifth Tokyo International Conference on African Development with particular emphasis in the ASEAN region on Myanmar following its transition to a civilian government. Emphasis will be placed on strengthening connectivity with regard to highways, railways, shipping and transportation infrastructure projects. By improving the flow of goods and securing routes for natural resources [\[See the Case Study on page 73\]](#), JICA will establish an environment that is beneficial for Japanese companies.



The Second Mekong International Bridge, which links Thailand and Lao, was financed by an ODA loan. The project is part of the construction of an east-west corridor that will extend from Vietnam to Myanmar.

## Information and Communication Technology (ICT)

### ● Overview of Issue

Information and communication technology (ICT) has been advancing rapidly in developed countries. In the administrative, social and economic sectors, ICT has been used to computerize central government operations (e-governance), educate via the Internet (e-learning) and facilitate digital trade and commerce (e-commerce). ICT also has the potential to support a variety of improvements that can enhance the quality of life, including increasing the efficiency of the economic and social systems of countries, raising productivity and conserving energy. It is not an exaggeration to say that ICT has become vital to the functioning of modern-day society.

In many developing countries, however, the spread of ICT has been slow. This has led to a digital divide with developed countries, which in turn has worsened economic disparities.

Furthermore, developing countries have gaps between areas where communication is possible (people can access information) and areas where there are no communication links. This gap translates directly into a structure of economic disparities that become larger.

### ● JICA Activities

JICA believes closing the digital divide is necessary to increase the effectiveness and efficiency of various cooperation programs. To close this divide, JICA is contributing to the greater use of ICT in developing countries.

At the G8 Kyushu-Okinawa Summit of July 2000, Japan asserted its stance to help bridge the digital divide in developing countries by promoting the use of ICT in development aid, such as through distance learning. Furthermore, Japan announced the establishment of ICT bases in 30 locations to use ODA funds more efficiently. Through activities like these, JICA is providing cooperation for the greater use of ICT in developing countries, mainly in Asia.

### ICT Policies Linked to Social and Economic Development

JICA offers the following five approaches to increase the use of ICT in developing countries:

- 1) **Improve ICT policy-planning capabilities:** Provide on-site advisors to support the formulation of IT policies in such areas as national strategy concerning electronic communication and the development of relevant industry.
- 2) **Develop ICT infrastructure:** Formulate a plan to develop central communication networks and rural communication infrastructures, and reinforce their maintenance and management systems.
- 3) **Improve aid effectiveness and efficiency through ICT use:** Increase project effectiveness and efficiency by adopting ICT in government administrative departments and using ICT for cooperation projects in a variety of sectors, including education, health care, and commerce.
- 4) **Train skilled ICT personnel:** Implement a human resource

development project to enhance the capabilities of technicians and policy planners in order to further enlarge ICT usage. This step comprises a large proportion of JICA's ICT support.

5) **Broadcasting:** Extend cooperation to expand the use of Japanese-style digital terrestrial broadcasting, which can withstand interference and permits stable reception.

**Case Study**

**Laos**

**Assistance for Training Engineers Who Can Support the IT Infrastructure**

**Human Resource Development in the IT Service Industry at National University of Laos (NUOL)**

Project period: December 1, 2008 to November 30, 2013)

**Use of IT in Laos is increasing rapidly. JICA is working with the Engineering Department of NUOL to train IT engineers and create a framework in which young people can start businesses that utilize IT.**

Private-sector IT investments in Laos increased 19.8% in fiscal 2012 (according to an industry association), which was much higher than the GDP growth rate of 8.2%. Utilization of personal computers and smartphones is climbing rapidly at companies as well as households. However, there are not enough engineers to back up the country's IT infrastructure. As a result, many key IT systems must be entrusted to foreign engineers. The aim of this project is to use instructors in Laos who have received technological know-how from JICA experts in order to foster the development of IT engineers who can immediately fill key roles. Courses for college graduates have been held two times. There were a total of 65 participants and almost all of them started working in IT jobs immediately after graduation. In 2012, this course was upgraded to become the first IT master's degree course in Laos. Currently 34 students are enrolled in this program. The classes enable students to obtain industry-standard IT certifications. There are also courses for developing systems for use with actual business operations. Due to the recognition of the highly practical nature of this program, a growing number of companies and government agencies are giving students scholarships and sending their own people to attend the course. A short-term course that was separated from the main program is also popular. Thus far, this course has been held 68 times and served a total of 772 students.

In 2012, an entrepreneurship support system (incubator) was started in Laos for the first time. This targets young people who have an idea or technology but no management know-how. This system provides space along with advice for registrations, accounting, marketing and other company activities. As of May 2013, the incubator was home to four companies, including one affiliated with Japan. These entrepreneurs are pioneers that are launching businesses that are common in other countries but had not yet emerged in Laos. Examples include the provision of digital information in the Laotian language and the sale of merchandise on the Internet.



Participants in a workshop conducted by this JICA project



Sharing knowledge about technical writing



A Thai instructor on a short-term assignment provides technical training