

Economic Infrastructure Development

A Holistic Response to Urban and Regional Issues Based on a Macro Perspective



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

The lack of utility infrastructure and frameworks for its operation and management hinders economic progress in many developing countries. Thus, JICA assists in infrastructure establishment and the development of the economy in these respective countries.

Although rapid urbanization can boost efficiency in economic activities and drive economic development, it can also trigger problems, such as the worsening of living environments, traffic congestion, unstable security, as well as increased disparities between urban and rural areas.

The promotion of effective urban and regional development requires not only region-specific approaches, but also planning on a macro scale, keeping in mind the linkages with other regions and cross-border economic zones.

With a view to developing sustainable economic infrastructure, JICA establishes urban and regional development plans which take stock of suitable social systems and institutions. Based on these plans, JICA is extending cooperation for the development of transportation infrastructures and information and communication networks, as well as for strengthening the organizations and human resources which maintain and manage these infrastructures and networks.

Urban and Regional Development

Overview of Issue

The world's population has been estimated to increase to 7 billion people in 2011. Although only 13% of the world's population lived in urban areas in 1900, rapid urbanization prompted the figure to increase by over 50% in 2006. This growth tendency is particularly pronounced in developing countries, and about 80% of the world's urban population is expected to be centered in developing countries by 2030.

The effects of rapid urban development may drive economic expansion but can also give rise to poor living environments, traffic congestion, air and water pollution, increased garbage, lack of public security and the buildup of slums areas. It also widens the gap between urban and rural areas, which leads to several problems such as regional economic deterioration, outdated social infrastructures and deficient public services.

JICA believes that all issues cannot be resolved from an individual perspective and that a holistic approach to development in urban areas or regions is crucial to reduce these negative effects due to rapid urbanization.

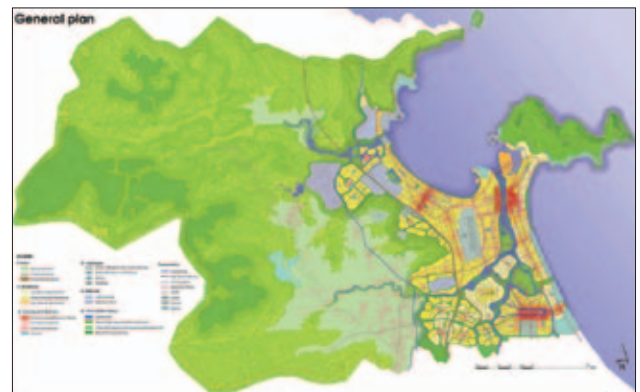
JICA Activities

JICA's efforts to sustain urban and regional development in developing countries include both urban master planning and comprehensive regional planning. Also, it conducts surveys, Technical Assistance and cooperation to facilitate the execution of these plans, which contributes to economic growth and improved standards of living.

Master plans and development plans are formulated based on the following five perspectives:

- 1) Take an integrated and comprehensive approach on the diverse issues in the urban areas or region
- 2) Emphasize capacity development across all administrative agencies, social organizations and communities to advance urban and regional development
- 3) Enhance regional administrative systems in line with the country's state of affairs
- 4) Correct disparities between regions by promoting balanced regional development that recognizes the perspectives of its residents
- 5) Encourage balanced economic development that prevents the negative effects of urbanization

Based on the above, JICA will analyze urban and regional problems, create a mid- to long-term vision, formulate development policies and sector-specific development plans, and propose action plans for their implementation. By implementing



A structural drawing of the future city proposed by The Study on Integrated Development Strategy for Danang City and Its Neighboring Area conducted in Viet Nam. The Study established a holistic development strategy and plan which achieves a balance between industry, tourism, commerce, and residential areas.



Internally displaced children in Northern Uganda attending class outside due to a shortage of classrooms. In the Amuru District in Northern Uganda, a region headed towards reconstruction in the aftermath of the 20-year conflict, JICA is extending cooperation to establish a community development model necessary for promoting the return and settlement of internally displaced persons.

multiple projects based on a master plan in coordination with each other, JICA strives to maximize the development impact.

Comprehensive and Internally-Driven Processes

JICA has conducted numerous urban and regional development cooperation to date. In order for the people in the developing countries to be able to realize the development plans on their own in the future, cooperation for urban and regional development must prioritize comprehensiveness and internally-driven approaches.

In particular, it is necessary to develop the capacities of people who work at the counterpart organization and are responsible for implementing the urban and regional development plans. It is important to review the organization's scheme for developing human resources, as well as the social and institutional mechanisms for the purpose of the organization's function to work effectively and sufficiently. It is incumbent on donors to cooperate on internally-driven processes which will facilitate people in developing countries to identify and address the issues comprehensively with their own efforts, at the individual, organizational, societal and institutional levels. JICA is extending cooperation which consistently prioritizes comprehensiveness and internally-driven processes, through every stage of the formulation and implementation of urban and regional development plans in developing countries.

Regional Development from a Macro Perspective

As regional needs diversify, there are an increasing number of issues that require a holistic approach based on an urban or regional perspective, rather than an approach that resolves issues individually. This approach must adopt a cross-border macro

perspective by looking at the region more broadly from multiple angles, instead of supporting the development of agricultural areas left behind in the economic growth. At the same time, initiatives increasingly need to take account of global issues, including climate change.

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 is rising rapidly. These projects require significant financing, and securing funds is a big challenge. 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 sustainably provide transportation services which meet demand while at the same time are not being wasted.

Furthermore, assistance is needed for initiatives which enhance the environment and society of the counterpart country, including initiatives for the elimination of traffic congestion through the introduction of modes of public transportation and



In the capital city of Bangkok, Thailand, the purple line of the mass transit system, connecting Bangkok and the neighboring Nonthaburi Province, is being constructed with the provision of ODA Loans.

changes in transportation methods; CO₂ 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 goods and people in order to vitalize socioeconomic activities and to ultimately improve income levels and enrich people's lives.

It is not merely enough to simply build roads and bridges to establish freight and transportation infrastructure in developing countries. The infrastructure also requires the establishment of a plan to ensure an efficient transportation system, the development of human resources and the strengthening of organizations that will appropriately maintain and manage the infrastructure, and the creation of social and institutional arrangements that support the organizations. JICA actively promotes participatory cooperation with the residents and collaboration with NGOs with a focus on the beneficiaries, including users and residents, in view of who will use the system and for what purpose.

In addition, cooperation for the transportation sector needs

to consider a variety of perspectives, including: "international transportation" for promoting the international flow of goods and people and the development of regional economic zones which transcend borders; "national transportation" which ensures people's fair access to transportation and balanced national development; "urban transportation" which supports sustainable urban development and enhances 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 indeed to achieve "inclusive and dynamic development."

Cross-border Transportation Infrastructure

Cooperation may be required for the development of transportation infrastructure in multiple countries, across national borders, e.g., those which connect an ocean-side country with a landlocked country.

JICA views cross-border transportation as a way to promote the integration of economic markets over a wide region across national borders. Cross-border transportation infrastructure will require a holistic approach, including the development of domestic infrastructure and border facilities, such as customs



Namibe Port in Angola which was repaired with Grant Aid



Vietnamese airport officials visited Japan for training in Japan. The photo shows the officials receiving an on-site lecture about facility management at Narita Airport.

Holistic Assistance for the Introduction of Viet Nam's First Urban Railway System

JICA is extending assistance for the introduction of urban railway systems in both Hanoi and Ho Chi Minh City. This is a holistic urban railway development initiative, which integrates ODA Loans, Technical Cooperation, and private partnerships, and covers the stages of planning; construction; operation, maintenance and management; and urban development along railroads.

In Viet Nam's major cities of Hanoi and Ho Chi Minh City, rapid economic growth and urbanization in recent years have caused an increase in traffic volume of motorbikes and vehicles. This has worsened traffic congestion and raised concerns about adverse effects on economic and social activities. Furthermore, vehicle traffic has contributed to the grave problem of air pollution.

Drawing on Japan's Experience and Technologies

In light of these circumstances, JICA supported the formulation of urban development master plans, including urban transportation plans for Ho Chi Minh City and Hanoi. Both plans recommended the introduction of a mass rapid transit system as part of a shift toward a system of public transportation.

Based on the recommendation, in Ho Chi Minh City, JICA provided ODA Loans for the construction of Line 1 (approximately 19.7km between Ben Thanh and Suoi Tien), which had the highest priority. In Hanoi, JICA is providing assistance through ODA Loans for the construction of Line 1 (11km between Gia Lam and Giap Bat, 4km around Ngoc Hoi station) and Line 2 (12km between Nam Thang Long and Tran Hung Dao) of the urban railways recommended in the master plan.

Because Japanese companies possess advanced technologies in the area of urban railway, the Special Terms for Economic Partnership (STEP) will be applied to the ODA Loan projects. For the traffic signal, communication systems, and the train car parts, Japanese products are expected to be delivered and utilized. Furthermore, Japanese

railway operators not only develop railways but also possess unique business models, including urban development models for real estate development along rail lines. It is expected that Japan's experience with urban development in connection with railways will also be harnessed for the development of urban railway systems in Hanoi and Ho Chi Minh City.

Construction will begin in 2012 for Line 1 in Ho Chi Minh City, and operations are targeted to start in 2017. Line 1 in Hanoi is expected to open in 2017 and Line 2 in 2016.

Assistance for Maintenance and Development of Neighboring Areas

Viet Nam lacks experience in operating and maintaining urban railway systems. A new company must therefore be launched to carry out the operations and maintenance. Beginning in 2011, JICA has commenced a Technical Cooperation project to support the establishment of an operation and maintenance company for urban railway in Ho Chi Minh City, while a similar cooperation is being considered for Hanoi.

Urban railway systems also require the establishment of technical standards and standard specifications. Thus, JICA supported



An image of an elevated bridge which crosses Saigon River, heading from central Ho Chi Minh City toward the suburbs

the formulation of technical standards for urban railway systems through a Development Study project (2008-2009).

Furthermore, in order to promote the use of urban railway among people used to commuting by motor bikes, the development of the train stations' surrounding area is essential in addition to the development of railways. This includes the development of facilities which enhance rider convenience, including parking lots for cars and bicycles as well as bus terminals for commuting to work and school. JICA is providing assistance for the development of areas across the major stations of Lines 1 and 2 and the development of areas along railway lines in Hanoi. Additionally, for Ho Chi Minh City, JICA is implementing a study with private companies in order to present a holistic proposal for the development of the Ben Thanh station that will include an underground mall. Ben Thanh station will serve as a terminal station connecting to other train lines.

Moving forward, JICA will continue to support urban development in Hanoi and Ho Chi Minh City through the introduction of the urban railway system, while making full use of Japan's railway technologies and experience.



The significant increase in road traffic has made road congestion a critical issue. In Ho Chi Minh City, the average travelling speed of vehicles is projected to worsen from 23.8km per hour in 2002 to 13.3km per hour in 2020.

and immigration offices; the development of a regional network allowing a region-wide flow of people and goods; simplified border crossing procedures to promote cross-border transportation; and the development of soft infrastructure, such as human resources development.

The aim is to vitalize the economies of the countries and region by promoting cross-border transportation, and its development will also require planning and implementation through multilateral cooperation. Nonetheless, JICA recognizes that the benefits of cross-border transportation may yield disproportionate gains to economically stronger regions, as well as lead to crimes and the spread of diseases such as HIV/AIDS. JICA takes into account the possibility of these negative impacts in advancing its cooperation while considering measures to address them.



The satellite hub antenna and the Japan-Pacific ICT Center constructed with Grant Aid at the University of the South Pacific in Fiji, in order to serve as the hub facility for ICT in the Oceania region. Technical Cooperation projects currently being implemented include the establishment of new ICT bachelor's degree courses and the enhancement of the satellite communication network.



A class being held at the ICT Center Lab

Information Technology (IT)

Overview of Issue

Information technology (IT) has been advancing remarkably in developed countries. Applicable in the administrative, social and economic fields, IT has been used to computerize central government operations (e-governance), educate via the Internet (e-learning) and facilitate digital trade and commerce (e-commerce). IT also has the potential to support a variety of improvements, including increasing the efficiency of the economic and social systems of countries, raising productivity, and enhancing the quality of life.

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

JICA Activities

JICA believes closing the digital divide is necessary to increase the effectiveness and efficiency of various cooperation programs. By promoting IT use in developing countries, JICA is contributing to the elimination of the digital divide.

At the G8 Kyushu-Okinawa Summit of July 2000, Japan asserted its stance to help bridge the digital divide in developing countries through distance learning and other means. The Japanese government also announced its plan to use ODA funds more effectively and establish IT bases in 30 locations. Through these actions, JICA has also tackled efforts to correct the digital divide in developing countries mainly in Asia [→ See the Case Study on page 72].

IT Policies Linked to Social and Economic Development

JICA offers the following five approaches to address the delayed introduction of IT in developing countries:

- 1) Improve IT policy-planning capabilities: Dispatch advisors to support the formulation of IT policies in such areas as national strategy concerning electronic communication and development of relevant industry.
- 2) Develop communication infrastructure: Formulate a plan to develop central communication networks and rural communication infrastructure, and reinforce their maintenance and management systems.
- 3) Improve aid effectiveness and efficiency through IT use: Increase project effectiveness and efficiency by adopting IT in government administrative departments and using IT for cooperation projects in a variety of sectors, including education, health care, and commerce.
- 4) Train skilled IT personnel: Implement a human resource development project to enhance the capabilities of technicians and policy planners in order to further spread IT usage. This step comprises a large proportion of JICA's IT support efforts.
- 5) Broadcasting: Extend cooperation to spread Japanese-style digital terrestrial broadcasting, which can withstand interferences and permits stable reception, etc.

Contributing to the Building of a New State through Port Distribution Promotion

Water transportation by the Nile River is critically important to South Sudan which does not border any ocean. JICA, coupled with the plan to construct a pier, etc. at Juba Port through Grant Aid, has commenced a Technical Cooperation project which will strengthen the port's management capabilities. With South Sudan obtaining independence in July 2011, JICA will promote cooperation for both hard and soft infrastructure with a view to contributing to the building of the new state through the promotion of the distribution system.



Diagram of the Juba River Port Expansion Project (at completion, forecast)

Lifeline Supporting the Reconstruction

After the Comprehensive Peace Agreement was reached in 2005 between the South and North which concluded a 20-year civil war, an Autonomous Government of Southern Sudan was established and southern Sudan has made progress towards reconstruction.

The smooth distribution of goods in and outside of the country is required for advancing post-war reconstruction. However, the arterial road linking South and North Sudan is not complete and transportation capabilities are limited. The inland water route of the Nile River, linking the Red Sea and the Juba Port through a central port in the North, serves as a lifeline supporting the reconstruction of South Sudan, along with the ground route through Kenya and Uganda.

JICA has consistently provided assistance



While at present the port handles bulk (stacked separately) cargo primarily, the use of containers will dramatically improve the efficiency and safety of cargo handling work.

for developing the Juba River Port, which serves as a central point of the inland water route. Immediately after the peace agreement was reached, JICA began repairing the port facilities which were damaged during the civil war, through an emergency development study. JICA has also promptly constructed a 35m pier, as well as in follow-up cooperation, provided cargo handling equipment and training in port management.

Both Hard and Soft Infrastructure

Following a six-year transition period since the peace agreement, the Republic of South Sudan obtained independence in July 2011. In view of the increasing freight transport demand due to economic vitalization accompanying the country's independence, JICA is working on a new cooperation which integrates Grant Aid and Technical Cooperation, in order to further promote freight transportation centered on Juba Port.

The preparatory survey for the Grant Aid has already been completed. By fiscal 2013, JICA plans to develop infrastructures, including an expanded pier (by approximately 200m) and a warehouse, as well as procure equipment, including large-scale cranes. While to date cargo had been handled mainly by humans, the introduction of full-fledged mechanized cargo handling by JICA is anticipated to increase the volume of

cargo that is handled, raise the efficiency and safety of cargo handling, and improve the sanitation conditions of the premises.

Furthermore, the Technical Cooperation project implemented from March 2011 for the next four years (plan) will strengthen Juba Port's port management capabilities through the establishment of the roles and organizational structure of the port management organization at Juba Port and its budget management mechanism. The project will also enhance the facilities' maintenance and management capabilities, promote safe and efficient cargo handling and port management, and create port statistics. In addition, in order to remedy the regional disparities which are of concern, JICA will conduct training for the staff of six other major commercial ports and aim to share the knowledge and experience gained at Juba Port among the other ports.

The development of port facilities in parallel with the port's human resources development will enable the provision of effective cooperation, including the provision of technical courses which take advantage of the facilities and equipment that were installed, as well as the maintenance and management of the facilities by the human resources which were trained.

Infrastructure Linking the South and North

The establishment of a smooth goods distribution system through this cooperation will allow many goods to be delivered to a broad area more cheaply. This is expected to generate economic effects, including lower prices for commercial products and the distribution of diverse products. This cooperation is also expected to not only contribute to the development of South Sudan, but also to the reconciliation between South and North Sudan through the promotion of goods distribution between the two areas.

From Our Counterpart

Eng. Maurice Rehan
Director General – Directorate of River Transport / Ministry of Transport

This Technical Cooperation project will help improve the management capabilities of the river port in South Sudan as well as expand the volume of cargo handled by the port, and is an excellent opportunity for South Sudan. We would like to devote our attention to acquiring the port technologies of Japan. Furthermore, I hope Japan will share with us not only technology but also its culture, including discipline.