
Chapter 1 Outline of the Transportation Sector

1-1 Current State of Transportation

Transportation is fundamental in enabling people to go about their lives, and is crucial for achieving economic or social objectives. Without transportation services and infrastructure such as automobiles, railways, aircraft, and ships, the range of activities available to us would be severely limited, and it is fair to say that modern society could not function. Meanwhile, the environments surrounding transportation are continuously changing, and the resulting issues are becoming more apparent and complex.

(1) Traffic Congestion Due to Rapid Urbanization and Obstruction of Smooth Transportation Due to Progress of Motorization

It is important to recognize the various problems in the transportation sector caused by urbanization

The global population as of this writing in 2004 is 6.38 billion¹, and 47% of people reside in urban areas. According to United Nations figures, the global urbanization rate is predicted to reach 60% in 2030. Urbanization in developing countries is particularly rapid, with urban populations rising 6% per year. It is predicted that the number of cities with populations in excess of one million in developing countries will double in the next 10 years. Increases in private automobile ownership are actually exceeding the level of urbanization, with between 15% to 20% increases per year in some countries. The rapid progress of motorization and urbanization is giving rise to various problems that obstruct smooth transportation, such as traffic congestion due to road capacity shortage, diminishing use of public transportation modes and worsening management status of transportation organizations, air pollution due to vehicle emissions, and increasing numbers of traffic accidents.

Measures towards motorization are generally aimed at expanding road capacity and have a tendency to emphasize the movement of vehicles rather than people. As a result, urban sprawl² advances, further reliance on automobiles as a means of transportation is encouraged, and the vicious cycle continues. Furthermore, policies that give priority to the movement of vehicles exacerbate disparities between people who have cars and those who don't with regard to the

¹ United Nations Population Fund (2004)

² Sprawl means the unplanned expansion of cities into surrounding areas resulting in the disorderly formation of urban areas. Low quality urban areas form with inadequate and incomplete roads, water and sewage facilities, resulting in environmental problems and disaster-prevention-related problems. Furthermore, not only is it difficult to improve the situation later due to social factors, but it also requires large economic outlays. (Atsuyuki Okabe, Professor at the University of Tokyo)

ability to move about and exercise transportation rights³.

Since economic growth is indispensable for ensuring poverty reduction, it is essential to consider transportation sector approaches.

(2) Increased Concern about Poverty

Resolving the problems of poverty is a matter of great concern in contemporary development assistance, as demonstrated by the commitment of international society to the Millennium Development Goals (MDGs) and the introduction of the Poverty Reduction Strategy Paper (PRSP). This trend began in the 1970s. Since then, the concerns of international development assistance have turned to the social sector, quite noticeably to medical care and education, factors that directly benefit the poor. In the 1990s, however, in contrast to Asia, where half of the population that had been living in poverty were raised out of poverty amidst continued economic growth, it became clear that the situation was barely changing in Central and South America, which were facing economic stagnation, and that the number of poor was increasing in Africa. These experiences led to widespread awareness that economic growth is indispensable to achieve poverty reduction. The recognition is increasing in developing countries and among donors that achieving the comprehensive economic growth that benefits all people (inclusive growth, pro-poor growth) is important.

Transportation is an essential factor in achieving this objective and it is expected to:

- (i) Benefit the poor indirectly by bringing about economic growth; and
- (ii) Make direct contributions to the poor by providing basic access.

Through the improvement of large-scale infrastructure such as ports and harbors, airports, roads, and railways, the indirect approaches in (i) above are expected to provide adequate responses to globalization, contribute to regional economic integration, attract Foreign Direct Investment (FDI), and promote use of national land and resources.

The direct approaches in (ii) aim to secure the national minimum⁴ and civil minimum⁵ to a greater extent than before, with regard to access to various basic services including markets, education and medical care.

(3) Shortage of Revenue and Capacity in Developing Countries

The capacity of developing countries to deal with the abovementioned issues is restricted to low levels.

Since governments' budgets for implementing transportation measures are limited, securing new sources of revenue is of course a crucial issue for

Capacity development is crucial for appropriately understanding and resolving problems faced by countries.

³ The transportation right is a new human right that indicates the right to transportation of citizens, and is a combination of related human rights set out in Article 22 (the freedom of choice of residence, migration, and occupation), Article 25 (the right to minimum standards of living), and Article 13 (the right to the pursuit of happiness) of the Japanese constitution, among others. (Tozaki (2002))

⁴ This refers to the guarantee of access to social public services and treatment of particular minimum standards regardless of what region the citizens reside in. The basic standards are termed the national minimum. (Naoyuki Yoshino, Professor at Keio University)

⁵ This is a political axiom that sets out the minimum required level of living standards to be secured from a relatively universal perspective, given the actual circumstances within a given region, based on the spontaneity of the people. (Matsushita (1971))

consideration along with the utilization of private-sector funds. Therefore, environmental improvements that facilitate the provision of transportation infrastructure and services by the private sector are essential, as is a shift in the role of government from provider to regulator.

In general, public transportation organizations in developing countries have been experiencing chronic problems due to low profitability resulting from low utilization and inefficient operation, with some of them heavily indebted. Therefore, since revenue required for expanding and improving services cannot be ensured or are absorbed by debt payments, transportation needs cannot be suitably met. On the other hand, there is a large supply of transportation and alternative means from the private sector, including the informal sector, either complementing or competing with public transportation modes. However, there are concerns related to the safety and reliability of such services.

In addition, for issues such as appropriately meeting transportation needs and the provision of management and maintenance of transportation infrastructure and services, the traditional central government-led approaches have been unable to provide effective solutions. New approaches and techniques such as participatory or demand-driven approaches are required for transportation infrastructure development, management and maintenance, and the provision of services in poverty-stricken remote and urban areas. Reform of the transportation sector is a matter of urgency, with appropriate measures including decentralization of government functions, the effective use of revenue through the introduction of private-sector technology and expertise, efficient asset management such as existing infrastructure, improvements to operational services, and appropriate legal reforms.

Like any other development issues, issues in transportation vary greatly depending on the particular economic, social, geographical, and other conditions, and are unique to each country. Thus, a single strategy or solution cannot be applicable to all countries. In the future, governments in developing countries must develop capacity through a cycle of transportation policy formulation, implementation, monitoring, and evaluation to appropriately deal with the unique transportation issues in their countries.

1-2 Definition of Transportation

Transportation (or transportation systems) in this report refers to:
(i) transportation modes,
(ii) transportation facilities
and (iii) transportation services.

There are various definitions of transportation, but in simple terms, it means the movement of people and goods. The movement of people and goods requires transportation facilities such as roads and ports, and transportation modes such as automobiles and aircraft. It also requires entities to provide transportation facilities and services, and, in addition, organizations, systems and sources of financing are essential to support all of these. Therefore, in this report, transportation is regarded as the required elements for moving people and goods and is defined as (i) transportation modes, (ii) transportation facilities required for providing services and (iii) the services provided by transportation organizations. All of these elements are taken together as forming transportation systems, and

proceed on that basis. (However, transportation via pipelines is not included.)

1-3 Trends of International Assistance

1-3-1 Post-war Trends in Assistance

The trends of international assistance for developing countries can be broadly broken into (i) the era of prosperity (1950s–1990s), (ii) the era of review (1990s) and (iii) the era of revival (2000 onwards).

The Post-World War II assistance for developing countries from international society can be broadly broken into three periods: the era of prosperity between the 1950s and the 1990s, the era of review from the 1990s to 2000 and the era of revival (renewed awareness) from 2000 onwards.

<The Era of Prosperity>

The trends in postwar assistance for developing countries were to focus on support for post-war revival, placing the main emphasis on economic growth through large-scale support for economic infrastructure that would produce significant external economic effects, such as transportation, electricity generation, irrigation, and communications. As a result, while developing countries experienced considerable growth, economic disparities widened between developed countries and developing countries, and among developing countries themselves. During the 1970s, the traditional focus on the construction of infrastructure shifted towards the fulfillment of Basic Human Needs (BHN) aimed at poverty reduction.

<The Era of Review>

During the 1990s, there was criticism that large-scale infrastructures such as dams and roads were contributing to environmental damage and the division of regional society, and that they were not benefiting the people living there. Limitations emerged from a cost-benefit perspective on investments for large-scale projects such as these, and “assistance fatigue” led to a decreasing level of funds from donors. Consequently, a reevaluation of the efficiency of assistance, and of existing assistance measures, became increasingly necessary. As the transportation markets were revitalized, the private sector began to participate in infrastructure development. Assistance organizations shifted the focus of their aid activities towards system reforms to meet the needs of the markets and reforms of state-run enterprises.

The focus shifted further to new development issues such as escalating poverty, the importance of peace building, and the perspective of human security, and in 1990 poverty received attention as part of donor assistance strategies⁶. The Second United Nations Conference on Human Settlements (HABITAT II) held in 1996 dealt with the issues of the deterioration in human living environments and the inadequacy of infrastructure due to urbanization. The Development Assistance Committee (DAC) Network on Poverty Reduction (POVNET) was established in 1998 by the Organization for Economic

⁶ The World Bank’s “*World Development Report*” identified poverty as a topic, and the UNDP has begun producing the “*Human Development Report*.”

Cooperation and Development's (OECD) DAC, and specialized Task Teams in the three areas of private sector development, agriculture and infrastructure work together to discuss and develop effective development cooperation strategies for poverty reduction.

<The Era of Revival>

Development objectives continued to become more diversified following the year 2000. When discussing international aid activities focusing on people, there were arguments that economic growth is not possible without infrastructure development, leading to renewed awareness of the importance of infrastructure⁷, and emphasizing in the process the relationship between poverty reduction and infrastructure development. The international development goal of reducing absolute poverty by half by 2015 was set as part of the Millennium Development Goals (MDGs) adopted following the September 2000 United Nations Millennium Summit. The World Summit for Sustainable Development (WSSD) held in Johannesburg in August 2002 not only revised Agenda 21⁸ and dealt with environmental issues, but there was also debate on wide-ranging and diverse themes such as poverty, health, trade and investment, and African development.

1-3-2 Activity Trends of Donors

Although the amount of support for infrastructure did fall after 1990, in recent years, donor countries and international organizations have rediscovered the important role of infrastructure in achieving the MDGs. Watching past trends in amounts for assistance, although the World Bank's contribution to the transportation sector had fallen by half in 2000, it subsequently experienced a continuous steady increase, and was at its highest level ever in 2004 (US \$3.7778 billion as of 2004). Transportation and communication is the largest area of support provided by the Asian Development Bank. The amount increased to 2.5 fold over the five years between 1999 and 2003, and in 2003, it accounted for 42.2% of the total value of assistance (US \$2.5777 billion for transportation and communication as of 2003). While the total value of assistance from many donors was falling around the year 2000, the figure is currently stable or increasing gradually in the transportation and communications sectors.

Due to the unfortunate aspects of past support-that infrastructure development did not produce adequate external economic effects, and that services did not reach intended beneficiaries-contemporary assistance has expanded beyond the construction sector to include such areas as management and maintenance, and capacity development (including the enhancement of systems and organization capabilities). Also being pursued are strategies that

The value of support for the infrastructure sector has been rediscovered in recent years.

In addition to assistance in "hard" components, such as infrastructure, the implementation of assistance in "soft" components, such as capacity development and PPPs, is expanding.

⁷ JICA redefined infrastructure in the report (2004a) as an essential common base for preserving the lives and livelihoods of all people, and for securing their right to lead a safe and healthy life, and which acts as a common base for bringing out people's inherent abilities, and realizing their potential.

⁸ This is a global action plan for achieving sustainable development in the 21st century; it was adopted at the 1992 United Nations Conference on Environment and Development (held in Rio de Janeiro, Brazil).

Box 1-1 World Bank PPP Studies

The World Bank has created a downloadable database that brings together information on PPP infrastructure projects around the world⁹. This database contains the project name, sector, type of PPP, amount of government and private investment, financing agreement conclusion time, and private sector entity name. Reports that provide an analysis of the database information are also produced regularly, allowing relevant parties to track the latest trends in PPP.

The World Bank also conducts assessments of the infrastructure sector in various countries, and summarizes investment and lending opportunities for private sector entities in the form of Recent Economic Developments in Infrastructure (REDI) reports. The assessments are consistently based on a set of standardized survey headings, aiming to facilitate comparative investigations of several countries.

Finally, the Public-Private Infrastructure Advisory Facility (PPIAF), a joint initiative of the governments of Japan and the United Kingdom and the World Bank, is an assistance facility aimed at improving infrastructure through private sector involvement. In addition to funding advisory services for a range of specific activities, the facility also collects information on the best practices in the world, and distributes this in the form of reports and toolkits.

create systems and environments that facilitate the private sector's activities such as the Public-Private Partnership (PPP) and privatization through private sector participation.

1-3-3 Issue-Specific Activities

<Poverty Reduction>

Transportation is treated as the highest priority sector by many assistance organizations since it promotes pro-poor economic growth. The World Bank and the Asian Development Bank have outlined policies and strategies for transportation that have the ultimate objective of reducing poverty.

<Regional Integration>

In conjunction with the progress of regional economic integration and globalization, transportation plays an important role in rapid and efficient cross-border processing. Regional efforts and regional organizations such as the Greater Mekong Sub-region (GMS) program in Asia, the Southern African Development Community (SADC) in Africa and the Puebla Panama Plan (PPP) in Central and South America, are engaging in such efforts as expediting cross-border processing, creation of regional corridors, and trans-border transportation infrastructure.

<Management and Maintenance, and Ensuring Revenue>

The Sub-Saharan Africa Transport Policy Program (SSATP) is an international partnership aimed at developing and implementing policies and

International issues are as follows:
(i) poverty reduction,
(ii) regional integration and
(iii) management and maintenance, and ensuring revenue.

⁹ World Bank website, "Private Participation in Infrastructure Database" (<http://ppi.worldbank.org/>)

Box 1-2 Trends in the Creation of International Standards

Because of various transportation infrastructure assistance, the standardization of various facilities and specifications and the creation of international standards are essential for the smooth flow of people and goods and for ensuring public security in coordination with the progress of globalization. For example, in relation to the planning of the Asian Highway-which spans 32 Asian countries and which faces issues including conformity with international design standards, simplification of cross-border processing and construction of integrated transportation systems-standardization of specifications for roads and other transportation infrastructure and services is required across many countries and regions.

Practical examples of such efforts include: standardization and the creation of international standards in the air transportation sector by the International Civil Aviation Organization (ICAO); revisions to the International Convention for the Safety of Life at Sea (SOLAS); the adoption of the ISPS Code, and the standardization of maritime personnel carried out by the International Maritime Organization (IMO); and road technology research carried out by the Permanent International Association of Road Congress (PIARC).

strategies for the transportation sector in sub-Saharan Africa. As part of this program, the Road Management Initiative (RMI) pursues activities which are aimed towards systematic reforms and policy formulation for better road management and financing for public road services. Also implemented are activities to efficiently utilize limited resources in regional areas using Labor-Based Technology (LBT) proposed by the International Labour Organization (ILO).

1-4 Trends in Japan's Assistance

1-4-1 Characteristics of Japan's Assistance

Following World War II, Japan received support and financing from the World Bank and other international agencies for national rebuilding. Japan started borrowing from the World Bank in 1953 and constructed and improved facilities such as roads, electricity and hydraulic power. Around the same period, in 1954, Japan began providing international assistance in the form of economic cooperation that went side-by-side with postwar reparations in Asia¹⁰. Not only did this assist the development in Asian countries and promote social welfare, but by limiting funding to the procurement of Japanese goods and labor when providing assistance to recipient countries, these activities also supported the market for Japan's domestic industries, and improved the infrastructure to facilitate Japanese enterprises to diversify overseas.

Consisting mainly of concessional loans, grant aid and technical cooperation, Japan's ODA has contributed to capacity development and to economic infrastructure development in areas such as roads, ports and harbors,

Japan's assistance activities have tended to focus on support for infrastructure development. Developing countries are assisted through improvements in economic and social infrastructure that supports sustainable development.

¹⁰ Paying Japan's reparations was completed in July 1976 with the final payment made to the Philippines.

**Box 1-3 A Bridge in Myanmar Constructed by Technical Cooperation:
(Example of JICA's Activity)**

Back in the 1970s, there was no bridge across the Irawaji, a river that divided the fertile river basin from east to west, a situation which inhibited agricultural and industrial development. In addition, since Myanmar had very little experience with large bridge projects, they requested technical support from the Japanese government for capacity development of technical personnel involved in constructing and planning roads and bridges.

Since there are limitations in learning the construction technology inside a classroom, it was proposed to learn the technology during the actual bridge construction. As a result, technical assistance was provided for a period of six years between 1979 and 1985. This assistance was aimed at facilitating the transfer of design and construction technology used in the Thuwunna Bridge, a long, large pre-stressed concrete (PC) bridge constructed using domestically produced concrete. Thuwunna Bridge became the only bridge constructed through technical cooperation. Following that, in 1985, construction of the Ngawun Bridge began, and technical guidance was provided through the short-term dispatch of experts.

Following the completion of the project, the personnel that had received capacity development training on the technology used in the project played a central role in the construction of many other bridges. Thus, Myanmar became one of the few countries in Southeast Asia that was able to independently undertake bridge construction projects from design to construction.

Source: Fujiwara and Takagi (2004), JICA (2004c)

electrical utilities, and water utilities, and has been consistently focused on supporting infrastructure development¹¹.

Due to severe economic and financial conditions, ODA budgets have been decreasing in recent years. Although the proportion of ODA in the form of assistance for economic infrastructure is currently declining, when the actual figures are examined, it is clear that the focus on infrastructure remains constant. Japan's assistance activities are targeting economic growth in developing countries by tackling contemporary development issues such as poverty reduction and promoting trade and investment through improving the economic and social infrastructure that is the basis for supporting sustainable development¹².

1-4-2 Strengthening of Region-Specific and Sector-Specific Assistance

Japan's ODA Charter, approved by the Cabinet in June 1992, identifies Asia as a priority region, with infrastructure development as one of the priority tasks.

¹¹ The following brief examples outline the extent of the contribution of Japan's assistance activities to improvements in economic and social infrastructure, which forms the foundation for economic progress: approximately 20% of highways in the Jakarta metropolitan area, and around 50% of the double tracking section of the Java Trunk Line in Indonesia were constructed, and 13% of national roads in the Philippines were upgraded. (Information sourced from relevant diplomatic offices in May 2004, MOFA (2004) p.18)

¹² MOFA (2004) p.109

Political approaches to region- and country-specific assistance policies have been continuously strengthened since the 1990s. Region-specific activities include the bolstering of development cooperation aimed at Africa through the Tokyo International Conference on African Development (TICAD) process, and aggressive efforts towards Mekong regional development¹³, an area that contains the majority of new member countries to the Association of Southeast Asian Nations (ASEAN).

The ODA Charter (2003) identifies (i) poverty reduction, (ii) sustainable development, (iii) global issues, and (iv) peace building as priority issues. It also notes that adequate attention must be paid to environmental and social considerations.

In August 2003, Japan's ODA Charter was revised for the first time in 11 years. With consideration for contemporary international development issues, the following main issues were identified: (i) poverty reduction, (ii) sustainable development, (iii) global issues, and (iv) peace building. The ODA Charter makes it clear that adequate attention must be paid to environmental and social impacts of ODA conducted in developing countries, and that fairness must be assured. Following the JBIC's Guidelines on "*Environmental and Social Considerations*" that were developed in April 2002 and enforced in October 2003, JICA revised¹⁴ its "*Guidelines for Environmental and Social Considerations*" in 2004, which were then enforced in April of the same year. These efforts resulted in greater consideration being paid to environmental and social issues with regard to the implementation of Japan's ODA activities.

1-4-3 Japan's Current Assistance Activities

(1) Improvement of Transportation Infrastructure

JICA provides technical cooperation in relation to the construction of transportation infrastructure funded by JBIC and the implementation of grant aid for materials.

While financial cooperation can be broadly broken into grant aid and concessional loans, the financial assistance for transportation infrastructure such as roads, railways, airports, and ports and harbors consists mainly of concessional loans, since they are generally large-scale and produce long-term economic effects¹⁵. A fundamental concept that permeates Japan's activities is support for the capacity of developing countries to solve problems through their own efforts, and concessional loans encourage developing countries to use revenue efficiently, and act independently with a view to ensuring future repayments. JICA provides support through the implementation of grant aid in relation to necessary equipment and materials and the construction of transportation infrastructure.

(2) Knowledge-Based Contributions

JICA supports development planning and the creation of strategies, policies and systems in the transportation sector through development surveys. The Agency's activities are wide-ranging and JICA also engages in Technical

¹³ The association is promoting the development of the East-West Corridor, a road that runs across the region, and the Second East-West Corridor, which links Bangkok, Phnom Penh, and Ho Chi Minh City.

¹⁴ The basic principles of JICA's environmental and social considerations identified in the new guidelines state that JICA will support the efforts of recipient governments to conform appropriately to environmental and social considerations in order to avoid or minimize the impact that development projects have on the environment and regional society, and to avoid negative impacts while contributing to the sustainable development of developing countries.

¹⁵ 146.7 billion yen (26.3% of total concessional loans) worth of support in the transportation sector was carried out in Fiscal 2003. (MOFA (2004) p.109)

Cooperation Projects, the dispatch of experts and the provision of training with a view to providing training for the technical personnel to manage and operate constructed facilities, and to provide the materials and equipment required for such management and operation.