

Present Trends in Japan's Railway-Related International Cooperation

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Transportation Cooperation

Japan and other countries have various Official Development Assistance (ODA) programmes under which they provide developing countries with the necessary funds and technologies to support self-help efforts, thereby contributing to improvement of their economies, social development, national welfare and stability. Developing countries often do not have sufficient funds, technologies or human resources for the consolidation of their social and economic infrastructures, and for operation and management. Many such countries are requesting help with know-how and financing.

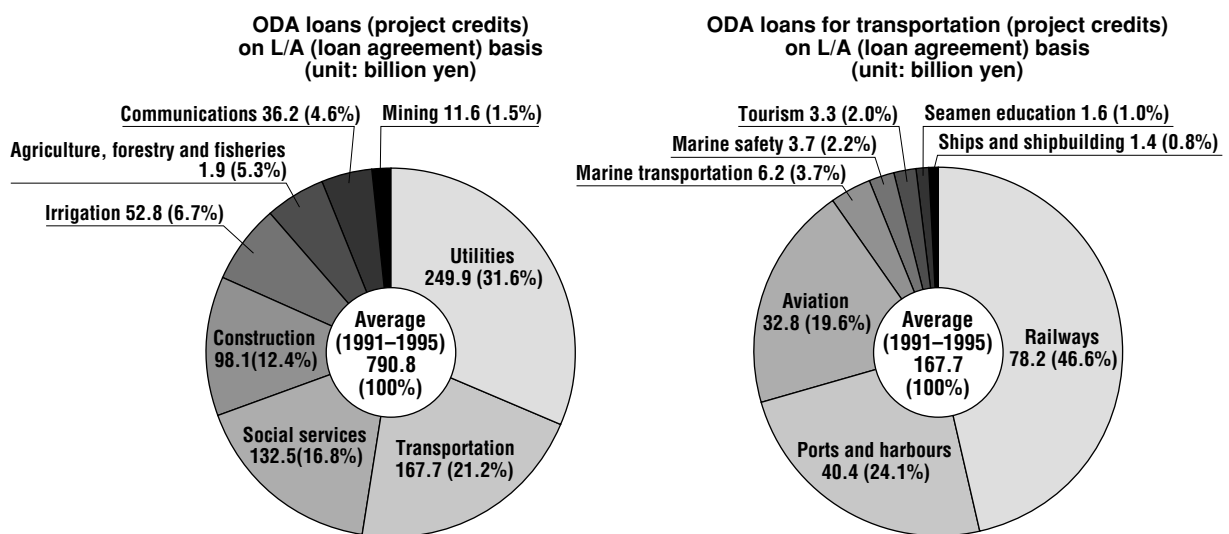
Out of approximately ¥790 billion given in aid in the 5-year period from 1991 to 1995, ¥167.7 billion (about 21%) was for transportation projects. This was the largest amount after aid to utilities (Figure 1). Within the transportation category, 47%



Crowded Myanmar train rebuilt from used buses

(K. Hosobuchi)

Figure 1 ODA Loans in Past 5 Years



Note: Ministry of Transport study based on annual report for 1996 of OECF

Table 1 International Cooperation in Urban Transportation

Fiscal year	1991	1992	1993	1994	1995
Development studies	0.7	0.5	0.5	0.9	1.4
Project-type technical cooperation	0.7	0.2	0.3	0.3	0.3
Dispatch of technical experts	7.9	7.4	9.0	7.0	6.5
Acceptance of trainees	5.6	5.5	6.4	6.3	8.6
ODA loans	55.864	79.642	94.463	50.819	108.002
Grant aid	—	—	1.121	1.007	—

Notes:

- 1) Sums in billion yen (ODA loans, grant aid); number of projects (development studies and project type technical cooperation); number of persons (dispatch of technical experts and acceptance of trainees)
- 2) Statistics on financial cooperation based on notes exchanged

(¥78.2 billion) went to the railways, followed by port and harbour facilities (24%) and aviation (20%).

The ODA cooperation generally takes one of three forms: bilateral grants, bilateral loans, and multilateral assistance. Technical cooperation means development studies, dispatch of experts, acceptance of trainees, project-type technical cooperation, rehabilitation cooperation, etc. Financial cooperation means ODA loans and grant aid.

Railways Cooperation

Table 1 shows recent international cooperation related to railways. Japan has sent experts to 28 countries, received trainees from 76 countries, and provided ODA loans totalling approximately ¥1280 billion.

Development studies

A development study, initiated at the request of a developing country for the country's public development projects, includes conducting field surveys, making plans to help the country's economic and social development, presenting master plans, reporting the result of feasibility studies, etc. At the same time, by working closely with the engineers of the

beneficiary country, the Japanese experts transfer technology to that country.

Table 2 shows the transport development studies currently in progress. Trends show an increasing number of studies related to railway management improvement plans, support plans for privatization of railways, and urban mass-transit improvement plans.

Dispatch of technical experts (Individuals)

Japanese experts are dispatched to a developing country at the request of that country or an international organization to share their professional knowledge and skills through technical guidance, surveys, studies and advice, thereby transferring technology to the beneficiary country.

The service period may be longer than a year (long-term dispatch) or shorter (short-term dispatch). Tables 3 and 4 show such services provided in 1996 in the railways field.

Acceptance of trainees

Japan accepts government employees of developing countries as trainees and provides them with professional knowledge and skills. Since such training is done in Japan as a rule, the trainees have direct contact with the Japanese culture, society and economic activities and, upon return to their home countries, often play a role as a bridge between their countries and Japan.



Japanese signalling experts working with Argentinian engineers at The National Railway Training Centre in Buenos Aires (JICA)

**Table 2 List of Development Studies by JICA
(Implemented in 1996 or Scheduled for Implementation in 1997)**

Egypt	Survey on national railway management improvement plan	S/W Jan. '95	Period: July '95 – Nov. '96
Management improvement plan (scheduled for 2012) regarding the management form of Egyptian National Railways (ENR), its financial status, organizational structure, labour productivity, service standards, operation, etc.			
Viet Nam	Survey on Hanoi urban transit plan	S/W Mar. '95	Period: May '95 – Oct. '96
Draft M/P for Hanoi Urban Transit Plan slated for completion in 2015 (with intermediate goal scheduled for 2005) to reduce road congestion due to lack of public transport and insufficient road facilities.			
Colombia	Survey on Bogota urban transit plan	S/W Feb. '95	Period: July '95 – Nov. '96
Draft M/P and manuals for urban transit plan to improve transportation in Colombia's capital, Bogota.			
Mongolia	Survey on railway and road infrastructure repair plan	S/W Nov. '95	Period: July '96 – Nov. '97 (planned)
Conduct F/S on improving railway infrastructure and bridges of Mongolia's national railways between Sühbaatar and Bayan.			
Philippines	Metropolitan Manila total transportation improvement plan	S/W Nov. '95	Period: Feb. '96 – Aug. '98 (planned)
Draft comprehensive transportation improvement plans through consolidation of public mass transit systems and improvement of transit services to enhance service quality and improve urban environments in metropolitan Manila.			
Bulgaria	Survey on national railway management improvement plan	S/W Jan. '96	Period: Sept. '96 – Feb. '98 (planned)
Draft M/P for management improvement in line with Bulgaria's move towards market economy considering the future of its railways and transportation systems in adjacent countries.			
Poland	Survey on national railway privatization support plan	S/W Mar. '96	Period: Jul. '96 – Dec. '97 (planned)
Propose methods of management improvement and privatization of Poland's national railways by analyzing the trends of its transportation market, the present status and privatization plan of its national railways, and by reviewing the process and outcome of privatization of national railways in Japan and Europe.			
Uzbekistan	Construction of electric locomotive repair plant	S/W Jul. '96	Period: Oct. '96 – Jul. '97 (planned)
Conduct F/S on construction of an electric locomotive repair plant to meet future demand for such repairs in Uzbekistan.			
China	Development survey on #1 subway system in Xian	S/W to be determined	Period: To be determined
Xian has a population of 2.83 million and is the major city of Shanxi Province but its fast growth in tourism and industry is causing severe traffic congestion. An F/S will be conducted on both hardware and software involved in the city's plan to construct #1 subway system.			

Other projects include surveys on comprehensive urban mass transit system plans in Bucharest (Romania), railway management and information modernization plan in Egypt, railway communication and control system consolidation in Sri Lanka, M/P for railway feeder service in Indonesia, and construction plan for mass transit systems in Barranquilla district in Colombia.

Training by JICA (102 trainees in 1996)

The Japan International Cooperation Agency (JICA) programmes during 1996 included group training on railway management, rolling stock consolidation and modernization, railway electrification, and railway information systems. They also included programmes on a country basis including Malaysia (Look East policy), Eastern Europe (land transportation), and Central Asia (transportation), plus a number of counterpart training programmes.

Other programmes for trainees and delegations (276 participants in 1996)

The delegations received under these programmes included the Vice Premier of Australia, the Premier of the Republic of Uzbekistan, and the Director of the Chinese State Planning Commission.

Project-type technical cooperation

Project-type technical cooperation combines three forms of services (dispatch of experts, acceptance of trainees, and supply of equipment) into a single project to ensure a more streamlined and comprehensive operation. Such a project is achieved as a joint project between the Japanese government and the government of a developing country. Projects of this type now in progress are outlined below.

Thailand—Railway training centre (1992-1997)

This training course is for operation and maintenance personnel of the State Railway of Thailand in Bangkok.

Indonesia—Modernization of railway personnel education and training system (1992-1997)

This project aims to enhance the technical quality of railway operation and maintenance personnel to a level appropriate for the railway now being modernized in Jabotabek Province.

Table 3 Dispatch of Long-term Experts (over 1 year) in 1996 and 1997 (planned)

Country	Receiver	Area	Number	Remark
China	Ministry of railways	Railways modernization	2	Ongoing
Indonesia	Army	Adviser to planning department manager	1	Ongoing
	Railway public corporation	Adviser to president	1	
Thailand	National railways (SRT)	Adviser to president	1	Ongoing
	ESCAP	Railways as whole	1	Ongoing
	OCMRT	Urban transit plan	1	Ongoing
	MRTA	Construction of subways	1	Adopted in 1996 (implemented in 1997)
Philippines	LRTA	Adviser to president	1	Ongoing
Egypt	National railways (subways)	Maintenance of electric cars (mechanical, electrical)	2	Ongoing
	Cairo transportation bureau	Maintenance of trams	1	Ongoing
Total			12	

Note: Dispatches related to project-type technical cooperation or rehabilitation cooperation are excluded from the list.

Table 4 Dispatch of Short-term Experts (up to 1 year) in 1996

Country	Receiver	Area of guidance	Number
China	Ministry of railways	High-speed railways speed control technology	4
		High-speed railways operation systems	4
		Submerged tunnel designs	4
		High-speed safety assessment of structures	4
Indonesia	Railway public corporation	Speed improvement plan	4
		Consolidation of railways rules	2
Thailand	MRTA	Construction of subways	1
Egypt	National railways (ENR)	Maintenance of subway cars	2
Romania	Subway public corporation	Consolidation of subways	3
India	Ministry of railways	25 kVAC traction system	1
		Subway car noise	2
		Railway bridge technology	2
Morocco	Ministry of public projects	Strait ferry and information processing	2
Argentina	Third country training	Electrification of railways and rolling stock	2
Total			37

Table 5 Recent ODA Loans Projects

Country	Purpose	Amount ¥ billion	Country	Purpose	Amount ¥ billion
Indonesia	• Construction of double-track trunk railways in northern Java	7.2	China	• Construction of railways between Shuo Xian and Huan Ghua (I)	27.7
	• Rehabilitation of bridges on trunk railways in northern Java (II)	5.9		• Construction of railways between Xian and Ankang (I)	19.8
Thailand	• Improvement of national railway tracks (III)	8.0	Ghana	• Reinforcement of railway transportation	6.3
	• Construction of Bangkok subway	26.6	Kazakhstan	• Reinforcement of railway transportation	7.2
Philippines	• #1 line reinforcement project of elevated railways in Metropolitan Manila (LRT)	9.8	Viet Nam	• Emergency rehabilitation of bridges on South-North railways (E/S) (II)	0.05
	• #2 line reinforcement project of elevated railways in Metropolitan Manila (LRT)	24.7		• Emergency rehabilitation of bridges on South-North railways (III)	7.2
China	• Construction of railways between Nanning and Kunming (IV)	19.0	Pakistan	• Manufacture of locomotives (II)	8.6
	• 2nd phase construction of subways in Beijing (IV)	2.3		• Rehabilitation of locomotives (III)	6.8

Iran—Yazd Signal Training Centre (1993-1996)

This project aims to consolidate the training for a signal system now being modernized.

Rehabilitation cooperation

Rehabilitation cooperation means repairing or otherwise revitalizing railway equipment in developing countries that is currently unfit for use due to lack of proper maintenance or management. These goals are achieved by dispatching expert teams, as well as by providing the necessary spare parts and training equipment to ensure comprehensive transfers of technology related to the maintenance, repair and management of railway equipment. Some recent programmes are outlined below.

Indonesia—Revitalization of rolling stock (1987-1990)

Training was given to the technical personnel of the Yogyakarta plant of the Indonesian Railway Public Corporation for maintenance of 164 diesel cars purchased from Japan using ODA loans.

Bolivia—Revitalization of rolling stock (1987-1990)

Training was given to technical personnel of the Bolivian National Railways for maintenance of 36 diesel cars purchased from Japan.

Mexico—Revitalization of trolley buses (1994-1996)

Training was given to the technical personnel for maintenance of trolley buses belonging to the Mexico City Electric Transportation Bureau.

Dispatch of special expert teams

This means dispatch of expert teams as an intermediate form of cooperation between project-type technical cooperation and technical cooperation by experts. Supply of small-scale equipment and training of a counterpart in Japan may be combined as needed and this type of programme is implemented as part of the dispatch of experts outlined above. As a rule, these programmes last for 3 years with one or two long-term experts, three or four short-term experts, and one or two trainees per year, and up to ¥3 million worth of equipment.

ODA loans

Yen credit is a generic term for yen loans by the Japanese government to the governments of developing countries. Normally, this credit refers to ODA loans by the Overseas Economic Cooperation Fund (OECF) and non-ODA loans by the Export-Import Bank of Japan. Because of the nature, ODA loans are provided at better conditions than ordinary commercial credits in terms of interest rates, periods, grace periods, etc. The terms of such loans by the Japanese government are determined taking the economy of the beneficiary countries and other factors into consideration.

In terms of purpose, these loans are generally grouped into project loans for consolidation of socio-economic infrastructure, commodity loans for purchase of capital equipment and consumable materials, and debt relief loans for servicing existing loans. Most of the loans by the Japanese government are project loans.

Some of the recent government loans for railways projects are listed in Table 5.

Grant aid

Grant aid means provision of funds to developing countries without repayment. This is the most preferred type of assistance especially for the least developed countries or countries with huge debts. Japan is expanding this type of cooperation to enhance the quality of cooperation, including funds for transportation modes that are socially useful but not profitable. As a rule, this form of financial cooperation provides funds whereby the necessary materials and equipment are procured and provided to the beneficiary countries.

Railway-Related Technical Cooperation

China

During his visit to China in 1979, Japan's Prime Minister Ohira promised that Japan would offer as much cooperation as possible towards modernization of China. Since then, Japan has been actively engaged in economic cooperation with China.

China is experiencing remarkable economic growth as a result of the recent

reforms and open-door policy. This increases demand for transportation far above supply. Transportation is said to be a bottleneck to the country's economic development. Consolidation of transportation infrastructure is an urgent matter and energy-efficient and environmentally-friendly railways are crucial. The railway cooperation starting in 1979 was the forerunner of the bilateral technical cooperation programmes. During the second Japan-China ministerial conference in December 1981, the two countries agreed to establish the Japan-China Railway Working Group aimed at smooth promotion of railway cooperation. The first meeting was in February 1982 and meets annually in Tokyo and Beijing alternately. The 16th meeting was held in 1996 in Ueda City, Nagano Prefecture where a new shinkansen is scheduled for completion in 1997. The council has been discussing construction of new railways, improvement of existing railways, electrification and many other projects. Japan has dispatched a large number of experts to China and has received many trainees from China, making the Japan-China railway cooperation

the largest in scale among Japan's international railway cooperation programmes.

China's Beijing-Shanghai High-Speed Railway Plan refers to construction of a new railway extending 1310 km between Beijing and Shanghai operating at high speeds of 250 to 350 km/h connecting the two cities in only 6 to 7 hours whereas the existing railways take 17 hours. The new railway will be devoted to passengers while the existing railways will be used for freight. The 9th Five-Year Socio-Economic Development Plan adopted in March 1996 dictates that the new railway construction should begin by 2010. Japan is promoting technical exchange with China by dispatch of experts and acceptance of trainees in the firm belief that its 30 years of experience in shinkansen technology will be useful in construction of this high-speed railway.

India

India plays an important political and economic role in SW Asia. Japan has enjoyed close ties with India over many years. Nearly 30% of the Indian population lives in poverty and the country is in great need of assistance. India is working towards a free market economy and Japan has been providing India with yen credits and other aid to help the Indian people achieve these goals.

During the meeting in Tokyo in December 1989 between India's Minister of Railways M. Scindia and Japan's Minister of Transport Ishihara, it was agreed to hold Japan-India Railway Working Groups. The first meeting was in Tokyo in February 1990. Since then, the meetings have been held alternately in Tokyo and Delhi.

During the 8th meeting in Delhi in January 1997, an agreement was reached between M. Ravindra, Vice Minister of Railways and the author to promote technical exchanges on safety issues. During the meeting, the Minister of State for



Transferring containers from standard gauge to broad gauge at Dzamin Uud Station in Mongolia near Chinese border (EJRCE)

Railways S. Maharaj also expressed his hope for continued cooperation in the field of railways.

In Calcutta, the uncompleted section (5 km) of the new subway system (16.4 km total) was completed using yen credits from fiscal 1982 and was opened in September 1995 to reduce Calcutta traffic congestion.

The Delhi High-Speed Mass Transit System Project is being planned to reduce the capital's traffic congestion and improve the environment. It is an 11-km subway from Delhi University in the north to the government buildings in the south, and a consolidation of the 44-km elevated railway between downtown Delhi and the suburbs, owned by Delhi Transit Corporation, a government operated public body. ODA loans for ¥14.8 billion were allocated in January this year to help this project.

Philippines

As a close neighbour, Japan has enjoyed good ties with this country for many years. There is very close trade and investment between the two countries.

Many people in the Philippines suffer from poverty. The country needs assistance and further support to promote economic autonomy.

In March 1996, yen credits for ¥24.7 billion were allocated towards the Metro Manila Public Railway Development (MRT #2 line) project, which aims to build an elevated railway running east to west in metropolitan Manila to reduce traffic congestion, and improve the environment.

Thailand

Ever since diplomatic relations were established between Japan and Thailand, the two countries have enjoyed close relationships in the political, economic and cultural areas, as well as in trade and investment. Due to recent rapid economic growth, Thailand is suffering from envi-



Grade separation in central Jakarta through Japanese-Indonesian cooperation

(T. Joraku)

ronmental degradation, lack of human resources and infrastructure, and economic disparities between different districts. As a result, the country is in growing need of assistance.

Notes were exchanged in September 1996 for financial cooperation with charges, and a subway construction project is now underway to solve the severe traffic problems and air pollution in Bangkok.

The Bangkok Subway Construction Project refers to construction of a circular 20-km long subway from north central Bangkok to the south. The project is being carried out by the Metropolitan Railway Transit Authority (MRTA), a government public corporation. Two development surveys were conducted for the project.

Indonesia

Japan enjoys close historic ties with Indonesia, which plays an important role in Japan's ocean transportation. It is also a major supplier of oil, gas and other natural resources. There are also close

ties in political and economic activities including trade and investment. Indonesia's 6th Five-Year Plan starting in 1994 placed priority on consolidation of transportation infrastructure including railways, ports and harbours, airports, etc. In 1981, a master plan was drafted for the consolidation of railways in metropolitan Jakarta and a total of over ¥100 billion has been provided so far. These efforts have helped to promote the elevated railway project and modern suburban trains are running there today.

An agreement was reached in 1995 regarding financial cooperation with charges for the rehabilitation of bridges on the trunk railways in northern Java (II).

Viet Nam

Japan's diplomatic relations with Viet Nam stagnated after the country invaded Cambodia in 1978. But the Paris Peace Treaty in 1991 brought changes. Amicable relations were restored after Viet Nam's Prime Minister Vo Van Kiet visited Japan in March 1993 and Japan's Prime Minister Murayama visited Viet



Track workers replacing old sleepers on main line from Hanoi to Ho Chi Minh City in Viet Nam (EJRCE)

Nam in August 1994.

There is very high demand for transportation infrastructure including railways, ports and harbours, airports, etc., and a series of projects, both hardware and software, are expected to start soon.

Development surveys in 1995 included the Hanoi Urban Transit Plan, which established a long-range plan to consolidate the urban transit systems in Hanoi, as well as the South-North Railway Consolidation Plan to help build transport infrastructure between southern and northern Viet Nam.

Future of International Railways Cooperation

The Japanese Ministry of Transport holds frequent high-level policy dialogues and meetings to identify the needs for and trends of international cooperation in developing countries with regard to transportation. The needs and trends gathered by such activities indicate a necessity to make efforts towards solving global environmental issues. As far as transportation is concerned, we need to solve traffic congestion, air pollution and other urban traffic issues, which are becoming very serious in large cities of developing countries. The need to consolidate trunk railway systems is most likely to increase especially in large and

highly-populated developing countries because increasing freight transportation by railways is an effective way to reduce global environmental problems. The high-speed railway project between Beijing and Shanghai is of special interest because it involves constructing new high-speed railways for passengers and then dedicating the existing railways to freight transportation. Japan is approaching China to use its shinkansen experience in this high-speed railway project. A recent trend is the privatization of state-owned or state-run enterprises in the former socialist countries, which are having difficulties shifting to market economies or are suffering from deficits. Privatization is being achieved with the guidance of the IMF and World Bank. National railways in many countries, developed and developing, are operating under deficits and are resorting to privatization or other management reforms. The privatization of Japan's na-

tional railways is regarded as a significant clue to success by many countries, and we believe Japan must provide advice based on its experience. The privatization of JNR into several JRs was a good decision in terms of revitalization of railway operation. Japan is likely to receive many more requests for cooperation from other countries towards improvement of their national railway operations. We think it is important to offer advice that is appropriate to the political, economic and cultural situations in such countries.

Demand for consolidation of transportation infrastructure is growing in many developing countries, but the amount of public investment is limited. In urban railway transportation, Build-Operate-Transfer (BOT) consolidation is becoming popular using the private sector. Use of the private sector is desirable in terms of promoting construction of infrastructure and efficient operation. However, in some cases, projects do not always succeed as originally planned. Under these circumstances, the Japanese Ministry of Transport hopes to conduct studies on the introduction of the private sector and to provide appropriate cooperation according to realistic patterns of operation in the beneficiary countries. In this regard, a new method has been introduced recently in Bangkok where the tracks and other parts of the new subway infrastructure are handled by the government, while operation and rolling stock are handled by the private sector. ■

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