Chapter 2

The Red River Delta Transport Development Program

2-1 Overview of Vietnam's Transport Sector

Vietnam's transport sector provides a full range of transport modes including road, railway, costal and sea shipping (maritime), inland waterway, and aviation (Table 2-1). As the economy has grown since the 1990s, passenger and freight demands have grown constantly. During the period between 1995 and 2004, the volume of passenger traffic (passenger-km) increased annually by 8%. The volume of freight transport (tons-km) in the same period also grew annually by 8% (Figure 2-1, Figure 2-2).

Regarding passenger transport, road transport is the biggest service provider with a share of 65% of the total in 2004, followed by aviation with an 18% share, railway with 9% and inland waterway with 7%. Basically the share of passenger transport volume by each mode of transport is almost the same as in 1995.

Regarding freight transport, maritime transport dominates with 72% of the total in 2004, followed by road with 15%, inland waterway with 8%, and railway with 4%. In comparison with 1995, it is notable that the share of maritime transport increased from 61% in 1995 to 72% in 2004, which implies that the role of maritime transport in freight transport became more important.

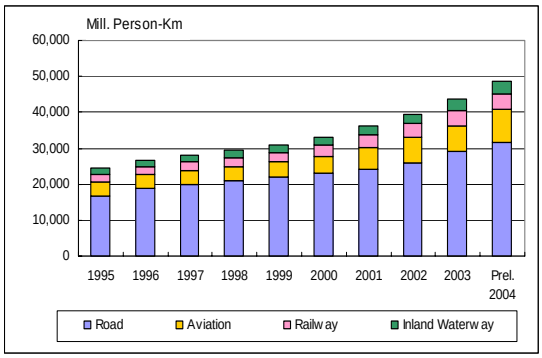
Table 2-1: Basic Transport Sector Data (Road, Railway, Port & Sea, Inland Waterway)

Sub-Sector	Total	Remarks
Road	210,900 km (Road)	National road: 16,100km
		Provincial road: 21,400km
		Urban road: 8,300
		District road: 46,500 km
		Commune road: 118,600 km
	8,300 bridges (Bridges)	
Railway	2,600 km	Four main lines
Port and Sea	140 ports	
Inland Waterway	8,000km	North: 2,300km, South: 4,500km

Inter-provincial traffic flow increased between 1992 and 1999 by 2.1 and 2.9 times for passenger and goods respectively. Such expansion of transport volume was supported by both the development of transport infrastructure since the 1990s and the effects of partial transport deregulation. In addition to general reform, extensive

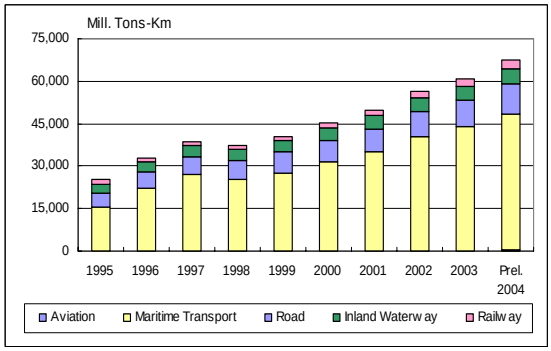
commercialization in the transport sector has progressed. A variety of new types of services have emerged such as container transport on road, rail and inland waterway transport, bonded transport, IDC (Inland Container Deport) operations, scheduled liner operations even in costal shipping, liberalized transit transport between Lao PDR, and so on.[1]

Figure 2-1: Volume of Passenger Traffic by Type of Transport



Source: GSO (2004)

Figure 2-2: Volume of Freight Traffic by Type of Transport



Source: GSO (2004)

2-2 Socio-economic Status of the Red River Delta

In Vietnam, there are two deltas: the Cuu Long River Delta in the South, and the Red River Delta in the North. These are the smallest regions in Vietnam in terms of geographical area. The Red River Delta is the place where all the big rivers in Northern Vietnam enter the ocean. It has the advantage of linking South East Asia and North East Asia.

The Red River Delta is the political and cultural center of Vietnam. Its statistical category consists of Hanoi (the capital city), Hai Phong, Hai Duong, Hung Yen, Ha Tay, Ha Nam, Nam Dinh, Thai Binh, Ninh Binh, Vinh Phuc and Bac Ninh[2]. Nearly 100% of the Red River Delta's population is of the Kinh majority.

The Red River Delta is the most populated area with 17,649,000 people in 2003 of which nearly 80% were in rural areas. However, the population growth rate of the region is the lowest in Vietnam. Amazingly, agriculture is contributing to a very limited amount of the region's economic activities. While construction industry accounted for 44% of the regional GRP, services accounted for 45% and agriculture accounted for just 11% (Table 2-2). Not only the Red River Delta but also the whole of Vietnam is facing the issue of how to redirect the labor force from agriculture to other activities (industry, construction, services).

During the last decade, the Red River Delta has been aggressive in attracting foreign

[1] VITRANSS (2000) p3-1

[2] However, this should be distinguished from the economic category of the Red River Delta, which takes into account other Northern provinces such as Quang Ninh, Bac Giang and Lang Son.

direct investment (FDI) and official development assistance (ODA). The Red River Delta is second after the South East region in terms of regional GDP with its share of the national GDP at 21% in 2003. Its regional economic growth rate is higher than the average in Vietnam. It also has achieved remarkable results in poverty reduction.

Hanoi city plays an important role in the region's socio-economic activities in terms of purchasing power, capital, technology and labour force, especially trained labour force.

Table 2-2: Socio-economic Indices for Each Region in Vietnam (2003)

	Unit	Region								
		North-east	North-west	Red River Delta	North of Central part	South of Central part	Highland (Tay Nguyen)	South-east	Cuu Long River Delta	Whole Country
Land										
Area	Km^2	63,630	37,336	14,812	51,511	33,069	54,474	34,743	3,739	329,314
Agricultural area	Km^2	9,106	4,359	8,507	7,568	5,493	13,269	17,411	29,605	95,318
Percentage	%	14	12	57	15	17	24	50	74	29
Population										
Average population	1,000 persons	9,220	2,390	17,649	10,410	6,900	4,570	12,881	16,882	80,902
Population in rural areas	1,000 persons	7,505	2,081	13,794	9,024	4,929	3,312	5,845	13,543	60,033
% of population in rural areas in comparison with the whole country	%	12.5	3.50	23.0	15.0	8.2	5.5	9.7	22.6	100.0
Agricultural population density	person/ Km^2	118	56	931	175	149	61	168	341	182
% of the population of minorities	%	45.0	79.0	0.7	10.5	15.3	33.0	8.0	7.7	14.0
Economics										
Regional GDP/National GDP	%	7	1	21	7	6	4	35	19	100
Economic structure	%	100	100	100	100	100	100	100	100	100
Agriculture	%	36	51	11	38	31	49	6	53	21.8
Construction industry	%	31	16	44	24	30	17	56	21	40
Services	%	33	33	45	38	39	34	38	26	38.2
Poverty rate										
By National criteria	%	13.8	18.7	8.1	15.7	12.2	17.4	6.3	9.3	11.0
By International criteria	%	38.0	68.7	22.6	44.4	25.2	51.8	10.7	23.2	28.9

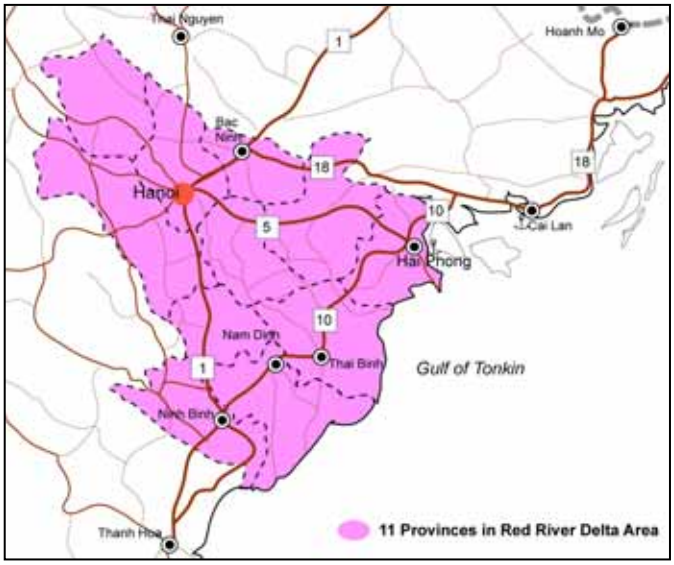
Source: TDSI

2-3 Japanese ODA projects under the Program

2-3-1 Road Transport Sub-Sector

In the Red River Delta, a road network has been developed covering the capital city and major cities and international ports as well as the small and medium-sized cities and towns in the provinces of the area (Figure 2-3). The major national highways in the area are: NH1, NH5, NH10, and NH18. As shown in the list of Japanese ODA projects in the road sub-sector under the Program in Table 2-3, these are all targets of Japanese ODA under the Program.

Figure 2-3: Major National Highway in the Red River Delta



The main characteristics of these national highways are as below:

National Highway No.1: The longest and the most important route vertically connects Ca Mau in Ca Mau Province in the south and Lang Son in Lang Song Province in the north with a total length of 2,300km. MH1 has a 2-lane carriageway but in some sections near the large and medium-sized cities, the carriageway is widened to 4-lanes. NH1 links major cities, major ports, and airports along the coast such as Hue, Da Nang, Qui Nhon, Nha Trang and HCMC and traverses 33 Provinces.

National Highway No. 1 in Bac Ninh Province

National Highway No.5: A major transport route connecting Hanoi and Hai Phong with a total length of 106km. NH5 has basically a 4-lane carriageway traversing rural areas except for many small cities and towns in Hung Yen Province, Hai Duong Province and Hai Phong Province. Several industrial parks and small and medium-sized factories are also located along NH5. NH5 runs parallel with the railway of the Hanoi-Hai Phong line in some sections.

National Highway No. 5 in Hai Duong Province

National Highway No.10: A major Route connecting the Red River Delta provinces including Quan Nihg Province, Hai Phong Province, Thai Binh Province, Nam Dinh

Province, Ninh Ninh Province, and Thanh Hoa Province with a total length of 230km. NH10 has basically a 2-lane carriageway, but in some short sections passing medium-sized towns, the carriageway is widened to 4-lanes. NH10 traverses rural agricultural areas except for some small and medium-sized cities in Quang Ninh Province, Hai Phong Province, and Tahi Binh Province. Some small and medium-sized factories are located in the area.

National Highway No.18: A major route connecting Noi Bai in Hanoi and Mong Cai, the eastern border between Quang Ninh Province and China with a total length of 342km. NH18 has basically a 2-lane carriageway. NH10 traverses rural agricultural areas except for some small and medium-sized cities in Bac Ninh Province and Hai Duong Province. Some small and medium-sized factories are located in the area.

Among the four sub-sectors, the road sub-sector receives the majority of Japanese ODA under the Program. Japanese ODA projects to the road sub-sector can be classified into three kinds of assistance: (i) direct assistance for physical infrastructure development; (ii) human resource development; and (iii) intellectual support for the sector development policy formulation.

Binh Bridge in Hai Phong City

Regarding (i) direct assistance for physical infrastructure development, the *National Hghway No.1 Bridge Rehabilitation Project (Phase I,II) (loan), National Highway No.5 Improvement Project (1)(2)(3) (loan), National Highway No. 10 Improvement Project (loan), National Highway No. 18 Improvement Project (1)(2) (loan), Bai Chay Bridge Construction Project (loan), Binh Bridge Construction Project (loan), Red River Bridge Construction Project (1)(2)(3) (loan), Transport Infrastructure Development Project in Hanoi (loan), Project for Reconstruction of Bridges in the Northern District(grant aid)* are categorized in this group.

Computer Class at Transport Technical and Professional School No.1 (currently Central Transport High School No.1)

Regarding (ii) human resource development, the *Project for Improvement of Transport Technical Assistance and Professional School No.1 (grant aid)* and the *Project for Strengthening Training Capabilities for Road Construction Workers in Transport Technical School No. 1 (technical cooperation)* are classified in this group.

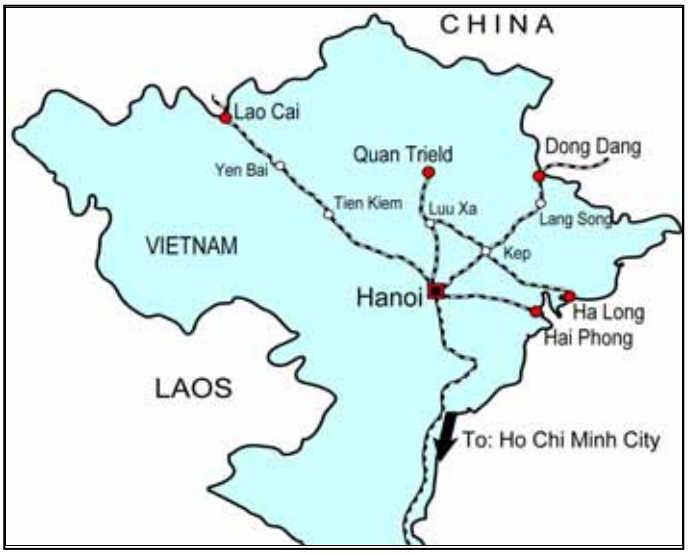
Regarding (iii) intellectual support for the sector development policy formulation, the *Feasibility Study of Highway No. 18 Improvement Project (development studies), Study of Urban Transportation for Hanoi City (development studies), Detailed Design of the Red River Bridge Construction Project (development studies),* and *Vietnam National Transport Development Strategy Study (VITRANSS) (development study)* are categorized in this group.

Table 2-3: Japanese ODA Projects under the Program (Road Transport Sub-Sector)

No.	Type of Aid (Year)	Project	Main Scope
01	Loan (1996-2004)	National Highway No.5 Improvement Project (1) (2) (3)	- Rehabilitation of 91 km of road between Hanoi and Hai Phong with widening of road trucks from 2 to 4 - Construction of fly-over and pedestrian bridges
02	Loan (1996-2005)	[PHASE I] National Highway No.1 Bridge Rehabilitation Project (1) (2) (3)	Repair and new construction of aged major bridges between Hanoi and Vinh (285km)
03	Loan (1999-2004)	[PHASE II] National Highway No.1 Bridge Rehabilitation Project (1) (2) (3)	Repair and new construction of aged major bridges between Hanoi and Bac Giang (63km) and Dong Ha and Nha Trang (689km).
04	Loan (1998-2007)	National Highway No.10 Improvement Project (1) (2)	- Improvement of roads between Bi Cho and Ninh Binh (140km) - Construction of a new by-pass road near Hai Phong
05	Loan (1998-2008)	National Highway No.18 Improvement Project (1) (2)	- Improvement of roads between Hanoi and Chi Linh (70km) and Bieu Ngh and Cua Ong (65km). - Repair and rebuilding of 50 bridges.
06	Loan (2001-2008)	Bai Chay Bridge Construction Project	- Construction of a new bridge (903m, 4 tracks) - Construction of approach roads.
07	Loan (2000-2007)	Binh Bridge Construction Project	- Construction of a new bridge (1,300m, 4 tracks) - Construction of approach roads.
08	Loan (2000-2008)	Red River (Thanh Tri) Bridge Construction Project (1) (2) (3)	- Construction of Red River Bridge
09	Loan (1999-2006)	Transport Infrastructure Development Project in Hanoi	- Construction of new city roads for by-pass purposes - Widening of the road and construction of new cross section
10	Grant aid (1996-1998)	Project for Reconstruction of Bridges in the Northern District	Construction of medium and small size bridges of provincial/ district roads in 16 provinces in northern Vietnam.
11	Grant aid (2000)	The Project for Improvement of Transport Technical and Professional School No.1	Construction of the training school and provision of equipment/ machinery for education of road construction engineers.
12	Technical coop. project (2001-2006)	Project for Strengthening Training Capabilities for Road Construction Workers in Transport Technical and Professional School No.1	- Training of the faculty - Improvement of planning and management of school curriculum - Modernization of road construction equipment, etc.
13	Development studies (1995-1996)	The Feasibility Study of the Highway No.18 Improvement in Vietnam	Feasibility study of (i) construction of new road of 31km, (ii) improvement of 206km of existing road, and (iii) construction of attached bridges and related facilities
14	Development studies (1995-1996)	The Study of Urban Transportation for Hanoi City in Vietnam	- Master plan study of (i) construction and improvement of roads of 1,190km, (ii) construction of new railway line of 17.4km. - Feasibility study of new city centre development (592ha)
15	Development studies (1998-2000)	The Detailed Design of the Red River Bridge (Thanh Tri Bridge) Construction Project in the Socialist Republic of Vietnam	Detailed design for the Re River Bridge (Thanh Tri Bridge), the access roads, and infrastructure of the new settlement area (120ha).
16	Development studies (1998-2000)	Vietnam National Transport Development Strategy Study (VITRANSS)	Preparation of the long and medium term transport development strategy as well as the short term investment program.

2-3-2 Railway Transport Sub-Sector

Figure 2-4: Major Railway Routes in Vietnam



Among the major five railway routes in the Red River Delta, only the Hanoi-HCMC line is the target of Japanese ODA under the Program. These projects are the *Hanoi-Ho Chi Minh City Railway Bridge Rehabilitation Project (1) (2) (3) (loan)* and *Upgrading the Hanoi-Ho Chi Minh Railway Line to Speed up the Passenger Express Trains to an Average Speed of 70km/h (development studies).*

The former is categorized in (i) direct assistance of physical infrastructure development, and the latter is classfied in (iii) intellectual support for the sector development policy formulation according to the nature of each project.

Strictly speaking the actual project target area of the *Hanoi-Ho Chi Minh City Railway Bridge Rehabilitation Project (1) (2) (3) (loan)* covers the central part of Vietnam, but considering the direct effects of this project, this project is included as one component of the Program.

Table 2-4: Japanese ODA Projects under the Program (Railway Transport Sub-Sector)

No.	Type of Aid (Year)	Project	Main Scope
17	Loan (1994-2005)	Hanoi-Ho Chi Minh City Railway Bridge Rehabilitation Project (1)(2)(3)	Construction of nine new railway bridges on then Hanoi-HCMC railway line.
18	Development studies (1993-1995)	Upgrading the Hanoi-Ho Chi Minh Railway Line to Speed up the Passenger Express Trains to an Average Speed of 70 km/h	- Master plan for the Hanoi-HCMC railway line - Feasibility study of (i) rehabilitation and improvement of Hanoi-HCMC railway line, and (ii) rehabilitation and improvement of Lao Cai-Cai Lan railway line.

The following are the characteristics of the five major railway routes and each location as shown in Figure 2-4.

Hanoi-Ho Chi Minh City Line (1,726km): The longest railway line covering two thirds of the total length of the Vietnamese railway network (2,600km) which connects the capital city in the north and Ho Chi Minh City, the largest economic centre in the south of Vietnam This line is the biggest railway service provider dominating more than 80 per cent of total passenger transport and nearly 60 per cent of cargo transport in Vietnam. Since this line runs along the long coastal line between the north and south, it competes with air transport for long distance and with bus transport for medium

distance passenger transport service. Regarding cargo transport service, inland waterway transport and truck transport are competitors. Many cities are located along this line, and there is a constant demand for railway transport on all the sections along this line.

Thach Yuan Bridge on the Hanoi-HCMC line in Phu Yen Province

Hanoi-Hai Phong Line (102km): Links Hanoi and the international port city of Hai Phong with a population of 1.7 million. The composition of passenger and cargo transport on this line is about fifty-fifty at present, but passenger transport is expected to increase with the increase in travelers and commuters between Hanoi and Hai Phong. Also the recent rapid development of industrial parks along the line and the expansion in export and import cargo volume through Hai Phong Port may increase container cargo transport by rail.

Hanoi-Dong Dang Line (162km): One of two international routes, this line connects Hanoi and Dong Dang in Lan Son Provice which is the north-east gate to Nanning, China. This line is equipped with a dual gauge accommodating both types of trains with normal gauge and meter gauges. The northern section of the line is located in a mountainous area with many tunnels, and where the agricultural productivity is not high. However, this line has significant potential as a strategic land transport route between Vietnam and China.

Hanoi-Quan Trien Line (75km): Initially developed to convey mineral ore from the mines located 75km north of Hanoi. This line is equipped with a dual gauge and operates only a single trip per day for each passenger and cargo train. Noi Bai Airport (Hanoi International Airport) is located near this line, it has development potential to serve between the hinterland of Hanoi and the capital city.

Hanoi-Lao Cai Line (296km): Another international route connecting Hanoi and Lao Cai in Lao Cai Province which is the west gate to Kumming, China. Agricultural commodities and mineral ore produced along the line are the main cargo goods. Because the area is within 70km of Hanoi and along this line there is productive flat land used for agricultural activities, there is potential for development in coordination with the economic growth of Hanoi.

2-3-3 Port and Sea Transport Sub-Sector

The port system in Vietnam is divided into four groups: (i) North (Quang Ninh, Hai Phong); (ii) Central (Da Nang, Quy Nhon, Nha Trag); (iii) South (Saigon, Dong Nai, Vung Tau; and (iv) Mekong (Can Tho). Hai Phong Port and Cai Lan Port (Quang Ning Port) are the primary ports and these are located in the Red River Delta. The two ports have been expanded since the mid-1990s through Japanese ODA projects.

Table 2-5: Port System in Vietnam

Port Authority	Main Port	Classification	Type of Freight
North			
Quang Ninh	Cai Lan, Cam Pha	Primary	General/Special
Hai Phong	Hai Phong	Primary	General
Central			
Da Nang	Tien Sa	Primary	General
Quy Nhon	Quy Nhon	Secondary	General
Nha Tang	Nha Tang	Secondary	General
South			
Saigon	Saigon, Tan Cang, Ben Nghe, VICT	Primary	General
Dong Nai	Dong Nai	Secondary	General
Vung Tau	Phu My	Primary	General
Mekong			
Can Tho	Can Tho	Secondary	General

Source: VINAMARINE

The port and sea transport sub-sector is the second priority target sub-sector after the road transport sub-sector in the Program. Five projects are provided in this sub-sector. The *Hai Phong Port Rehabilitation Project (1)(2) (loan), Cai Lan Port Expansion Project (loan),* and the *Costal Communication System Project (loan)* are classified into the group of (i) direct assistance for physical infrastructure development. The *Project for Improvement of Higher Maritime Education (technical cooperation project)* is categorized in (ii) human resource development. The *Feasibility Study for Construction of Cai Lan Port (development study)* and the *Master Plan Study of Coastal Shipping Rehabilitation and Development Project (development study)* can be classified in the group of (iii) intellectual support for the sector development policy formulation.

Maritime Navigation Class at Vietnam Maritime University

Strictly speaking, Cai Lan Port is located in Quang Ninh Province, which is not included in the 11 provinces of the Red River Delta in terms of the statistical classification. However, Cai Lan Port is often categorized as a part of the Red River Delta according to its socio-economic linkage as well as the linkage of infrastructure network in the area. The Cai Lan Port project is therefore included as a part of the Program's component projects.

The following are the characteristics of Hai Phong Port and Cai Lan Port.

Hai Phong Port: A river port situated on the upper stream of Cua Cam River. Hai Phong has the second largest cargo handling capacity in Vietnam next to Saigo Port. Hai Phong Port is equipped with

Container Terminal at Hai Phong Port

Vietnam's first full specialized container terminal.

Hai Phong Port is linked to Hanoi directly through National Highway No.5 and the distance is about 100km. Also the Hanoi-Hai Phong railway line serves this port.

Cai Lan Port: A deep sea port situated at Bai Chay Bay in Ha Long Bay, equipped with four berths (Berth. No.1, No.5, No.6 and No.7) and two container terminals.

Cai Lan Port is connected to Hanoi by National Highway No.10, No.18, and No.5 and the distance is about 160km. Also the railway line between Hanoi and Ha Long runs near Cai Lan Port, but the railway connection of 4km between Cai Lan station and Cai Lan Port has not yet been completed.

Container Terminal at Cai Lan Port

Table 2-6: Japanese ODA Projects under the Program (Port and Sea Transport Sub-Sector)

No.	Type of Aid (Year)	Project	Main Scope
19	Loan (1994-2007)	Hai Phong Port Rehabilitation Project (1)(2)	- Rehabilitation of the old berth and construction of two new berths - Construction of a new container terminal - Dredging with the supply of a relatively large dredger - Procurement of tug boats and small supporting vessels
20	Loan (1996-2005)	Cai Lan Port Expansion Project	- Construction of three new berths - Procurement of installation of loading/unloading equipment - Procurement of tug boats and small supporting vessels
21	Loan (1997-2002)	Costal Communication Systems Project	Provision of radio communication equipment and installation of radio communication systems at major ports including Hai Phong, Da Nang, Hue, and Ha Long.
22	Technical coop. project (2001-2004)	Project on Improvement of Higher Maritime Education in Vietnam	- To educate and train navigation faculty and marine engineering faculty to meet international standards - To improve research capacity, etc
23	Development studies (1993-1994)	Feasibility Study for the Construction of Cai Lan Port	Feasibility study for the construction of Cail Lan port including: land scale and terrain survey, sea depth survey, preliminaryenvironment impact assessment, etc.
24	Development studies (1994-1996)	Master Plan Study of Coastal Shipping Rehabilitation and Development Project	Master plan study of the coastal sea transport network, expansion of coastal sea transport fleet, construction of ship building factories, management of shipping business, safety on the sea and environment, etc.

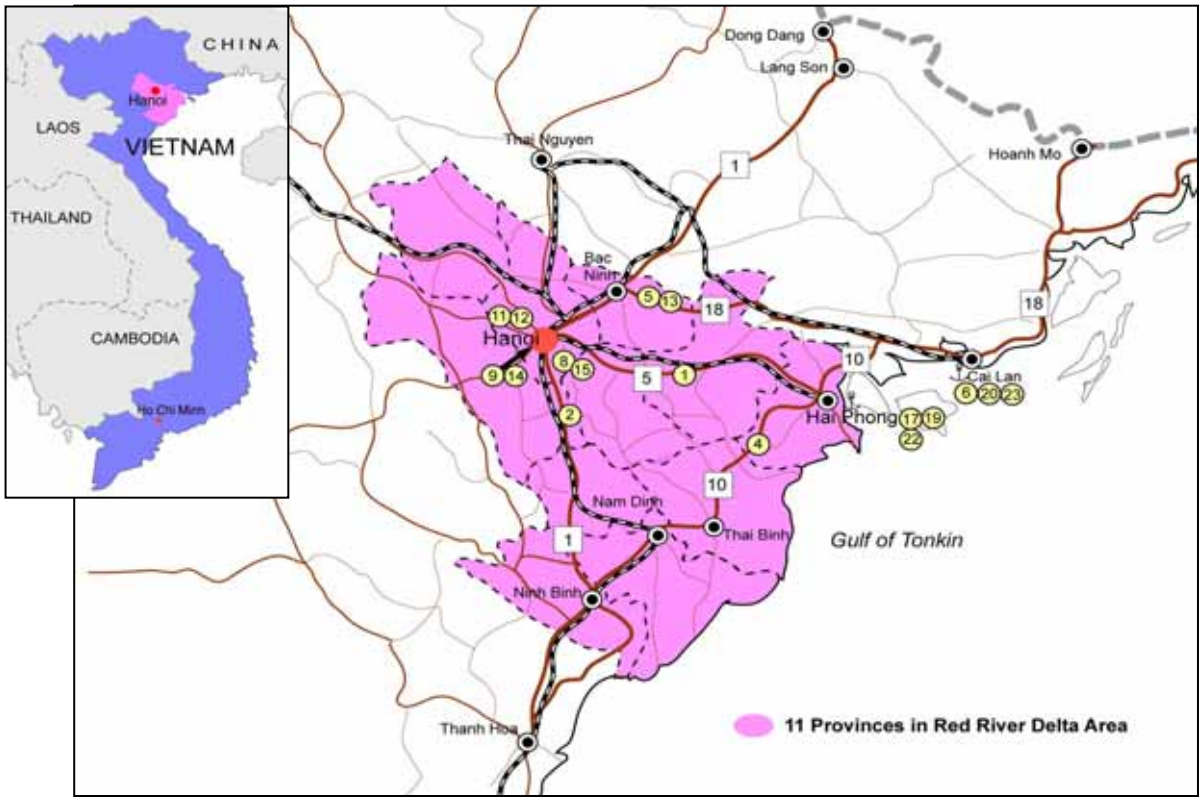
2-3-4 Inland Waterway Transport Sub-Sector

Regarding Japanese ODA projects for the Inland waterway transport sub-sector, there is only one project, the *Study of Red River Inland Waterway Transport System (development studies)*, which is categorized as (iii) intellectual support for the sector development policy formulation (Table 2-7). In fact Japanese assistance to the inland waterway sub-sector is very limited, and no physical infrastructure development project has materialized in this sub-sector yet.

Table 2-7: Japanese ODA Projects under the Program (Railway Transport Sub-Sector??)

No.	Type of Aid (Year)	Project	Main Scope
25	Development studies (2001-2003)	Study of Red River Inland Waterway Transport System in Vietnam	Study of (i) improvement of existing river port facilities and identification of appropriate new river ports in the Hanoi area, (ii) improvement of present inland waterway routes in the Hanoi area, and (iii) necessary river port facilities for specific transport and load/unload purpose.

Figure 2-5: Location of Japanese ODA Projects under the Program



① National Highway No.5 Improvement Project (1)(2)(3)

② [PHASE I] National Highway No.1 Bridge Rehabilitation Project (1)(2)(3)

③ [PHASE II] National Highway No.1 Bridge Rehabilitation Project (1)(2)(3)

④ National Highway No.10 Improvement Project (1)(2)

⑤ National Highway No.18 Improvement Project (1)(2)

⑥ Bai Chay Bridge Construction Project

⑦ Binh Bridge Construction Project

⑧ Red River (Thanh Tri) Bridge Construction Project (1)(2)(3)

⑨ Transport Infrastructure Development Project in Hanoi

⑪ The Project for Improvement of Transport Technical and Professional School No.1 in Vietnam

⑫ Project for Strengthening Training Capabilities for Road Construction Workers in Transport Technical and Professional School No.1 in Vietnam

⑬ The Feasibility Study of the Highway No.18 Improvement in Vietnam

⑭ The Study of Urban Transportation for Hanoi City in Vietnam

⑮ The Detailed Design of the Red River Bridge (Thanh Tri Bridge) Construction Project

⑲ Hai Phong Port Rehabilitation Project (1)(2)

⑳ Cai Lan Port Expansion Project

㉒ Project on Improvement of Higher Maritime Education in Vietnam

㉓ The Feasibility Study for Construction of Cai Lan Port

⑯ Vietnam National Transport Development Strategy Study (VITRANSS)
㉑ Coastal Communication System Project
㉔ Master Plan Study of Coastal Shipping Rehabilitation and Development Project
㉕ The Study of Red River Inland Waterway Transport System in Vietnam

} Target area of these projects is nation wide.

⑩ Project for Reconstruction of Bridges in the Northern District

} Target area of this project is the northern part of Vietnam including the Red River Delta.

⑰ Hanoi-HCMC Railway Bridge Rehabilitation Project (1)(2)(3)
⑱ Upgrading the Hanoi-HCMC Railway Line to Speed up the Passenger Express Trains to an Average Speed of 70 km/h

} Target area of these projects is the section between Hanoi and HCMC.