

## **Chapter 8 Present Situation and Development Plans of Major Sea Ports**

### **8.1 Major sea ports**

#### **8.1.1 Hai Phong Port**

##### **(1) Outline**

Hai Phong Port is located on the right bank of Cam River and 20 nautical miles (37km) from buoy zero. The port was initially opened by the French in 1879. Hai Phong Port is a nodal point of inter-modal transportation consisting of road (Highway No. 5), inland waterway (corridors 1 & 2) and railway transport.

Cargo throughput of Hai Phong Port has been increasing rapidly and reached 7.6 million tons in 2000 (export: 1.2, import: 3.6, domestic: 2.8), which is the highest cargo throughput among the ports in the Northern region.

As to port facilities, Hai Phong Port has 17 berths (6 berths for container) with total length of 1,700m (930m for container) and maximum depth of -8.5m (for container). Besides, roadsteads (anchorage area) are located at Bach Dang (3), Hon Gai (9) and Lan Ha (3) for lighterage operation. Tidal range is 3.9m.

##### **(2) Current Problems of Hai Phong Port**

- The depth of the access channel is shallow (current depth: -4.5m) due to alluvium deposit. The vessel over 15,000DWT must be lightened at the anchorage area (roadstead) before berthing. Some 50 vessels (total handling cargo: 0.6 million tons) conducted the lighterage operation in 2001. This increases the handling charges and other expenses.
- The maintenance dredging at a published depth in front of berths is insufficient due to lack of fund for maintenance, although mid-way channel is managed and maintained by Vietnam Marine Safety Bureau.
- The current handling equipment and other facilities need to be replaced because of long time usage.
- The port will meet the severe competition especially in container operation due to the appearance of Cai Lan Port.
- IWT share of transport between the port and its hinterland is only 10-15%, and the rest is mainly conducted by road transport.

### **(3) Development plans of Hai Phong Port**

- Rehabilitation project by ODA Japan (1st phase, 1997-2001, completed): US\$ 40 million for purchasing tugboat and high speed boats, container berth construction and handling equipment at Chua Ve Container Terminal.
- Rehabilitation project by ODA Japan (2nd phase, 2001-2004): US\$ 126 million for establishing a new access channel with the depth of -7.2m (sea channel section and Chanh River) and -5.5m (river channel section, whole channel will be -7.2m by 2009), construction 2 new container berths at Chua Ve.
- Bengot - Lachhuyen Lighterage Project: VND 25 billion for 30,000DWT class anchorage area (operation: 2003).
- Dinhvu New Port Project: New building 7 quays with total length of 1,500m at Dinhvu Industrial Zone, 2 km far from Highway No 5. 2001-2005 (VND 335 billion, agreed by MOT): 2 quays for 10,000DWT (20,000DWT after lightening) class with total length of 425m, etc. 2005-2010: 5 quays.

### **(4) Strategy of Port of Hai Phong under VINALINES**

- Cargo throughput: 11.5 million tons in 2005, 16.8 million tons in 2010
- Diversification of container cargo: in-bound (manufactured goods, etc.), out-bound (agricultural products from RRD, rare earth from Lao Cai, etc.)
- IWT share: 40% in 2005
- Cooperation with NOWATRANCO in order to promote container transport by IWT, including establishment of new container port with ICD (Inland Container Depot) function in Hanoi area.
- Cooperation with Yunnan Province of PRC in order to enlarge transport volume by IWT and railway transport.
- Barge transport fee between Hon Gai Roadstead and Hai Phong Port be decreased to US\$ 1.5/ton from US\$ 2.0/ton by excavating new canal at Dao Ha Nam which can significantly decrease the distance from 60km to 40km.

**Table 8.1.1 Cargo Throughput of Hai Phong Port**

	1996	1997	1998	1999	2000
Total Cargo including Container (1000 tons)	4,809	4,588	5,446	6,510	7,645
Export (1000 tons)	655	804	850	940	1,224
Import (1000 tons)	2,440	2,247	2,618	3,170	3,580
Domestic (1000 tons)	1,714	1,538	1,970	2,400	2,825
Total Container (1000 TEU)	149	165	184	199	219
Export (1000 TEU)	65	77	84	93	101
Import (1000 TEU)	74	78	89	94	113
Domestic (1000 TEU)	10	10	11	13	12

Note) Total Cargo includes container cargo.

Average cargo volume in container in 2000: 10.2 ton/TEU (export), 12.5 ton/TEU (import)

Source) Port of Hai Phong under VINALINES

**Table 8.1.2 Commodity-wise Throughput of Hai Phong Port (2001)**

Cargo Type	Total	Import	Export	(1000 ton)	
				Domestic Unloading	Domestic Loading
General Cargo	368	86	11	138	133
Container	2,752	1,420	1,088	123	121
Wood	150	42	89	19	
Metal	1,853	1,620		68	165
Chemical	85	67			18
Machinery	176	169	7		
Food	351		21	330	
Salt	132	93		31	8
Asphalt	32	32			
Fertilizer (Nitrogenous)	614	447		73	94
Metal Ore	229	95	50	51	33
Foodstuff	93	55		10	28
Animal Food	242	164		37	41
Gypsum	67	67			
Apatite	62				62
Coal	22			22	
Construction Material	394		66	214	114
Cement	732		3		729
Clinker	184				184
Total	8,538	4,357	1,335	1,116	1,730

Source) Port of Hai Phong under VINALINES (through TDSI)

**Table 8.1.3 Port Facilities & Equipment of Hai Phong Port**

Section	Quay (m)	Depth (m)	Yard (1000m <sup>2</sup> )	Warehouse (1000m <sup>2</sup> )	Equipment, etc.
Main Port	1,700	-8.0	350	32	Forklifts (2.5-42t), Portal Cranes (5-32t), Mobile Harbour Crane (25t), Automatic Bulk Bagging Machine (4,000MT/d/ship), Railway System, Electric Weighing Station (80t)
Chua Ve Container Terminal	480	-8.5	100	3.2	QGC 2(40t), Portal Shore Crane (5-t), RTG (40t), Forklifts (2.5-42t), Computerized Weighing Station (80t), Linked with Highway No.5 & Railway
Doan Xa	200	-5.5	50	4	Forklifts (2.5-40t), Portal Cranes (5-10t), Weighing Station (30t), 10km to Dinhvu IZ
Vat Cach	320	-3.0	100	7.2	Forklifts (2.5-5t), Portal Cranes (5-10t), Railway System, Weighing Station (80t)
Bach Dang Roadstead	3 mooring Dolphins	-7.5			Floating Crane (10-85tons), 8km to Chinfon Cement Plant and 40km to Hoang Thach Cement Plant
Hon Gai Roadstead	9 Anchorage Points	-14.0			Floating Crane (10-85t), Accommodation Vessel up to 50,000DWT
Lan Ha Roadstead	3 Anchorage Points	-14.0			Floating Crane (10-85t), Accommodation Vessel up to 40,000DWT

Source) Port of Hai Phong under VINALINES

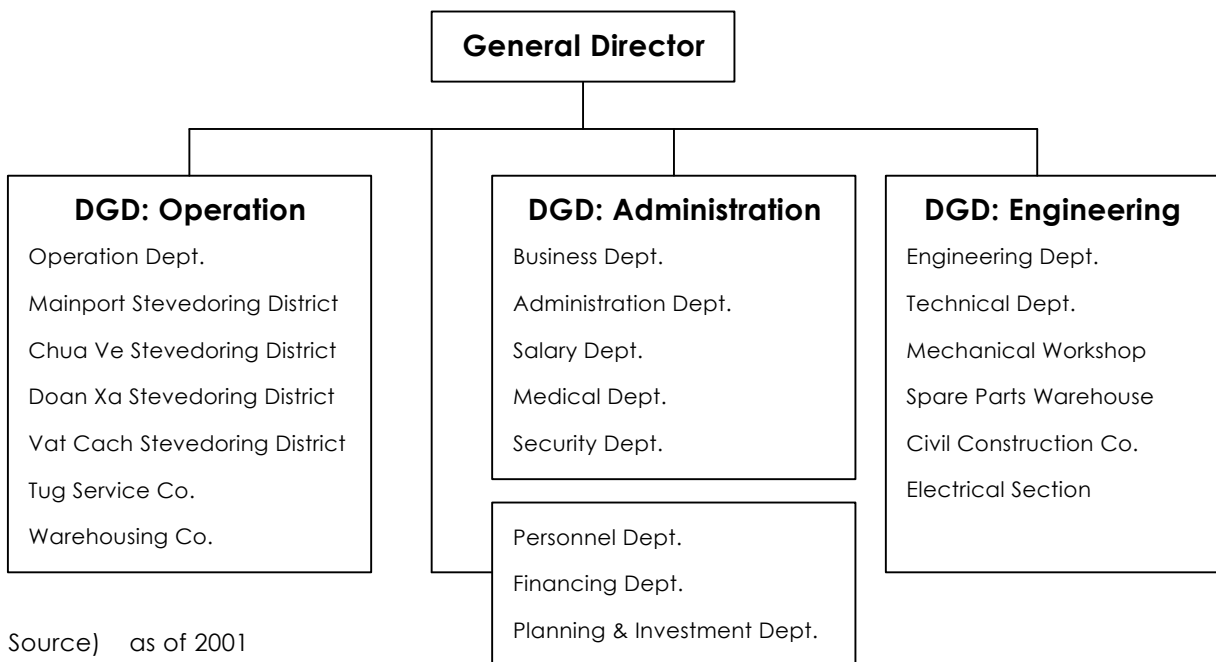
**Table 8.1.4 Container Terminals of Hai Phong Port**

Item	Chua Ve CT	Main Port CT
Berth (length, No.@depth)	480m, 3B@-8.5m	450m, 3B@-7.5m
Quay-side Crane	QGC	Jib Crane
Planned Capacity	0.5 million TEU	0.1 million TEU
Actual Throughput	0.18 million TEU	0.06 million TEU
Ownership	State-owned	State-owned
Operator	Port of Hai Phong	Port of Hai Phong
Open	Nov. 1994	Jul. 1993

Source) Port of Hai Phong under VINALINES

**Table 8.1.5 Distance from Hai Phong Port**

Region	Waterway Route	Road	Railway
HCMC	1,480 km	1,800 km	1,926 km
Da Nang	560 km	965 km	890 km
Hanoi	150km	106km	102km
Viet Tri	205km	190km	164km
Ninh Binh	219km	117km	216km
Hong Kong	910 km		
Manila	1,620 km		
Singapore	2,670 km		
Tokyo	4,350 km		
Kunming (China)			765 km



Source) as of 2001

**Figure 8.1.1 Organization Chart of Port of Hai Phong under VINALINES**

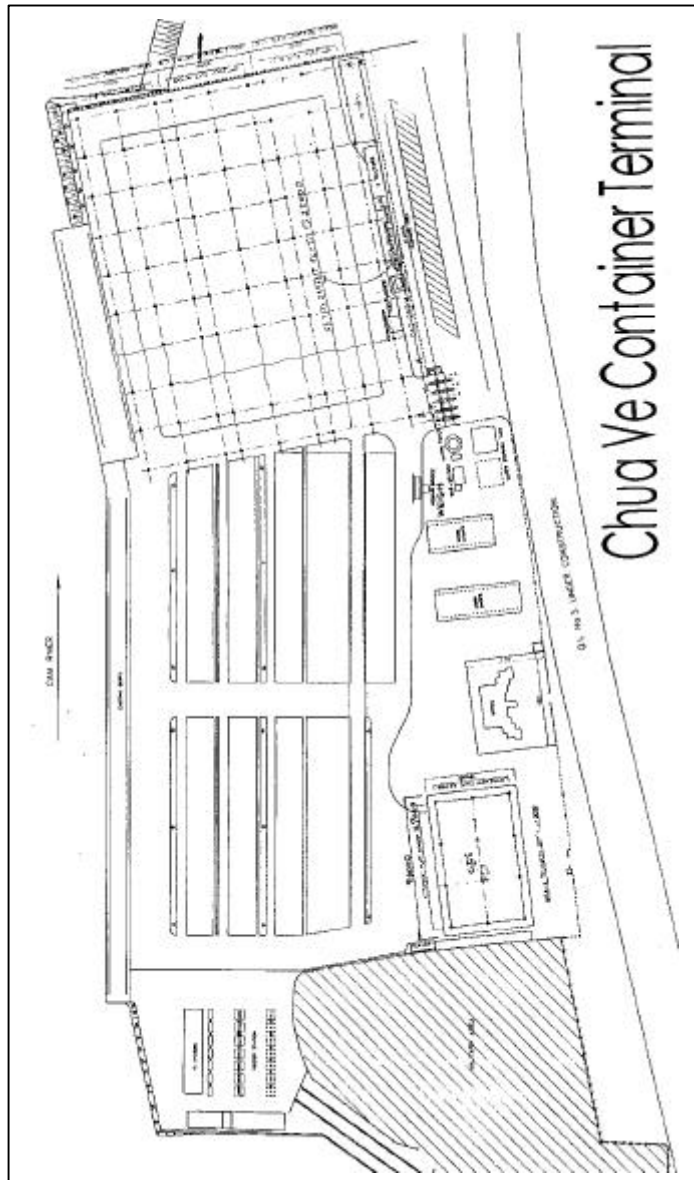
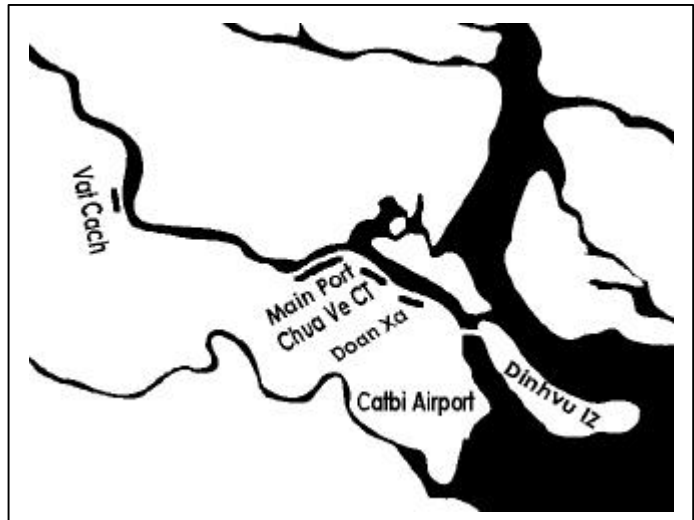
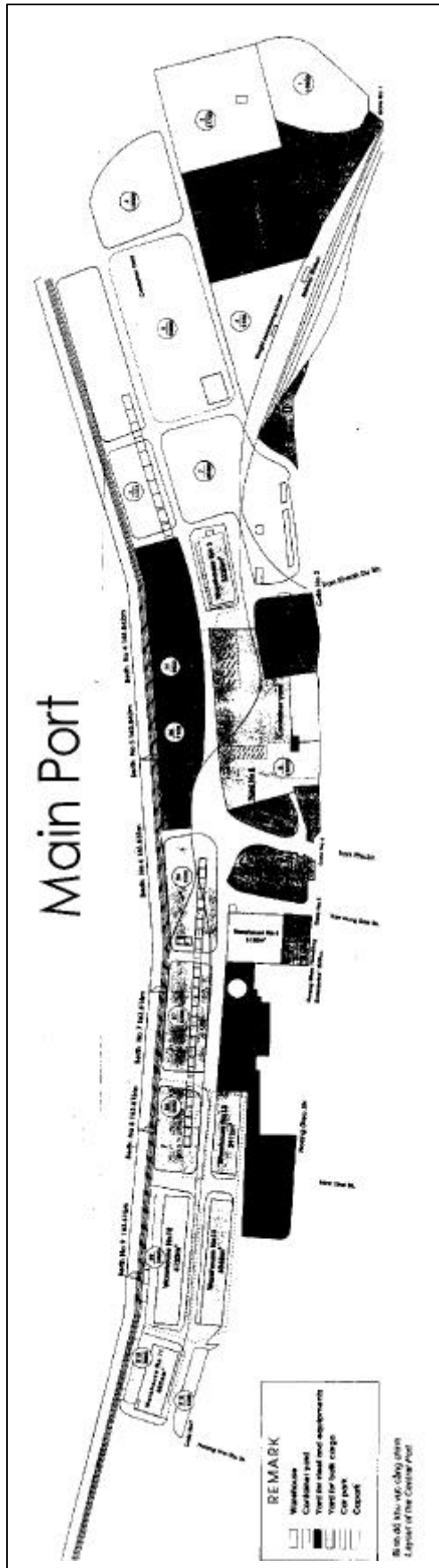


Figure 8.1.2 Layout of Hai Phong Port

## **8.1.2 Cai Lan & Quang Ninh Ports**

### **(1) Outline**

Cai Lan and Quang Ninh (Hon Gai) Ports are located in Ha Long Bay and 35 nautical mile (65km) from Hai Phong. Port of Quang Ninh under VINALINES operates both ports. Coal had been loaded at coal berth (200m@-8.8m) in Quang Ninh (Hon Gai) Port, but the berth was recently converted to a cruise ship berth.

Cargo throughput of Cai Lan and Quang Ninh Ports has been increasing and reached 1.1 million tons (export: 0.2, import: 0.5, domestic: 0.4) in 1999. Moreover cargo throughput in 2001 is estimated to be 1.5 million tons (Cai Lan Port: 0.67 million tons and 0.2 million TEU).

Major commodities are wood chip (from Viet Tri) and limestone (from Viet Tri) for export, fertilizer, wheat, vegetable oil and animal food for import, wheat (to RRD), wood chip (from Viet Tri), Cement and clinker for domestic.

Besides, cruise ship of Star Leo (capacity: 2000 PAX) has recently started to call at the port every Tuesday and passengers in 2001 was 0.3 million PAX.

Port facilities of Cai Lan and Quang Ninh Ports consist of Cai Lan No. 1 Berth, Hon Gai Cruise Berth and Hon Gai Anchorage. Access channel is 37km in length and -8.0m (-6.8m between Hon Gai Anchorage and Cai Lan Port) in depth. Tidal range is 4.3m.

### **(2) Development plans of Cai Lan & Quang Ninh Ports**

- Cai Lan Port Expansion project by ODA Japan (1st stage: 2000-2003)  
US\$ 126 million for construction of berths No. 5, 6, 7 (700m, 3B@-13m, for container and multi-purpose, completed in 12/2002), upgrading existing No.1 berth (from -9m to -12m, completed in 12/2003), dredging of inner channel, procurement of handling equipment, etc. Cargo throughput of Cai Lan Port: 1.7 million tons in 2003, 2.7 million tons in 2004.
- Cai Lan Port Expansion project (2nd stage: port operator's intention)  
Construction of berths No. 2, 3, 4 (700m, 3B@-13m)
- Upgrading cruise berth (port operator's intention)  
from -8.8m to -10.0m by 2005.

### (3) Strategy of Port of Quang Ninh under VINALINES

- Cargo throughput: 4.0-6.0 million tons in 2010
- Passenger throughput: 1.0 million PAX in 2005-2010
- Diversification of container cargo: in-bound (manufactured goods, etc.), out-bound (agricultural products from RRD, rare earth from Lao Cai, etc.)
- Current container transport shares between Cai Lan Port and its hinterland are 50% for road, 30% for railway and 20% for IWT. Distance by road between the port and Hanoi has decreased in February 2002 to 130km from 160km due to the completion of Pha Lai Bridge of Highway No. 18.

**Table 8.1.6 Cargo Throughput of Cai Lan & Quang Ninh Ports**

	1995	1996	1997	1998	1999	2000	2001
Import	192	132	109	277	481	(-)	(-)
Export	477	491	322	231	197	(-)	(-)
Domestic	15	182	387	503	413	(-)	(-)
Total	684	805	818	1,011	1,091	(-)	1,500

Source) Quang Ninh Port under VINALINES

**Table 8.1.7 Cargo Throughput of Cai Lan Port**

Items	1998				1999				2000			
	Import	Export	Domestic	Total	Import	Export	Domestic	Total	Import	Export	Domestic	Total
Stone		4,303		4,303		109		109				0
Vegetable oil	65,384	6,518		71,902	100,697	5,787		106,484	80,000	2,000		82,000
Wood			1,677	1,677		16,358	21,188	37,546		40,000	40,000	80,000
Animal food				0	16,203			16,203	30,000			30,000
Fertilizer	107,858			107,858	208,775			208,775	185,000			185,000
Steel, iron	4,857			4,857	2,929			2,929	3,000			3,000
General good & palm oil	1,298			1,298	4,928			4,928	10,000			10,000
Bulk wheat	69,017			69,017	99,772			99,772	90,000			90,000
Sodium				0	4,884			4,884	15,000			15,000
Wheat, mash			26,336	26,336			36,336	36,336			45,000	45,000
Coal			727	727			2,775	2,775				0
Container				0			26,649	26,649			20,000	20,000
Other goods			33,762	33,762			547	547			25,000	25,000
Total	248,414	10,821	62,502	321,737	438,188	22,254	87,495	547,937	413,000	42,000	130,000	585,000

Source) Quang Ninh Port under VINALINES

**Table 8.1.8 Port Facilities & Equipment of Cai Lan Port & Quang Ninh Port**

Section	Quay (m)	Depth (m)	Storage	Equipment, etc.
Cai Lan No.1 berth (1985)	200	-9.0	Yard (10000m <sup>2</sup> )  Warehouse (272m <sup>2</sup> )	Rail Mounted Crane (5t), Truck Crane (4@14-25t), Crawler Crane (63t), Forklift (10t), Automatic Packing System (6@25-1,000kg), Hopper (70@0.6-8m <sup>3</sup> )
Hon Gai Cruise Berth	200	-8.8		Cruise ship of Star Leo (capacity: 3,000PAX) calls at the port every Tuesday. Passengers in 2001 was 0.3 million PAX.
Hon Gai Anchorage		-9.5		Maximum Vessel Size: 50,000DWT

Source) Port of Quang Ninh under VINALINES



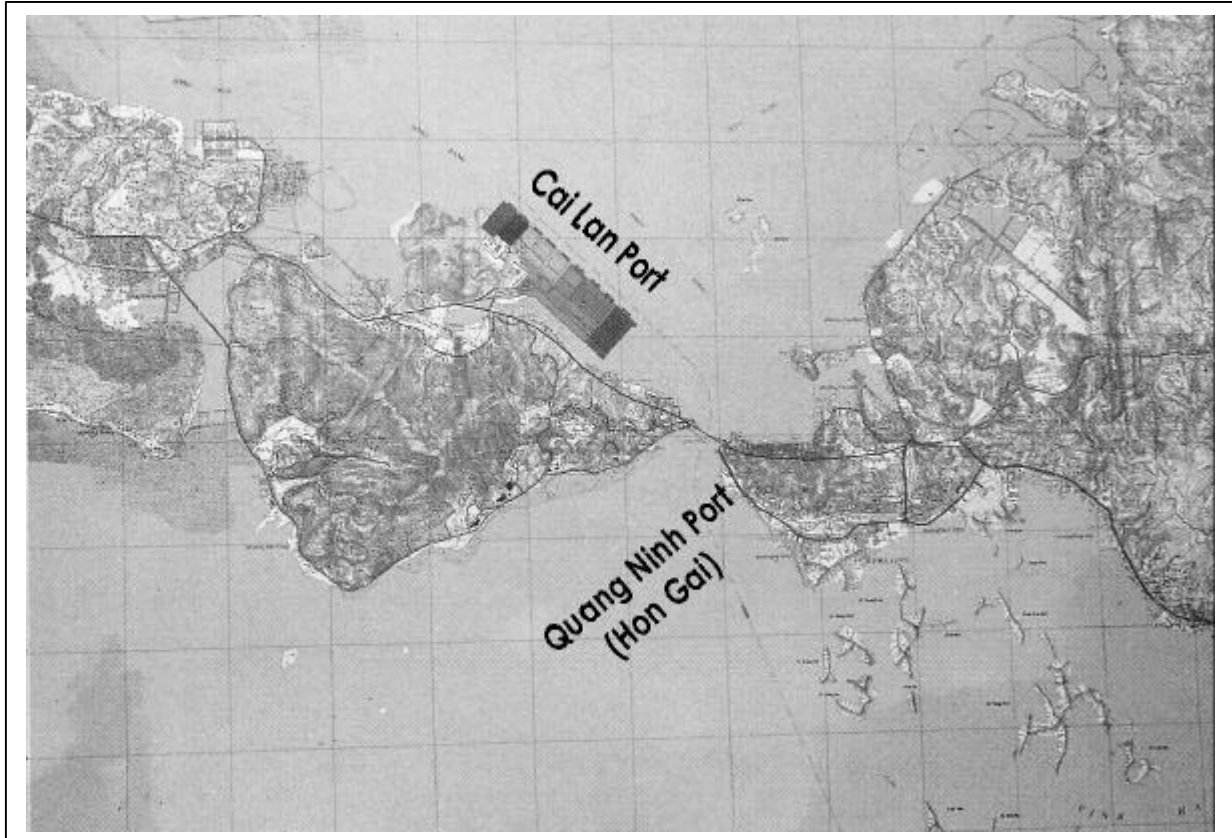


Figure 8.1.3 Location of Cai Lan Port & Quang Ninh Port

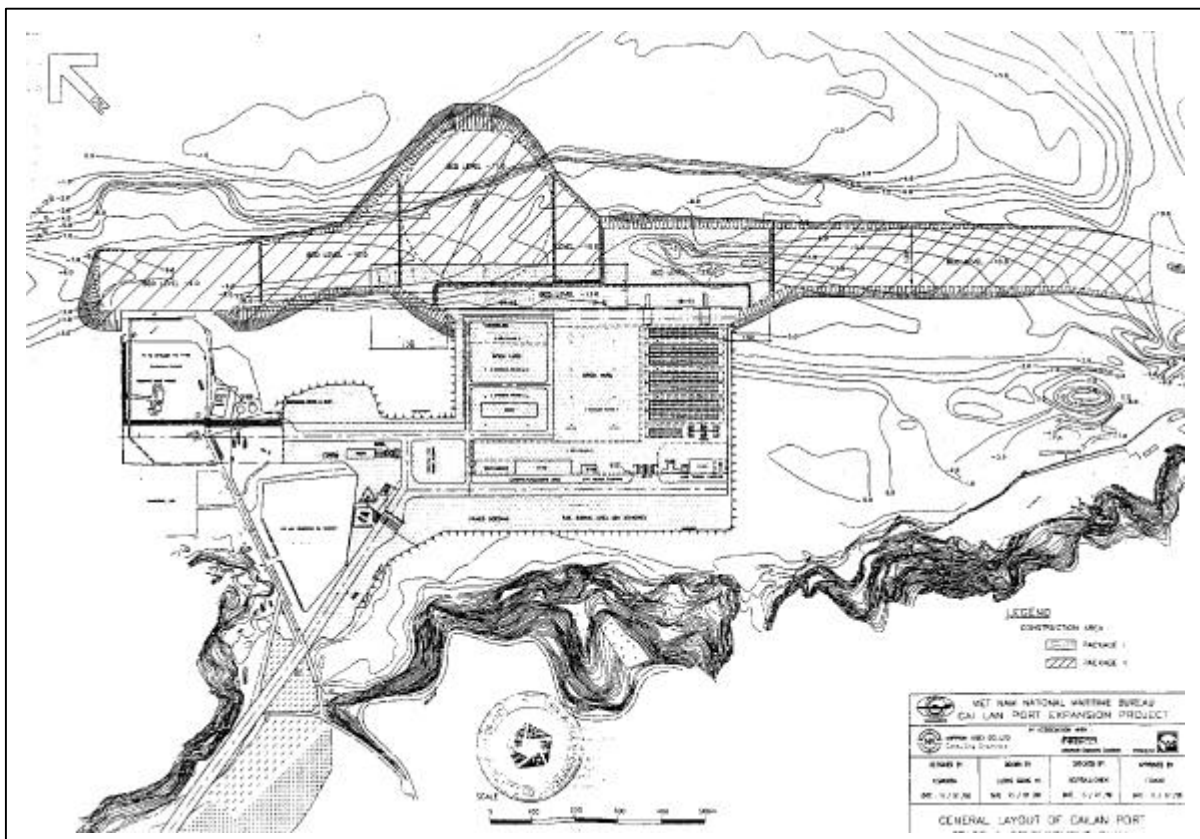


Figure 8.1.4 Layout of Cai Lan Port (JBIC project)

### 8.1.3 Cam Pha Port

Coal produced by the Cam Pha coal mines are classified as anthracite in rank, with a low sulfur, high calorific value and high ash fusion temperature. Coal is exported to overseas countries under the brand name of HONGAY anthracite coal. Coal price in recent years is rather stable and some US\$ 20/ton (FOB).

Cam Pha Port was built in 1924 for coal loading and has been put into operation in 1928. In 1990 the port was handed over to Vietnam National Coal Corporation (VINACOAL) by Ministry of Transport. Since then, it has been officially managed and exploited by Port and Coal Trading Company under VINACOAL.

Cargo throughput of Cam Pha Port is some 4.0 million tons (3.5 for export, 0.5 for domestic). Coal for the Southern region (0.35 million tons) is loaded into coasters of 5,000DWT - 10,000DWT. Coal for the RRD (0.15 million tons) is loaded into barges of 200DWT - 500DWT.

Port Facilities of Cam Pha Port consist of a coal berth (300m, 1B@-9m for 30,000DWT), Hon Net anchorage (for 65,000DWT), Con Ong anchorage, Inner port and access channel of (40km). Tidal range is 4.1m.

Port and Coal Trading Company under VINACOAL is planning to invest with bank loan into deepening the port facilities so that the port can handle more than 6.0 million tons in 2005.

**Table 8.1.9 Existing Port Facilities & Development Plan of Cam Pha Port**

Section	Existing Facilities	Development Plan
Cam Pha Port	300m, 1B@-9m	550m, 2B@-12m
Inner Port	Tide use	for 500DWT (domestic)
Con Ong Anchorage	-7.4m	-8.8m
Hon Net Anchorage	-13m to -21m Mooring Buoy 1 unit	-13m to -21m Mooring Buoy max 10 units
Access Channel (Buoy 0 - Honnet)	-9.8m	-11.0m
(Honnet - Con Ong)	more than -10.m	more than -10.0m
(Con Ong - Port)	-7.0m	-8.8m

Source) Port and Coal Trading Company under VINACOAL

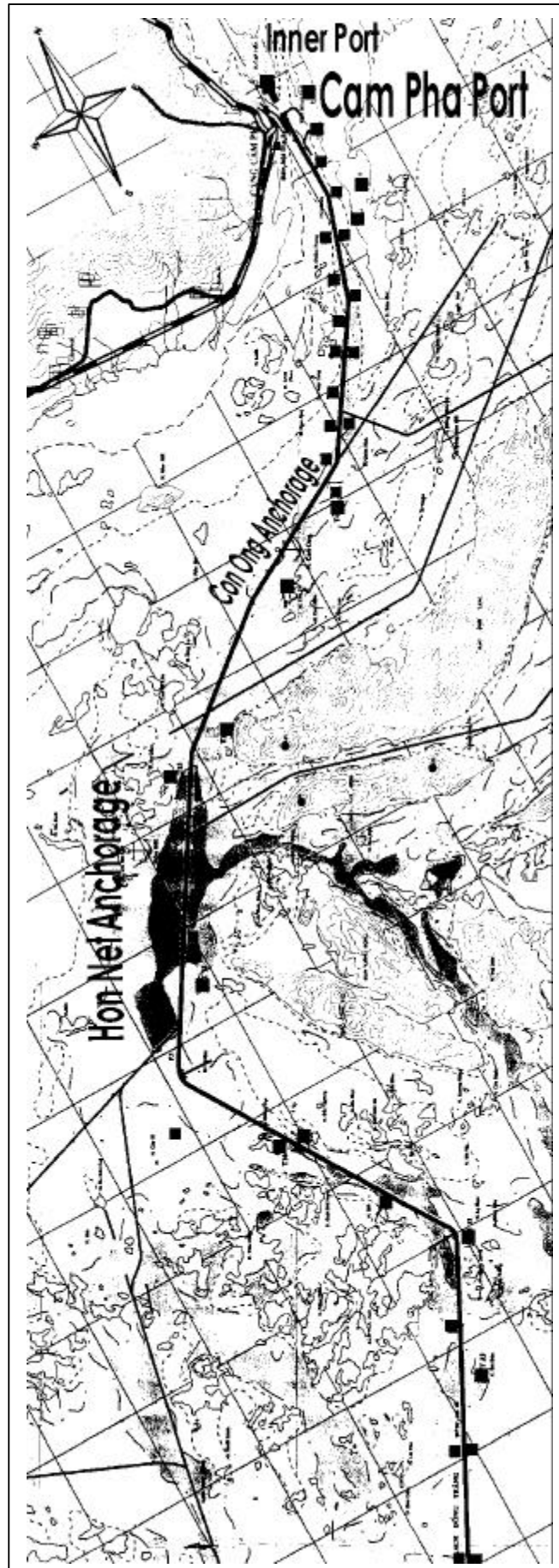


Figure 8.1.5 Layout of Cam Pha Port

#### 8.1.4 Da Nang Port

Da Nan Port is located in the Central region, 518 miles (960km) NNE of HCMC and 308 miles (570km) south of Hai Phong Port. Da Nang Port is the maritime gateway of the Central region, Laos and northeast Thailand through East-West Corridor.

Cargo throughput of Da Nang Port is 1,7 million tons, of which domestic cargo account for 40%. Major domestic cargoes are cement and coal from the Northern region, clinker and steel for the Northern region.

Da Nang Port consists of Tien Sa Port (5B@-12m) for mainly international cargo at Son Tra Island and Song Han Port (750m@-6m to -7m) for domestic cargo at the left bank of Han River. In the vicinity of Da Nang Port, there are My Khe buoy (for unloading oil products) in the south of Son Tra Island and Hai Van Cement pier in the west of Da Nang Bay. Tidal range is 1.6m.

**Table 8.1.10 Cargo Throughput of Da Nang Port**

	1996	1997	1998	1999	2000	2001
Total Cargo (incl. container, 1000 tons)	848	882	830	1,200	1,400	1,700
Import (1000 tons)	198	280	314	400	(-)	(-)
Export (1000 tons)	582	433	340	410	(-)	(-)
Domestic (1000 tons)	68	169	176	390	655	630
Total Container (1000 TEU)	(-)	(-)	(-)	17	22	26

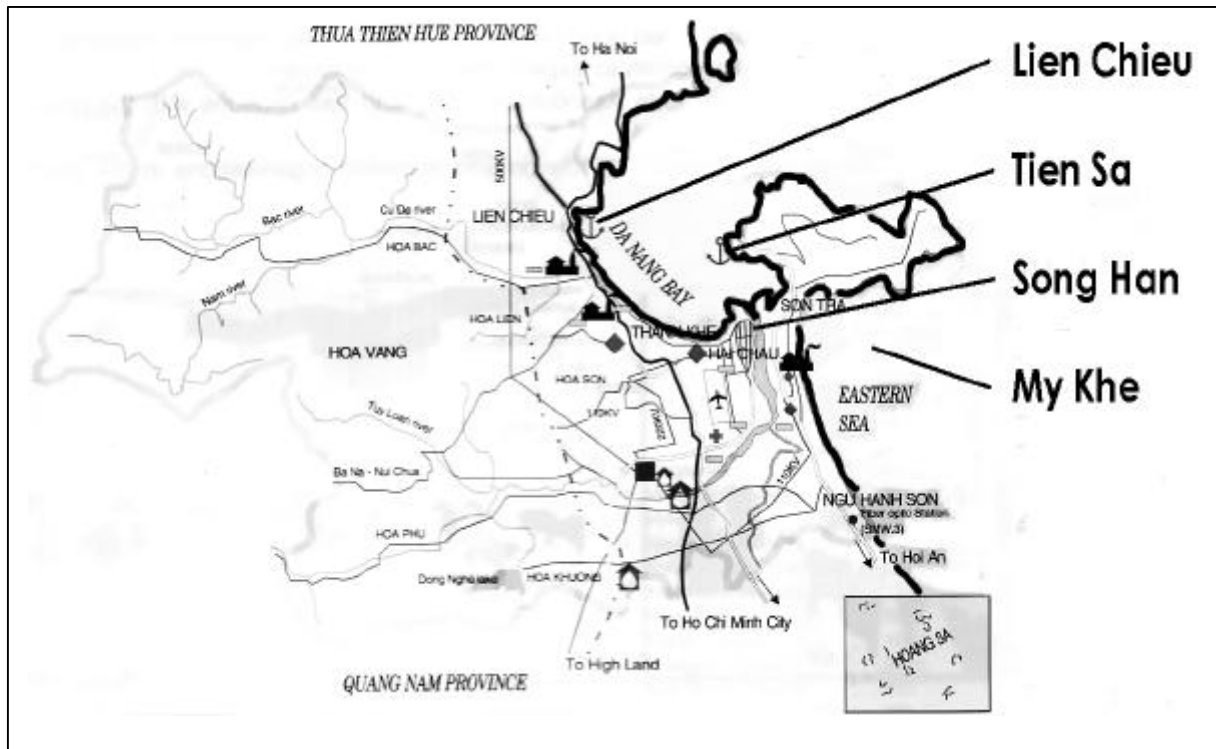
Note) Da Nang Port under VINALINES handled another 1 million tons of oil products at My Khe Buoy.

Source) Da Nang Port under VINALINES

**Table 8.1.11 Port Facilities and Throughput of Da Nang Port**

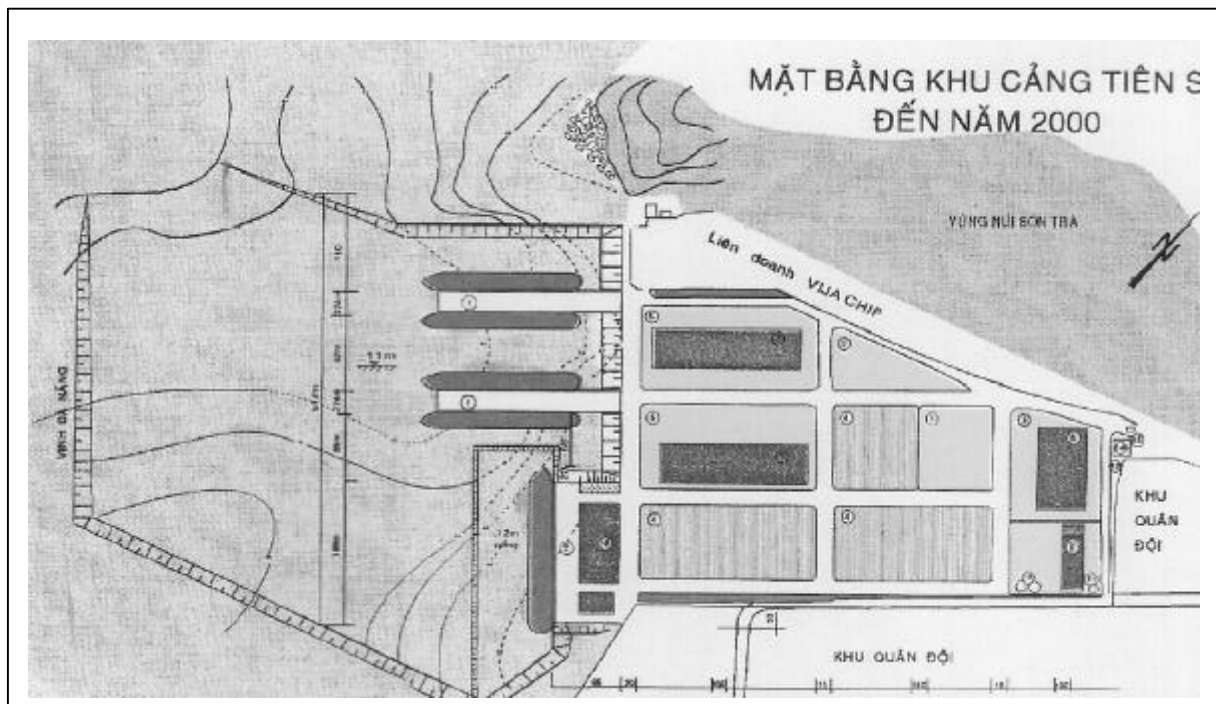
Section	Port Facilities	Maximum Vessel Size	Throughput Capacity
Tien Sa	2 Finger Pier: 4B (182m@-12m) 1B (165m@-12m) Yard: 11.5ha Warehouse: 2.0ha	30,000DWT	3 million tons
Song Han	Total Berth Length: 750m Berth Depth: -6m to -7m Yard: 1.0ha Warehouse: 0.2ha Access Channel: 4km@-6.2m	5,000DWT	1 million tons

Source) Da Nang Port under VINALINES



Source) Da Nang Port under VINALINES

**Figure 8.1.6 Location of Da Nang Port**



Source) Da Nang Port under VINALINES

**Figure 8.1.7 Layout of Tien Sa Port (within Da Nan Port)**

## **8.2 Master plan for the development of Vietnamese seaport system up to 2010**

The growth of cargo throughput of Vietnamese seaports is closely related to GDP of Vietnam, which is set to have at least doubled the level of 2000 in the Strategy for Socio-economic Development (2001 - 2010). Vietnam has joined ASEAN and will join AFTA in 2006, and will focus on increasing trade as a means of economic development. Vietnam is close to the international shipping lanes of east-west and intra-Asia.

These backgrounds should help to boost the development of the Vietnamese seaport system. Therefore, the transport sector is planning to develop the national commercial fleet, to rehabilitate and improve seaports, especially deep-water ports in the focal economic areas. In addition, advanced technologies, which have been applied to ship and port operations all over the world, must be introduced to the Vietnamese seaport system.

Taking into account the above situation, "Master Plan for the Development of Vietnamese Seaport System up to 2010" was formulated by MOT (VINAMARINE) and approved by the Prime Minister in 1999 (No.202/1999/QD-TTg, Oct. 12th 1999).

In the plan, priority is given to the rehabilitation, improvement and modernization of existing main ports to handle the increased volume of cargo. The construction of some deep-sea ports at key economic zones to accommodate vessels up to 30,000 - 40,000 DWT is also being considered to meet the increased demand of import and export cargoes generated by the planned economic development.

Vietnamese seaport system is basically comprised of 8 port groups:

- (1)Northern, (2)North Central, (3)Mid Central, (4)South Central,
- (5)HCMC - Dong Nai - Ba Ria - Vung Tau, (6)Mekong River Delta,
- (7)South West Islands, (8)Con Dao

A port group is composed of several ports that support each other in one area due to geographical features. A group may include general ports, specialized ports, floating ports and ports for local economic development. The scale of 8 port groups is based on cargo throughput forecast up to 2010. Cargo throughput is expected to be 106 million tons in 2003 and 200-268 million tons in 2010.

**Table 8.2.1 Cargo Throughput of Vietnamese Seaports by Commodity**

(million tons)

Commodity	by 2003	by 2010
General freight (incl. cement, petrol and coal)	60.0	131.1
Specialized cargo (incl. refinery)	13.5	25.0
Crude oil (converted into oil of all kinds and gas)	20.5	40.0
Goods in transit and transshipment freight	12.7*	58.3*
Iron ore from Thach Khe and Cam Pha		14.0*
Total	106.2	268.4

Note) \*: potential

Source) Master Plan for the Development of Vietnamese Seaport System up to 2010

**Table 8.2.2 Cargo Throughput of Vietnamese Seaports by Port Group**

(million tons)

Port Group	by 2003	by 2010
Northern Port	21-24	57-69
North Central Coast	2-4	23-26
Middle Central Coast	17-18	35-38
South Central Coast	3	5-6
HCMC, Dong Nai, Ba Ria - Vung Tau	34-38	84-89
Mekong Delta	5-6	9-11
Southwest Islands		*
Con Dao		*

Note) \*: potential

Source) Master Plan for the Development of Vietnamese Seaport System up to 2010

**Table 8.2.3 Some Main Project of Vietnamese Seaports (2000-2010)**

(million tons)

Port	Function	Project	Fund (million US\$)
Cai Lan Port	Multi-purpose	Rehabilitation/Expansion	120
Hai Phong Port	Multi-purpose	Newly Construction	128
Da Nang Port	Multi-purpose	Rehabilitation/Expansion	40
Dung Quat Port	Oil	Newly Construction	250
Sai Gon Port	Multi-purpose	Rehabilitation/Expansion	59
Vung Tau Port	Multi-purpose	Newly Construction	637

Source) Master Plan for the Development of Vietnamese Seaport System up to 2010

### **8.3 General indicators of maritime transport in 2001-2005 by VINAMARINE**

#### **(1) Volume of sea transport**

In 2001-2005, total volume of sea transport by national flag is estimated to be 132 million tons, of which international transport is 80 million tons, domestic transport is 52 million tons. The growth will be 11% annum up to 2005 which is equivalent to 1.4 times of GDP growth in the same period.

Coastal shipping has a higher growth than international shipping due to the increasing demand of transporting some commodities such as cement, fertilizer, coal to Southern provinces and materials to industrial zone in Dung Quat oil refinery.

#### **(2) Cargo throughput of seaport system**

In 2001-2005, total volume of cargo throughput reaches 641 million tons (5 year total) and annual growth is estimated to be 15.1%. General port system under the central management level is 154 million tons, of which 36.7 million tons for export cargo, 46.7 million tons for import cargo, 46.2 million tons for domestic cargo and 24.4 million tons for transit cargo.

#### **(3) Infrastructure construction investment for seaports**

Total investment for the whole maritime industry is VND 18,742 billion, of which VND 3,642 billion of foreign investment, VND 15,000 billion of domestic investment. The main infrastructure construction projects are as follows:

For seaport

- Project on Cai Lan port construction: finish the construction of 4 berths up to 2003
- Hai Phong port: loan funding from JBIC, under the second phase (first stage) including channel dredging, construction of 2 container terminals and handling equipment
- Dinh Vu container port: construct 2 berths with the capacity of 20,000 DWT
- Dung Quat port: construct berths and port infrastructure under VINALINES, construct breakwaters
- Project on national Thi Vai and Cai Mep ports: construct two terminals of 20,000 DWT and two terminals of 50,000 DWT



- Project on Vung Tau container port: have planned to construct 1 berth and 1 yard, infrastructure
- Contribute to improvement and development: Cua Lo port (2 berths of 10,000 DWT), Quy Nhon port (1 berth of 30,000 DWT), Nha Trang port (berth of 20,000 DWT), navigation aid system, channel maintenance, complete all approved projects
- Study and develop domestic passenger vessels, construct passenger ports in Hon Gai, Hai Phong, Da Nang, HCMC

For others

- Project on rehabilitation of Vietnam coastal communication station: already finished the first phase of the project and the second phase under going by JIBIC funding, it is estimated to be finished in 2002
- Project on search and rescue vessel building: complete building 1 vessel in 2001 by domestic investment, continue implementing project by ORET loan to build 6 vessels with dimension of 27x47 m
- Project on investment and development of vessel fleet: build domestic vessels, buy foreign secondhand vessels with total investment of VND 5,120 billion and USD 226,5 million
- Continue to complete procedures, invest into infrastructure, searching and rescuing, spill oil solution, channel maintenance, anchorage area, storm prevention, and port authority office
- Study project on Vietnam marine safety including components of upgrading sea signals, buoy dropping vessels and rescue vessels