Chapter 5 Present Situation of Port Sector

5.1 Location of Ports

Ports of Phnom Penh and Sihanoukville (former Kompong Som) are two international ports serving as national gateway ports. Other small local ports were located on the Mekong River and Tonle Sap Lake to accommodate local ships. Following the Cambodian constitution promulgated in 1993, the government proclaimed several laws on organizations related to maritime activities including Sub Decree on the establishment of the Ministry of Public Works and Transport. Sub Decrees on the establishment of the Sihanoukville autonomous port and Phnom Penh autonomous port were also promulgated in July 1998.

Since then, the development of private ports was approved by the government and the construction of the Port of Sre Ambel started in 2001. Following the development of the Port of Sre Ambel, which entered into operation in 2003, the construction of the Port of Oknha Mong started in 2003 on the east coast of Kompong Som Bay and opened in August 2004. Two oil jetties were also developed in the north of Sihanoukville Port by oil companies, which replaced the old oil jetty of SAP.

Besides autonomous ports and private ports, there are local facilities developed by provincial authorities, such as wooden jetties in Sihanoukville Port, in Kampot, in Stueng Hav District and other areas. These small jetties, most developed in the 1970's, are used for handling general goods and construction materials from Thailand. While provincial/municipal authorities and Waterways Department of MPWT are responsible for the construction and maintenance of these facilities, no construction of local ports was reported since 1990. Many jetties for fishing vessels are observed in Sihanoukville Port and Stueng Hav Port, however, official approval for the construction was not accorded to those facilities.

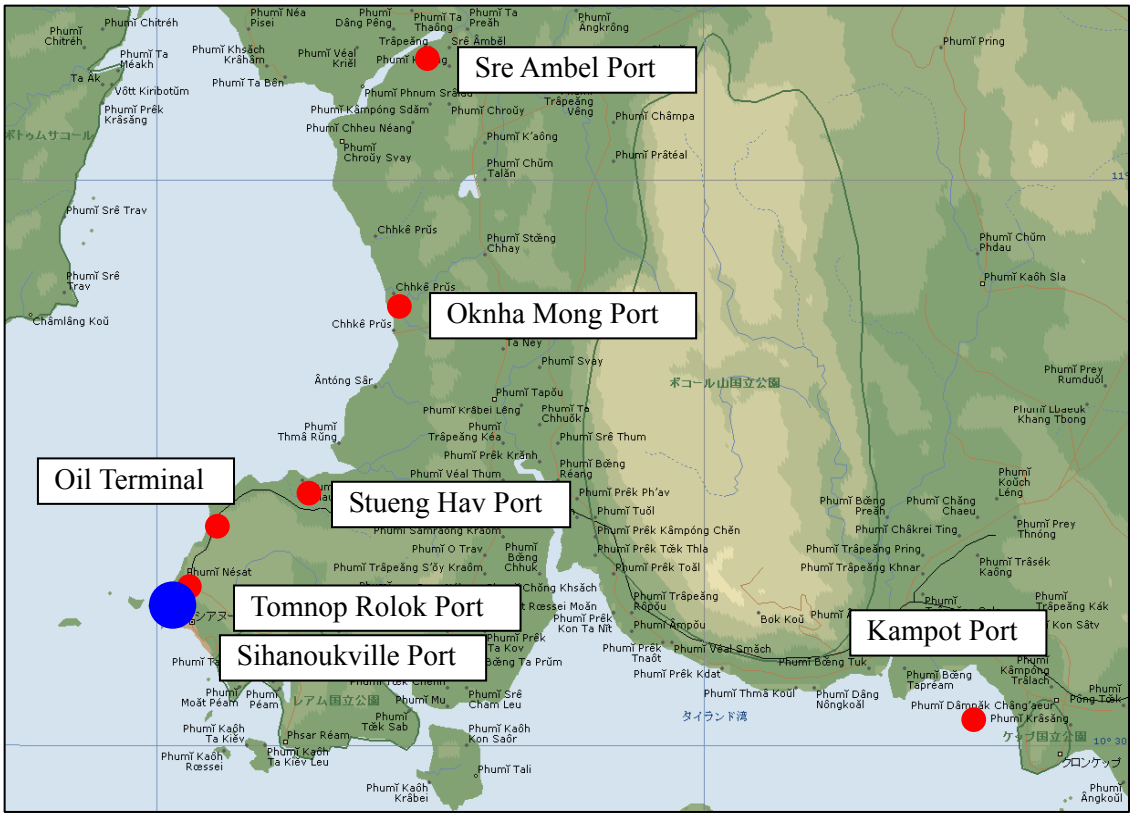


Figure 5.1.1 Location of Seaports

There are many river ports along the Mekong River which belong to provincial or district authorities. Kompong Cham Port is located 105 km up the river from Phnom Penh (PP), Kratie Port in 220 km up, Stung Treng Port in 370 km up, and Neak Loeang Ferry Port is located 60 km down the river from PP.

On the Tonle Sap River, Kampong Chhnang Port is located 90 km up the river from PP. Chong Kneas Port is on the edge of Lake Sap near Siem Reap, 190 km from PP, and Battambang Port is upriver of Tonle Sap Lake.

Cambodian government established two autonomous ports, provincial authorities have two coastal ports and seven river ports, private enterprises own three coastal ports, and district authorities have 42 ports. List of these ports is shown in Table 5.1.1. Besides the ports listed, private oil jetties are located in the Mekong waters in the Phnom Penh area. Almost all river ports are located in the upper river above Phnom Penh due to the fact that no road exists along the Mekong River.

Table 5.1.1 List of Ports in Cambodia

Type	Name of Port	Management Body / Location
Autonomous	Sihanoukville Port	Sihanoukville Autonomous Port
〃	Phnom Penh Port	Phnom Penh Autonomous Port
Private	Sre Ambel Port	Koh Kong Province / Sre Ambel District
〃	Oknha Mong Port	Private Company / Sre Ambel District
〃	Oil Terminals	Private Company / Sihanoukville
Province	Stueng Hav Port	Koh Kong Province / Stueng Hav District
Municipality	Tomnop Rolok Port	Sihanoukville City
Province	Kampot Port	Kampot Province / Kampot
〃	Kompong Cham Port	Kompong Cham Province / Upper Mekong 105 km from PP
〃	Kratie Port	Kratie Province / Upper Mekong 220 km from PP
〃	Stung Treng Port	Stung Treng Province / Upper Mekong 370 km from PP
〃	Kampong Chhnang Port	Kampong Chhnang Province / Tonle Sap River 90 km from PP
〃	Chong Kneas Port	Siem Reap Province / Tonle Sap 260 km from PP
〃	Battambang Port	Battambang Province / Sangke River west of Tonle Sap
〃	Neak Loeang Terminal	Ferry Terminal / Lower Mekong 60 km from PP
District	42 ports	32 ports along the Mekong River 10 ports along the Tonle Sap River

Source: Merchant Marine Department, Waterways Department, MPWT

5.2 Port Administration, Legislation and Organizations

5.2.1 Legislation and Organization related to Port Administration

Sub Decree No.14 on the Organization and Functioning of the Ministry of Public Works and Transport was promulgated in 1998, which determined the Ministry shall be responsible for port administration. While the Law on the Establishment of the Ministry of Public Works and Transport was already promulgated in 1996, all the details of organization and function were entrusted to sub decrees.

Before the promulgation of the Constitution in 1993, the Ministry of Communications, Transports and Posts was responsible for port administration. Following the transformation of ministries, the Ministry of Public Works and Transport took over the port administration. This transformation is similar to the case in Japan, where the Ministry of Land, Infrastructure and Transport was established due to the organizational reform of government ministries in 2001.

MPWT is responsible for the improvement and maintenance of infrastructure such as ports, roads, bridges, railways, waterways, airports and state buildings, and the operation of surface transport services. Particulars of their duties are as follows:

To manage and develop national policies on public/civil construction sectors;
To improve, maintain and manage public infrastructures;
To develop regulations on the management of roads, ports, railways and waterways;
To develop regulations and manage road transportations, railways and waterways;
To participate and jointly develop laws, rules and regulations related to constructions;
To renovate state buildings; and
To cooperate with the Civil Aviation Authority on facility construction
（No.14/ANK/BK, Sub Decree on the Organization and Functioning of the Ministry of Public Works and Transport, March 1998）

In connection with these duties, MPWT has three general departments and each general department directs respective several departments under its jurisdiction (see Figure 5.2.1). General Department of Administration takes charge of personnel, financial and planning matters, General Department of Public Works and Construction has departments of road, heavy equipment, technical research, public building, waterways and airports. Railways and ports are under the jurisdiction of MPWT, however, state enterprises, namely Royal Railways of Cambodian, Sihanoukville Autonomous Port and Phnom Penh Autonomous Port, takes charge of the management and development of respective infrastructures.

General Department of Transport is in charge of the road transportation, maritime and inland waterway transportation. Therefore, the construction of infrastructures and the administration of transportation activities are under different general departments, consequently there seem to be less coordination between the development of transport infrastructures and the promotion of transportation activities.

Departments related to maritime and port sectors are the Merchant Marine Department and the Inland Waterway Transport Department under the General Department of Transport and the Waterways Department under the General Department of Public Works and Construction. Sihanoukville Port, Phnom Penh Port and KAMSAB are autonomous bodies under the direct command of the Minister for Public Works and Transport.

5.2.2 Establishment of Autonomous Ports

Port of Phnom Penh has had a commercial facility since the beginning of 20th century and the Port of Sihanoukville was developed after the independence of Cambodia in 1953 with assistance of the French Government. During the Pol Pot regime, ports handled no cargo due to the ban of import and export activities. Import was resumed from the beginning of 1980s. Rehabilitation of Sihanoukville Port started in the mid-1980s and the rehabilitation was encouraged by the UNTAC rehabilitation plan in 1992.

Following the promulgation of the Cambodian Constitution in 1993 and the establishment of MPWT in 1996, both ports had the legal status of autonomous port. Ports of Sihanoukville and Phnom Penh were transformed into autonomous bodies based on Sub Decrees No.50 and No.51 on

17 July 1998 entitled "Establishment of the Sihanoukville Autonomous Port" and "Establishment of the Phnom Penh Autonomous Port" respectively. Both ports have the board of directors and are able to manage by their own capacity, however, they are under the direction of MPWT in terms of technical matters and MEF in terms of financial matters. Actually both ports are under the strong control of the government.

Both port authorities are responsible for providing pilotage service, loading and unloading operation, forwarding service, warehouses, yards and ship chandlery as well as giving permission for ships for entry, berth allocation, developing and managing port facilities. In this sense, PPAP and SAP fall under the category of comprehensive port authority.

Board of Directors of the PPAP and SAP consists of seven members, namely representatives of MPWT, the Council of Ministers、MEF、MOC、Phnom Penh or Sihanoukville Municipality, Port Labors and Port Authority. CEO of each port authority is designated by the Minister for MPWT and chairs their Board. Since PPAP and SAP are under the direction of MPWT and MEF, both ports are state enterprises. However, their business is under the same burden of taxes as private companies.

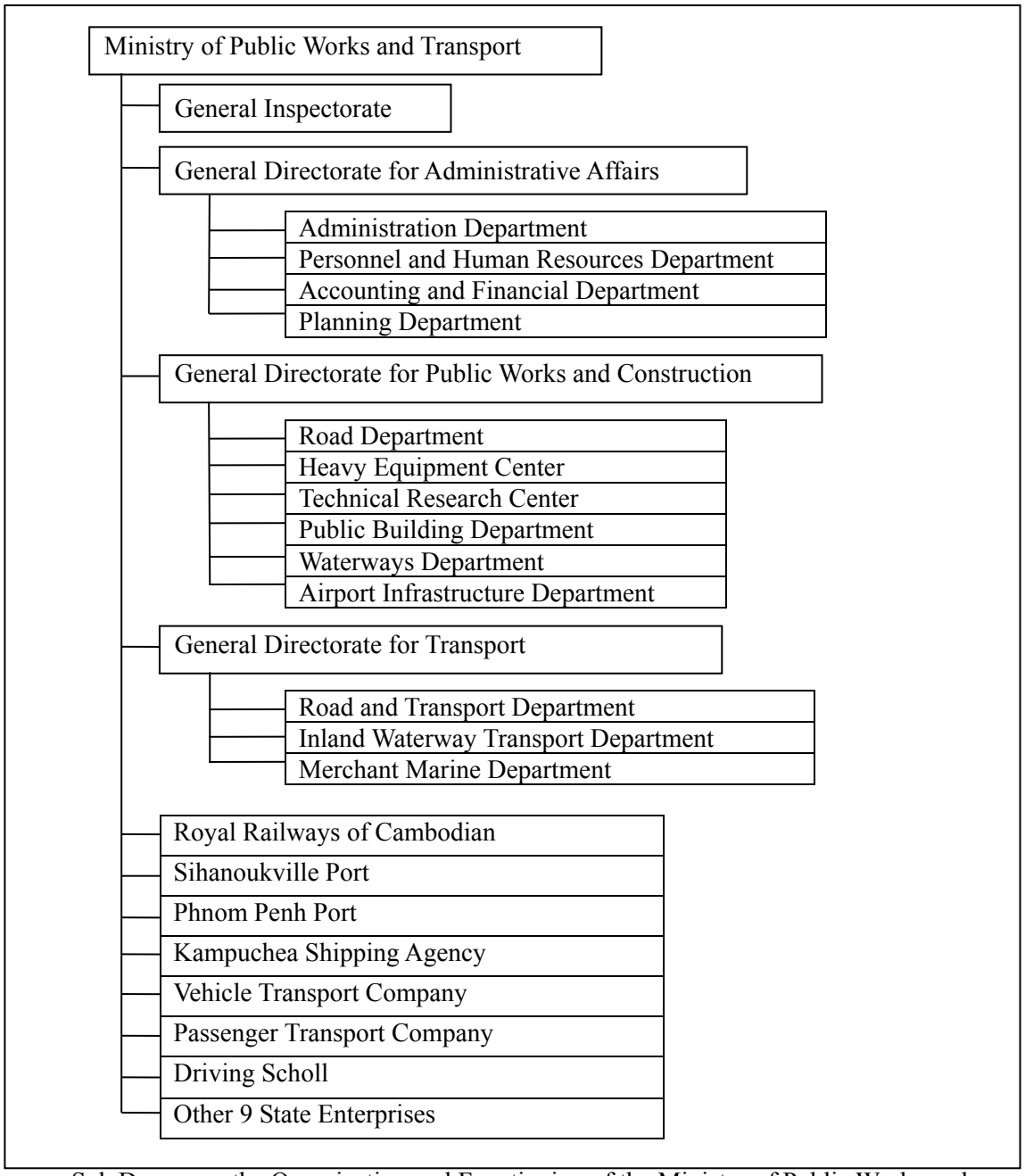
PPAP engages in channel dredging in the Mekong River beyond its port limits and collects channel dues instead of Waterways Department, MPWT. In this regard, PPAP acts as a public body. However, PPAP also works for installing buoys in the Mekong River as a sub contractor of private foreign construction company. In this line, PPAP acts as a private company. After the completion of buoy installation, PPAP will maintain the buoys as a public body. SAP also has the same character. When SAP works as a cargo operator, SAP acts as a private company, but when SAP engages in collecting port dues or inspects private facilities, SAP plays a role of public body.

5.2.3 Legislation on Private Ports and Local Ports

No legislation related to private ports is identified in Cambodian laws and regulations. Construction proposals in, under or above rivers are examined by the Waterways Department, MPWT, from a technical point of view of river maintenance and navigation (Sub Decree No.14 on the Organization and Functioning of the Ministry of Public Works and Transport)

Private ports, namely Sre Ambel and Oknha Mong, have been developed since 2001 based on the Open-Sea-Strait Policy of the Government. While the approval for the development was accorded from a political point of view, it is required to determine the rights and duties of private ports by law to ensure orderly development and management of maritime transportation.

As local ports are in very poor condition, it is also necessary to ensure proper rehabilitation and management of local ports. Port legislation shall include the role of local authorities in port rehabilitation and management to increase regional welfare.



Source: Sub Decree on the Organization and Functioning of the Ministry of Public Works and Transport

Figure 5.2.1 Organization of MPWT

5.3 Phnom Penh Port

5.3.1 Outline

Phnom Penh Port is the second main port in Cambodia. Located in the capital Phnom Penh, this river port faces the Tonle Sap and is some 3-4 km from its junction with the Mekong river. It is also about 330km from Vung Tau at the mouth of the Mekong which is mainly part of Vietnam.

The water level at the port is more than 9 m higher in the rainy season (+10m) than in the dry season (+0.5m). Therefore, only vessels of about 2,000DWT can transit all year round. In addition, maintenance dredging of the channel is necessary for ships of 6,000DWT or less to transit during the highest water level.

5.3.2 Port Facilities

(1) Approach Channel
Maintenance dredging of the Ka-orm Somnor-Phnom Penh-Kompong Cham channel is carried out each year for 2 or 3 months in the dry season by 2 dredgers owned by PPAP, and the annual dredging volume is around 100,000 m^3. Maintenance dredging of 159,648m^3 is planned at Chaktmok this year (Cross section: W=60m, L=1290m, D=7m). Sometimes the dredgers of PPAP are hired by a private company to conduct land reclamation, etc.

(2) Berthing Facilities
PPAP owns facilities at Port No.1 and Port No.2: Port No.1 has 3 berths with a total length of 300m and apron width of 20m. Port No.2 has 2 two pontoon type berths, No.5b and No.5c, for handling passengers and is located about 1km downstream from Port No.1.
Petroleum products are handled at eight private facilities between 4 ㎞ and 13km upstream from Phnom Penh. Ships ranging from 600-1,000DWT berth alongside the pier.

(3) Container Yards
PPAP has two container yards: CY1 (3,772m^2) and CY2 (3,638m^2). These yards are mainly stacked with laden containers; dwelling time is generally 2 or 3 days.

(4) Cargo Handling Equipment
PPAP has four types of cargo handling equipment: mobile cranes (17 units), forklifts (18 units), trucks (11 units) and trailers (6 units).

Sovereign has two geared barges for container handling between container vessel and chassis on the apron: 45ton: 1 unit, 80ton 1 unit.

(5) Harbour Craft
PPAP has its own harbour crafts; 2 tugs (550Hp: 1 unit, 380Hp: 1 unit) and 2 dredgers (840Hp: 1unit, 1,200Hp: 1unit).

Figure 5.3.3.1 Organization Chart of PPAP

5.3.3 Port Management and Operation System

(1) General
MPWT is responsible for construction, administration and maintenance of such transportation means as air, road, railway and river, ports and shipping, etc. The Port Authority of Phnom Penh, as an implementing agency of the Royal Government, was previously a subdivision of MPWT responsible for operation and maintenance of port facilities, navigational channel and docking operation including tug service in oil ports.

(2) Phnom Penh Autonomous Port (PPAP)
The Port Authority of Phnom Penh was reformed under the sub-decree No. 51 dated on 17 July 1998, and, presently, is a state-owned enterprise of Phnom Penh Autonomous Port (PPAP).

PPAP is operated and managed under the control of the General Director and three Deputy Directors. Currently, PPAP consists of 12 functional departments (5 administrative departments and 7 operational departments). PPAP is organized by a staff and labor force of 458 in total. Figure 5.3.3.1 shows the organization chart of PPAP.

At present, PPAP is promoting privatization, and the following privately operated container handling operation has been established:

Sovereign Base Logistics Co., Ltd. (Sovereign) has a sole port operation and water transportation agreement with PPAP for container cargo. Sovereign can exclusively utilize Berth No.5 & 6 of Port No. 1 under the agreement.

(3) Financial Status
The income and expenditure account of PPAP in 2002-2005 is shown in Table 5.5.3.1.

Table 5.3.3.1 Income and Expenditure Account of PPAP in 2002-2005

Items	2002	2003	2004	2005
		in Thousand Riel		
I.Operating Income	4,766,229	5,328,576	7,662,664	13,763,819
Services A/C No. 70	4,138,228	4,927,040	7,397,013	13,491,122
Fixed production A/C No.72	537,774	108,855	172,940	0
Miscellanous from operating income A/c No.75	39,882	34,348	55,040	272,697
Provisions for the Operating Risk A/C No. 78	50,344	219,657	37,671	0
Transfer of Charge-current operating A/C No. 79		38,675	0	0
II. Operating Expense	4,660,117	4,766,607	7,207,962	11,734,479
Purchase A/C No. 60	1,513,199	1,171,565	1,424,283	3,517,858
External Services A/C No. 61	208,042	141,130	456,148	184,448
Other External Services A/C No. 62	307,069	384,572	793,595	1,273,352
Taxes & Similar Services A/C No. 63	32,575	34,424	771,171	138,352
Personnel Expenses A/C No. 64	1,577,771	1,657,588	1,796,324	2,309,150
Other Operating Expenses A/C No.65	69,160	107,267	134,304	535,542
Depreciation & Provisions A/C No.68	952,301	1,270,061	1,832,137	3,775,777
III. Net Operating Income I - II	106,112	561,968	454,702	2,029,340
IV. Financial Income	438,305	139,045	253,266	119
V. Financial Expense	0	1,298	0	0
VI. Net Financial Income IV - V	438,305	137,747	253,266	119
VII. Exceptional & Extraordinary Income	1,599,601	1,600,321	3,784,442	1,078,482
VIII. Exceptional & Extraordinary Expenses	1,664,319	1,727,905	3,733,326	1,211,189
IX. Net Exceptional Income VII - VIII	-64,718	-127,584	51,116	-132,707
X. Net Income Before Tax III + VI + IX	479,699	572,132	759,084	1,896,752
XI. Income Tax	95,940	114,426	151,817	379,350
XII. Net Income After Tax	383,759	457,705	607,267	1,517,402

Source: PPAP

During the period from 2002 to 2005, operation income rapidly increased from 4,766 million Riel in 2002 to 13,764 million Riel in 2005 at an annual average increase rate of 42.4 %. Net income after tax in 2005 was 1,517 million Riel, about 4.0 times that in 2002. PPAP's financial situation has generally been satisfactory.

(4) Port Tariff

The present main tariff at Phnom Penh port is shown in Table 5.3.3.2.

Table 5.3.3.2 Main Tariff at Phnom Penh Port

Categories	Unit	Rate		
Navigation charge	US$/GRTx2	0.13		
BERTHAGE DUES (Cargo ship)				
a) at quay	US$/GRT	0.23		
b) at buoy	US$/GRT	0.1		
c) at anchorage	US$/GRT	0.05		
Berthage Dues (Tourist ship)				
a) at quay	US$/GRT/Hrs	0.003		
b) at buoy	US$/GRT/Hrs	0.001		
c) at anchorage	US$/GRT/Hrs	0.0005		
CHANNEL DUES	US$/GRT			
Commercial ship	US$/GRTx2	0.31		
Lighter Carrier	US$/GRT	0.16		
PILOTAGE CHARGE				
Commercial sea port	US$/GRTx9mile	0.003		
Oil terminal	US$/GRT	0.03		
Shifting within port area	US$/GRT	0.017		
TUGBOAT ASSISTANCE CHARGE				
Vessel below 1000GRT	US$/Hrs	83		
from 1,001 to 4000GRT	US$/Hrs	149		
from 4,001 to 10,000GRT	US$/Hrs	165.5		
from 10,001 to 15,000GRT	US$/Hrs	215		
Over 15,000GRT every subsequent 1000GRT to be char	US$/Hrs	18		
MOORING AND UNMOORING CHARGE		At Quay	At Buoy	
Vessel below 1000GRT	US$/time	16.5		50
from 1,001 to 4000GRT	US$/time	33		83
from 4,001 to 10,000GRT	US$/time	50		110
from 10,001 to 15,000GRT	US$/time	66		132
Over 15,001GRT every subsequent 1000GRT to be char	US$/time	83		149
GARBAGE REMOVAL CHARGES		At Quay	At Buoy/Anchorage	
At SAP garbage is removed every five days if done bef five days additional charge shall be paid	US$/time	2.5		3.75
FRESH WATER CHARGE		Supplied from Hudrant at Quay	Supplied by Truck	
	US$/m3	2.5		3.75
Clearance fee	US$/trip	100		
Watchman	US$/person/hr	1.6		
Tally fee of laden container	US$/unit	1		
STEVEDORING CHARGES		Base rate		
1.Bulky cargo	US$/tonne	1.46		
2.Cargo in bags	US$/tonne	1.58		
3.Machinery spareparts	US$/tonne	2.12		
4.Cargo in drums	US$/tonne	2.32		
5.Cargo in bundles, rolls,sheets,cotton,paper	US$/tonne	2.45		
6.Sawn timber, plywood, bamboo wares	US$/tonne	2.52		
7.Cargo in baskets, tobacco, cigarette	US$/tonne	2.65		
8.Fragile cargos, glasses, crystal, tv	US$/tonne	2.81		
9.Fresh fruit, vegetables, livestocks	US$/tonne	2.92		
10.Special and valuable cargo: gold, diamond	US$/tonne	4.97		
NON-CONTAINER STORAGE CHARGE		US$/day	US$/m2/day	
a. in warehouse		0.2		0.25
b. in open space		0.1		0.125
CONTAINER HANDLING CHARGE				
STEVEDORING CHARGES		Full container	Empty container	
Quay-CY and CY-Quay: 20ft container	US$/unit	49		26
Quay-CY and CY-Quay: 40ft container	US$/unit	74		37
Crane charge 20ft container	US$/unit	16		10
Crane charge 40ft container	US$/unit	25		16
LIFT-ON - LIFT-OFF CHARGE		Full container	Empty container	
CY-Truck and Truck-CY: 20ft container	US$/Unit	46		23
CY-Truck and Truck-CY: 40ft container	US$/Unit	62		44
STUFFING - UNSTUFFING CONTAINER				
Container 20ft	US$/Unit	50		
Container 40ft	US$/Unit	100		
CONTAINER STORAGE CHARGE		Full container	Empty container	
-Container 20ft	US$/Unit	3		1.2
-Container 40ft, 40ft HU, 45ft	US$/Unit	6		2
Import cargo free of charge		7 days after completion of discharging		
Export cargo free of charge		5 days free of charge after arriving at storeyard		

Source: PPAP

5.3.4 Cargo Handling System

(1) Cargo Handling Volume

Table 5.3.4.1 shows the cargo tonnage handled by type of cargo at Phnom Penh port from 2001 through 2005. During this period total port traffic increased from 496.2 thousand tons in 2001 to 737.5 thousand tons in 2005. Traffic at the port has been predominately imports, with imports of 680.1 thousand tons in 2005 accounting for 78.1 % of total traffic.

Table 5.3.4.1 Cargo Handled at the Phnom Penh Port

Unit: tons

N°	Year	2001	2002	2003	2004	2005
I	TOTAL (VESSEL)	1,077	931	1,073	1,094	1,186
	Inter-Vessel/Barge	209	107	87	109	210
	Oil Vessel	573	522	592	639	708
	Cambodia Vessel	38	21	89	124	158
	Domestic Barge	257	281	305	222	110
II	Import Cargo	462,473	404,059	495,799	559,754	680,066
	White Rice		2,000		1,000	
	Machine			35		
	Glass + Pottery,Tile, Plastic	533	4			
	Construction Material	1,766				
	Paper , Soap	3,444	385			
	Pipe	1,717	804			
	Cement			150	1,008	
	Steel Coil- Steel Bar	6,896	5,353	941		1,006
	Wheat	26,338	23,749	27,521	18,605	38,160
	Glue	1,151	400	400		
	Coal	2,015			400	
	Wheat Flour	10,898				
	Fertilizer				578	
	General Cargo	6,509		170	934	1,865
	Ship		33			
	Spar part		6			
	Coffee		68			
	Cloth		1			
	Truck		90		36	
	Fuel	401,050	368,775	419,276	460,652	464,366
	Empty container (Tons)	2	189	504	2,120	1,907
	Containerized Cargo (Tons)	154	2,202	46,802	74,421	172,762
	Empty container (TEU)		100	306	985	867
	Containerized Cargo (TEU)		242	4,134	7,054	14,077
III	Export Cargo	33,684	12,413	26,853	33,130	57,418
	Natural Rubber	3,148				
	Raw Rubber	2,975				
	Scrap Metal		18			
	Log	9,977				
	General Cargo			1,103		
	Rubber		671			
	Rubber tree		576			
	Rice Bran	1,730				
	Veneer	15,070	7,007			
	Machine	746	962	19		225
	cloth		14			
	Spar part		1,122			
	Empty container (Tons)	38	296	2,264	9,263	25,454
	Containerized Cargo (Tons)		1,747	23,467	23,867	31,739
	Emty Containers (TEU)		167	1,118	4,250	11,570
	Containerized Cargo (TEU)		237	2,072	3,237	3,767
	Container Throughput (TEU)		746	7,630	15,526	30,281
IV	Total (Import+Export)	496,157	416,472	522,652	592,884	737,484
V	Passanger & Tourist Terminal		195,414	116,348	67,555	41,715
	Phnom Penh - Province		184,420	110,115	58,949	34,722
	Phnom Penh - Chau doc (VN)		3,789	3,847	5,943	6,173
	Tourist in Town		7,205	2,386	2,663	820
VI	Tour Boad (Viet nam)					
	-Ship			5	32	43
	-Passanger			466	1,985	2,812

Source: PPAP

(a) Imported Cargoes
Total imports in 2005 reached 680,066 tons (annual growth rate from 2001- 2005 was 10.1%). Of this total 464,366 tons, or 68.3 %, were fuel.

(b) Exported Cargoes
Total exports in 2005 reached 57,418 tons (annual growth rate from 2001- 2005 was 14.3%). Of this total 31,739 tons, or 55.3 %, were container cargoes.

(c) Container Traffic
Container traffic has rapidly increased from 2002. Container traffic increased from 7,630 TEU in 2003 to 38,233 TEU in 2006 at an annual average increase rate of 71.1 %. Container traffic has not been balanced between import and export movements. The ratio of empty containers for imports and exports in 2006 was 2.6 % and 72.8 %. Cargo volume of loaded import and export containers was 12.0ton/TEU and 13.6 TEU, respectively (see Table 5.3.4.2).

Table 5.3.4.2 Container Traffic at the Phnom Penh Port

	2002	2003	2004	2005	2006
Import					
Empty Container					
20 ft.	22	40	51	143	163
40ft.	39	133	467	362	157
Box	61	173	518	505	320
TEU	100	306	985	867	477
Laden Container					
20 ft.	158	3,068	4,070	7,805	9,907
40ft.	42	533	1,492	3,136	4,096
Box	200	3,601	5,562	10,941	14,003
TEU	242	4,134	7,054	14,077	18,099
Cotainer volume (ton)	2,975	48,630	76,541	173,587	217,878
Total	261	3,774	6,080	11,446	14,323
Total	342	4,440	8,039	14,944	18,576
Export					
Empty Container					
20 ft.	105	604	2,514	6,498	9,050
40ft.	31	257	868	2,536	2,633
Box	136	861	3,382	9,034	11,683
TEU	167	1,118	4,250	11,570	14,316
Laden Container					
20 ft.	217	1,530	1,173	1,195	879
40ft.	10	271	1,032	1,286	2,231
Box	227	1,801	2,205	2,481	3,110
TEU	237	2,072	3,237	3,767	5,341
Cotainer volume (ton)	4,066	24,383	33,130	57,695	72,726
Total	363	2,662	5,587	11,515	14,793
Total	404	3,190	7,487	15,337	19,657
Grand Total (Box)	624	6,436	11,667	22,961	29,116
Grand Total (TEU)	746	7,630	15,526	30,281	38,233

Source: PPAP

5.3.5 Port Activities

(1) Calling Vessels
According to the PPAP's classification, vessels calling at Phnom Penh port are divided into four types; inter-vessel/barge, oil vessel, Cambodia vessel and domestic barge as shown in Figure 5.3.5.1.

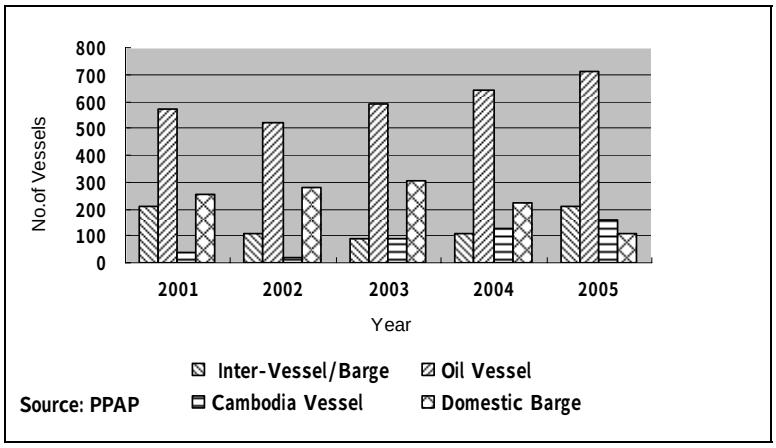


Figure 5.3.5.1 Number of Calling Vessels of Phnom Penh Port

According to the actual record in 2006, around 1,320 vessels called at the port. The majority (64.6 %) or 853 of the vessels that called the port are tankers. Container vessels followed, accounting for 25.9 % (342 vessels). In terms of the volume of cargoes handled at the port, the oil tankers accounted for 63.0 % of the total volume, and container vessels accounted for 27.74 %.

(2) Utilization of Berths

The utilization of berths at Phnom Penh port is classified according to vessel type, namely, tankers, container vessels, passenger boat as shown in Table 5.3.5.1.

Table 5.3.5.1 Utilization of Berths of Phnom Penh Port

Berth Name (Place)	Berth No.	Total Length (m)	No. of Vessels	Actual Berthing Time (hours/ship	Actual Berthing Time (hours)	Berth Occupancy Rate (%)	
Phnom Pehn Port							
No. 1	3	300	347	30.7	10,655	40.5	
No. 2	2	-	41	202.7	6,283	35.9	Passenger
Private Oil Campany							
B.Victory	1	-	47	47.8	2,246	25.6	
Kg.Cham	1	-	3	148.0	444	5.1	
Mekong	1	-	27	27.0	2,469	28.2	
Petronas	2	-	157	63.3	9,935	56.7	
Savimex	1	-	111	31.6	3,513	40.1	
Sokimex	1	-	160	49.1	7,855	89.7	
Tela	1	-	248	33.1	8,217	93.8	
Total	1	-	101	43.3	4,374	25.0	

Source: PPAP

There are 5 berths used for loading and unloading container cargoes and passengers and 9 private oil berths. According to the records of cargo-handling operation in 2006, the total number of ships which moored at the No.1 berths and oil berths was 347 and 854 respectively.

The average berthing/operation time per ship is 30.7 hours for container vessels, 49.2 hours for tankers. The average volume of cargoes handled per vessels is 700 tons tanker, 55 TEU per container vessel.

The berth occupancy rate at the port was 40.5 % at berth No.1, 35.9 % at No.2 and 40.5 % at oil berth in 2006.

(3) Cargo Handling Productivity

According to the actual record in 2006, the average container handling productivity is 3.7 TEU per hour. The average productivity of general cargo vessels is 3.0 tons per hour. The average productivity of petroleum products at Savimex and Kompong Cham is 24.0 tons per hour (maximum) and 3.5 tons per hour (minimum), and the average productivity at whole oil berths is 17.4 tons per hour as shown in Figure 5.3.5.2.

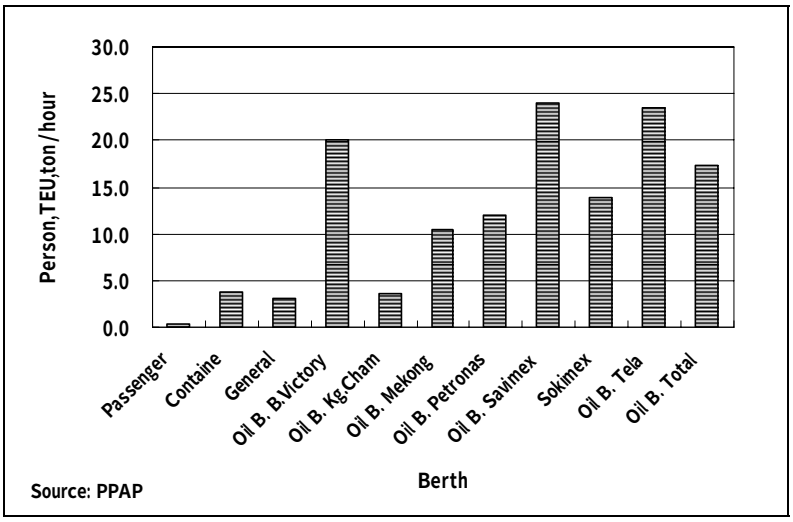


Figure 5.3.5.2 Cargo Handling Productivity at Phnom Penh Port

5.3.6 Natural Conditions of Phnom Penh Autonomous Port

The PPAP (the Port) is located in Phnom Penh city, the capital of Cambodia. It is situated along the Tonle Sap River (the River) approximately 2km upstream from the Mekong River junction. The Port is about 348km from the estuary of the Mekong River. The Port is at latitude 11°35' north, and longitude 104°55' east.

As a river port, the Port is not affected by a severe natural conditions. However, according to the seasonal changes of Cambodia's climate, rainy season and dry season, the Port shows two interesting and different features.

a) The variation of the water depth between two seasons is approximately 9m to 10m.
b) The flow direction of the River reverses between two seasons.

The water depth of the Port is 5.2m in the dry season. The width of the River around the Port changes about 700m to 900m between the two seasons.

The flow velocity of the River in front of the Port ranges from 2.1m/sec (maximum) to 0.4m/sec (minimum).

For reference, the flow velocity of the Mekong River ranges from 3.1m/sec (in rainy season) to 0.3m – 0.5m/sec.

The subsoil condition around the Port is alluvial, soft and fertile but not suitable for construction works.

The seasonal direction change of the River flow means that the velocity becomes zero in some period twice a year. Sedimentation of the floating fine materials happens naturally. Therefore, the periodical maintenance dredging of the River is indispensable for the Port.

For reference, PPAP owns 2 dredgers (PEACE No.1 and PEACE No.2) and executes the maintenance dredging works of both the Tonle Sap River and Mekong River. The total dredged volume is over 5.25 million m3 from 1991 to May of 2007.

5.4 Sihanoukville Port

5.4.1 Outline

Sihanoukville Port is the main port in Cambodia and is located at the southeast entrance of Kompong Som Bay where several islands are lined up from north to south namely, Nord Island, Milien Island, Chenal Island. Koh Rong Island, Koh Rong Sam Lem Island, Paletuvires Island, and Koh Poah Island act as a natural breakwater and shelter Kompong Som Bay from the west to southwest waves generated in the Gulf of Thailand.

Typhoons rarely visit this area. Due to the topographical features and the climate, the sea area near Sihanoukville Port is fairly calm throughout the year. Handling work at wharves is generally suspended less than 200 hours per year. The suspension often occurs during the rainy season, and thus, heavy rain seems to be the main cause.

5.4.2 Port Facilities

At present, Sihanoukville Port consists of a commercial port. In addition to these major port facilities, there are several fishery facilities of smaller scale in the vicinity of Sihanoukville Port. These smaller scale facilities are administrated by other agencies (Department of Fishery and Municipality of Sihanoukville).

(1) Navigation Channel
South channel;
Length: 5,500m (natural channel), Depth: -8.4 m, Width: 80-100m (at some portions, sea bed is bare rock)
North channel (completed in 2006);
Length: 1,000m, Depth: -10m, Width: 150-200m

(2) Berthing Facilities
The port consists of the Old Jetty and New Quay. The 290m long Old Jetty has 4 berths (Nos.1 to 4) constructed in 1960 and a berth depth of -9.0m. The New Quay has 3 berth (Nos.5 to 7) completed in 1969 and is a reclaimed wharf having a 350m long berth with water depth of -7.5m. Recently, new berths of 240m and 160m in length have been constructed by Japanese government loan, and a container yard behind the new 160m berth is under construction.

There are 3 private port facilities for petroleum product handling out side the port as follows.
- Sokmex: berth length of 200m and water depth of -9.2m
- Pontoon: berth length of 110m and water depth of -6.5m
- Stone Wharf: berth length of 53m and water depth of -4.2m

(3) Warehouses
Port has 5 warehouses and total floor space is 36,600m^2.

(4) Container Yards
The port has three container yards: CY1 (12,000m^2), CY2 (23,000m^2) and CY3 (75,000m^2 for empty container). CY2 was completed in 1996, and 2 transfer cranes with capacity of 40.6 tons are installed.

(5) Cargo Handling Equipment

Port has several types of cargo handling equipment: 2 mobile cranes (64 ton), 2 transfer cranes (40.6 ton), 6 super stackers (45 ton), 17 forklifts (3-25 ton), 10 trucks and etc.

(6) Harbour Craft

Port has its own harbour crafts; 3 tugs (1,800Hp: 1 unit, 1,600Hp: 1 unit, 800Hp: 1 unit), 1 Pilot boat, 1 mooring boat and 1 speed boat.

5.4.3 Port Management and Operation System

(1) General
MPWT is responsible for construction, administration and maintenance of such transportation means as air, road, railway and river, ports and shipping, etc. The Port Authority of Sihanoukville, as an implementing agency of the Royal Government, was previously a subdivision of MPWT responsible for operation and maintenance of port facilities, navigational channel and docking operation including tug service in oil ports.

(2) Sihanoukville Autonomous Port (SAP)
In 1961, the Port Authority of Sihanoukville was established by MPWT to operate and manage the port of Sihanoukville under direct control of MPWT.

The Port Authority of Sihanoukville was reformed under the Sub-decree No. 50/ANK regarding Creation of Port Autonomous of Sihanoukville (as abbreviated PAS) promulgated on July 17, 1998 and, presently, is a state-owned enterprise governed by the Law No. 0696/03 on Common Statute of Public Enterprises enforced on June 17, 1996. The Sub-decree prescribes that:
- The office shall be located in Sihanoukville,
- PAS is a legal entity with technical, administrative and financial autonomy,
- PAS shall be subject to provisions of the Sub-decree and shall comply with provisions of the Law No. 0696/03 regarding Common Statute of Public Enterprises and the Commercial Law.

SAP is operated and managed under the control of the General Director and three Deputy Directors. Currently, SAP consists of 11 functional departments (4 administrative departments and 7 operational departments). SAP is organized by a staff and labor force of 1,080 in total. Figure 5.4.3.1 shows the organization chart of SAP.

A private company has been engaged for cement handling operations and water supply.

a. Water Supply to vessels
SAP made a concession contract with Seva Import & Export Company for the water supply to vessels at the port about 7 years ago. However, at present, its work is in execution by An Yuan Sihanoukville Seaport Development Co.

b. Private Company for Stevedoring Operation
Three private companies are involving in SAP stevedoring work for supplying labor. These companies can supply of labor forces in particularly for bagged cement handling operation.

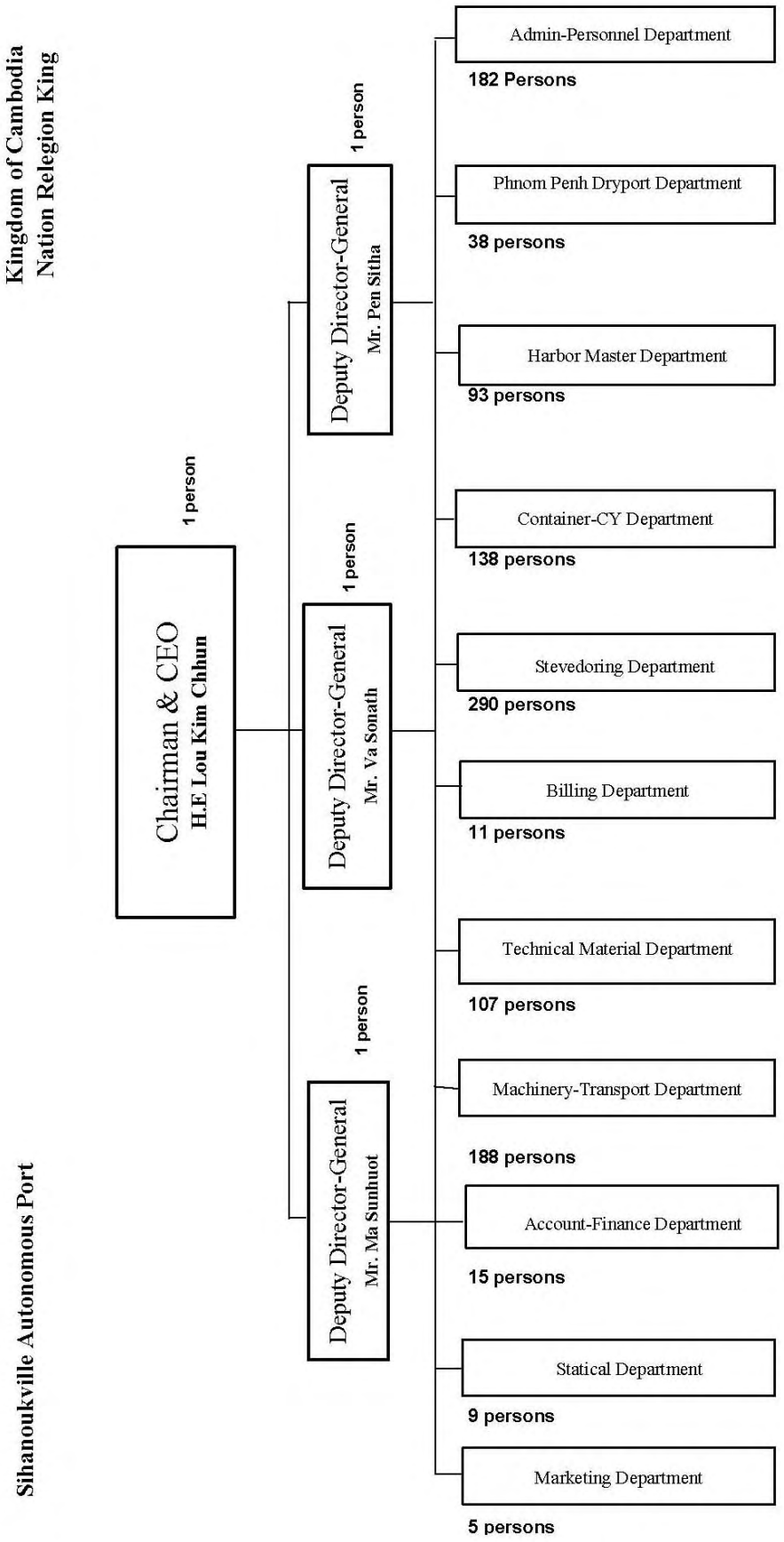


Figure 5.4.3.1 Organization Chart of SAP

(3) Financial Status

The income and expenditure account of SAP in 2002-2005 is shown in Table 5.4.3.1.

Table 5.4.3.1 Income and Expenditure Account of SAP in 2002-2005

Items	2002	2003	2004	2005
		in Thousand Riel		
I.Operating Income	77,426,796	84,039,591	88,485,247	83,894,615
Sale A/C No. 70	74,741,315	81,870,998	85,115,797	80,416,704
Fixed production A/C No.72	2,682,782	2,168,592	3,358,773	3,477,911
Miscellanous from operating income A/c No.75	2,699	0	10,676	0
Transfer of Charge-current operating A/C No. 79	0	0	0	0
II. Operating Expense	51,552,652	58,923,041	75,259,268	78,815,136
Purchase A/C No. 60	17,940,979	20,438,226	24,853,779	29,264,588
External Services A/C No. 61	1,357,903	1,426,080	1,228,124	1,450,677
Other External Services A/C No. 62	885,723	921,154	1,496,040	1,204,874
Taxes & Similar Services A/C No. 63	49,554	44,802	120,350	48,282
Personnel Expenses A/C No. 64	14,169,030	16,849,516	18,574,331	18,073,822
Other Operating Expenses A/C No.65	1,119,989	2,588,986	1,754,815	1,847,316
Depreciation & Provisions A/C No.68	16,029,473	16,654,277	27,231,830	26,925,577
III. Net Operating Income I - II	25,874,144	25,116,550	13,225,979	5,079,479
IV. Financial Income	606,041	337,497	1,319,695	341,251
V. Financial Expense	21,659	1,600	33,127	300
VI. Net Financial Income IV - V	584,382	335,897	1,286,568	340,951
VII. Exceptional & Extraordinary Income	0	108,250	3,000	5,016
VIII. Exceptional & Extraordinary Expenses	256,704	1,230,875	837,083	1,062,142
IX. Net Exceptional Income VII - VIII	-256,704	-1,122,625	-834,083	-1,057,126
X. Net Income Before Tax III + VI + IX	26,201,822	24,329,821	13,678,464	4,363,305
XI. Income Tax	5,240,364	4,865,964	2,735,693	872,661
XII. Net Income After Tax	20,961,458	19,463,857	10,942,771	3,490,644

Source: SAP

During the period from 2002 to 2005, operation income slightly increased from 77,426 million Riel in 2002 to 83,894 million Riel in 2005 at an annual average increase rate of 2.7 %, however, its dropped to 83,894 million Riel in 2005 from 84,039 million Riel in 2003 and 88,485 million Riel in2004. While operation expense rapidly increased from 51,552 million Riel in 2002 to 78,815 million Riel in 2005 with annual growth rate of 15.2 %, and purchase, personnel expense and depreciation & provision make up 88.5 % of total operation expense. Therefore, net income after tax rapidly decreased from 20,961 million Riel in 2002 to 3,491 million Riel in 2005.

(4) Port Tariff

The present main tariff at Sihanoukville port is shown in Table 5.4.3.2. This tariff rate is almost similar level of Phnom Penh port.

Table 5.4.3.2 Main Tariff at Sihanoukville Port

Categories	Unit	Rate		
Tonnage dues	US$/GRT	0.25		
BERTHAGE DUES (Cargo ship)				
a) at quay	US$/GRT	0.23		
b) at buoy	US$/GRT	0.1		
c) at anchorage	US$/GRT	0.05		
Berthage Dues (Tourist ship)				
a) at quay	US$/GRT/Hrs	0.003		
b) at buoy	US$/GRT/Hrs	0.001		
c) at anchorage	US$/GRT/Hrs	0.0005		
CHANNEL DUES	US$/GRT	0.5		
Cambodian vessel operating in the country (discount-June-20	Percentage	50		
Barge-carrier	US$/GRT	0.1		
Barge	US$/GRT	0.15		
PILOTAGE CHARGE				
Vessel coming into & going out of port	US$/GRT	0.03		
Vessel coming into & going out of oil port	US$/GRT	0.035		
TUGBOAT ASSISTANCE CHARGE				
Vessel below 1000GRT	US$/Hrs	105		
from 1,001 to 4000GRT	US$/Hrs	178		
from 4,001 to 10,000GRT	US$/Hrs	190		
from 10,001 to 15,000GRT	US$/Hrs	237		
Over 15,000GRT every subsequent 1000GRT to be charged	US$/Hrs	20		
MOORING AND UNMOORING CHARGE		At Quay	At Buoy	
Vessel below 1000GRT	US$/time	16		50
from 1,001 to 4000GRT	US$/time	33		83
from 4,001 to 10,000GRT	US$/time	50		116
from 10,001 to 15,000GRT	US$/time	66		132
Over 15,001GRT every subsequent 1000GRT to be charged	US$/time	17		53
GARBAGE REMOVAL CHARGES		At Quay	At Buoy/Anchorage	
At SAP garbage is removed every five days if done before	US$/time	30		60
FRESH WATER CHARGE		At Quay	At Buoy/Anchorage	
	US$/m3	1.5		3.5
-SAP requires all vessels to buy fresh water at least	Tonne=m3	50		
Charge for delivery and receiving cargos				
1. Cargo in bag	US$/tonne	0.5		
2. General cargo	US$/tonne	0.7		
3. Vehicle-machinery	US$/unit	5		
4. Container	US$/unit	1		
STEVEDORING CHARGES		Base rate		
1.Bulky cargo	US$/tonne	1.46		
2.Cargo in bags	US$/tonne	1.58		
3.Machinery spareparts	US$/tonne	2.12		
4.Cargo in drums	US$/tonne	2.32		
5.Cargo in bundles, rolls,sheets,cotton,paper	US$/tonne	2.45		
6.Sawn timber, plywood, bamboo wares	US$/tonne	2.52		
7.Cargo in baskets, tobacco, cigarette	US$/tonne	2.65		
8.Fragile cargos, glasses, crystal, tv	US$/tonne	2.81		
9.Fresh fruit, vegetables, livestocks	US$/tonne	2.92		
10.Special and valuable cargo: gold, diamond	US$/tonne	4.97		
NON-CONTAINER STORAGE CHARGE		US$/day	US$/m2/day	
a. in warehouse		0.2		0.25
b. in open space		0.1		0.125
CONTAINER HANDLING CHARGE				
STEVEDORING CHARGES		Full container	Empty container	
Quay-CY and CY-Quay: 20ft container	US$/unit	57		30
Quay-CY and CY-Quay: 40ft container	US$/unit	85		45
LIFT-ON - LIFT-OFF CHARGE		Full container	Empty container	
CY-Truck and Truck-CY: 20ft container	US$/Unit	46		23
CY-Truck and Truck-CY: 40ft container	US$/Unit	62		44
CY-Train and Train-CY: 20ft container	US$/Unit	57		28
CY-Train and Train-CY: 40ft container	US$/Unit	78		55
STUFFING - UNSTUFFING CONTAINER				
Container 20ft	US$/Unit	50		
Container 40ft	US$/Unit	100		
CONTAINER STORAGE CHARGE		Full container	Empty container	
-Container 20ft	US$/Unit			
-Container 40ft, 40ft HU, 45ft	US$/Unit			
Import cargo free of charge		5 days after completion of discharging		
Export cargo free of charge		3 days free of charge after arriving at storeyard		

Source: SAP

5.4.4 Cargo Handling System

(1) Cargo Handling Volume

Table 5.4.4.1 shows the cargo tonnage handled by type of cargo at Sihanoukville port from 2000 through 2006. During this period total port traffic decreased from 1.64 million tons in 2000 to1.58 million tons in 2006 because all imported cargoes except machinery and container cargo decreased such as general cargo, cement, steel and fuel. However, traffic at the port has been predominately imports, accounting for 79.1 % or 1.25 million tons of total traffic in 2006

Table 5.4.4.1 Cargo Handled at Sihanoukville Port

Unit: tons

Item	2000	2001	2002	2003	2004	2005	2006
- Gross Throughput	1,641,765	1,763,593	1,674,707	1,772,361	1,503,050	1,380,847	1,586,791
- Not Include Fuel	1,340,163	1,401,071	1,352,155	1,454,856	1,242,011	1,131,699	1,320,102
- Not Include Fuel & Cont.	683,999	709,825	550,409	650,329	308,153	107,929	197,573
- Cargo Containerize	656,165	691,247	801,746	804,527	933,858	1,023,770	1,122,529
Cargo Imported :							
Rice	18,783	21,118	44,769	8,697	23,238	7,557	
General Cargo	15,428	4,294	13,459	4,112	11,286	7,607	4,600
Machinery	7,834	5,027	12,381	8,741	8,823	9,771	16,562
Cement	553,250	554,754	411,472	564,906	218,618	65,849	144,462
Fertilizer							
Sugar		7,966	4,559				6,813
Bitumen	1,844	1,023	2,987	5,146	1,649		
Steel	75,734	70,646	52,996	58,727	44,306	17,144	18,408
Clinker							
Corn							
Containerize Cargo	512,413	525,888	629,988	621,646	715,829	771,947	798,375
Flour							
Zinc							
Salt		41,922					
Fuel	301,602	362,522	322,553	317,505	261,039	249,148	266,689
Total Imported :							
- Not Include Fuel	1,185,286	1,232,639	1,172,612	1,271,974	1,023,749	879,875	989,220
- Include Fuel	1,486,888	1,595,161	1,495,165	1,589,480	1,284,788	1,129,023	1,255,910
Cargo Exported :							
Sawn Timber	2,640	1,900			230		
Log Wood							
Plywood	3,568						
Rice	4,453						
General Cargo	464		95		2		238
Scrap Metal							
Containerize Cargo	143,752	165,358	171,759	182,882	218,030	251,824	324,153
Rubber							
Wood processing		1,174	7,690				6,490
Total Exported :	154,877	168,433	179,543	182,882	218,262	251,824	330,882
Container Throughput	130,435	145,292	166,638	181,286	213,916	211,141	231,036
Import Cont. (TEU)	65,811	72,741	83,996	90,754	107,565	105,855	117,086
- Full (TEU)	57,303	60,181	72,630	74,700	87,281	86,034	93,155
- Empty (TEU)	8,508	12,560	11,366	16,054	20,284	19,821	23,931
Export Cont. (TEU)	64,624	72,551	82,642	90,532	106,351	105,286	113,950
- Full (TEU)	26,287	33,391	37,343	42,324	51,101	52,814	62,340
- Empty (TEU)	38,337	39,160	45,299	48,208	55,250	52,472	51,610
Vessel Calling	814	828	820	881	731	691	944
-Container	493	471	487	481	460	433	509
-Tanker	142	136	128	149	114	132	152
-General	179	218	202	248	156	121	251
-Passenger	-	3	3	3	1	5	32

Source: SAP

(a) Imported Cargoes
Total imported cargo fell from 1.18 million tons in 2000 to 0.98 million tons in 2006. General cargo fell from 15,428 tons in 2000 from to 4,600 tons in 2006. Cement fell from 553 thousand tons in 2000 to 144 thousand tons in 2006. Steel fell from 75,734 tons in 2000 to 18,408 tons in 2006. Fuel fell from 301 thousand tons in 2000 to 266 thousand tons in 2006.

(b) Exported Cargoes
The total exported cargoes at Sihanoukville port rapidly increased from 154 thousand tons in 2000 to 330 thousand tons in 2006, however, imported container cargo of 324 thousand tons accounting for 97.9 % of total export traffic.

(c) Container Traffic
During the period from 2002 to 2006, container traffic steadily increased from 166 thousand TEU in 2002 to 231 thousand TEU in 2006 at an annual average increase rate of 8.5 %. Container traffic has been balanced between import and export movements. The ratio of empty container of import and export in 2006 was 20.4 % and 45.3 %. Cargo volume of loaded import and export container was 8.6 tons/TEU and 5.2 tons/TEU, respectively (see Table 5.4.4.2).

Table 5.4.4.2 Container Traffic at Sihanoukville Port

	2002	2003	2004	2005	2006
Import					
Empty Container					
20 ft.	996	1,394	950	273	927
40ft.	5,185	7,330	9,667	9,774	11,502
Box	6,181	8,724	10,617	10,047	12,429
TEU	11,366	16,054	20,284	19,821	23,931
Laden Container					
20 ft.	23,162	22,294	25,637	24,258	24,003
40ft.	24,734	26,203	30,822	30,888	34,576
Box	47,896	48,497	56,459	55,146	58,579
TEU	72,630	74,700	87,281	86,034	93,155
Cotainer volume (ton)	629,988	621,646	715,829	771,947	798,356
Total	54,077	57,221	67,076	65,193	71,008
Total	83,996	90,754	107,565	105,855	117,086
Export					
Empty Container					
20 ft.	16,645	17,132	19,778	18,030	17,314
40ft.	14,327	15,538	17,736	17,221	17,148
Box	30,972	32,670	37,514	35,251	34,462
TEU	45,299	48,208	55,250	52,472	51,610
Laden Container					
20 ft.	7,099	6,782	7,417	6,498	7,438
40ft.	15,122	17,771	21,842	23,158	27,451
Box	22,221	24,553	29,259	29,656	34,889
TEU	37,343	42,324	51,101	52,814	62,340
Cotainer volume (ton)	171,759	182,882	218,030	251,824	324,153
Total	53,193	57,223	66,773	64,907	69,351
Total	82,642	90,532	106,351	105,286	113,950
Grand Total (Box)	107,270	114,444	133,849	130,100	140,359
Grand Total (TEU)	166,638	181,286	213,916	211,141	231,036

Source: SAP

Concerning the concentration of container vessels, in March, April and August 2006 for instance, the port handled 59,220 TEU for 128 vessels. The average handling volumes per day of the week is summarized as follows.

Table 5.4.4.3 shows the container handling volume in March, April and August 2006, average imported and exported TEU per vessel is 229 TEU and 211 TEU. Berthing of vessels between Thursday and Friday is concentrated in a week, and peak ratio is 2.13, and followed by

Wednesday-Thursday of 1.22.

Table 5.4.4.3 Container Handling Volume in March, April and August 2006

Berthing day of the week	Number of days	Number of vessels	Total TEU	TEU/ day	Peak Ratio	Average TEU/vessel
Sunday-Monday	8	9	3,044	381	0.55	338
Monday-Tuesday	13	20	7,283	560	0.82	364
Tuesday-Wednesday	12	20	8,479	707	1.03	424
Wednesday-Thursday	14	17	11,702	836	1.22	688
Thursday-Friday	13	36	18,978	1,460	2.13	527
Friday-Sturday	12	16	6,647	554	0.81	415
Sturday-Sunday	10	10	3,087	309	0.45	309
Total	82	128	59,220	4,806		

Source: SAP

5.4.5 Port Activities

(1) Calling Vessels

According to the SAP's classification, vessels calling at Sihanoukville port are divided into four types; container vessel, tanker, general cargo vessel and passenger ship as shown in Figure 5.4.5.1.

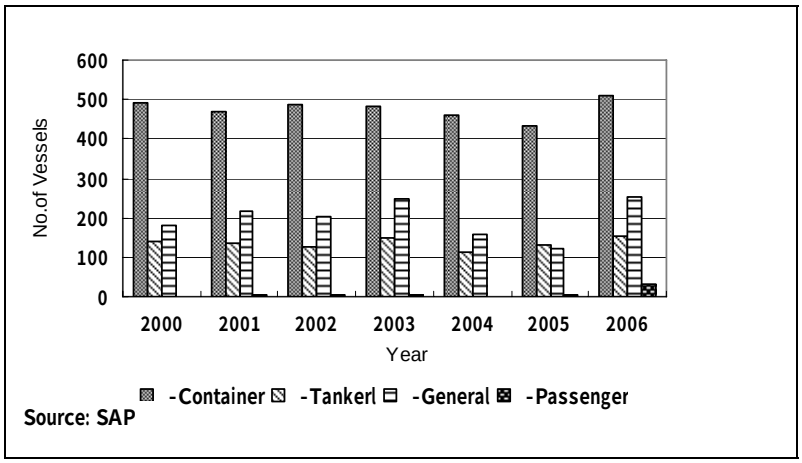


Figure 5.4.5.1 Number of Calling Vessels of Sihanoukville Port

According to the actual record in 2006, around 944 vessels called at the port. Almost half (53.9 %) or 509 of the vessels that called the port are container vessels. General cargo vessels and tanker followed, accounting for 26.6 % (251 vessels) and 16.1 % (152 vessels). In terms of the volume of cargoes handled at the port, the container vessels accounted for 70.7 % and tankers accounted for 16.8 % of the total volume.

(2) Utilization of Berths

The utilization of berths at Sihanoukville port is classified according to vessel type, namely, container vessels, general cargo vessels, tankers and passenger ship as shown in Table 5.4.5.1.

Table 5.4.5.1 Utilization of Berths of Sihanoukville Port

Berth (Place)	Berth No.	Total Length (m)	No. of Vessels	Actual Berthing Time (hours/ship)	Actual Berthing Time (hours)	Berth Occupancy Rate (%)	
Old Jetty	1	290	30	28.3	850.2	9.7	
	2	290	35	207.7	7,267.9	83.0	
	3	290	33	33.2	1,094.3	12.5	
	4	290	37	158.1	5,849.1	66.8	
New Quay	5		205	25.5	5,221.2	59.6	
	6		127	22.7	2,878.2	32.9	
	7		175	24.7	4,320.3	49.3	
	8		43	25.8	1,107.7	28.3	2006/7/21
	9		13	23.7	308.7	15.9	2006/10/5
Private Oil Berths							
Stone Wharf	1		42	24.4	952.1	10.9	
Sokimex	1		94	18.9	1,700.7	19.4	
Pontoon	1		15	35.6	498.8	5.7	

Source: SAP

There are 9 berths used for loading and unloading container cargoes, general cargoes and passengers owned by SAP and 3 private oil berths. According to the records of cargo-handling operation in 2006, the total number of ships which moored at Old Jetty and New Quay and private oil berths was 135,563 and 151, respectively.

The average berthing/operation time per ship is 22.4 hours for container vessels, 26.3 hours for tankers and 44.5 hours for general cargo vessels. The average volume of cargoes handled per vessels is 220 TEU per container vessel, 1,072 ton per general cargo vessel and 1,059 tons (Stone Wharf), 1,197 tons (Sokimex) and 7,306 tons (Pontoon) per tanker.

The berth occupancy rate at the port was 43.0 % at the Old Jetty, 37.2 % at New Quay and 12.0 % at private oil berths in 2006.

(3) Cargo Handling Productivity

The average container handling productivity was 19.2 TEU per hour. The average general cargo handling was 25.6 tons per hour. The average petroleum product handling was 43.4 ton per hour (Stone Wharf), 63.4 ton per hour (Sokimex) and 205.0 ton per hour (Pontoon) as shown in Figure 5.4.5.2.

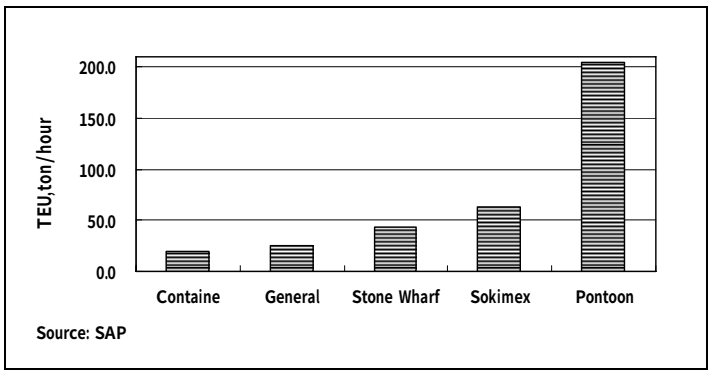


Figure 5.4.5.2 Cargo Handling Productivity at Sihanoukville Port

5.4.6 Natural Conditions of Sihanoukville Autonomous Port

SAP (the Port) is located in the southern end of the Kompong Som Bay facing the Gulf of Thailand. It is the only international seaport in Cambodia. In the south-west direction of the Port, there are some islands (Koh Pos,Koh Dek Koul, andKoh Kaong Kang), which protect the Port from rough sea conditions, acting like a natural breakwater.

In a year, there are two typical seasons. The North-East Monsoon and South-West Monsoon season.

The climate that has no large seasonal change and is tropical throughout the year. The coolest month is January with an average temperature of around 26℃, and the hottest April with an average temperature of around 29℃. The annual average temperature is nearly 27℃.

Through the year, the strong wind occurs mostly in the South-West Monsoon season in which the maximum wind speed around 25m/sec.

The annual mean rainfall is about 3,000mm to 4,000mm. The average monthly rainfall in the rainy season is 300mm to 700mm, and in the dry season is less than 100mm.

In terms of oceanographic conditions, the difference between HWL and LWL is 1.43m.
The general current movements are from northwest to north with the maximum velocity of about 50cm/sec, which occur in various directions.

There is no available wave data. According to the past JICA report (The Study on the Master Planning and Feasibility Study of the Sihanoukville Port in the Kingdom of Cambodia: Final Report Vol.2 Master Planning June 1997), the offshore waves with height not exceeding 0.5m occupy 92.3% and those exceeding 0.75m height are estimated to account for only 0.8%.
However, the maximum significant offshore wave is calculated as 2.6m in height with a 5.6sec wave period from the west direction using SMB method of 50 years return period.

Fine sand with silt of N-value less than 10 forms the upper part of the soil layer, and sandstone layer follows beneath it. However, the characteristics of the subsoil condition differ widely depending on the location.

5.5 Other Ports

There are two private and three provincial/municipal seaports around Sihanoukville Port.

- Oknha Mong Port (Private)
- Sre Ambel Port (Private)
- Tomnop Rolok Port (Municipal)
- Kampot Port (Provincial)
- Steng Hav Port (Provincial/District)

However, only ports of Oknha Mong and Sre Ambel have full-fledged port facilities and are managed by private companies approved by the central government

5.5.1 Oknha Mong Port

The Oknha Mong Port is located in Keo Phos Village, Chroy Svay Commune, Sre Ambel District, Koh Kong Province and is 75.57 km (47 miles) and takes 1h 5mn from Sihanoukville

(1) Port facilities
Port construction started on January 1, 2003 and operations commenced on August 1, 2004.
Port has a land area of 64 ha while the total terminal area is about 26 ha. Total berth length is 1,111m with a width of 200 m and a water depth of 5.5 m. The port has 6 warehouses (1 unit of 1,200 m^2, 3 units of 5,600 m^2, and 2 units of 7,000 m^2) and open storage areas of 3 ha. It has 5 cranes (2 of 25-ton capacity), 5 forklifts and 15 trucks (for operating at the port area) and 2 dredging barges.

(2) Management and Organization
The port commenced operation on August 1, 2004. The port construction was approved by MPWT and under the joint consideration of CDC. It received a special privilege from the Royal Government on tax preferences and allowances. It is 100% privately owned. The port employs 20 office workers, 12 engineers (for operating) and 350 temporary labors.

Related government agency offices are Customs, KAMSAB, Immigration, CAMCONTROL and Port security.

(3) Cargo handling operations
Most of the transport is carried out by the wooden boats that carry cargoes from Thailand with the capacity of 300 tons. About 35 to 50 boats call this port. Most vessels are small size and carry fruits from Thailand (Klong Srun Port).

Cement is carried by convoys consisting of 1 tugboat and 4 barges (each with about 1,000 ton capacity). Each month an average of 16 to 20 barges carry cement from Thailand directly from Bangkok. The monthly import volume is approximately 20,000 tons. Other ships carry sugar, fruits and general cargoes depending on the season; monthly volume ranges from 8,000 to 10,000 tons. A very small amount of steel (30 to 100 tons) used in construction works is shipped by light carriers.

Cargo handling operations within the terminal are performed by the terminal's own staff and temporary labors. Cargoes are directly unloaded to trucks and carried out the port, which is arranged by the cargo owners or consignees.

(4) Port Dues and Handling Charges
The port and barge dues are different for domestic and foreign boats. The domestic boat (wooden boat) is charged USD 150/trip just for cargo handling. The handling charge of cement is paid as stipulated in a contract with the labor workers at the port (USD 1.20/ton).

5.5.2. Sre Ambel Port

Sre Ambel Port is located in Rondaochhor Village, Sre Ambel District, Koh Kong Province and is 99.69 km (62 miles) and takes 1h 20mn from Sihanoukville City. Recently the name of the port has been changed to Kompong Phe Thmei Sre Ambel.

(1) Port facilities
Construction started in 2001 Port has a total land area of 10 ha. The port that is being constructed is located 15 km from the main street to Koh Kong City Center, and it lies along the channel (canal) about 12 km from the open sea. Total berth length is 500 m with a width of 30 m and a water depth of 5 m. Without dredging, only boats of a maximum of 180 tons can navigate the channel, however, there is plan to secure a depth of 6m through dredging which will allow the channel to accommodate ships loading from 2,000 to 3,000 tons. The berthing channel can accommodate 5 to 6 ships simultaneously.

The port has 2 excavators, 5 cranes, 4 lorries, 1 bulldozer, 1 truck, 2 elevators, 2 dredging barges, 1

transiting ship, 2 power plants and 3 warehouses (1 is 3,163m^2 and 2 are under construction), a crane that can carry 5 tons of cargoes, a transit shed of 48m^2 and an open storage area of 3 hectares.

(2) Management and Organization
Port is established by MDH Trading Company, which is a 100% private company. It was given permission to invest in the port in 2006 after the request for building a port was approved by Ministry of Land Management, Urban Planning and Construction, CDC as well as the local authorities from the relevant village and province. The port has 13 office workers, 3 engineers (operators and technicians), and 300 to 400 labors.

Related government agency offices are as follows: Customs, KAMSAB, Immigration and CAMCONTROL

(3) Cargo handling operations
Most imported goods are conventional cargoes such as foods, zincs, fibro, cements, and construction materials. Most of the cargoes come from Thailand though some originate in Singapore.

Cement is carried by one tugboat with 4 barges. Annual import volume through Sre Ambel Port ranges from 4,000 to 5,000 tons. Most of the steel vessels with barges that carry heavy cargoes like cement and construction materials are Thai vessels, while wooden boats carrying light cargoes are Cambodian.

Cargo handling operations within the terminal are performed by the terminal's temporary labors and are directly unloaded to trucks and carried out of the port, which is arranged by the cargo owners or consignees.

(4) Port Dues and Handling Charges
Handling charge for cement is USD1.0/ton and that for general cargo is USD 1.6/ton while warehouse fee is USD 0.9/m^2 per month.

5.5.3. Tomnop Rolok Port

Tomnop Rolok Port is located in Tomnop Rolok Village inside Sihanoukville Port. Construction started in 1989 by the central government (DPWT and the Sihanoukville Municipality). The port has a wooden berth of 700m^2 and one warehouse (161 m^2) and one crane (25 tons). The current water depth is from 4m to 6m. During low tide, depth ranges from 2.8m to 3.9m, and in the high tide from 5m to 6m.

It had been state-owned under the DPWT until 1995. From January 01, 1996, DPWT went forward with privatizing operations according to the joint Decisions from MPWT and MEF through a bidding process. Tomnop Rolok Port is now operated by a private company.

The prominent competent authorities are Immigration Police, Customs and CAMCONTROL.
Cargoes consist of conventional cargoes such as household materials, light construction materials, and consumption goods. They are all imported from Thailand by wooden boats belonging to Cambodians that have business relations with Thais. For loading the cargoes, the port charges R 70,000 for 1 truck and R 50,000 for berthing service.

5.5.4 Kampot Port

Kampot Port is located along the canal, 12km from the open sea. It was constructed in 1922. The

port area covers 288m^2. The water depth in the canal was originally 5.5m, but presently the depth ranges from 1.5m to 3.5m. The port used to be state-owned, but the bidding for private management was launched by the Provincial DPWT in 1995; however, it is still under the technical inspection of the provincial DPWT of Kampot Province.

The cargoes that are transported through Kampot Port are sugar, bricks, fibro, steel bars, energy refreshment of M150, noodles, soft drinks and fruits etc. They are mainly imported from Thailand though a small portion comes from Vietnam. However, the sugar imported from Thailand is transshipped at Kampot Port and exported to Vietnam. The quantity of cargoes imported from Thailand is about 20,000 tons per year.

Wooden boats or barges of 500 tons to 1,000 tons berth at the port. All of the large ships/ vessels or heavy barges belong to the Thai side. Wooden boats (which belong to the Cambodian side) of 50 tons transfer the cargoes from the big heavy ship at the open sea. Most of the wooden boats are rented by the cargo owners or consignees, though a few belong to the cargo owners or consignees. The port doesn't have modern facilities because the cargoes transferred there are mostly light cargoes that can be carried by the porters (labors). The port has temporary workers. They are paid a daily wage according to the amount of work they have done on board.

Related local authorities are CAMCONTROL, Customs and Immigration office. CAMCONTROL is also in charge of quarantine. KAMSAB official visits the port only when heavy cargoes such as machines are handled.

5.5.5 Stueng Hav Port

A large port development at Stueng Hav located about 30 km from the main National Road 4 leading to Sihanoukbville city is planned by a private company. A new road which connects Stueng Hav with National Road 4 was opened in April 2007. The construction of the existing fishery near the project site started during the Pol Pot Regime with the cooperation of China and there are about 1,600 fishery boats

Development of a port with a maximum depth of 12m is planned. The land area for port and industries will consist of about 520 ha obtained by reclamation while the basin will be 400 ha, protected by breakwaters of more than 7.6km in length. The volume of materials dredged for the basin and approach channel (in case that the dimension of the channel is 3.7 km in length and 300m in width) is estimated at about 21million m3. The plan is phased into four stages and construction will be commenced in July 2007 according to a newspaper report.

5.6 Present Situation of Port Security

5.6.1 Compliance with ISPS Code

In compliance with the effectuation of the amended SOLAS chapter and of the ISPS Code, MPWT (SOLAS Designated Authority (DA)) enacted the internal 'Law' [Sub-decree No.40/SD/PK of May 9, 2006 on Ship Security and Port Facility Security] on behalf of the Cambodian Government (SOLAS Contracting Government (CG)). However, many hindrances to be solved remain such as shortage of budget, capable persons, safety equipment/facilities and so on. Therefore the actual implementation progress of port security is generally slow; however, it is being established steadily. And the 'Declaration' [Declaration on Port Facility Security of the Kingdom of Cambodia] is in preparation which will be considered as the implementation guidance of port security.

The Cambodian ports may be classified into three groups from a viewpoint of port security.

(1) International Ports stipulated in the Law.
(2) Oil Terminals constructed by the Foreign Company or JV with Foreign Company.
(3) Other Private Ports.

The Sihanoukville Autonomous Port and the Phnom Penh Autonomous Port are only categorized as group (1) ports. These two ports comply with the standards of the ISPS Code and their names are specified in the Cambodian Law as the international ports in Cambodia.

The conception of port security is correctly recognized among the related authorities in the two ports, and the systems for port security are being established. It is explained briefly that the Port Facility Security Officer (PFSO) was appointed, the Port Facility Security Assessment (PFSA) was conducted and approved, and Port Facility Security Plan (PFSP) was prepared.

However, due to some delay of the enactment of the Law (May 2006), it can be said that the actual implementation progress is slow. And due to the financial issue, it is scheduled to supply the port security apparatus and equipment by the foreign aid.

The ports categorized group (2) are the SOKIMEX Oil Terminal, PTT Oil Terminal and so on. The implementation progress speed of port security in these ports is also slow. However, it is observed that the conception of port security is recognized under the circumstances to introduce the foreign investment.

The Okhna Mong Port and the Sre Ambel Port typify the private ports in group (3). The private companies have developed, constructed and have been operating the ports by their own stuffs and fund under the permission from the Cambodian Authorities.

They are importing commodities mainly from Thailand; however regrettably, there is no concept of port security in the private ports. The port security for them means the ‘safety’ which protects their ports from impediments such as robbery, iniquity and fire.

The detailed port security situation of each port is described below.

5.6.2 SAP and PPAP

(1) Sihanoukville Port
The PFSO was appointed and the security system has been established in the port. The PFSA prepared by the PFSO was approved by the MPWT in December 2006. In the next step, it is necessary to obtain the approval of the PFSP which was already prepared, and actual implementation shall be commenced based on the PFSP without any delay. In fact, due to delay of the enactment of the Law, actual implementation speed in the port is slow. The Port Security Committee (PSC) was already organized in the port.

Financial support is granted from Japan. The port security apparatus and equipment (X-ray scanner, VTMS, CCTV and Computer Monitoring System, Pilot-boat and so on) are included in the scheme. According to the implementation plan, the bid will be announced in February 2007 and the installation and procurement will be completed by the end of 2008.

Now, the container scanning is done by a private company with its own machinery to all imported containers. The scanning cost is charged on the shippers, $80 to 40’ container and $50 to 20’.

(2) Phnom Penh Port
The PFSO was appointed and the security system has been established in the port. The PFSA prepared by the port staffs was approved by MPWT in December 2006 similar to Sihanoukvill Port.

Therefore in the next step, it is necessary to obtain the approval of the PFSP which was already prepared, and actual implementation shall be commenced based on the PFSP. The port organized the port security systems originally. For example, they established a security division in which 36 security guards were employed to take care of the security and safety in the port area. And the trainings for them are conducted based on the standards of the ISPS Code. The access control is done by its own criteria.

By taking a similar process of Sihanoukville Port, the CCTV and Compute Monitoring System will be introduced by Japanese grant aid.
X-ray container scanner was supplied from China in December 2006. According to the port officer, the scanner will be operated by the port staffs and the scanning cost will not be charged on the port users. However, they are still discussing this issue.

5.6.3 Other Private Ports

(1) SOKIMEX Oil Terminal
This is a private oil terminal located in Stueng Hav district of Sihanoukville. The jetty was first constructed as a state managed port. In 1996, it was 100% privatized. SOKIMEX itself has its share of 81% and MARUBENI (Japan) 19%. The terminal manager is appointed to be a PFSO. The ISPS Code translated into Cambodian is prepared, however actual port security implementation is not adopted. PFSA and PFSP of the terminal are not prepared yet.

(2) Oknha Mong Port
This is 100% private port operated by Mong Reththy Group Company. The port has a length of 1,111m, a width of 25 m and maximum water depth of 5.5m. It is the biggest private port which is treating general cargoes in Cambodia. It trades many commodities from Thailand, in which the main imported cargo is cement. Average of 30,000 tons of cargo including 20,000 ton of cement is imported every month.

However regrettably, they have no conception of port security. The port security for them means the ‘safety’ which protects their ports from robbery, iniquity and so on. They employ and deploy 14 safety guards to do the gate check and port boundary control.
The development plan was approved by MPWT and under the joint consideration of CDC.

(3) Port of Sre Ambel
Port of Sre Ambel located in Sre Ambel district of Koh Kong province is a private family port operated by MDH Trading Company. The construction was approved by the Ministry of Land Management, Urban Planning and Construction as well as the local authorities. The main imported cargo of the port is cement from Thailand. The annual figure is from 4,000 to 5,000 tons.
Unfortunately, they have no conception of port security also.

5.6.4 Port Security Levy

The pros and cons of introducing a Port Security Levy into Cambodian Ports are examined in this section.
At the same time, the scanning charge which is imposed on import/export containers in Cambodian ports (SAP and PPAP) is also evaluated.

The Port Security Levy is already introduced in some ports of Europe, USA, and so on, in order to achieve port security. As an example of Port Security Levy, the charge imposed on container is 5€ to 9€ per container in European ports, 2US$ in USA, 1.75C$ in Canadian ports, 10US$ in Mexican port, and so on. In Asia, China tentatively introduced this system charging 20 CNY on 20' container and 30 CNY on 40' container.

In Cambodian ports, the container scanning charges are imposed on import/export containers. There is no other port in the world which is executing such system. Table 5.6.1 shows the existing scanning charge system.
Especially for the garment factories which import the textiles and export the finished products, it is a huge burden. And garments represent one of the most essential staple products in Cambodia. They are charged doubly on their import/export containers.

The container scanning, which itself is indispensable for port security in order to establish Cambodia' s position in the Supply Chain Management, is distorted and is used as a means to increase the national revenue. The charges are being added to the product cost, and as a consequence, the competitiveness of the Cambodia's garment industries is becoming weak in the World market.

Considering these circumstances and from a view point of reducing production costs, the introduction of a Port Security Levy system into the Cambodian ports is out of the question.
In addition, the container scanning charge should be minimized as much as possible.

Table 5.6.1 Existing Container Scanning System

Name of Port	Type of Scanner	Donor/Supplier	Implementation Body	Scanning Charge	Body to be charged
Sihanoukville Autonomous Port (SAP)	γ-ray Scanner	A-Z Company	Customs (MEF)	Imported 40' Container : US$ 80 Imported 20' Container : US$ 50	Consignee
				Export 40' Container : US$ 80 Export 20' Container : US$ 50	Consignor
	X-ray Scanner	Japanese Grant-aid	Undecided	Undecided	Undecided
Phnom Penh Autonomous Port (PPAP)	X-ray Scanner	Chinese Grant-aid	Customs (MEF)	Imported 40' Container : US$ 40 Imported 20' Container : US$ 25	Consignee
				Export 40' Container : US$ 40 Export 20' Container : US$ 25	Consignor

Source: JICA Study Team

Chapter 6 Economic Development Plan and Related Projects

6.1 National Development Plans

6.1.1 National Strategic Development Plan (NSDP)

Royal Government of Cambodia (RGC) published "National Strategic Development Plan (NSDP) for 2006-2010" in July 2006. The Plan aims to achieve the goal of "CMDG: Cambodia Millennium Development Goal Report, Nov. 2003, MOP", which has a target year of 2015. NSDP is founded on "Rectangular Strategy", which is the current government's basic policy of socio-economic development, and integrated many existing national development plans such as "NPRS: National Poverty Reduction Strategy, Dec. 2002, CSD".

NSDP sets 15 targets, highest one of which is poverty reduction targeting to reduce poverty ratio of the State to 25 % by 2010, and hammers out 6 fields strategies as a means for achieving 15 targets. Fields are "Governance", "Environment for the Implementation of the Rectangular Strategy", "Enhancement of Agricultural Sector", "Rehabilitation and Construction of Physical Infrastructure", "Private Sector Development and Employment Generation" and "Capacity Building and Human Resource Development".

The transport sector's strategy is described in a part of "Rehabilitation and Construction of Physical Infrastructure". Transportation network and transport infrastructure are defined as arteries that transform the country into an integrated economy and are vitally critical for distributed economic growth. They play an essential role in contributing to poverty reduction, which is the government's highest target, by facilitating trade, movement of goods and services, by promoting tourism and rural development, and by fostering integration of domestic markets as well as enabling integration with the region and the world. Therefore the plan insists that the objective in this sector is to create a convenient, comprehensive, safe, effective, cost effective transport network to achieve above-mentioned purpose.

Regarding the port sector, the plan says that the Sihanoukville deep sea port is being upgraded and a second stage container terminal will be taken up for construction. Regarding inland waterway, the immediate priority in the plan is to rehabilitate dredgers to carry out dredging on all major waterways, particularly Mekong and Tonle Sap rivers, to facilitate river transport.

Meanwhile, in the fields of industrial promotion and private sector development, the plan aims at export-led economic growth. Therefore RGC will continue to encourage private sector investment in below-mentioned sectors as priority sectors. These are "agriculture and agro-industry", "transport and transportations infrastructure", "energy and electricity", "labour-intensive industries and export-oriented processing", "tourism and related spheres" and "human resource development". On the other hand, government's roles are defined as strategist, guide and manager of the development process, and the facilitator in creating a wholesome climate conducive to private investment and enterprise"

Trade is described as a powerful and important catalyst for socio-economic development, since promotion for Cambodian products has been among top priorities. As the garment industry has been developed by trade, agriculture, agro-processing, handicraft and other areas could be developed by trade. Therefore RGC will continue to reform in governance, legal and judicial sector and in public administration and to rehabilitate basic infrastructure for a better climate for Trade and Investment by private sector. And RGC will act as below to address all constraints.

* Actively promote access to external markets for unique and high quality Cambodian products, including agricultural products (particularly processed ones), fisheries products, and labour services

* Promote Cambodian products abroad
* Promote business membership organizations and strengthen their advocacy capacity
* Reduce policy-based impediments to efficient transactions
* Streamline customs inspections to make it more user friendly and free of delays and inherent costs, including formulating and implementing a revised Customs law
* Reduce entry barriers such as high cost of registration and license fee
* Help establish Export Processing Zones(EPZs) to promote export-oriented processing and manufacturing

In addition, goals and indicators of NSDP are shown in the following page. Forty-three indicators are described in the plan, highest of which is reducing poverty ratio to 25% by year 2010 from 34.7% in 2005（Poverty line is based on food poverty line and a minimal non-food allowance.）, and among which are 6% annual GDP growth at constant prices, increasing annual tourist arrivals to 3,120 thousands in year 2010 which is 2.5 times that of year 2005.

Table 6.1.1 NSDP's Macro-Goals and Critical Indicators (Targets)

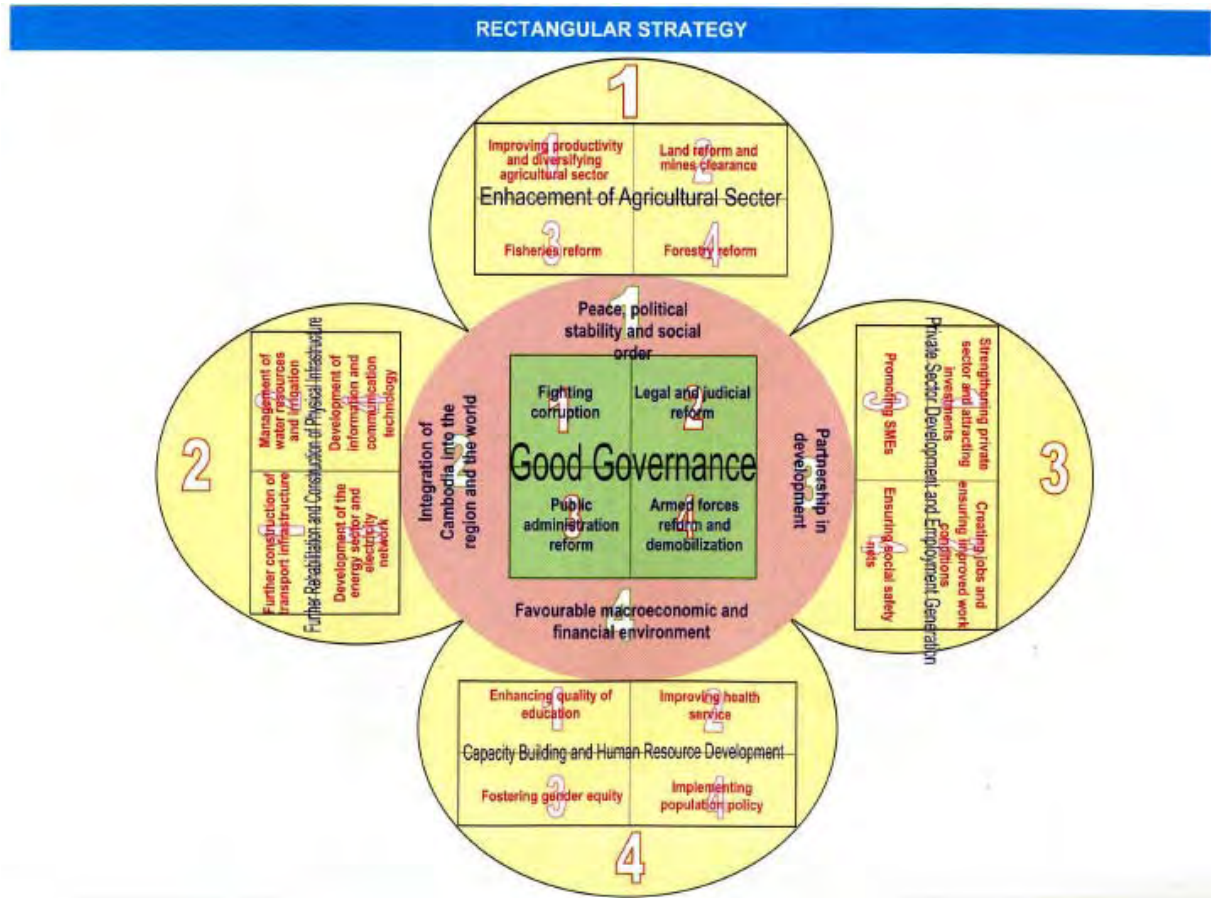
	Major Goals: Targets/ Indicators	2005	2010	CMDG-2015
	Eradicate Poverty & Hunger (*)			
1*	Poverty levels % of Population-- 2004	34.7	25	19.5
	--in 59% of country covered by 1993/94 survey	(28.0)		
2*	Poverty levels % of rural population -- 2004	39.2		
	--in areas covered by 1993/94 survey	(33.7)		
3*	People below food poverty line % --2004	19.7	13	10
	-- in areas covered by 1993/94 survey	(14.2)		
	Enhance Agricultural Production and Productivity			
4	Paddy yield per hectare (tons)	1.97	2.4	
5	Irrigated area --including supplemental irrign., (% of rice area)	20	25	
6	Land Reforms: Land tileles of farmers-- % of Total agri. land	12	24	
	Improvements in Health (*)			
7*	Infant Mortality Rate per 1,000 live births	66	60	50
8*	> 5 Mortality Rate per 1,000 live births	82	75	65
9*	Maternal Mortality per 100,000 live births	N/A	243	140
10*	Births atteded by skilled health personnel --%	N/A	70	80
11*	HIV/AIDS prevalence, % of adults 15-49	1.9	1.9	1.8
12*	Malaria Cases- fatality%	0.36	0.2	0.1
13*	TB smear positive cases, per 100,000	N/A	214	135
14*	Married women using modern birht spacing methods(%)	20.1	44	60
15	% of health facilities providing RH services	33	45	70
	Improvements in Education (*)			
16*	Net Enrolement: Primary Schools-- Total; Boys;Girls--%	91.9; 93.0; 90.7	100	100
17*	Net Enrolement: Lower Sec. schools--Total; Boys; Girls--%	26.1;27.1;24.8	75	100
18*	Survival Rate%: 1-6	53.1	100	100
19*	Survival Rate%: 1-9	30.18	76	100
20*	6-14 years out of school (%)	18.7	11	0
	Rural Development			
21	Rural Roads rehabilitated --Kms (out of total 28,000)	22,700	25,000	28,000
22*	Safe Drinking water access--% rural population	41.6	45	50
23*	TB smear positive cases, per 100,000	16.4	25	30
	Environmental Sustainability (*)			
24*	Forest Cover--% of total area	60	58	60
25*	Fuel Wood dependency: Households--%	83.9	61	52
26*	Access to safe water source--% of urban population	75.8	85	80
27*	Access to improved sanitation--% of urban population	55	67	74
	Gender Equity (*)			
28*	Mainstream gender in all spheres	to be developed		
29*	Female share of wage employment --agriculture, industry, servcic	52.5;53.5;27	50;50;37	50;50;50
30*	Level of awareness that violence against women is a crime(%)	4.5	25	100
	Reforms			
31	Accelerate Governance Reforms	to be developed		
	Sustain High Macro- Economic Growth (*)			
32	Annual GDP Growth at constant prices--%	7.0	6.0	
33	Per capita GDP at constant prices(000 Riels)	1,400	2,243	
34	Rate of Inflation %	6.2	3.0	
	Improve Budget Performance			
35	Total Government Budget Revenue- % of GDP	11.8	13.8	
36	Total Government Budget Expenditure- % of GDP	14.9	16.5	
	Accelerate Industrial Growth & Employment			
37	Annual Growth in manufacturing - constant prices(%)	10.2	7.2	
38*	Working children aged 5-17 years--%	22.3	10.6	8
	Tourism			
39	Annual Tourist arrival nos--000s	1,300	3,120	
	De-mining, Victim Assistance (*)			
40*	Casualties (deaths and injuries) nos.	797	200	0
41*	Area affected cleared of mines and UXOs--%	50.3	77	100
	Infrastrucure			
42	Length of paved roads (primary & secondary) out of 11,310 kms	2,100	4,100	
	Energy			
43	Per capita use of electricity- Kwh	54	89	

(*)- CMDG goals and targets

source: National Strategic Development Plan 2006-2010

6.1.2 Rectangular Strategy

"Rectangular Strategy" is defined as basic policy to achieve the goal of NSDP. The following figure shows the principle of the "Rectangular Strategy", putting "Good Governance" including fighting corruption, public administration reform, legal and judicial reform at the center of the rectangle as an immediate top priority. And at the corners of the rectangle, there are "Enhancement of Agricultural Sector", "Future Rehabilitation and Construction of Physical Infrastructure", "Private Sector Development and Employment Generation" and "Capacity Building and Human Resource Development" as priority development subjects.



Source: National Strategic Development Plan (NSDP) for 2006-2010

Figure 6.1.1 Principle of "Rectangular Strategy"

6.1.3 Cambodia Millennium Development Goal Report (CMDG)

Cambodia Millennium Development Goal Report (CMDG) was published in November of 2003, which is based on United Nation's "Millennium Declaration". CMDG sets the long term development goals of the State to be achieved by 2015. There are 9 goals concerning improvement of living standards of the people as shown below.

Table 6.1.2 The Cambodia Millennium Development Goals(CMDGs)

Eradicate extreme poverty and hunger
Achieve universal nine-year basic education
Promote gender equality and empower women
Reduce child mortality
Improve maternal health
Combat HIV/AIDS, malaria and other diseases
Ensure environmental sustainability
Forge a global partnership for development
De-mining, UXO and victim assistance

source: National Strategic Development Plan 2006-2010

6.1.4 Conclusion of Free Trade Agreement

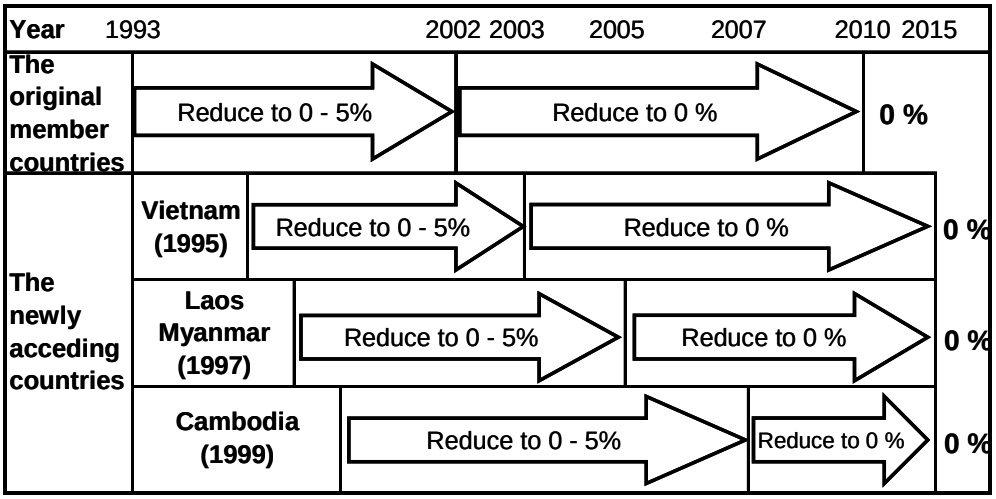
(1) ASEAN Free Trade Agreement (AFTA)
ASEAN Free Trade Agreement (AFTA) was agreed at ASEAN summit in 1992 pursuing free trade within the ASEAN region. In 1999, Cambodia became a member of ASEAN and therefore an object country of the ASEAN Free Trade Agreement.

The original member countries such as Brunei, Indonesia, Malaysia, Singapore, Thai and Philippines will abolish tariff barriers by 2010. And by 2015, the newly acceding countries such as Vietnam, Laos, Myanmar and Cambodia will abolish tariff barriers in accordance with the agreement provision. ASEAN countries will launch a gigantic single market with a population exceeding 600 million.

Main targets of AFTA are liberalization of intraregional trade to strengthen the competitiveness of the region as a production base to the international market and to vitalize economic activities by eliminating tariff barriers and nontariff barriers within the region. In particular, AFTA has the following three targets.

a. Vitalization of intraregional trade
b. Promotion of foreign direct investment and intraregional investment
c. Enhancement of international competitiveness of industries within the region

The Common Effective Preferential Tariff (CEPT), which is the realization mechanism of ASEAN free trade, started 1993. Object articles of CEPT are all industrial products and agricultural products made in the region except General Exclusion List (GEL) including articles related to national defense, life and health preservation and historic and archaeological value, Temporary Exclusion List (TEL) including articles which need time to open completely and Sensitive List (SL) including some unprocessed agricultural products. TEL and SL shall be objective articles of CEPT finally.



Source: HP of MOFA, JAPAN

Figure 6.1.2 Time Frame of Tariff Reduction under AFTA

(2) Free Trade Agreement between ASEAN and other countries
Three FTAs between ASEAN and other countries take effect. These are with China, India and South Korea. And more two FTAs are under negotiation with Japan and Australia/New Zealand.

6.2 Development of Offshore Oil Field

There are six mining areas set offshore of Cambodia. Now appraisal drilling is conducted at some areas. Equipment and materials for offshore appraisal drilling aren't produced in Cambodia. So these equipment and materials are transported from Sihanoukville port after being imported from foreign countries such as Japan and laden at Sihanoukville port once.

In case a large scale profitable offshore oil field is found and commercial production begins on a major scale, a huge amount of equipment and materials should be provided for construction and operation of offshore drilling platforms. And thousands of people working on the project will need a large amount of daily commodities such as foods, housing facilities such as hotels and commercial facilities such as shopping centers. It's assumed that a supply base for offshore drilling platforms should have port facilities such as berths with 9m draft and cargo handling equipment and large land of 50 to 100 ha.

On the other hand, in case profitable offshore oil fields are small, the necessary terminal as oil supply base will be small scale with around -6m depth berths.

Development of offshore oil field is an important project as it can have a large impact on Cambodian economic development. Therefore future port development plans should take account of movement of offshore oil field development and port sector should contribute to the project according to need.

6.3 Support from International Organizations and Foreign Government

6.3.1 IMO technical cooperation and Belgian Development Study

(1) IMO Technical Cooperation to Cambodia
IMO sent a technical cooperation team to Cambodia for administrational improvements in 2001, and made recommendation of consultants for open registry system and domestic implementation scheme. From the end of 2006 to the beginning of 2007, IMO successively sent three technical cooperation teams. The mission held "Technical Cooperation Seminar on implementation of FAL Convention", "Technical cooperation on Maritime Administrative Improvement", and "Technical Cooperation Seminar on implementation of Port State Control".
The Maritime Administrative Technical Cooperation Team in 2006 recommended the following in their report.

(a) For Flag State implementation measures, the team recommends Cambodian government to require the open registry company to operate the ship registry from Phnom Penh with the administrative purview of the MMD, so that the flag state control could be rather easily operable. They also recommend the open registry company to interact directly with MMD in all matters relating to compliance with Cambodian maritime legislation and all technical and administrative aspects of ship registration instead of the ministers council.

(b) The team recommends MMD to utilize every opportunity to participate in the seminars and workshops which IMO can provide, in order to strengthen the technical capabilities of MMD staff. The team also recommends MMD to ask Tokyo MOU for technical assistance on Port State Control.

(c) The team recommends MMD to prepare a three year term program to promote maritime administrative establishments such as the review of draft Maritime Code and finalization, establishment of domestic ship safety regulation. MMD is requested to seek donors for the program and ask for a consultant to lead the program, while IMO be requested to cooperate. The program should include the measures to implement ratified and newly required conventions into domestic regime.

(d) They suggest Cambodian government to put in place sound legislation to ensure flag state responsibility to get technical cooperation from IMO and other donors.

6.3.2 Belgium Development Study "Inland Water Transport Development Study in Cambodia"

Belgian development study is a comprehensive study on the development of the whole Cambodian inland water area including Basssac River, Mekong River, and Tore Sap Lake. From the issue of inception report on June 2005, they conducted detailed investigation for more than one year and made a draft final report at the end of 2006. The development study targets in 2015 as the middle term target and 2025 as the long term target. They proposed 64 sub-programs categorized into three type of Actions (Cross-border Actions、Domestic Navigation Actions、Institutional and Capacity Building Actions) in the long term plan. After devising three types of economic forecasts (optimistic, middle, pessimistic) and transport demands derived from the economic forecasts, they devised four types of development scenarios. These scenarios were all assessed economically (cost/benefit assessment), environmentally and socially. After summarizing and evaluation, they proposed 62 Action plans, compiling into Legal Actions (3), Social Actions (5), Waterway Design Actions (5), Environmental Actions (11), Port Planning Actions (12), Water Safety Actions (17), Training and Education Actions (3), and Institutional Actions (6).

The main issue of waterway design is "Dredging Bassac Estuary to Phnom Penh and Phnom Penh to Kampong Cham"
The output will be a navigation channel with the following least available depth:

Year‐round, 24 hours per day except where stated	Required draught	Required least available depth (LAD)
Bassac estuary	6.0m tidal	6.5m tidal
Bassac River and Vam Nao Pass to Cambodia‐Viet Nam border	6.0m tidal	6.5m tidal
Cambodia‐Viet Nam border to Phnom Penh	6.0m tidal	6.5m tidal
Phnom Penh to Kampong Cham	4.0 m	4.5 m

Dredging
- Border to Phnom Penh 750,000 m^3
- Phnom Penh to Kampong Cham 193,000 m^3
- Total Cambodia 943,000 m^3

Budget
South China Sea to Phnom Penh:
Only the Bassac route option without by‐pass canal is costed, since this is much cheaper than the Mekong mainstream option, on the basis that Viet Nam will agree to use of the Bassac by vessels bound for Phnom Penh: US$ 9,378,000 Total
Phnom Penh to Kampong Cham**:** US$ 686,000 Total

Time Schedule
- The capital dredging works can be completed in one season.
- Dredging from the sea up to Phnom Penh without the by‐pass canal can be scheduled as early as 2007.
- The option of using the by‐pass canal will only be feasible from 2014 onwards.
- Dredging of the Phnom Penh to Kampong Cham stretch should be scheduled for 2014, to allow petroleum and container barges to operate from 2015 onwards.

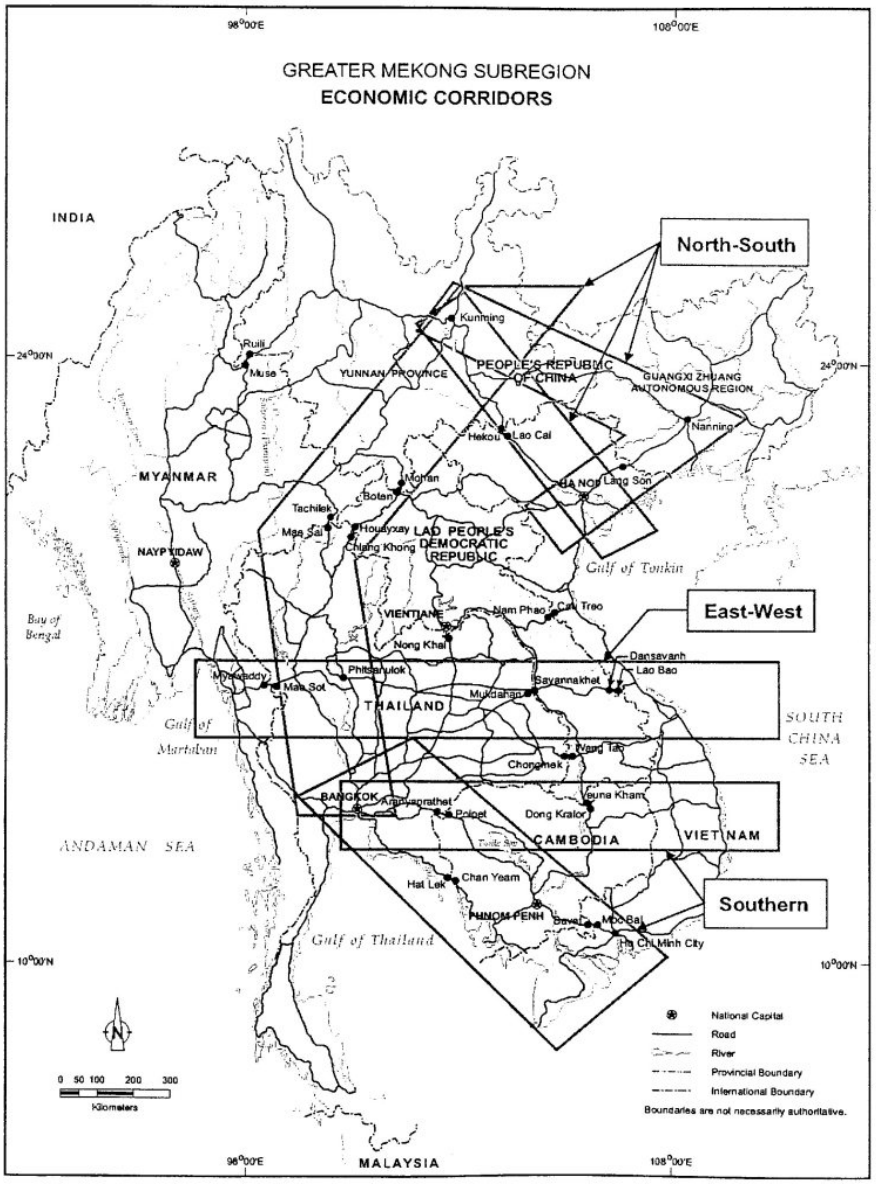
6.3.3 GMS Transport Sector Strategy (TSS) (2006—2015)

The GMS Economic Cooperation Program (see section 8.1.2,) led by ADB, developed a GMS Transportation Master Plan at year 1995 in order to develop the economic corridors that are the foundation of the GMS program.

In October 2004, ADB provided technical assistance for a study to develop a GMS transport sector strategy study, a successor to the 1995 Plan, that takes into account present and projected transport needs to 2015. The draft report of the GMS Transport Sector Strategy Study (TSSS) was finalized by a meeting of GMS transport officials in Vientiane, Laos on 21 March 2006 and the final report was reviewed, adopted and endorsed by the 10th meeting of the GMS Subregional Transport Forum on 22—23 March 2006.

Outline of TSS is as follows;

(1) Main Items of the 1995 Plan
(a) Economic Corridor Concept
The 1995 plan identified priority transport links. In 1998, economic corridor concept was added to the plan. The concept suggested focusing infrastructure investments (e.g., energy, telecommunications, and tourism, as well as transport) in the same geographic space to maximize development impact. Three main corridors were identified—North—South, East—West and Southern.



Source: ADB

Figure 6.3.3.1 GMS Economic Corridors

(b) GMS Cross-Border Transport Agreement (see 8.1.2)
The six GMS countries signed the GMS Cross-Border Transport Agreement (CBTA.) The CBTA provides a basic framework (such as customs inspection, traffic rights, and infrastructure standards) for facilitating the cross-border movement of goods and people.

(2) Change of Situation
(a) New Industrial Structure
The proportion of labor costs to total cost of manufactured exports has declined with the result that GMS countries that capitalized on their low labor costs need to develop other advantages, such as reliable, low-cost transport. Improved competitiveness will depend critically on the ability to establish connectivity and an efficient transport network. Improved transport systems and logistics are needed to deepen GMS cooperation, particularly in marketing the subregion as a single tourism destination and as a market and site for regional networks of consumption and production.

(b) Link to Outer Economics
Improved transportation networks to link GMS and non-GMS countries, such as via a land bridge between South Asia and the Association of Southeast Asian Nations (ASEAN)-People's Republic of China (PRC) free trade area are needed.

(3) Transport Challenges: Role of a Transport Strategy
(a) Constraints to GMS Transportation Flows
(i) Constraints for Passenger Flow
1) limited cross-border bus services
2) high road traffic accident rates, costing 2.1—3.1% of GDP
3) reciprocity issues
4) limited cross-border rail access
5) different regulatory regimes on the different pars of the Mekong River
6) issues surrounding the operation of the cruise ship industry
7) remaining hardware issues in civil aviation
8) slow development of air service agreement
(ii) Constraints for Freight Flow
1) suboptimal parcel size of GMS shipments
2) missing road and rail links
3) lack of road maintenance
4) transshipment of cargo, including destuffing/restuffing of containers at borders
5) lack of complementary facilities, such as container depots, at many border crossing points
6) inadequate air cargo facilities
7) inadequate inland water transport conditions, such as channel improvements that are not maintained
8) lack of links to other regions, such as South Asia

(b) Need for a New Transport Strategy
(i) completing the transport corridors critical to linking the subregion and promoting trade and investment
(ii) coordinating strategies to ensure that transport corridors evolve into economic corridors, enabling agricultural diversification, industrialization, and creation of employment opportunities
(iii) accelerating the implementation of "software" arrangements, including expanding the implementation of CBTA
(iv) expanding cooperation to include rail, air and water transport
(v) identifying and developing critical transport linkages not only within GMS but also with neighboring countries in South and Southeast Asia

(c) Role of a GMS Strategy

A key purpose of the GMS transport strategy is to help steer transport system development toward economically desirable objectives, without subverting its wider role. Even domestic transport projects are seldom undertaken purely for economic benefits. Priorities have to balance the desire for national prestige projects, the concerns of public pressure groups, equity issues, long-run network considerations and the solving of pressing local issues. For international projects, economic benefits may play an even smaller role. Thus, there is particular need for a GMS-wide strategy that focuses on future needs and priorities.

(4) Identifying of Investment and Technical Assistance Projects

(a) End-user Demand

End-user demand at year 2015 is newly estimated.

(b) Internal and External Subregional Links

(i) Internal Subregional Links

Existing internal links will be prioritized for widening and broadening by identification of additional or expanded cross-border links.

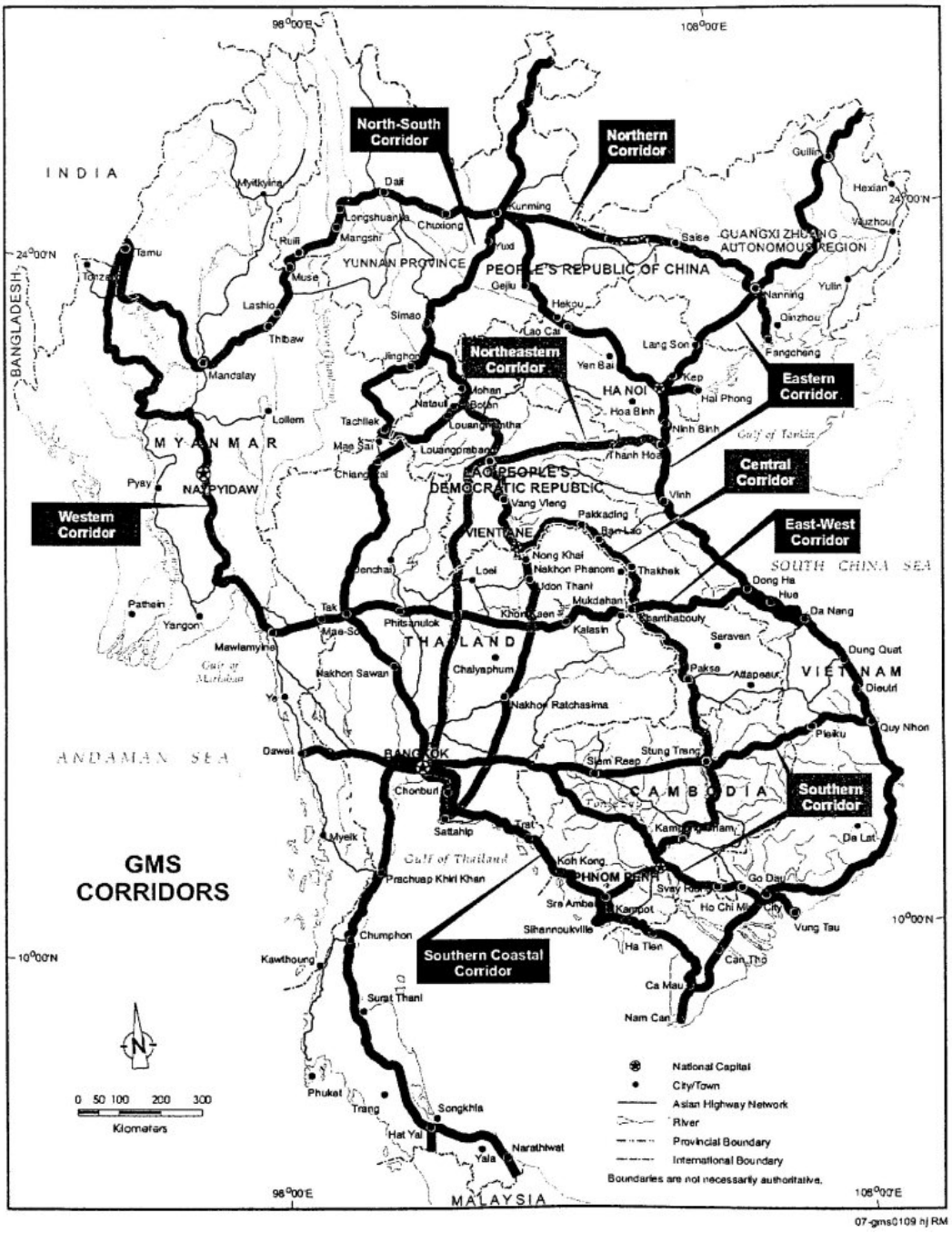
(ii) External Subregional Links

The weak connection with South Asia will be addressed. Initiatives are already being taken bilaterally or multilaterally between some countries and through agencies.

(iii) Efficiency in Cross-Border Traffic

GMS transport network optimization remains a work in progress. The network will continue to develop and improve in efficiency through the implementation of new projects, such as opening more border crossings, increasing network density and providing multimodal facilities.

(iv) Redefining GMS Economic Corridors
1) North—South Corridor: Kunming—Bangkok
2) Eastern Corridor: Kunming—Ho Chi Minh City
3) East—West Corridor: Mawlamyine—Danang
4) Southern Corridor: Dawei—Quy Nhon/Vung Tau
5) Southern Coastal Corridor: Bangkok—Nam Can
6) Central Corridor: Kunming—Sihanoukville/Sattahip
7) Northern Corridor: Fangcheng—Tamu
8) Western Corridor: Tamu—Mawlamyine
9) Eastern Corridor: Nanning—Bangkok/Laem Chabang



Source: ADB

Figure 6.3.3.2 New GMS Corridor Network

(v) Prioritization of Investment Projects

More than 150 new investment projects for the sector have been proposed under the new GMS Transport Strategy. Of these, 31 are considered high-priority investment projects, comprising 20 road projects, 2 railway projects, 4 airport projects and 5 water transport projects. These have been further categorized as immediate implementation, ranking study, feasibility study, new corridor and capacity building. Table 6.3.3.1 shows the high priority projects in each group.

Table 6.3.3.1 High-priority Investment Projects

Category	Basis of Determination	Project Identifier	Project
Immediate Implementation	Immediate Implementation required without further study	A2.1-3	Houayxay-Chiang Khong Third International Mekong Bridge
		A3.4-2	Route 13S-NR7 cross-border section
		B1-11	Sisophon-Poipet/Aranyaprathet reinstatement
		A3.2-3	NR33: Kampong Trach-Lork Vietnam border missing 17-km section
Ranking Study	Top priority based on results of other ranking studies	A3.6-1	Route 14A: Junction Route 16-Cambodian border paving/reconstruction Section B
		A3.6-3	Pakse-Xekong Direct Route paving/reconstruction
		A4-4	Mawlamyine-Mudon-Thanbyuzayat upgrading
		A6-3	Route 4 (Lao PDR/Thailand Bridge at Nam Heuang) Ban Nakha-Ken Thao-Paklay-Sayaboury-Xieng Ngern
		A6-4	Transport corridors in Lao PDR northern region
Feasibility Study	Currently under feasibility study, results available 2006	A2.2-2	Hanoi-Lao Cai expressway
		A6-6	Thakhek-Nakhon Phanom Bridge
		A6-9	Dau Giay-Lien Khuong expressway
		B1-10	Phnom Penh-Sisophon/Phnom Penh-Sihanoukville rehabilitation
		C1-1	Improvement of Savannakhet Airport for joint Thai/Lao PDR use
		C1-3	Da Nang port upgrading, phase 2
		C3.2-1	Channel, navigation and port improvements on Mekong and for access to port at Siem Reap; development of intermodal terminal at Khone Falls
New Corridor	New corridor strategic project, implementation timing primarily policy dependent	A2.3-1	Baise-Longlin expressway
		A2.3-2	Baise-Debao-Longbang Vietnam border expressway
		A3.3-2	NR66: Siem Reap-Preh Vihear-Stung Treng
		A4-3	Thaton-Payagyi-Bagan-Kalay-Tamu/Moreh (India)
		C3.2-3	Construction of floating port on Hamluong River
		D19	Xieng Kok-Kyaing Lap Mekong Friendship Bridge
Capacity Building	Capacity-enhancement project, implementation primarily timing-demand dependent	A2.3-5	Chongzuo-Longzhou, upgrading to Class II
		A3.1-4	Bien Hoa-Vung Tau expressway
		A6-10	Dali-Lijiang upgrading
		A6-11	Kunming-Wuding upgrading
		C2.1-3	New Kunming International Airport
		C2.1-5(a)	Expansion of Dali Airport
		C3.2-4	Laem Chabang Phase 2, construction of C and D terminals
		D14	Guilin International Airport improvement
		D21	Lancang-Mekong navigation channel improvement and maintenance project

Source: ADB

(vi) Prioritization of Technical Assistance Projects

Forty technical assistance projects (TAPs) that can make transport infrastructure more effective in meeting overall GMS objectives have been proposed.

(5) Action Plans, Outstanding Issues and Next Steps

(a) Investment Projects

Investment projects are prioritized to 3 categories, high-priority projects (see Table 6.3.3.1,) moderate-priority projects and low-priority projects.

(b) Technical Assistance Projects

The action plan for TAPs which includes budget, schedule and priority (4 categories) is provided.

(c) Outstanding Issues and Next Steps

(i) Role of GMS

The recommended roles for GMS to 2015 is to encourage dialogue between the various bodies involved in project initiation and financing.

(ii) Specification of a GMS Transport Network
Comprehensive and detailed database of the transport networks in and between GMS countries is needed.

(iii) Financing Issues
The strategy provides detailed financing proposals. In particular, fostering active participation by the private sector is needed.

(iv) Multimodal Transport
1) Road
The dominance of road transport throughout GMS is well entrenched and will be further encouraged by an improving road infrastructure.
2) Railway
During the strategy period, the focus should be mainly on the efficient operation of domestic rail networks. There are significant intermodal possibilities, e.g., container train services on the Laem Chabang (Thailand)—Thanaleng (Lao PDR,) Kunming/Nanning (PRC)—Haiphong (Vietnam) and Phnom Penh (Cambodia)—Bangkok (Thailand) corridors.
3) Inland Waterway
Inland waterway developments will offer increased opportunities for multimodal transport, but these are primarily for specific markets and are constrained by network geography.
4) Airport and Port
Airport and port development is primarily driven by non-GMS considerations.

(v) Optimizing GMS Transport
As the GMS transport networks come to be viewed as a single network, more consideration will be given to optimizing investment. Optimizing requires a defined scope of GMS investment and agreed investment goals. There is no agreed definition for GMS project and it is difficult to make it. Investment goals need definition in areas as follows;
1) priorities between modes, areas and strategies
2) the relative importance of opening new links against improving existing links
3) specifications of long-term strategic projects to be implemented irrespective of economic ranking

(vi) Training
The Strategy envisages training as an integral part of several TAPs rather than a separate theme.

(vii) Results-based Framework for Monitoring
A Results Framework for the Strategy, which is similar to Project Design Matrix for JICA projects, is used for monitoring.

6.3.4 Development Aid Projects

Summary of related development study projects, yen-loan-financed projects and grant aid projects are as follows.

(1) Port Related Projects

(a) Master Planning and Feasibility Study of the Sihanoukville Port (Development study project, 1995-1997)
This study proposed master plan and short-term plan of Sihanoukville Port including construction of container terminal and improvement of port operation. In accordance with the plan proposed in this study, Sihanoukville Port has been developed and expanded by yen-loan-financed projects mentioned below.

(b) Sihanoukville Port Urgent Rehabilitation Project（Yen-loan-financed project, 1999-）
The purpose of the project is to construct a container terminal including dredging work at Sihanoukville Port, thereby boosting its cargo handling capacity, and improving its freight traffic. This project was the first yen-loan-financed project in Cambodia after a blank of 30 years.

(c) Sihanoukville Port Urgent Expansion Project（Yen-loan-financed project, 2004-）
Continued from above mentioned project, container terminal is being expanded in this project to deal with the rapidly increasing container cargo volume. At the same time cargo handling equipment including two units of gantry cranes will be installed. New container terminal with total berth length of 400m will open in 2008.

(d) The project for the Improvement of Security Facilities and Equipment in Main International Ports (grant aid projects, 2006-)
The purpose of the project is to improve and enhance port security at Sihanoukville Port and Phnom Penh Port. The project consists of X-ray container screening system, CCTV camera surveillance system, ID pass system and so on.

(e) Rehabilitation Project of the Phnom Penh Port (grant aid projects, 1994-1995)
Port facilities including quay were developed for international vessels to Vietnam.

(2) Industrial Development Related Projects

(a) The Study on Regional Development for the Phnom Penh - Sihanoukville Growth Corridor（Development study project, 2001-2003）
The Study proposed "Regional Development Master Plan of the Phnom Penh-Sihanoukville Corridor" with a focus on the latter aspect, that is, encouraging industrial development of the corridor in close relationship with Sihanoukville Special Promotion Zone (SPZ). A feasibility study was conducted regarding Sihanoukville SPZ.

(b) Sihanoukville Port SEZ Development Project（Yen-loan-financed project, 2007-）
Under this project, a special economic zone (SEZ) with an area of about 70 hectares will be developed adjacent to the Sihanoukville Port as the immediate priority project of above mentioned “Phnom Penh-Sihanoukville Corridor”. The development strategy and detail design will be established in 2007.

(3) Road Related Projects

(a) The study on the road network development（Development study project, 2005-2006）
In the study Master plan of the road network development targeting 2020, middle term plan

targeting 2015 and short term plan targeting 2010 were proposed regarding many category of roads in the State. And a pre-feasibility study of priority project was conducted.

(b) The Study on the Construction of Second Mekong Bridge in Cambodia（Development study project, 2004-2005）
A feasibility study of Second Mekong Bridge was conducted in this study. The Second Mekong Bridge is located at the across point of Neak Loeung Liver within National Road No.1. After completion of the bridge cars can go to Vietnam from Phnom Penh through National Road No.1 without using Ferry. The bridge is included in the short term plan (target year: 2010) in the above mentioned study.

(c) The feasibility study on the improvement of National Road No.1 (Phnom Penh-Neak Loueng section) （Development study project, 2001）
A feasibility study was conducted regarding the improvement of National Road No.1 between Phnom Penh and Neak Loueng. Following the study, the improvement project of National Road No.1 is now being conducted as a grant aid project.

Chapter 7 Maritime Transportation and Ports in Neighboring Countries

7.1 Maritime Industry, Maritime Policy and Agency Activities

Merchant fleets of Thailand, Vietnam, Malaysia, Singapore and Hong Kong are shown in Table 7.1.1. Details of maritime industry, maritime policy and agency activities of each country are mentioned in the following sub-chapters.

Table 7.1.1 Merchant Fleets by Flag of Registration as of January 2006

1000GT over Country of domicile	Number of vessel			Deadweight tonnage (1000DWT)		
	National Flag	Foreign Flag	Total	National Flag	Foreign Flag	Total
Thailand	278	40	318	2,741	457	3,198
Vietnam	n.a.	n.a.	267	n.a.	n.a.	2,192
Malaysia	249	76	325	5,454	4,179	9,633
Singapore	467	287	754	14,695	8,285	22,980
Hong Kong	292	371	663	17,973	25,870	43,843

Source: UNCTAD Review of Maritime Transport 2006 & Others

7.1.1 Thailand

The merchant fleet in Thailand, capacity is over 1000 GRT, is 318 vessels and 3,198 thousand DWT as of January 2006 including 40 foreign flag domiciling vessels. Five major carriers are listed on the Stock Exchange of Thailand; PRECIOUS SHIPPING COMPANY GROUP (Tramper operator), THORESEN (BANGKOK) CO.LTD.（Conventional liner and tramper operator）, UNITHAI LINES CO.LTD（Conventional liner operator）, JUTHA NAVEE CO.LTD (Semi-Container operator), and REGIONAL CONTAINER LINES CO.LTD. (Container operator).

Thai maritime industry is regulated and fostered with maritime laws; THE NAVIGATION IN THAI TERRITORIAL WATER ACT 1913, THE THAI VESSEL ACT 1938, THE PORT AUTHORITY OF THAILAND ACT 1951, THE MERCANTILE MARINE PROMOTION ACT 1978, THE PREVENTION OF COLLISION OF SHIPS ACT 1979, THE ARREST OF SHIPS ACT 1991、THE CARRIAGE OF GOODS BY SEA ACT 1991, THE SHIPPERS COUNCIL ACT 1994. The Maritime Promotion Commission (MPC) was organized under Ministry of Communication and Transport following the promulgation of the MERCANTILE MARINE PROMOTION ACT 1978. This law requires the government procurements to use Thai flag ship, and subsidizes maritime industries financial assistance and tax incentives. Under the Board of Investment Act, ship owners are granted exemption from corporate income tax for 8 years, import duty for ship over 1000 GRT, capital gain of replacing used ship and income tax for Thai employees and foreign employees of Thai flag ship. Also, a total credit line of 8 billion Baht is provided by Bank of Thailand (BOT) as well as 4 billion Baht jointly by the Industrial Finance Corporation of Thailand (IFCT) and EXIM. Also ship owners are mitigated to decrease the complement of Thai seafarers onboard to 50%.

RCL (Regional Container Lines) was incorporated in 1979 as a major shareholder by Ngow Hock Co., Ltd, and started its shipping business Bangkok-Singapore route by its own vessel m.v. “Siri Bhum” in 1981, then commenced Bangkok-Kaohsiung-Hong Kong route in 1987. The company was listed on the Thailand Stock Exchange in 1988.

Now RCL is the most famous shipping line of Thailand and operates 42 container vessels by RCL Ship Management Pte Ltd, with a fleet size ranging from 420TEUs to 2,600TEUs, and calls more than 70 destinations in Asia, Australia and the Middle East. RCL provides 36 loops serving not

only common feeder service to Trunk Lines, but also their own Intra Asia container business.
RCL acquired container terminal concession in Laem Chabang port named as "TIPS Co., Ltd" jointly with Japanese shipping companies in 1991, also incorporated RCL Investment Pte. Ltd in Singapore as well as Regional Container Lines (HK) in Hong Kong. In Cambodia, RCL Cambodia Co., Ltd was established as shipping agent and changed its name to the Feeder Shipping Agency Co. Ltd when its shareholding increased from 45% to 100% in 2000.

7.1.2 Vietnam

The merchant fleet in Vietnam, capacity is over 1000 GRT, consists of 267 vessels and 2,192 thousand DWT as of January 2006. Most of the fleet are owned and operated by state owned enterprises under VINALINES such as VOSCO, VITRANSCHART, VINASHIP, FALCON, or by joint ventures with VINALINES such as GEMATRANS, APM Saigon Shipping. VINALINES group is now controlling the biggest fleet in Vietnam, 104 vessels and 1,199 thousand DWT as of June 2006. Small ships or barges on the inland water are owned by private or state owned companies; major shipping line is NOWATRANCO in the northern area of Vietnam and COSAVO in the southern area. Dung Quat Oil Refinery of 130,000 bpd will start its operation in 2009 as the first oil processing plant in Vietnam, and affiliate tanker operator of PETRO VIETNAM, named PETRO VIETNAM TRANSPORTATION CO., has purchased a used tanker "Poseidon" (96,125DWT) and also has ordered three aframax tankers to be built by Dung Quat Shipbuilding Industry under VINASHIN, which will be delivered in 2008 and 2009.

VINALINES was newly established under Decision No.250/TTg dated April 29, 1995 by the Prime Minister for re-structuring of shipping, port and related business, which was formerly controlled by Vietnam National Maritime Bureau and Ministry of Transport in Vietnam, then started its operation in accordance with the Charter approved by Decree No.79/CP dated November 22, 1995. According to the Decision No. 512/QN-TTg dated April 26, 2001 of Prime Minister, VINALINES is comprised of 42 enterprises; Shipping (VIETNAM OCEAN SHIPPING COMPANY (VOSCO), VIETNAM SEA TRANSPORT AND CHARTERING COMPANY (VITRANSCHART), VIETNAM SHIPPING COMPANY III (VINASHIP), FALCON SHIPPING COMPANY (FALCON), VIETNAM SEA AND RIVER TRANSPORT CORPORATION (VISERITRANS), NOSCO); Ports (Haiphong Port, Saigon Port, Quang Ninh Port, Danang Port, Cantho Port); Joint Venture with foreign enterprises (VIJACO, VINABRIDGE, COSFI, PHILI-ORIENT LINES, TRANSVINA, GEMATRANS); forwarding and Related business (GEMADEPT, SAFI, INFACON, INLACO HAIPHONG, VICONSHIP SAIGON, ICD DONG NAI, MARINA HANOI, TRADING AND TRANSPORTATION SERVICE COMPANY, CENVICO, SESCO, MARIMEX, HAIPHONG PORT TRASERCO, MITECO).

(Vietnam Maritime Code 2005)
Acceding to WTO membership, Vietnam promulgated new MARITIME CODE 2005 with effect from January 1, 2006, and is superseding MARITIME CODE 1990, which launched the Doi Moi policy in 1986. This new legislation reflects updated maritime policy in Vietnam including international maritime conventions, such as the United Nations, the International Maritime Organization (IMO) and the Committee Maritime International (CMI), meanwhile, foreign cooperation and investment in the port domain was minimal, so port authorities were separated from port enterprises. In the new MARITIMR CODE 2005, provisions on seagoing ships clarify the meaning of ship registration, cabotage, maritime safety and pollution, prevention of collusion, mortgage and lien, bare-boat charter and time charter. Provisions on seafarers: Criteria and duties of crew, working regime for foreign ship, responsibilities of ship owners for crew, rights and responsibilities of captain with regard to ship and cargo carried onboard. Provisions on cargo carriage by sea: Contracts, rights and responsibilities of shipper, bills of lading and limitations for claims and liabilities of ship owners such as compensation for cargo loss, cases of liability exemption, right to seize cargo, compensation for general average, limitation of ship owners'

liability for cargo claim. The new MARITIME CODE 2005 consists of 261 clauses; chapter 1. General Provision, 2. Seagoing Vessels, 3. Seafarer, 4. Seaports 5. Contracts of carriage of cargo by sea, 6. Contracts of carriage of passenger and luggage by sea, 7. Charter Party 8. Shipping agency and ship brokerage, 9. Pilot, 10.Towage, 11. Salvage, 12. Recovery of sunken property, 13. Collision 14. General Average, 15. Limitation of civil liability for maritime claims 16. Marine Insurance, 17. Settlement of maritime disputes 18. Implementation provision

(Maritime policy)
VINAMARINE was organized as agency under the Ministry of Transportation, and its tasks are strategies for maritime development except inland water, maritime laws, shipping policies and regulations, rules of management and legal norms on maritime activities in Vietnam. Also VINAMARINE is responsible for promulgating the statutes of port, their opening for navigation; to grant permission for foreign vessels to enter the territorial waters of Vietnam; to issue certificates of registry to sea-going vessels; certificates of competency to seafarers; to approve shipping agent license. Apart from VINAMARINE, Vietnam Inland Waterway Bureau is looking after inland water transportation, and Vietnam Shipbuilding Industry Corporation is supervising the shipbuilding and repair in Vietnam. Decision No.1195/Qd-TTg dated November 4, 2003 approves the master plan for sea transportation until 2010 and orientation beyond 2020, that is the target of fleet is 4,445 thousand DWT in 2010, and 7,100 thousand DWT in 2020 which is equivalent to an investment of about USD 2,000 million. Also the decision proposes the review of VINALINES and state owned enterprises, reduction of port charges, compliance with the MARPOL convention, upgrading the ship register and inspection.

(Shipping Agent)
Vietnam Ship Agents & Brokers Association (VISABA) is reporting that there are nearly one hundred shipping agents registered in Vietnam, although only about 30% are active. In compliance with the Foreign Investment Law, shipping agent of foreign shipping line needs to have a certificate/ license and be registered with the Ministry of Planning and Investment. The new maritime code 2005 envisages opening up the industry further, in accordance with the directives of WTO and AFTA. In fact, MAERSK Line had its agent approved with 100% foreign investment in 2004 and Mitsui OSK Line Japan followed in 2006. Now there are fewer barriers for foreign shipping lines to establish their own shipping agent in Vietnam as joint venture with majority shareholding.

7.1.3 Singapore

The merchant fleet in Singapore, capacity is over 1000 GRT, is 754 vessels and 22,980 thousand DWT as of January 2006 including 287 foreign flag domiciling vessels.
In 1969, The Merchant Shipping (Registration of Ships) Regulations provided for an open registry of ships; in 1970 the Income Tax Act was reviewed for FOC inducement to Singapore. Under the Regulations, foreign owners can register their ships under the Singaporean flag, which may be granted an exemption of income tax on profits as well as dividend. In addition from 1973, the tonnage dues may be refunded 50% amount to the shipping lines operating Singaporean flag ship with crews on boarding over 25% to the complement, also may be exempted income tax for seafarers on boarding Singaporean flag.

In 1992, an Approved International Shipping Enterprise Scheme (AIS) was introduced by the International Business Opportunities in Singapore. Shipping companies awarded AIS status are exempt from paying tax on income earned from qualifying activities and other concessions, such as 10 year tax exemption on income from overseas, on dividend from subsidiary line. In 2003, the scope of qualifying ship was expanded to tug boat, salvage, dredging, sub-marine rig. In 2002, the qualified minimum 10% of Singaporean flag was abolished, and in 2005 the tax was exempted for the capital gain from ship transferring belongs to AIS status company.

Maritime administration is carried out by The Maritime and Port Authority of Singapore (MPA), which was formed under the Maritime and Port Authority of Singapore Act (Chapter 170A) (1996). And MOT is responsible for overseeing the activities of the MPA. The MPA's key roles include the following: as port authority, controls vessel movements, ensures navigational safety and regulates marine services and facilities; as port industry regulator, regulates marine services, pilotage and tugboat services, as well as the port industry; as port planner, draws up the national port master plan and future port development; as port developer, works with other agencies to ensure the continuing strength of Singapore's maritime sector; as national sea transport policy developer and government adviser on matters relating to sea transport, represents Singapore at regional and international meetings.

The Shipping Association was first formed as Singapore National Shipping Association (SNSA) in 1985 to promote and protect the interests of its members, who are basically ship-owners and operators, ship managers, ship agents and shipbrokers, and about 260 members are organized. Now Neptune Orient Lines Ltd (NOL) is the biggest container operator in Singapore and owns 106 ships and capacity of 342,593TEUs as of November 2006. NOL was established in 1968 as Singapore's national shipping line, wholly owned by the Singapore Government. In 1997 NOL integrated American President Lines (APL), which was nearly twice the size of NOL, and became a top-10 container carrier as a member of Grand Alliance including APL container service and APL Logistics. NOL is publicly listed on the Singapore Exchange; Temasek Holdings of the Singapore Government is the largest single shareholder with 69%.

7.1.4 Hong Kong

The merchant fleet in Hong Kong, capacity is over 1000 GRT, is 663 vessels and 43,843 thousand DWT as of January 2006 including 371 foreign flag domiciling vessels, which means an increase of 188 national flag vessels and 12,572 thousand DWT compared with 1997. And the share of flagging out has decreased to 59% as of January 2006.

Table 7.1.2 Merchant Fleets (Hong Kong)

1000GT over Country of domicile	Number of vessel			Deadweight tonnage (1000DWT)		
	National Flag	Foreign Flag	Total	National Flag	Foreign Flag	Total
1997	104	503	607	5,401	28,079	33,481
1998	101	506	607	5,751	29,812	35,563
1999	106	467	573	5,775	26,876	32.651
2000	132	424	556	6,574	24,965	31,539
2001	166	385	551	9,075	26,626	35,701
2002	197	360	557	11,305	25,055	36,361
2003	235	334	569	13,206	24,527	37,733
2004	254	238	492	15,376	15,508	30,884
2005	274	331	605	17,246	23,747	40,993
2006	292	371	663	17,973	25,870	43,843

Source: UNCTAD Review of Maritime Transport

On July 1 1997, Hong Kong, including 236-associated islands, was handed over to Mainland China ending a 99-year lease by England since 1898. Hong Kong became a "Special Administrative Region" of China from its status as a "Crown Colony".

Hong Kong has a long time history as a colony, and has well developed trade, maritime and port sectors. Jardine Matheson, Dent & Co. and Russel & Co. were known as shipowners in old times. The Hong Kong and Whampoa Dock Company and The Taikoo Dockyard were worldwide shipbuilder and ship repairers, manufacturing large slow speed main propulsion diesel engines.

Also in the field of salvage tug, Mollers Towage and Hong Kong Salvage and Towage were reputable companies. But Hong Kong has always been behind Shanghai, which had the most developed system by inland water transportation through the Yangtze River. Almost all Chinese private shipping lines and state owned shipping lines were established in Shanghai, and not in Hong Kong. In 1949 the People's Republic of China was established and USA laid Embargo against China, Shanghai ship owners have refuge to Hong Kong, and have established the Tung Group and the World Wide Group in Hong Kong, which brought the biggest change to the maritime sector in Hong Kong.

New container shipping line of OOCL (Orient Overseas Container Line), was established by Mr. CY Tung born in Zhejiang, and started its operation in 1969. Small container vessel of 300 TEU capacity called Victory class was initially deployed. Mr. CH Tung and Mr. CC Tung took over OOCL and developed the container shipping business and container terminal business. As of 2006, OOCL is operating 47 vessels (capacity 251,925 TEUs) as owned and long-term chartered fleet, and also operating 24 vessels (capacity 35,580 TEUs) as short-term chartered fleet assigned for their 12 main loops, which includes AEX, CCX, ECN, ECS, IDX, JCX, NCX, NWX, PAX, PNX, SCX and SSX. In addition, OOCL is operating five container terminals in the USA and one container terminal in Taiwan for the exclusive use OOCL vessels or Grand Alliance member vessels.

Hong Kong owners have always been near the top of world rankings, often competing with competing with Greece and Norway. Generally, Hong Kong owners tend to favor newly built bulk carrier or tanker under the flag of convenience, and chartered by long time contracts. Before 1997 almost Hong Kong fleets were registered under foreign flags, and very few of national flag.
The most famous shipowner in the world is the World Wide Group in Hong Kong, which was established by Mr. YK Pao from Ningbo. World Wide Group has expanded their fleet by the particular concept known as the “shikumisen system” initiated by Mr. YK Pao. His fleets were financed against long-term contracts with Japanese operator, and associated with Japanese shipbuilders and trading houses.

Ship is registered by the Merchant Shipping (Registration) Ordinance (Cap.415) and its subsidiary legislation. There are 3 types of ship registration. Provisional and full registration; Registration of mortgages on full and provisional registration; and Demise charter registration. The Hong Kong Marine Department has authorized 7 classification societies to carry out the audit as required for ISM compliance, including American Bureau of Shipping, Bureau Veritas, China Classification Society, Det Norske Veritas, Germanischer Lloyd, Lloyd's Register of Shipping and Nippon Kaiji Kyokai. The registration fee is determined by gross tonnage of a ship, and HKD15,000 for ships exceeding 500 GTs. Annual tonnage charge is calculated by reference to the net tonnage of HKD100,000 for ship exceeding 31,500 NRT.

As shown in above table, Hong Kong national flag in 2006 increased by 188 vessels and 12,572 thousand DWT compared with 1997. Hong Kong Marine Department outlines their advantages on its home page; 1) available technical support and professional staff, 2) the lowest tax regimes in the world 3) No profits tax levied on overseas trade 4) Double taxation relief arrangement with 5) No nationality restrictions on manning 6) ship management, financial, communication, legal and other support facilities 7) An independent well-established common law system 8) Gateway to the Mainland of China. These measures are supporting to Hong Kong national flag registration, and resume from flagging out.

7.1.5 Malaysia

The merchant fleet in Malaysia, capacity is over 1000 GRT, is 325 vessels and 9,633 thousand DWT as of January 2006 including 76 foreign flag domiciling vessels, and almost the entire fleet is owned and operated by Malaysian International Shipping Corporation Berhad (MISC).

MISC was incorporated in 1968 as a state owned company, and next year was listed on the Stock Exchange of Kuala Lumpur in Malaysia. In 1997 Petroliam Nasional Berhad (PETRONAS) acquired a 62% share of MISC, then MISC became an industrial carrier of the national oil & gas conglomerate of Malaysia as well as international container shipping. Also MISC acquired Petronas Tankers, and in 2003 MISC expanded its fleet through acquisition of American Eagle Tankers (AET), 18 LNG carriers, which is currently the world's largest single owner/operator of LNG fleet, 43 crude oil and 5 product petroleum tankers the second largest owner-operator of Aframax tanker fleet in the world, 34 bulk carriers and 24 containerships for liner service. The principal business of MISC consists of ship-owning, ship-operating, logistics and maritime related transportation services such as drayage of 400 tractors and 25% equity stake in Northport Corp Bhd in Port Klang, with diversified fleet of 139 vessels and a combined tonnage of 8 million deadweight tons.

MISC has been a member of FEFC and other conferences, and has organized Grand Alliance for Europe trade with NYK Line, OOCL, P&0 Ned Lloyd and Hapag-Lloyd; it also has been participating in Australia, New Zealand, South Africa, Persian Gulf and Intra Asia container trades.

Maritime Administration in Malaysia is the responsibility of the Marine Department of the Ministry of Transport and its scope is divided by Peninsular Malaysia, Sabah and Sarawak. In order to promote shipping industry in Malaysia, Government supported the establishment of MISC as a state owned company in 1968, and also encouraged foreign shipping lines to set up regional offices in Malaysia; foreign equity shareholding up to 70% was permitted.

Registration in Malaysia is regulated by the Merchant Shipping Ordinance (1952), and a vessel must be 51% owned by a Malaysian Citizen. Second Register was introduced by the Merchant Shipping Amendment Act (1997) subject to; the ship owner must be incorporated in Malaysia or offices located in Malaysia; the ship manager must be a Malaysian citizen or corporation; the company must have a paid up share capital of 10% of the ship value or one million RM, whichever is bigger; and tanker or bulk carrier must be less than 15 years old, and others less than 20 years old. Malaysian shipping line by Malaysian flag is tax exempted including fishing boat. Malaysian seafarers on board Malaysian flag are exempted from income tax. Malaysian shipper supporting national flag carrier receives tax benefits for ocean freight and charges in addition to any deduction allowable under section 33 of the Income Tax Act (1967 as amended) which came into effect in 1995, accelerated depreciation on ships is allowed with an initial first year capital allowance of 20 per cent and further special allowance of 6-10 percent.

7.2 Maritime Education and Training in Neighboring Countries

7.2.1 Thailand

The MET institutes in Thailand are as follows:-
(1) Merchant Marine Training Centre : 1
(2) Private Rating School : 3
(3) Others : 4
The representative institute among these MET institutes is the Merchant Marine Training Center in Thailand. Its main courses are Navigation Course of 5-year (120 students/year) and Marine Engineering Course of 5-year (30 students/year) for officers. And there are the Special Course for Marine Engineering of 3-year (30 students/year), Intensive Course for Marine Engineering of 2-year (30 students/year) and the Rating Courses for both Deck and Engine for 15-week (30 candidates respectively). There are 26 kinds of short training courses prescribed in STCW Convention (Radar/ARPA Simulator, GMDSS and others).

In order to fill up the estimated global shortage of the officers, the Merchant Marine Training Center is willing to make its capacity double, 330 students annually short term plan and 1,000 students annually in the long run.

The issues to be solved are the low level of English ability and the shortness of length of continuous employment at the shipping company because of the various shore-based chances for them.

The main facilities and equipment are as follows:-
(a) Radar/ARPA Simulator
(b) Electronic Navigation Laboratory
(c) Seamanship Laboratory
(d) Electronic Laboratory
(e) Language Laboratory
(f) Computer Laboratory
(g) Physics Laboratory
(h) Chemistry Laboratory
(i) Fire-Fighting Training Facilities
(j) Survival Training Facilities
(k) Engineering Workshop

MET in the Merchant Marine Training Centre in Thailand is approved as the system satisfied with the standards in the STCW Convention

JICA has implemented the Project Type Technical Cooperation to this Center (from 1993 to 1998: 5-years)

7.2.2 Vietnam

The MET institutes in Vietnam are as follows:-

(1) Vietnam Maritime University : VIMARU (belong to MOT)
The predecessor of VIMARU has been established as the maritime vocational training school in Haiphong City in 1956 and inaugurated as VIMARU by the government decision in 1976. The outline of the University is as follows:-
(a) Faculty of Navigation
(b) Faculty of Marine Engineering

(c) Faculty of Marine Electrical Electronic Engineering
(d) Faculty of Shipbuilding
(e) Faculty of Sea Transport Economics
(f) Faculty of Waterway Construction
(g) Faculty of Information Technology

Among these faculties, the courses for education and training for seafarer are "Faculty of Navigation" and "Faculty of Marine Engineering" with capacities of 5-year courses (Navigation: 330 students and Marine Engineering: 250 students) and 3-year course (Navigation: 135 students and Marine Engineering: 120 students). Such capacities are increasing annually.

The distinctive character of this University is the Faculty of Sea Transport Economics because this faculty is only for management other than engineering so as to tackle on the Management, Business and Administrative Control.

VIMARU has been supporting to educate and train the Cambodian seafarers almost who have been engaging as Pilot in both Phnom Penh Port and Sihanoukville Port; furthermore it will assist for the Maritime Training Center Project in Cambodia which has been implementing as "ASIA-LINK Program" provided by EC; e.g. the instructor training. Moreover, some of the practical trainings which are impossible to organize in Cambodia have been under discussion to be supported by VIMARU.

(2) Transport University of Ho Chi Minh City: TU-HCMC (belong to MOT)
TU-HCMC which has been a branch of VIMARU was independent from VIMARU in 2001 as the Integrated Transport University including the land and air transports. The management department was consisted by a Dean, two Deputy Deans, heads of Departments of Navigation and Engineering. The academic staffs are consisted by 35 full-times, 11 from the other faculties, 8 visiting lecturers and 10 teaching assistants for Navigation and 26 full-times, 13 from the other faculties, 1 visiting lecturer and 3 teaching assistants for Engineering. The main courses for seafarers are as follows:-
(a) Long term Course（5-year: Navigation and Marine Navigation : Management Level respectively）
(b) Short term Course（3-year: Navigation and Marine Navigation : Operational Level respectively）

The main facilities and equipment are as follows:-
Ship Handling Simulator, Engine Room Simulator, Radar/ARPA Simulator, Planetarium, Electronic Navigation Laboratory, Seamanship Laboratory, Automatic Control Laboratory, Electronic Laboratory, Language Laboratory, Communication Laboratory, Computer Laboratory, Physics Laboratory, Chemistry Laboratory, Fire-Fighting Training Facilities, Survival Training Facilities, Engineering Workshop, Diesel Power Plant and the training ship (2,000 GT with dual purpose of training and cargo carry) will be launched in July, 2007 so as to go enter service by the end of 2007.

Furthermore, as the specialized University on the transport, the Shipping Economics Course has been contributing to provide the education as Port Operation, Logistics, Multi Modal Transport, and Project Management additionally to the traditional Shipping Economics.

(3) Maritime Secondary School I: belong to Maritime Bureau
It was established as a maritime secondary school in the vicinity of VIMARU in Haiphong. The annual outputs are 1,300 graduates.

(4) Maritime Secondary School II: belong to Maritime Bureau
It was established as a maritime secondary school in the vicinity of TU-HCMC in Ho Chi Minh City. The annual outputs are 700 graduates.

The major courses are the deck rating course and engine rating course with the school periods of 15-month and 18-month respectively. They are not only for the rating education and training but also for the followings:-

- Deck raining course: Mandatory minimum requirements for certification of officers in charge of a navigational watch and of masters on ships of less than 500 gross tonnage, engaged on near-coastal voyages
- Engine rating course: Mandatory minimum requirements for certification of chief engineer officers and second engineer officers on ships powered by main propulsion machinery of between 750 kW and 3,000 kW propulsion power

They are the rating courses for the ocean going large vessel and the officer courses for the coastal small vessel.

Other than these major courses, the various courses have been implementing, such as refresher courses, up-grading courses and STCW compulsory courses. The facilities and equipment covers all subjects other than GMDSS training. This high school possesses two training ships for the inland water training with 100 DWT and 20 cadets capacity and for the ocean going dual purpose of cargo carry and training with 1,385 DWT and 20 cadets capacity.

7.2.3 Support to the Maritime Training Center in Cambodia by EU

As one of sphere of ASIA-LINK Program, the Antwerp Maritime Academy has been contributing for inaugurating the Maritime Training Center Cambodia. As the first step, the inauguration of the Navigation Course has been preparing since September, 2004; then it has been started in November, 2005. The official opening as the Maritime Training Center was done on 25th January, 2006. This Project will be lasting by July, 2007 and will be prolonged with the target to prepare and commence the Marine Engineering Course. The outline of this Project is as follows:-

(1) The overall objectives
(a) to improve the overall economic and intellectual situation of Cambodia by contributing to the further development of the country's education system;
(b) to support the economic policy guidelines of Cambodia by training staff for the maritime transport sector;
(c) to create new study opportunities in Cambodia;
(d) to enhance international co-operation between EU Institutes and between EU and Asian maritime education institutions;
(e) to develop European international activity in the field of maritime training and education assistance.

(2) Outline of Activities
(a) to develop the curriculum and education method
(b) to train the Cambodian teaching staffs in Belgium, Ireland, Spain and Vietnam including the training for the Vietnamese teaching staff in Antwerp
(c) to commence the operation of departments
(d) to organize the education support system by Europe and Aisa

(3) Supporting institutions
(a) Antwerp Maritime Academy (Belgium: Leading institute)
(b) The Nautical Maritime College of Ireland (Ireland)
(c) Universidad Plytechnica de Cataluna - Facultad de Nautica de Barcelona (Spain)
(d) Vietnam Maritime University (Vietnam)

(4) Present Situation

The necessary matters for the class lecture were provided correctly, such as curriculum, test and methods of education and evaluation. The first class for the Navigation has been operating with 28 students, 14 from Phnom Penh Autonomous Port and 14 from Sihanoukville Autonomous Port. The teaching staffs for these lectures are the Pilots, 8 from Phnom Penh Autonomous Port and 5 from Sihanoukville Autonomous Port.

Almost lectures are provided in English because the international seafarer market is also within its future target.

The practical training is not yet implemented, has been discussing the possibility at outside of Cambodia, e.g. in Vietnam according to the planning. For the Maritime Training Center in Phnom Penh, this lack of facilities and equipment for practical training is a big problem. EU has been assisting to the education well and looking for some donor.

The present equipment of the Center is only a PC/printer, a photocopy machine and a projector for the minimum level for lecturing; however the level of lecture seems to be covered the international standards due to the efficient effect of outputs on such soft component. It is highly appreciated that the boosted moral both of teaching staffs and students; therefore the significant development will be expected if the facilities and equipment were improved properly. At present, the real Radar and GPS receiver are expected to provide by the Antwerp Maritime Academy, Belgium.

7.3 Management and Development of Ports in Neighboring Countries

7.3.1 Prospects of Ports of Vietnam

Vietnamese ports/terminals are managed by government organizations, state owned enterprises or private companies. State owned enterprises are affiliated with government organizations such as VINAMARINE (Vietnamese Maritime Administration under the Ministry of Transport), Ministry of Defense, Ministry of Industry, Ministry of Trade, Ministry of Agriculture and Rural Development, Ministry of Construction and People's Committee. Private companies are joint ventures with foreign terminal operators.

Port of Ho Chi Minh is a group of terminals comprised of Saigon Port, Tan Cang, Ben Nghe Port, Cat Lai and VICT (Vietnam International Container Terminal). Each terminal is owned and operated by a different entity. Port Authorities in Vietnam are local branches of VINAMARINE engaging in work of the Harbor Master; their tasks are therefore different from ordinal port authorities.

(1) Saigon Port
Saigon Port is located in the busy area of Ho Chi Minh City along the Saigon River. The port is owned and managed by Saigon Port Company, which is a state company affiliated with VINALINES. A total of 10.5 million tons of cargo was handled in 2004 including bulk cargoes, containers and conventional cargoes. Container throughput was 300,000 TEUs. Number of ship calls was 1,700 in 2004, in which 600 were container vessels.

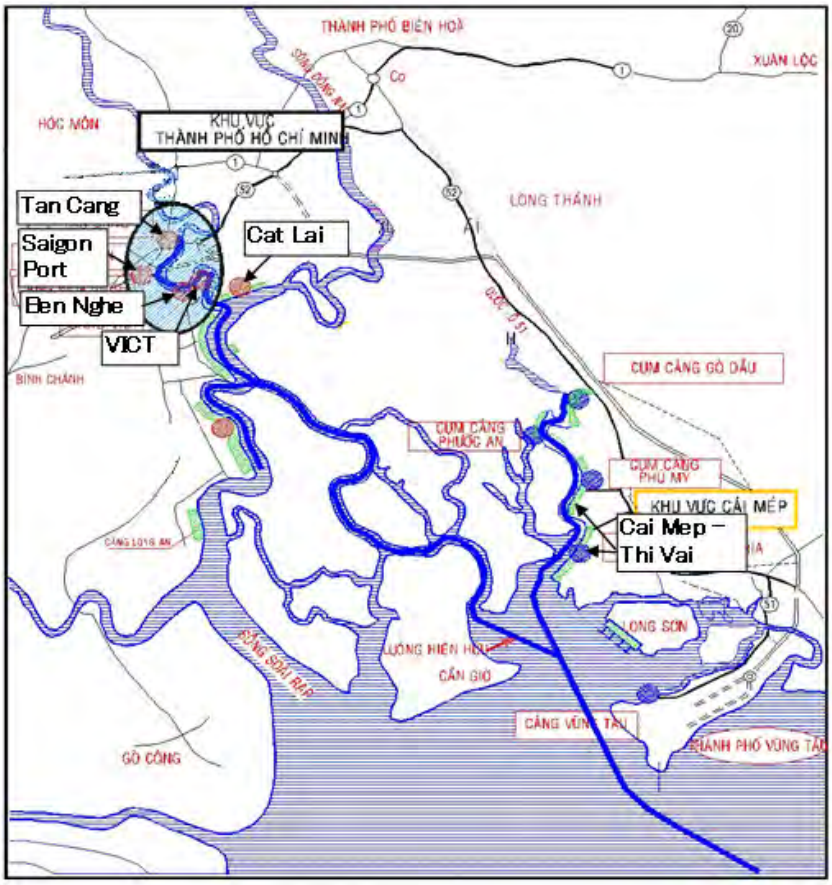
Saigon Port consists of four terminals in Ho Chi Minh, namely Nha Rong, Khanh Hoi, Tan Thuan, and Tan Thuan II. The Saigon Port Company owns one berth in Can Tho, which is located in the south west of Ho Chi Minh City.

(2) Saigon New Port (Cat Lai Port)
Ministry of Defense (Navy) operates Tan Cang Port, a commercial terminal located in the upriver of Saigon River. Tan Cang is close to the downtown of Ho Chi Minh and has no room for expansion. Cat Lai Port was therefore newly developed by Saigon New Port Company, a state owned company affiliated with the Ministry of Defense, as a substitute of Tan Cang Port. Saigon New Port handles half of containers of a total of the Ho Chi Minh Ports Group. The New Port Company operates an inland container depot in Song Than, Ho Chi Minh City.

(3) Ben Nghe Port
Ben Nghe Port, owned and managed by the People's Committee of Ho Chi Minh City, is located in the middle of city along the Saigon River. The port has four berths with a total length of 820m.

(4) Vietnam International Container Terminal (VICT)
VICT was developed and managed by First Logistic Development Co., which is a joint venture of NOL, Mitsui Trading Co. and Sowatco (Vietnam). Original shares of JV were NOL 48%, Mitsui Trading Co. 15%, and Sowatco 37%. However, some shares of Sowatco may have been transferred to foreign companies.

VICT took the land from the government on a lease of 40 years and constructed a container terminal. A total of USD 54 million was invested to build a terminal with a berth length of 486m and a water depth of 10m. Total length of the berth will reach 678m in the final phase.



Source: OCDI

Figure 7.3.1 Location of Ports in Ho Chi Minh and Vung Tau - Thi Vai

Table 7.3.1 Container Cargo Throughput of Ho Chi Minh Terminals (Unit: 1,000 TEU)

Ho Chi Minh Terminals	Facilities	2002	2003	2004	2005
Sigon New Port (Cat Lai)	6 Berths (923 m)	484	726	865	-
VICT	2 Berths (486 m)	269	296	340	-
Saigon Port	20 Berths (2,670 m)	260	197	253	-
Ben Nghe Port	4 Berths (816 m)	77	86	113	-
Others		56	89	69	-
Total		1,147	1,395	1,642	1,911

Note: Exclusive of Container Throughput of Gemadept BB
Source: VINAMARINE, OCDI Study Team

(5) Port Projects in Cai Mep-Thi Vai Area

Dramatic increases in container cargo throughput are expected in Ho Chi Minh area due to the economic boost in Vietnam. However, present ports of Ho Chi Minh City are located in the Saigon River and have difficulty in accommodating recent large container ships with a deep draft. In this connection, several development plans of deep water seaports have been approved by the government in Cai Mep - Thi Vai area.

(a) Cai Mep Container Terminal (VINAMARINE)

VINAMARINE has a plan to develop a modern full size container terminal with a quay length of 600m (two berths) and a water depth of 14m. The terminal is designed to accommodate 8,000 TEU

container vessels and its design capacity is 740,000 TEUs per annum. This project is financed by the Japan Bank for International Cooperation and expected to enter into operation in the end of 2010.

(b) Cai Mep Container Terminal (Saigon Port)
Saigon Port has a plan to develop a container terminal next to the Cai Mep International Container Terminal of VINAMARINE. The terminal is designed to cater to 8,000 TEU vessels with a total quay length of 1,200m, a water depth of 14m, and a yard area of 48ha. Handing capacity of the terminal is estimated at about 1.1 million TEUs per annum. This project has started in 2005 and expected to be completed in 2010.

Saigon Port Company has been seeking partners for the development of container terminals and reached an agreement with AP Moller Maersk to establish a JV to construct two berths of Cai Mep Container Terminal. Their investment is estimated at USD 187 million and the JV was officially approved by Prime Minster in December 2006. Saigon Port Company also has an agreement with PSA (Singapore) and SSA (USA) to develop a container terminal.

(c) Thi Vai Multi-Purpose Terminal (VINAMARINE)
VINAMARINE also has a plan to develop a new multi-purpose terminal with a total length of 600m (two berths), a water depth of 14m and an area of 12ha. The terminal is designed to accommodate vessels up to 75,000 DWT and cargo handling capacity is about 2.5 million tons.

(d) Thi Vai Multi-Purpose Terminal (Saigon Port)
Saigon Port Company also has a plan to build a new terminal with a total length of 600m (two berths), a water depth of 14m and a terminal area of 27ha. Maximum design vessel is 50,000 DWT and cargo handling capacity is estimated at about 2.2 million tons. Total investment is USD 63 million during a project period from 2005 to 2010.

(e) Upper Cai Mep Container Terminal (Saigon New Port)
Saigon New Port Company started the development of a new container terminal in January 2006 in the up river of Cai Mep Container Terminal. Their plan is to develop a new terminal with a total quay length of 900m (three berths), with a water depth of 15m, and a yard area of 60ha. The phase one of the project aims at developing one berth of 300m until 2008 and the phase two will develop the second berth until 2011 followed by the phase three until 2014.

(f) Lower Cai Mep Container Terminal (Gemadept)
Gemadept Co., plans to develop a new container terminal in the down river of Cai Mep Container Terminal. The terminal will have two berths with a total length of 600m.

Development of Cai Mep - Thi Vai area will proceed at a rapid pace owing to the participation of AP Moller Maersk, PSA and SSA. After 2010, cargo throughput of Cai Mep area will enjoy a dramatic increase and likely become a transshipment port for Cambodian cargoes.

7.3.2 Prospects of Ports of Thailand

(1) Development of Laem Chabang Port
Port of Bangkok (Khlong Toei), located 35km up river from the mouth of Chao Phraya River, was the only national gateway port until 1991. Since the Port of Bangkok is a river port in the downtown area, the port was faced with many difficulties, such as traffic jams around the port, no space for expansion, shallow channel in the Chao Phraya River, and so forth. Coping with this situation, the Thai Government decided to develop a new deep seaport in Laem Chabang, around 130km south of Bangkok.

The first phase of the development commenced in 1986 with a JBIC loan and the first container terminal was opened in January 1991. Industrial parks were also developed behind the port and around the nearby area.

The second phase development was started soon after the completion of B terminals. Land reclamation of C terminals was completed in 1998 and that of D terminals followed. Terminal C3 entered into operation in August 2004. Land reclamation of E terminals is on going and the surrounding seawalls have been completed.

Port of Laem Chabang is managed by the Port Authority of Thailand (PAT), a public enterprise under the jurisdiction of the Ministry of Transport. PAT, established to manage the Port of Bangkok in 1951, was also authorized to manage the new port. While PAT provides stevedoring services at the Port of Bangkok and acts as an operator, container terminals of the Laem Chabang Port (LCB) are operated by private companies. This policy was adopted to make the port more competitive by encouraging competition between terminals and introducing modern container terminal operation through international operators.

At the Port of Laem Chabang, PAT is responsible for the construction of breakwaters, channel dredging and land reclamation, navigational aids, and other non-beneficial facilities. Container terminal facilities, such as quay gantry cranes, CFS, yards, gates and other superstructures, were provided by private terminal operators. PAT also prepared such facilities when they were urgently needed.

(2) Terminals of Laem Chabang Port

The first phase of the development of LCB built wharves A and B from the north. Wharves of LCB are named A to F from north to south. Wharves A and B have berths with a water depth of 12m. The second phase of the development reclaimed the land for wharves C and D, which have a water depth of 14m and are designed to accommodate 8,000 TEU container vessels with a tonnage of about 100,000 DWT. Each wharf of C and D is planned to have three terminals, namely C1 to C3 and D1 to D3.

Laem Chabang International Terminal Co. Ltd. (LCIT) won the bids for Terminal C3 and opened the terminal in August 2004. LCIT is affiliated with DPW who succeeded P&O Ports. Bids for Terminals C1, C2, D1, D2 and D3 were invited and Hutchison Port Holdings (HPH) was granted the concession of all five terminals in September 2004. HPH is obliged to open two terminals by November 2007 and other three terminals by 2011. PAT estimated the capacity of HPH terminals at about 5.8 million TEUs and expected that the capacity of LCB will not face with the shortage after the completion of D1- D3 Terminals. Concession of new terminals has a period of 27 - 30 years.

Details of the six container terminals in operation are shown in Table 7.3.2 and Table 7.3.3 shows recent increases in cargo throughput of LCB.

Table 7.3.2 Terminal Sizes and Operators of Laem Chabang Port

Terminal	Size	Operator
B1	Length 400m, CY Area 10.5ha QGC: 3 (Post-Panamax) Capacity 550,000 TEUs	LCB Container Terminal 1 Co. Ltd. (MAERSK has a share)
B2	Length 300m, CY Area 10.5ha QGC: 3 (Panamax) Capacity 400,000 TEUs	Evergreen Container Terminal（Thailand）Co. Ltd.
B3	Length 300m, CY Area 10.5ha QGC: 3 (Panamax) Capacity 520,000 TEUs	Eastern Sea Laem Chabang Terminal Co. Ltd. (PSA has a chare of 50% since 2003)
B4	Length 300m, CY Area 10.5ha QGC: 3 (Panamax) Capacity 660,000 TEUs	TIPS Co. Ltd. (NYK, MOL have a share)
B5	Length 400m, CY Area 18ha QGC: 4 (Post-Panamax) Capacity 810,000 TEUs	Laem Chabang International Terminal Co. Ltd. (LCIT), (DPW succeeded to P&O Ports' share)
C3	Length 500m, CY Area 22ha QGC: 4 (for 8,000 TEU Vessel) Capacity 900,000 TEUs	LCIT (Opened since August 2004)

Source: Port Authority of Thailand, OCDI

Table 7.3.3 Container Throughput of Laem Chabang Port

Items	2000	2001	2002	2003	2004	2005
Import (TEU)	1,019,488	1,146,194	1,312,844	1,533,119	1,757,987	-
Export (TEU)	1,057,745	1,160,839	1,335,307	1,498,516	1,753,515	-
Transshipment	28,029	5,406	8,798	15,734	18,380	-
Total	2,105,262	2,312,439	2,656,949	3,047,369	3,529,883	3,765,967

Source: Port Authority of Thailand (2000-2004), Containerisation International (2005)

7.3.3 Prospects of Ports of Malaysia

(1) Port Kelang

Port of Kelang is located 40km west of Kuala Lumpur and plays an important role as the national gateway port. Container throughput of the Port of Kelang reached 5.5 million TEUs, in which 41% is transshipment containers in 2003. Eighty percent of import and export containers are handled at the Port of Kelang.

The port consists of three areas called South Port, North Port and West Port. The South Port and North Port are container terminals and the West Port is a bulk and general cargo terminal. The Port of Kelang has a good connection to the highway and railway, both of which run from north to south along the Peninsula. Therefore, southern border area of Thailand is the hinterland of the port and their cargoes are transported via the Port of Kelang.

(2) Rapid increase in cargo throughput

Cargo throughput has increased by two times from 49 million tons in 1996 to 99.9 million tons in 2004. Container throughput has dramatically increased from 1.4 million TEUs in 1996 to 5.5 million TEUs in 2005, by four times during 9 years. (see Table 7.3.4)

Background of such a rapid increase in container throughput is analyzed as follows:
a) Malaysian government encouraged the transshipment of Malaysian import and export cargoes at Malaysian ports and introduced a policy to develop the Port of Kelang as National Load Center.

b) To encourage transshipment at the Port of Kelang, the government eased the regulation on cabotage and foreign flag vessels joined a feeder transportation service in Malaysia.

c) EDI covers 98% of customs documentation

d) The port is located near the Great Kelang Valley, the largest industrial and commercial hub in Malaysia, and plays a vital role in the economic development of Malaysia.

Owing to these efforts, transshipment of import and export containers from/to Penang at the Port of Singapore has decreased from 70% in 1994 to about 40% in 2004. Railways have a share of 10%-15% in the transportation from the port to the hinterland and the trucks have an 85%-90% share. Railway service (comprised of 28 trains per week) is available between the North Port of Kelang and Bangkok; travel time is about 60 hours.

Table 7.3.4 Container Throughput of Port of Kelang and Tanjung Pelepas (1,000 TEUs)

Port	2002	2003	2004	2005
Port Kelang	4,533	4,841	5,244	5,544
Tanjung Pelepas	2,660	3,487	4,040	4,177

Source: Containerisation International Year Book

(3) Port Authority and Terminal Operators
Kelang Port Authority (KPA) is a government organization and takes the responsibility for the safety of navigation, management of port assets, ensuring maritime transportation, port promotion, and future development plan of the Port as well as supervising and monitoring the activities of private companies.

At the Port of Kelang, a container terminal of the North Port was privatized in 1986 and Kelang Container Terminal (KCT) was established to operate the terminal. Conventional terminals of the North Port and South Port were privatized in 1992 and Kelang Port Management (KPM) was launched to operate the terminals.

Kelang Multi-Terminal (KMT) was established in 1994 to build the West Port on a BOT basis and started the operation of West Port. The term of BOT is for 30 years. Huchison (Port Holdings) acquired 30% of the shares of KMT. KCT and KPM were merged into one and Northport Corp Berhad（NCB） was established in 2003. The term of contract of the North Port is for 21 years.

The North Port and the South Port severely compete with each other for container handling. Total investment at the Port of Kelang reached 2.7 billion RM during a five year period of 1996-2001.

(4) Future Development
As the North Port has little space for expansion, it is planned to convert Berths No.12, 13, 16 to container terminal with a water depth of 14.5m. North Channel has only a depth of 12m and partially 11m, so deep draft vessels enter into the North Port via Pintu Gedung near the West Port. It takes 90 minutes longer than the route via North Channel. The North Port strongly requires the dredging of the North Channel. The West Port has no difficulties in the depth of entrance channel and has a plan to extend their container terminal. KPA foresees that the capacity of container terminals will be increased to 8.4 million TEUs in 2010 due to the development of the North and South Port.

Chapter 8 Cross Border Transportation and SEZ

8.1 Current Situation of Cross Border Transportation

8.1.1 Bilateral Approach

(1) Road Transportation
(a) Vietnam
(i) Agreement (1998)
"Agreement between the Royal Government of Cambodia and the Government of the Socialist Republic of Vietnam on Road Transportation" was signed by both Transportation Ministers on 1 June 1998 in Hanoi, Vietnam.

(ii) Protocol (2005)
"Protocol for Implementation of the Agreement between the Royal Government of Cambodia and the Government of the Socialist Republic of Vietnam on Road Transportation" was signed by both Transportation Ministers on 10 October 2005 in Hanoi, Vietnam. The protocol has 13 sections and 93 articles as below;
1) Section I: Registration and Type of Motor Vehicle
2) Section II: Conditions Requirement of Road Vehicle
3) Section III: Temporary Importation and Re-exportation of Motor Vehicles
4) Section IV: Compulsory Motor Vehicle Insurance
5) Section V: Cross-Border Movement of People
6) Section VI: Carrier Liability Regime of Passenger Transport
7) Section VII: Cross-Border Transport of Goods
8) Section VIII: Carrier Liability Regime of Transport of Goods
9) Section IX: Criteria for Licensing of Transport Operators Engaged in Cross-Border Transport Operations
10) Section X: Custom Clearance and Sanitary and Phytosanitary Inspection
11) Section XI: Designation of Entry and Exit Points
12) Section XII: Charges on Cross-Border Traffic
13) Section XIII: Final Provisions
14) Appendixes

(iii) Main Result of the Agreement
Each of the 40 registered vehicles can cross the border. Destinations of the vehicles are limited to designated cities such as Phnom Penh and Ho Chi Minh.

(iv) Present Situation
The agreement came into effect on 30 September 2006. Cambodian government has prepared 20 register capacities for passenger buses and 20 register capacities for cargo trucks. Vietnamese government has prepared 40 register capacities for passenger buses only. Passenger buses are operated by both sides. However, cargo trucks are not operated at all even though some Cambodian logistic companies have already registered their cargo trucks.

(v) Problems
According to interviews with authorities and organizations concerned, problems are as below;
1) No insurance is given to foreign vehicles, though insurance is one of the necessary conditions for cross border vehicles in the agreement.
2) Vietnamese government does not allow Cambodian companies to open branch office for ticket selling in Vietnam and to place bus stops and packaging areas in Vietnam.
3) Drivers' training for driving in foreign countries is insufficient.
4) Direct trucking is not practical at this moment because of imbalance of cargo.

(vi) Recent Progress
Bilateral Meeting on this matter was held on March 2007 in Siem Reap. Both sides agreed on adding 110 capacities, totally 150, for register of cross border vehicles. MOU which includes this register capacity expansion is expected to be signed in 2007. Problems on insurance, branch offices, bus stops, packaging areas and expansion of designated destinations (Vietnam has offerred to add Siem Reap to designated destinations) were also discussed, but need further discussion.

(b) Thailand
Cambodia and Thailand are negotiating on cross border road transportation under GMS CBTA (see 8.1.2.) Thailand signed CBTA in 1999 and Cambodia signed it in 2003. Signing of annexes and protocols was finished in March 2007. Both sides signed the MOU of Initial Implementation of CBTA at Poipet-Aranyaprathet in 2005. Now both sides are negotiating on the MOU of Exchange of Traffic Rights. According to Cambodian authorities, Cambodian side has already agreed to the draft of the MOU, but the Thai side is still deliberating. Schedule of signing is not yet decided.

(c) Other countries
Negotiations on a bilateral agreement with Laos have not yet been started.

(2) Water Transportation
(a) Vietnam
(i) Agreement (1998)
"Agreement between the Royal Government of Cambodia and the Government of the Socialist Republic of Vietnam on the Waterway Transportation" was signed by both Transportation Ministers on 13 December 1998 in Hanoi, Vietnam.

(ii) Protocol (under negotiation)
"Protocol for Agreement between the Royal Government of Cambodia and the Government of the Socialist Republic of Vietnam on the Waterway Transportation" is under negotiation. The draft (version 1 October 2006) has 7 chapters and 36 articles as below;
1) Chapter 1 General Provisions
2) Chapter 2 Freedom of Navigation (access to ports, documents, etc.)
3) Chapter 3 Dues, taxes and Customs
4) Chapter 4 Technical Management of Waterways
5) Chapter 5 Bilateral Mekong Navigation Committee
6) Chapter 6 Dispute Settlement
7) Chapter 7 Final Provisions

(iii) Problems
According to Cambodian authorities, in the agreement negotiation, the Vietnamese side asked the Cambodian side to choose either the Bassac River or the Mekong River as the transportation route. Cambodian side chose the Mekong River because there was a bridge construction plan over the Bassac River. In spite of that, during the protocol negotiations, the Vietnamese side insisted that the Bassac River be included as a transportation route, which was puzzling to the Cambodian side.

(iv) Recent Progress
Recently two meetings for the protocol were held; on March 2007 in Phnom Penh and on May 2007 in Ho Chi Minh. Negotiations have progressed and it is expected that the protocol will be finalized at the next meeting held in November 2007. Revised agreement also may be needed to solve the Bassac River problem.

(b) Other countries
Negotiations for a bilateral agreement with Laos have not yet been started.

8.1.2 Economic Cooperation in the Greater Mekong Subregion

(1) GMS Program
GMS program is a regional economic cooperation system led by ADB. It consists of the following six countries: Cambodia, China, Laos, Myanmar, Thailand and Vietnam. The first GMS Ministerial meeting was held in 1992.

The GMS program provides two kinds of support for development of cross-border transport. One is facilitation of cross-border procedures by GMS Cross-Border Transport Agreement. The other is prioritization of the projects and technical assistance by GMS Transport Sector Strategy (see 6.3.3.)

(a) GMS Cross-Border Transport Agreement (CBTA)
CBTA, which covers road and multimodal transport related to road, was signed by the six countries by 2003. The Annexes and Protocols were finalized and signed by March 2007 and they are to be put into effect in 2007-2008. These include contents as below;

(i) single-stop/single-window customs inspection
(ii) cross-border movement of persons (i.e., visas for persons engaged in transport operations)
(iii) transit traffic including exemptions from physical customs inspection, bond deposit, escort, and phytosanitary and veterinary inspection
(iv) requirements that road vehicles will have to meet to be eligible for cross-border traffic
(v) exchange of commercial traffic rights
(vi) infrastructure, including road and bridge design standards, road signs and signals

(b) GMS Transport Sector Strategy (TSS)
TSS provides prioritization of the projects and technical assistance based on the economic corridor concept during the period from 2006 to 2015. According to TSS, three investment projects related to cross-border transport that concern Cambodia are given the highest priority (category II) as below;

(i) A3.4-2: Route 13S - NR7 cross-border section (Cambodia – Laos, US$ 5 million)
(ii) B1-11: Sisophon-Poipet/Aranyaprathet reinstatement (Cambodia – Thailand, US$ 4 million)
(iii) A3.2-3: NR33: Kampong Trach - Lork Vietnam border missing 17km section (Cambodia – Vietnam, US$ 4 million)

And five technical assistance projects (TAPs) concerning CBTA are given the highest priority (category four stars) as below;

(i) TAP1: Implementing the GMS Agreement to Facilitate the Cross-Border Movement of Goods and People, Phase 2 (US$ 0.86 million)
(ii) TAP6: Establishment of Issuing and Guaranteeing Organizations under the GMS Cross-Border Transport Agreement (US$ 0.30 million)
(iii) TAP8: Phased Liberalization of Visa Regimes for Travelers (US$ 5.00 million)
(iv) TAP9: Specification of Transit Charges to be Implemented under Protocol 2 of the Cross-Border Transport Agreement (US$ 0.15 million)
(v) TAP 11: Institutional Strengthening of National Transport Facilitation Committees (US$ 0.30 million)

(2) Mekong River Commission (MRC)
Cambodia, Laos, Thailand and Vietnam signed “Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin” on 5 April 1995 in Chiang Rai, Thailand. And on the same day, they signed the “Protocol to the Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin for Establishment and Commencement of the Mekong

River Commission" and established MRC as defined in Chapter IV of the agreement.

Article 9 of the agreement declares "Freedom of Navigation" in Mekong River. It is understood that Article 9 represents general policy and has no legal authority unless the concrete implementation is agreed upon in other agreements.

MRC has promoted water transportation by the Navigation Program (NAP) since 2004. The program has five components as below;

(a) Socio-Economic Analysis and Regional Transport Planning
(b) Legal Framework for Cross Border Navigation
(c) Traffic Safety and Environmental Sustainability
(d) Information Promotion and Coordination
(e) Institutional Development

In late 2005, NAP received funding support from the Belgian government.

The five outputs which come under the umbrella of components b, c, d and e, are as below;

(a) Installation of aids to navigation on the Mekong River between Phnom Penh Port and the Cambodia-Vietnam border
This will include a hydrographic survey, detailed design of the aids to navigation, international tendering for international companies to supply the material, fully operational aids to navigation system and training of national counterparts.
(b) An updated and harmonized legal regime to guarantee freedom of navigation, consisting of legal and operational navigation agreements
(c) Risk analysis and contingency plans
(d) Coordination, institutional building and training
MRC will continue to develop its relationship with China and Myanmar and hopes to work more closely with its upstream neighbors on increased cooperation on Mekong navigation issues.
(e) Pilot projects on morphology and bank erosion in Lao PDR, Thailand and Vietnam and on hydrodynamic and morphological impact of dredging the Tonle Sap

(3) ASEAN
ASEAN countries have developed some legal instruments concerning cross border transport as below;

(a) ASEAN Framework Agreement on the Facilitation of Goods in Transit (1998)
The agreement was signed in 1998 by 10 ASEAN countries. It consists of 33 articles, has 9 protocols (5 signed,) and covers transit by road and rail. The object of the agreement is shown in Article 1 of the agreement as below;

(i) to facilitate transportation of goods in transit, to support the implementation of the ASEAN Trade Area, and further integrate the region's economics
(ii) to simplify and harmonize transport, trade and customs regulations and requirements for the purpose of facilitation of goods in transit
(iii) to establish an effective, efficient, integrated and harmonized transit transport system in ASEAN

(b) ASEAN Framework Agreement of Multimodal Transport (2005)
(c) ASEAN Framework Agreement of Facilitation of Inter-State Transport (not yet signed)
(d) Agreement on Recognition of Domestic Driving Licenses issued by ASEAN Countries (1985)
(e) Agreement on Recognition of Commercial Vehicle Inspection Certificates for Goods Vehicles

and Public Service Vehicles issued by ASEAN Countries (1998)
(f) ASEAN Agreement on Customs (1997)

8.1.3 Border-Crossing Procedures

(1) Control Offices at the Border
Sub-decree on the establishment of control offices at the border was enacted on 29 July 2001. (The complete name of the sub-decree is "Sub-decree on the Designation and Management of Control Offices at the International Gates, the International Border Gates, the Bilateral Border Gates, the Gates at the Border Areas and the Seaport Gates across the Kingdom of Cambodia.") According to the sub-decree, composition of some major control offices is defined as below.

Officials of quarantine, animal quarantine and phytosanitary inspection are not included in the sub-decree. They have their headquarters in Phnom Penh and have their own branch offices in Sihanoukville. But according to interviews with authorities concerned, there are no such officials at land border gates such as Poipet and Bavet. At the land border gates, quarantine is delegated to police officers, animal quarantine and phytosanitary inspection is delegated to CAMCONTROL officials.

(a) The International Port Gate in Phnom Penh
(i) An official of PPAP, MPWT: a chief and 3 assistants
(ii) A national police officer, Department of Foreigners, Ministry of Interior: a deputy chief and 29 colleagues
(iii) An official of Customs and Excise, MEF: a member and 30 colleagues
(iv) A CAMCONTROL official, MOC: a member and 14 colleagues
(v) A KAMSAB official, MPWT: a member and 2 colleagues

(b) The International Port Gate in Sihanoukville
(i) An official of SAP, MPWT: a chief and 3 assistants
(ii) A national police officer, Department of Foreigners, Ministry of Interior: a deputy chief and 49 colleagues
(iii) An official of Customs and Excise, MEF: a member and 47 colleagues
(iv) A CAMCONTROL official, MOC: a member and 29 colleagues
(v) A KAMSAB official, MPWT: a member and a colleague

(c) The Poipet International Border Gate
(i) The governor of Banteay Meanchey province, who can be represented by a senior delegate: a chief
(ii) A national police officer, Department of Foreigners, Ministry of Interior: a deputy chief and 39 colleagues
(iii) An official of Customs and Excise, MEF: a member and 36 colleagues
(iv) A CAMCONTROL official, MOC: a member and 11 colleagues

(d) The Bavet International Border Gate
(i) The governor of Svay Reang province, who can be represented by a senior delegate: a chief
(ii) A national police officer, Department of Foreigners, Ministry of Interior: a deputy chief and 39 colleagues
(iii) An official of Customs and Excise, MEF: a member and 24 colleagues
(iv) A CAMCONTROL official, MOC: a member and 9 colleagues

(e) The Khaom Samnor-Koh Rokar International Border Gate (on the Mekong River)
(i) The governor of Kandal province, who can be represented by a senior delegate: a chief
(ii) A national police officer, Department of Foreigners, Ministry of Interior: a deputy chief and 39

colleagues
(iii) An official of Customs and Excise, MEF: a member and 24 colleagues
(iv) A CAMCONTROL official, MOC: a member and 9 colleagues

(2) One Stop Service
There is a "One Stop Service Office" in the Manhattan Special Economic Zone in Bavet. It consists of branch offices of CDC, customs, CAMCONTROL, MOC and Ministry of Labor and provides all necessary governmental services for tenant companies.

According to interviews with authorities concerned, there is a plan to enforce Cambodia—Vietnam joint customs inspection in Bavet—Moc Bai checkpoint. But the starting date has not yet been decided.

(3) Formalities at border on the Mekong River
Inland Water Transportation in which borders are crossed entails several formalities, such as the harbour master, Customs officer and Immigration. It takes about 2 hours for processing formalities and hampers the efficiency of Inland Water Transportation. Business hours are only from 7am to 5pm, not 24 hours, and if a ship (except for passenger boats) arrives at the border after 5pm, It is necessary to wait until the next morning to process formalities. Following table shows formality documentation that is submitted to each office.

Table 8.1.3.1 Formality Documentation List

Documentation	Harbour Master (4)	Customs (10)	Immigration (3)
General Declaration of Arrival	1 Original	1 Original	1 Original
General Declaration of Departure	1 Original	2 Copies	1 Original
Last Port Clearance Paper	1 Original		
Crew List	1 Original	2 Copies	2 Copies
Crew Effect List		2 Copies	
Shipstore List		2 Copies	
Nil List		2 Copies	
DG List		2 Copies	
Cargo Declaration List		2 Copies	
Export Cargo Manifest		2 Copies	
Document Transfer Sheet		2 Copies	

Source: JICA Study Team

According to the Draft Protocol implementing the 1998 Hanoi Agreement, officials may decide to abolish the border stop and carry out formalities at Vung Tau or final destination only. Therefore in the future efficient container transportation through the Mekong River can be expected due to simplified formalities.

8.2 Road Development

Considering the economic situation of Cambodia and neighbor countries, development of National Road (NR) 1 and NR 5 has highest priority in order to promote the Cambodian economy by using cross border transport.

NR 1: Phnom Penh—Bavet (Vietnam-Cambodia Border,) connecting Phnom Penh area to South Vietnam
NR 5: Phnom Penh—Poipet (Thailand-Cambodia Border,) connecting western area of Cambodia to Thailand

In addition, development NR 7, NR 48 has secondary priority for cross border transport.

NR 7: Skun—Doung Krolor (Laos-Cambodia Border,) connecting Phnom Penh area to Laos
NR 48: Chamker Loung—Koh Kong (Thailand-Cambodia Border,) connecting coastal area of Cambodia to Thailand

According to the JICA study "The Study on the Road Network Development in the Kingdom of Cambodia" (2006,) road improvement plan of these four routes is as shown below;

ST: Short Term (2006—2010)
MT: Middle Term (2011—2015)
LT: Long Term (2015—2020)

(1) NR 1
(a) Phnom Penh—Neak Leoung (4 Lanes, AC)
Ongoing Project: Widening 1 Lane to 2 Lanes
LT Project: Widening 2 Lanes to 4 Lanes

(b) Neak Leoung Ferry
ST Project: Construction of 2nd Mekong Bridge (2 Lanes, AC) (under study by Japan)
MT Project: ditto

(c) Neak Leoung—Bavet (Vietnam Border) (2 Lanes, AC)
LT Project: Road Upgrading DBST to AC

(2) NR 5
(a) Phnom Penh—Odongk (4 Lanes, AC)
MT Project: Widening 2 Lanes to 4 Lanes

(b) Odongk—Kampong Chnang (4 Lanes, AC)
LT Project: Widening 2 Lanes to 4 Lanes

(c) Kampong Chnang—Battambang (2 Lanes, AC)
LT Project: Road Upgrading

(d) Battambang—Sisophon (2 Lanes, AC)
MT Project: Road Upgrading

(e) Sisophon—Poipet (Thailand Border) (2 Lanes, AC)
Ongoing Project: Road Upgrading to AC

(3) NR 7
(a) Skun—NR 11 (4 Lanes, AC)
LT Project: Widening 2 Lanes to 4 Lanes

(b) NR11—Kratie (2 Lanes, AC)
LT Project: Road Upgrading

(a) Kratie—Stoeung Treng (2 Lanes, AC)
Ongoing Project: Road Upgrading to DBST

(d) Stoeung Treng—Doung Krolor (Laos Border) (2 Lanes, AC)
Ongoing Project: Road Upgrading to DBST

(4) NR 48
(a) Chamker Loung—Koh Kong (Thailand Border) (2 Lanes, AC)
Ongoing Project: Road Upgrading to DBST

8.3 Situation of SEZ in Cambodia and Neighboring Countries

8.3.1 Present Situation of Special Economic Zones in Cambodia

(1) Background
Cambodia has marked relatively high economic growth recently. Real GDP growth rate was 8.6% in 2003, 10.0% in 2004 and 13.4% in 2005. And exports and imports also have been increasing. On the other hand, absolute level of GDP per capita isn't high yet, reaching only 395USD in 2005.

Against this background, RGC aims to enhance export oriented industry as the main engine of economic development and promote Foreign Direct Investment (FDI) and domestic private investment.

(2) Qualified Investment Project (QIP) and Investment Incentive
In Cambodia, the investment license scheme was established by "Law on Investment" in 1994, and substantially reformed by "Law on the Amendment to the Law on Investment" in 2003.

Under the scheme, both foreign and domestic investors can receive incentives as described below, in case the project is approved as Qualified Investment Project (QIP) by the Council for the Development of Cambodia (CDC) or Sub-Committee on Investment of the Provinces Municipalities (PMIS). The CDC is expected to act as One-Stop Shop for investors and obtain all necessary licenses from relevant ministries on behalf of the investment applicant. Recently export oriented garment industry has been developed under this scheme.

Incentives for QIP are as below.

a. Profit tax exemption or special description (selective)
b. 100% exemption of export tax
c. Duty free import as shown in the below table

Table 8.3.1 Duty- Free Import for QIPs

Type of QIP	Commodities to be imported free of duty
Domestically oriented QIPs	Production equipment, production input and construction materials
Export oriented QIPs (except those which elect or which have elected to use the Customs Manufacturing Bonded Warehouse mechanism)	Production equipment, construction materials, raw materials, intermediate goods and accessories
Supporting Industry QIPs	Production equipment, construction materials, raw materials, intermediate goods and production input accessories

Source: Cambodia Investment Guidebook

Minimum condition required for the provision of incentives as QIP is shown in the below table.

Table 8.3.2 Minimum Conditions Required for the Provision of Incentives

Fields of Investment	Requirement for Investment
Supporting industry, which has its entire production (100%) supplying export industry	US$100,000 or More
Production of animal feed	US$200,000 or More
Production of leather products and related products Production of all kinds of metal products Production of electrical and electronic appliances and office materials Production of toys and sporting goods Production motor vehicles, parts and accessories Production of ceramic products	US$300,000 or More
Production of food products and beverages Production of products for textile industry Production of garments, textile, footwear and hats Production of furniture and fixtures that do not use natural wood Production of paper and paper products Production of rubber products and plastic products Clean water supplies Productions of traditional medicines Freezing and processing of aquatic product for export Processing of any kind of cereals and crop products for export	US$500,000 or More
Production of chemicals, cement, agriculture fertilizer and petrochemicals Production of modern medicines	US$1,000,000 or More
Construction of modern market or trade center	US$2,000,000 or More More than 10,000 m2 Adequate space for car park
Training and educational institutes that provide training for skill development, technology or poly technology that serves industries, agriculture, tourism, infrastructure, environment, engineering, sciences and other services	US$4,000,000 or More
International trade exhibition center and convention halls	US$8,000,000 or More

Source: Cambodia Investment Guidebook

(3) Special Economic Zone (SEZ)

Special Economic Zone (SEZ) scheme was introduced in December 2005. QIPs located in a SEZ can receive incentives as other QIPs under "Law on the Amendment to the Law on Investment" and enjoy one stop service which is expected to drastically reduce time, cost and procedures concerning establishment and operation of projects.

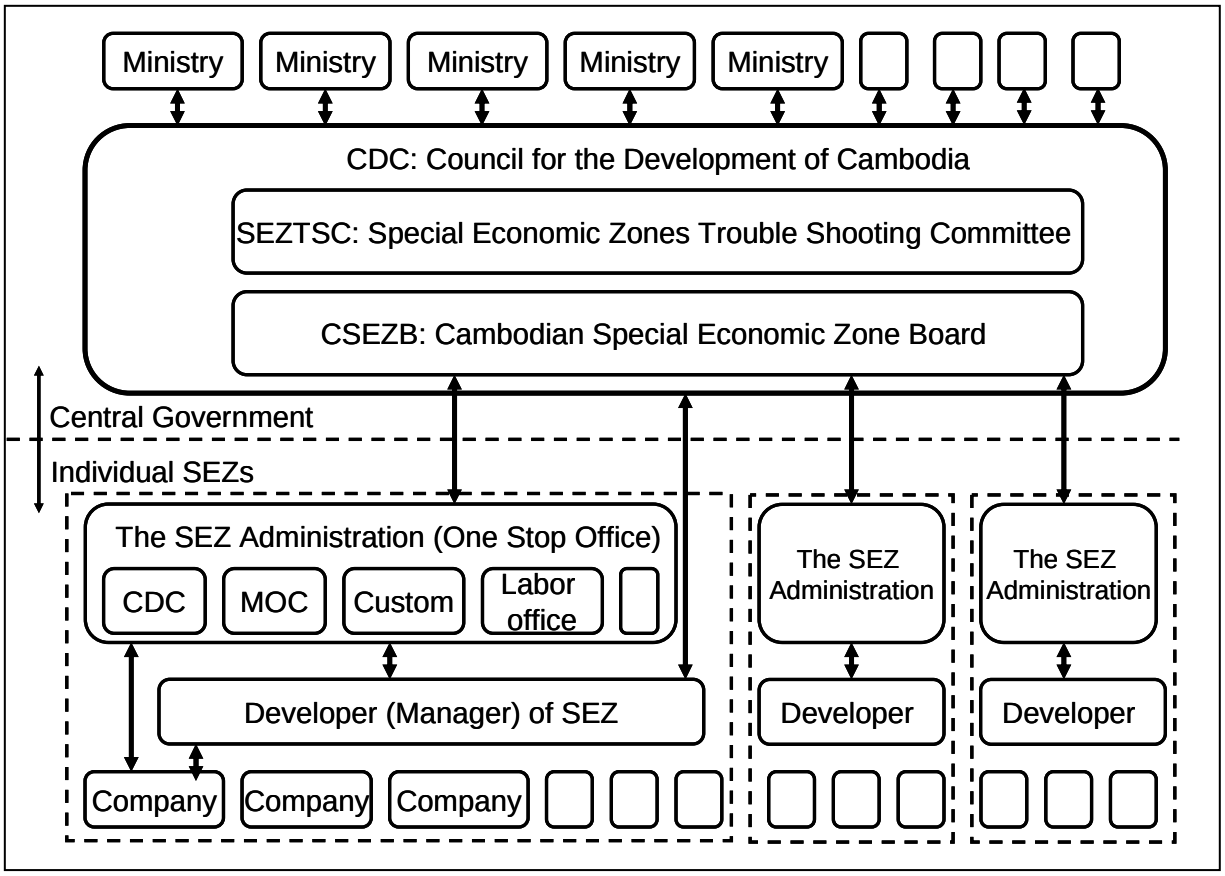
A SEZ needs to have more than 50 ha of land constituted by General Industrial Zone (GIZ) and/or Export Processing Zone (EPZ). Each SEZ shall have a Production area which may have a Free Trade Area, Service Area and so on. Management office building and Zone Administration office should be developed and all necessary infrastructures must be provided. EPZ and Free Trade Area must be fenced out.

As governmental organization related to SEZs, the Cambodian Special Economic Zone Board (CSEZB), was established within the CDC to provide one stop service. The CSEZB establishes the SEZ Administration in each SEZ as a one stop service organization in the SEZ.

In addition, Special Economic Zones Trouble Shooting Committee (SEZTSC) is established within

the CDC to quickly settle all issues in the SEZs beyond the competence of the SEZ Administration or the CSEZB.

On the other hand, developer and manager of SEZ also have an important role to secure a certain amount of area for SEZ in a good location site and to develop necessary infrastructures such as factory space, road, electricity, water, administration office and provide these to tenant companies at a competitive price. It's also an important role of developer and manager of SEZ to promote good relations between governmental organizations such as the CDC and tenant companies. Developer and manager of SEZ should arrange true one stop services provided to tenant companies.



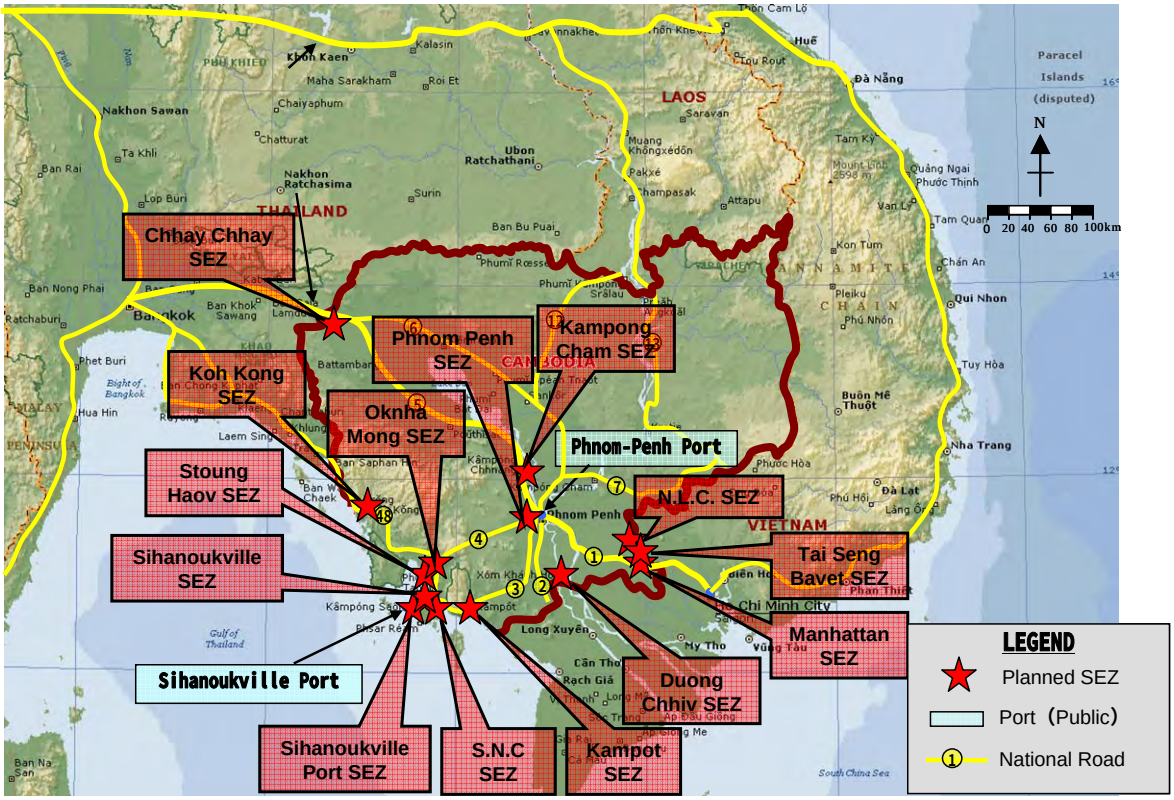
Source: JICA Study Team

Figure 8.3.1 Organization Structure for SEZs

About 14 SEZs seem to be planned by developers. Most of these SEZ are planned near a border with Vietnam or Thai or at a coastal area, which are suitable for export oriented companies. Among the SEZs planned at the coastal area, some are located at or around Sihanoukville Port. Some other SEZs are planned integrally with new port developments, although the viability of those plans may be not high. At this time, only one SEZ, the Manhattan SEZ, has started operations. Therefore it is uncertain whether SEZs will contribute to the promotion of FDI by high quality one stop service or not.

Manhattan SEZ, which is the only SEZ operating now, is established by Manhattan Development Co., LTD at Bavet close to a Vietnam border, although it isn't approved by the CDC yet. As of February 2007, it has three tenants in the field of racing bicycle, screw and footwear and provides jobs for around 1350 people. The SEZ Administration has branch of CDC, MOC, Customs,

CAMCONTROL, and Labor office and provide on stop service to tenant companies. Advantages of this SEZ seem to be its close proximity (80 km) to Ho Chi Minh, relatively low land rent and stable supply of electricity from Vietnam.



Source: JICA Study Team based on the data of CDC

Figure 8.3.2 Planned SEZ and Transport Infrastructure

8.3.2 Present Situation of Special Economic Zones in Neighboring Countries

South-east Asian countries such as Thai, Malaysia and Vietnam have established Special Economic Zones to promote FDI. China also established Special Economic Zones at seaboard to create an economic development base under a market economy. Incentives including tax preference and simplification of procedures are usually given to these zones. Advanced cases of Thai and Vietnam are as below.

(1) Special Economic Zone in Vietnam

1) Outline of Investment Incentive Scheme in Vietnam

In Vietnam industrial zones and export processing zones have been established across the country to promote FDI and domestic investment from 1991. Under the scheme around 150 industrial estates with a total area of 32,000 ha have been established and contributed widely to the economic development of Vietnam by introducing 2,500 FDI projects with investment of 24billion USD and 2,700 domestic projects with investment of 9 billion USD.

Meanwhile a new investment law which defines encouraged areas and investment sectors came into effect. Industrial zones, export-processing zones, and so on are being promoted. There are over 100 industrial zones to target companies specialized to industrial production and supporting companies providing services to industrial production. Export processing zones are established in Hanoi, Hai-phong, Ho Chi Minh, Da-nang and so on to target processing companies specialized to

export products and supporting companies providing services to export oriented product manufacturing and export activities.

Investment in the following sectors is being encouraged
a) The manufacture of new materials and production of new energy, manufacture of high-tech products, bio-technology, IT and mechanical manufacturing
b) The breeding, rearing, growing and processing of agricultural, forestry and aquaculture products, production of salt, and creation of new plant and animal varieties
c) The use of high technology and advanced techniques, protection of the ecological environment, and investment in research, development and creation of high-technology
d) Labor intensive industries
e) The construction and development of infrastructure facilities and important industrial projects on a large scale
f) The professional development of education, training, health, sports, physical education and Vietnamese culture
g) The development of traditional crafts and industries
h) Other manufacturing and service sectors that require encouragement

Investment incentive regarding income tax, import tax and VAT and so on is decided based on the combination of located area and investment sector as shown in the figure below.

Table 8.3.3 Investment Incentives of Corporation Income Tax in Vietnam

Type of project	Corporate Income Tax		Remittance Tax
	Tax rate	Tax holiday	
IP and EPZ Infrastructure development project	- 10%: within the first 15 years since the commencement of production; - 28%: afterwards	- tax holiday within 4 years since earning profits ; - 50% reduction within 7 years afterwards	None
Manufacturing projects in IPs and EPZs	- 15% : within the first 12 years since the commencement of production; - 28%: afterwards	- tax holiday within 3 years since earning profits - 50% reduction within 7 years afterwards	None
Service projects in IPs and EPZs	- 20%; within the first 10 years since the commencement of production; - 18%: afterwards	- tax holiday within 2 years since earning profits - 50% reduction within 6 years afterwards	None
Common projects in EZs	- 10%: within the first 15 years since the commencement of production; - 28%: Afterwards	- tax holiday within 4 years since earning profits - 50% reduction within 9 years afterwards	None
Important projects in EZs	- 10% applied to the whole duration of a project	- tax holiday within 4 years since earning profits - 50% reduction within 9 years afterwards	None

Source: Ministry of Planning and Investment in Vietnam

Table 8.3.4 Investment Incentives of other Taxes in Vietnam

Import Tax			Value Added Tax (VAT) and Luxury Tax				Personal Income tax
Raw materials and materials		Commodities					
not yet domestically produced for manufacturing in IPs and EPZs	for manu-facturing in EZs	to form fixed assets for all projects in IPs, EPZs and EZs	Goods imported into EPZs and/or imported by export processing enterprises	Means of public transportation including bus and electric tramcars in IPs and EPZs	Materials and goods for manufacturing which are imported into Duty Free area in EZs	Case-by-case	Experts and Employees in EZs
Tax holiday within 5 years		Tax holiday for the whole duration of project	VAT 0%		VAT: 0%, Luxury tax: 0%	VAT repayment	50% reduction

Source: Ministry of Planning and Investment in Vietnam

2) Industrial Zones in Ba Ria – Vung Tau Area

Industrial zones with a total area of 6,000 ha will have been licensed by 2010 in Ba Ria – Vung Tau area including Cai Mep – Thi Vai which has several deep sea container terminal projects under construction. Many industrial zones are located just behind ports (see below figure).

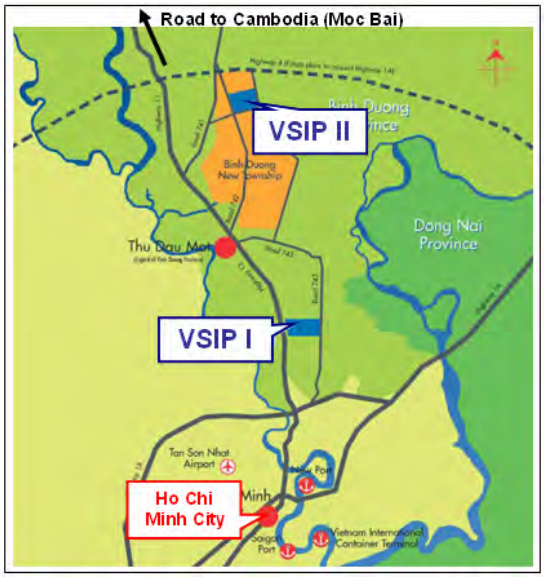
Source: Ba Ria – Vung Tau Industrial Zones Authority (BIZA)

Figure 8.3.3 Industrial Zones in Ba Ria – Vung Tau Area

3) Vietnam Singapore Industrial Park

Vietnam Singapore Industrial Park (VSIP) located at suburbs of Ho Chi Minh City started to operate in 1996 as one of the earliest industrial estates in Vietnam. VSIP was started based on an agreement between the prime ministers of Vietnam and Singapore. VSIP has similarities to the Sihanoukville Port SEZ below; a) one of the earliest industrial estate projects in late-industrializing countries of ASEAN region, b) project assisted by foreign government. Therefore case of VSIP serves is good example for the Sihanoukville Port SEZ. Outline of VSIP is as below.

Vietnam Singapore Industrial Park JV Co. Ltd., which is developer and operator of VSIP, was established as a joint venture between a Singaporean consortium having 51% of the stock led by public enterprise "SembCorp" and a Vietnamese state-owned enterprise having 49% of the stock. At first VSIP I with an area of 500 ha located at 17 km distance of Ho Chi Minh City came into operation in 1996. However VSIP I was able to introduce only a few tenants before 2000 partly due to the Asian currency crisis. After that FDI to Vietnam began to accelerate and VSIP I is currently full. 70 % of tenant projects in VSIP I are already operational. Total investment of operational projects is around 11.5 billion USD. Number of employees of these projects is around 41 thousand.



Source: Vietnam Singapore Industrial Park

Figure 8.3.4 Location of Vietnam Singapore Industrial Park

Following VSIP I, VSIP II was established 32 km from Ho Chi Minh City. Phase 1 area of VSIP II is 345 ha. Sale[*1)] of the Phase 1 area started in 2005 and 80 % of the area is already sold. Phase 2 of VSIP II with an area of 1,000 ha is now under construction. Large scale logistic park with an area of 60 ha is planned to be developed in the Phase 2 area. This logistic park will be the largest one in the south part of Vietnam.

[*1)] To be exact, it is long term rental contract until 2055. However leaseholder has relatively strong right as being able to resale the right to a third person at actual value.

Table 8.3.5 Outline of Vietnam Singapore Industrial Park

Total area	1,845 ha
VSIP I	500 ha
VSIP II Phase1	345 ha
VSIP II Phase2	1000 ha
Rental Rate (VSIP I)	45USD /m2/50year
Rental Rate (VSIP II)	32USD /m2/50year
Maintenance Fee	0.04 USD/m2/month
Electricity Expense (VSIP II)	445VND-1775VND/kwh
Number of Factories (VSIP I)	307 Factories
Investment Fund (VSIP I) *	11.5 billion USD
Number of Employees (VSIP I) *	41,000 Employees
Distance from Ho Chi Minh City	17km(VSIP I), 32km(VSIP II)

*) Result of factories already operated (70% factories are already operated in VSIP I)

source: Vietnam Singapore Industrial Park

It is inferred from the above situation that the first step of developing an industrial estate was very hard, because foreign companies hesitate to advance to an unknown country. Accordingly there ware only a few tenants for the first several years. However tenant number increased rapidly and an industrial estate of 500 ha scale became full after solidifying its reputation as an attractive investment area. Therefore for a first industrial estate to be successful, full support under a stable framework is required. In the case of Vietnam Singapore Industrial Park, both governments assisted in the project as shown below.

1) Assistance from Vietnamese government

Management board dedicated for VSIP is established in the industrial park. The board was constituted by loaned officials from related administrative organizations and supported tenant companies regarding investment license, tax practice, labor difficulties and so on. Usually, there is only one authority in one province or city which has the same function as the board in VSIP. So this is special treatment for VSIP by the government.

At the same time, custom office is established in the industrial park. Customs procedure can be finished in the industrial park.

2) Assistance from Singaporean government

Singaporean government displayed clear signs of strong support policy to VSIP by investing majority capital to the company of development and operation of VSIP.

And a technical training center of local provincial government was established next to VSIP by assistance of the Singaporean government. Tenant companies are able to preferentially employ graduates of the center. Curriculum of the center follows standards of Singaporean institute. Singaporean government provides necessary equipment and trains local lecturers.

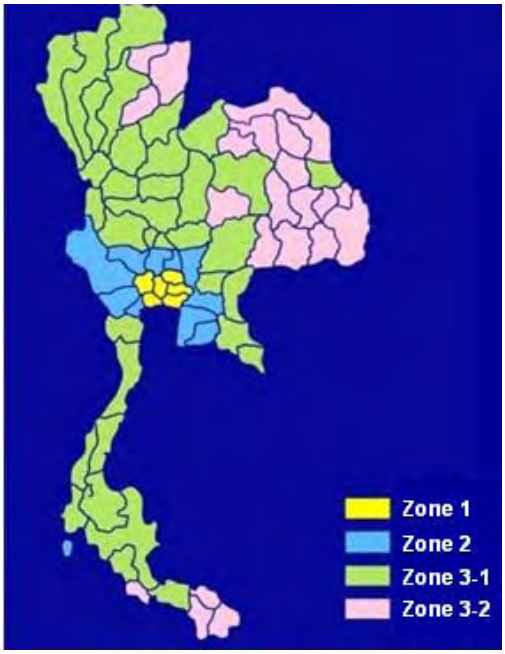
(3) Special Economic Zone in Thailand

1) Outline of Investment Incentive Scheme in Thailand.

Over 50 industrial parks are established to accept incentives in Thailand. There are three types of industrial parks; first one is the type that “IEAT: Industrial Estate Authority of Thailand” develops and operates, second one is that other governmental organization or private company develops and IEAT and developer operate jointly, third one is that private company develops and operates getting a license of “BOI: Board of Investment ”. The first and second types which are operated by IEAT

are known as “Industrial Estate” in Thailand.

BOI defines encouraged investment sectors and gives incentives to projects meeting standards of sector, investment amount and so on. Incentives are different in each of the 4 zones shown below figure. BOI gives generous incentives to distant zones from Bangkok aiming at balanced development of the nation.



Source: BOI

Figure 8.3.5 Divided Investment Promotion Zone in Thailand

Incentives for companies inside and outside of industrial parks in each zone are shown in the table below.

Table 8.3.6 Granting Tax and Duty Privileges for Investment Promotion Zone in Thailand

Granting Tax and Duty Privileges	Zone 1		Zone 2		Zone3 36 Provinces		Zone 3 22 Provinces	
	Industrial Estate/ Promoted Industrial Zone	Outside Industrial Estate	Industrial Estate/ Promoted Industrial Zone	Outside Industrial Estate	Industrial Estate/ Promoted Industrial Zone	Outside Industrial Zone	Industrial Estate/ Promoted Industrial Zone	Outside Industrial Estate
Import Duty on Machinery	50% Reduction	50% Reduction	Exemption	50% Reduction	Exemption	Exemption	Exemption	Exemption
Corporate income Tax exemption	3 years	-	7 years*	3 years	8 years**	8 years	8 years	8 years
Import duty on raw or essential materials used in manufacturing of export products	Exemption for 1 year	Exemption for 1 year	Exemption for 1 year	Exemption for 1 year	Exemption for 5 year	Exemption for 5 year	Exemption for 5 year	Exemption for 5 year
Double deduction from transportation, electricity and water costs	-	-	-	-	√	-	√	√
50 percent reduction of corporate income tax for 5 years	-	-	-	-	√	-	√	√
Deduct the Project's infrastructure installation or construction cost	-	-	-	-	√	√	√	√
Duty on raw or essential materials used in the manufacturing of domestic sales	-	-	-	-	75% reduction for 5 year* with year-by-year approval***	-	75% reduction for 5 year* with year-by-year approval	-

Remark
√ = shall be granted privileges
- = shall not be granted privileges
* = (for all applications submitted during January 1,2005 to December 31,2009)
** = Including Laem Chabang Industrial Estate/Promoted Industrial Zone in Rayong Province
*** = Excluding Laem Chabang Industrial Estate/Promoted Industrial Zone in Rayong Province

Source: BOI

In addition, some industrial parks have Export Processing Zones other than General Industrial Zones. It is required for tenant companies in EPZ to export at least 40% of their products. EPZ enjoys additional incentives as follows.

Exemption of import and export duties, value added tax (VAT), excise tax for the following items;
a) Machinery, equipment and accessories
b) Raw materials
c) Semi-finished goods

d) Capital goods

2) Laem Chabang Industrial Estate

Laem Chabang Industrial Estate located just behind Laem Chabang Port was established in 1992, around the same time as establishment of the port. Developer and operator of the estate is IEAT. Laem Chabang Industrial Estate has similarities to the Sihanoukville Port SEZ as below; a) located just behind or inside port, b) distance from its capital city. Outline of the estate is given in the table below.

Table 8.3.7 Outline of Laem Chabang Industrial Estate

Application Zone	GIZ, EPZ
Total area	3,556 Rai
GIZ	1,824 Rai
EPZ	979 Rai
Public utility are and others	753 Rai
Rental rate (GIZ)	145,200 Baht/rai/year
Rental rate (EPZ)	181,500 Baht/rai/year
Maintenance Fee (GIZ)	1,000 Baht/rai/month
Maintenance Fee (EPZ)	1,200 Baht/rai/month
Number of Operating Factories	140 Factories
GIZ	59 Factories
EPZ	81 Factories
Investment Fund	70,000 million Baht
Export Value	120,000 million Baht
Number of Employees	60,000 Employees
Distance from Bangkok	125 km
Distance from Seaport	1 km from Laem Chabang

1Rai = 1,600 sq.m
Source: IEAT

Source: IEAT

Figure 8.3.6 Layout of Laem Chabang Industrial Estate

Though there are only a few tenants in the early years, the number of tenants increased in step with growth of the port. It became full in 2004. Major sectors of tenants are shown below.

Table 8.3.8 Producing Sectors of Laem Chabang Industrial Estate

Producing Sector	Percentage
Motor vehicle / Car component	21.7%
Computer / Electronic equipment	20.0%
Kitchenware / Equipment / Plastic product	14.2%
Warehouse industry and Service & Transportation	10.9%
Textile industry / Pain / Paper for printing	8.3%

Source: IEAT

There is “one stop office” including BOI, custom and port. According to an officer of the estate, export container number from the estate is 2,500 to 3,500 TEU per month recently.

(3) Summary of Advanced Cases in Neighboring Countries
Summary of findings of Vietnam and Thai cases are as below.
a) Special economic zones are set up just behind deep sea container ports such as Cai Mep Port and Laem Chabang Port.
b) Industrial estates spanning an area of 500 ha were developed as the first step.
c) Initially, promoting the industrial estate was very difficult because foreign companies were hesitant to advance to an unknown country. Accordingly, there were only a few tenants for the first several years. However tenant number increased rapidly and the industrial estate became full after its reputation as an attractive investment area was established.
d) For a fledgling industrial estate to be successful, full support under a stable framework is required. In the case of Vietnam Singapore Industrial Park, both governments assisted in the project.
e) Export container volume from an industrial estate with 570 ha is 2,500 to 3,500 TEU per month in the case of Laem Chabang Industrial Estate.
f) There is no systematic coordination between the port and adjoining industrial estate in Vietnam and Thai. Therefore the Sihanoukville SEZ can have an advantage if a solid organizational relationship is established between the Port and the SEZ.