Chapter 12 Master Plan for Port Sector

12.1 Basic Direction on Port Development and Use in Cambodia

12.1.1 General view on circumstance surrounding port sector in Cambodia

To form the Basic Direction on Port Development and Use in Cambodia, it is first necessary to identify the circumstances surrounding Cambodian ports as follows:

National Land Structure
Cambodia's land area covers 180 thousand km2 and is characterized by plains in the central part of the country as well as Tonle Sap Lake, the Bassac River and the Mekong river which crosses the country from north to south. On the other hand, the marginal area forms wooded high-lands. The southwest part of the country faces the Gulf of Siam.

National Life
Population amounts to approximately 14 billion and is increasing at rate of more than 2% per year. The population is concentrated in the central plain including the capital city Phnom Penh and many people in rural areas are in poverty.

The population is forecasted to reach 18 billion in 2020.

Economy
General Domestic Products (GDP) has increased at rates of 11.2% on average for these five years and amounts to approximately US$6,200 million in 2005. Per Capita is approximately US$450 and low among ASEAN countries.

Since the end of the war in 1991, Cambodia joined the world economy with its affiliation to ASEAN in 1999 and WTO in 2004. Cambodian Economy has been affected by the scheme of Common Effective Preferential Tariff and movements on free trade agreements in these years.

Development of Export Processing Zone and promotion of foreign direct investment and private sector development etc have been progressing.

GDP in 2020, based on a growth rate of 6-8%/year, shall reach US$17 million, 2.75 times that of 2005. Per Capita is estimated to be US$950, more than twice the current level.

Industry
By sector, GDP share of agriculture, fisheries and forestry in 2005 is 34%, that of Industry is 27% and that of Services is 39%. GDP value of each sector is steadily increasing.

In the industrial sector, share of textile, garments and footwear is approximately 50%. Share of construction is 25%. In the service sector, share of trade in 2005 is 23%. That of hotels and restaurants is 11% and that of transport and communication is 17%.

GDP of each sector is expected to show large growth in future.

Trade
Both exports and imports have seen double-figure growth in recent years and the value of exports has reached US$30 billion while that of imports US$25 billion. But according to a certain report, there may be uncounted import goods and there may in fact be a trade deficit.

Garment industry accounts for the majority of exports while products processed from materials

imported from China, Taiwan, Hong Kong and Korea are exported to mainly USA and EU countries.

Both the import of materials for industry and the lives of citizens as well as export of goods produced in Cambodia will continue to increase from now on because of improved living standards and diversification and expansion of industrial activities.

International Distribution
Import/Export cargo are transported via the ports of Sihanoukville and Phnom Penh as international trade ports and small ports owned and managed by provinces, municipalities and the private sector. Some cargo is transported by road from/to Thailand, Laos and Vietnam and via air.

Import and export container cargo volume through both international ports has been increasing and especially the growth rate of containers through Phnom Penh Port is noteworthy.

In future international distribution will expand and import and export container and bulk cargo will increase under a rational role sharing between land and sea transportation.

Natural Environment and Heritage
Cambodia has good natural environmental resources such as the Mekong River and Coast of Gulf of Siam as well as historical resources such as Ankhor-Watt (designated as a World Heritage). Tourists from overseas enjoy them and the number of tourist will increase.

Request for conservation and appropriate use of these resources shall be strong in future.

Neighboring Countries
Cambodia, Laos and Vietnam are connected by the Mekong River and have close mutual relationships. Further these countries (and Thailand as well) have had even closer ties in recent years because of the development of cross-border- transportation.

On the other hand exchange among Cambodia, Thailand, Singapore and Malaysia through sea transportation on Gulf of Siam has also developed.

Economic relation among those countries will be strengthened more and more by expansion of the global economy; economic activities in one country will affect the other countries' economy much more. For example, development of ports in the southern part of Vietnam will affect Cambodian ports.

12.1.2 Basic Concept for Port Development and Use

On the basis of the above circumstance and national policy, the Basic Concept for Cambodian Port Development and Use which consists of the following items is identified for formulating National Port Policy.

1) To contribute to poverty reduction and realization of satisfactory national life
   To supply necessary materials for national life with low cost and stability
   To promote traditional industries such as agriculture
   To create job opportunities by promoting port business and port related industries

2) To support new industrial investment and promoting industrial activities
   To help industries by providing efficient supply chain through port
   To create new industries united with port
   To create export industries using resources which are produced in Cambodia

To promote tourism industries
To create added value in economic special zones
To accelerate foreign investment and private sector development

3) To promote well-balanced national development including environmental conservation through making use of the potential of each region
To develop ports as a core of regional development
To develop Port of Sihanoukville as a deep sea port
To develop Port of Phnom Penh as a river port located in the capital city
To develop other ports by making the most of their respective features

4) To make efficient use of the limited resources
To make the most of existing infrastructures and invest for new infrastructures most efficiently under limited resource
To construct port facilities timely according to a stage plan
To preserve and make use of the good natural environment and limited national land and sea as national resources
To provide opportunity for making use of the talent of Cambodian people

The National Port Policy formulated on the basis of this basic concept shall become a strategic measure for achieving the goal of the national policy because its contents have a close relation with mentioned in Rectangular Policy (Fig-12.1.1).

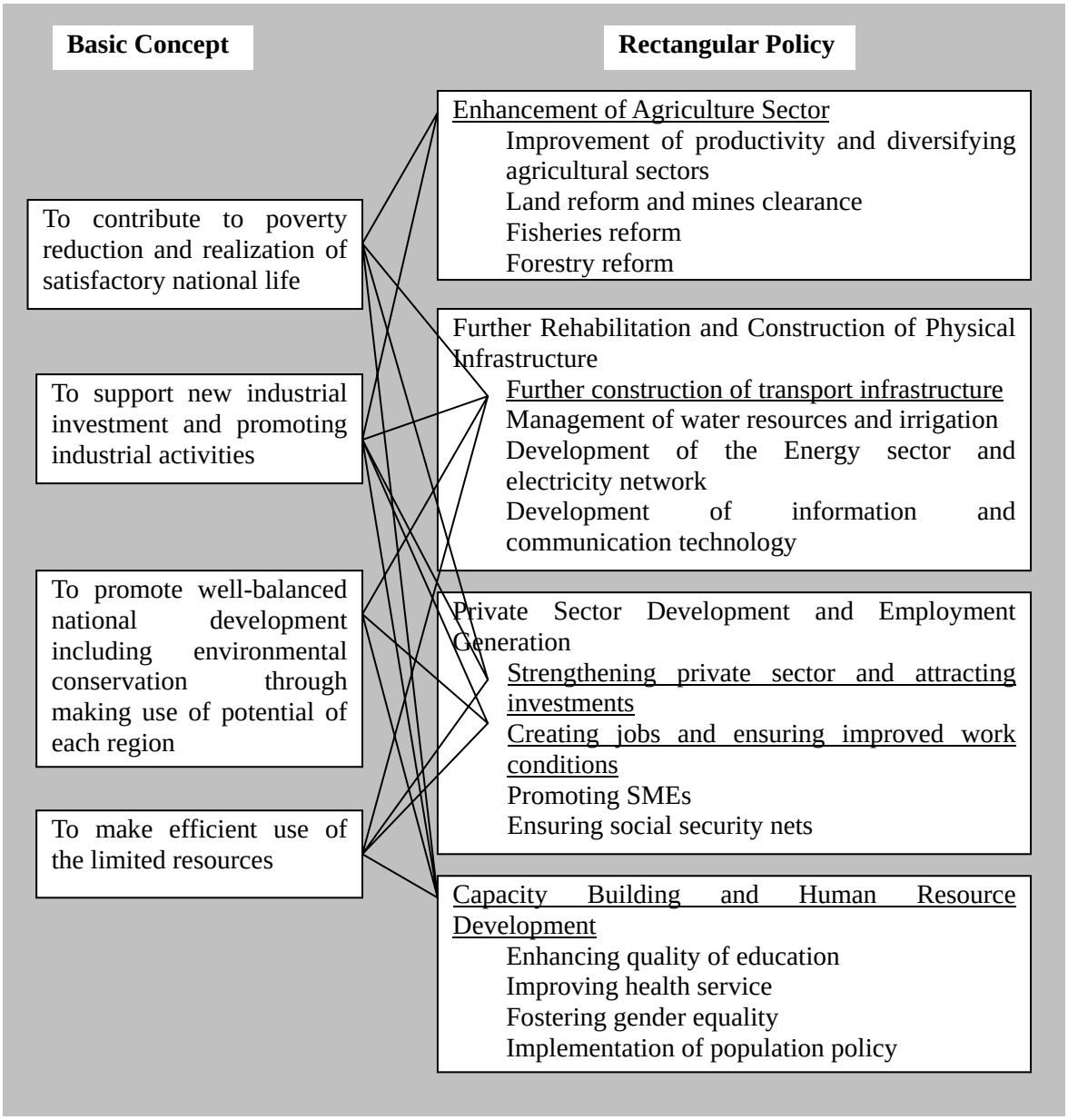


Figure-12.1.1 Basic Concept and Rectangular Policy

12.1.3 Target of Port Development and Use

In order to enhance international competitiveness of Cambodian ports and in turn to achieve economic growth and land development of Cambodia, it is necessary for the port sector of Cambodia to set a clear target and for relevant parties to make efforts to reach the target together. Port sector in Cambodia shall aim at the target in the following manner:

1) Strengthening Function as Center of International Distribution
In order to support the Cambodian economy and national life, RGC encourages the development of internationally competitive ports which can result in the steady flow of import and export goods at low cost to Cambodian people and industries. To keep pace with the development of container ports in neighboring countries such as southern Vietnam and Thailand, the deep draft container seaport which larger vessels can use and the river port which increases container handling capacity in the Mekong River shall be improved and operated efficiently. Through these measures, smooth handling of increasing containers in Cambodian ports shall be secured and connection with the international container transportation network of Cambodian ports shall be enhanced. Reliable and efficient transport from/to ports in their hinterlands shall be realized by utilizing inland container depots.

In order to cope with increasing demand for exports of resources produced in Cambodia and imports of raw materials for industries as well as daily necessities, bulk terminals equipped with a sufficiently deep quay for large vessels, equipment with high efficiency and sufficient area for cargo handling and storage shall be developed. When plural types of cargo are handled at one terminal, necessary measures for efficient use shall be prepared considering characteristics of cargoes.

Roads and waiting area near ports for trucks to/from ports shall be secured in order to improve conditions of transportation to/from ports. Relevant organizations shall make efforts to increase capacity of road transportation and realize smooth transportation together. In addition, transportation of cargo by railway shall be introduced making use of its advantage when the railway network and its operation are improved.

Cross border transportation through roads is foreseen to increase because of improvement of roads and deregulation on transportation across borders. Under such a condition, port sector shall make efforts to enhance the function of ports as cargo transport bases taking advantage of sea transportation.

Ports of Sihanoukville and Phnom Penh have played the role of international distribution centers in Cambodia and shall continue to play these roles in future. On the other hand, foreign trade through private ports is increasing and private ports are expanding their capacities. Further developments of new big ports are planned by the private sector. A rational allocation of the roles of these ports is necessary by considering the characteristics of each port and the appropriate use of resources. Through cooperation and competitiveness among these ports, ports in Cambodia shall enhance their function as a whole.

2) Providing Efficient Port Service
In order to enhance international competitiveness responding to requests of port users, ports shall improve efficiency of transportation and convenience of port use.

In cooperation with relevant organizations, ports shall provide international-standard service taking care of improving working conditions in ports. Then, ports shall make efforts for raising the efficiency of cargo handling and providing efficient service and simplifying and unifying port procedures such as documentation in port entry/leaving procedures with IT technology such as

EDI.

Relevant parties shall make efforts to improve the administrative work environment, use information on port in common and also work together on port promotional activities.

3) Development of Ports as Infrastructures which Support National and Regional Development
Ports shall make efforts to improve circumstance for supporting activities of industries coping with requests from distribution and processing industries, industries that import their raw materials through ports and industries that export manufacturing products which make use of advantage of direct connections to foreign markets. Further, ports shall prepare appropriately for coping with request by new industry such as supply base for offshore oil development.

Ports are essential infrastructure for Special Economic Zones and cooperation between both shall produce multiplier effect. Therefore SEZ shall be developed and operated in cooperation with ports.

Port shall provide comfort and convenient terminals for passenger vessels and cruise vessels coping with the tourism demand that is expected to increase from now on.

Local ports shall play roles to support life and industries in their region and shall provide necessary service as a center of safe and reliable sea/river transportation network.

Ports shall timely and flexibly cope with requests from new industry and shall be developed under a long-term vision considering the potentiality of future development.

4) Securing Port Security and Preservation of Environment
Safety navigation and use of water area shall be secured subject to the rules such as international agreements under cooperation of relevant organizations. In particular, special care shall be taken for vessels transporting dangerous cargo and layout of dangerous cargo in ports and necessary disaster prevention measures shall be arranged.

For improvement of reliability and safety of international sea transportation, the hard and soft measures necessary for securing security shall be taken to comply with the SOLAS convention.

In order to preserve the environment in and along sea and river for the next generation, environmental measures in ports will be taken as necessary.

Environmental assessment shall be conducted at the planning stage and efforts to avoid and lessen the impact to the environment shall be made at the implementation stage. If necessary, countermeasures for preservation of environment shall be taken and monitoring shall be implemented.

5) Port Development and Use based on a Concept of Comprehensive Development and Use of Coastal Zone
Ports shall base development and use on a concept of comprehensive development and use of coastal zone that aims at harmonization among many uses in the coastal zone.

Port shall make efforts to achieve coexistence with the region where the port is located. Especially port shall avoid conflict with urban activities such as interaction between traffic in urban and from/to port as much as possible.

6) Efficient and Effective Investment for Port Development
Existing property should be used effectively through efforts for maintaining port facilities in good

condition and reforming old facilities timely.

New investment shall be implemented efficiently through grasping requirement in the region and future demand of cargo and coordinating with other related plans and projects. In order to get early effect by investment, ports shall implement stage plans and open the facilities partially as necessary.

Ports shall make efforts to create an investment atmosphere that will be attractive to the private sector. In the case of private investment, necessary coordination between public and private sectors shall be made in order to avoid disorder and irrational investment.

7) Participation on various sectors and Role-sharing for Port Development and Use
Ports should be developed and operated under rational role-sharing between public and private sectors.

Ports should contribute to promote originality of each region in cooperation with relevant organizations such as local public entities, port users, citizens and NPO.

8) Strategic Development of Main Ports
(a) Port of Sihanoukville
Sihanoukville Port shall continue to play its leading role as the one deep sea port in Cambodia.

With the opening of the new container terminal on schedule and through providing international-level service to calling vessels and shippers, Sihanoukville Port shall aim at becoming an international container port and make efforts to enhance connection with international container trunk lines.

Sihanoukville Port shall also play a role as an industrial port and contribute to create job opportunities in the region as well as promote a balanced national development.

In case that the layout and size of present facilities is not sufficient to meet new demands, a new Sihanoukville Port shall be developed at an appropriate place based on the concept of comprehensive development and use of coastal zone

(b) Port of Phnom Penh
The function of Phnom Penh Port shall be enhanced by maximizing its advantageous location in Phnom Penh city and overcoming disadvantages of navigation restraints and conflict with urban activities.

It is difficult to find sufficient space for port development in/near the present site of Phnom Penh Port and a port at a new site shall be developed taking into consideration river conditions such as water depth, stream, stability of its bed and erosion of banks, access transportation conditions such as road network, access to Phnom Penh City and distance to a border between Vietnam, land conditions such as area for development and land use surrounding area and environmental conditions etc.

12.1.4 Priority Projects

In order to reach the target effectively and efficiently, it is important for a port sector to prioritize important projects and to steadily implement the projects. Priority shall be given to the following projects.

1) Efficient Operation of New Container Terminal in Port of Sihanoukville

2) Development of Port of Sihanoukville according to Long-term Plan
3) Development of Port of Phnom Penh
4) Appropriate Development and Use of Coastal Zone
5) Efficient Port Management
6) Securing Port Security.
7) Development of SEZ at the Port

12.1.5 Arrangement of Prerequisite Conditions for Achieving Target

1) Authorization, Legal Scheme and Organization
On the basis of this direction of port development and use, the national basic policy shall be formulated as an authorized governmental policy through detailed studies on matters to be described in the policy. The policy shall function as a guideline of port development and use in Cambodia with descriptions of the target and priority projects etc. This national port policy shall be revised according to the socio-economic situation.

In addition, legal schemes and organizations which support and execute the policy are necessary to be arranged. A new law which covers development/use and management/operation on Cambodian ports overall shall be established as a basic law on ports through detailed study on the present legal scheme on ports in Cambodia etc. On the other hand, organizations on port administration and port management shall be enhanced together with fostering talent in the field of ports.

2) Improvement of Port Statistic System
Having a precise understanding of the current situation of overall port activities in Cambodia is prerequisite to formulating the basic policy. In addition, monitoring port activities is necessary for reaching the target of the policy. Further basic data is also useful for port promotion. It is important for the port sector to collect basic data on port activities regularly and arrange them as reliable national statistics.

Some data may be collected in all ports and some data in major ports. For all ports in the country, port statistics shall cover the following data: Number of ship calls by categories of ship size and ship type, Number of passengers, Commodity-wise cargo throughputs by categories of import, export, domestic inward and toward cargo, Number of cars, buses, trucks and other vehicles transported by ferry boats and PCC and Number of containers by categories of laden or empty, import or export or transshipment etc. For major ports more detailed information shall be required: Commodity-wise imported cargo tonnage and TEU by countries/ports of origin, Commodity-wise exported cargo tonnage and TEU by countries/ports of destination, Commodity-wise domestic inward cargo tonnage and TEU by ports of origin, Commodity-wise domestic outward cargo tonnage and TEU by ports of destination and Transshipment cargo tonnage and TEU by ports of origin and by ports of destination etc.

It is necessary to establish an institutional scheme on port statistics in order to collect precious data and arrange reliable statistics.

3) Cooperation among relevant parties
Cooperation among national government, port authority/port management body, private enterprise, academics, local people, NPO and self effort by each party shall be important.

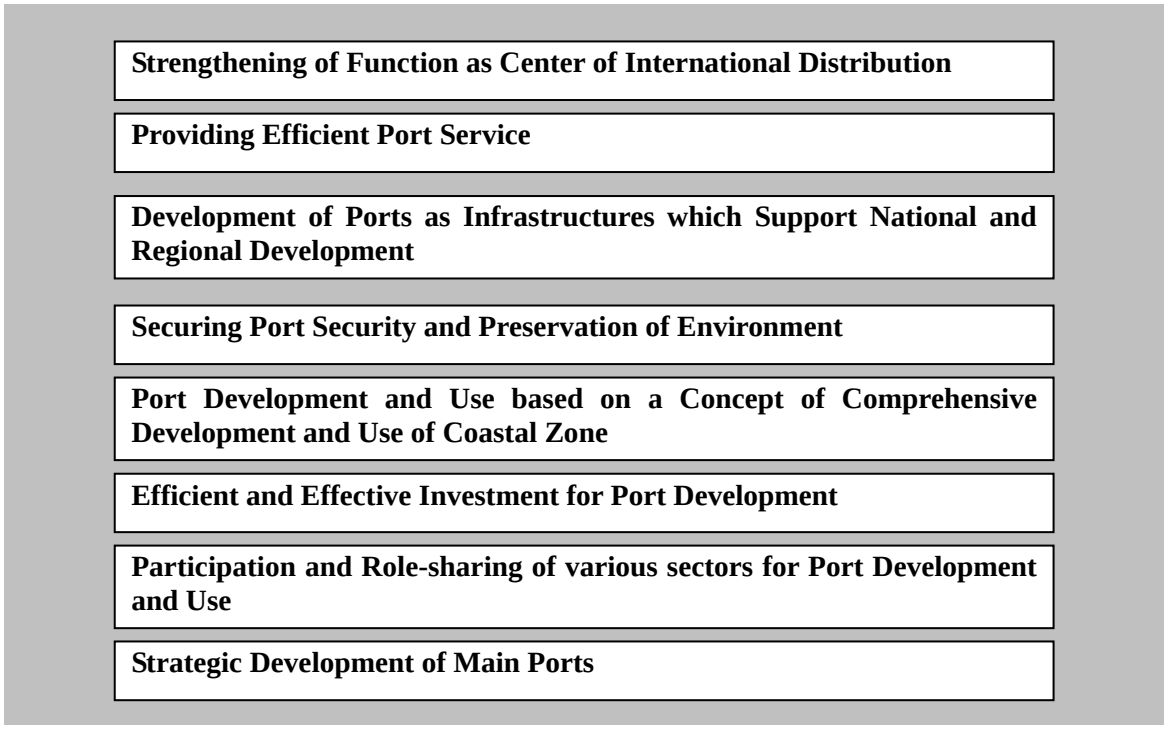


Figure 12.1.2 Target of Port Development and Use

12.2 Development and Promotion of Sihanoukville Port

12.2.1 Operation of New Container Terminal

(1) Field of Technical Cooperation for Strengthening Terminal Management and operation

Although the total container cargo throughput was only 38,900 TEUs in 1995, potential for future growth of containerized cargo was high. The Cambodian government requested technical assistance from JICA for the formulation of the study on the Maser Planning and Feasibility Study of Sihanoukville Port.

JICA completed the port master plan with the target year of 2015 in June 1997. After the completion of the study, JBIC signed a loan agreement for the project of the 1st Emergency Rehabilitation of Sihanoukville Port (including construction of 240m container terminal berth, stacking yard etc.) with the Cambodian government in 1999, and started financial cooperation for Sihanoukville Port development.

Since that time, JBIC has continued to support the project for the 2nd Phase of Sihanoukville Port Extension Project to be completed in 2008 as follows.

Table 12.2.1.1 Scope of Facility Component for the 2nd Phase of Sihanoukville Port Extension Project

Package/Work Item		Work Quantity	Remarks
Package A: Berth Extension, Buildings and Related Facilities			
Civil Works:	Dredging Port Basin	Q = 200;000 m^3, -9.0 m	
	Reclamation	Q = 78,000 m^3	
	Revetment	L = 206 m	
	Wharf Quay (Apron Width =40 m)	L = 160 m, -9.0 m	Apron : 5,500 m2
	Yard Pavement	Q = 14,000 m^2	
	Storm Water Drainage	1 L. S.	
	Yard Fence	L = 365 m	
Utilities:	Power Distribution	I L.S.	Building Area
	Yard Lighting System	I L.S.	
	Water Distribution	1 L.S.	Extension Area
	Fire Fighting System	1 L.S.	
Building Works:	Administration Building	I L.S.	
	Maintenance Workshop	1.L.S	
	Security House	1.L.S	
Package B: Cargo Handling Equipment			
Cargo Handling Equipment:	Quay Side Gantry Crane (30.5t)	2 units	including training
	Rubber Tired Yard Gantry Crane	5 units	
	Tractor	8 units	
	Chassis	8 units	
Utilities:	Computer System (Software and Hardware)	I L.S.	including training

Source: SAP

In addition, JICA signed a technical cooperation project agreement concerning the Project for Strengthening Port Operation Management in the Kingdom of Cambodia, which includes dispatching JICA long term expert, JICA short term experts and training Cambodia counterpart personnel in Cambodia and Japan from August 1, 2007 and July 31, 2009.

As mentioned above, the construction of the new container terminal with a berth length of 400m,

the introduction of the computer system etc. is scheduled to be completed in 2008. However, additional traffic or change in the traffic pattern will generate a further burden, which could lead to a wide variety of problems with container terminal administration, management and operation at the master plan stage. Therefore, it is necessary to strengthen container terminal management and operation through technical cooperation at the early phase.

Areas requiring improvement are identified in the master plan stage. Goals and objectives are in principle a methodology for classifying works by degree of importance and time necessary for implementation.

Technical cooperation by donor will be applied to the following fields for improving container terminal management and operation.

Table 12.2.1.2 Scope of Technical Cooperation for Improving Container Terminal Management and Operation

Field	Subject
General Aspects	Reform of SAP's administration and management system Reform of SAP's fundamental financial system Improvement of port clearance and procedure Formulation of policy and implementation plan Invitation of experienced port general aspects specialists from abroad
Organization and Personnel Management	Reform of SAP's organization Revision of personnel management system Development of education and training Improvement of SAP's organization
Financial Aspects	Reform of financial management Development of management accounting system Improvement of asset liability management system Invitation of experienced financial specialists from abroad
Operation Management	Improvement of overall port operation Improvement of efficiency of ship operation Utilization of land space in/out of the port
Container Operation Management	Centralized control of yard operation Centralized control of container vessel operations Management and control of target productivity Management and control of vessel arrival schedule Grade up of yard handling equipment at the container terminal Change in the yard operation system of the container terminal Increase in ground slots in the marshalling yards Invitation of experienced container operation specialists from abroad
Engineering Management and Maintenance System	Training of maintenance workers Preparation of Maintenance Standards/Manuals Improvement of "Purchase Regulations" Simplification of supplies and stores of spare parts Strengthening of planned maintenance system Survey of costs for repair in the SAP and the private sector Invitation of experienced maintenance specialists from abroad
Management Information Systems	Computer hardware enhancement Development of new application systems Effectuation of computerization and application development Improvement of statistics and Management Information System Strengthening of computerizing planning capacity Invitation of experienced computer specialists from abroad

Source: Study Team

(2) Terminal Management and Operation System

The best management of container terminals is performed by a single organization which has enough skillful officers and workers, to be able to supply full service to customers (shipping companies, shippers/consignees), from receiving containers to loading them onboard ship, or from discharging containers to delivery to the consignee.

There are several systems in terms of management and operation of container terminals around the world.

Basically two types of terminal operations are common in the world. One is where a port management body takes charge of not only public duties such as port planning, construction of port facilities, maintenance but also cargo handling business which is of a commercial nature. The other is that the role of the port management body is limited to the public duties and commercial business like cargo handling is done by private enterprises under the general control of the port management body.

These methods of port operations, peculiar to each port, are not the results of careful selection by each port management body. Rather, they have been chosen by reasons of regional conditions like customs and historical backgrounds. So careful consideration shall be given to port operation in other countries and various local conditions. The important thing to be considered is to choose the best method which enables a port management body to operate a port efficiently and effectively without sacrificing public interest.

At present, Sihanoukville port is administered and managed by SAP. SAP is the most experienced organization in port operation and they have many skilled officers and workers.

As for the scale of ports, Sihanoukville port is the largest port in Cambodia, however, when compared with other world scale ports, it lacks sufficient cargo volume to keep several terminal operators working together at the same time. Considering this situation, it will be appropriate SAP, the present port administrator, will directly operate the new container terminal in the existing port area, for the time being. A concession to private company or lease contract with private terminal operators may be an important issue of the national port policy.

Necessary preparations for this area are as follows:

(a) SAP will set up an exclusive new terminal operation division to manage the new container terminal.
(b) That section shall control the whole container operation, including loading onto ships and lashing/unlashing containers onboard.
(c) Reorganizing the mechanical maintenance and repair system for cargo handling machines is necessary to keep cargo handling machines always in good operating condition. For this purpose it is necessary to maintain a sufficient mechanical staff, to establish a mechanics training program, to ensure proper supplies and to arrange facilities for the orderly storage of mechanical parts.
(d) In order to use effectively the limited CY spaces of the container terminal, it is necessary to spread out the cargo volume and avoid congestion by spacing the work out evenly over a one-day free time period. By collecting adequate overtime charges for containers and cargoes which exceed the free time period, SAP can help to ensure that both shipping companies and shippers will not exceed the free time period. By this system SAP can prevent both the delay of delivery for imported containers and the early arrival of export containers.

(3) Organization and Required Personnel

In designing the organization and required personnel of the container terminal operation division, generally, the following conditions should be considered.

-Simplicity of organization
-Minimizing the number of workers in the administrative sections

New container terminal needs to establish the organization having the following divisions to manage a full-fledged container terminal.

(a) Loading/unloading Division
- Planning and operating loading/discharging
- Receiving relevant information from shipping lines/agents
- Providing information on vessels' arrival for related parties

(b) Yard Control Division
- Arranging necessary cargo handling equipment, operators and workers
- Supervising the container handling operation in CY, controlling the flow of tractor trailers from outside the gates
- Controlling inventory of containers stored in the container terminal
- Compiling the data of storage fee and statistics

(c) Gate Operation Division
- Delivering/receiving containers at the terminal gates
- Checking the document to be exchanged with trailer drivers
- Checking container numbers and seal numbers
- Checking the exterior of containers and damage of containers

(d) Documentation Division
i) Export section
- Checking the booking of shipping lines/agents
- Checking the permission of Customs
- Compiling the data concerning detention charge

ii) Import section
- Checking the data of cargo manifest
- Checking the schedule of the container delivery by transporters or shipping lines /agents
- Checking the permission of Customs
- Compiling the data concerning demurrage

For the viewpoint described above, organization and required personnel of the operational division was examined. Result is shown in Table 12.2.1.3

Table 12.2.1.3 An Example of Organization and Required Personnel of the Operational Division

Chief Operations Manager: 1 person				
Operations Manager: 1 person Ship/Yard/Berth/Transportation/Documentation)				
Asst. Operations Manager: 1 person (Ship/Yard/Berth Planning)				Asst. Operations Manager: 1 person
Yard planner	Control center	Ship planner	Gate clerk	Document /Certificate /Billing
: 4 persons	: 6 persons	: 6 persons	: 15 persons	8
Daytime: 4	Daytime: 4 Nighttime: 2	Daytime: 4 Nighttime: 2	Daytime: 12 Nighttime: 3	Daytime: 8
	Yard patrol		Gate checker	
	: 6 persons		: 11 persons	
	Daytime: 4 Nighttime: 2		Daytime: 8 Nighttime: 3	
Total 56 persons				

Source: Study Team

Several points which were paid attention in studying the organization and required personnel are shown below.

(a) Two assistant managers should be assigned under the Operation Manager; one assistant takes responsibilities for terminal operations and the other for container transport and documentation.
(b) The yard planner is responsible for yard decking and will be a key person for improving cargo handling efficiency.
(c) The control center is to monitor the entire operations in the yard, give instructions on operations, and decide the allocation of transfer cranes.
(d) The patrol staff are supposed to check terminal operations on site and inform the control center in the event of trouble. In the case of a lane change made by a transfer crane, they shall make a check on site.
(e) The number of machine operators is determined on the basis of the employment of a three-shift system.
(f) The table mentions nothing about lashing gangs, who should be arranged by the terminal by the nature of the job.

(4) Port Promotion

(a) Necessity of Port Promotion

The marketing department is in charge of port promotion, however, it does not seem to be pursued aggressively. SAP's marketing staff seldom call at shipping companies, shipping agents or shippers for sales.

Since the current container handling capacity of the port is sufficient, SAP's position for sales activities is considered not realistic. But it is recommendable that port promotion should be aggressively performed for new container terminal. They should recognize that even if the capacity is small, there will be a chance to attract shipping companies by appealing to the total merit of the port. The staff of the marketing department should become aggressive, and approach all companies which might possibly bring cargo to the port in the future.

(b) Port Promotion Strategy

For performing port promotion activities, it will be effective to take aim at main targets and to make strategies to attack the targets. This strategy should be established as soon as possible.

SAP should take aim at container cargo including North East/South East Asian countries in particular, and call for sales at the shipping companies and shippers which carry the containers. In this case, sales point should be focused on not only on the port facilities but on the merit of using Sihanoukville port for the companies.

To make an attractive brochure for this purpose will be necessary. In this brochure, merits of Sihanoukville port should be described plainly. It should be well designed so that everyone wants to take a look.

Holding seminars to introduce Sihanoukville port to shippers of various countries is thought also effective.

(c) Improvement of Port Statistic System

To formulate port promotion strategy, analysis of cargo turnover is necessary. But present port statistics are not sufficient to analyze actual condition for realized port activities.

It also necessary to provide easy access to port information for port users. This service will make the ports more attractive. Proper information service is mandatory to survive competition with rival ports.

It is necessary to improve the statistics system to support formulation of the strategy. To establish quick and proper information service system is also desirable. Sihanoukville port will have an advantage over rival ports by implementing these systems.

12.2.2 Long Term Development of the Sihanoukville Port

(1) Basic Concept for the Sihanoukville Port
The Sihanoukville Port is the only deep sea port in Cambodia. Though some private ports have plans to develop deep terminals, those sites don‘t have sufficient potential based on the mesh analysis due to shallow natural water depth and so on. Therefore the Sihanoukville Port has an important role in supporting economic development of Cambodia as it will be relied on to cope with the increasing import and export cargo and enlarging vessels.

In addition Sihanoukville port must also provide an industrial zone having a close relationship with port activities for introducing export-oriented industry by FDI which is urgent matter of Cambodian economic development.

(2) Demand for the Sihanoukville Port
1) Container
The Sihanoukville Port is almost the only appropriate site from the viewpoint of water depth and existing functions. Container cargo volume of the Sihanoukville Port has been increasing steadily, reaching 231 thousands TEU in 2006. It is estimated to reach almost 1 million TEUs in 2020 in the high-case scenario. The Sihanoukville port can cope with the increasing container boxes and enlarging container ships.

2) Bulk
Cement cargo, which was one of the main bulk cargoes in the past, is not forecast to increase in future, because cement factories are being developed in Cambodia. Coal cargo started to come to the Sihanoukville Port in 2006 and is estimated to increase to around 300 thousand tons in 2020 due to cement factories and power plants. Wood and chip cargo may exceed 1 million tons in 2020. And import of wheat and automobile is estimated to greatly increase. Sihanoukville port shall handle these kinds of bulk cargo.

On the other hand, offshore oil fields may start operation in the short term. Sihanoukville Port shall provide function of oil supply base. In doing so, however, it is necessary to maintain compatibility with the long term development direction of Sihanoukville Port.

3) Passenger
Number of passenger ships calling the Sihanoukville Port has increased recently. Number of foreign tourists is estimated to greatly increase in Cambodia in future. A one-day trip to Siem Reap may become easy due to operation of Sihanoukville airport. This one day trip option will contribute to an increase in cruise ships. The Sihanoukville Port can contribute to the development of the tourism industry by coping with this increase in cruise ships.

Currently, passenger ships come alongside the old jetty which is also handles cargo ships. The Sihanoukville Port doesn’t provide enough comfort and safe service to passengers. It is desirable to develop a dedicated facility to provide comfort and safe service.

4) SEZ
The Sihanoukville Port SEZ project with 70 ha is under development by yen-loan. It is important to have a close relationship between the Port and the SEZ from the physical and organizational viewpoint.
After success of the first SEZ with 70 ha, it will be important for the Sihanoukville port to expand SEZ area. The Port can use its experience and reputation established at the first step to contribute to industrial development in Cambodia.

5) Transport to hinterland
Origin and destination of most cargo of the Sihanoukville Port is Phnom Penh and neighboring areas currently. Accordingly it is important to provide efficient service to shippers around Phnom Penh by setting up logistics bases nearby Phnom Penh. Rehabilitation project of the railway system may be conducted by assistance of ADB. Utilization of railway may be one option, if it will be efficient considering the contents of the If the railway project is realized and the service level is sufficiently high, utilization of railway may be one option.

Table 12.2.2.1 Demand for the Sihanoukville Port

	Short Term	Middle / Long Term
Container	a) Increase of Container Cargo b) Efficient Operation	a) Increase of Container Cargo and Enlargement of Ships
Bulk	a) New Cargo such as Coal b) Function of Oil Supply Base	a) Increase of Bulk Cargo such as wood and Chip
Passenger	a) Safety and Security of Passenger	a) Dedicated Terminal for Safety and Comfort
SEZ	a) Combination between Container Terminal and SEZ	a) Expansion Area
Transport to Hinterland	a) Service near Customers b) Improve of Access to Railway	
Other	a) Port Security	

Source: Study Team

(3) Required Facilities in the Sihanoukville Port
1) Container
i) Short Term
New container terminal is under development as a yen-loan project. It will operate as a terminal with -11m depth in 2008. It will be important to operate this terminal efficiently based on international standards.

ii) Middle / Long Term
Maximum capacity of the terminal above will be 400 to 500 thousand TEUs even after additional handling equipment will be installed. Therefore additional container berth shall be necessary in the middle term.

And in the long term, additional container berth with sufficient depth may be necessary to treat high case container cargo and enlarging container ship. Detailed dimensions of the berth shall be decided considering future container demand, ship size situation, natural conditions and so on.

2) Bulk
i) Short Term
In the short term it is important to provide the function of oil supply base which needs berths with around -7m depth and yard. When formulating the detailed plan and design of the oil supply base, it is important to consider middle and long term development direction of the port and utilization of coal cargo as well as requests of oil supply companies. And at the stage of entering contracts with the oil supply companies, contract items and terms shall be adjusted with the port development of middle and long term.

There are two methods for constructing the facilities. One is that SAP itself constructs the facilities by its own finance or ODA and lends the facilities to companies after construction. The other is that SAP decides the conditions such as BOT scheme and permits companies to construct and operate the facilities. SAP should choose the best development scheme based on the prevailing circumstances.

At the same time, a bulk terminal which has a berth with around -5m depth and yard is necessary to handle bulk cargo such as coal.

ii) Middle / Long Term
In the middle and long term the port shall have (a) bulk terminal(s) with -12m depth which can accommodate 30,000 DWT cargo ships. RORO terminal for automobile carrier may be considered depending on future demand of automobile imports.

3) Passenger
i) Middle / Long Term
In the middle and long term, dedicated terminal may be necessary for providing comfort and safe service depending on the future demand of calling cruise ships.

4) SEZ
i) Short Term
The Sihanoukville Port SEZ is under development as yen-loan project. Since it is important to have a close relationship between the Port and the SEZ from the physical and organizational viewpoint, container yard for the SEZ and dedicated gate shall be installed.

ii) Middle / Long Term
Expansion area for the SEZ will be required in or around the port.

5) Transport to hinterland
ICD will be required nearby Phnom Penh to provide efficient service to shippers around Phnom Penh. Rehabilitation project of railway system may be conducted by assistance of ADB in 2009. Efficient connection system between the port and railway terminal shall be considered if the service level of the railways system is adequate.

Table 12.2.2.2 Necessary Facilities in the Sihanoukville Port

	Short Term	Middle / Long Term
Container	a) Container Terminal (-11m) b) Terminal System and Cargo Handling Equipment such as GC	a) Container Terminal (-12 to -14m)
Bulk	a) Multi-purpose Terminal （-5 to -7m） b) Yard for Oil Supply Base	a) Bulk Terminal (-12m)
Passenger	a) Port Security System	a) Passenger Terminal (-9m)
SEZ	a) Container Yard for SEZ, Dedicated Gate	a) Expansion Area
Transport to Hinterland	a) Inland Container Depot b) Access to Railway Terminal	
Other	a) Port Security System	

Source: Study Team

(4) Development Plan
1) Long Term Development Plan
a) Development inside and outside of the north breakwater
Expansion area of SEZ and bulk terminal including oil supply base will require a large scale area. Accordingly the water area inside and outside of the north breakwater shall be developed for these functions. Regarding utilization of fishery boats inside the breakwater, sufficient water area in front of fishery jetties will be required and it will be necessary to cut the breakwater as a channel for fishery boats. Detail layout and design of the terminal and dimensions of reclamation area shall be decided considering future demands of bulk cargo and SEZ, natural conditions, environmental effects, development cost and so on.

b) Phased Development of the Container Terminal
In the long term, area from the newly constructed container terminal to outside of the west breakwater will be appropriate for large scale integrated container terminals. The container terminals shall be developed in a phased manner depending on container cargo demand.

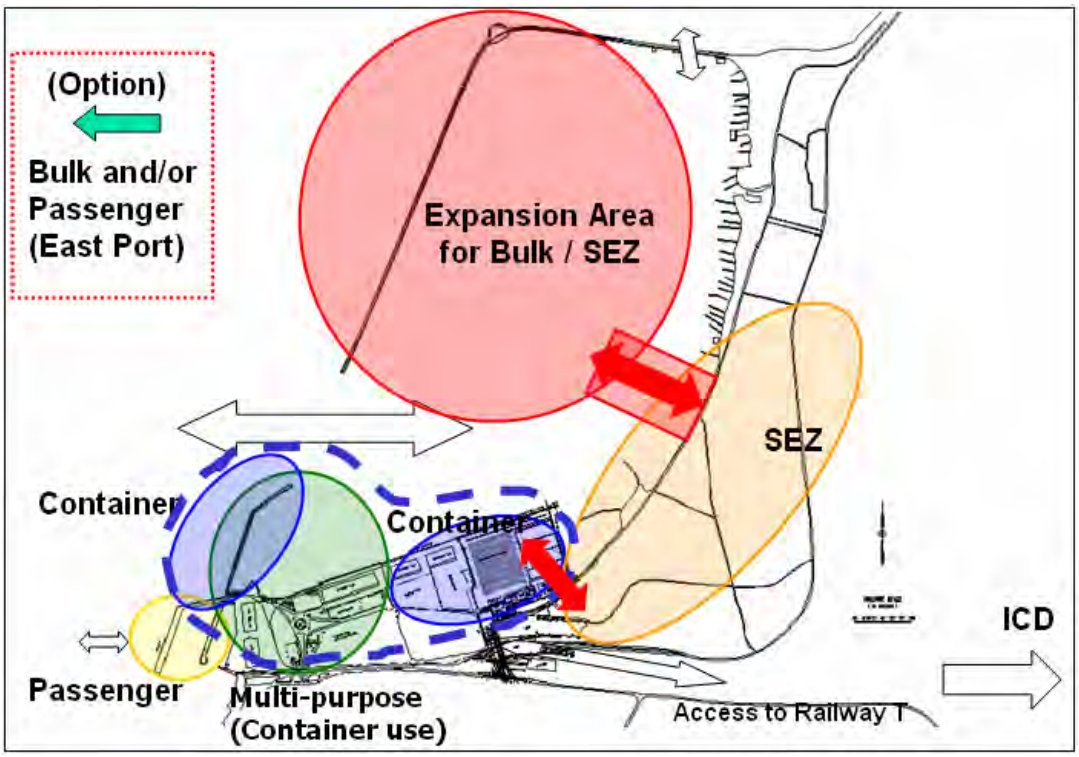
i) Phase 1
The container terminal is currently under construction (-11m * 400m).

ii) Phase 2
The multi-purpose terminal inside the west breakwater, which will be used for bulk cargo in the short term as mentioned in the short term development plan below, shall be converted to container use.

iii) Phase 3
A container terminal with depth berth shall be developed outside of the west breakwater. Detail layout and dimensions of the terminal shall be decided considering future demands of container cargo, movement of ship size, natural conditions such as water depth and soil, development cost, adjustment with channel development and so on.

c) Development of Passenger Terminal
Existing old jetty's area will be appropriate for passenger terminal development considering the access to urban area and flow separation between passenger and cargo. Though the old jetty is decrepit, it was rehabilitated. So the durability shall be examined carefully. If it is sufficiently durable, it can be used as passenger dedicated terminal. Otherwise a new passenger terminal shall be constructed considering natural conditions, cost and so on.

d) Development of East Port
Though the planned site of the east port is evaluated as an appropriate site for a deep sea port from the viewpoint of water depth, there is no infrastructure such as road around the site currently. Therefore it is difficult to develop the port independently. However the area around the site has the possibility to be developed as an international residential and resort zone or industrial zone, since the area has the advantage of high accessibility to an airport and economic clusters. If the area around the site will be developed, one option is to develop a bulk terminal and / or passenger terminal at the east considering land usage of the area. Development of the east port shall be examined carefully considering demand, natural conditions, development cost and so on.



Source: Study Team

Figure 12.2.2.1 Long Term Development Plan of the Sihanoukville Port

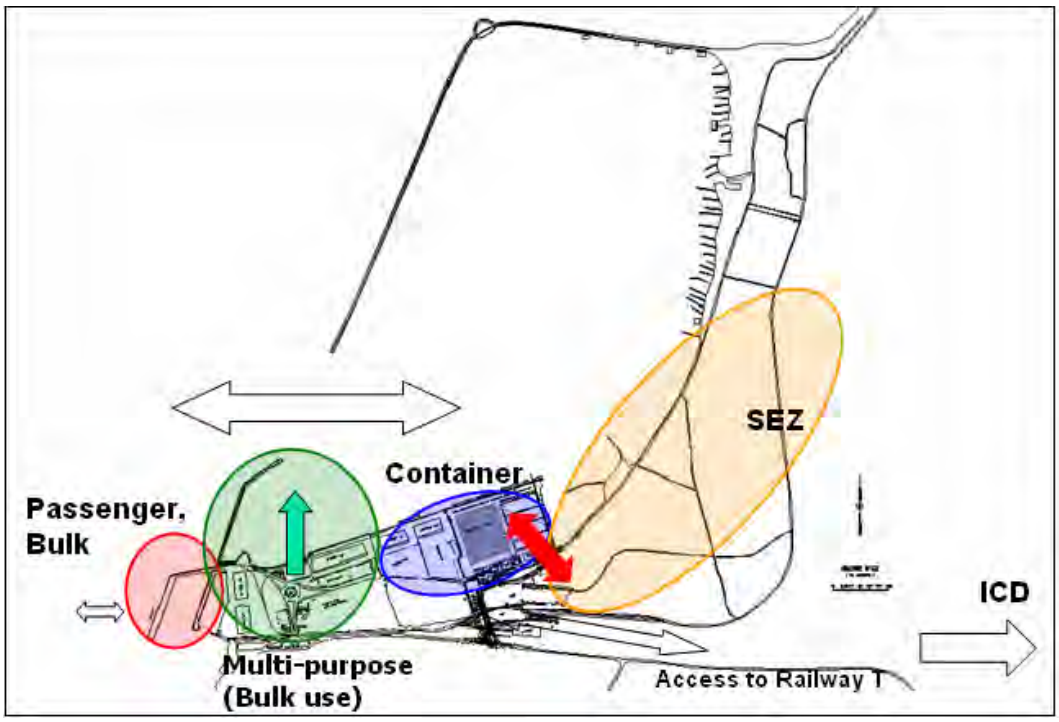
2) Short Term Development Plan

a) Development of Multi-purpose Terminal

Since it is an urgent matter to provide function of oil supply base and handle coal cargo, multi-purpose terminal shall be developed inside the west breakwater. The multi-purpose terminal will be used as oil supply base and facility for coal cargo in the short term and shall be converted to container use in the middle and long term as mentioned in the long term development plan above. When making the detailed plan and design of the multi-purpose terminal, it is necessary to consider required dimensions for short term use of oil supply base and coal treatment and long term use of container terminal, natural conditions, development cost and so on. .

b) Development of SEZ

The Sihanoukville Port SEZ project is conducted as a yen-loan project at the site next to the container terminal.



Source: Study Team

Figure 12.2.2.2 Short Term Development Plan of the Sihanoukville Port

(5) Master Plan

The study team examined the development direction of the Sihanoukville Port in the short and long term. Moreover the master plan regarding long-term utilization and development of the Port shall be established before development of the area outside of the west breakwater and the water area inside and outside of the north breakwater.

Items to be examined for establishment of the master plan are as below.

* Setting the basic concept of utilization and development of the Port
* Socio-economic flame, Hinterland analysis, Demand estimation
* Evaluation of present facilities, identification specify of existing issues
* Natural and environmental conditions
* Required facilities
* Dimensions and layout of facilities
* Phased development plan
* Basic design
* Feasibility study (Economic analysis, Financial analysis, Environmental evaluation)

12.3 Port Development Master Plan of Phnom Penh Port

The cargo handling capacity of PPAP, which was constructed by Japanese grant aid in 1996, is about 40,000TEU to 45,000TEU. The actual handling records of PPAP in the last three years are 15,526TEU (in 2004), 30,281TEU (in 2005), and 38,200TEU (in 2006). The growth rates are remarkable. It is only a matter of time before the handling capacity is reached. Therefore, a new development plan to cope with this situation is urgently required. However, due to financial problems, development works are not going ahead. In fact, an implementation plan has not yet been drawn up.
In this section, the future development plan with a target year 2020 is introduced. In addition, current problems and measures to solve them are examined.

Figure 12.3.1 shows the flow of the development scheme. The new development plan is mainly divided into two parts. The first is to enhance the capacity of the Existing Port. The second is to draw up the development plan of the New Terminal. Furthermore, the former includes three categories which target the enhancing and expanding of the existing port, improving the handling efficiency, and developing the inland container depots. The latter means the construction of the new terminal itself with consideration of the functional responsibilities between the two ports (new and existing). The management system and fund procurement plan shall be also included in the new development plan.

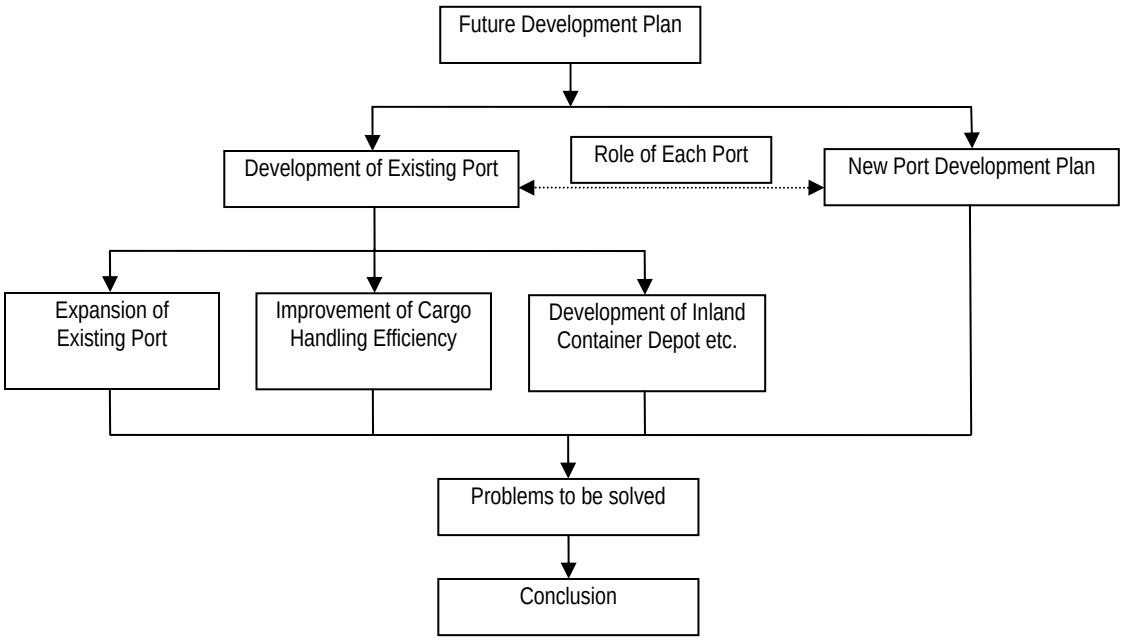


Figure 12.3.1 Flow of Phnom Penh Port Development Plan

(1) Development Plan of Existing Phnom Penh Port

1) Expansion Plan of Existing Phnom Penh Port

The existing port with a 300m long quaywall does not have sufficient space in the hinterland behind. The only solution would be to extend it along the Tonle Sap River. However the extension toward upstream is restricted by the existing bridge. Port operation could result in accidents. Therefore, the only space for development is on the downstream side. However, extension along the river is only a temporary expedient; the fundamental problem of lack of space remains.
Due to technical reasons, the gantry crane can not be installed on the existing quaywall. This also hinders efficient cargo handling at the existing port.

One alternative is to extend the existing quaywall 150m downstream where the gantry crane can be installed. But as mentioned above, this would not be a permanent solution.
In conclusion, if there are funds available to extend the existing port, they should instead be allocated to the construction of the new terminal.

2) Improving the Efficiency of the Existing Port

At the existing port, development works shall focus on enhancing the cargo handling efficiency and increasing the capacity. The yards and buildings located in the port premises shall be rearranged, and the appropriate cargo handling equipment shall be equipped on the existing quaywall.

3) Development of the Inland Container Depot

If the container handling efficiency is improved, the stacking yard could not be able to handle the increase in container volume. The inland container depot (ICD) will be necessary. PPAP has one ICD located in Prak Anhjanh about 5km north from the port. And another yard, which the Green Trade company owns, is nominated as the new ICD in the future. The new yard is along by the Tonle Sap River, facing Route No.5, and has an area of about 9.5ha and is linked with the railway.
For reference, the Green Trade company used to be a state-owned company but is now an autonomous enterprise.

(2) Development of the New Terminal and Functional Responsibility between New/Old Ports

The construction of the new terminal is indispensable to cope with the forecast container volume (200,000TEU to 250,000TEU).
The location of the new terminal shall be determined by a comprehensive evaluation of various aspects such as the natural, socio-economic, and environmental conditions and so on. One of the proposed sites is in the area of 30km downstream from the junction of the Tonle Sap River and Mekong River.

Regarding the functional responsibility between two ports, for the time being, the existing port will handle both containers and bulk cargoes which will be necessary for the Phnom Penh city's activities and the new terminal will handle all import/export containers for the factories located in the suburbs of the city. However, in the future, the existing port will be dedicated to bulk cargoes, and the new terminal to containers.

(3) Problems to be overcome

PPAP has no future development plan. The new port development plan is drawn up in the MRS study report which is being executed by the Belgian consultant. However, the study covers water transport on the Mekong River, and the new port development is only drawn up as one part of the study. It does not draw the total development plan of the Phnom Penh Port in the future.
Therefore, the total master plan is indispensable and urgent.

Procuring the implementation fund is also very important. PPAP has a plan to invite financial assistance and investment from inside/outside of the country. However, there has not been any actual progress. The MRS study report includes a financial analysis, but it does not indicate the actual way to procure the fund.
Therefore, methods to procure funds will also be examined and evaluated.

The port development master plan of the Phnom Penh Port which includes the fund procurement plan shall be drawn up as soon as possible. And the actual implementation work should be commenced without delay.

12.4 Development potential of the coastal area around Sihanoukville

12.4.1 Outline

The study team conducted a mesh analysis to evaluate the development potential of coastal and land area around Sihanoukville. Brief summary of the analysis regarding the coastal area is as below.

Sihanoukville Port is the only high potential zone for a deep container terminal.

High potential zones for deep bulk terminal are also only the Sihanoukville Port and neighboring zone. And planned east port, existing oil ports and neighboring zone have some possibility.

Regarding cargo terminal for coastal shipping, zones which have some potential are spread along the coast in addition to Sihanoukville Port and neighboring zone which have high potential.

Sandy beach which is south-west of Sihanoukville has high potential as an international resort.

Zone including planned east port isn't an appropriate site for any function currently due to lack of road access. However this zone would have the advantage of high accessibility to an airport and economic cluster in case road is developed. So this zone has latent potential in future.

Zones of Oknha Mong Port and planned Stueng Hav Port don't have high potential for deep sea container terminal and deep sea bulk terminal due to the lack of water depth. However these zones have the possibility to serve as cargo terminals with around -5m depth for coastal shipping, though it cannot be said that these zones are ideal for that purpose.

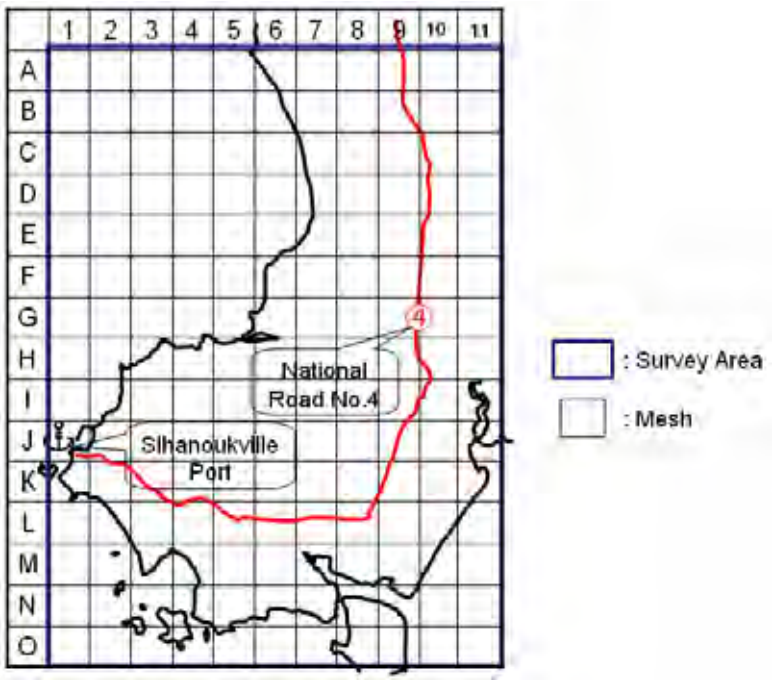
12.4.2 Mesh Analysis Examining Future Development Direction of Sihanoukville and Neighboring Area

It is necessary for formulating a port and regional development strategy to specify functions to be introduced to the area considering natural, socio-economic conditions and existing infrastructures and to examine appropriate zoning.

Therefore Mesh analysis is conducted by the study team to examine future development direction of Sihanoukville and neighboring area.

(1) Object Area of the Analysis
Objective area is set as below figure to examine coastal and regional development in an integrated fashion. And Meshes are set to be analyzed.

The objective area is set considering the integrity of coastal and regional conditions. Accordingly, the east edge of the area includes the area along the Route no.4. North edge includes area where it is possible to develop a port with -5m depth. West and south edge are the coastal line.



Source: Study Team

Figure 12.4.1 Setting of Object Area and Meshes for Mesh Analysis

(2) Functions Examined to Introduce to the Objective Area

Functions examined to introduce to the objective area are set as below considering the "Growth Corridor" Study mentioned above and advanced cases of other countries' special economic zones.

a) Port function
- a-1) Container terminal
- a-2) Terminal for coastal shipping
- a-3) Deep bulk terminal
- a-4) Passenger terminal for cruise ship

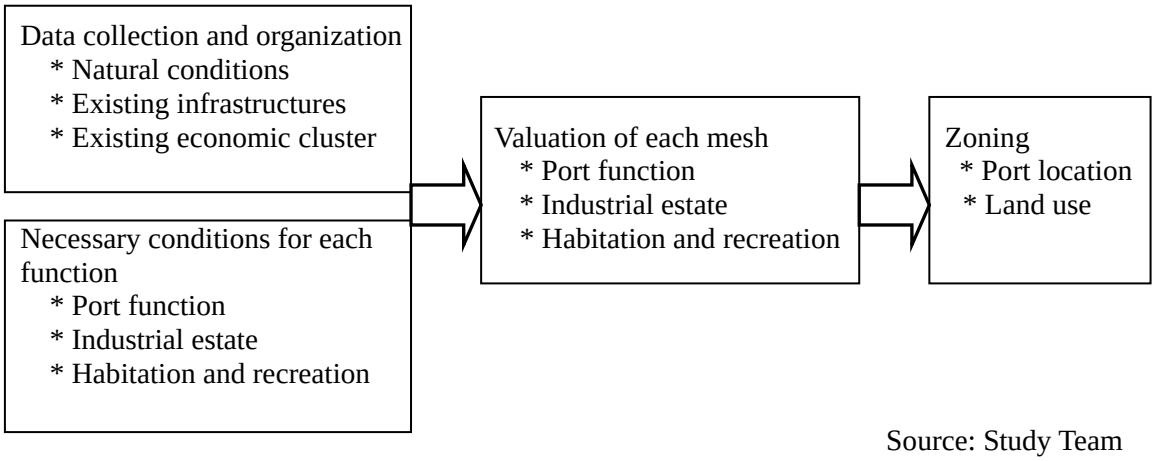
b) Industrial estate
- b-1) Export processing industry
- b-2) Chemical industry
- b-3) Agro processing industry

c) Habitation and recreation
- c-1) International habitation and commercial
- c-2) International recreation

(3) Analysis Method

Analysis flow is shown in the figure below.

At first data of natural conditions, existing infrastructures and existing economic clusters are collected and organized. Secondly necessary conditions for each function are listed and each mesh is valuated for each function. Finally, zoning of the port and land use is formulated considering valuation of each mesh.



Source: Study Team

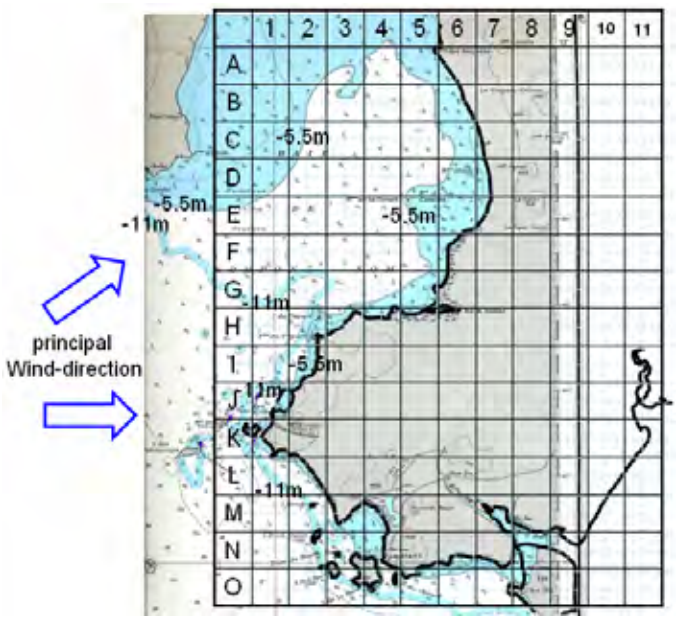
Figure 12.4.2 Flow of Mesh Analysis

(4) Data Collection and Organization

a) Natural conditions

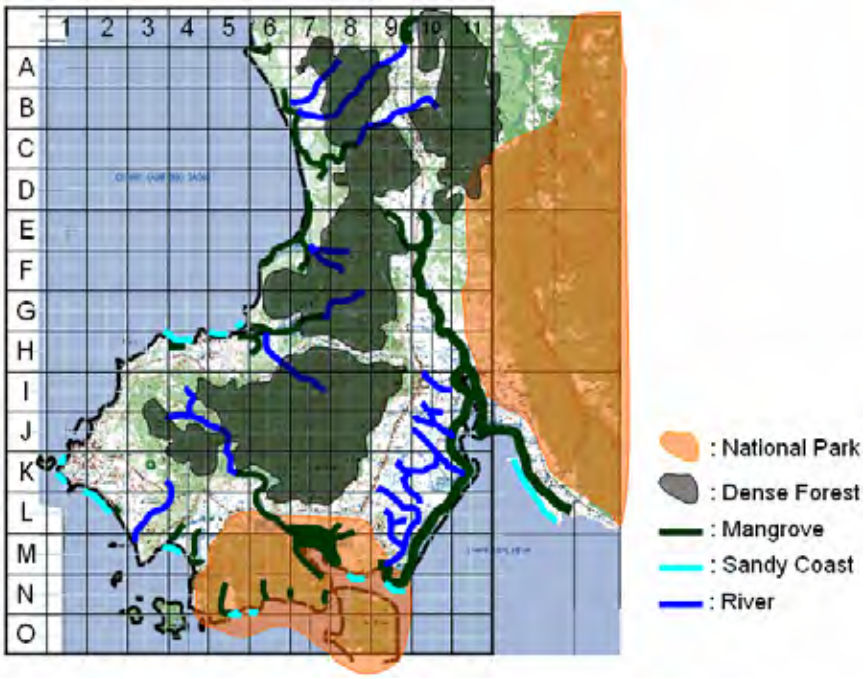
Natural conditions listed below are obtained by collecting existing data and field surveys and organized into a mesh figure as below.

- Water depth
- Wind-direction
- Sandy coast
- Mangrove
- River
- Dense forest
- National park



Source: Marin Chart 3967, JICA Study

Figure 12.4.3 Natural Condition 1 (Water Depth and Wind-direction)



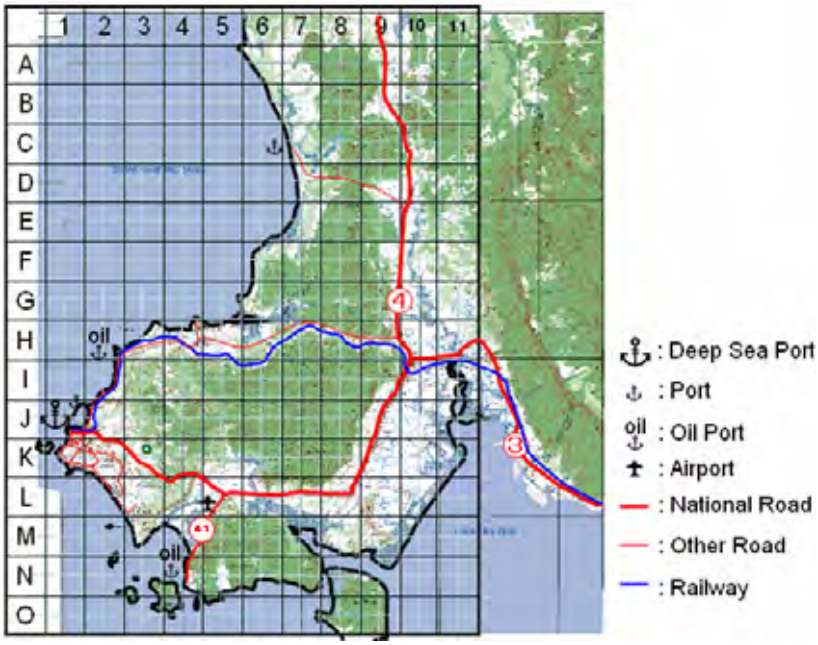
Source: Geography Department, Study Team

Figure 12.4.4 Natural Condition 2 (National Park, Dense Forest, Mangrove, Sandy Coast and River)

b) Existing Infrastructures

Existing Infrastructures listed below are obtained by collecting existing data and field surveys and organized into a mesh figure as below figure.

- Deep sea port
- Port
- Oil port
- Airport
- National road
- Other Road
- Railway

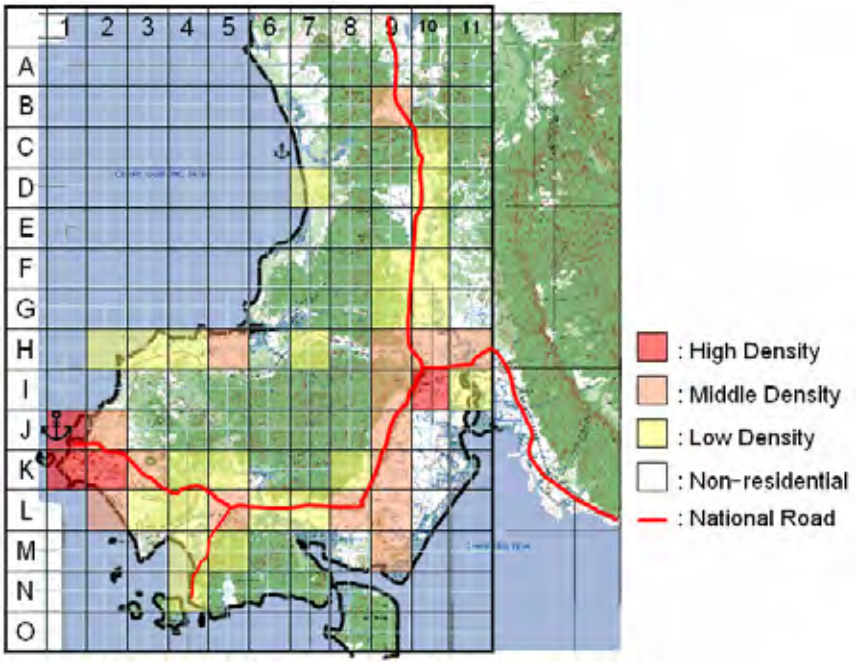


Source: Geography Department, Travel Map, Study Team

Figure 12.4.5 Existing Infrastructures

c) Existing Economic Cluster

Situation of existing economic cluster is determined using map and air photo of Geography Department and field survey and organized into a mesh figure as below.



Source: Study Team

Figure 12.4.6 Existing Economic Cluster

(5) Necessary Conditions for each function

a) Port function

a-1) Container terminal

Necessary conditions:
- Possible to construct a berth with -12m depth
- Not a national park

Desirable conditions:
- Coastal line isn't mangrove or sandy coast
- Principal wind-direction is blocked by island or land
- Easy access to major national road
- Existing container terminal

a-2) Terminal for coastal shipping

Necessary conditions:
- Possible to construct a berth with -5m depth
- Not a national park

Desirable conditions:
- Coastal line isn't mangrove or sandy coast
- Principal wind-direction is blocked by island or land
- Easy access to major national road
- Existing port

a-3) Deep bulk terminal

Necessary conditions:
- Possible to construct a berth with -9m depth
- Not a national park

Desirable conditions:
- Coastal line isn't mangrove or sandy coast
- Principal wind-direction is blocked by island or land
- Easy access to major national road
- Existing port

a-4) Passenger terminal for cruise ship

Necessary conditions:
- Possible to construct a berth with -9m depth
- Not a national park

Desirable conditions:
- Coastal line isn't mangrove or sandy coast
- Principal wind-direction is blocked by island or land
- Easy access to major national road
- Easy access to airport
- Nearby economic cluster
- Nearby recreation zone
- Existing port

b) Industrial estate

b-1) Export processing industry

Necessary conditions:
- Easy access to container port
- Not a national park or dense forest

Desirable conditions:
- Easy access to major national road
- Easy access to airport
- Not mangrove
- Nearby economic cluster
- Nearby international habitation and commercial
- Nearby recreation zone

b-2) Chemical industry

Necessary conditions:
- Nearby oil port
- Possible to make large scale industrial area
- Not a national park or dense forest

Desirable conditions:
- Easy access to container port and bulk port
- Easy access to major national road
- Easy access to railway
- Not mangrove

b-3) Agro processing industry

Necessary conditions:
- Not a national park or dense forest

Desirable conditions:
- Nearby agricultural area
- Easy access to major national road
- Easy access to port
- Not mangrove

c) Habitation and recreation

c-1) International habitation and commercial

Necessary conditions:
- Not a national park or dense forest

Desirable conditions:
- Easy access to major national road
- Easy access to airport
- Not mangrove
- Nearby economic cluster
- Nearby recreation zone

c-2) International recreation

Necessary conditions: - Not a national park or dense forest - Having coast line
Desirable conditions: - Easy access to major national road - Easy access to airport - Nearby economic cluster - Having sandy coast

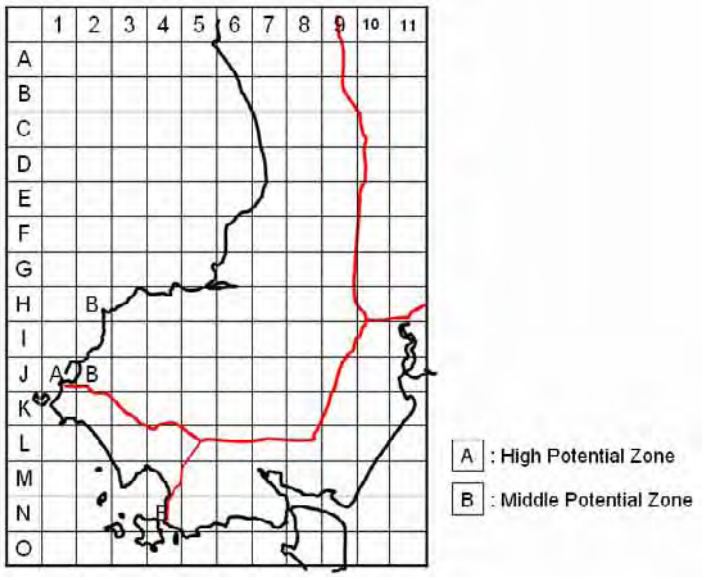
(6) Valuation of Each Mesh

Potential of each mesh for each function is valuated based on above mentioned conditions. Valuation of each mesh for each function is as below.

a) Port function

a-1) Container terminal

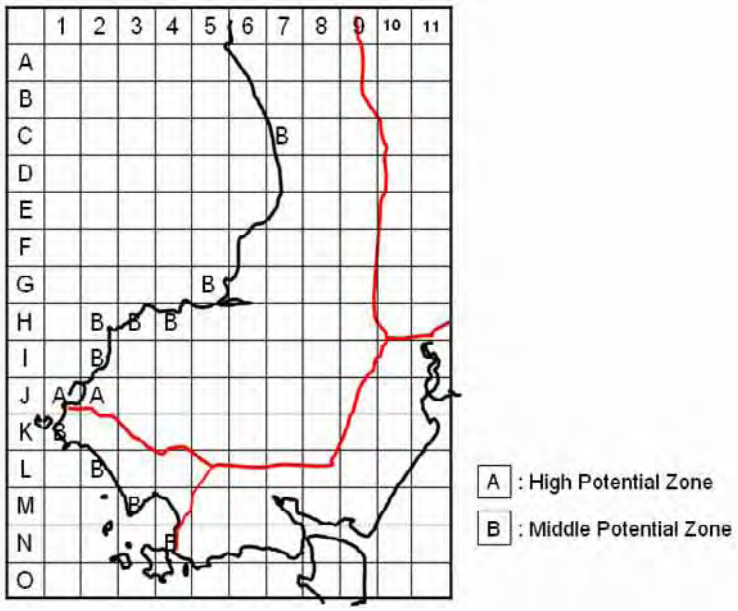
Potential zones for deep container terminal are as below.
Sihanoukville Port is the only high potential zone.



Source: Study Team

Figure 12.4.7 Potential Zones for Container Terminal

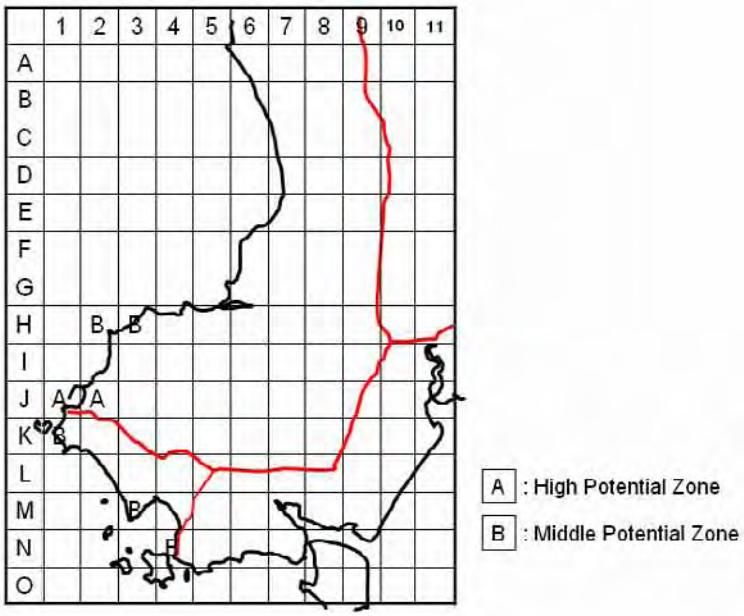
a-2) Terminal for coastal shipping
Potential zones for terminal for coastal shipping are as below.
In addition to Sihanoukville Port and the neighboring zone which have high potential, zones with some potential are spread along the coast.



Source: Study Team

Figure 12.4.8 Potential Zones for Terminal for Coastal Shipping

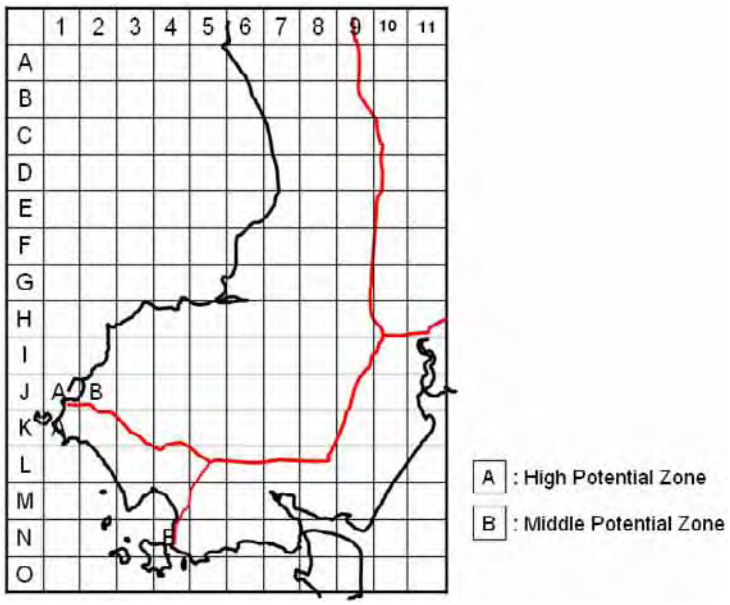
a-3) Deep bulk terminal
Potential zones for deep bulk terminal are as below.
High potential zones are also only the Sihanoukville Port and neighboring zone. The planned east port, existing oil ports and neighboring zone have some potential.



Source: Study Team

Figure12.4.9 Potential Zones for Deep Bulk Terminal

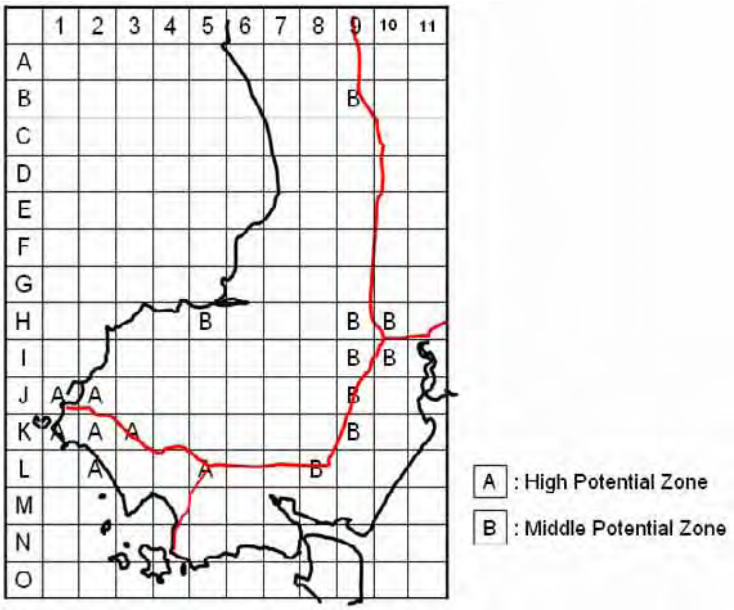
a-4) Passenger terminal for cruise ship
Potential zones for deep passenger terminal for cruise ship are as below.
High potential zones are also only the Sihanoukville Port and neighboring zone. The Phsar Ream, which has existing oil port, has some potential.



Source: Study Team

Figure 12.4.10 Potential Zones for Passenger Terminal for Cruise Ship

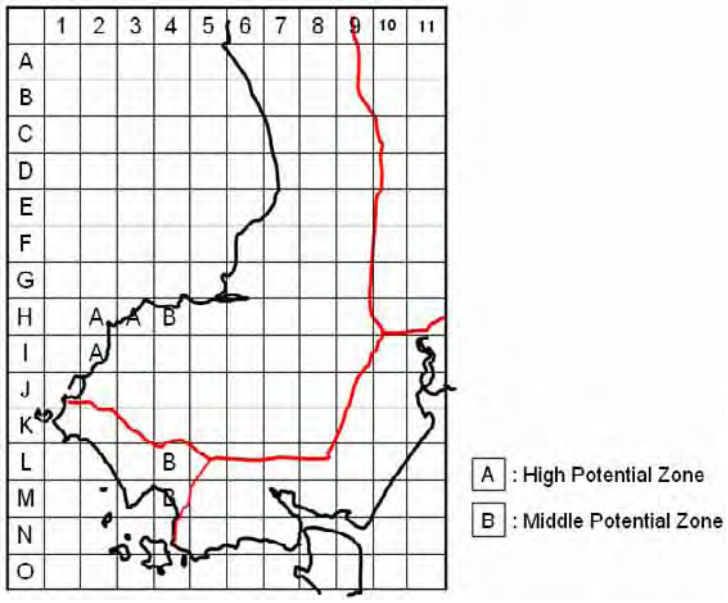
b) Industrial estate
b-1) Export processing industry
Potential zones for export processing industry are as below.
High potential zones are zones of and around the Sihanoukville Port and north zone of the airport. Zones which have some potential are spread along the Route No. 4 and on Stueng Hav.



Source: Study Team

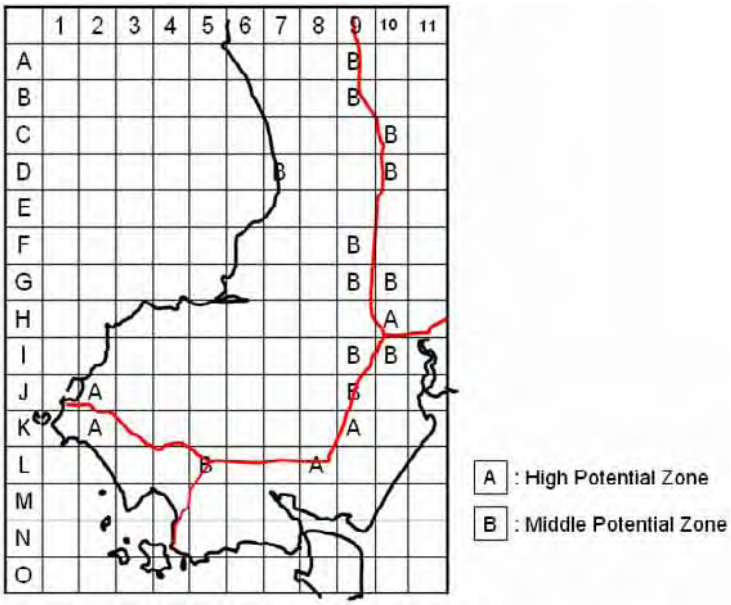
Figure 12.4.11 Potential Zones for Export Processing Industry

b-2) Chemical industry
Potential zones for chemical industry are as below.
High potential zones are zone of Sokimex oil terminal and neighboring zones. The east zone of the high potential zones and north zones of Phsar Ream, which has existing oil port, have some potential.



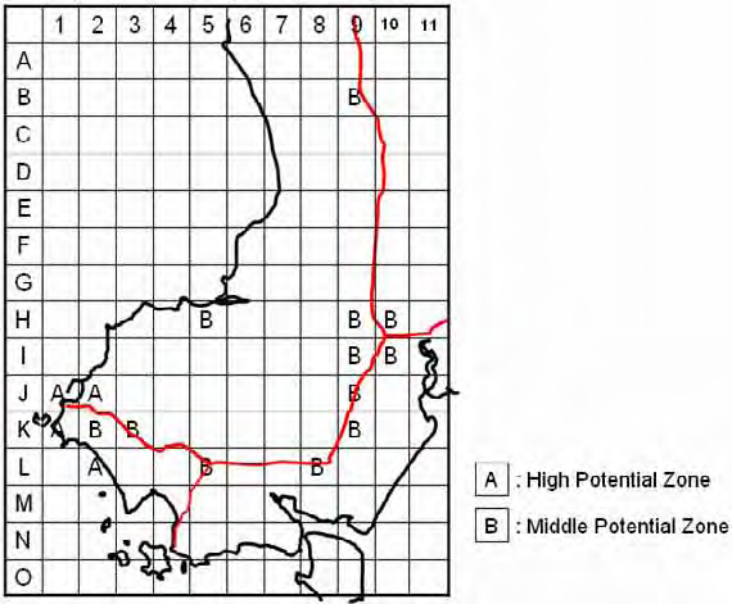
Source: Study Team
Figure 12.4.12 Potential Zones for Chemical Industry

b-3) Agro processing industry
Potential zones for agro processing industry are as below.
High potential zones and zones which have some potential are spread along the Route No. 4 and on Oknha Mong Port.



Source: Study Team
Figure 12.4.13 Potential Zones for Agro Processing Industry

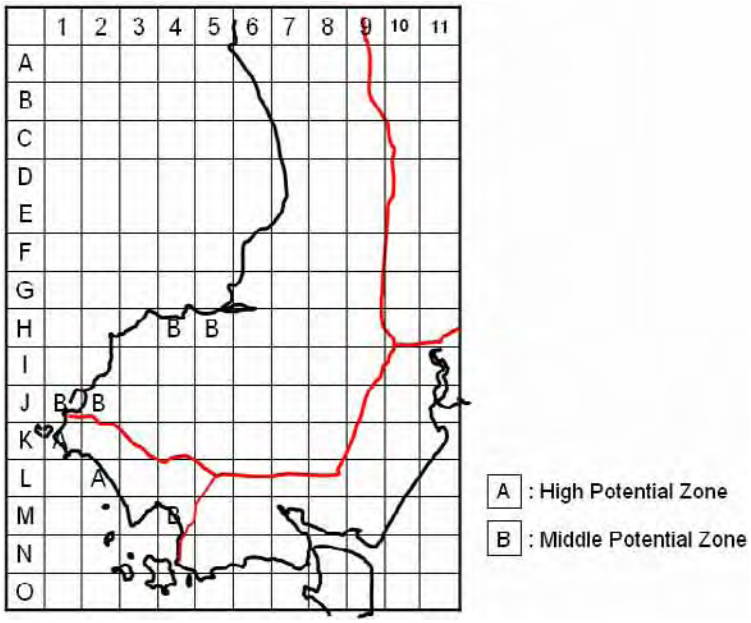
c) Habitation and recreation
c-1) International habitation and commercial
Potential zones for international habitation and commercial are as below.
High potential zones are zones around the Sihanoukville Port and south-west area of Sihanoukville city which has sandy beach. Zones which have some potential are spread along the Route No. 4 and on Stueng Hav.



Source: Study Team

Figure 12.4.14 Potential Zones for International habitation and commercial

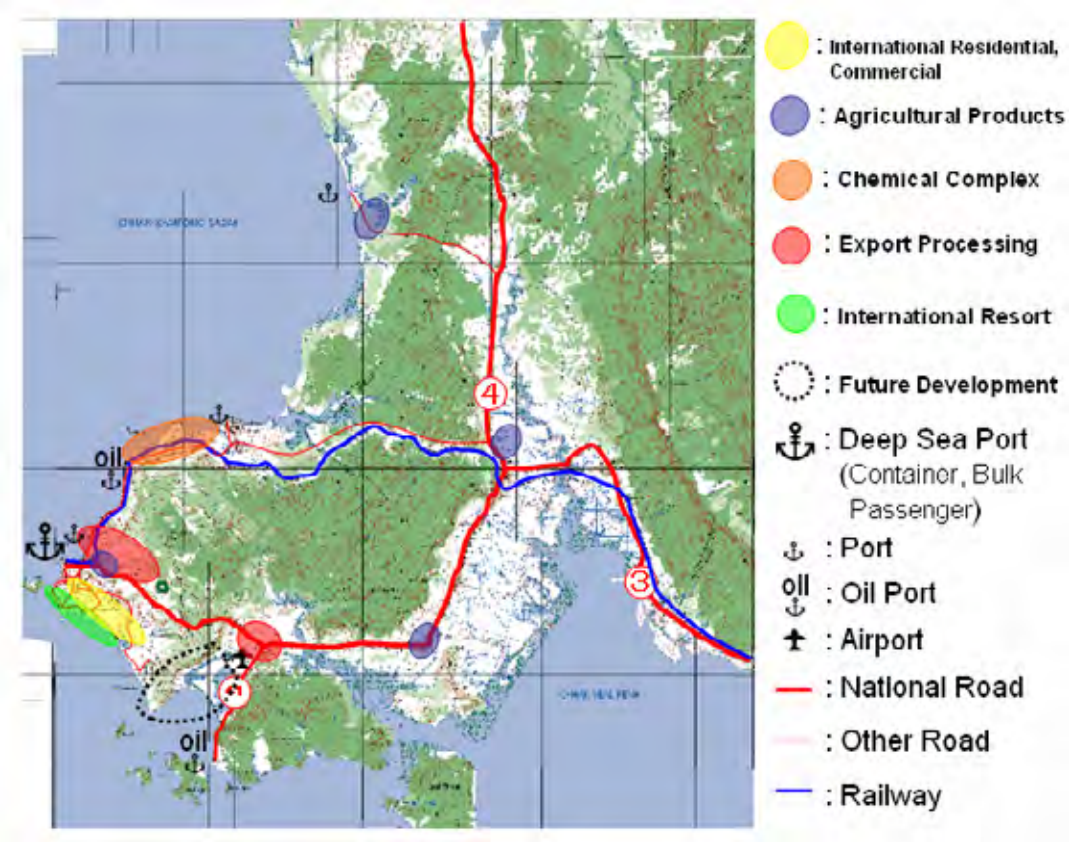
c-2) International recreation
Potential zones for international recreation are as below.
High potential zones are the south-west area of Sihanoukville city which has a sandy beach. Zones of Stueng Have and south of the airport which have sandy beach have some potential.



Source: Study Team

Figure 12.4.15 Potential Zones for International Recreation

12.4.3 Zoning – Direction of Future Development of Sihanoukville and Neighboring Area –
Direction of future development of Sihanoukville and neighboring area is examined based on above mentioned analysis considering relationship between each function. Examination result is as below.



Source: Study Team

Figure 12.4.16 Direction of Future Development of Sihanoukville and Neighboring Area

12.5 Measures for Efficient Port Management

12.5.1 Efficiency and Simplification of Documentation

At present, SAP and private companies exchange a lot of documents concerning export and import procedures. Officials spend much of their time checking and verifying cargoes and documents at each stage.

SAP will introduce the container terminal operation computer system, completion of which is expected to be in 2008. This system is used by staff of SAP for container cargo operation and management together with container documentation done at the container terminal, and the outside communication is carried out by FAX or Internet. In addition, customs has also already introduced a computer system which functions as a database to assist customs officers in deciding the value of import commodities.

As mentioned above, a data communication system will be provided for future EDI (electronic data interchange) system between this computer system and shippers, consignees, shipping lines and other container terminal, etc.

When introducing an EDI system, it is necessary to adopt international standards prepared by IMO. Although the investment cost in an EDI system is quite high, its long-term advantages make it unquestionably worthwhile. It will not only improve the SAP's service to its to customers, but also strengthen the Cambodian information system structure; however, consensus and cooperation among related official organizations and private sector should be considered before introduction of the EDI system.

12.5.2 Provision of Efficient Port Service

SAP should focus on the following three points for port management and operation to attract port users.

(1) Efficient services
High productivity of cargo handling, seamless smooth operation and speedy procedure for cargo clearance are necessary. These encourage port users to minimize the cost of transport through a port.

(2) Reliability and availability of port facilities
Port facilities and cargo handling equipment must be well maintained so that port users can make full use of facilities and equipment. Breakdown time must be minimized. Storage facilities should be well-designed to prevent cargo damages. Security measures for cargoes or countermeasures against pilferage must be taken effectively. Cargo handling operation must be accurate, careful and safe.

(3) Reasonable tariff
Port charges should be competitive but must cover the cost of construction, management and maintenance of port facilities. Furthermore, tariff structure should encourage port users to use port facilities efficiently.

12.5.3 Corporatization of Port Management and Operation

Some container terminals strengthen their functions by introducing corporatization in management and operation. Introduction of corporatizaton to port management and operation includes essential issues in national port policy because it involves reform of the port management system itself of the

country. Therefore full examination from wide-ranging viewpoints and thoughtful preparation are necessary when introducing corporatization.

In general, some potential problems of corporatization are identified as follows.

Initiative in management of port itself
Port operation by a monopolistic company may deprive a port management body of initiative on management of the port itself. Adequate supervision by the public sector is required.

Monopoly on cargo handling in ports
Fears of monopoly in cargo distribution through a port can emerge depending on contract conditions of corporatization. Full consideration for avoiding monopoly is necessary when preparing contract terms.

Labor Problems
Corporatization may result in a change of employees' status and personnel reduction. This can be a serious issue when ports face labor problems.

Inadequate supervision by public sector
Corporatization may make the public sector pay less attention to ports which could lead to delays in improving related infrastructures such as roads and inconsistent land use and environmental deterioration surrounding ports. This could be an obstacle to maintaining port functions.

Avoidance of political favoritism
In many cases, corporatization of ports is introduced by a high-level decision and can be political in nature. Fairness and transparency are important issues in corporatization and political favoritism must be avoided.

In order to avoid the above pitfalls, public sector including the government needs a sure policy and strong initiative on corporatization. Legal scheme and capable personnel are also required to successfully realize corporatization.

Sihanoukville Autonomous Port which was established as a state enterprise by sub-decree manages the port and makes efforts to strengthen its function through development and by providing good service to port users. One of the most urgent issues for SAP is to build up a new management and operation system and raise the skill level of its staff prior to the opening of the new container terminal in 2009. However, when it becomes necessary to develop the next new container terminal at some point in the future, introduction of corporatization may have to be discussed. In such a case, careful consideration of the above issues will be needed.
Circumstance surrounding international container ports is changing rapidly and it is necessary for Sihanoukville port to pay attention to such movements and take adequate measures timely.

Purpose of corporatization of ports is to contribute to national and regional development through the enhancement of a port's function as a distribution center and increased productivity. It is important that both the public and private sectors share roles in port management and operation and promote port activities under a partnership.

12.6 Port Security

In this section, an approach to Port Security is discussed and future requirements based on the current situation in Cambodian ports are identified.

(1) Approach to Port Security
The recognition that Port Security should be situated in the center of the logistic flows is very essential. The purpose of Port Security is to establish a cargo flow that is safe, quick and smooth. Therefore, it should be accomplished not only by one port but also among the all logistic bodies concerned. Port Security Measures are necessary to ensure that Cambodian ports can play a role in grovel Supply Chain Management (SCM).

(2) Methodology of Port Security
The under-mentioned methodology will be considered.

a) Identify Target to be Protected;
Targets to be protected include cargoes, port facility including water area and land area, equipment, and of course human life.

b) Consider Potential Threat;
This means to identify potential threats to the identified targets. Such threats include destruction of property, unauthorized access, robbery, transportation of arms and explosives, smuggling, hijacking, and so on.

c) Establish Countermeasure;
Countermeasures to combat potential threats include cargo inspection, enhancement of surveillance system, enforcement of pilot works including water area and land area, exhaustive gate and access control, installation of gate and fence, and so on.

These processes should be deliberated and incorporated into the Port Facility Security Plan (PFSP) of each port. And the PFSP should be approved by the Designated Authority (DA), MPWT in Cambodia, and executed by the port.

d) Identify Vulnerability and Reflect it in New PFSP;
As the circumstances around a port can change every hour, from a view point of Port Security, it is necessary to identify the existing vulnerabilities of the port and to review the PFSP itself. This is called a PDCA Cycle. P means Plan which indicates: PFSA and PFSP as the terms of Port Security, D is Do: Implementation and Training, C is Check: Audit and Verification, and A is Action: Review and Assessment.
However, in carrying out the PDCA Cycle, it must be recognized that the Port Security Measures are implemented considering the particular condition in the port itself. It is also necessary to understand that Port Security requires funds.

(3) Future Port Security in Cambodian Ports
In compliance with the effectuation of the amended SOLAS chapter and of the ISPS Code, MPWT enacted the internal ‘Law’ [Sub-decree No.40/SD/PK of May 9, 2006 on Ship Security and Port Facility Security]. In the Sub-decree, Phnom Penh Port and Sihanoukville Port are stipulated as international ports. The Port Security systems of both ports are proceeding systematically. However, under the present circumstances, the physical implementation of Port Security is dependent on foreign aid. In the future, Port Security shall be achieved using its own funds, based on the PDCA Cycle. In this way, Cambodian ports will gain a reputation of being safe and reliable.

According to financial statements, PPAP is in a healthy financial state. SAP has seen a decline in

overall revenues in recent years ahead, but is still in the black. Therefore, the Port Security budgets should be managed by the ports themselves to the extent possible.

On the other hand, there are no international private ports in Cambodia except some oil terminals which were developed by foreign investment. The Okhna Mong Port is the only one private port which has some concept of Port Security in its import/export operation. However, Port Security for them means 'safety' and their security measures are focused on theft and fire.
Therefore, to improve the Cambodian ports in future, it is important that officials directly in charge of ports not only have full knowledge of port security but also make efforts to get various persons to comprehend the importance of it.

There is no long-term master plan or short-term action plan covering Port Security. The most feasible plan shall be promptly selected and implemented in accordance with the actual situation of the port.

12.7 Development of SEZ at the Port

(1) Industrial Development of Sihanoukville Area
Industrial development of Sihanoukville area is important for the future economic development of Cambodia. Since Cambodia doesn't have enough industrial clusters yet, it is urgent that export processing industry by FDI be promoted using SEZ scheme. The Sihanoukville port and hinterland have high potential for this activity considering above mentioned "Growth Corridor" Study and mesh analysis.

At advanced cases in Thailand and Vietnam, industrial estates with scale of 500 ha were developed as the first step. When this scale industrial estate is full, it is expected to create employment for 50 thousand people and generate exports worth to 3 billion USD which is the same as the present export value of Cambodia. Taking the case of Laem Chabang Industrial Estate as an example, this scale of industrial estate has the potential to generate 200 to 300 thousand TEUs of container cargo.

In the case of Thailand and Vietnam, the first stage of development was very difficult because there ware only a few tenants for the first several years. But the tenant number increased rapidly and an industrial estate of 500 ha scale became full after gaining credibility among foreign investors. Therefore, overcoming the initial lean years is biggest and hardest matter. Accordingly, such a project needs to be fully supported by the government and ODA from experienced country (as in the case of Vietnam Singapore Industrial Park).

Roles of Cambodian government and donor country for putting SEZ of Sihanoukville area into orbit are shown below.

1) Necessary assistance from Cambodian government
   a) Expanding of incentives to developer, operator of SEZ and tenants
   b) Realizing one-stop service regarding administrative procedure in SEZ
   c) Securing expansion area of SEZ by regulation and guidance of land use

2) Necessary assistance from donor country
   a) Financial aid for development and operation of SEZ
   b) Providing knowledge and experience for development and operation of SEZ
   c) Assistance in training labor force

The developer and operator of the first planned 70 ha SEZ needs to overcome the initial hardships mentioned above. The following projects are expected to be relatively easy after success of the first project. The developer and operator of first project should attempt to expand the SEZ area using experience and credibility it gains.

(2) Positive growth cycle between the SEZ and the Port
Sihanoukville Port SEZ Development Project with an area of about 70 hectares inside the Port is being carried out as a yen-loan-financed project from 2007 and will be developed in 2009.

Sihanoukville SEZ is defined as the immediate priority project of "Phnom Penh-Sihanoukville Corridor", which is expected to lead to the future nationwide success of SEZs and economic development of the State.

On the other hand, the SEZ and industrial development in the coastal area are essential to the future survival of Sihanoukville Port which is the only deep sea port of the State from the view point of securing the base cargo. Accordingly, it is expected that a positive growth cycle will be formed between the SEZ and the Port.

(3) Key issues for the Sihanoukville Port SEZ
Circumstances surrounding the SEZ are hard because of the competition with other SEZs both in neighboring countries and other regions in the State. Key issues for success of the SEZ are shown below.

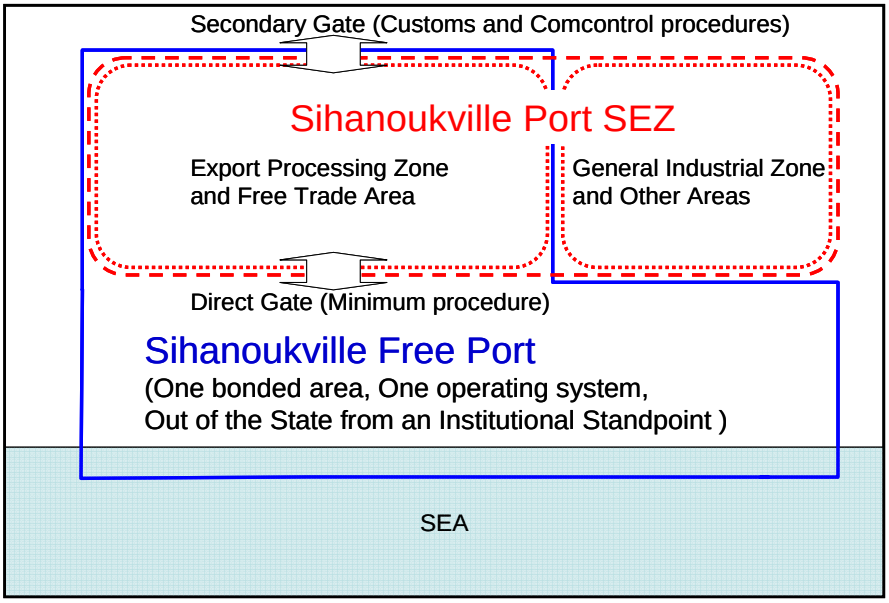
Table 12.7.1 Key Issues for the Sihanoukville Port SEZ

Issues	
Cost	Customs and Camcontrol
	Transport cost
	Land cost
	Maintenance/Service Fee
	Others（Electricity, Water etc.)
Time	Port operation
	Customs and Camcontrol
	Others
Procedure	Port operation
	Customs and Camcontrol
	Procedure in SEZ
	Others
Others	Fields of Investment
	Others

Source: Study Team

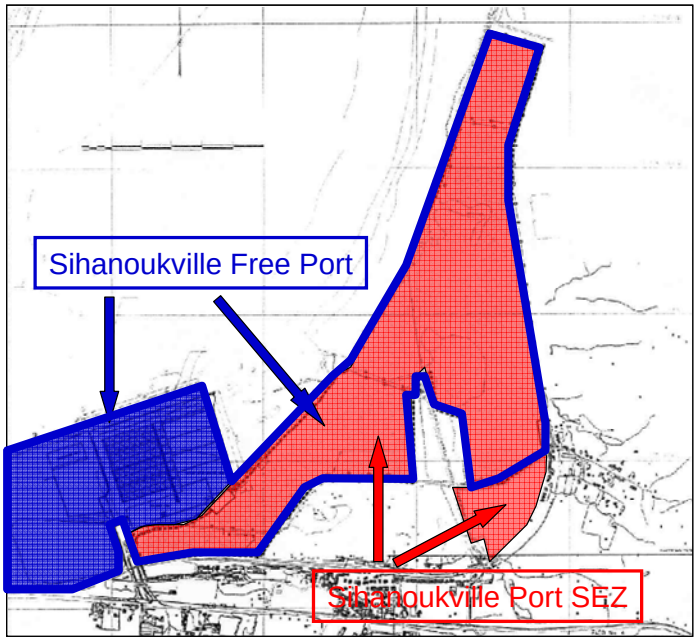
(4) Basic strategy
The biggest advantage of the Sihanoukville Port SEZ is the location. The SEZ will be established in the international port. Therefore, land transportation cost is expected to be very low. This in itself, however, will not be enough to make it competitive with other SEZs.

It's strongly recommended to take advantage of its close relation with the port in terms not only of geography but also organization. An integrated scheme, which means Free Port scheme in the Port and SEZ scheme in SEZ, should be established. The figure below shows the concept of each scheme and conceptual map of the Sihanoukville SEZ and the Port. Actual location of the free port and SEZ is envisioned in the subsequent figure.



Source: JICA Study Team

Figure 12.7.1 Conceptual Map of Sihanoukville Free Port and SEZ



Source: Study Team using information from the Sihanoukville Port

Figure 12.7.2 Actual Image of location of Sihanoukville Free Port and SEZ

Based on a comparison of SEZs and Free Port schemes in Asian countries, the following items should be considered.

a) Simplification of procedures by integrated operation system including establishment of EDI system covering the Free Port, the SEZ and other related organizations

b) Establishment of one bonded area in the Free Port as if it were out of the State from an institutional viewpoint.

c) Full dimensional cost reduction

d) Removal of the barriers of business in the SEZ and the Free Port

Chapter 13 Long-term Plan for Administrative Capacity Improvement

13.1 Responsibilities of Maritime and Port Administration

13.1.1 Maritime Related Administration

Maritime regulatory administration usually covers navigation rules, ship traffic control, maritime safety and security, ship safety, ship registration, port state control, seafarer's qualification, supervision of the contract of carriage, marine insurance and other services. Maritime operational administration works include search and rescue on the sea, maintaining navigational aid facilities in order, preparing nautical charts, maintaining channel, surveying ships safety, providing pilot service, preparing seafarers' training school, removing shipwrecks, monitoring oil spillage and other effluents, and providing other services on safety and security on the sea.

MPWT faces four main issues: “Ratification and implementation of International Conventions and establishment of domestic regulations”, “Implementation of flag state control”, “Establishment of domestic ship registration/inspection/PSC implementation regime” and “Establishment of MARPOL/SAR implementation regime”. All of these issues should be pursued both urgently and also step by step as part of the long term strategic plan.

1) Ratification of International Conventions and establishment of domestic regulations
a. Formulation of Maritime Code implementing already ratified Conventions and new Conventions preferably to be implemented after ratification
b. Formulation of “Domestic Ship Registration and Inspection Regulation”, which will constitute fundamentals for ship safety administrations
c. Formulation of Regulations which is required by the Maritime Code (This work is mainly to make domestic regulations corresponding to the ratified International Conventions)

2) Flag State Implementation
Implementation of Flag State Control adopting controls over Open Registry Company and Ship Classification Societies

3) Formulation of Domestic Ship Registration and Inspection Regime, and Port State Control Regime

4) Formulation of MARPOL and SAR Implementation Regime
The first step is to establish a National Committee augmenting responsible implementing agencies such as the Ministry of Environment, Defense Ministry, Ministry of Interior etc. for MARPOL and SAR Implementation. MPWT (MMD) should be the focal point and the coordinator of the National Committee. The second step is the establishment of a Coastal Communication Center to implement the operational requirements of SOLAS/MARPOL/SAR introducing GMDSS facilities, prevention of marine pollution facilities and oil spill combating ships. Development of human resources should be pursued at the same time.

The main obstacle to pursuing these issues is the “Insufficient human resources”. To secure adequate human resources is a vital prerequisite for MMD administrative activities, but it cannot be accomplished in a short time. MMD should continue to improve the problem step by step based on a strategic approach.

The assignment to MMD can be divided into two categories. First is the role of “Planning and Coordinator”, second is the role of “Executing agency”. The role of “Planning and Coordinator” mainly corresponds to dealing with International Conventions and ASEAN. In the near future, the “Promotion of domestic maritime industry” will be added as the main issue in this category. The

role of “Executing agency” mainly corresponds to the enforcement of regulations such as ship registration, ship inspection, and port state control.

We would like to propose that MPWT (MMD) increase human resources under a long-term strategy as follows;

1) Expand the working area step by step as the Executing agency, as well as promote the capabilities of present human resources who form the nucleus of present activities. Increase the number of ship inspectors and relevant technical officers through budget request in connection with the expansion of actual working area for ship registration and inspection. Employing officers in the rural MPWT offices as the officers of MMD is one measure to be considered.

2) Increase the number of officers utilizing the role of “Planning and Coordinator”. MPWT (MMD) is going to be employed as the Focal Point (Coordinator) to the domestic and international responsible authorities in establishing prevention of marine pollution and SAR regime. Present implementation teams are composed of SAR team in the national defense and marine police. The local offices of the Ministry of Environment are also involved. In the first step, these present implementation teams should be built onto the implementation team in the Coastal Communication Center, which MMD should also be the Focal Point (Coordinator). In the second step, MMD should be encouraged to build the management class of the implementation team onto the Planning and Coordinator team in MMD. MMD could solve the lack of human resources problem through this strategy, and also could promote the capabilities for planning and coordination role.

We would like to point out the importance of strengthening the regional cooperation scheme to pursue strategic organizational expansion. Activities in the expanded ASEAN are important to clarify the responsibilities and rights of each independent country. To utilize the technical cooperation scheme by IMO is also important in this regard. On the other hands, strengthening cooperation activities between Cambodia and neighboring countries (Thailand and Vietnam) is important to clarify responsibilities and rights in the Gulf of Thailand.

13.1.2 Tasks of Port Administration

Various kinds of tasks are required to maintain order and safety in a port. First, the basic role of a port is to accommodate ships in a safe and secure manner; accordingly, port entry, berthing and departure control are vital elements of port administration. Secondly, administration related to cargo handling plays an important role, for example administration related to examining cargo quantity and quality, assessing cargo value, levying duties, inspecting hazardous insects, virus and materials, and checking seafarers and passengers. Furthermore, it is also necessary to secure the safety of port labors, and provide general civic services such as fire fighting, crime investigation by police, and others.

Port administration shall cover fair and safe operation of pilotage service, forwarders' service, warehouses, transportation, stevedoring service, fuel and water supply service and other port services. However, regulations shall be minimized in line with the deregulation of government administration and encouragement of private business activities.

Port district or national government is responsible for the development, utilization and preservation of the ports in their jurisdiction. Administration on port development is the responsibility of the public sector in connection with road transportation, railways, and industrial development in the hinterland. In addition to regulatory administration, economic affairs such as government subsidy for port development or tax exemption for new port development are also important.

Table 13.1.2 Tasks of Port Administration

Areas	Administrative Activities/Organization
Policy Planning	Establishment of Port Authority/Management Body Port Development and Utilization
Port Management/Operation	Port Facility Development and Maintenance Port Security Terminal Operations Stevedoring, Warehouses, Transportation Tugboat Service Labor Standards Inspection
Navigation	Channel Dredging and Maintenance Pilot Service Port Entry/Clearance
Trade	Customs Tally, Measurement Certificate of Origin, Export Certificate, Others Insurance
Safety/Security	Coast Guard, Police, Navy Immigration Quarantine Animal/Plant Quarantine Fire Services Marine Accidents Inquiry

(1) Administration on Port Activities

Customs, immigration control, animal and plant quarantine and other port related government entities each have different objectives. Therefore, no country has unified all the various aspects of administration, but many countries are trying to establish a single window system for port entry and clearance procedures. In accordance with the Convention on Facilitation for International Maritime Traffic, 1965, it is recommended to use standard documents on port entry procedures, ship safety inspection, import export duties, immigration control, and other protocol related to port. Simplification of port related procedures is an important international theme. Typical procedures in ports are indicated in Table 13.1.3.

Table 13.1.3 Typical Port Entry and Departure Procedures

Authority	Port Management Body	Harbor Master	Quarantine	Immigration	Customs
Before Port Entry	-Request for Berth Allocation	-Notice of Approach -Notice of Oil Pollution Compensation Insurance -Notice of ISPS status -Application for Dangerous Cargo Handing -Request for Anchorage -Request for the Shift of Ship	-Request for Entry -Notice of Crew's Health	-Request for Entry -Crew List -Passenger List	-Ship Information -Navigational Information -Crew List -Passenger List Ship Sundries List
At Port Entry	-Notice of Entry -Payment of Port Dues	-Notice of Entry -Notice of Ship Shift -Notice of Berthing	-Notice of Entry -Crew List -Passenger List	-Notice of Entry	-Notice of Entry -Payment of Duties
At Departure	-Notice of Departure -Payment of Port Charges	-Notice of Departure		-Notice of Departure	-Notice of Departure

1) Notice of Approach

Vessels over a certain tonnage or carrying dangerous cargo are requested to inform their approach to harbor master in advance of their port entry.

2) Request for Berth Allocation

Ships are requested to inform the port management body for berth allocation in advance.

3) Notice of ISPS status

All vessels engaging in international voyage are requested to provide their security information and history of calling ports 24 hours prior to their arrival.

4) Application for Dangerous Cargo Handing

Handling of dangerous cargoes listed in IMO convention is subject to approval of harbor master from the view point of port and ship safety.

5) Request for Anchorage

Anchoring of vessels over 500 GT or vessels loading dangerous cargo requires the approval of harbor master before entering port.

6) Request for the Shift of Ship
All vessels in port except small crafts are requested to obtain the approval of the harbor master when they shift from a berth or anchorage to another place.

7) Notice of Oil Pollution Compensation Insurance
Vessels over 100 GT are required to show their certificate of PI insurance to cover the oil pollution accident and the removal of shipwreck.

8) Quarantine
All vessels calling from foreign countries are required to inform the quarantine office of crew members' health and ports of call during the last 28 days 24 hours prior to their port entry.

9) Immigration
All vessels calling from foreign countries are obliged to report the list of crew members and their mariner's pocket-lodger information, list of passengers and their passport information 24 hours prior to their port entry.

10) Customs
Customs requests information on estimated arrival date, and manifest 3 days prior to entry. Notice of crew members and their pocket-lodger information, passengers and their passport information, ship sundries and other information is required before entry.

11) Notice of Entry
All ships are requested to inform their entry to harbor master, port management body, quarantine, immigration office and customs office immediately after their entry.

12) Notice of Departure
Before departure, all ships are required to get clearance of harbor master, port management body, immigration and customs after paying duties, taxes and port dues.

In order to avoid the duplication of some documents, introduction of EDI system is strongly recommended to ease the workload of shipping lines, shippers and consignees. One stop service is indispensable to encourage and promote the use of port.

(2) Administration on Port Development
Besides the regulatory administration mentioned in the previous section, it is also an important task of port administration to encourage port development to meet the future demand for cargo throughput and to promote industrial development through the port development.

Port authorities shall participate in policy discussions on regional transportation network planning and regional industrial development planning and collaborate with relevant administration on regional economic development.

Development and revision of the national port policy is an important task of port administration, which shall aim at improving the port management and operation scheme of the country. It will also be important task to give financial assistance to port development and levy tax on port activities which will incur additional administration cost for the government.

(3) Administration on Port Statistics and Survey
Proper port administration involves monitoring the performance of each port and introducing adequate measures to overcome any shortcomings. Statistics are an effective means to monitor the

activities of each port, therefore, it is strongly recommended to establish a national port statistics system. Cambodia promulgated the statistics law in May, 2005, and related sub decree in January 2007.

However, it is necessary to establish a sub decree for each statistical item. In order to establish port statistics scheme, dedicated officer/team shall be nominated to draft sub decree on port statistics, which stipulates who is responsible for statistics at each port, what kind of information shall be arranged in port statistics, when such statistics shall be reported to MPWT, and other necessary regulations.

(4) Administration on Technical Affairs

It is another important task of port administration to evaluate the safety and stability of port facilities based on technical standards. Such technical standards shall cover the safety of channel and basin, the stability of jetties, quay walls and breakwaters and environmental impact of dredging and land reclamation.

Taking into account that private port development is now going on at Ports of Oknha Mong and Sre Ambel, and development plans are proposed in Stueng Hav area and Kampot province, technical evaluation of development plans becomes important for port administration. Specifically, the following points shall be examined in the technical evaluation:

1) Safe navigation and turning of ships shall be assured at the channel and basin of the port in consideration of wave disturbance, tidal current, wind direction, ship's under keel clearance, width of entrance channel and other safety requirements

2) Breakwaters shall have enough stability against waves and shelter the basin from waves, and shall not cause sedimentation at river mouth or beach erosion on the nearby coast.

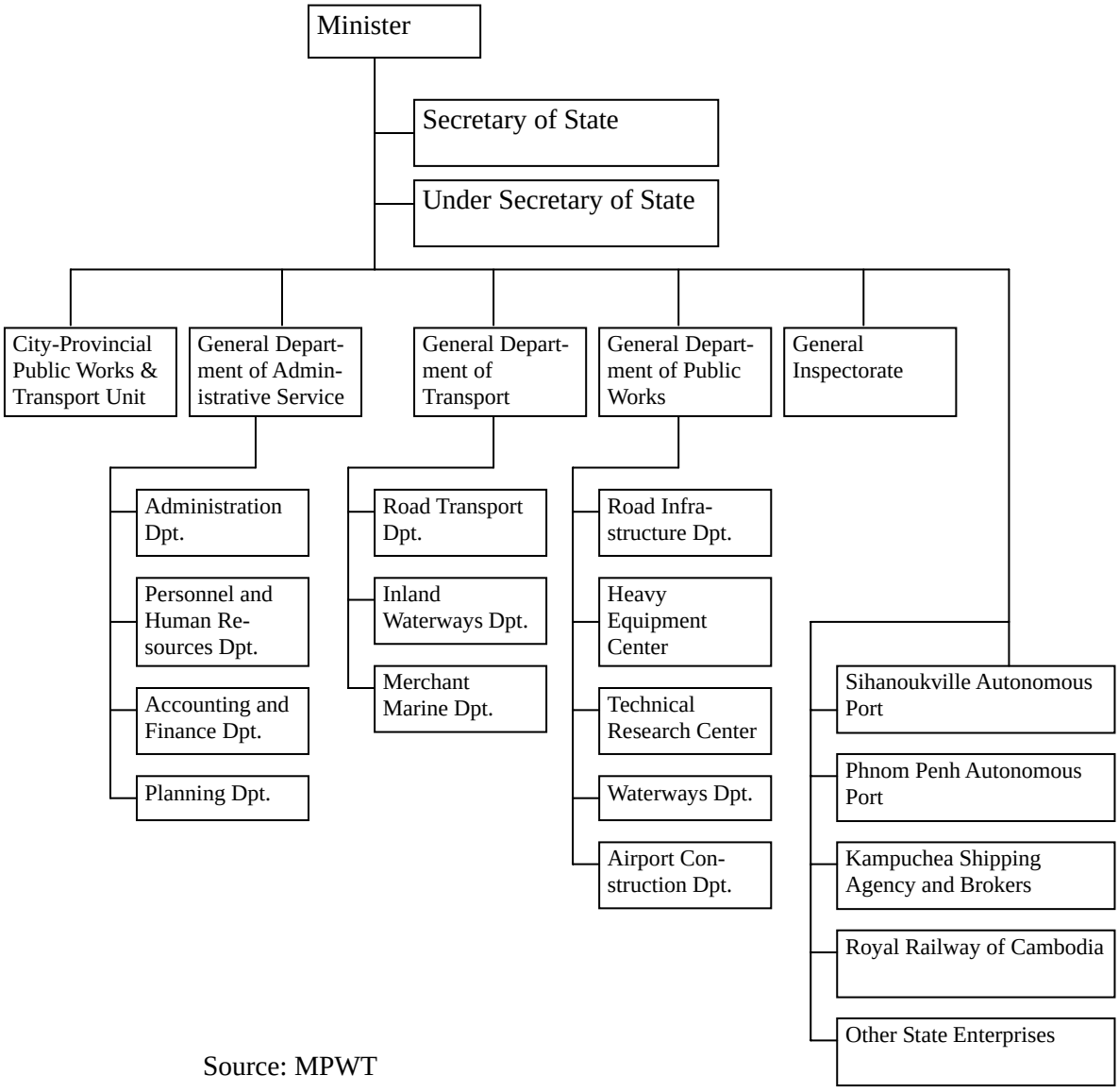
3) Quay walls shall have enough stability and durability over a certain period, more than 30 years for example. Passenger facilities shall be structurally sound.

4) Port layout and construction procedure shall be carefully planned and examined by environmental impact assessment. Counter measures against oil spillage or other accidents shall be well planned. Port development plan shall be coordinated with the regional road network plan in the hinterland or regional industrial development plan.

13.2 Maritime and Port Administration

13.2.1 Present Organization

The organization of Cambodian maritime and port administration is shown in Figure 13.2.1. Five Secretaries of State and five Under Secretaries of State are assigned to MPWT. Three General Departments, General Inspectorate and 24 City-Provincial Public Works & Transport Units are set up in the MPWT. General Department of Administrative Service has four departments, namely administration, personnel and human resources, accounting and finance, and planning department. General Department of Transport administers road traffic, vehicle registration, shipping, and inland waterway transportation. General Department of Public Works administers road construction and maintenance, inland waterway maintenance, airport construction, public buildings' rehabilitation and maintenance and research department. (Sub Decree on the Organization and Functioning of the Ministry of Public Works and Transport, No 14/ANK/BK, March 1998)



Source: MPWT

Figure 13.2.1 Organization of MPWT

Departments and state enterprises related to the maritime and port sectors are shown in Figure 13.3.2. Inland waterway transport department and merchant marine department are placed in the General Department of Transport. Waterways department is in the General Department of Public Works and Waterways. Related state enterprises are Kampuchea Shipping Agency and Brokers, Sihanoukville Autonomous Port, and Phnom Penh Autonomous Port.

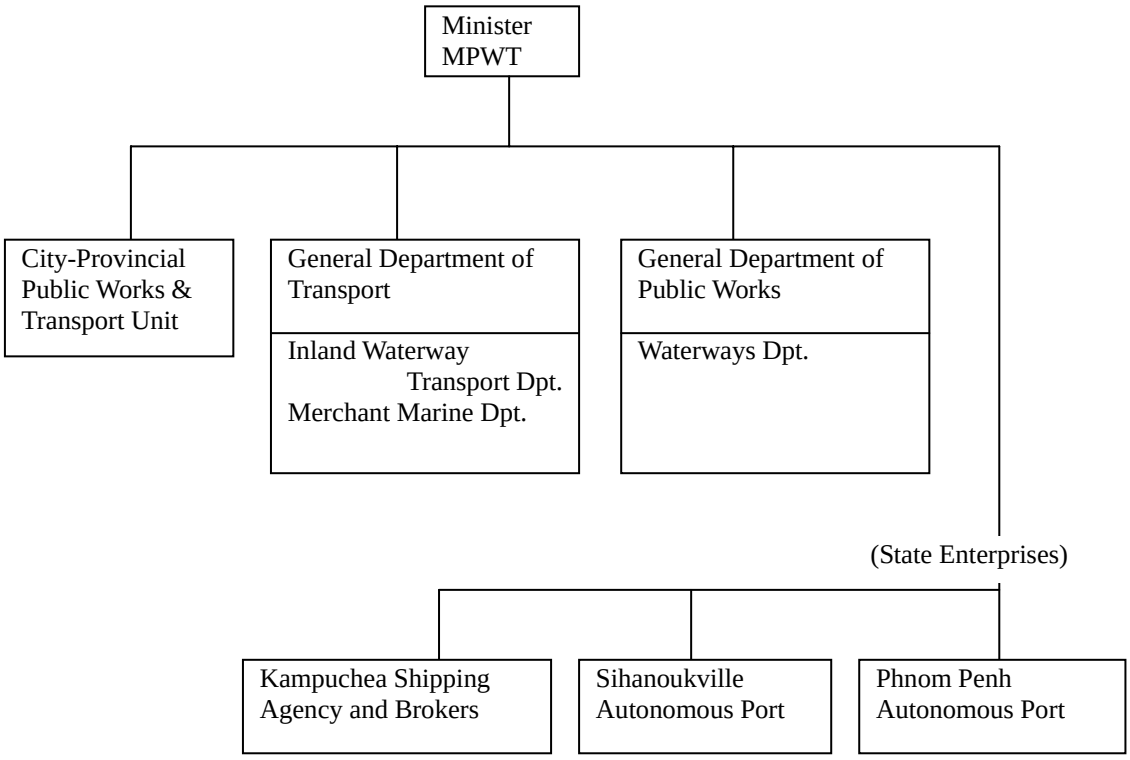


Figure 13.2.2 Present Maritime and Port Related Organization

The Waterways Department is in charge of:
1) Studying and conducting works relevant to traffic along national waterways;
2) Preparing maps and plans of rivers and canals;
3) Putting signs and buoys along rivers;
4) Taking measures to clear obstacles in waterway traffic;
5) Informing river transport drivers of any recently discovered obstacles;
6) Arranging proper docking of transport means, rafts, floating houses, and the like;
7) Reviewing construction proposal in, under, or above rivers;
8) Studying embankment erosion works;
9) Taking measures to dredge river to serve transportation;
10) Building local ports in collaboration with local authorities;
11) Managing waterway shoulders;
12) Reviewing proposals to dredge rivers and deepen river beds;
13) Imposing fees on waterway transportation; and
14) Recording water height along rivers within the country for waterway traffic

In spite of the above assignment, PPAP collects channel dues, which is listed in No.14) of the above mentioned responsibilities, and carries out maintenance dredging of the channel and installation of buoys for navigation on behalf of the Waterways Department.

The Inland Waterway Transport Department is responsible for:

1) Managing any transport along rivers, creeks, small rivers, and lakes;
2) Making and monitoring the enforcement of rules and regulations and the conduct of river transportation;
3) Supervising and monitoring transport development policies;
4) Issuing driving license, boat and driver identifications, and business license;
5) Administering local ports;
6) Inspecting the statutes of domestic ships

While container ships and oil tankers engaging in river transportation from Vietnam to Phnom Penh Port are international ships and some of them are Cambodian flag vessels, administration on such ships, seafarers and voyages are not necessarily well coordinated between IWT and MMD.

The Merchant Marine Department is responsible for:
1) Managing the general administrative work of commercial ships and public institutions of the state
a) Managing regular maritime transportation and monitoring the enforcement of rules and regulations;
b) Studying and evaluating the qualitative and quantitative needs for commercials ships of the state;
c) Researching on scientific and technical ship's conception;
d) Providing technical assistance with regards to investment in the shipping industry;

2) International and regional maritime cooperation:
a) Making and proposing technical bases for international and regional maritime cooperation;
b) Managing international and regional maritime cooperation;
c) Managing bilateral agreements on maritime transport cooperation;
d) Negotiating international maritime transport arrangement; and
3) Management of related professions in the maritime fields

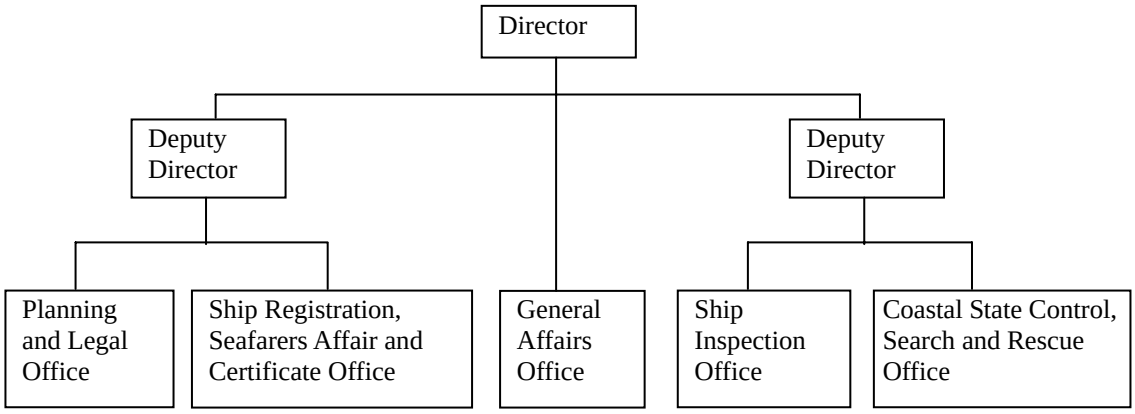


Figure 13.2.3 Merchant Marine Department

Based on the above responsibilities, MMD has five offices, namely general affairs office, planning and legal office, ship registration, seafarers' affairs and certificate office, ship inspection office, coastal state control, search and rescue office. However, the position of director is vacant at some offices nor can all offices be said to be functioning well. While MMD has an office for ship registration, all responsibilities for ship registration have been shifted to the Office of Council of Ministers. MMD has therefore no responsibility on this matter.

13.2.2 Short-term Improvement of Maritime and Port Organization

There are some shortcomings in maritime and port administration as indicated in the previous chapters. To cope with these administrative shortcomings, it will be necessary to improve the Merchant Marine Department and set up the Port Department. Both departments will take responsibilities for:

1) Preparing regulations and protocol on the entry and clearance of foreign vessels according to international custom and Cambodian laws, and administering the ship entry and clearance procedures
2) Drafting port policy to coordinate private and public ports, preparing regulations to ensure fair competition between private and public ports, and assigning a harbor master at each private port to supervise ships' navigation and maintain port's order
3) Preparing statistics of cargo throughputs, ship calls, and other important information on port performances
4) Improving the management of ship registration and seafarer's certificate, and issuing mariner's pocket-ledger to crew members on Cambodian flag vessels
5) Stipulating the rules on shipping agency activities, and giving approval to private shipping agent in accordance with the rules
6) Implementing maritime education and ratings' training in collaboration with Maritime Training Center in Phnom Penh Port.

In order to meet these requirements, organizational improvement is expected as shown in Figure 13.2.4 in due course.

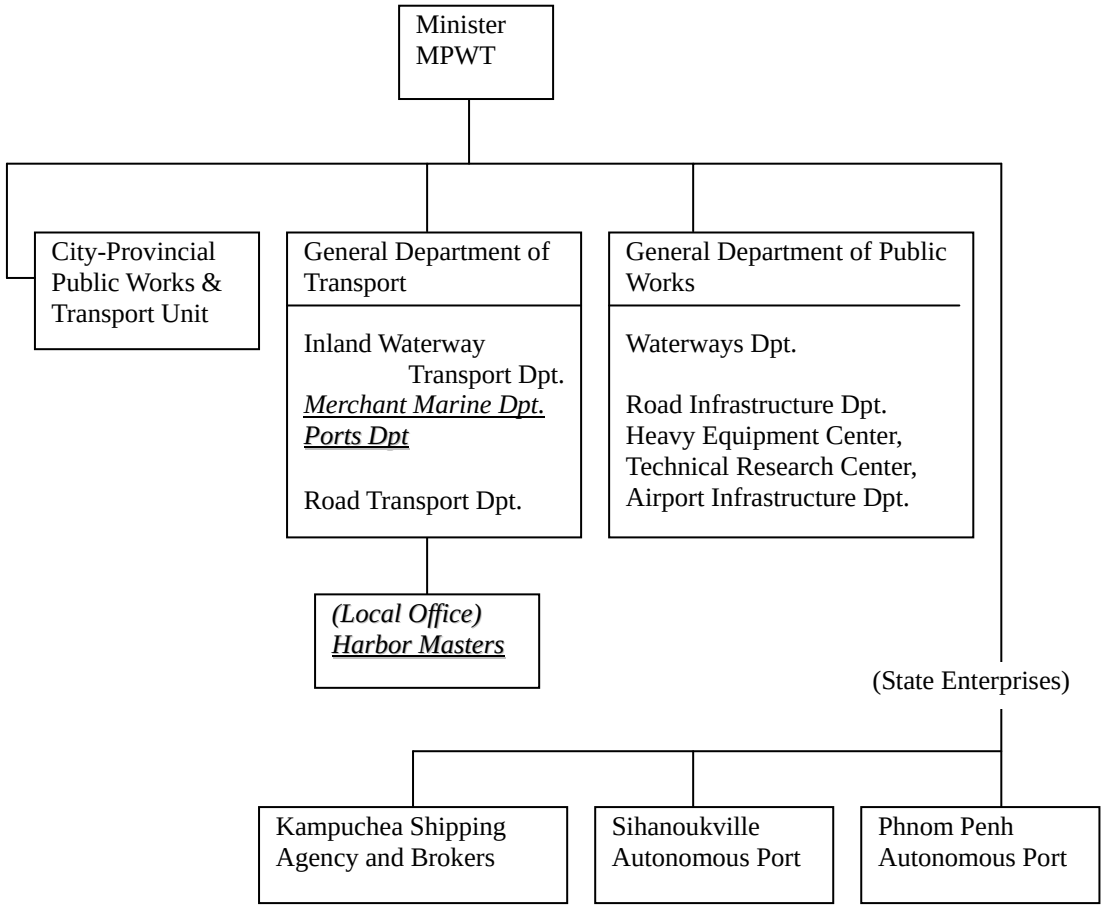


Figure 13.2.4 Short-term Organizational Improvement

13.2.3 Long-term Improvement of Maritime and Port Administration

It will be effective to establish a general department of water transport to implement maritime and port administration as well as a general department of land transport to carry out road and railway administration. Inland waterway transportation and maritime transportation has a close connection with each other, so that similar rules on ships, crew certificate and navigation safety shall be implemented under an umbrella. Maritime education will be the responsibility of the Ministry of Education, Youth and Sports, however, training for rating crews will be the responsibility of MPWT. Maritime Practical Training Center shall be set up under the administration of MPWT, like a Maritime Secondary School of VINAMARINE in Vietnam.

KAMSAB may change from a state enterprise administered by MPWT to a state owned company, whose shares will be held by the government and whose subsidiary companies will provide services of shipping agent, logistics, port cargo handling and other related business. This change will expand the business area of KAMSAB. On the other hand, private companies will be eligible to enter the shipping agent business after obtaining approval from the competent authority.

It will be necessary to introduce more than two companies to undertake shipping related business, namely shipping agency, ship brokers, pilot service, tugboat service, cargo handling, and other port services. In order to achieve this scheme, the government shall establish a law on shipping and port business. Based on that law, competent authority shall evaluate applications for such business and issue business certificates to private companies. If the kind of business has no need for government intervention, competent authority shall just receive a report of such business periodically.

Ports of Sihanoukville and Phnom Penh are established by sub decrees and have the status of autonomous port. Article 3 of the Sub Decree mentioned that SAP and PPAP obtain the power and other duties from the state to fulfill the missions accordingly with its objective with the status of Public Department. Taking into consideration that Cambodia has an open-sky open-sea policy, many private companies will participate in ship and port related business. In this connection, it will become necessary to separate regulators and operators in the port management and shipping business management.

When the Port Authority of Singapore was corporatized in 1996, Maritime and Port Authority (MPA) was established as a ministerial department and regulatory tasks were transferred from PSA to MPA. Port authority was corporatized and PSA Corporation was established in 1997. Shares of PSA Corporation are wholly owned by Temasec, the Singapore government investment company.

Tasks transferred to MPA are:
1) Administration on ship entry and departure
2) Ship navigation safety
3) Environmental protection in the port area
4) Establishment of port related regulations
5) Control of port tariff
6) Other public roles and regulatory work

SAP and PPAP should invite skillful private companies to operate new terminals to be developed together with the growth of ports. It may be also effective to establish JV with international terminal operators. Port of Singapore Authority was corporatized and expanded their business to overseas ports. However, SAP and PPAP will concentrate on the growth of their ports and increasing productivity and service level of their ports. In this regard, both ports may shift their focus from operation to a landlord type port management. Port authorities such as the Port Authority of Thailand and Sri Lanka Port Authority are reducing their operation division and inviting international terminal operators to their new terminals. One option for the future

organization of Cambodian maritime and port sector is indicated in Figure 13.2.5.

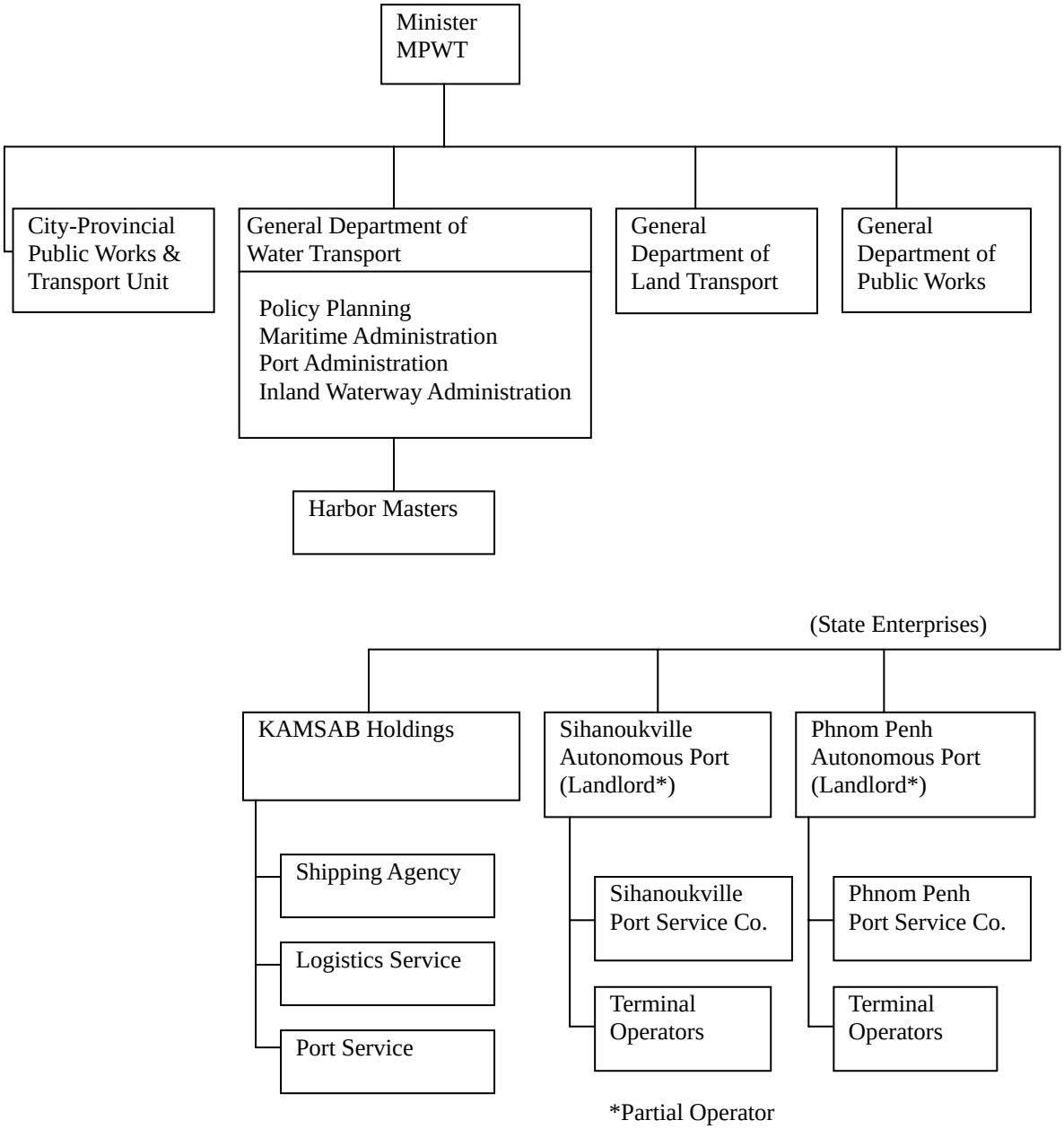


Figure 13.2.5 One Option of Long-term Organizational Improvement of Maritime and Port Sector

13.2.4 Organization for Search and Rescue and Marine Pollution Prevention

Cambodia has no dedicated organization for the implementation of maritime safety and coast guard; a special committee is necessary for search and rescue operation and marine pollution prevention, namely National Maritime Search and Rescue Committee and National Oil Spill Response Committee. The latter has already commenced. In order to coordinate activities of each member, Coastal Communication Center will play a key role in collecting information and planning joint operations with neighboring countries. MMD will be the focal point as the secretariat of both committees. Organizational chart of both committees is shown in Figures 13.2.6 and 13.2.7.

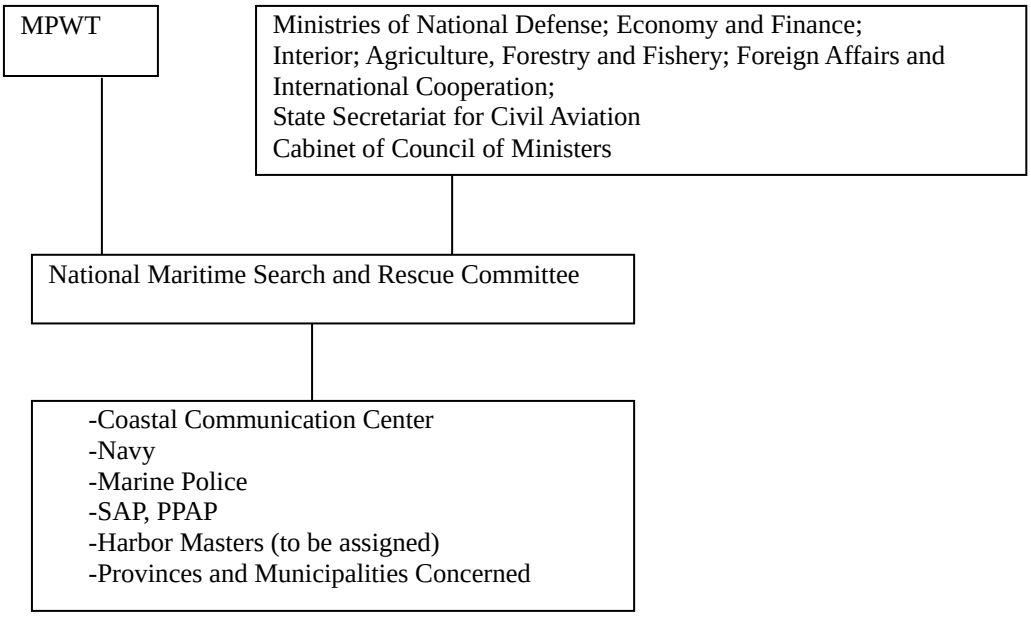


Figure 13.2.6 Plan of Organization for Search and Rescue

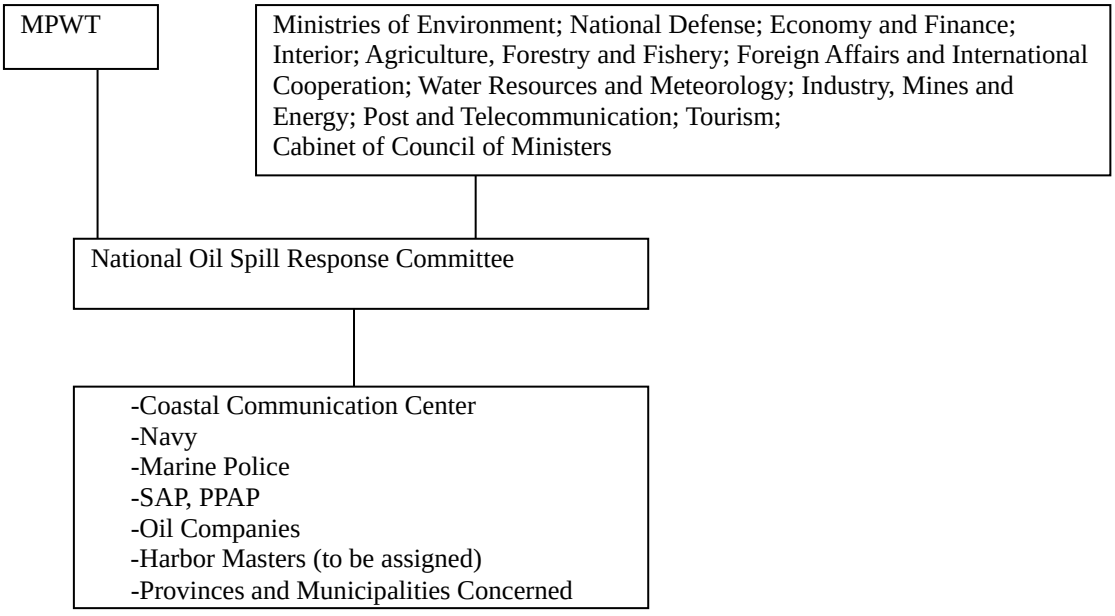


Figure 13.2.7 Plan of Organization for Oil Spill Response

13.3 Sector Program Approach for Enhancement of Administrative Capabilities

13.3.1 Components of Maritime and Port Sector Program Approach

In the globalization of economic activities, it is important to attend the global market by means of import and export to achieve economic growth. Competitive maritime transportation is therefore indispensable to every country, particularly to developing countries, who suffer from a lack of maritime infrastructure, expensive and slow maritime service, and irrational port practice. Establishment of competitive maritime transportation will be a key to economic growth of Cambodia.

Upper goal of maritime and port improvement projects is to achieve national economic and industrial development. Upgrading the competitiveness of maritime transportation is indispensable to achieve the upper goal. Efforts should be made to 1) strengthen shipping services in terms of cost and reliability, 2) rationalize maritime and port administration, 3) improve port management and operation and encourage port development. In addition, 4) development of land transportation will play an important role in strengthening the Cambodian maritime and port sectors. These four components are identified as key factors of the sectorial program approach.

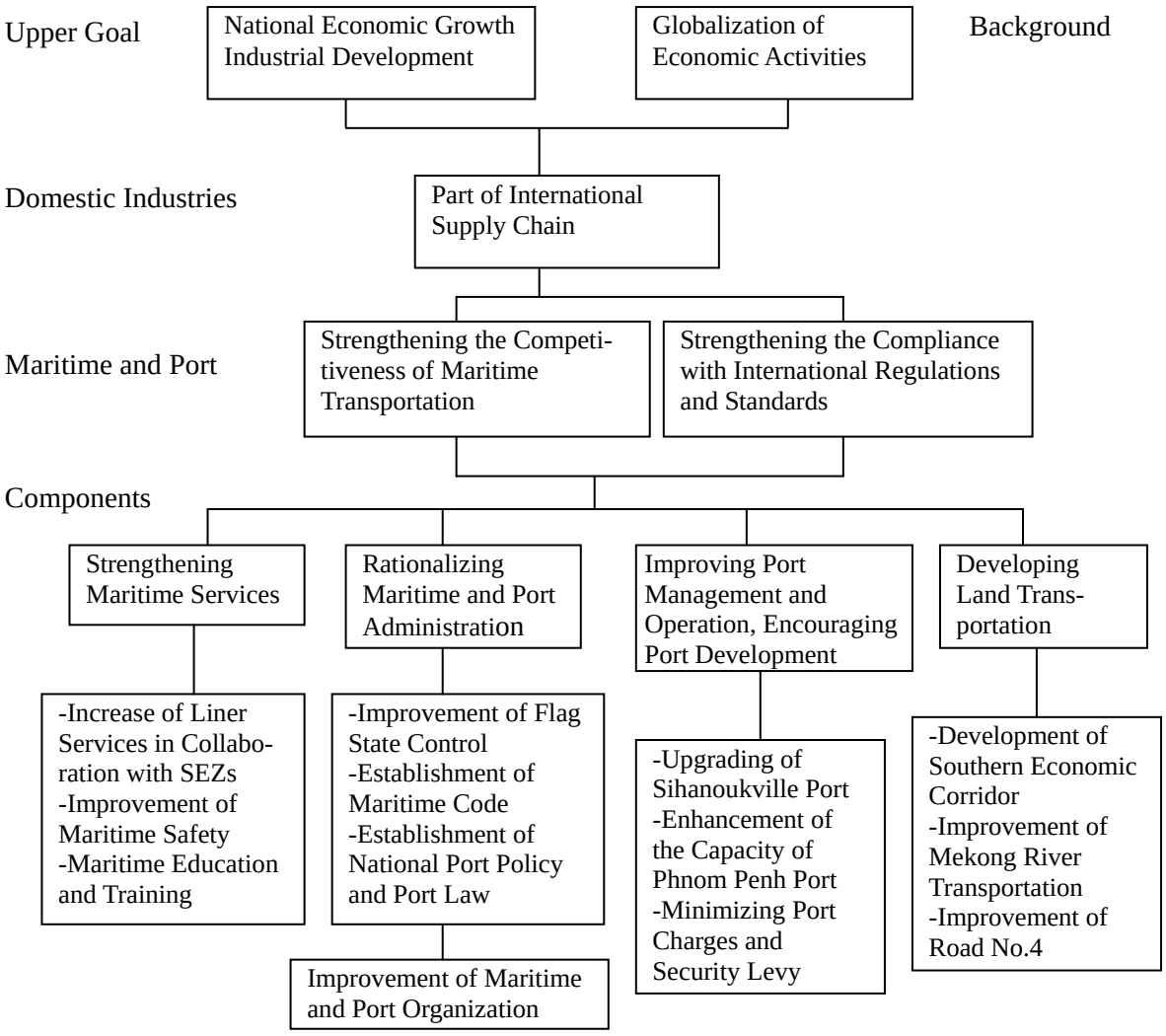


Figure 13.3.1 Maritime and Port Sector Program Approach

The Second Socio-Economic Development Plan (Royal Government of Cambodia, 2000) aims at economic development of Cambodia, in which the transport sector's goal is to establish a transport network conducive to regional and national economic development. Important subjects are:
1) To rehabilitate and develop transport infrastructure for international trade routes and tourist routes;
2) To increase the income of transport sector for the sake of infrastructure improvement;
3) To improve the operation scheme and increase the capacity; and
4) To encourage private participation in the development of transport infrastructure.

The National Poverty Reduction Strategy (Royal Government of Cambodia, 2002) placed priorities of the transport sector on:
1) Ensuring financial resources for road improvement and development
2) Capacity building of related ministries and agencies
3) Developing Sector Policy for Poverty Reduction
4) Promoting border trade between Thailand and Vietnam

According to these national plans, maritime and port sector aims at promoting international trade, improving management and operation of the sector activities, and developing the capacity of related organizations. Short-term action plan for the Enhancement of Administrative Capabilities focuses on these three themes.

13.3.2 Capacity Development

In the field of maritime and port administration, human resources are very limited and no expertise is available for policy planning and supervision of maritime and port activities. Particularly, the middle management of each organization seems insufficient to implement effective administration.

All international shipping services are carried out by foreign companies, and almost all oil tankers on the Mekong River are Vietnamese vessels. Consequently, maritime administration does not provide effective seafarers certificate, ship inspection or maritime business license. Since the maritime administration is not well developed, Cambodia admits the open registry of international vessels. Therefore, many sub-standard vessels have Cambodian flags and large number of Cambodian flag vessels is detained by Port Sate Control at Asian Ports. High detention rate of Cambodian flags is reported by Tokyo MOU. Improvement of this situation is expected by the world maritime society.

Ports of Sihanoukville and Phnom Penh are two autonomous ports directed by their respective Boards. Both ports are financially independent and each has reported a surplus in recent couple of years. Both ports pay the revenue tax and excise to the government. However, port charges of both ports are much higher than those of neighboring Thai ports or Vietnamese ports. Low productivity of cargo handling discourages ship calls of international shipping lines.

Due to the limitation of government's budget, it is desirable to introduce private sector participation to road maintenance, air port operation and other public services. Inspection of containers is also commissioned to a private company, which charges a very high fee as a result of its monopoly. Toll fee on the Road No.4 is also collected from container trucks owing to the justification of maintenance fee. Reasonable charges would be justified but a present they are discouraging international maritime trade. Efforts should be made to reduce such charges and the public sector should bear the cost of basic infrastructure of the country. Competitiveness of maritime transportation is greatly reduced as a result of these charges.

As the public sector is not willing to develop new port facilities and their operating charges are

high, private ports have been developed along the coast of Kompong Cham. However, no maritime administration covers such private port activities. It is an important task of the maritime and port administration to secure the safety of navigation and clarify rights and obligations of private ports. Cargo throughput statistics of private ports is also necessary for setting up proper national maritime and port policy.

(1) Administrative Capacity Development
To implement effective maritime and port administration, it is essential to have a budget, law and organization, all of which insufficient at this moment. Assistance by experts will be beneficial at this stage to establish appropriate rules and regulations on maritime and port activities. Capacity development of administrative staff is very important for effective management of both sectors.

Goal: To strengthen the capacity of maritime and port administration
Measures: To collaborate on the establishment of laws and regulations, and to give prompt advice through the course of legislation.

(2) Operational Capacity Development
To secure maritime safety and improve maritime services, it is also essential to upgrade skills of operational staff members. Training of staff is required for search and rescue on the sea, coast guard activities, maintenance of navigational aid facilities, survey on the sea, port security management, ship survey, pilotage service, seafarers education, terminal operation, dangerous cargo handling and other operational skills.

Since the opportunity for such training is inadequate in Cambodia, it will be necessary to receive practical training in neighboring countries and donor countries. Suitable organizations for the training of maritime and port sector staff are maritime institutes in Vietnam, maritime safety agencies and maritime academies in donor countries, port authorities in neighboring countries and donor countries and other agencies concerned. On the job training will be more effective than lectures or seminars.

(3) Capacity Development of Private Sectors
As many activities necessary for maritime and port sectors are provided by private companies, capacity development of private sector staff members is also essential for achieving competitive maritime transportation. It may be effective to transfer state companies to private companies or encourage private companies to participate in public services. However, careful consideration shall be given to the situation of related private sectors. Cambodian private sector does not have enough funds for investment, nor is their accounting system transparent. In this sense, more than two private companies should carry out the same maritime and port activities.

Improvement of the capacity of the private sector in the field of maritime and port business shall be encouraged in the shipping agent business, tally and measurement of cargo, stevedoring service and other services related to maritime and port. Training for the private sector is also important to the maritime and port sectors in Cambodia.

13.3.3 Establishment of Basic Legal Scheme on Cambodian Port

(1) Concept of Cambodian Port Law
Supervision of logistics and cargo handling business, navigational safety, customs, quarantine, immigration, control of trade etc. are all aspects of port administration and the competent authorities administer these matters subject to related laws and regulations. In order for ports to play roles as social-economic infrastructure and provide high-quality service to users, it is required for the port to be managed by one responsible organization other than the above authorities. The Cambodian Port Law shall provide the necessary legal scheme to realize this.

There is no legal scheme which covers overall development and management of ports in Cambodia. At present, Cambodian Maritime Code is being drafted. It includes a chapter for waterways and ports. The chapter consists of nine articles: Competent waterway and port authorities, Power of port authorities, Restriction on alienation of land, Power of port authority to make port regulations, Appointment and power of harbour master, Levy of harbour dues and rates, Inspection of rules, Regulations for waterways and Regulations for private port facilities.

According to the Code (draft), "the waterways and ports in Cambodia shall be owned and managed by the competent authorities designated by the Royal Government of Cambodia" and the "legal status" and management etc. "of the competent authorities" "will be determined by the sub-decrees or declarations." A port authority shall be designated subject to the provision of the Code or other applicable laws.

Construction and maintenance of port facilities, business of carrier, stevedore, wharfinger, warehouse and lighterman, water and electricity supply to vessels and appointment, license and management of pilots, appointment, license and regulation of weighers and meters, control of use of berth and approach, determining and imposing charge for services and grant etc. are listed as powers of port authorities. Further details on welfare of employees are also noted as powers of port authorities.

In addition, regulations for traffic within the limit of port, ballast discharge, anchoring and mooring of ships etc. made by port authorities are listed. Port authorities can prescribe penalties. It is also provided that port authorities make tariff and levy dues and rates and allow any person to inspect it and that port authority may appoint one or more harbour masters in respect of any port.

For private ports, it is provided that "Royal Government of Cambodian may make regulations for the establishment and operation of privately owned or managed port facilities." Conditions such as ensuring safety and security, protection of environment, prohibition of anti-competitiveness, delimitation of port area, qualification of employees and ensuring compliance may be imposed to operators and users of private port facilities.

It is thought that the Code (draft) may have been drafted for provision on administrative powers and responsibilities on the basis of self operated public ports. Regulations on private ports are provided as special cases.

Japan's Ports and Harbours Law consists of seven chapters and sixty-three articles: Chapter 1 General Provisions (article 1-3), Chapter 1-2 Port and Harbour Plan (article 3/2-3/3), Chapter 2 Port Authority, Section 1 Establishment of Port Authority (4-11), Duties (12-13), Organization (14-27), Finance (28-32), Chapter 3 Local Public Entity as Port Management Body (33-36), Chapter 4 Port area and Water front area (37-41), Chapter 5 Cost of Port and Harbour Work (42-43/5), Chapter 6 Waterways to be Developed and Preserved (43/6-43-10), Chapter 7 Miscellaneous Provisions (44-63).

China's Port Law consists of six chapters and sixty-one articles: Chapter 1 General provisions (1-6), Chapter 2 Port planning and construction (7-22), Chapter 3 Port Operation (23-31), Port safety and supervision (32-44), Chapter 5 Legal responsibilities (45-57), Chapter 6 Supplementary provisions (58-61) .

Provisions in Cambodian Maritime Code under drafting and in Japanese and Chinese ports laws are shown in Figure 13.3.3.1. Comparison of provisions of these laws is almost meaningless because situations surrounding ports in each country are different; accordingly, the examination is based on chapters rather than articles and does not go into much detail. However, main difference is

provision on port development and construction. Cambodian Maritime Code (draft) does not include this item. In both port laws, description on port development is also included in relevant articles.

In order to enhance international competitiveness of Cambodian ports, it is necessary to establish a legal scheme on port development/use and port management/operation. Therefore it is better to arrange a legal scheme by establishing an independent law on ports in coordination with the Maritime Code being drafted.

Cambodian Port Law may include provisions on the following items:

Purpose
Ports: ports covered by the Law, port classification
Port Management Body: legal status, establishment, supervision, organizations, finance, powers and obligations, duties etc.
Port Area: designation of port area, control and regulation deeds in port area etc.
Port Development: national port policy, port plan, construction and maintenance of facilities etc.
Port Use: entering and going out of port, control of port facility use, providing port service etc.
Port tariff: decision of tariff, collection of tariff etc.
Exceptional provision on private ports
Supervision and protection of privilege of Private Sector: port business etc.
Others: Port security, environmental issues, collection of basic data and preparation of statistics

Basic law on port has to be drafted after detailed examination on provided issues on the basis of detailed study on related laws and the present situation of ports on Cambodia.

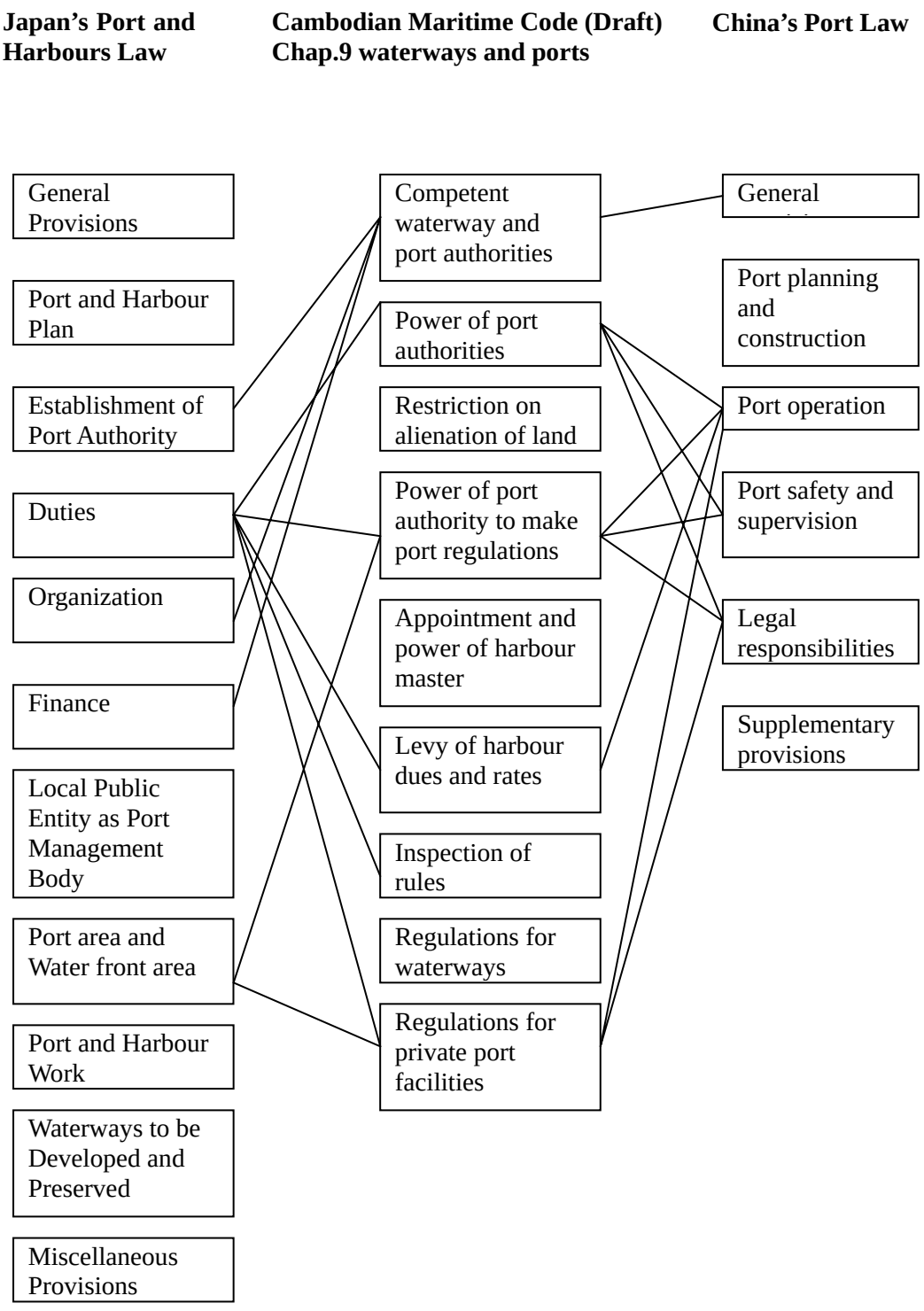


Figure 13.3.3.1 Provisions of Cambodian Maritime Code (draft) and Japanese and Chinese port laws

(2) Administration on private ports

Development of private ports shall be approved by CDC at the stage of planning but administrative framework in port sector has not been arranged at present. Cargo volume through existing private ports is increasing and some ports have expansion plans. Furthermore, new large port development

projects have been approved by CDC. In order to cope with such a situation as well as to develop ports in Cambodia, establishment of a framework on port administration is strongly required.

Administration of private ports should be executed under a framework which covers overall ports in Cambodia but considering its urgency, establishment of a Sub-Decree which prescribes a special provision on private ports may be prudent as an immediate measure.

Provisions on legal status of private ports, duties of the government and obligations of private ports may be included in the Sub-Decree. It is important that the Sub-Decree is drafted from a viewpoint of growth of port sectors in Cambodia as a whole.

Sub-Decree shall be prepared for ports managed by a private enterprise which develops port facilities such as quays and conducts port operation. For the time being, ports where import and/or export cargo of other than the enterprise are handled shall be its target.

Interim measures shall be required for ports which have been open or whose development plan has been approved prior to proclamation of the Sub-Decree. On the other hand, it may include transitional measures when basic law on ports is established.

Duties of competent authorities

1. Approval of port management and operation
   Examination of business plan, port management and operation plan, financial situations and organizations by competent authorities and approval when adequate
2. Approval of development plan
   Consistency with national policy
   To meet national standards on planning, technology, safety and environment
3. Permission of priority use of water area
   Permission of priority use of a minimum water area necessary for port operation by competent authorities
4. Permission of deeds in water area
   Examination of reclamation plan for port development by competent authorities and special permission for dedicated use of water area when adequate
   Examination of dredging plan for approach channels and permission when adequate
5. Allocation of harbor masters
   Appointment of a harbor master by competent authorities
   Control of navigation of vessels from/to the private port and supervision for safety navigation by the harbor master
6. Execution of power
   Execution of administrative power including incurring penalty for violation

Obligation of private enterprises managing ports

1. Formulation of a development plan
   Formulation of a development plan according to an official procedure and its publication
2. Announcement of conditions of port use
   Decision of appropriate tariff and its announcement
   Announcement of port services provided in port
3. Prohibition of unfair service to port users
   Supply of fair service to all port users
4. Management of water area
   Keeping water area for priority use in good condition
5. Payment of charges
   Payment of charges imposed on administrative service
6. Securing safety in ports

Securing safety of port users by appropriate maintenance of facilities etc.

7. Securing port security
   Observance of provisions concerned by installation of necessary equipment and their operation
8. Preservation of environment in port and surrounding area
   Observance of provisions concerned by installation of necessary equipment and their operation
9. Report to competent authorities
   Report to competent authorities on basic data on port activities such as vessels and cargo
   Report to competent authorities on accidents which occurred during port activities
10. Cooperation with competent authorities
    Cooperation for smooth execution of administration works by competent authorities

Chapter 14 Short-term Action Plan

14.1 Priority Issues

14.1.1 Issues, Measures and Tasks

Issues and measures/tasks to be considered in the maritime and port sector master plan were listed in Chapters 11 and 12, in which priority issues were selected for short-term implementation. Priority issues were chosen from the viewpoint of strengthening the competitiveness of maritime services and the compliance with international maritime scheme. Issues, measures/tasks and activities to be taken are listed in Table 14.1.1.

Table 14.1.1 Issues and Measures/Tasks of Short-term Action Plan

Issues	Measures/Tasks	Activities
1. Upgrading the Sihanoukville Port as a major gateway port	1-1) To increase liner services and strengthen the connection with SEZs	Port sales, Invitations to shipping lines
	1-2) To improve management and operation of container terminal	Capacity development in container terminal operation, Advisory service on terminal concession contract
	1-3) To develop multipurpose berth and terminal	Advisory service on planning and design of new wharf
	1-4) To encourage the use of dry ports	Cargo pick-up at dry port in Phnom Penh
	1-5) To minimize port security levy on shippers and consignees	Reduction of the inspection charge to international level
2. Enhancement of container handling capacity of Phnom Penh Port	2-1) To develop a new container terminal and ICD	Feasibility study on a new terminal
	2-2) To improve the convenience of container transportation through Mekong River	Simple border clearance, and Easing of regulations in Vietnam and Cambodia
3. Improvement of Flag State Control	3) Improvement of ship registration administration and ship inspection	Advisory service on ship administration
4. Maritime Education and Training	4) To establish Maritime Practical Training Center	Grant for procurement of training equipment, Assistance by lecturers
5. Maritime Safety	5) To improve the system for maritime safety and establish Coastal Communication Center	Grant for procurement of radio communication system, Advisory service on maritime safety and operation of CCC
6. Port Security	6) To improve port security management and scheme	Compliance with international security requirement
7. Strengthening of Maritime Administration	7) To enact Maritime Code and establish related regulations	Advisory service on Maritime Code and related regulations, Training of staff members

8. Appropriate Port Management and Operation Scheme	8) To establish national port policy, port law, and administration on the development and management of private ports	Advisory service on port law and administration, Training of staff members
9. Improvement of Maritime and Port Organization	9) To improve the organization of maritime and port administration and operation	Advisory service on maritime and port administration

While the implementation of all the measures/tasks in Table 14.1.1 is necessary for maritime and port sectors, the priority of each measure is examined as shown in Table 14.1.2 from the viewpoint of strengthening competitiveness, meeting the international requirements, and stakeholders' request.

Table 14.1.2 Priority of Measures/Tasks in Short-term Action Plan

Measures/Tasks	Competitiveness	International Requirements	Stakeholders' Requests	Comprehensive Priority
1-1) To increase liner services and strengthen the connection with SEZs	A	B	AA	A
1-2) To improve management and operation of container terminal	AA	A	AA	AA
1-3) To develop multipurpose berth and terminal	A	B	AA	A
1-4) To encourage the use of dry ports	A	A	B	B
1-5) To minimize port security levy on shippers and consignees	A	AA	B	A
2-1) To develop a new container terminal and ICD	A	B	A	A
2-2) To improve the convenience of container transportation through Mekong River	A	B	B	B
3) Improvement of ship registration administration and ship inspection	A	AA	B	A
4) To establish Maritime Practical Training Center	A	A	A	A
5) To improve the system for maritime safety and establish Coastal Communication Center	B	A	B	B
6) To improve port security management and scheme	B	AA	A	A
7) To enact Maritime Code and establish related regulations	A	AA	B	A
8) To establish national port policy, port law, and administration on the development and management of private ports	A	A	A	A
9) To improve the organization of maritime and port administration and operation	A	B	B	B

AA: Very high level
A: Fairly high level
B: Ordinary level

14.1.2 Development of Inland Container Depot with rail linked

Sihanoukville port is located about 240 km from Phnom Penh, and the distance between sea port and business center seems too away compared with neighboring countries, such as 130km between Laem Chabang port and Bangkok city center, or less than 50km in HCMC. However there is located Inland Container Depots in order to avoid long distance inland haulage by shipper or to avoid traffic jams or traffic regulation in the city. Therefore railway transportation is provided between Lat Krabang and Laem Chabang, or barge transportation is provided between 6 ICD and 4 terminals in HCMC.

There are 4(four) Inland Container Depots in Phnom Penh, where import and export cargo can be received or delivered, so-called "Dry Ports". The dry ports are listed now 1) Cambodia Cwt Dry Port, 2) SO NGUON Land Transportation, 3) Tec Srun Transport and Dry Port and 4) MSE KPM INLAND PORT. The Cambodia Cwt Dry Port, established in 1998, is now 100% owned by the Sihanoukville Autonomous Port. This dry port has been operated mainly as CFS service to shipping companies, and consolidation service of small packages. The other three (3) dry ports have been invested and established by the private trucking companies. The biggest Dry Port among these four (4) is MSE KPM INLAND PORT, which handles all the buyers' consolidation service provided by MAERSK Logistics on behalf of consignees in the USA or European Countries. The SO NGUON Land Transportation and Tec Srun Transport and Dry Port handle the buyers' consolidation cargoes provided by APL Logistics. These Dry Ports are located at a convenient site in Phnom Penh for connection to Sihanoukville Port through Route 4. Furthermore, the Cambodia Cwt Dry Port is located alongside the railway and is mapping out an idea of rail transportation to/from Sihanoukville Port in the future.

It is expected that the Cambodian railway will be rehabilitated 594km and reconstructed 48km in December 2009, and that will provide railway linked container transportation between Phnom Penh and Sihanoukville port. The Cambodia Cwt Dry Port is located alongside the Southern Line of Cambodian railway, and it is possible set up a railway linked ICD in 2010, managed by SAP like as Lat Krabang ICD in Thailand.
Lat Krabang ICD was opened in April 1996, 5 years later of Laem Chabang container terminal. It is located 30km east from Bangkok, as well as 120km north from Laem Chabang port. Total area is 96ha and allocated 6 modules operated by private terminal operators. Lat Krabang ICD handled totally 1.47 million TEU in 2006, which is sharing about 30% of Laem Chabang throughput. Also 30% of Lat Krabang throughput is transported by rail and remaining 70% is transported by truck between Laem Chabang.

It seems good chance to enhance ICD functions forwarding to Sihanoukville port with rail linked massive transportation. New ICD will complement port space shortage for container handling and stowage. In the near future container feeder transportation through the Mekong River become more advantageous connecting to Cai Mep deep ports, and therefore rail linked ICD to Sihanoukville port would be expected to reduce FOB Charge and to regain Cai Mep outflowing. New container center would emerge in Phnom Penh city with integrated ICD functions with vanpool and container repairing.

The study of Cambodian dry port (Inland Container Depot) will be implemented for rail linked upgrading in and around 2010, when the Cambodian railway will be rehabilitated, 594km and reconstructed 48km. At that time container transportation will be feasible by rail between Phnom Penh ICD and Sihanoukville port. Otherwise expensive inland transport cost will reduce throughput at Sihanoukville port as container cargo will divert to Cai Mep in Vietnam.

14.1.3 Reduction of Port Security Levies and safety of scanning

As mentioned in Chapter 5.6, all factors which lead to increase of the product costs shall be eliminated. Therefore, the container scanning fee which is charged on export/import container in Cambodian ports shall be minimized. However, to maintain the scanning machine in good condition, running costs including personnel cost will be necessary.

As port security levies are mentioned in Chapter 5.6, container scanning charges at Sihanoukville Port and Phnom Penh Port shall be reduced to the international level. Typical examples of port security charges are shown in Table 14.1.3.

Table 14.1.3 Port Security Levy

Region	Charge
EU	5-9 Euro/container
USA	2 USD/container
Canada	1.75 Canada$/container
Mexico	10 USD/container
China	20 Yuan/20’
	30 Yuan/40’
Japan	0 Yen

Source: JICA Study Team

Reduction of port security levies will bring following advantages:

a) To promote import and export;
b) To enhance international competitiveness of Cambodian products; and
c) To encourage international and domestic investments in the SEZs.

It should also be noted that the existing scanning machine at SAP is using γ(gamma)-rays which are more permeable than X-rays, so that the use of γ-ray machine should be minimized. Careful attention shall be paid to the safety of X-ray or γ -ray scanning in terms of radiation emission. The following measures shall be taken to ensure that nobody is exposed to radiation.
1) The container truck parks in the scanning hall.
2) The driver enters a shielded waiting room for the duration of the x-ray scan.
3) The x-ray housing passes across the container on a rail-type system at a rate of 10 meters per minute. The truck cabin is not x-rayed in the process.
4) The x-ray systems meet the stringent standards imposed by each country and/or World Health Organization (WHO) safety standards.
5) Customs staff are trained in the use of the x-ray equipment and operate under comprehensive standard operating procedures.
6) Exposure limits for materials set by the WHO are less than 100 microGray（μGy）.
7) Buildings are designed so that leakage radiation is less than the limits recommended by the International Commission on Radiation Protection.
8) Mechanisms are built into the x-ray system to ensure that no person will be exposed to radiation throughout the x-ray scanning process.
9) The walls and doors of the scanning hall are constructed to fully enclose the radiation volume with a concrete shield. The entry and exit portals have radiation shielding doors.
10) Daily tests verify the functionality of normal operation safety systems, weekly tests verify the functionality of major system interlocks, and quarterly audits ensure that procedures and equipment are in order.
11) The driver waiting room is totally shielded from leakage from the scanner.

In addition, it is also important to reduce the toll on the Road No. 4. While the Second

Socio-Economic Development Plan 2000 and the National Poverty Reduction Strategy 2002 indicates that the government has a policy to increase revenue from the transport sector, efforts should be made to reduce the cost of international transportation from origin to destination. Port security levies and tolls on roads are part of the international transport cost.

14.2 Upgrading the Sihanoukville Port to Gateway Status

14.2.1 Diversification of Liner Services and Strengthening the Connection with SEZs

At Sihanoukville port, container volume of 211,141TEUs was handled in 2005, including imports of 105,855 TEUs (Laden 86,034 TEUs/ Empty 19,821 TEUs) and exports of 105,286 TEUs (Laden 52,814 TEUs/ Empty 52,472 TEUs). Five shipping companies made 433 calls with gear-equipped container ships regularly on the fixed day of the week schedule. Container cargo consists of their own Intra Asia cargo, feeder cargo to the US or EU countries via Singapore and empty containers.

Table 14.2.1 Container Service at Sihanoukville

Service	Calling ports	Ship (TEU)
RCL 1	Kuantan/ **SIH(Thu)**/ Songkhla/ SIN/ Kuantan	550
RCL 2	Kuantan/ **SIH(Sat)**/ Songkhla/ SIN/ Kuantan	628
RCL 3	HKG/ **SIH(Fri)**/ Songkhla/ HKG/ HPH/ HKG/ KEE/ TCG/ HKG	628
MCC 1	Songkhla/ **SIH(Sat)**/ TJP/ SIN/ Songkhla	347
MCC 2	SIN/ **SIH(Tue)**/ Songkhla/ SIN	327
MCC 3	HCM/ **SIH(Sun)**/ LCB/ HCM/ KHH/ HCM	390
ACL	SIN/ **SIH(Sat)**/ Kuantan/ SIN	728
HUB	Shekou/ HKG/ **SIH(Wed)**/ Bangpakong	671
COTS	LCB/**SIH**/BKK/LCB	194

Source: JICA Study Team

Main calling ports are Singapore(5 loops), Hong Kong(2 loops), Kaosiung(1 loop), Laem Chabang (2 loops) and Tanjung Perepas(1 loop), and 5 loops are calling to Singapore as the gateway for Global container network. There is no quay crane installed at Sihanoukville port, so that ships are handling container by ship's own gears at the present time. After the completion of the new container terminal in 2008, 2 quay cranes will be available for container handling and thus Sihanoukville port will be able to attract container ships without gear.

Nowadays, container shipping is characterized by a global network service, which is connected by a lot of loops with fixed-day schedules between both the place of receipt and the place of delivery. And there are many connecting ports in South East Asia allocated such as Singapore, Tanjung Pelepas, Port Klang, Laem Chabang, Hong Kong, Shanghai, Kaohsiung, Busan, Gwang Yang, Kobe, Osaka, Yokohama and Tokyo. These ports are connected by a lot of loops and provide a more condensed global network.

Following table shows 65 loops calling to Laem Chabang, which is the nearest port from Sihanoukville. Laem Chabang port is recognized as the gateway for global network in Thailand, and is connected by not only trunk lines to the USA or EU but also Intra Asia lines covering all main ports. And all the Thai containerized merchandise is exported to world markets through Laem Chabang port with connecting service.

How to induce these loops currently calling Laem Chabang to Sihanoukville port is a key issue. All the ships calling Laem Chabang are navigating off Sihanoukville port, and if there were sufficient container cargo to be loaded at Sihanoukville with cheaper port charge, it would be easy to induce additional calls to Sihanoukville. In addition, the strategy for trade route or ship size should be selected well in advance.

Strategic port sales means consideration of production and trade by FDI enterprise located in the

Sihanoukville SEZ, which is now under construction and scheduled to open in 2009. Now is a good time to integrate the functions of Sihanoukville port with the development of the Sihanoukville SEZ. New container loop will be induced to Sihanoukville port, when their service is useful for imports and exports to/from Sihanoukville SEZ. Only preferable loop will be selected as a measure of trade logistics by FDI enterprise.

It seems practical to select new loop inducement from ships calling Laem Chabang. When the SEZ is developed in Sihanoukville the quay cranes on the port would be already installed which can accommodate the gearless container ship. However the draft would still be limited at 9.5 meters, so that container capacity would be less than 1100 TEU. Accordingly, the selection criteria of the new loop would be focused on the color highlighted from 65 container service at Laem Chabang as shown in the following Table 14.2.2, including 7 loops for USA/EU destinations, 35 loops for East Asia destinations and 23 loops for Straits and West Asia destinations.

Table 14.2.2 Container Service at Laem Chabang

1.USA/EU	Calling ports	Ship (TEU)
CSCL - AMA	LOS/NGB/SHG/CHW/PKG/JEB/NVS/PKG/LCB/HKG/YNT/SHG/NGB/LOS	5754
G.ALLIANCE PNX	VAN/SEA/BUS/KHH/HKG/SHK/SIN/LCB/SHK/HKG/KHH/VAN	5340
G.ALLIANCE AEX	SAV/NOR/NWY/HFX/GIO/PSD/JED/COL/SIN/LCB/SIN/COL/JED/GIO/HFX/NWY/SAV	4639
MAERSK AE9	STN/ROT/HMB/SLH/PKG/PTP/LCB/PTP/SIN/COL/STN	4300
APPENSHIP	HMB/ANT/PKG/SIN/PAS/KUA/LCB/BKK/HMB	1520
CHIPOLBROK	HMB/ANT/BLB/LCB/TXG/HCM/SHG/BUS/XIN/DAL/HKG/SIN/HMB	723
UNITHAI	ANT/LCB/ANT	534

2.E/S Asia	Calling ports	Ship (TEU)
MAERSK IA2	TOK/YOK/KOB/KHH/PTP/LCB/HKG/KHH/TOK	2890
EVERGREEN	KHH/MNL/LCB/KHH	2750
K-LINE/PIL - CSG	SHG/NGB/XIA/SIN/JEB/BBB/KAR/PKG/SIN/LCB/HKG/SHG	2640
HAMBURG-SUD	SHG/HKG/LCB/SIN/DUR/SIN/HKG/SHG	1740
TSK-HLS	TOK/SHZ/OMZ/NAG/KOB/LCB/SIN/KAR/NVS/COL/PEN/SIN/LCB/KEE/TOK	1610
DOGNAMA HANJIN	BUS/KWN/HKG/BKK/LCB/HKG/SHG/BUS	1608
KMTC KTC	BUS/ULS/KWN/INC/DAL/QIN/ULS/BUS/KEE/HKG/SHK/HCM/LCB/BKK/LCB/SHK/HKG	1599
TS LINES JHT	OSK/KOB/YOK/TOK/KEE/TXG/HKG/LCB/BKK/HKG/OSK	1519
HAPAG/KMTC/OOCL	TOK/YOK/OSK/KOB/KEE/HCM/LCB/HCM/TOK	1452
WAN HAI-JTT	TOK/CHI/YOK/NAG/YKK/KEE/TXG/KHH/HKG/LCB/BKK/LCB/HKG/KHH/TXG/KEE/TOK	1368
MSC	SIN/LCB/HCM/NGB/HCM/SIN	1300
TS LINES JHT2	NAG/SHZ/YOK/TOK/KEE/HKG/BKK/LCB/HCM/HKG/NAG	1250
MOL/RCL/SITC	NAG/TOK/YOK/SHG/LCB/BKK/LCB/NAG	1228
HEUNG-A/MOL	KWN/ULS/BUS/HKG/HCM/BKK/LCB/HKG/BUS/KWN	1220
DONGNAMA/HEUNGA	INC/ULS/BUS/NGB/HKG/LCB/BKK/LCB/HKG/INC	1216
HYUNDAI/SIAM/TSK	KOB/OSK/SHZ/TOK/YOK/HKG/LCB/BKK/LCB/HKG/XIA/KOB	1177
EVERGREEN	KHH/TXG/LCB/BKK/LCB/HKG/KHH	1164
CNC/YANG MING	TOK/YOK/NAG/OSK/KOB/KEE/TXG/KHH/HKG/LCB/BKK/HKG/KHH/KEE/TOK	1157
CNC/YANG MING	TOK/YOK/NAG/OSK/KOB/OIT/KEE/TXG/KHH/HKG/LCB/BKK/HKG/KHH/TXG/KEE/TOK	1120
WAN HAI	OSK/KOB/HAK/MOJ/TYM/KEE/KHH/HKG/LCB/BKK/LCB/HKG/KHH/TXG/KEE/OSK	1080
K-LINE/HANJIN	TOK/YOK/SHZ/NAG/SHG/LCB/BKK/LCB/HCM/TOK	1064
MOL OBW	OSK/KOB/MOJ/HAK/BUS/MNL/LCB/BKK/OSK	1060
K-LINE - B 2	OSK/NAG/YKK/KOB/MOJ/MNL/LCB/BKK/LCB/MNL/OSK	1032
MOL - CBE	TOK/YOK/SHZ/NAG/BUS/LCB/BKK/MNL/TOK	1032
HYUNDAI/SIAM/TSK	HAK/BUS/HCM/BKK/LCB/MNL/SHG/QIN/HAK	1030
SINOKOR/EP CAR	SIN/MNL/LCB/SIN	1022
CNCLINE/SITC/YM	NGB/SHG/HKG/MNL/LCB/BKK/LCB/HKG/NGB	1005
CSCL	SHG/HCM/LCB/HKG/NGB/SHG	964
RCL/WAN HAI	HKG/HCM/BKK/LCB/HCM/HKG	928
HEUNG-A/STX	INC/HKG/BKK/LCB/HCM/HKG/QIN/INC	855
APM SAIGON - SVN	KHH/HKG/SIH/LCB/HCM/KHH	660
GOLD STAR - CVX	NNJ/TCG/NGB/HKG/HCM/BKK/LCB/HCM/HKG/NNJ	660
BIEN DONG - THAI	BKK/LCB/HCM/HPH/BKK	404
E. CAR LINER	YOK/NAG/OSK/KAN/MIZ/KKB/MUA/SIN/PKG/LCB/YOK	400
E. CAR LINER	JKT/LCB/JKT	144

3.Straits/W.Asia	Calling ports	Ship (TEU)
ANCHOR TRANSP.	SIN/LCB/PTP/SIN	2890
MSC/THAI EXP	SIN/LCB/SIN	2150
EVERGREEN - SLH	PTP/SIN/LCB/PTP	1810
EVERGREEN/ SAMUDERA/Y.M	SIN/PAS/LCB/HKG/SHG/NGB/HKG/SIN/COL/NVS/SIN	1805
EVERGREEN - APG	KHH/TXG/YNT/PTP/COL/DBI/BBB/LCB/HKG/KHH	1618
SAMUDERA - BKX1	SIN/LCB/BKK/LCB/SIN	1120
NEW ECON LINE	SIN/JKT/SIN/PKG/LCB/BKK/SIN	1078
RCL/SAMUDER/TSK	SIN/PKG/MDS/PKG/SIN/LCB/BKK/LCB/HCM/SIN	1060
SAMDERA - BKX2	SIN/KUA/LCB/BKK/LCB/SIN	1060
APL - LCX	SIN/LCB/SIH/SIN	1020
SAMUDERA - BKX3	SIN/LCB/BKK/SIN	1020
RCL - RTS	SIN/BKK/LCB/SIN	1018
ADVANCE CONT	SIN/LCB/BKK/SIN	938
GOLD STAR - VTX	SUR/SEM/JKT/PKG/SIN/HCM/BKK/LCB/PKG/SIN/SUR	910
WALLENIUS WIL	SIN/JKT/LCB/SIN	849
HUB/FAS/G STAR	PKG/BPK/LCB/SIN/PKG/BKK/BPK/LCB/PKG	802
K-LINE/NEW ECON	PEN/PKG/SIN/HCM/SIN/LCB/BKK/LCB/SIN/PKG/PEN	710
PACC CONTXGNER	JKT/SIN/LCB/BKK/SIN/JKT	700
TSK APX2	SIN/PKG/LCB/SIN/PKG/JKT/SIN	566
PENDULUM EXP	PKG/PTP/LCB/PKG	558
TSK APX1	SIN/BKK/LCB/SIN/JKT/SIN/PKG/SIN	450
RCL - RTI	SIN/PAS/BKK/LCB/SIN/JKT/SIN	445
NORTRANS	SIN/BKK/LCB/SRI/MTP/PKG/SIN	371

Source: JICA Study Team

At present many container ships are skipping Sihanoukville port en route from Laem Chabang to East Asia or Laem Chabang to Singapore and West Asia, but in 2008 a modern container terminal with 9.5m draft is going to be developed, which will allow calls for larger-sized and gearless container ships. The port should make intensive effort to induce many loops through enhancing its international competitiveness with cooperation of SEZ activities adjourns the port from 2009; otherwise Cambodian trade will suffer and Sihanoukville port will not become a gateway. Benchmarking with neighboring ports, especially HCMC and Laem Chabang, will suggest the weakness of Sihanoukville port to become a gateway. Especially the port charge is too expensive to induce new loop for SEZ trade logistics, so that some special incentives must be considered to the target shipping line for inducement.

Port sales will be implemented in and around 2010, when the Sihanoukville SEZ will be developed and ready for FDI factory building. And a new loop for SEZ trade logistics will be concentrated to inducement; otherwise Sihanoukville SEZ will be not so good reputation for foreign investment.

14.2.2 Improving Management and Operation of Container Terminal

(1) Purpose/Urgency

It is essential for the economic growth of Cambodia that Sihanoukville Port continues to play its leading role as the one deep sea port in Cambodia. It is most important at present for Sihanoukville Port to fulfill its function as an international gateway upon the opening of the new container terminal now under construction.

The new container terminal is scheduled to be completed in 2008. It is important that the terminal open on schedule and that it provide services on par with international standards in order to be acknowledged as a full-fledged international container terminal.

In the meantime, SAP has to formulate a management plan and an operation plan for the new container terminal. This entails arranging for the provision of necessary equipment in good working order and coordinating with relevant organizations to ensure that port procedures are carried smoothly.

After its opening, SAP has to monitor the terminal operation and inspect whether the plan, manual and system prepared beforehand are applicable to the actual operation. Improvement of its operation and service shall be made based on the result of monitoring. It is necessary for SAP to continue to make efforts to increase its operational productivity.

SAP has to prepare the management plan and operation plan and organize a necessary system for the new container terminal which will open after 2 years. This short term action plan includes the subjects which may be covered by short/long term experts already scheduled but it is necessary for SAP to achieve the goal in this action plan. Taking terms necessary for preparing the plans and training persons in charge into consideration, this short term action plan has to start immediately.

(2) Output

1. Enhancement of Container Terminal Management and Operation
   Reform of Organization, Fostering of Skill in Container Terminal Management and Operation
   Management Plan on Container Terminal
   Measures for Efficient Port Procedure and Cooperation with Relevant Organizations etc.
2. Efficient Container Terminal Operation
   Container Terminal Operation Plan
   Personnel Allocation Plan
   Manual on Container Handling etc.
3. Appropriate Management and Maintenance of Equipment
   Guideline of Procurement
   Manual on Maintenance of Equipment etc.

(3) Subject

1. Preparation of Management Plan of Container Terminal
   The plan shall include such matters as a target of operation, central control system, organization and personnel allotment, work plan, increase of productivity, finance, monitoring, port procedure, cooperation with relevant organizations. Future prospects including evaluation of corporatization shall be examined also.
2. Preparation of Terminal Operation Plan and Operation
   Personnel allotment plan and manual on container handling shall be prepared. Terminal operation shall be implemented according to the plan and the manual. The plan and the manual shall be revised based on the result of monitoring on actual operation after opening.
3. Examination of Management and Maintenance of Equipment
   Appropriate procurement procedures, standard of maintenance of equipment and method of supply and storage of parts etc. shall be examined and guidelines/manuals shall be prepared as necessary. They shall be revised base on the result of monitoring of actual maintenance after opening.
4. Monitoring Terminal Operation and Maintenance of Equipment
   Conditions of terminal operation and equipment maintenance shall be monitored in detail at the initial stage and application to the actual operation and maintenance and necessity of revising the plan, the manual/guideline and the system shall be determined. It is especially important to customize the computer system further based on the actual operation.
5. Training
   In order to foster skill of both of managers and operators, on-the-job training at Sihanoukville Port and training through study on advanced container terminals shall be implemented.

(4) Schedule

Subject	2007	2008	2009	after
New Container Terminal	Construction/ Installment	Construction /Installment	Open/ Operation	Operation
Preparation of Container Terminal of Management Plan				
Preparation of Terminal Operation Plan and Operation	JICA short term expert			
Examination of Management and Maintenance of Equipment				
Monitoring Terminal Operation and Maintenance of Equipment				Continuation by SAP/Support by the donor as necessary
Training				Implementation as necessary

(5) Implementation Organization
1. SAP shall work in cooperation with experts dispatched by the donor.
2. Experts
   Container Terminal Management
   management plan, enhancement of organizations, financial issues, efficient port procedure etc.
   Container Terminal Operation
   personnel allotment, container handling manual, guidelines on maintenance, training on terminal operation etc.
   Information/Computer System
   utilization of computer system, training etc.

(6) Implementation Method
1. SAP and experts shall work together in cooperation with a long-term JICA expert to be dispatched soon.
2. Considering necessity for managers and operators to have a high level skill for actual management and operations, the experts shall provide instruction and training on management and operation including monitoring on-site.
3. Training overseas through study on advanced container terminals shall be implemented to promote efficient container terminal operation and ensure that trainees are familiar with international standards.

14.2.3 Development of Multi-purpose Terminal

(1) Urgency
The multi-purpose terminal should be used as an oil supply base and facility for coal cargo in the short term and then converted to container use in the middle and long term.

Offshore oil drilling project is important for the economic development of Cambodia. Appraisal drilling is being conducted and related legal system is now being examined. Since it has been decided that the Sihanoukville Port will provide function of oil supply base in case the project goes forward, the multi-purpose terminal needs to be developed urgently.

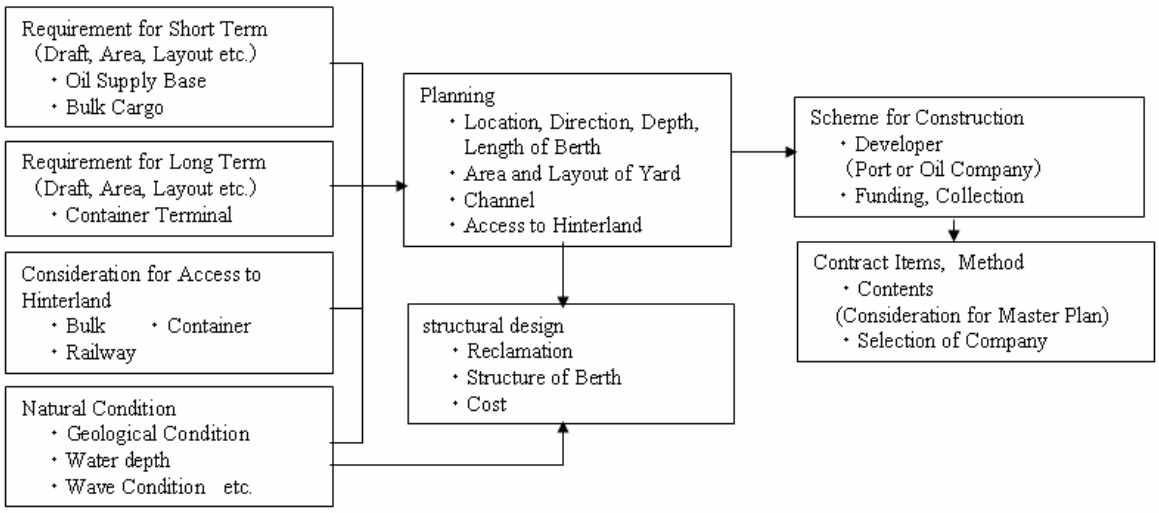
(2) Estimated Demands
Estimated demands of the terminal are as below. Since the status of the offshore oil drilling project could change, demands shall be examined carefully before making the plan and designing.

1) Coal Cargo (Short term)
It is estimated that coal cargo demand will be around 240,000 ton in 2010. (Refer to 10.2.2 (10))
2) Oil Supply Base Function (Short term)
It is estimated that 200m to 400m length berths will be necessary as oil supply base in 2010.
(There are six mining areas set offshore of Cambodia. A dedicated-use berth of approx 40m in length will be necessary for each mining area which will begin to operate in near future.)
3) Container Cargo (Long term)
After being converted to container use in the long term, the terminal will handle small size container ships and a container volume of 200,000 to 300,000 TEUs per year.

(3) Issues
On the other hand, there are many items to be examined as mentioned below. It is necessary when making a detailed plan and design of the multi-purpose terminal to consider necessary dimensions for container use in the middle and long term as well as request of oil supply companies. And when entering a contract with oil supply companies, contract items and terms shall be adjusted with the middle and long term use. At the construction stage, there are two methods for constructing the facilities. One is that SAP itself constructs the facilities by its own finance or ODA and lends the facilities to companies after construction. The other is that SAP decides the conditions such as BOT scheme and permits companies to construct and operate the facilities. SAP needs to select the best development scheme based on a careful analysis of all important aspects.

There are many complex issues that SAP needs to examine. Therefore technical assistance from experienced donor will be necessary at each stage of planning, designing, construction and contract.

(4) Items to be Examined and Flowchart
Items to be examined and flowchart are shown in the below figure.



Source: Study Team

Figure 14.2.1 Items to be Examined and Flowchart for the Multi-purpose Terminal

(5) Estimated Schedule

Subject	2007	2008	2009	2010
Loan request, Preparation				
Planning, Basic design, Feasibility study				
Detailed design				
Construction work				
Operation of the terminal, Contract with oil companies				

14.3 Upgrading Container Handling Capacity of Phnom Penh Port

14.3.1 Development of New Phnom Penh Container Terminal

(1) Purpose/Urgency

Cargo volume through Phnom Penh Port has been increasing in recent years. Container cargo shows a remarkable increase and is forecasted to exceed the present capacity of Phnom Penh Port in a few years. There is no adequate place for expansion near Phnom Penh Port and therefore coping with increase of container cargo by the development of a new container terminal is one of most urgent issues for Phnom Penh Port. In addition, this project is strongly required from the viewpoints of industrial development in the Phnom Penh area and coexistence with urban activities in Phnom Penh City.

Development plan of a new container terminal shall be formulated based on a comprehensive examination of container handling efficiency at the present port, functional enhancement of inland container depots, increasing container handling capacity in the Phnom Penh area by developing a new container terminal, functional allotment between a new container terminal and the present port and others. Feasibility study on the proposed container terminal development plan shall be conducted and its implementation program shall be prepared according to a result of the feasibility study. Early commencement of the project is necessary.

There is possibility that capacity of Phnom Penh Port may be a bottleneck of economic growth of Cambodia if the port remains with no measures. Taking the term necessary for planning master plan and construction of a new terminal into consideration, PPAP has to start this short term action plan immediately.

(2) Subjects

1. Formulation of long term development plan of Phnom Penh Port and feasibility study on a new container terminal development project
   Analysis on present situation, survey on natural conditions, future demand forecast, site selection for new development, layout and capacity of port facilities, basic design, rough cost estimation, project implementation method, management and operation of container terminal, economic analysis, financial analysis, environmental consideration etc.
2. Detailed design
   Detailed survey of natural conditions of site, detailed design of facilities, construction plan, cost estimation etc.
3. Construction of a new container terminal

(3) Schedule

Subject	2007	2008	2009	2010	after
Formulation of long term development plan of Phnom Penh Port and feasibility study on a new container terminal development project					
Procurement of funds					
Detailed design and preparatory works for implementation					
Construction of a new container terminal					
Commencement of service					

(4) Implementation system
Study team dispatched from donor under appropriate support system and counter part personnel of Cambodian side shall work together to formulate the long term development plan of Phnom Penh Port and feasibility study on a new container terminal development project.
Cambodian side shall identify an appropriate funding source and implement the project.

14.3.2 Improvement of Inland Container Depots at Phnom Penh Port

(1) Urgency
Container handling capacity of Phnom Penh Port is limited due to the narrow yard area. Since the port is located in the middle of the city, inland container depots are an effective means to expand the capacity of Phnom Penh Port.

An immediate measure to cope with increasing container cargo of Phnom Penh Port is indispensable before the development of a new container terminal.

(2) Implementation
Shifting container inland depots outside the present port site is an effective measure that can be carried out immediately. The improved container inland depots have to be operated efficiently through coordination with wharf operation.

In addition, when the depots are planned and operated, adequate consideration on road transportation between the port and the inland depots will be required.

14.4 Improvement of Flag State Control

(1) Action Assignment
Flag State Control is the responsible obligation assigned to the government by SOLAS and MARPOL Conventions. Cambodia should place the first priority on improving the present state of the open registry system to keep the world standard. All the MOU organizations in the world have their data base for inspection, and have the system to exchange the data of sub-standard vessels and inspection records through the Internet. The systems have proved effective for the PSC inspection, and surely strengthen the port state control activities in the world. Thus the controls on the sub-standard ships have been strengthened recently. Accordingly, sub-standard vessels will offer no economic benefits. Cambodia should implement Flag State Control in order to survive as an open registry country as well as to comply with International Conventions.

(2) Actions to be implemented
1) Establishment of Control Regime in cooperation with Council of Ministers and MPWT-MMD

- The implementation of Flag State Control should be decided by the government.
- MPWT-MMD should be assigned to control over the open registry company and ship classification societies. (MMD－Office of Ship Registration, Planning and Legal Office, Office of Ship Inspection)

2) Controls over the Open Registry Company

IMO Resolution A.739. "Guidelines for the Authorization of Organization acting on behalf of the Administration" should be employed to control over the Open Registry Company.

- Observation of the Data Base on registered ships
- Observation of the periodical reports from the Open Registry Company
- Correspondence to the inquiries from the foreign governments and MOU
  (Arrangements of countermeasures in cooperation with the Open Registry Company)
- Recommendation to the Open Registry Company for the improvement targets
  (Set a quota to the Open Registry Company)

3) Controls over the Ship Classification Societies

- Observation of the Data Base on registered ships
- Observation of the periodical reports from the Ship Classification Societies
- Correspondence to the inquiries from the foreign governments and MOU
  (Arrangements of countermeasures in cooperation with the Ship Classification Societies)
- Recommendation to the Ship Classification Societies for the improvement targets
  (Set a quota to the Ship Classification Societies)

(3) Improvement of the Control System

It is necessary to recruit capable officers to improve the control over the Open Registry Company and the Ship Classification Societies. Following measures should taken.

Technical experts should be employed from IMO, utilizing programs of Technical Cooperation Committee

Technical experts should be employed from reputable ship classification societies and TOKYO MOU for the Data Base and the periodical report Observations, and for the countermeasures corresponding to the inquiries from the foreign governments and world MOU

For implementing control over open registry company and ship classification societies, we propose the introduction of a Data Base of registered ships and an information search system through IMO number. Connecting the DATA BASE in MMD to those of open registry company and ship classification societies, MMD can grasp the new information and update the DATA BASE. The world MOU has already introduced the information exchange system through the internet. For example, they can inform detention information immediately after the execution of the detention to the related governments and world MOU. MMD also can grasp the information the same as the foreign governments and world MOU, and arrange the counter measures before the formal inquiries through the diplomatic routes via the internet.

(4) Urgency

The Cambodian open registry ships are exposed to international attention for abounding sub-standard ships. It must be the important prerequisites for Cambodia to implement flag state control over the open registry ships in order to get supports through various kinds of international cooperation scheme. The flag state control should be tackled with urgently in this regards.

14.5 Establishment of Maritime Practical Training Center

The maritime education and training consists of rating crews and officers in the navigation and engineering fields respectively. It is necessary to meet the mandatory subjects stipulated in STCW on both class lecture and practical training as well as navigation and engineering in order to be recognized internationally as a legitimate maritime education and training center. In Cambodia, the

education and training for rating crews has not commenced yet and the facilities and equipment for practical training are not secured yet, even though Cambodia has officially started maritime education and training. These two issues must be overcome to improve the maritime education and training.

In order to solve these matters, the Maritime Practical Training Center is to be established as shown in the Fig.14.5.1. The Maritime Training Center was inaugurated with Belgian assistance; however it is small in scale and will require the assistance of the Vietnam Maritime University for the implementation of practical training. By the following proposal, the self-absorbed system in Cambodia for the purpose to meet the mandatory level of STCW both for the education and training for rating, and practical training for all seafarers will be secured. In other words, this proposed plan of action is to secure the education and training for rating and the necessary facilities and equipment. By these actions, it is expected to provide the practical training for officer and complete all necessary subjects for both rating and officer, also for both class lecture and practical training with a target to foster the internationally competitive seafarer.

One of the reasons for setting the target year at 2010 is to satisfy the standards for reexamination of the "White List" of STCW which will be made in 2010. This requires not only the foreign certificate of competency but also that a maritime education and training system be established in Cambodia.

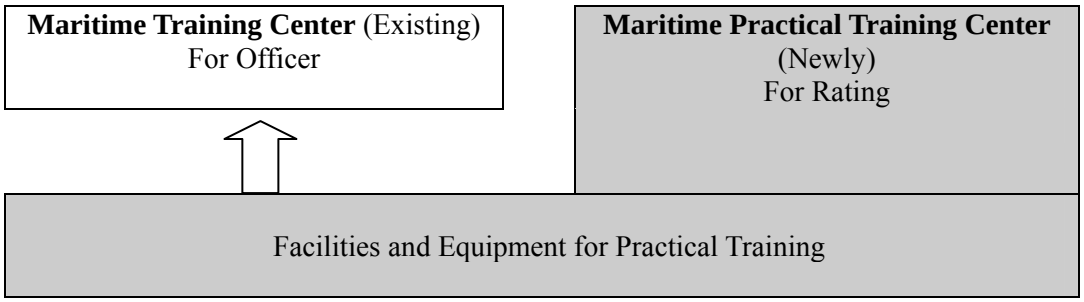


Fig. 14.5.1 Concept of MTC and MPTC

The issue of poverty reduction is critical in Cambodia. By supplying Cambodian seafarers for the domestic and international seafarers' market, poverty levels can be reduced. To secure efficient and cost-effective seafarers is vital to the global maritime industry; therefore it is expected a considerable number of employment opportunities will emerge. According to the record in 2005 in the Philippines, which is said to provide 40% of seafarers to the world seafarers' market, the numbers of officer is 46,000 and rating is 74,000 (BIMCO / ISF MANPOWER 2005 UPDATE). In addition, new Filipino seafarers are being hired each year, often as many as 2,300 officers and 3,700 rated crew members. The normal monthly salaries for them are US$ 2,400 and US$ 1,100 respectively (Newsletter of the Chamber of Shipping No.39 Summer 2006: Chamber of Shipping, U.K.). Wages in Cambodia, however, are lower, and thus Cambodian seafarers are expected to be in great demand.

To achieve this, the aid coordination should be well considered with the ASKI-LINK Program of EU, which has been managed by Antwerp Maritime Academy (hereinafter referred to as "AMA"). The necessity of aid coordination has been discussing globally in order to improve the quality and efficiency of assistance. According to "National Operational Guidelines for Development Cooperation, Grant Assistance" the Cambodian Rehabilitation and Development Board, Council for the Development of Cambodia, March 2006, declared that "The Government and development partner agencies will recognize and reward results achieved through collaboration" on "Development Cooperation Partnerships to Enhance Aid Effectiveness".

The international sharing of roles has taken root in the maritime industry. Each country has been

playing a specific role according to its strengths. For example, the Philippines provides 40% of all seafarers as mentioned above and the shipbuilders in Japan and South Korea provide 75% of all ships in the world. In such a borderless maritime industry, Cambodia, which does not have a shipping company or its own fleet of ships, is expected to enter the seafarers' market as the first step in promoting its maritime sector. Although the global seafarers market is prevailed by the Philippines at the moment, the training system is changing now. There will be an opportunity for Cambodia to join the market targeting the efficient rating-crew training as described in 11.3. It is also expected that such seafarers who acquire enough experience on board ships both domestically and internationally will become maritime oriented specialists, such as technical officer of MMD, ship inspector, maritime instructor, maritime examiner, and so on, and pass their knowledge to the future generation. The goal is for there to be 100 Cambodian seafarers in the market by 2010, 500 by 2015, and 1,000 by 2020

Taking such background into consideration, we propose the short-term action plan regarding the Maritime Education and Training with the target year of 2010.

(1) Purpose
The purpose is for Cambodian seafarers to acquire the skills that will make them internationally competitive in the seafarers' market.

(2) Expected Outputs
1) Seafarer as a profession will gain a high profile and a large number of candidates will compete with each other to enter the Maritime Practical Training Center.
2) The Ratings from the Maritime Practical Training Center will conform with STCW.
3) The practical training is secured at the Maritime Practical Training Center in conformity to STCW.
4) The development plan of the Maritime Practical Training Center with a target year of 2020 is drawn.

(3) Activities
1)-1 To demonstrate the merits of the maritime education and training in Cambodia to the maritime industry.
-2 To clarify the image of seafarers, such as a potential, working conditions, job content and so on.
-2 To conduct a public relations campaign on the benefits of becoming a seafarer in order to increase training prospects.
2)-1 To collect, review and analyze information on the necessary curriculum and assessment procedure for the rating education and training.
-2 To prepare the instructor training program required for the teaching staff.
-3 To implement the rating education and training.
3)-1 To collect, review and analyze information on the necessary curriculum and assessment procedure for the practical training.
-2 To examine fully the specifications of the facilities and equipment necessary for the practical training.
-3 To prepare the instructor training program required for the teaching staff for the practical training.
-4 To implement the practical training.
4)-1 To prepare the education and training plan for the advanced rating.
-2 To prepare the education and training plan for "Special training requirements for personnel on certain types of ships" such as "Tankers (STCW A-V/1)" and "Ro-Ro passenger ships (STCW A-V/2)"
-3 To reexamine the demand of Cambodian seafarers and to prepare the necessary additional development plan.

(4) Outline of Plan

This plan is to establish the Maritime Practical Training Center for the purpose of securing the education and training system for rating and to furnish the Center with the capacity to conduct the maritime practical training comprehensively. Regarding the rating education and training, "Basic rating training" is to be prepared urgently as the first step; then "Advanced rating training" will not commence until after 2010 because on-board experience is necessary for the advanced rating, e.g., the rating forming part of a navigational watch.

On the other hand, the existing Maritime Training Center is to be upgraded to the Maritime Institute (tentative name) and is waiting for approval. The short-term action plan for the Maritime Practical Training Center is to secure the initial training and the successive long-term action plan is to develop the facilities and equipment further so as to provide the practical training to the Maritime Institute. By these actions, it is expected that the practical training for the officers is to be secured by the long-term action. On the other hand, the basic rating training is to be secured by the short-term action and the advanced rating training is to be secured by the long-term action by 2020.

Although the present Maritime Training Center has a classroom and staff room only on PPAP's property, all land and buildings are to be provided for the Maritime Training Center and Maritime Practical Training Center because PPAP will move to the new office. The present building can be used for the maritime education and training provide some minor repair works to the interior are carried out. It is to be understood that the existing land and building are sufficient at the initial stage although in future it may become necessary to expand capacity or relocate if the number of students dramatically increases. The outline of the planning is as follows:

Table 14.5.1 Outline of Planning of Establishment of the Maritime Training Center

Outline of Planning	2007	2008	2009	2010
Study on cooperation with donor and planning				
1) Action to improve the image of seafarer				
-1 Research and prepare the PR material of the image of seafarer (Dispatch of Experts)				
-2 PR implementation in various media				
2) Action for the education and training for rating				
-1 Development of curriculum and assessment procedures (Dispatch of Experts and overseas training)				
-2 Foster the teaching staff (Dispatch of Experts and overseas training)				
-3 Education and Training Implementation (100 in 2010, 500 in 2015 and 1,000 in 2020)				
3) Action for the development of practical training platform				
-1 Development of curriculum and assessment procedures (Dispatch of Experts and overseas training)				
-2 Development of facilities and equipment (N.B. shows in detail) (Dispatch of Experts)				
-3 Foster the teaching staff (Dispatch of Experts and overseas training)				
-4 Education and Training Implementation				
3) Action for the further development plan of the Maritime Practical Training Center				
-1 Advanced Rating Planning				
-2 Tanker, Ro-Ro Planning				
-3 Demand Survey and Additional Development Planning				
Reexamination of "White List" of STCW				☆

Note

- Personal survival equipment : Life-Jacket, Immersion Suit, Rescue Boat (with Derrick), Survival Raft (with Dropping Platform), Radio Equipment, Distress Signal
- Fire-fighting equipment : Fire-Fighter's Outfits, Fire-Extinguisher, Stretcher
- Elementary first-aid equipment : Dummy for resuscitation, other basic medical apparatus
- Basic practical equipment for engine rating : Welding and Metal Processing Facilities and Equipment
- Seamanship Equipment : Boatswains Chair, Rope, Steel Wire, others
- GMDSS simulator
- RADAR/ARPA simulator
- others

The summary of the Planning is as follows:

Project Name	Establishment of Maritime Practical Training Center
Outline	The Maritime Practical Training Center is to be established and the education and training for rating is to be commenced to secure the whole practical training both for officer and rating.
Implementing Agency	MMD, PPAP and SAP
Output	1) Seafaring as a profession will be given a higher profile and the number of applicants for the Maritime Practical Training Center will increase. 2) The Ratings come out from the Maritime Practical Training Center in conformity to STCW. 3) The practical training is secured at the Maritime Practical Training Center in conformity to STCW. 4) The development plan of the Maritime Practical Training Center with a target year of 2020 is drawn.
Activities	1) To demonstrate the merits of the maritime education and training in Cambodia to the maritime industry. 2) To secure the necessary curriculum, assessment procedure, facilities and equipment for "Requirement for all seafarers" 3) To secure the necessary curriculum, assessment procedure, facilities and equipment for "Ratings" 4) To draw the development planning of the Maritime Practical Training center
Schedule	2007: Study on cooperation with donor and planning 2008: Development of curriculum and assessment procedures 2009: Development of facilities and equipment 2010: Foster the teaching staff, Education and Training Implementation, Education and Training Implementation, Reexamination of "White List"
Feasibility	Social Feasibility: Feasible because there is a shortage of seafarers in the seafarers market.
	Economic Feasibility: Feasible because the new employment will help to reduce poverty.
	Financial Feasibility: Feasible because full support from PPAP and SAP is to be expected.
	The Implementing Agency has the organizational and technical skills to successfully realize the objective. Moreover, the Implementing Agency has been operating the center and is expected to enhance its ability as a result of the Planning.

14.6 Marine Safety

(1) Necessity for the establishment of Coastal Communication Center

Cambodia has no communication facilities to cope with marine accidents and oil pollution accidents. The Coastal Communication Center is vitally necessary in order to secure marine safety and maritime security and to prevent marine pollution as the responsibility of the government. It is also indispensable for effective implementation of regional agreements for maritime security and prevention of marine pollution in the Gulf of Thailand.

(2) Assignment

- To receive information of marine accidents and pollution accidents, inform to responsible implementing agencies, and monitor the operations against marine accidents and pollution

accidents.
- To communicate and coordinate with the Regional Coordination Centers of surrounding countries to secure marine safety and maritime security and to prevent marine pollution as the responsible Regional Coordination Center of Cambodia
- To operate oil pollution recovery operations in the case of marine pollution accidents along the coastal area in the Gulf of Thailand

(3) Required Facilities/Systems
- Following facilities corresponding to the requirements ofGMDSS

1) Medium-wave (MF) radiotelephone System
2) Short-wave (HF) radiotelephone System
3) VHF radiotelephone System
4) DSC (Digital Selective Calling) System
5) NBDP (Narrow Band Direct Printing) System
6) NAVTEX System
7) INMARSAT and COSPAS-SARSAT Satellite Telecommunications System

- Direct satellite communicating system with Regional communication centers in the Gulf of Thailand
- Direct communication system with domestic responsible agencies
- Apparatus to secure spilled oil and spilled oil recovery vessels

(4) Effects of Output
- The establishment of one coastal communication center in Cambodia to coordinate with responsible Regional Coordination Centers in the Gulf of Thailand.
- The domestic implementation plans to secure marine safety and maritime security and to prevent marine pollution will be accelerated
- The regional ratification of SAR Convention in the Gulf of Thailand will be prompted.

(5) Preparatory works for the establishment
Following preparatory works are necessary as the action plan up to 2020
- Establishment of National Committees composed of responsible authorities related to marine pollution prevention and SAR, and establishment of the Focal Point (Coordinator)
- Decision of responsible Authority to manage the Coastal Communication Center (National Committee or MPWT(MMD))
- Arrangement of operating and maintenance budget
- To choose the location of the Center and identify facility requirements of facilitation, estimate the construction costs (Coordination of MPWT, Ministry of Environment, Ministry of Defense, and Marine Police)
- Negotiation with the donors

14.7 Strengthening of Maritime Administrative Capabilities

One of the most urgent issues for the Cambodian maritime sector is to establish a law enforcement regime based on the Maritime Code and its subordinated regulations. In the first place, the draft should be re-examined taking into account the newly ratified Conventions onto the Code. Secondly, the domestic ship safety regulation, which is the most urgent matter, should be prepared. After that, domestic regulations required by the Code should be continuously drafted as needed. At the same time, a program upgrading the technical capabilities and increasing the number of ship inspectors and other technical staff should be pursued. This program should be continued in the long term based on the results of the short term action plan.

(1) Publication of Maritime Code and implementation of International Conventions into domestic regulations

- Drawing up of the draft Maritime Code, circulation to related ministries and agencies, adoption by the Congress

Complete checking of Articles, and examination to bring in following new Conventions into the Code

1) International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea (HNS 1996)
2) London Convention on the Prevention of Marine Pollution by Dumping of Wastes and other matters 1972 (LC 72) (LC Protocol 96)
3) International Convention on Maritime Search and Rescue 1979 (SAR79), 1998 Amendment (SAR98)
4) Convention Concerning Minimum Standards in Merchant Ships 1976 (ILO Convention No. 147)
5) Convention on Facilitation of International Maritime Traffic1965 (FAL 65) The 2005 amendments (Entry into force: 1 November 2006)
6) International Convention on Limitation of Liability for Maritime Claims 1976 (LLMC 76) (Protocol of 1996 Entry into force**:** May 2004)

- Arrange a road map (priority map) to make regulations required by draft Maritime Code

1) Regulations applicable to the maritime areas of the Kingdom of Cambodia
2) Ship Registration Regulations
3) Regulation for registration of small sea-going ships operating along the coast or on inland waterways
4) Regulations for safety of ships and in order to give effect to the SOLAS Convention and its related annexes, codes, instructions and other instruments
5) Load Lines Regulations
6) Bulk cargo regulations
7) Dangerous Goods regulations
8) Collision Regulations
9) Regulations in respect of navigational aids
10) Legal status, organization, direction, management, functioning and finances of the port authorities
11) Pilot Regulations
12) Regulations for establishment of search and rescue centers
13) Regulations for distress and accident response and maritime contingency planning
14) Regulations for the management of waterways and the powers of competent waterway authorities and their officers
15) Regulations for the establishment and operation of privately owned or managed port facilities
16) Regulations with respect to recruitment and placement of seafarers, and with respect to crew agreements
17) Safe Manning Regulations
18) Marine Environment Protection Regulations
19) Maritime Enforcement Regulations
20) Rules relating to inquiries and investigations

- Drawing up of Regulations based on the road map

(2) Establishment of domestic ship registration and inspection system

1) Formulation of the Domestic Ship Safety Regulation as the first priority issue required by the draft Maritime Code
   - Harmonization of the Ministry Instruction No.006（1999）with the IMO Recommendation "Safety Regulations for Non-Conventional Sized Ships"
2) Establish the training program to upgrade and increase the number of ship inspectors and other technical staff from 2 at present up to 5~10 in 2020

- Utilization of IMO technical cooperation scheme
- Dispatch of trainee to World Maritime University (IMO)
- Dispatch of trainee to foreign countries through bilateral cooperation scheme
- Accept technical consultant from TOKYO MOU

Note: There exist no capable technical staff in MMD who can fully understand the technical detail of IMO Recommendation "Safety Regulations for Non-Conventional Sized Ships". A long term training program for upgrading technical capabilities of MMD staff should be formulated and implemented.

(3) Urgency

It is the pre-requisites to establish maritime law enforcement system in Cambodia in order to strengthen international maritime competitiveness. Establishments of the Maritime Code and related regulations must be the first priority issue for the purpose, and should be tackled with as the urgent issue.

14.8 Establishment of National Port Policy, Port Law and Administration of Private Ports

(1) Purpose/Urgency

In order for ports in Cambodia to fulfill their expected functions as an important socio-economic infrastructure and for port users to take advantage of this service, it is important for the port sector in Cambodia to establish the framework on the port sector in a timely and strategic manner.

It is necessary for the port sector to have a target and for all relevant public and private organizations to work towards achieving that target. The basic policy which acts as a guideline for achieving the target is an effective administration tool. However, at present there is no basic policy outlining the targets of the Cambodian port sector and each port drafts it own plan and implements projects as necessary. Formulating the National Port Policy and Approach to Realization of Policy Initiatives is one of the most basic issues in the port sector.

Having a precise understanding of the current situation of port activities in Cambodia is prerequisite to formulating the basic policy. In addition, monitoring port activities is necessary for adequate port administration. It is for this reason that statistics of port activities in Cambodia are required. On the other hand, statistical data is also useful for port promotion at each port. Statistics Law came into force in 2005 and a scheme on statistics in each sector shall be provided based on a Sub Decree to be prepared by each sector. It is necessary to establish a scheme for collecting basic data on port activities and arranging them as statistics according to this provision. Statistics provide the most basic information for preparing all policies and measures in the port sector.

Arrangement of a legal scheme on port development/use and management/operation which covers all ports in Cambodia is essential in order to achieve the target indicated in the basic policy. Sub Decrees on ports of Sihanoukville and Phnom Penh were proclaimed in 1998 and both ports have been characterized as autonomous ports. The Sub Decrees provide duties, responsibilities, management, financial issues, relationship with the state etc. of both autonomous ports. However, there is no provision on private ports which have expanded their activities in recent years. Some issues such as control of entering/departing ports, administration on collecting information on port activities and port development, securing safety from an engineering viewpoint and sound operations etc. need to be addressed at private ports. Considering such a situation, it is necessary to establish a basic law as a legal scheme covering all ports in Cambodia for executing rational and sure port administration.

As stated above, administration of private ports should be executed under the scheme which covers overall ports in Cambodia but considering its urgency, establishment of a Sub-Decree which prescribes a special provision on private ports may be prepared prior to establishment of the basic

law. The provisions shall be inserted into the law later when the law is drafted.

Important movements in the Cambodian port sector include the autonomy being given to two large ports, progress in increasing the capacity of ports, and greater private sector participation etc. On the other hand, the international situation surrounding ports in Cambodia is also changing. Under such circumstance, the port sector in Cambodia is at a point where it must establish basic frameworks on ports such as the national port policy, port statistics and the basic legal and administrative scheme.

Outputs of this short term action plan relate closely each other and it is necessary that this action plan shall be implemented timely and efficiently according to the schedule prepared on the basis of their relation.

(2)Output
1) National Port Policy and Approach to Realization of Policy Initiatives (the National Port Policy)
Contents to be included in National Port Policy and Approach to Realization of Policy Initiatives (draft)
Recognition on present situation of port sector in Cambodia
Future demand for port sector in Cambodia
Basic Policy on port development/use and management /operation
Approach to realization policy initiatives
Important and urgent issues etc

2) Rule on Investigation and Statistics on Ports
Items to be prescribed in Rule on Investigation and Statistics on Ports (draft)
Purpose, Target ports, Investigation items, Format of investigation sheets, Date of investigation, Reporters, Investigators, Method of analysis, Publication and custody of statistic data etc.

3) Sub Decree on Private Port
Contents to be included in Sub Decree (draft)
Legal status of private ports
Duties and responsibilities of competent authorities
Approval of port management and operation to private sectors, Approval of development plan, Control of use of water area, Allocation of harbor masters, Execution of administrative power etc.
Obligation of private ports etc
Formulation of a development plan, Announcement of conditions of port use, Prohibition of unfair service to port users, Management of port water area, Payment for necessary administrative cost, Securing safety in ports, Securing port security, Preservation of environment in port and surrounding area, Report to competent authorities, Cooperation to competent authorities etc.

4) Cambodian Port Law
Contents to be included in the Port Law (draft)
Purpose, Ports covered by the Law and Port classification
Port Management Body: legal status, establishment or designation of a body, supervision, organizations, finance, powers and obligations, duties etc.
Port Area: designation of port area, control and regulation deeds in port area etc.
Port Development: national port policy, port planning, construction and maintenance of facilities etc.
Port Use: entering and going out of port, control of port facility use, providing port service etc.
Port tariff: decision of tariff, collection of tariff etc.
Exceptional provision: private ports
Supervision and protection of privilege of Private Sector: port business etc
Port security, environmental issues, collection of basic data and preparation of statistics etc

(3) Subjects
1) Review of Master Plan Study and additional survey
Local port survey and Cambodian laws and regulations

2) Investigation and analysis on matters necessary for drafting the National Port Policy
Functions of ports in Cambodia, Classification of ports, Movement of international shipping, Future demand of cargo through ports, Functional allocation, Development of main ports, Investment and work plan, Efficient port operation, Information system for ports, Basic information on ports, Safety in port and port security, Environmental issues, Role-sharing between public and private sectors, Comprehensive development and use of coastal area etc.

3) Investigation and analysis on matters necessary for arranging the rule on port statistics
Investigation items, Form of investigation sheets, Method of data collection and analysis, Investigation and statistics system etc.

4) Investigation and analysis on matters necessary for drafting Port Law
Legal status and duties of port management body, Designation of port area and control and regulation deeds in port area, procedure of port planning, Rules on construction and maintenance of facilities, Procedure on port use, Port tariff, Port security, Basic data on ports etc.

5) Formulating the National Port Policy
Drafting the National Port Policy, Coordination with relevant organizations etc.

6) Arranging the Rule on Investigation and Statistics on Ports
Drafting the rule and its publicity, Coordination with relevant organizations etc.

7) Drafting Sub-Decree on Private ports
Drafting Sub Decree, Coordination with relevant organizations etc.

8) Drafting Port Law and relevant rules and regulations
Preparing draft of Port Law and relevant regulations, Coordination with relevant organizations etc

(4) Schedule

Subject	2008	2009	2010	after
Setting up task force team				
Review of Master Plan Study and additional survey				
Investigation and analysis on matters necessary for drafting the National Port Policy				
Investigation and analysis on matters necessary for arranging the rule on port statistics				
Investigation and analysis on matters necessary for drafting Port Law				
Formulating the National Port Policy				
Arranging the rule on Rule on Investigation and Statistics on Ports				
Drafting Sub-Decree on private ports				
Drafting Port Law and relevant rules and regulations				To Diet

(5)Implementation Organization
1) Members of the task force team work in collaboration/cooperation with the experts dispatched by donor agency.
2) Task force team shall consist of staff of MPWT, SAP and PPAP and MPWT shall take charge of its secretariat.
3) The fields of experts from donor
Port administration: Chief
Port policy: Framework of the policy, Realization of Policy Initiatives etc.
Port management and operation: Port management body and its responsibilities and duties, Supervision of private sectors etc.
Port planning: Contents of the policy, Planning procedure and standard etc.
Port statistics: Method of investigation and statistics, Scheme of port statistics etc.

(6) Implementation Method
1) Additional survey shall be implemented by the local consultant and the local lawyer office that shall be hired.
2) Task force team shall conduct investigation and analysis on matters necessary for drafting the National Port Policy, arranging rule on port statistics and drafting Sub Decree and Port Law in corporation with experts.
3) Task force team shall formulate the National Port Policy in cooperation with experts and conduct coordination with relevant organizations.

4) Task force team shall arrange the rule on port statistics in cooperation with experts and conduct coordination with relevant organizations.
5) Task force team shall prepare draft of Port Law and related regulations as well as Sub-decree on private ports in cooperation with experts and conduct coordination with relevant organizations. The draft of the law shall be proposed to the Diet by MMD as its own duty. A designated member of the task force team shall cooperate with MMD as necessary.
6) Translators and Interpreters shall be hired.
7) Training program for study on advanced cases shall be implemented for member of the task force team.

(7) Enforcement of the policy, the rule, the Sub Decree and the Law
After formulation of the National Port Policy, establishment of a port statistics scheme, establishment of Sub Decree on private ports and preparation of a draft of Port Law, Cambodian side has to take steps to see that they come into force. At that stage, experts from the donor may follow up their cooperation as necessary.

1) On the National Port Policy
It is important to authorize the National Port Policy as an official governmental policy and to use it as a guideline of port development, standards on planning and engineering, and a means for coordination with other relevant plans.
2) On the Rule on Investigation and Statistics on Ports
Explanation of the rule to reporters and investigators, preparation and delivery of forms to reporters, collecting the filled forms, analyzing collected data, preparation and publication of statistics and saving data shall be conducted according to the rule.
3) On Sub Decree on Private Ports
Competent authorities shall examine and approve port plans, grant permission of use of water area, appoint harbor masters etc. In addition, competent authorities shall supervise management bodies of private ports according to Sub Decree
Interim measures shall be required for ports which have been open or whose development plan has been approved prior to proclamation of the Sub-Decree.
4) On Port Law

The draft of Port Law shall be submitted to the Diet for approval. Administration based on provisions of Port Law shall be implemented after proclamation. Interim measures shall be required as necessary.

(8) Remarks
Institutional scheme
1) Task force team shall be organized because no organization has overall powers on all ports in Cambodia.
2) Support by donor agency is necessary.
3) Basic Policy on port development/use and management/operation to be included in the national port policy may be given as legal status the Cambodian Port Law.
4) Cambodian Port Law has to be authorized under whole legal structure of Cambodia
5) Coordination with respect to provisions and drafting schedule of Cambodian Maritime Code (Draft) is required.

Human resources
1) Personnel with experience and expertise on formulating basic policy and establishing basic framework on ports is lacking in Cambodia and therefore support by experts dispatched by the donor shall be necessary.
2) Fostering of skills in the field of port policy formulation, port statistics and framework establishment on ports shall be promoted through this project.

Financial feasibility
1) Additional survey shall require a consultant fee.
2) Cost for interpreter and translator shall be required.
3) Cost for training of members of the task force team overseas shall be required
4) Cost for office and transportation and communication shall be required.
5) Personnel cost of both sides are necessary.

Social feasibility
1) Coordination with many organizations shall be required.
2) Hard negotiation with stakeholders shall be required in terms of relation between the regulations to be provided in the new law and the fact there is no regulation at present.
3) Understanding the necessity of a new Law on the part of National Assembly is most important.

Economic feasibility
1) Formulation of the basic framework on Cambodian ports shall have a positive effects on the national economy.

14.9 Improvement of Maritime and Port Organization

14.9.1 Implementing Organizations of Action Plan

Pursuant to Chapter 13 which discussed the organizational improvement of maritime and port sectors, responsible organizations for issues and measures/tasks listed in the short-term action plan are shown in Table 14.9.1. To implement the short-term action plan, improvement of these organizations and their prompt actions are urgently required.

Table 14.9.1 Implementing Organizations of Short-term Action plan

Measures/Tasks	Responsible Organization
1-1) To increase liner services and strengthen the connection with SEZs	SAP
1-2) To improve management and operation of container terminal	SAP
1-3) To develop multipurpose berth and terminal	SAP
1-4) To encourage the use of dry ports	SAP
1-5) To minimize port security levy on shippers and consignees	Customs and Excise
2-1) To develop a new container terminal and ICD	PPAP
2-2) To improve the convenience of container transportation through Mekong River	MMD
3) Improvement of ship registration administration and ship inspection	MMD
4) To establish Maritime Practical Training Center	MMD/SAP/PPAP
5) To improve the system for maritime safety and establish Coastal Communication Center	MMD
6) To improve port security management and scheme	MMD/SAP/PPAP
7) To enact Maritime Code and establish related regulations	MMD
8) To establish national port policy, port law, and administration on the development and management of private ports	Ports Department
9) To improve the organization of maritime and port administration and operation	MMD/Ports Department

Urgently required measures/tasks are 1) to improve management and operation of container terminal and 2) to establish the administration on the development and management of private ports as shown in chapter 14.1. In order to improve the operation of container terminal at Sihanoukville Port, capacity development of operation staff members is indispensable. Advisory service by an expert team and training of SAP staff members will be effective in strengthening their operation. In case SAP gives a private operator a commission of terminal operation, the terms of reference shall be carefully studied referring to examples of foreign terminals. Advisory service on this subject will be helpful to SAP and MPWT.

In order to establish the administration on the development and management of private ports, port law will play an important role. Taking into account that it may take 2-3 years to enact the Cambodian port law, it will be an effective means to assign "Harbor Master" to each private port by promulgating a Sub Decree on private port management. It will be also necessary to establish

"Ports and Harbor Department" under the General Transport Department to take charge of Harbor Master and to prepare port law and national port policy.

Another important one of urgent measure/task is to enact "Cambodian Maritime Code". While MMD is drafting the code with assistance of a professor, more advisors will be necessary to refine the draft and prepare necessary sub decrees and regulations under the code. Establishment of Cambodian Maritime Institute and its sub organization "Maritime Practical Training Center" is also required as soon as possible. MMD, SAP and PPAP shall organize a task force and collaborate on the establishment of the institute and the center.

14.9.2 Short-term Organizational Improvement

As shown in Section 13.2.2, it is recommendable to improve the function of MMD and establish Ports and Harbor Department (PHD) as soon as possible. Tasks and responsibilities of MMD are listed in Table 14.9.2 and those of PHD are in Table 14.9.3. Table 14.9.4 shows tasks of Harbor Master at each port as a representative of the government.

Table 14.9.2 Tasks and Responsibilities of MMD

Present Responsibilities of MMD
1) To manage regular maritime transportation and monitor the enforcement of rules and regulations on the fleet hors conference;

2) To assess the integration of the state fleet hors conference on specialized fleet;
3) To study and evaluate the qualitative and quantitative needs for commercials ships of the state;

4) To research on scientific and technical ship’s conception;
5) To provide technical assistance with regards to investment in the shipping industry;
6) To make and propose technical bases for international and regional maritime cooperation;

7) To manage international and regional maritime cooperation;
8) To manage bilateral agreements on maritime transport cooperation;
9) To negotiate international maritime transport arrangement;
10) To manage professions related to the maritime fields

Additional Tasks and Responsibilities
11) To inspect and survey Cambodian flag vessels
12) To issue mariner's pocket-ledger to crew members on Cambodian flag vessels
13) To issue business permission to shipping agents
14) To implement tasks required under Maritime Code

Table 14.9.3 Tasks and Responsibility of PHD

1) To form national port policy and national port development plan 2) To draft and coordinate Cambodian port law 3) To enact regulations on ship entry and clearance and to issue entry permission to ships 4) To prepare national port statistics and inventory of port facilities at 5) To study private/provincial ports in terms of management, facilities, operation, statistics and activities. 6) To examine and approve the territory of each private/provincial port, and monitor their activities 7) To approve the tariff reported by each private/provincial port 8) To examine and approve the development plan of each private/provincial port 9) To encourage EDI on port procedures 10) To approve port security plan of each port 11) To protect port environment against pollution 12) To administer harbor masters at each port 13) To implement tasks under port law and regulations

Table 14.9.4 Tasks of Harbor Master

1) To manage ship entry and departure, and to watch ship navigation 2) To receive and approve to the request for ship entry, shift and departure, and to give a necessary instruction 3) To maintain the order in port 4) To approve dangerous cargo handling 5) To receive ship security information based on the regulation of SOLAS Convention 6) To watch ship traffic, to maintain the safety of navigational channel, and other tasks required under maritime code and port law

In order to implement tasks mentioned in the above three Tables, the improvement of MMD, the establishment of PHD and harbor masters is needed as shown in Figure 14.9.1.

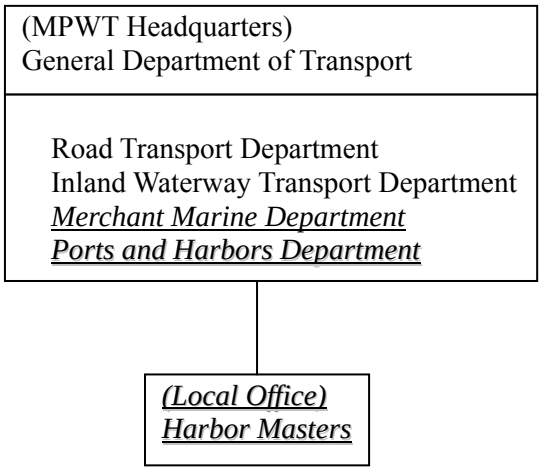


Figure 14.9.1 Short-term Improvement in Maritime and Port Organizations
(see Figure 13.2.4 for full organization of maritime and port sectors)

14.9.3 Long-term Improvement in Maritime and Port Administration

Long-term organizational improvement plan of maritime and port sectors is shown in the section 13.2.3 and Figure 13.2.5. Taking into consideration that organizational improvement takes time and needs compromise, long-term vision of organizational improvement shall be shown at the stage of short-term improvement.

If a concession of container terminal operation were given to private operators, port administration needs to publicize rights and duties of concessionaires and port management bodies. Port law is expected to enter into force before such concession.

National port policy to be prepared in the future will discuss the corporatization of SAP and PPAP, and may refer to a concession of terminal operation to private operators or to JV, which consists of public and private sectors. Pilot and tugboat services may be moved to public corporation to clarify its own account of service. Stevedoring service by private companies may be allowed at the Ports of Sihanoukville and Phnom Penh. SAP and PPAP will change to landlord type port authorities.

If SAP and PPAP were corporatized, there are two options to establish port administration body. One is to establish Cambodia Port Authority as only a management body to supervise all Cambodian major ports as a landlord and regulator. Another one is to establish a general department of MPWT, "Port Administration" provisionally, and supervise all major ports. In case of establishing Cambodia Port Authority (CPA), CPA can own major shares of corporatized SAP and PPAP. Advantages and disadvantages of port corporatization and concession of terminal operation shall be carefully examined in the national port policy to be prepared in the near future.

14.10 Implementation of Short-term Action Plan

Coping with globalization of economic activities, the Short-term Action Plan aims at encouraging industrial development and economic growth of Cambodia through 1) strengthening the competitiveness of maritime and port sectors and 2) strengthening the compliance with international regulations and standards. Projects of the Short-term Action Plan are designed to strengthen shipping services, to rationalize maritime and port administration, to achieve better coordination of port development projects, and to develop the capacity of port management and operation

Institutional and organizational improvement is indispensable for realizing the Short-term Action Plan. Objectives of maritime and port laws are to clarify the rights and duties of private companies and responsibilities of public sectors, therefore, these laws are indispensable for ensuring stable maritime transportation and encouraging foreign direct investment. In case that the Cambodian Maritime Code is not enacted, shipping companies, shippers, ships, agents, stevedoring companies, and other related parties have to engage in their business without legal protection against liabilities of accident or assurances of their business. Without the promulgation of the Cambodian Maritime Code, it is difficult to implement international conventions related to maritime and port activities.

In case that the Cambodian Port Law is not enacted, rights and duties of private port developers or terminal operators, or roles of national/provincial government remain vague. Therefore, it will be difficult to ensure the safety of ship entry and berthing, port environment protection, and fair competition between private and public ports. While fair competition between two ports usually plays a key role in reducing port charges and promoting service, unfair competition will damage port activities of one port and will result in improper development of another port. Unfair competition always increases the social cost and prevents rational allocation of financial resources. Unfair competition will also bias the development of a container port and impede progress of an international gateway port. Without a proper institutional scheme of port development and operation, the capacity of Cambodian ports will become inadequate and a bottleneck of Cambodian

economic development.

Early implementation of measures/tasks of the short-term action plan is strongly expected by responsible authorities. Each measure/task is summarized in the form of module except ones which can be achieved only by the decision of policy makers. Each module summarizes goal of project, purpose, outputs, activities and inputs for a project/task in a project design matrix as per attached.

Through the implementation of the Short-term Action Plan, following outputs are expected:
1) Diversification and increase of liner services
2) Reduction of maritime transportation cost and improvement of shipping/port services
3) Improvement of flag state control
4) Human resource development (Seafarers and Ratings)
5) Improvement of Maritime Safety
6) Promotion of port throughput and business
7) Facilitation of industrial location

The Short-term Action Plan will bring following outcomes:
1) Establishment of Maritime Code
2) Enactment of Port Law
3) Establishment of National Port Policy
4) Rationalization of Maritime and Port Administration
5) Development of Port Facilities
6) Increase in Cargo Throughput

Important projects related to the Short-term Action Plan are:
1) Development of the Second East West Corridor (Ho Chi Minh-Phnom Penh-Bangkok-Myanmar),
2) Improvement of Mekong River Water Transportation, and
3) Rehabilitation of National Roads and Railways in Cambodia.

Chapter 15 Conclusions and Recommendations

15.1 Scope of the Study

The maritime and port sectors are vital for the promotion of Cambodian industry and improving the lives of citizens. Globalization of economic activities requires competitive maritime transportation to every country in the world. No country can achieve economic growth without attending the global market by means of export and import. Considering the modernization of Cambodian maritime and port sectors is indispensable for Cambodian economic development, this study aims at strengthening the international competitiveness of the maritime and port sectors in Cambodia. The study also aims at assisting in the compliance with international conventions related to maritime transportation, seafarer's certificate, ship safety, maritime pollution and others.

Since there is no national ocean-going shipping industry in Cambodia, the study highlights the need to nurture maritime services, seafarers and ship related business as well as to increase the productivity of ports. Besides maritime transportation via Cambodian seaports, it is also important to improve the efficiency of international cargo transport utilizing the Mekong river water transport and cross-border road transport through the Second East-west Corridor.

The scope of the study is to formulate a master plan for the maritime and port sectors in Cambodia and propose a short-term action for the priority projects identified in the master plan. This master plan (target year: 2020) includes the development strategies in three fields; namely, the maritime sector, the port sector and the maritime and port administration.

Important issues of the Cambodian maritime and port sectors are:
1) Removal of bottlenecks in maritime and port sectors to achieve efficient maritime services;
2) Competitive shipping services for the promotion of Cambodian industries;
3) Rational cargo sharing among transport modes taking the trend of cross-border transport into account;
4) Public private demarcation in port management and operation;
5) Preparation of legal and institutional framework;
6) Strengthening compliance with international conventions related to maritime transport and port security; and
7) Capacity development toward self-sustaining development.

In connection with the study, workshops and seminars were held in Phnom Penh and Sihanoukville to show the progress of the study and discuss the situation of the Cambodian maritime and port sectors.

15.2 Conclusions

15.2.1 Situation of the Cambodian Economy

GDP per capita of Cambodia is USD448 in 2005, showed an increase rate of 15.3%, but remains about half the level of Vietnam and a quarter of China. Among Asian countries, Nepal, Afghanistan and Myanmar are ranked behind Cambodia. Population in 2005 is estimated at about 13.8 million and 15.3 million in 2010. Cambodian population estimates show a considerable increase in each province. Population of Phnom Penh area will increase to 1.6 million in 2010 and that of Sihanoukville to 278 thousand.

While Cambodia acceded to WTO membership in October 2004, the country faces various problems, namely small export industry dependent on garments, a lack of funds, and a lack of human resources as a result of the civil war. In particular, a lack of economic infrastructure and

legal institutions are main reasons for the insufficient FDI in Cambodia.

15.2.2 International Trade

The trade value has been increasing during recent years, with the import value reaching $2,548 million and the export value reaching $3,014 million in 2005, respective increases of 80% and 120% from the year 2000. Garment exports have soared sharply and a surplus in the balance of payments has been reported since 2003. However, statistics of 10 overseas trading partners suggest that the statistics of Cambodia Customs are consistently undervalued, especially for imports. Imports may exceed exports in Cambodia.

Cambodian Customs has seven major clearance points, namely Phnom Penh Port, PP Dry Port, Sihanoukville Port, PP International Airport, Poipet Border, Bavet Border, Kokong Border, and some other special clearance points such as private ports, oil jetties and small border gates.

Of all imports and exports in 2005 reported by the Cambodian Customs, 1,630 thousands tons was estimated to be carried by ocean going ships, 700 thousands tons by IWT barges, 19 thousands tons by air and 1,505 thousands tons by road. By transportation mode, 42% was carried by ship, 18% by IWT, 0.5% by air, 39% by road and 0% by rail.

15.2.3 Shipping Service

Container vessels of six shipping lines called at the Port of Sihanoukville in 2005. Number of ship calls is 157 by RCL, 147 by MCC, 55 by ACL, 50 by HUB and 25 by COTS. Ocean freight has been negotiated in Hong Kong or Singapore and has not been disclosed in Cambodia. Also feeder freight has been decided in a more complicated manner in connection with the trunk lines. According to reliable market source information, it is reasonable to assume that the ocean freight ranges from $600-$650/20', $1200-$1300/40' for COC from Hong Kong to Sihanoukville, and $250-$300/20', $500-$600/40' for SOC from Singapore to Sihanoukville.

Four shipping companies, Sovereign, China Shipping, GEMADEPT and Song Dao, have deployed small container barges for the service to Phnom Penh Port. Container cargo is mainly import material from Intra Asia service via HCMC and some export garment feeder service connecting to the trunk lines. This service has just started since 2002, and the volume of traffic has soared every year.

Freight rates of inland waterway feeder service have also been negotiated in Vietnam, Hong Kong or Taiwan between shippers and carriers, therefore, Cambodia is placed outside of the negotiation. Agents in Cambodia are only concerned with container operation and have no interest in marketing or sales. According to reliable market source information, freight rate is $250/40' for an empty container, $500/40' for a laden container one way between Phnom Penh and HCMC.

Shipping Agent provides service not only for ship operation but also sales activities on behalf of owner, ship management, and operator, who are called the "Principal". While many shipping agents were established as a local company with investment from foreign shipping lines, husbanding agency activities is permitted only to KAMSAB by the sub-decree and these shipping agents can do sales activities only.

15.2.4 Open Registry System

Cambodia started its open registry system in 1993 to promote Cambodian shipping industries by increasing the number of Cambodian flag vessels. A private company, CSC (Cambodian Shipping Corp.), was employed to take care of all the business for ship registration. The number of

Cambodian flag vessels was increased through a simple and easy system without any strict regulation. Since then the number of detentions by world MOU has also increased year by year due to an increasing number of sub-standard ships. ISROC (International Shipping Registry of Cambodia) took over the work of CSC, and the responsible Authority in Cambodia changed from MPWT to the National Committee for the Management of Registration of Cambodian Flag Ships, the Council of Ministers, on 28 February 2003.

In three years from 2003 to 2005, TOKYO MOU inspected 3,170 Cambodian flag vessels and detained 621 ships, which mean 20% of inspected ships. The number of Cambodian flag ships is the highest among the detained ships by Tokyo MOU. Reduction in the number of detentions is an urgent issue of world maritime society.

15.2.5 International Conventions

Cambodia has already ratified 17 important conventions related to maritime activity; following conventions shall be taken into consideration and ratified in due course.
1) United Nations Conventions on the Law of the Sea 1982 (UNCLOS 82)
2) London Convention on the Prevention of Marine Pollution by Dumping of Wastes and other matters 1972 (LC 72)
3) International Convention on Maritime Search and Rescue 1979 (SAR79)
4) International Convention on Standards of Training, Certification and Watch keeping for Seafarers 1995 (STCW 95)
5) Convention on Facilitation of International Maritime Traffic1965 (FAL 65)
6) International Convention for Safe Containers 1972 (CSC 72)
7) International Convention on Limitation of Liability for Maritime Claims 1976 (LLMC 76)
8) Convention Concerning Minimum Standards in Merchant Ships 1976 (ILO Convention)

Three steps for the ratification may be practical for Cambodia. Firstly, UNCLOS, LC72, LLMC, and IMO Convention 1993 will be important for the country. Secondly, ILO Convention and FAL65 will become necessary. Thirdly, SAR79 and SUA88 shall be ratified.

15.2.6 Seafarers

Cambodia had operated a maritime education and training institute before the civil conflict, however, it was closed because of the policy to discontinue educational institutes. The number of seafarers in Cambodia is estimated at about 500 while there are estimated to be about 4,500-5,500 fishermen.

Cambodian government has started to endorse foreign seafarers on the Cambodian flag vessels since July 2002, under the mutual recognition system of certificate of competency with the following 11 countries: Philippines, South Korea, North Korea, Russia, Ukraine, Estonia, Egypt, Rumania, Singapore, Latvia and Georgia. The registration system of seafarers shall be established as well as the certification system of seafarers.

15.2.7 Search and Rescue

The maritime safety system in Cambodia is not established yet. Navy, Air Force, MPWT and Marine Police are taking individual measures respectively for search and rescue. The role of regional coordination center is played by both the Navy and Air Force. Navy SAR team represents the nation in ASEAN. The related agencies are now cooperating for the task of search and rescue through the drafting of National Contingency Plan for maritime safety. When a national committee or agency is organized, MPWT shall play the role of the focal agency for regional cooperation.

15.2.8 Marine Pollution Prevention

Cambodia has already ratified major MARPOL related conventions, and is now going to organize domestic implementation schemes including the National Oil Spill Contingency Plan and the National Oil Spill Response Center. Cambodia made an agreement with Thailand and Vietnam to protect the coastal and marine environment of the Gulf of Thailand in the form of "Joint Statement of Cambodia, Thailand and Vietnam on Partnerships in Oil Spill Preparedness and Response in the Gulf of Thailand" in January 2006. The Joint Statement contains a tripartite intergovernmental agreement on combating oil spills.

In order to meet the requirements of the International Convention on Oil Pollution Preparedness Response and Co-operation (OPRC), efforts shall be made to establish the National Oil Spill Response Center to provide a national framework for responding to oil spills and protecting the resources of the coastal area of Cambodia by providing a coordinated response mechanism for combating oil spills using the combined resources of the government and private sectors.

15.2.9 Cambodian Ports

Ports of Phnom Penh and Sihanoukville are two major international ports serving as national gateway ports. Both ports have autonomous status based on the Sub Decrees on the establishment of the Sihanoukville autonomous port and Phnom Penh autonomous port promulgated in July 1998.

Based on the Open-Sea-Strait Policy of the Government, the development of private ports was approved and the Port of Sre Ambel and the Port of Oknha Mong were opened in 2003 and 2004 respectively. 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 and private ports, there are local ports developed by provincial authorities mostly in the 1970's. Provincial/municipal offices and Waterways Department, MPWT, are responsible for the construction and maintenance of these facilities. However, construction of local ports has been 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.

15.2.10 Sihanoukville Port

Sihanoukville Port is the only deep sea port on the coast of Cambodia. The depth of the entrance channel is 10 m. The port is located 230 km from Phnom Penh and has a container berth of 400 m with an alongside depth of 9 m, which shall be dredged to 11 m in the near future as will the entrance channel.

Container throughput in 2006 was 231,000 TEUs. Total cargo throughput was 1,587,000 tons and operating income was USD 21 million in 2006. Net income after tax was reported at USD 873,000 in 2006. Total number of employees is 1,080 as of January 2007.

15.2.11 Phnom Penh Port

Phnom Penh Port is located in the Tonle Sap River, about 3.5 km from its junction with the Mekong River. Distance to the border is about 110 km and 330 km to Cua Tieu, River Mouth, in Vietnam.

The minimum water level at the port is about 5.2 m above the chart datum (LLW) and shallow points in the Mekong River are about 4.0-4.5 m. The difference in water level between the dry and

rainy season is about 9 m. Maximum size of navigable vessels is about 2,000DWT in the dry season. Phnom Penh Port handled 38,233 TEUs in 2006. A total cargo throughput of 737,500 tons and operating income of USD3.4 million were reported in 2005. Net income after tax was reported at USD 380,000 in 2005. Total number of employees is 458 as of January 2007.

15.2.12 Private Ports

The Oknha Mong Port is located in Keo Phos Village, Sre Ambel District, Koh Kong Province and is 75 km from Sihanoukville, 185 km from Phnom Penh. Port construction was started in 2003 and operations were commenced in August 2004. Total berth length is 1,111m with a width of 200 m and a water depth of 5.5 m, possibly 3-4 m above the chart datum.

Customs, KAMSAB, Immigration, and CAMCONTROL have an office at the port. Major cargo is cement, fruit, sugar, food products and other conventional cargo. Statistics of cargo handling are not available due to a lack of port statistic regulation on private ports.

Sre Ambel Port is located in Rondaochhor Village, Sre Ambel District, Koh Kong Province and is 100 km from Sihanoukville City, about 160 km from Phnom Penh. Port construction was started in 2001 and the port opened in 2003 by MDH Trading Company.

The port lies along the channel about 12 km from the open sea. Total berth length is 500 m with a width of 30 m and a reported water depth of 5 m, though it may be shallower above the chart datum. Only boats of a maximum of 180 tons can navigate the channel. Related government agency offices are Customs, KAMSAB, Immigration and CAMCONTROL.

15.2.13 SEZs in Cambodia

Special Economic Zone scheme was introduced in December 2005, and 14 candidates are listed by CDC. Most of the SEZs are planned near the border with Vietnam or Thai or at a coastal area, which are suitable for export oriented industries. Six SEZs are allegedly planned around the Port of Sihanoukville, but some of them seem to be planned without any study. As of May 2007, only one SEZ, the Manhattan SEZ, has started operations.

Sihanoukville Port SEZ is planned by the SAP and a feasibility study is ongoing. The SEZ shall be planned as part of the Sihanoukville Port and enjoy full privilege of the location. Export and import containers from/to the Port SEZ shall be handled just like containers in the stacking yard of the port.

15.2.14 Development of Deep Seaport in Ho Chi Minh and Laem Chabang

Cambodia is located between two large container ports, the Port of Laem Chabang in Thailand and Ports of Ho Chi Minh in Vietnam. In addition, a new deep sea container port is now being built in Cai Mep-Thi Vai area on the southeast coast of Ho Chi Minh and will enter into service after 2009. The port is designed to accommodate trunk line container vessels, so a North America and Europe service will call at the port after its completion. The improvement of Route No.1 is also being carried out with international aid, therefore, import and export cargo of Cambodia may divert to this new port for transshipment.

15.2.15 Issues and Tasks of Maritime Sector

Following issues are identified in the Cambodian maritime sector.
(Shipping)
1) Upgrading the Sihanoukville port to gateway status

2) Enhancement of Phnom Penh to allow HCMC container transport
3) No Cambodian enterprise for container transport
4) Individual factory (shipper/consignee) has no direct access to shipping companies
5) Establishment of reliable transport of oil product and bulk cargo
(Trade Procedure)
6) Double check at border by Customs and CAMCONTROL
7) Implementation of new Cambodian risk management system by IIFG into port security system
(Maritime administration)
8) Legislation of maritime code, Legislation of Ship Safety Regulation
9) Ratification of International Conventions
(Ship registration)
10) Ship registration is not executed, Ship inspection is not executed.
11) Open registry, Lack of implementation body.
(Implementation)
12) Port State Control
13) Search and rescue
14) Oil pollution prevention
(Seafarers)
15) No record of number of Cambodian seafarers
16) No effective registration and certification system exists for Cambodian seafarers
17) Seafarers training institution, Lack of STCW compatible practice training facilities
18) Rating crew training

15.2.16 Issues of Port Sector

Following issues are identified in Cambodian ports and port administration.
(Sihanoukville Port)
1) Concentration of container vessel calls
2) Lower productivity in container terminal operations
3) Long waiting time of trucks in front of the gate
4) Inadequate security check of export/import containers
5) Shortage of yard area for bulk cargo and project cargo
6) Lack of international passenger terminal
7) Various kinds of charges levied on exports and imports
(Phnom Penh Port)
8) Rapid increase in container cargo
9) Necessity for regular maintenance channel dredging
10) Lower productivity in container handling
11) Shortage of yard area and dry port
12) Congestion of road near the port
(Private ports and public ports)
13) Private port development needs to satisfy technical and environmental requirement
14) Fair competition between public ports and private ports
15) Lack of supervision over private ports
(Port Procedures)
16) Delay in preparing domestic law/regulations on port security
17) Lack of framework for simplifying port procedures
(Port Administration)
18) Necessity for national port policy consistent with national land development and economic development policy
19) Lack of nationwide information/data on port activities

15.2.17 Demand Forecast

Ministry of Economy and Finance predicted a GDP growth rate of 6.0% per year in 2009-10, 6.9% in 2014-15, and 7.8% in 2019-20. While the annual growth rate of GDP reached 17.7% in 2005, the study adopts the prediction of the Ministry. Based on these growth rates, the study estimates future demand for seaborne container cargo of all Cambodia. The future demand is allocated to Sihanoukville Port and Ho Chi Minh Port by using the Logit Model. The volume of container cargo to Ho Chi Minh is allocated to river transport and road transport by also using the Logit Model. The volume of river transport is the same as cargo throughput of Phnom Penh Port.

Container Throughput Forecast in 2010 and 2020 (TEUs)

Year	2005	2006	2010	2020
Case			Low - High	Low - High
Sihanoukville Port	211,141	231,036	270,000 - 349,000	479,000 - 1,124,000
Phnom Penh Port	30,281	38,233	43,000 - 74,000	112,000 - 393,000
Road No.1	-	-	9,000 - 15,000	48,000 - 169,000
Total	241,422	269,269	345,000 - 410,000	799,000 - 1,405,000

Besides container cargo, the study estimates future demand for bulk, break bulk, liquid bulk cargo. Cement consumption will increase in line with GDP growth. As two new cement factories will have a total capacity of 2 million tons per year, cement handling at the ports of Oknha Mong and Sihanoukville will not increase in 2020. However, the import of coal will increase for the use of cement production and power generation. The import of oil products is estimated to increase by 2.7 times in 2020. Wood chips and pulp will be produced in Cambodia after 2010, so their export will be handled at the port of Sihanoukville. Imports of wheat, other grain and vehicles will also increase in 2020. International passenger cruisers are expected to increase considerably and assumed to reach a certain level.

15.2.18 Port Expenses

Port expenses of a typical ship calling at Sihanoukville is calculated at about US$ 42,500 assuming a container ship of 9,800 GRT with container loading of 300 TEUs and discharging of 300 TEUs. Those of Laem Chabang and Ho Chi Minh are about US$ 30,700 and US$ 31,500 respectively. Port expenses paid by ship operators are approximately US$ 71 per TEU at Sihanoukville, US$ 53 at Ho Chi Minh City and US$ 51 at Laem Chabang. Port expenses consist of port dues, pilotage, tug boat service, wharfage, mooring fee, container handling charge, shipping agency fee and other ship related expenses paid by shipping companies.

15.2.19 Domestic Transportation Cost

Supposing a factory in Phnom Penh area exports a 40' container with garments of $100,000 in value, the FOB Charge payable by Cambodian shippers is estimated at about US$ 620 to Sihanoukville Port and US$ 260 to Phnom Penh Port, in which US$ 100 is the survey fee of CAMCONROL. Truck transportation fee from Phnom Penh to Ho Chi Minh City is about US$ 600-650 per box including container lift on/off charge US$ 60 (40' container) at Bavet. However, additional unofficial cost is required at the border, which is about US$150-US$180 on the Vietnamese side and US$250-US$280 on the Cambodian side. Freight rate of river transportation between Phnom Penh and Ho Chi Minh City is about US$ 500 for a 40' container. However, additional unofficial cost is also required at the border. River transportation needs FOB charge of about US$ 260 to Phnom Penh Port.

15.2.20 Ocean Freight Rates

The port of Laem Chabang in Thailand handled 3.8 million TEUs in 2005 and the Ports of Ho Chi Minh City handled 1.9 million TEUs. While the Port of Sihanoukville handled 230,000 TEUs in 2006, the port remains as a feeder port and the ocean freight rates are much higher than those of Laem Chabang and Ho Chi Minh City. The recent ocean freight rate of a 40' container to the US west coast is about US$ 2,600 from Sihanoukville but it is about US$ 2,000 from Ho Chi Minh City and US$ 2,100 from Laem Chabang.

Taking into account all transportation cost from a factory in Phnom Penh to a port on the US West Coast, the total cost via Sihanoukville port is fairly higher than the cost via Ho Chi Minh City. In case of import of 40' containers, scanning fee of US$ 80 is charged to consignees. Toll on the route No.4 and the scanning fee makes the Port of Sihanoukville less competitive.

15.2.21 Ship Registration and Ship Inspection

Improvement in the open registry system is required to satisfy the world standard. Cambodia must tighten the control over the ship registration companies and related ship classification societies. Technical and systematic supervision is required to effectively control the ship registration company and related ship classification societies. MPWT shall cover the technical administration of ship registration in cooperation with the Council of Ministers.

The competent authority should collect all the inspection records and introduce an appropriate system to confirm and maintain the records. Additional reports must be compulsory when detention information arrives from world MOU organizations. The report must include counter measures for the detained ship, which the competent authority confirms and approves. The authority shall give a strict instruction to their ship registration company and related ship classification societies including the annual target to decrease the number of detentions. Modification of the open registry system is also necessary in the future.

15.2.22 Maritime Education and Training (MET)

Human resources development in the field of maritime and port sectors is a priority issue in Cambodia. Maritime education and training has just started at the Maritime Training Center located in Phnom Penh Autonomous Port since 2006. However it is difficult to complete all necessary practical trainings at the center because of the lack of facilities and equipment that meet international standards. Education and training in the port sector is not carried out in a consistent manner.

MET is also necessary to ensure that Cambodia remains on the “White List” of STCW Convention when it is re-examined 2010. Since no facilities and equipment for implementing the practical training are available in Cambodia, it will be necessary to make use of the practical trainings at the Vietnam Maritime University for the time being. Practical training is stipulated in the STCW Convention.

15.2.23 Port State Control

Port State Control is the inspection of foreign ships in ports to verify that the condition of the ship and its equipment comply with the requirements of international regulations and that the ship is manned and operated in compliance with these rules. These inspections were originally intended to be a back up to flag state implementation, but experience has shown that they can be effective, if organized on a regional basis and closely coordinated.

However, unnecessary ship inspections might delay ship departure and reduce the ship calls. Efforts should be made to implement the flag state control on Cambodian registered vessels and reduce the detention of Cambodian flag vessels.

15.2.24 Maritime Safety and Marine Pollution Prevention

SAR Convention has not been ratified yet due to the lack of a maritime safety organization in Cambodia. As the communication system plays a vital role in securing maritime safety, the establishment of a Regional Coordination Center which satisfies both the GMDSS requirements of SAR and requirements in case of oil spill accidents and other emergency cases is required. The center will become the general information and communication center for Maritime Safety, Marine Pollution Prevention, and SAR. Since the length of the Cambodian coastal line is 433 km, one capable communication center will suffice for the task.

15.2.25 National Port Policy

Basic policy outlining the targets of the Cambodian port sector is one of the most important issues in the port sector. National Port Policy shall be formulated based on the basic concept which consists of four items.
1) To contribute to poverty reduction and realization of satisfactory national life
2) To support new industrial investment and promoting industrial activities
3) To promote well-balanced national development including environmental conservation through making use of the potential of each region
4) To make efficient use of the limited resources

In order to enhance international competitiveness of Cambodian ports and in turn to achieve economic growth and land development of Cambodia, it is necessary for the port sector of Cambodia to set a clear target. National Port Policy shall aim at:
1) Strengthening the function of ports as the center for Cambodian trade;
2) Providing efficient port service;
3) Development of ports which support national and regional development;
4) Securing port safety/security and preservation of environment;
5) Compliance with the concept of coastal zone management;
6) Ensuring efficient and effective investment in port development;
7) Private and public partnership; and
8) Strategic development of main ports

15.2.26 Efficient Terminal Operation at Sihanoukville Port

A new container terminal with computer system for terminal operation will open fully in 2009. For effective operation of the new terminal, it is necessary to establish a new operation system and increase the skill level of staff members through technical training at the early phase.

Port promotion activities are important to strengthen the connection with shipping lines. EDI system is an effective measure to improve port productivity and reduce complicated documentation. Granting a concession of terminal operation to private terminal operators may be a means to operate SAP's container terminal. However, it shall be carefully examined whether a concession or lease contract could improve the productivity of port, increase cargo throughput, encourage ship calls, or increase the port revenue.

15.2.27 Future Development of Sihanoukville Port

Taking into account that the Sihanoukville Port shall continue to play its leading role as the only

deep sea port in Cambodia, its proper development is essential for Cambodian trade and industry. It is also strongly expected that the Sihanoukville Port will develop/provide industrial zones which have easy access to the port and encourage the location of export-oriented industry.

Sihanoukville Port needs 1) to enhance the function of container port, 2) to cope with increasing container cargo handling, 3) to achieve efficient operation, to receive larger container vessels, 4) to increase bulk cargo handling capacity for coal, wood chip, pulp, wheat and automobile, 5) to provide facilities for oil supply base, 6) to improve passenger terminal function, 7) to develop SEZ in combination with container terminal, 8) prepare for future expansion of SEZ, and 9) to enhance the transportation to hinterland by road and railway. Coping with the above mentioned demands, future development of Sihanoukville Port shall encompass the following facilities:

Facility Type	Short-term Action Plan	Middle/Long Term Plan
Container	Container terminal (-11m) Terminal system and cargo handling equipment	Container terminal (-12 to -14m)
Bulk	Multi-purpose terminal (-5 to -7m) Yard for bulk cargo and oil supply base	Bulk Terminal (-12m)
Passenger	-	Passenger Terminal (-9m)
SEZ	Container yard for SEZ, Dedicated gate to SEZ	Expansion Area
Transportation to hinterland	Inland container depot Access to railway terminal	-
Other	Port security system	-

Taking into consideration the stage plan for port improvement and future expansion, the long term development plan of Sihanoukville Port is proposed as shown in Figure 12.2.2. Detailed layout and design of the terminal shall be decided considering future demands for bulk cargo and SEZ, natural conditions, environmental impacts, and financial feasibility.

Water area inside and outside of the north breakwater shall be developed as an expansion area of SEZ, bulk terminal including oil supply base. Sufficient water area in front of fishery jetties and an entrance for fishery boats shall be secured.

Function of container port shall be strengthened under a phasing plan depending on future demand of container cargo. The container terminal with a length of 400 m was constructed in phase 1. In phase 2, a multi-purpose terminal will be built inside the west breakwater, which will be used for bulk cargo in the short term stage and be converted to container use in the future. In phase 3, a deep water container terminal can be developed outside of the west breakwater.

The area where the old jetty is located is appropriate for a passenger terminal. Since the old jetty needs rehabilitation in due course, a new passenger wharf can replace the old jetty. The planned site of east port has an advantage for the site of a new deep water sea port, but has a disadvantage of narrow hinterland and no road connection.

15.2.28 Development of Phnom Penh Port

The function of Phnom Penh Port shall be enhanced by maximizing its advantageous location in Phnom Penh city and overcoming disadvantages of navigation restraints and conflict with urban

activities.

It is difficult to find sufficient space for port development in/near the present site of Phnom Penh Port, therefore, a new terminal at a new site shall be developed taking into consideration river conditions, water depth, stability of its bed, erosion of banks, access to Road No.1, access to Phnom Penh City, distance to the border between Vietnam, site conditions, land use of surrounding area, and environmental conditions. Feasibility study on new sites is expected urgently.

15.2.29 Potential Analysis of Seaport Location

Potential of seaport location was estimated by a mesh analysis method. Situation of each mesh was analyzed from the viewpoint of natural conditions, existing infrastructure, economic cluster of each 4km by 4km mesh.

Potential of port development was evaluated based on the possibility of construction of a berth with a depth of 12m, distance from the national park, coastal conditions of mangrove/sand, principal wind-directions, access to main road, and the location of present container terminal.

Highest potential zone for a deep water container terminal and bulk terminal is the Sihanoukville Port zone. Next potential zones are East Port planning area, present oil terminals and their neighboring zones. For coastal shipping, possible zones are widely seen along the coast. Zones of Oknha Mong Port and planned Stueng Hav Port have low potential for a deep sea port.

15.3 Recommendations

15.3.1 Priority Issues

Issues and measures/tasks for the Short-term Action Plan were selected from all issues listed in the long-term plan. Priority issues were chosen from the viewpoint of strengthening the competitiveness of maritime services and the compliance with the international maritime scheme. Issues and measures/tasks are as listed below;

Issues	Measures/Tasks
1. Upgrading the Sihanoukville Port as a major gateway port	1-1) To increase liner services and strengthen the connection with SEZs
	1-2) To improve management and operation of container terminal
	1-3) To develop multipurpose berth and terminal
	1-4) To encourage the use of dry ports
	1-5) To minimize port security levy on shippers and consignees
2. Enhancement of container handling capacity of Phnom Penh Port	2-1) To develop a new container terminal and ICD
	2-2) To improve the convenience of container transportation through the Mekong River
3. Improvement of Flag State Control	3) Improvement of ship registration administration and ship inspection
4. Maritime Education and Training	4) To establish Maritime Practical Training Center
5. Maritime Safety	5) To improve the system for maritime safety and establish Coastal Communication Center
6. Port Security	6) To improve port security management and scheme
7. Strengthening of Maritime Administration	7) To enact Maritime Code and establish related regulations
8. Appropriate Port Management and Operation Scheme	8) To establish national port policy, port law, and administration on the development and management of private ports
9. Improvement of Maritime and Port Organization	9) To improve the organization of maritime and port administration and operation

15.3.2 Diversification of Liner Services and Close Connection with SEZs

Sihanoukville Port should make intensive effort to induce many loops through enhancing its international competitiveness in cooperation with SEZ activities. Since the Port of Laem Chabang has 65 loops connecting USA, EU and all major Asian ports, it is important to attract some of these loops to call at Sihanoukville Port. If the port has sufficient container cargo for a loop and could offer cheaper port charge, it will be possible to attract additional calls to Sihanoukville.

Benchmarking with neighboring ports, especially HCMC and Laem Chabang, will suggest the weakness of Sihanoukville Port to become a gateway. In particular, the port charge is too expensive to attract a new loop for the cargo of SEZs, so that some special incentives must be considered to the target shipping line for inducement.

15.3.3 Improvement of Management and Operation of Container Terminal

Capacity development of terminal operation personnel is essential to cope with the request of shipping lines and increase the productivity. Terminal operation system shall be carefully examined in consultation with RCL, MMC and other major users before the procurement. Intensive training is urgent for quay crane operators, forklift trucks, gate operation, yard planning, storage planning and other jobs in container yard.

One stop service is also essential to improve the import export procedure. As a SEZ administration has a branch of CDC, MOC, Customs, CAMCONTRAL and Labor Office in one place, Sihanoukville Port should have the same service of competent authorities through EDI system. Customs inspection of export container cargo is usually cleared at factory and sealed container is carried to the port. Since the checking gate of the port is not connected online, documents are sent by a messenger car and trucks are waiting for the documents outside the gate. To avoid such a situation, EDI service and one stop service by Customs, SAP, CAMCOMTROL, KAMSAB, Quarantine, and Immigration shall be introduced in due course.

Introduction of private terminal operators will be necessary for new terminals to be developed together with the growth of ports. It may be also effective to establish JV with international terminal operators. Since the private terminal operation has advantages and disadvantages, it shall be fully examined from wide-scope viewpoints and be carefully prepared through discussions to formulate a national port policy. Circumstances surrounding international container ports are changing rapidly and it is necessary for Sihanoukville Port to pay attention to such movement and take adequate measures timely. Pros and cons of port privatization are discussed in the section 13.3.3 of this report.

15.3.4 Development of Multi-purpose Berth and Terminal

To cope with the demand for bulk cargo handling and project cargo, it is necessary to develop a bulk terminal for coal, wood chip, pulp, wheat, automobile and others. The terminal can be used for the expansion of the present container terminal in the future and the bulk terminal can be shifted to another location.

Multi-purpose terminal will be built along the revetment between the general berth and the west breakwater with a water depth of 5-7 meters. If the seabed of basin has rock at a shallower level than 7 meters, it will be difficult to dredge the basin. Therefore, boring survey is strongly recommended at earliest convenience of SAP. New berth and yard will be utilized for bulk cargo and project cargo of oil supply base.

15.3.5 Development of Inland Container Depot

Sihanoukville port is located 230 km from Phnom Penh. Transportation cost to/from the port is a heavy burden to shippers/consignees. In the way that Lat Krabang ICD plays a very important role for Laem Chabang Port as a distribution and collection center, ICD in Phnom Penh can encourage the use of Sihanoukville Port through reducing land transportation cost. If rehabilitation of the national railway is completed, rail transportation between ICD and Sihanoukville Port will provide regular service with container transportation. However, the road transportation will have larger share in land transportation as the capacity of rail transportation may be limited due to the single track.

15.3.6 Port Security Levy

The Port Security Levy is already introduced in some ports of Europe and USA to maintain their

security system. Some European ports impose 5 Euro to 9 Euro per container and some US ports charge 2 USD, some Canadian ports 1.75 C$, some Mexican ports 10USD, while China tentatively charges 20 Yuan on 20 footer and 30 Yuan on 40 footer.

Since Sihanoukville Port Customs charges 40 USD on 20' container and 80 USD on 40', charges are a heavy burden to Cambodian consignees. When the new X ray system is introduced, these charges should be reduced to the international level.

15.3.7 Development of a New Container Terminal in Phnom Penh Area

Demand forecast analysis predicts a cargo throughput at Phnom Penh Port of about 62,000 TEUs in 2010 and 224,000-295,000 TEUs in 2020. Since the present berth with a length of 300m has a narrow backyard and cannot handle such a volume, new terminal will be necessary in the near future. Location of the new terminal will be down stream of Phnom Penh and must be adjacent to the Road No.1 to have easy access to Phnom Penh City.

As the plan of a new terminal is not formulated, planning and feasibility study should be conducted at the earliest convenience of PPAP. As it might be possible to invite private investment in a new terminal, basic plan shall be prepared for invitation, which includes approximate location, size of berth and terminal, predicted cargo throughput, channel maintenance, and terms of concession.

15.3.8 Improvement of container transportation through Mekong River

Inland waterway transportation has to face several formalities/authorities at the border, such as harbor master, customs officer and immigration police. It takes about 2 hours for processing formalities and hampers the efficiency of inland waterway transportation. Business hours are only from 7am to 5pm. If ship arrival is after 5pm, ships have to wait until next morning to complete formalities, except passenger boat.

According to the draft protocol to implement the Hanoi Agreement 1998, it is discussed to abolish the border stop, and to carry out formality at Vung Tau or final destination only. Therefore, simplified formality will bring efficient container transportation through the Mekong River. This negotiation is expected to conclude in 2007.

15.3.9 Improvement of Ship Registration and Ship Inspection

Flag State Control is an obligation of the government prescribed by SOLAS and MARPOL Conventions. Cambodia is requested to place the first priority to improve the present situation of the open registry system and reduce the detention ratio of Cambodian flag vessels.

Necessary actions are 1) to establish a strategy to implement the Flag State Control in cooperation with Council of Ministers and MPWT, 2) to strengthen the control over the open registry company, and 3) to tighten the controls over the ship classification societies. Training of MMD staff members on ship inspection is also an important means to improve the open registry of Cambodia.

15.3.10 Establishment of Maritime Practical Training Center

The present Maritime Training Center (MTC) in Phnom Penh Port was opened in 2006 in cooperation with Belgium. PPAP and SAP manage the center for training of their staff members. Number of trainees is limited due to the lack of training facilities and the fact that the center is operated only for port staff members.

Taking into account that MTC will become the training center for officers and have no function of

the training of rating crews, Maritime Practical Training Center (MPTC) will focus on the training of rating crews and will be operated by PPAP under the control of MPWT. Most of proposed facilities for MPTC can be shared with MTC.

The aim of MPTC is to supply a significant number of Cambodian rating crews into the global seafarers' market providing Cambodian young generation with good job opportunities. Training period will be one year and 100 graduates are expected in 2010.

15.3.11 Establishment of Coastal Communication Center

In the event of marine accident or pollution incident, Coastal Communication Center will receive signals from ships and information from relevant agencies and neighboring countries. CCC will work under proposed National Maritime Search and Rescue Committee and also proposed National Committee for Oil Spill Preparedness and Response.

MMD will be the focal point of each committee and CCC will become the information center for each committee. CCC shall be developed in due course and have communication equipment, such as Medium-wave (MF) radio telephone, Short-wave (HF) radio telephone, VHF radio telephone, DSC (Digital Selective Calling), NBDP (Narrow Band Direct Printing) and others.

15.3.12 Port Security Management

Amendment of the SOLAS Convention entered into force in mid 2004 and ports are requested to make the port facility security plan. Cambodia promulgated sub-decree on the Management of Vessel Security and Port Facility Security on May 6, 2006. However, detailed provisions for the implementation of port security control have not been issued yet. Port facility security plan was therefore not reported to IMO because of the lack of the detailed provisions. To meet the request from shipping lines, port facility security plan shall be approved as soon as possible.

MMD is requested to organize and examine formalities to assign duties related with:
1) Port facility security assessment, 2) Creation of port facility security plan, 3) Modification of port facility security plan, 4) Recommendation on port facility security assessment

15.3.13 Establishment of Maritime Code and related regulations

One of the most urgent issues for the Cambodian maritime sector is to establish a law enforcement regime based on the Maritime Code and its subordinated regulations. In the first place, the draft should be re-examined taking the opportunities to introduce newly ratified Conventions into the Code. Secondly, the domestic ship safety regulation is urgently required. Thirdly, domestic regulations related to the Code shall be drafted in due course. Together with the establishment of Code and regulations, capacity development program will be necessary to upgrade the technical capabilities and to increase the number of ship inspectors and other technical staff members. Continuous advisory service is expected to formulate the proper Maritime Code and related regulations.

15.3.14 National Port Policy, Port Law and Administration on Private Ports

The most urgent issue faced by the Cambodian port sector is establishing the necessary legal scheme for private ports. Accordingly, policy on private ports shall be prepared prior to the establishment of the basic law on port and regulations.

National port policy shall include private public partnership, responsibility of port development, management and operation, future demand for port facilities and services, and other important and

urgent issues.

Cambodian Port Law shall cover provisions on 1) port management body and its legal status, establishment, organization, finance, powers and obligations; 2) the limit of port area, control and regulation on the port area; 3) port development, port planning, construction and maintenance of facilities; 4) control and supervision of port activities, services; 5) port statistics collection; 6) port tariff and charges; 7) port security, environmental protection and other important issues.

Prior to drafting the Cambodian port law, it will be necessary to enact sub-decree on the development and management of private ports. The sub-decree may include the provisions on legal status of private ports, duty of government, and obligations of private ports.

15.3.15 Improvement of Maritime and Port Organization

Urgently required measures/tasks for maritime and port sectors are 1) to improve management and operation of container terminal and 2) to establish the administration on the development and management of private ports.

It will be an effective means to assign "Harbor Master" to each private port and to establish "Ports Department" under the General Department of Transport to take charge of the harbor master and to prepare port law and national port policy.

Other urgent measures/tasks are to enact the Cambodian Maritime Code, therefore, it is recommended to improve the function of MMD. Establishment of Cambodian maritime education institute and a training center, the latter is provisionally entitled "Maritime Practical Training Center", is required at the earliest possible stage. MMD, SAP and PPAP shall organize a task force and collaborate on the establishment of such institute and center.

National port policy to be prepared in the future will discuss the corporatization of SAP and PPAP, and will refer to a concession of terminal operation to private operators or to JV, which consists of public and private sectors. Pilot and tugboat services may be moved to public corporation to clarify its own account of service. Stevedoring service by private companies may be allowed at the Ports of Sihanoukville and Phnom Penh. SAP and PPAP will change to landlord type port authorities.

Annex

ANNEX Project Design Matrix (PDM)

Project Title: Strengthening the Competitiveness of Maritime and Port Sectors in Cambodia
Target: Cambodia
Target Group: Ministry of Public Works and Transport, Sihanoukville Autonomous Port, Phnom Penh Autonomous Port, Kampuchea Shipping Agency and Brokers

Super Goal & Overall Goal

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Super Goal Coping with globalization of economic activities, Encouraging industrial development and economic growth, Projects aim at: 1) Strengthening the competitiveness of maritime and port sectors, 2) Strengthening the compliance with international regulations and standards	—	—	Cambodian government gives priority to the improvement of maritime and port sectors
Overall Goal Through the improvement of maritime and port sectors, Projects intend 1) To strengthen shipping services 2) To rationalize maritime and port administration 3) To coordinate port development projects and develop the capacity of port management and operation	Following outputs are expected: 1) Diversification and increase of liner services 2) Reduction of maritime transportation cost and improvement of shipping/port services 3) Improvement of flag state control 4) Human resource development (Seafarers and Ratings) 5) Improvement of Maritime Safety 6) Promotion of port throughput and business 7) Facilitation of industrial location	Progress can be monitored by: 1) Establishment of Maritime Code 2) Enactment of Port Law 3) Establishment of National Port Policy 4) Rationalization of Maritime and Port Administration 5) Development of Port Facilities 6) Increase in Cargo Throughput	Following projects will be carried out: 1) Development of the Second East West Corridor (Ho Chi Minh-Phnom Penh-Bangkok- Myanmar), 2) Improvement of Mekong River Water Transportation, and 3) Rehabilitation of National Roads and Railways in Cambodia.

Module 1

Project Name: Increase of Liner Services and strengthening of the connection with SEZs (Table 14.1.1 Tasks 1-1)

Target Group: Sihanoukville Autonomous Port

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Goal Upgrade Sihanoukville Port to gateway status	(Loop of Sihanoukville port calling) To achieve 12 loops in 2010 (3 loops increasing over 2005), and serve convenience for FDI enterprise in SEZ trade expanding	(Main ports network) To connect 10 main ports network in 2010 (5 ports increasing over 2005), with Vietnamese, Chinese, Korean and Japanese ports	Improvement of port management Expansion of port facility
Project Purpose Capacity Building for port sales to SAP staff. Inducing 3 loops until 2010 adjusting port charge, and to breakthrough the Overall Goal.	New Loop will be studied for Laem Chabang calling ships. List is prepared for Port Sales	List is analyzed as route and ships size, for reference to select Port Sales candidate. Comparative port expense list will be referred	To study trade volume and partner for FDI enterprise. it is also the criteria for route and ship's size selection
Outputs New loops inducing are to be provided trade route for FDI enterprise into SEZ, and Port Sales will be discussed and reviewed its measure and effects with them	Accessible loop and ships size are analyzed from Container Service list at Laem Chabang, and proposed inducement to the shipping line with adjustment of port expenses	Lifting results of new loop induced and assessing of profitability of shipping line will expand Port Sales activities in the future	Fact finding of new loop utilization by FDI enterprise will be useful for judgment of economic impact or additional requirements for new loop inducement
Activities The meaning of Port Sales is to confirm FDI enterprise and Port to be cooperative and understanding of competitive situation. The measures of Port Sales is to select new loops inducement and to negotiate port charge with shipping lines. The effect of Port Sales is to evaluate economic impact by FDI enterprise.	**Input** **Donor** **Experts;** -Logistics and Shipping Management -Port Sales -Coastal SEZ Management **Training;** -Logistics management for FDI enterprise -Shipping management of container service	**Cambodia** **Human Resources;** CP（SAP）will assign new staffs for Port Sales Facility; Office, Meeting Room Local Expense; Traveling Expense	—

Module 2

Project Name: Establishment of internationally competitive container terminal (Table 14.1.1 Tasks 1-2)

Target Group: Sihanoukville Autonomous Port

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Goal Implementation of internationally competitive container terminal management and operation.	1. Introduction of international container terminal management and operation system. 2. Introduction of container handling equipment management and operation system.	1. Monitoring container terminal management and operation system. 2. Monitoring cargo handling equipment management and operation system.	1. Emphasis of related official organization and private sector. 2. Promotion of port sales.
Project Purpose To strengthen container terminal management and operation.	1. Condition of development and implementation of container terminal management and operation. 2. Container handling productivity. 3. Operational rate of cargo handling equipment.	1. Monitoring strengthening the capacity on the container terminal management and operation 2. Monitoring strengthening the capacity on the cargo handling equipment management and operation.	1. Cooperation and coordination of related official organization 2. Coordination of each department of port.
Outputs 1. To enhance the capacity on the container terminal management and operation. 2. To enhance the capacity on the handling equipment management, operation and maintenance.	1. Condition of container terminal management and operation. 2. Increase of the container handling productivity and operational rate of cargo handling equipment.	1. Monitoring container terminal management and operation. 2. Monitoring container handling productivity and operational rate of cargo handling equipment.	1. Maintain an upward trend of container handling volume. 2. Increase of Container handling productivity. 3. Increase of operational rate of cargo handling equipment.
Activities 1. Preparation of Management Plan of Container Terminal 2. Preparation of Container Terminal Operation Plan 3. Examination of Management and Maintenance of Equipment 4. Monitoring Terminal Operation and Maintenance of Equipments 5. Training	**Input** **Donor** **Expert:** -Container Terminal Management -Container Terminal Operation -Information/Computer System **Training:** -Counterparts training in Donor Country	**Input** **Cambodia** **Human Resources:** Counterparts; SAP **Facilities:** Office and Meeting room **Local Cost:** Project management cost	—

Module 3

Project Name: Development of Multi-purpose Terminal (Table 14.1.1 Tasks 1-3)

Target Group: Sihanoukville Autonomous Port

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Goal Enhancement of the port function of supporting industrial activities	Rise in living standards Development of industrial activities	GDP per capita GDP, Export value	—
Project Purpose 1. Support for offshore oil drilling projects 2. Support for hinterland industries such as cement factory 3. Support for export-oriented industry (in the middle and the long term)	1. Providing function of oil supply base 2. Treatment of increasing bulk cargo such as coal 3. Treatment of increasing container cargo (in the middle and the long term)	1. Cargo volume relating to oil supply base 2. Volume of bulk cargo 3. Volume of container cargo	1. Implementation of offshore oil drilling projects 2. Operation of hinterland industries such as cement factory 3. Further industrial development in Cambodia
Outputs 1. Operation of Multi-purpose terminal 2. Maintaining compatibility with middle and long term utilization of the port	1. Development of Multi-purpose terminal 2. Setting of appropriate items of usage contract 3. Maintaining compatibility with the master plan of the port	1. Complete examination of construction work 2. Contents of contract with oil companies 3. Phased development plan of the port	Ability of funding
Activities 1. Organizing of conditions required for the short term utilization 2. Organizing of conditions required for the middle and the long term utilization 3. Consideration for access to hinterland 4. Organizing of natural conditions 5. Planning 6. Structural designing 7. Consideration for construction scheme	**Input** **Donor** **Experts** -Port Planning -Natural Conditions -Port Structure Design -Economic and financial analysis **Financial resources** -Providing financial assistance to the construction of multi-purpose terminal	**Input** **Cambodia** **Human resources** Counterparts; SAP Task force in charge of : -Port Design, -Access road to hinterland -Natural conditions -Port Structure - Dredging	—

8. Setting of appropriate items and method of usage contract with oil companies 9. Construction of the terminal 10. Making usage contracts with oil companies	-Economic and financial analysis -Construction management	

Module 4

Project Name: Development of New Phnom Penh Container Terminal (Table 14.1.1 Tasks 2-1)

Target Group: Phnom Penh Autonomous Port（PPAP）

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Goal Enhancement of the competitiveness of the PPAP and Achievement of Financial Soundness of the Management Body	1. Statistics of Cargo Throughput, Ship Calls etc. 2. Financial Statements of the Management Body	1. Actual Conditions of the Port 2. Financial Statement of the Port	—
Project Purpose Improvement of Cargo Handling Capacity	Volume of Cargo Throughput Number of Ship Calls	Achievement Records	1. Improvement of Mekong River transportation 2. Development of Cross-Border Transportation
Outputs 1. Development of the New Phnom Penh Container Port 2. Improvement of Cargo Handling Capacity of the existing Phnom Penh Port	Volume of Cargo Throughput Number of Ship Calls	Achievement Records	1. Procurement of the Project Fund 2. Coordination with Private bodies
Activities 1. Request for the Execution of the Development Plan (2007) 2. Commencement and Completion of the Development Plan (2008) 3.Procurment of the Fund and Implementation of the Detailed Design (2009) 4. Commencement of the Project	**Inputs** **Donor** **Feasibility Study** Small scale of F/S on the development of a new terminal -Location of a new terminal -Layout of facilities and design -Access road planning to hinterland -Construction planning -Cost estimation -Financial Analysis	**Inputs** **Cambodia** 1. Establishment of the C/P (MPWT, PPAP, Phnom Penh City Government etc.) 2. All Data and Statistics for the Plan, and Cooperation with the Study Team 3. Appraisal of the Plan	Cooperation with relevant Ministries and Authorities

Module 5

Project Name: Implementation of Flag State Control (Table 14.1.1 Tasks 3)

Target Group: Council of Ministers, Ministry of Public and Transport (MPWT)

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Goal Implementation of Flag State Control required by International Conventions	Decreased number and rate of Detention Rate	１．Declaration of Government (Council of Ministers) ２．Evaluation by world MOU ３．Decreased number and rate of Detention Rate	Declaration of Government to implement flag state control　(Council of Ministers)
Project Purpose 1.Reserve administrative capabilities for Flag State Control 2. Reduce the detention rate by half until 2020	1.Evaluation of counter measures to Open Registry Company and Ship Classification Societies 2. Evaluation of response from Foreign governments and World MOU	1.Evaluation of counter measures to Open Registry Company and Ship Classification Societies 2. Evaluation of response from Foreign governments and World MOU ３．Decreased number and rate of Detention Rate	1. Assignment of capable officials (MMD） ２．Cooperation from IMO and Tokyo MOU
Outputs 1.Implementation of responsibility as the open registry country 2. Decreased number of sub-standard vessels	1. Decreased number and rate of Detention Rate 2. Evaluation by world MOU	1. Participation to Tokyo MOU 2. ASEAN Regional Agreement on PSC 3. Flag State Control Regime in MMD	－
Activities 1. Control over Open Registry Company 2. Control over Ship Classification Societies 3. Response to foreign governments and world MOU (Oblige reports from Open Registry Company and Classification Societies as their duties, approve the counter measures by the government)	**Input** **Donors** **Experts** -Flag State Control -Ship Surveyor -Port State Control **Training** -Training and Education of CP in experienced foreign countries -On the job training	**Input** **Cambodia** **Human Resources** CP（MPWT(MMD)） **Facilities** Office, Meeting Room	－

Module 6

Project Name: Establishment of Maritime Practical Training Center (Table 14.1.1 Tasks 4)

Target Group: Ministry of Public and Transport (MPWT), Phnom Penh Autonomous Port, Sihanoukville Autonomous Port

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Goal The attractiveness and employment opportunity of Cambodian Seafarers are grown to the Cambodian flag ships and international seafarer market.	Annual new employment of seafarers more than 100 in 2010, 1,000 in 2020	Employment record of seafarers	To secure the STCW White List
Project Purpose The education and training for the ship's rating and operational level of officer in line with the International Standards is implemented in Cambodia.	Success in the external assessment Competent enrollment (higher than 3 times competition rate)	Result of the external assessment Result of the entrance exam	To establish the external assessment system
Outputs 1) The education and training system is established for "Mandatory minimum requirements for familiarization and basic safety training and instruction for all seafarers (STCW A-VI/1) (hereinafter referred to as "Requirement for all seafarers" by means of the development of Maritime Practical Training Center. 2) The education and training system is established for Rating. 3) The development plan of the Maritime Practical Training Center with a target year of 2020 is drawn.	1) Consistency of the facilities, equipment, Curriculum and others to the International Standards. 2) --- Ditto.--- 3) Relevance of the education and training for the Management Level of Officer according to the development plan.	1) Education and training record and STCW standards 2) --- Ditto.--- 3) The plan, STCW standards and implementation structure	—
Activities (Target year in parentheses) 1)-1 The necessary curriculum and assessment procedure for "Requirement for all seafarers" are to be secured. (2008) -2 The necessary facilities and equipment for "Requirement for all seafarers" are to be secured.(2009) -3 The teaching staffs for "Requirement for all seafarers" are to be fostered. (2008~2010) -4 The education and training for "Requirement for all seafarers" is to be implemented. (2010) 2)-1 The necessary curriculum and assessment procedure for "Rating" are to be secured. (2008) -2 The necessary facilities and equipment for "Rating" are to be secured.(2009) -3 The teaching staffs for "Rating" are to be fostered. (2008~2010)	**Input** **Donor** **Experts:** -Education and Training for Rating (Navigation and Engineering) **Overseas Training** -Education and training method at the institutions concerned **Facilities and equipment** -For survival training -For fire-fighting training	**Input** **Cambodia** Human Resource CP（MPWT、SAP、PAPP） **Facilities and equipment** Building of the Center, Tug-boat **Local expense** Local budget for the Project	To secure the counterpart personnel and local budget.

-4 The education and training for “Rating” is to be implemented. (2010) 3)-1 The education and training plan for the advanced rating is to be made, for such as “Mandatory minimum requirements for ratings forming part of a navigational watch (STCW A-II/4)” and “Mandatory minimum requirements for certification of ratings forming part of a watch in a manned engine-room or designated to perform duties in a periodically unmanned engine-room (STCW A-III/4)” (2010) -2 The education and training plan for “Mandatory minimum requirements for certification of GMDSS radio personnel (STCW A-IV/2) is to be made. (2010) -3 The education and training plan for “Special training requirements for personnel on certain types of ships” are to be made, for such as “Tankers (STCW A-V/1)” and “ro-ro passenger ships (STCW A-V/2)” (2010) -4 The reexamination for the demand of Cambodian seafarers is to be made and the necessary additional development plan is to be made. (2010)	-For elementary first aid -For welding and metal works -For seamanship	

Module 7

Project Name: Securing of Marine Safety (Table 14.1.1 Tasks 5)

Target Group: Ministry of Public and Transport (MMD)

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Goal 1. Establishment of Cambodian Marine Safety regime 2. Establishment of Coastal Communication Center(CCC)	Establishment of National Committee corresponding MARPOL and SAR Convention	Evaluation of institutional arrangements	The issue should be assigned as one of the governmental policy with overriding priority
Project Purpose 1. Establish CCC fitted with GMDSS requirements of SOLAS, and requirements of Regional Coordination Center of SAR Convention 2. Pave the way for comprehensive regional ratification of SAR Convention	. Establishment of CCC Arrangement of institutional regulations	Evaluation of ; 1. Regulations 2. Facilities 3. Information control regime	Support from related governmental bodies
Outputs Establishment of CCC corresponding to SOLAS/MARPOL/SAR	1. Establishment of CCC corresponding to SOLAS/MARPOL/SAR 2. Facilitation to CCC with National Oil Spill Contingency Team	Evaluation of implementation scheme	1. Allocation of human resources from SAR team in Navy 2. Finalization of preparatory work and human resource secure up to 2010
Activities 1. Establishment of National Committee corresponding MARPOL and SAR Convention Focal Point (MPWT (MMD)) 2. Fix the place and responsible authority of CCC 3. Evaluate the requirement of facilities and estimate cost 4. Allocate human resources（information control, Oil Spill Response Team） 5. Establishment of CCC	**Input** **Donor** **Facilities and equipment:** Building, Communication equipment, Oil spill response apparatus, Oil spill response vessels **Experts:** -Consultant for the planning of CCC and cost estimation -Search and Rescue Operation **Training and Education** -Training and Education of CP in experienced foreign countries -On the job training of CP	**Input** **Cambodia** **Human Resources** CP（MMD, Navy SAR team） **Facilities** Office, Meeting room	—

Module 8

Project Name: Strengthening of Maritime Administrative Capabilities (Table 14.1.1 Tasks7)

Target Group: Ministry of Public and Transport (MPWT) Merchant Marine Department

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Overall Goal Establishment of world standard in Maritime Administration	Administrative Enforcement Regime	Evaluation of Administrative Enforcement Regime	The issue should be assigned as one of the governmental policy
Project Purpose 1.Secure administrative enforcement capabilities of world standard in MPWT(MMD) 2. Secure basic maritime regulations and corresponding implementation regime up to 2010 3. Improve administrative enforcement capabilities in MMD	Organizational structure of MMD and securing of regulations	Evaluation of MMD Organizational structure and regulations	―
Outputs 1. Establishment of Maritime Code 2. Issue of Establishment of Domestic Ship Safety Regulation 3. Issue of prioritized Regulations required by Maritime Code 4. Enforcement of technical capabilities of MMD staff by increasing the number of ship inspectors from 2 at present to 5 up to 2010, and up to 10 in 2020	1. Maritime Code, 2. Regulations required by Maritime Code 3. Increased number of qualified technical staff in MMD	1.Evaluation of Maritime Code and issued regulations 2. Evaluation of technical capabilities of MMD staff	―
Activities 1. Close examination of draft Maritime Code 2. Ratification of new applicable Conventions and introduction into the Maritime Code 3. Issue of Domestic Ship Safety Regulation 4. Issue of prioritized regulations required by Maritime Code 5. Human resource development (technical staff) (1)) On the job training in Cambodia (2) Dispatch of trainee to Japan (Maritime Safety University, Maritime Technical College, Ship yards, etc.) (3) Dispatch of trainee to World Maritime University (WMU) (4) Dispatch of consultant from IMO and Tokyo MOU	**Input** **Donors** **Experts:** -Maritime Laws and Regulations **Training and Education:** -Training and Education of CP in experienced foreign countries -On the job training of CP	**Input** **Cambodia** **Human resources** CP（MPWT(MMD)） **Facilities** Office, Meeting Room	Cooperation of IMO and Tokyo MOU

Module 9

Project Name: Establishment of Basic Framework on Development/Use and Management/Operation of Cambodian Ports (Table 14.1.1 Tasks 8)

Target Group: Ministry of Public and Transport (MPWT), Sihanoukville Autonomous Port（SAP）, Phnom Penh Autonomous Port（PAPP）

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Goal Development/use and management/operation of Cambodian ports with international competitiveness	Activities of ports in Cambodia (Cargo volume, entering vessels, regular service etc.), Activities of industries related to port, Evaluation by port users	Statistical data on port activities and port-related industries' activities Interview to port users	Continuous work of TFT members in competent authorities Cooperation and coordination with competent authorities Fostering port-related private sectors
Project Purpose 1. Fostering of skills in the field of port policy formulation in the Royal Government of Cambodia 2. Fostering of skills for establishing administrative/legal framework establishment on ports in the Royal Government of Cambodia	1.Evaluation of talents of TFT members and results of work by TFT, Contents of the national port policy and progress of coordination with relevant organizations 2. Evaluation of talents of TFT members and results of work by TFT, Contents of Rule on statistics, Sub Decree and Port Law (draft), and progress of coordination with relevant organizations	1. Interview to member of TFT, Evaluation of the national port policy 2. Interview to member of TFT, Evaluation of Cambodian Port Law (draft)	Continuous work of TFT members in competent authorities Cooperation and coordination with competent authorities Budget for this project including necessary personnel costs Understanding necessity of the law on the part of National Assembly
Outputs 1. Formulation of the National Port Policy and Approach to Realization of Policy Initiatives (the National Port Plan) by RGC personnel 2.Arrangment of Rule on Investigation and Statistics on Ports by RGC personnel 3.Draft of Sub-Decree on private ports by RGC personnel 4.Establishment of Port Law (draft) by RGC personnel	1. The national Port Policy, Result of investigation and analysis, Progress and result of coordination with relevant organizations 2.Rule on Investigation and Statistics on Ports, Result of investigation and analysis 3. Sub-Decree, Result of investigation and analysis, Progress and result of coordination with relevant organizations 4.Port Law (draft), Result of investigation and analysis, Progress and result of coordination with relevant organizations	Interview to member of TFT Evaluation of result of investigation and analysis Evaluation of contents of the National Port Policy, Rule of statistics, Sub Decree and Port Law Evaluation of progress and result of coordination with relevant organizations	Continuous work of TFT members in competent authorities Cooperation and coordination with competent authorities Understanding necessity of new schemes on ports by related parties Examinations and approval by Diet

Activities 1. Review of Master Plan Study and additional survey（2008） 2. Investigation and analysis on matters necessary for drafting the national port policy (2008-09) 2. Investigation and analysis on matters necessary for arranging rule on statistics (2008) 4. Investigation and analysis on matters necessary for drafting sub Decree and Port Law(2008, 2009) 5. Formulating the National Port Policy (2009) 6.Arranging the rule on statistics on ports(2008-09) 7.Drafting Sub-Decree on Private ports (2008) 8.Drafting Port Law and relevant rules and regulations (2010)	**Input** **Donor** **Experts** -Port Administration -Port Policy -Port Management and Operation -Port Planning -Port Statistics **Training** Training TFT members overseas through discussion with officials of advanced countries **Local consultant** -Translators and Interpreters -Local consultant (Local ports survey) -Local legal office (Cambodian laws and regulations)	**Input** **Cambodia** **Human resources** Staff of MPWT, SAP and PPAP **Facilities** Office room, Meeting room **Local cost** General operation cost	RGC shall set up a task force team which consists of staff of MPWT, SAP and PPAP. MPWT shall take charge of its secretariat. **Prerequisite** Positive intentions for this project by MPWT and SAP/PPAP

Module 10

Project Name: Improvement of Organization for Maritime and Port Administration (Table 14.1.1 Tasks 9)

Target Group: Ministry of Public Works and Transport, Sihanoukville Autonomous Port, Phnom Penh Autonomous Port

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Goal Rationalization of Maritime and Port Administration	Organizational Improvement	Revision and promulgation of laws and regulations on organization	Government gives priority to the improvement of Maritime and Port Administration
Project Purpose Capacity Development of Maritime and Port Sectors in Administration	Technology transfer to task force members	Interview with task force members	Ministry agrees to revise organizational sub decrees and regulations
Outputs Task force drafts the revision of organizational sub decrees and declarations in collaboration with foreign experts	Performance of task force members in terms of planning and coordination	Evaluation of draft laws and regulations on organizational improvement	Cooperation with maritime and port related organizations and business society
Activities 1. Study for issues on Cambodian maritime and port activities 2. Comparative study on maritime laws and organizations of neighbor countries 3. Proposal for MPWT internal organizations/departments 4. Proposal for local maritime and port administration in terms of responsibility and jurisdiction. 5. Proposal for future port management body of Sihanoukville and Phnom Penh 6. Drafting of sub decrees on organizational improvement 7. Coordination of relevant authorities/entities to realize organizational reform 8. Preparation of materials for seeking approval on laws and regulations 9. Request for budget 10. Arrangement of offices for new administration and local organizations	**Inputs** **Donor** **Experts** -Maritime Administration, and -Port Administration **Training** -Training at foreign maritime administration and port authority **Others** -Translation of documents into Khmer -Education/Training materials	**Inputs** **Cambodia** **Human Resources** Setting up working groups （MPWT、SAP、PAPP） **Facilities** Office, Meeting room	**Important Assumption** MPWT gives priority to the improvement of organization for maritime and port administration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