

Chapter 5 Logistics Issues in Cambodia

5.1 Logistics Issues of International Container Logistics

Sihanoukville and Phnom Penh Ports are major players for international container logistics. Nearly 90% of laden containers pass through both ports (65% Sihanoukville Port, 25% Phnom Penh Port and 10% highway). The issues on container logistics are, in other words, port logistics issues.

Since 2009, maritime containers have been shipped from Phnom Penh to a new, deep-sea international container port at Cai Mep on the South China Sea in Vung Tau Province of Vietnam, about 70km by road south-east of Ho Chi Minh City. Initially, the specialized motorized barges from the old Phnom Penh Port on Sisowath Quay shipped containers, but in the beginning of 2013, a new container port was opened by the Phnom Penh Autonomous Port at a site located 30km from Phnom Penh on the Mekong mainstream. The self-propelled river barges connect the new port with a capacity of up to 160 TEU to Cai Mep, and through this port, directly to mainline shipping services to the ports on the west coast of the United States.

At least up until the present, the New Container Port of Phnom Penh has faced its principal competition from Sihanoukville Port. However, the new port is able to dispatch garment export containers to North America, whereas Sihanoukville has to rely on two feeder services (rail or road from Phnom Penh and feeder shipping from the port) to connect in Singapore with mainline shipping services to the ports on the west coast of the US. For this reason, the New Container Port of Phnom Penh has been able to secure a major portion of the garment export trade from the Port of Sihanoukville. Regarding the maritime, Phnom Penh new port has an advantage to export to the US and Sihanoukville port to the EU.

The high quality road connection through NR1, which provides the new port with

convenient access to container sources in and around the city of Phnom Penh, also poses a threat as a result of the completion of the new bridge at Neak Loeung and with it the probability of increased road traffic between Phnom Penh and Ho Chi Minh City.

The Phnom Penh Autonomous Port (PPAP) maintains quite detailed container and other cargo throughput statistics. The increase ratio of container cargo in 2015 fell compared to that of 2014. This is because of the economic slowdown of China, and labor conflicts in the ports of the west coast in the US. Phnom Penh Port has an advantage to export containers because the barges can easily stream down to ports in Vietnam but it takes much more time to reach Phnom Penh Port, especially during the rainy season.

After the general election in 2013, the minimum wage in Cambodia was increased (2012=\$61, 2016=\$140). Therefore, the merits of the Bavet SEZ decreased, because the labor cost became almost the same as that of the outskirts of Ho Chi Minh City(2016=\$170). On the other hand, the difference in labor cost between Bavet and Thailand is still large (2016=\$180). In addition, the rail connection for Bangkok – Poipet – Sisophon will be completed in the middle of 2016 and a new truck cross border point will be completed in the same year. Therefore the advantage of Poipet will be increased. Cargo owners can choose from four international ports, i.e. Sihanoukville and Phnom Penh Ports in Cambodia, Cai Mep Port in Vietnam, and Leamchabang Port in Thailand. Competition among those three ports has increased since ASEAN Economic Integration. Therefore the container handling function of Sihanoukville Port should be reinforced in Cambodia. At the same time, a rail connection from Bangkok to Sisophon will be focused on for heavy cargo transportation.

The Study Team can point out the four major issues of logistics system in Cambodia; i) the implementation system in regard to logistics system, ii) legal system, iii) information system, and iv) connectivity among transportation modes.

5.1.1 Issue of Implementation system by the Government

The logistics system includes various fields basically; however there is no coordination body between the public and private sectors in Cambodia.

In Malaysia as a logistics advanced country, the Prime Minister ordered the establishment of joint organization between the public and private sectors which enhanced efficient national logistics system and the master plan development.

In addition, it is important for the government to establish the joint implementation organization between the private sector and related ministries and enhance them.

5.1.2 Issue of legal system

It is necessary to develop accurate statistics information for the development of the national logistics policy. However, the government is currently not obliged to grasp the logistics information in Cambodia. This might be a serious obstacle in logistics policy planning.

The warehouses and dry ports must be very important function points for an efficient logistics system as a connection point. The government has not clarified the ministries that have jurisdiction over the warehouse and dry port development. Therefore, policy guidance concerning logistics facilities development has not been performed.

It is necessary for the Government to develop "an adjustment and determination mechanism among the related ministries concerning logistics development" and "the related legal system concerning logistics improvement by relevant ministries".

5.1.3 Issue of information system

The Ministry of Economic and Finance and the Ministry of Commerce are promoting the single window system. However, the single window system does not include the port procedure as logistics core under the MPWT jurisdiction.

All port-operating procedures are conducted by the related documents and it has not been computerized yet up to now. It is important to advance the computerization of the port (procedure), which plays a core role of the logistics system in Cambodia.

The unification between the computerization of port-operating procedure and the single window system will contribute to the efficient logistics system and industrial development greatly.

5.1.4 Issue of connectivity among transportation modes

There is a railroad dry port in Phnom Penh, however the trade procedure in the railroad dry port is not performed effectively under the present circumstances. If

the trade procedure in the railroad dry port would become more efficient, the connectivity between rail and port will be strengthened as an efficient logistics system.

5.2 Logistics Infrastructure Issues

5.2.1 Ports

(1) Institutional Issues

1) Enactment of a Port Act

The ports are the gateway of a country playing an important role in the growth of the country's economy and trades. The ports are also an international logistic infrastructure where foreign ships are entering/departing day by day. In this sense, the ports in Cambodia should be developed in a methodical manner and operated/maintained in an appropriate way.

As Cambodia lacks a port-related law, some Port Act should be enacted for the purposes as follows:

- To maintain orderly port development
- To provide greater convenience to port users
- To ensure the safety and security of ports
- To protect the environment

2) Requirement for EDI for Port Clearance Procedures

a. Benefit of Port EDI

Trade facilitation is undoubtedly beneficial not only to the national economy of Cambodia but also to the regional economic integration of ASEAN, and furthermore, to the trade around the globe. Likewise, the facilitation of port entry procedures will be beneficial not only to the local shipping agents, but also to the shipping lines in the world. It is because every ship entering into Cambodian ports is an asset of the ship owner/operator with a considerable value, and the containers on board the ship as well. Reducing the time for port entry will immediately improve the asset management of the shipping lines. In this sense, the Cambodian ports need to have a

strategic view to develop a “Port EDI System” in view of strengthening the competitiveness of them in the global shipping market.

b. Current Status of Port Clearance Procedures

Currently, no EDI system for port entry procedures has yet been developed in Cambodia, as those procedures are still done with hard copies to obtain original stamps and signatures of government officers. “Kampuchea Shipping Agency & Brokers (KAMSAB in short)”, as sole organization offering ship’s agency under license of RGC, handles all formalities for port clearance on behalf of shipping lines. Established in 1979, KAMSAB is a government-owned company controlled by MPWT and Ministry of Economics & Finance for its operational and financial activities respectively. The Sub Decree No.81 prescribes its organization and area of business activities since August 1999. Details of the current procedures are described in the previous study “The Project for the Study on Strengthening Competitiveness and Development of Sihanoukville Port”, which have not been changed much since then. KAMSAB, appointed by the Minister’s decree as the sole shipping agent in Cambodia, is playing a key role in the port entry procedures.

c. Current Status of Port EDI Development

Currently no plan has been formulated to introduce EDI for port clearance procedures either, while GDCE’s ASYCUDA Project is on-going in the perspective of building up the Cambodian National Single Window.

d. Issues on Port EDI

The background factors would be as follows; which need to be determined before starting the development of Port EDI system.

i) Legal issues

Currently all the procedures are done on the principle of “original documents” which do not conform to the international standard. There are no procedural regulations to specify official application forms or methodologies. There also are no clear regulations that enable the government agencies to accept the application documents in EDI format.

“Convention on Facilitation of International Maritime Traffic” (“FAL Convention” in

short) was adopted among International Maritime Organization (IMO) member countries including Cambodia in 1965 as the "standards and recommended practices on formalities, and documentary requirements" for port clearance procedures. The FAL Convention has already been ratified by most of the Advanced Economies including ASEAN countries as follows, but not yet by RGC.

Table 5.1 Status of Ratification of FAL Convention by ASEAN Countries

Country	Singapore	Thailand	Indonesia	Vietnam	Cambodia	Malaysia	Philippines
Ratification	Yes	Yes	Yes	Yes	No	No	No

Source: IMO "Status of Conventions" as of February 11, 2016

ii) Organizational issues

Various government bodies under different ministries are involved in the port clearance procedures, such as MPWT, Customs, Immigration Police at Port, port Quarantine Office, PAS, PPAP, etc. However there is no clear policy as to which party shall have the initiative to precede with Port EDI.

(2) Operational Issues

1) Extension of Shipping Lines' Service Scope up to Inland CYs

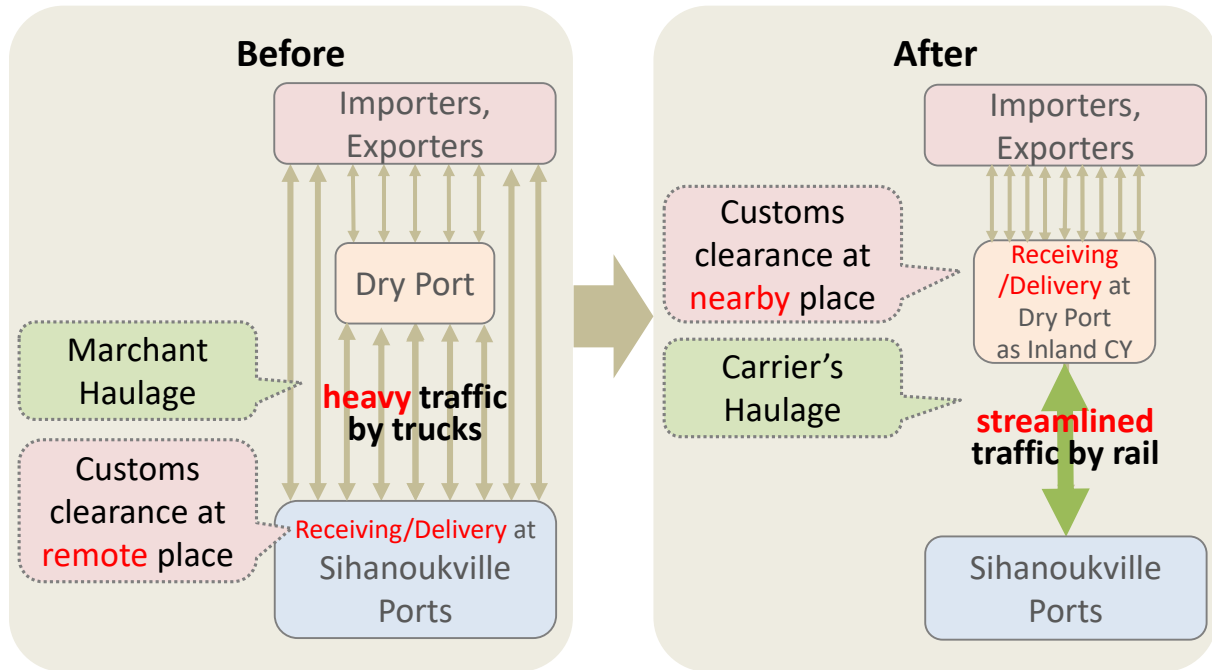
a. Inland CY in Phnom Penh with Railway Connection

As stated in 3.1.1-(4), the shipping lines currently register their CYs only at Sihanoukville Port and Phnom Penh Port. Because of that, the exporters in Phnom Penh need to bring their containers with the documents for customs clearance all the way to Sihanoukville Port by themselves (called "Merchant Haulage"). This causes heavy traffic on NH4 and a waste of time because of the customs clearance from remote areas.

If the shipping lines register their CYs at a dry port in Phnom Penh connected with Sihanoukville Port by railway, the traffic on NH4 will be relieved as 60-80 TEUs can be loaded on one train of the Royal Cambodian Railways. If the customs rules are amended for exporters to finish the export customs at a railway dry port and for the shipping lines to easily apply the bonded transportation procedures for all containers from Phnom Penh Port to Sihanoukville Port, the exporters can reduce their time

and work because they can finish their export clearances from near their factories.

Figure 5.1 illustrates how the logistical situations will be improved.



Source: Study Team

Figure 5.1 Changes of Logistical Situations through Establishment of Phnom Penh Inland CY

To implement this way, RCR needs to ensure reliable transportation service at a reasonable price, as the shipping lines have to bear all liabilities and costs for the transportation from the inland CY to Sihanoukville Port (so called “Carrier’s Haulage”). The most important element in the “reliable transportation service” is the “punctuality”; as the garment buyers are rather strict about the shipping schedule, shipping lines can be held responsible for any delays happening after they receive containers at the dry port. Another important element may be the supply of wagons, as the number of wagons will soon fall short against the increasing demand of multiple shipping lines.

The dry port needs to be operated under a tight security control, as it will handle a substantial volume of bonded cargoes.

It is presumed that there will be a substantial demand for this arrangement from the garment industry in Phnom Penh, especially major apparel brands that are conscious of reducing environmental impact.

In the case of the trade term of “FOB Sihanoukville Port”, the change of receiving places and B/L descriptions may cause an increase of the ocean freight amount, which will require some modification of the trade contract between the exporter and the overseas buyer.

b. Inland CY with Waterway Connection

The innovation of shipping lines’ services stated above may be able to apply to any waterfront facilities on Thonle Sap River or Mekong River connected by barges through inland waterways. The barge operators’ reliable service at a reasonable price will again be required. The customers for this arrangement will be the one who handles the remote cargo sources such as rice and other agricultural products to be exported in large lot sizes.

2) Accommodation of More Berthing Windows at Sihanoukville Port

At both Sihanoukville Port and Phnom Penh Port, most of the berthing windows should be open on weekends as long as the garment industry in Phnom Penh maintains the current order/production system. Unlike Phnom Penh Port, which can choose to use the old terminal or the new terminal, Sihanoukville Port will sooner or later face the shortage of berthing windows on weekends. At Sihanoukville Port, the measures need to be taken by PAS among the three options below:

- To enhance the operational efficiency with additional stevedore equipment; quay cranes and RTGs so that the loading/unloading work can be done in a shorter time
- To secure more berthing windows on weekends by the expansion of berth length or the development of a new terminal
- To induce new shipping lines’ services on weekdays

Both a) and b) may require a considerable amount of capital investment. c) will be effective when an intensive dialogue is undertaken with the garment industry.

Without the countermeasures above, some potential competitor may sooner or later open a new container terminal to take this demand. Steung Hav Port is the most probable competitor as it has a railway connection and financial capability.

3) Inducement of a Variety of Intra-Asia Services to Sihanoukville Port

As stated in 3.1.1-(4), 60% of export containers bound for East Asia are carried by barges to Ho Chi Minh Port and loaded onto Intra-Asia ships there. This is presumably because the choices of destination ports in East Asia are fewer at Sihanoukville Port than those at Ho Chi Minh Port.

Therefore, it would be better for PAS to induce some new Intra-Asia services in order to increase the choices of discharging ports. The strategy for PAS would be to induce a shipping line which has the potential to make an additional call on the way from Laem Chabang Port, provided sufficient berthing windows are secured on the weekends as stated in (2) above.

5.2.2 River Transportation

(1) Institutional Issue

MPWT has finished the draft of Inland Water Transportation Act and this draft was examined in the inter-ministerial meeting. MPWT should have the responsibility for ship registration, insurance, license, ship category etc. In the case of change of ship registration contents, the owner should inform to MPWT. All ships should be inspected by MPWT. A business license is required for river transportation businesses and a certification for seafarers is also clarified. Establishment of an act and enforcement ensure the safety of transportation on rivers in Cambodia.

(2) Operational Issue

1) Info-Ware

In some parts of the Mekong River in Cambodia and Vietnam, Vessel Traffic Management Systems (VTMS) have been introduced for safe river navigation. However, these systems are operated independently. If AIS and VTMS are introduced more comprehensively and the navigation of barges is monitored, nonstop border clearance might be possible.

2) One Stop Services in the Border

Chau Dac, the Mekong River border point on the Vietnamese side, has introduced a single stop service and all authorities concerned work at the same administration

buildings. On the other hand, at Khaorm Samnor on the Cambodia side, authorities work in small independent offices on the river side. The staff of Kamsab has to visit each office for documentation procedures. Therefore, Cambodia needs to consolidate each procedure done by each authority and to provide a single stop service into one authority.

The documents on the Cambodia side are needed much more than on the Vietnamese side (refer to 3.2.2(4)). The custom officers at five places check original documents: e.g., factory, office, port (two times) and border. It is required to adopt user-friendly service.

(3) Infrastructure

1) Mekong River

The Mekong River on the Cambodia side fluctuates so that it has some shallows. Dredging is not drastically needed but it needs regular channel maintenance. There are two critical issues on river infrastructure in the Mekong on the Vietnam side. The first one is Cho Gao channel which has a narrow channel and low water level. It also has the height restriction of electric lines and bridges. It is congested for small ships in this area and a barge is needed to keep speeds down and operate carefully. The Vietnamese government finished first the improvement. There is second improvement plan by VIWA using a PPP scheme but it is not proceeding yet.

The second issue is the mouth of the Mekong River. The depth of the river in this area is 2m in low tide and the barges have to wait until high tide for the depth of the river to become 4m. The barge that goes around the river mouth to Cai Mep Port also has to wait for the high tide. There are fishing nets in this area and the ships have to operate carefully. In the monsoon season, small barges are restricted in operation because of the wind and waves. For these situations, it is necessary to develop the capacity of Phnom Penh Port to manage the growing number of containers. However, unless the problem of Cho Gao channel and the navigation around the mouth of the river are solved, transport by the Mekong River will have limitations.

2) Bassac River

Bassac River is known as the Hau River on the Vietnamese side where it is wide and

deep enough for 10,000 DWT ships to stream up to Can Tho Port. From Can Tho, there are feeder container services to Singapore. In the river mouth of Hau River, the Quan Chanh Bo Canal is under construction by the initiative of VINAMARINE. The canal will enable 20,000DWT ships (not full draft) to stream up to Can Tho Port.

Between the Mekong and Bassac (Hau) Rivers, there is a very shallow connection channel called the Vam Nao Pass. If this connection would be excavated and deepened, foreign ships (5000DWT) could transit to Phnom Penh Port directly. MRC always proposes this project but the Vietnamese side does not show the same enthusiasm.

5.2.3 Land Transport

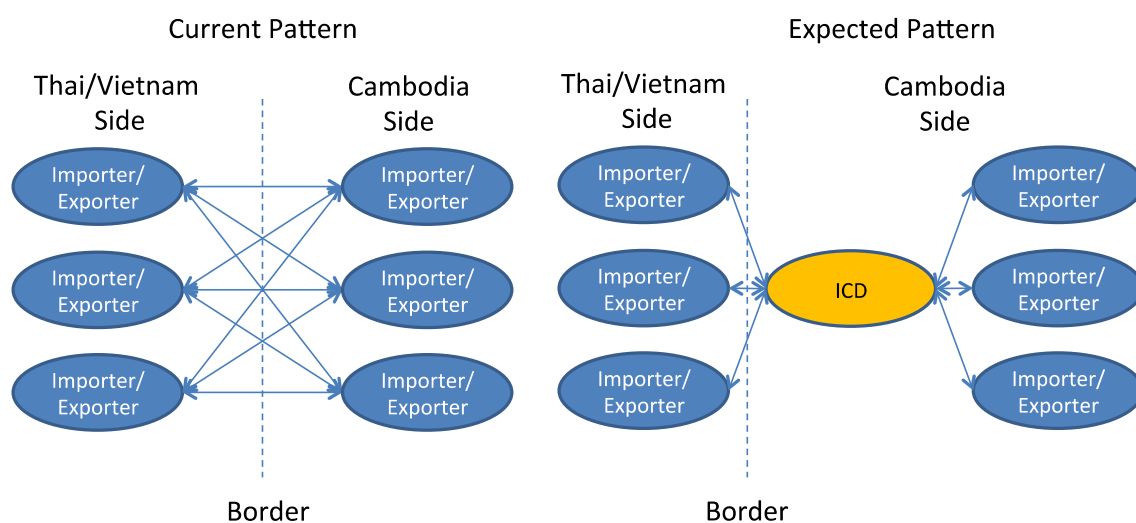
(1) Operational Issue

1) Few Return Cargo

Trade imbalance forces truckers to undertake a large amount of empty haulage, resulting in the main reason for high logistics cost. In order to resolve this problem, exporter/importer (including SEZ companies) are likely to use return trucks for export. Logistics providers are not responsible for improving the trade imbalance.

Development of consolidation is regarded as an alternative solution, dry ports can provide consolidation service. However, the origin/destination is limited to respective dry ports.

A single dry port has limited cargo volume so that bridging different dry ports and exporter/importer (including SEZ companies) is desirable. The custom rule allows the consolidation of exporter/importer (including SEZ companies) cargo at dry ports. The activating and facilitation of this scheme is attractive for promoting consolidation service.



Source: JICA Study Team.

Figure 5.2 Effective Pattern of Consolidation

2) Double License Truck (under the CBTA)

With the promotion of ASEAN integration, there could be two extremely different scenarios for the Cambodian truck industry: (1) “development” utilizing the geographical advantage of sharing the border with Thailand and (2) “decline/extinction” as a result of the competition with truckload carriers of the two neighboring countries. The Cambodian logistics industry is by no means as competitive as their counterparts in Thailand and Vietnam. In addition, Cambodia was not active in the issuance of bilateral truck transport licenses under CBTA (Cross Border Transportation Agreement) agreed to in the ASEAN transit agreement. Currently, Cambodia issues Cambodia-Vietnam bilateral transport licenses. However, there is no advantage in using Cambodian trucks for exports from ports in Vietnam because Cambodian vehicles cannot enter Cai Mep Port and because empty containers need to be brought from Vietnam.

Meanwhile, in the case of trade with Thailand, most of the cargo is partly transshipped on the border. Regardless of border-crossing available, logistics companies will be hesitant about border-crossing in consideration of safety because drivers keep to the right side of the road in Cambodia while drivers keep to the left side in Thailand.

Vietnamese trucks can travel 20 km from the border into Cambodia even if they do not have the license. Licensed trucks can carry cargo to Phnom Penh City without transshipment. With regard to customs clearance procedures, the same documents are required for bilateral licensees.

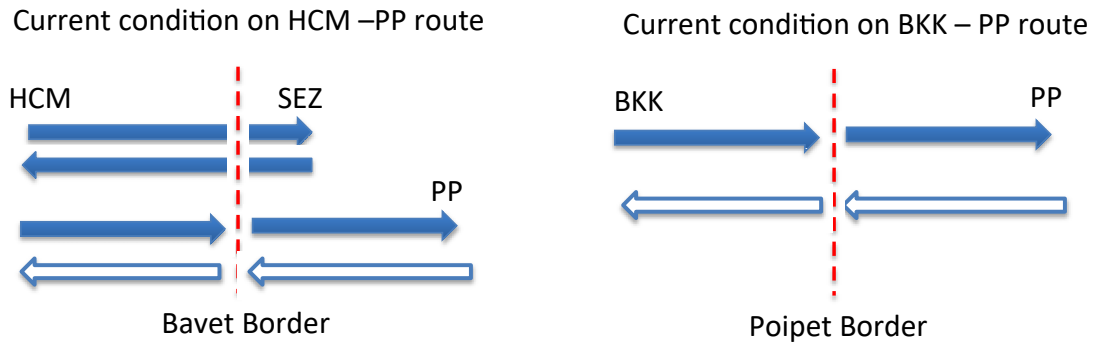


Figure 5.3 Trans-loading Pattern at the borders

3) Aging Trucks

Many trucks are second hand from overseas, the performance of the truck maintenance level and fuel consumption ratio are not necessarily good, resulting in higher transport cost.

It is reported that 40-70% of variable cost is the fuel cost. Transport cost depends largely on fuel. According to the ADB survey (Green Freight in Cambodia), fuel consumption rate is 2.1ℓ in Cambodia, 2.5~2.5ℓ in other advanced ASEAN countries. About 10% of the fuel consumption ratio of Vietnamese trucks is better than Cambodian trucks. The truck haulage charges face severe competition from class3 transporters who are mainly owner drivers. As a result, the incentive on the procurement of new trucks is negative when considering the high interest rate which is 7-10%. Instead of them risking an investment for trucks, an investment for customs procedure operation or warehouse ICD seems more attractive.

4) Driver Management

Even for class1 truckers, truck driving is unstable and daily payment is not rare. Exposure to threats from organized crime, corruption, and heavy traffic reduce the attractiveness of this job. Drivers seek to improve their income with per day payments, fuel theft and extra jobs including minor bribery on a regular basis even

within their own companies.

In addition, training to get a large vehicle driver's license and the license system are not established. Drivers having a small vehicle driver's licenses can get a large vehicle driver's license for approximately 500 dollars. There is no institutional scheme for truck drivers that can foster eco-friendly driving or safe driving skill.

Class1 transporters feel the need for driver training; however, conducting driver training is not active because of the risk of job-hopping for drivers. Since there is no training scheme, some companies send their drives to Thailand for training.

(2) Hard Infrastructure

1) Traffic Congestion at Aranyaprathet

Trucks entering Poipet via Aranyaprathet wait on the Thailand National Road 33 if they arrive before the border opening time. Trucks go through the border at about 11 o'clock.

In the transport from Bangkok to Phnom Penh, It takes a long time to transport up to Phnom Penh from Poipet. Trucks cannot arrive in one day to Phnom Penh because of the actual working hours of a driver. If an extension of border facilities is arranged and the new border facilities are only for cargo, the shortening of a transportation lead time cannot be expected because of the length of transit time, and the truck ban in Phnom Penh. Therefore, it is necessary to consider two plans, 1) shorten the transport time by developing an expressway between Poipet and Phnom Penh, and 2) avoiding the truck ban by the development of a ring road. If the truck is able to clear two of these obstacles of the waiting time at the border and the transport time, if a truck leaves Poipet in the morning, passing through a ring road of Phnom Penh Municipality, it is possible to arrive in Phnom Penh in the evening. The actual working hours of the truck may decrease and it may lead to a reduction of a transport cost.

2) Ring Road Development

Container trailers, in particular, need to wait before passing through Phnom Penh City to take another national highway, even if they arrive in the vicinity earlier, because truck regulations permit trailers to enter the city only during a limited time.

This extends the truck duty hours, increasing the cost of drivers and vehicles. This is one of the factors contributing to high logistics costs. It is urgently necessary to develop a ring road to resolve this problem. The route of a ring road, which connects with a main national road, is as below:

- Route to transport from RN 1 along the road to Sihanoukville Port,
- Route to transport from RN 5 along the road to Phnom Penh Port,
- Route to transport from RN 6 along the road to Phnom Penh Port, in case the route from RN 6 along the road to Sihanoukville Port is used,

An important maintenance point is as follows.

- Flyover development of RR3 for the crossing of RN 3 and RN 6,
- Flyover development of RR3 for the crossing of RN 5 and RR3.

Shipping companies can reduce their inventory amount by one day if they can reduce the transport lead-time by one day, leading to cash flow improvement. For this reason, lead-time reduction is emphasized to attract foreign enterprises.

5.2.4 Rail Transportation

(1) Institutional Issue

There is no railway law or regulation. There is only a contract with the concessionaire and a draft of technical guidelines. An institutional frame work should be set up. In Japan, a railway business act was established in 1990. There are three columns, the first is on infrastructure and equipment, the second is on staff for railway operation, and the third is passenger publication. There are many regulations which were prepared based on this act. Those are for the smooth and safe operation of railways. In Cambodia, the railway business act is going to be prepared after the completion of the port act.

(2) Operational Issue

1) Modernization of Train Operation System

Rail operation systems should be upgraded and properly maintained for safe transportation. To ensure the reliable transportation services, a modern train operation system should be introduced.

2) Container Information Between ICD and Port

At the same time, the container information systems between the port and ICD should also be updated. ICD information should be combined with CTMS in Sihanoukville Port.

3) Trailer Fee inside Port

The LOLO fee from/to train is free for enhancement of rail transportation but the trailer fee inside port is \$22 for one container. This price is said to be a little high by users.

4) Infrastructure

Rail transportation enables efficient container transportation to Sihanoukville Port. One train can transport 80TEUs of containers at once and there is no need to wait at the port gate. There are around 1000 surface crossings including smaller ones on the south line requiring a train to reduce its speed. Animals and people sometimes walk on the rail tracks. A train also slows down in sections where the track is not well maintained, at old bridges and weak culverts. Therefore it takes eleven hours to reach Sihanoukville Port but there is no problem for container handling onto the vessels.

One train can transport 80TEUs of containers at once and there is no need to wait at the port gate. It is better to install the train container scan system in the entrance of the rail freight station in order to facilitate the scanning process.



Source; Rapiscan

Figure 5.4 Rail Scan System

5.3 Soft Infrastructure

5.3.1 Prior permission procedure of customs clearance

Although customs law and a ministerial ordinance were made in 2008, computerization of ASYCUDA etc. is progressing now. As soon as it computerizes the procedure of the prior permission concerned and transportation immediately, the procedure of the prior permission of Head Office should be simplified. For this purpose, the development of business flow of the Purakas, the introduction of the electronic systems required, and the introduction of transportation (transit) module of the ASYCUDA, etc. were required. There is a need to be careful about the simplification of procedures without the usage of the electronic systems. Because, simplification of the procedure may become an inaccurate base based on the situation of Cambodia where a cargo management situation is insufficient. A customs officer receives and examines data, the state that verification and management can be performed always is required if necessary.

On the other hand, it is irrational that the examination time of the procedure in the head office takes one day. One of causes is that 4-5 officers check separately.

In addition, there is a redundant procedure that a check of the assistant chief is required. It is necessary to improve this process. It is necessary to perform business improvement, such as "risk management introduction by preliminary review", and "considering it as handling simple about constant cargo and the cargo of the shipper who can trust (the examination stage is reduced)" etc. The handling of temporary storing space is the same as handling of the in-bond storage place in Japan. Therefore, certain and quick cargo management should be guided by the technical assistance program of the in-bond business of the customhouse in Japan.

5.3.2 Permission of custom document

Under the present circumstances, the assistant chief's signature is required for granting permission to customs documents. It is necessary to decide to perform a prior check and permission procedure of custom documents not at the Head Office but at the branch office. The procedure of the assistant chief signature should be limited to only when dealing with a special case, or only when Head Office approval is

required. The comment mentioned above does not still improve. It is considered as one of the main reasons that the sufficient knowledge and experience of the officer are insufficient and that the delegation of authority does not progress due to the administration customs in Cambodia.

In the evening, a customs broker brings 20-30 kinds of document files to the assistant chief, and is waiting for the assistant chief's signature. A customs broker carries documents in order to the general personnel, Deputy Chief, Chief, Deputy Director, Director, and the assistant chief (Deputy Director General), and receives a signature from each. Several problems in this situation are shown below.

- The officers are busy with documents work every day, and cannot concentrate on policy issue.
- The applicant carries these documents files.
- In the work working space, the applicant is always coming and going, and the applicant has hung about at passage or stairs. Therefore, confidentiality is not put into practice.
- The officers are overbearing to the applicant and so the applicant gains an unprofessional attitude. Professionalism and moderation are missing.

When the officer is absent for a long time for a meeting, the applicant must wait for many hours. These are common cases. In the short term, a time crunch is performed by reducing the number of times a signature is required in customs procedures. As a result, the application time can be shortened. In the medium to long term, it is important to carry out such as business flow changes made by the revision of the related decree", "promotion of computerized", "cargo management at the appropriate dry port", and "transportation from the border".

5.3.3 Procedure Relevant to Logistics

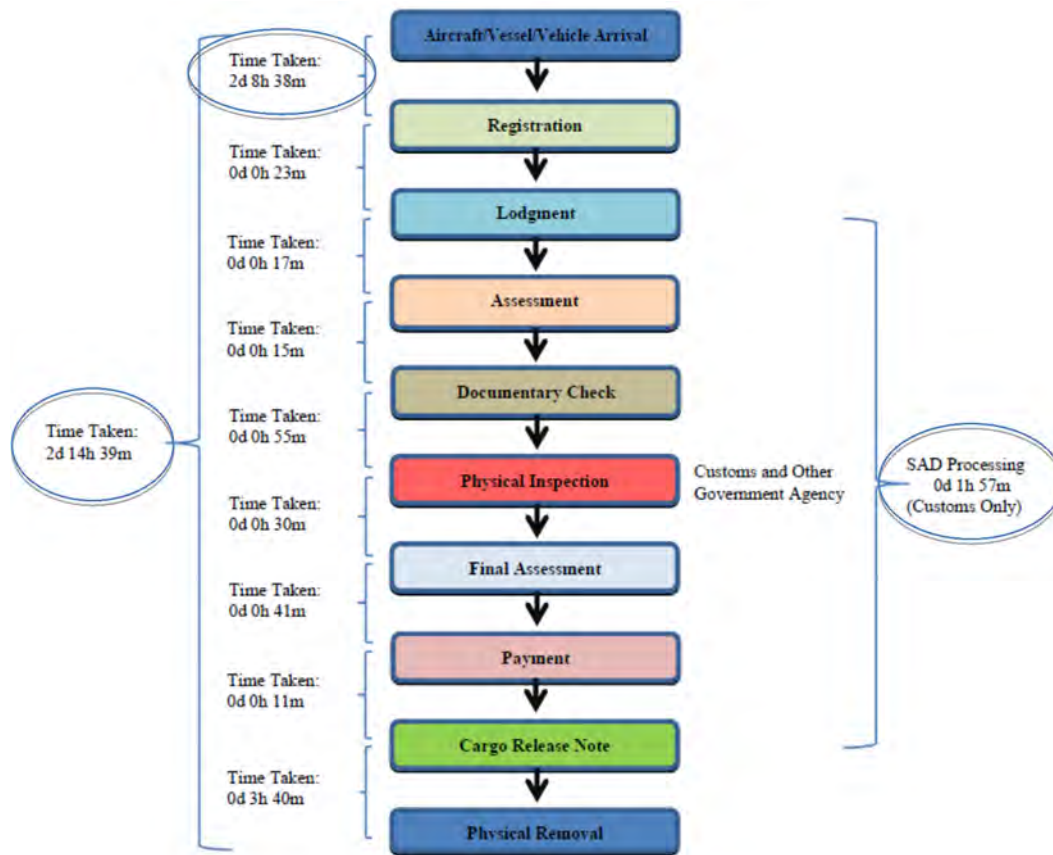
According to the TRS survey, the procedures following an ASYUCDA declaration have been reduced as a result of the introduction of ASYCUDA. As the pre-ASYCUDA process, customs valuation is still performed manually. In other words, basic import (taxation) requires "double procedures" (customs valuation and ASYUCUDA declaration). Many countries of the world have introduced ASYCUDA.

In these countries, usually declaration, valuation, customs duty calculation, examination, and permission are completed within the ASYCUDA system. Cambodia's calculation of customs duties by another system is a rare case. The TRS survey measures only the AYSUCDA processing time. The pre-AYSUCDA processing time was not measured, but it is believed to require one or two days (Handbook of Customs Procedures).

This also leads to the double taxation structure in the customs procedures. According to a survey conducted by JICA in 2010, a double taxation structure is applied to customs clearance fees (a customs office fee and a border-crossing fee). Cambodia maintains this structure, but the transparency of the system has increased as a result of the introduction of a tariff. According to some interviewees, however, the fees are not collected as specified in the rule.

In addition, a transit permit is required for the cargo to move to dry ports, from the GDCE. Such a permit is obtained at the point of departure in many countries. (China also changed its system from the conventional arrival customs permission system to the departure customs permission system.) This means that time is inevitably wasted in transferring documents, etc., to the customs at the point of departure.

According to detailed TRS data, the time until declaration is longer than the time required for ASYUCDA.



Source: ADB, "Time Release Study", 2013.

Figure 5.5 Time for Customs Clearance

The reasons for the longer time until declaration include:

- Time spent waiting for the determination of customs values by GDCE
- Unlike Japan, the same Hs-code items may not be totaled, and data entry takes time.
- Even if they are only worth a small amount, all items are entered because there is no rule for small-amount customs clearance exemption.
- Time spent waiting for a support letter and other documents
- Time spent waiting for original documents

It is necessary to input manpower to address these obstructive factors, but this leads to a cost increase.

Meanwhile, companies engaged in duty-free importation in an SEZ, etc., submit a

master list in advance and receive duty exemption status. This procedure is difficult especially for new cargo. However, individual customs clearance procedures are smoothly implemented once the exemption is allowed. The check on the border as well as cargo inspection after arrival is simplified. No problem was pointed out by any of the interviewees.

5.3.4 Transport Insurance

Transport insurance has not become common in Cambodia because of the cost increase. In the case of a transport accident, the responsibility might belong the driver under the current conditions in Cambodia. The transport insurance system should become common in Cambodia for the purpose of the upgrading of transport quality.

5.3.5 Logistics Business Act

MPWT is playing a leading role in the Cross Border Facilitation Committee and the Minister of MPWT chairs this committee. In addition to this, MPWT is responsible for formulating the logistics Master Plan and the logistics facilitation committee. This is also described in NSDP. Currently, MPWT is undergoing organizational reform in which a new department for logistics management will be set up in the general department of administration. As an inter-ministerial organization, a Logistics Facilitation Committee should be set up by relevant ministries and authorities but the Vice Minister might be better to hold the chair for LFC and MPWT is better to play a role as the secretariat.

Several basic transport laws have been established, especially in the field of land transportation, but laws regarding water transportation, maritime transportation and the ports are still on the way. It is necessary to register with the Ministry of Commerce when a new company is established. To secure safe and reliable logistics services, a new comprehensive law for logistics service companies including warehouse and dry port businesses should be enacted. Through the law enforcement, MPWT should control logistics business licenses for them.

5.4 Summary of Issues of International Container Logistics

The table 5.2 shows the summary of issues of international container logistics in

Cambodia.

Table 5.2 Summary of International Container Logistics Issues

		Overall Issues	PP –Thailand route (road)	PP – Vietnam route (road)	PP – Vietnam route (inland waterway)	PP – Sihanoukville route (road and railway)
H A R D	Transport facility		✓Narrow damaged NR5 (Expansion is planned)	✓Congested and damaged NR1 (Expressway is planned)	✓Shallow and narrow river channel in Vietnam	✓ Congested and dangerous NR4 (Expressway is planned) ✓Congested port gate ✓Slow railway transport
	Logistics facility	✓Lack of development of transport nodes (ICD; Inland Container Depot etc.) ✓ One Way Cargo	✓Limited capacity of the border (new border is planned)	✓Limited capacity of the border	✓Limited port capacity (expansion in progress)	✓ Insufficient ICD capacity ✓Limited port capacity and access (expansion in progress)
S O F T	Law/ Policy/ Regulation	✓Lack of Forwarding Business Act ✓Negative impact of track ban ✓Negative impact of overloading	✓ Limited Double Licensed Vehicle	✓ Limited Double Licensed Vehicle		
	Mater plan/ Strategic plan	✓Lack of logistics master plan				
	Organizational structure	✓ Lack of coordination mechanism ✓Unclear demarcation among ministries				
	Operation/ Procedure / Information	✓Limited harmonization between custom and port system	✓Limited operation hours of border (only daytime)	✓Limited operation hours of border (only daytime)	✓Lack of Port EDI ✓Limited operation hours of border (only daytime) ✓Redundant documentation	✓ Lack of Port EDI ✓Lack of shipping lines' services to receive/ deliver the laden containers at ICD
	Charge/ Tariff	✓Lack of minimum/ maximum charge system	✓ High forwarding charge	✓ High forwarding charge	✓ High forwarding charge	✓ High forwarding charge ✓ High port charge (LOLO; Lift on / Lift off)
	Human Resource Development	✓Lack of human resources in logistics/ statistics sectors	✓Limited driver skill	✓Limited driver skill		✓Limited driver skill (dangerous driving),

Source: JICA study team

Chapter 6 Basic Direction for Logistics Improvement in Cambodia

6.1 Logistics Performance Indicators

Based on the needs of logistics users and society, and incorporating lessons learned from international experience, logistics performance metrics should cover three areas: efficiency, safety, and environmental impact. The comprehensive list of logistics system performance indicators in the table below distinguishes between those important to users of transportation and logistics services (service quality and cost indicators), and those important to the general public (safety, environmental impact). Some indicators may in practice have relevance for both users and the general public.

Table 6.1 Logistics Indicators

Viewpoint		Micro Performance Indicators		Macro Performance Indicators	Major Factors			
Users of Transportation and Logistics Services	Service and Efficiency	Service	Average transit time Cargo visibility Percentage of on-time deliveries	—	<ul style="list-style-type: none"> Logistics infrastructure Track and trace capability Modal interconnection Multimodal usage Information technology penetration Load factor Equipment utilization efficiency Customs process efficiency 			
		Cost	Transport cost as a percentage of total product cost	Logistics cost as percentage of gross domestic product				
General Public	Safety	Loss and damage rate	Citizen complaint rate Emergency services response time	Accident rate	<ul style="list-style-type: none"> Percentage of overloaded trucks Percentage of drivers with excessive on-duty hours 			
		Environmental and Health Impact				Reduction in emission and noise test violation of trucks	Fuel economy Reduction of pollutant emission	<ul style="list-style-type: none"> Percentage of power units failing to meet fuel economy targets Percentage of empty movements Reduction in noxious gas emission Reduction in greenhouse gas emission

Source; ADB Transport Efficacy Study

6.2 Standardization of Logistics Policies

Logistics development has always been driven by market demand, which leads logistics enterprises to continuously develop, upgrade, and transform their services to meet market needs. Government can play a proactive role in logistics market development, but government policies should concentrate on assisting logistics enterprises to improve their business competitiveness and vitality, and promote the development of a robust logistics market.

In practice, different governments adopt different approaches to logistics development. The United States (US) relies on free market mechanisms to define the path of logistics development. The US government limits its role mostly with little market interference. The governments of Germany and Japan, on the other hand, play a much stronger role.

Standards are essential for the effective and efficient functioning of a complex system. In a sense, they serve as a universal language among various parties in a logistics system. In the course of moving goods, various transport means are used, different instructions are received, and diverse regulations are enforced. For the process to function well, technical standards must be in place.

A good logistics standard should possess the following attributes:

- It is an effective solution to a significant problem.
- It is widely adopted by users.
- It promotes good practices (such as supporting safety, security, energy efficiency, environmental protection).
- It enhances quality and efficiency and reduces cost.
- It facilitates cargo, information, funds, and equipment interchange.
- It is simple and easy to use.

6.3 Main Logistics Issues in Cambodia and Policy Direction

As described in the previous sections, the following three main issues should be focused on for the improvement of logistics in Cambodia;

- Realizing the improvement of logistics infrastructures,

- Realizing the improvement of logistics related laws and regulations aimed at an efficient logistics system in the region,
- Realizing capacity building for experts who are engaged in the logistics field in the public and private sectors.

In other words, the logistics industry needs the government to address the identified deficiencies in market integrity, tax policy, and logistics park development, and to eliminate administrative barriers and create regional policies that favor local logistics enterprises. The challenges can be divided into infrastructure, market regulation, transport and logistics practices, and policy framework. In particular;

- Develop integrated international transportation hubs (international port)
- Develop international corridors (truck highway and expressway)
- Promote multimodal transport development (rail and port, rail and inland waterway)
- Develop ring roads and an urban distribution system in the capital area (counter-measure for the truck ban)
- Optimize the location and design of logistics park and logistics center (near SEZ, expressway IC or port)
- Create public logistics information platforms (port community system and truck booking system)
- Encourage enterprise information system development
- Eliminate policy discrimination (state own/private own, domestic own/foreign own, etc.)
- Eliminate regional administrative barriers (ratification of CBTA)
- Adjust tax policy to fit industry needs (to enhance international competitiveness and market integration)
- Establish proper standards (vehicle size, road design)
- Enhance honest and fair dealings in the freight markets (eliminate unclear charges and protocols)

6.4 Capacity Building for Experts Logistics

Capacity building is the most crucial issue to improve logistics activities. Cooperation and consensus among three parties, i.e. the Government in charge of transport logistics, Logistics Associations and Logistics Companies, are vital in order to achieve efficient and seamless transport logistics systems. Capacity building programs must therefore be provided to these three parties and enable logistics related personnel to acquire the necessary knowledge and skills to contribute to the further economic growth of Cambodia.

6.4.1 For governments (In charge of transport logistics):

The government who is in charge of transport logistics acquires skills for establishing policies, laws and supporting systems for the industry in Cambodia.

6.4.2 For logistics associations:

Logistics associations, especially for management people, acquire knowledge and skills for organizational start-up, management and strategies in the ASEAN region.

6.4.3 For managers of logistics companies (Truck, Warehousing, Forwarding and etc.):

Management people acquire skills to manage the company effectively, deliver qualified services to the customers and consider environmental aspects. These ideas will lead them to a higher stage of management.

6.4.4 For operating staff of logistics companies:

Operating personnel acquire knowledge and operating skills for driving, cargo handling, warehousing, etc. in order to provide safe and reliable just-in-time services to customers.

Chapter 7 Proposal Project

7.1 Hard infrastructure

Logistic infrastructures have become the bottleneck of logistics efficiency improvement in Cambodia. As a main part of logistic infrastructures, specific hard infrastructure facilities are proposed in the following sections.

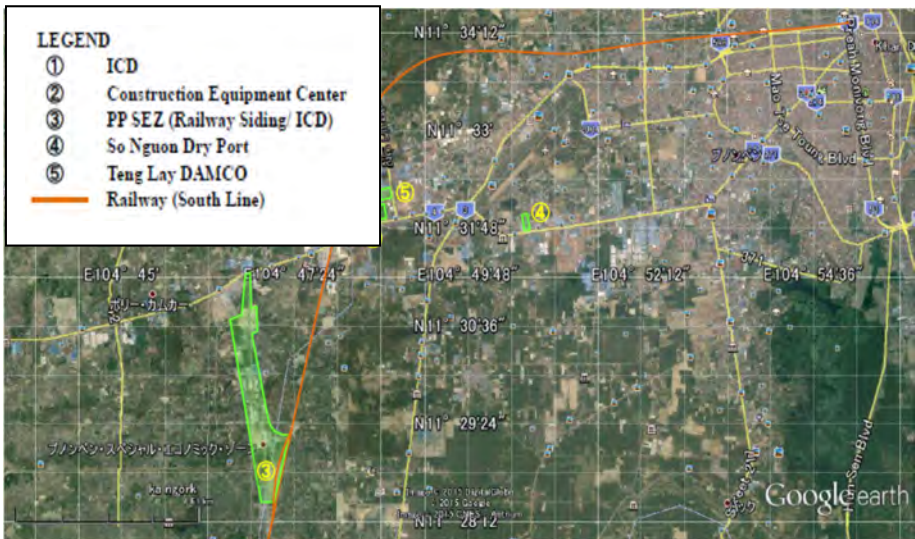
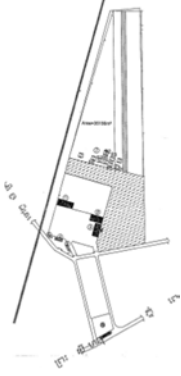
Table 7.1 below summarized the major items classified by modal. Each item is described in Section 7.1 and succeeding Sections.

In Table 7.1, the levels of the necessity of relevant items are indicated by A, B and C considering the urgency and significance.

Table 7.1 Summary of Hard Infrastructures

Modal	Present Issue	Counter-measures	Outline	Needs	cf. Sections
Railway	Amongst the Railway Container Cargo (CC)Transportation between PNH and SHV, the lack of facilities of ICD in PNH is bottle-neck.	Provision of ICD facilities and equipment in PNH	Aiming Railway CC ratio to SHV Port future CC volume to be 15 to 20%, 10 ha of the existing ICD land owned by PAS out of total 16 ha, will be utilized for Railway siding lines CC yard, with provision of the CC handling equipment. Approx. project cost :US\$ 23million.	A	7.1.1
	Lack of access from PNH City center to Airport	Provision of AGT Depot	6 ha of PAS owned ICD land in PNH will be shared and utilized for AGT Depot.	A	
	Damage of road pavement due to heavy container load for agriculture products from the coastal are of Tonle Sap Lake	Transportation of heavy container cargo by Railway North Line	(The development of the North Line is underway)		B
Road	Traffic congestion in the PNH City core area.. Restriction of heavy vehicles entering the City core.(Truck ban)	RR3、Mekong River Bridge	RR (Ring Road) 3,NR1, PNH New Container Terminal and Mekong Bridge will be developed at the outskirts of truck ban area where the hub of logistics will be organized	A	7.1.3
		Dry Port	Existing dry-ports located around the airport will be supplemented by the new dry-port at above mentioned hub area as logistic center.	A	
		PP Port SEZ	PPAP is going to acquire the land for SEZ development at the hinterland of of his New Container Terminal. The 200 ha for the 1st Phase and succeeding 1,000 ha development in future which will contribute for the industrial development of the Country with FDI (Foreign Direct Investment). Approx. project cost for 1st Phase US\$ 48 million (PPP base)	B	
	Road congestion of NR4 in the vicinity of the SHV Port	Development of four-lane road	The RN4 should be developed to be four-lane highway.	B	-
		Development of short-cut access road	(Described in the Port Sector below)	B	7.1.4
Ports/ In-land water-way	Lack of PNH Port (PPAP) capacity for the future cargo growth	Expansion of the New Container Terminal of PPAP	The estimated capacity of PPAP existing New Container Terminal (NCT) (1st Phase) is 150 thousand TEU/year. Due to quick growth of cargo in recent years, the actual handling volume reached to 147 thousand TEU in 2015. For the mean time, as the 2nd Phase, PPAP will increase the number of cargo handling equipment and expand the CC yard area aiming the total capacity to be 170 thousand TEU/year. Afterward, it is required to expand the pier and yard facilities as 3rd Phase development. Approx. Project cost for 3rd Phase: US\$ 50million:	A	7.1.2
	Shipment and Export of the agriculture products from coastal area of Tonle Sap Lake	Development of Feeder Ports	The export of the rice from the rice land along Tonle Sap Lake is most advantageous by means of container barges via Ho Chi Min Ports thorough inland waterways. The water depth of Tonle Sap Lake is, however, shallow for 3 months in a year during dry season, in which the transportation will be by another modal such as railway North line. For the high water season the new feeder port sites are determined at Bak Prea near Battambang or Kampong Phluk in North Tonle Sap Lake near Siem Reab.	C	7.1.5
	Road congestion of NR4 in the vicinity of the SHV Port by the development of New Container Terminal of PAS	Development of short-cut access road	To meet the container cargo growth of SHV Port (PAS) a New Container Terminal (NCT) Development is on -going by JICA Study. The access road from proposed NCT site to NR4 is surrounded by dense fishery village and private houses. A short-cut road avoiding such dense areas of 3 km long will be effective to meet future port traffic volume. Approx. Project cost: US\$6 million	B	7.1.4

7.1.1 Railway ICD (Inland Container Depot) in Phnom Penh

Facility name	Railway ICD (Inland Container Depot)	
Implementing agency	1) Land owner: PAS (Port Authority of Sihanoukville) 2) Facility operator: RRC (Royal Railways in Cambodia)	
Location	<p>Southern Line of Cambodia Railway: Located at 13 to 15 Pk (Kilometer Post) from Phnom Penh Central Station. Northeast corner of intersection point with National Highway No.4 (NR4) (See Fig. 7.1)</p>  <p>Figure 7.1 Map of current situation of ICD in Phnom Penh City</p>	
Current state	<p>1) Phnom Penh side of the ICD land that is owned by PAS (about 16 ha) is located at ① on the above Railway Southern Line figure. PAS constructed the land filling for 1/3 of the area of the southern part, office building and warehouses.</p> <p>RRC has a concession from PAS and are being operated by RRC as Railway ICD (Dry Port) (See Fig. 7.2: Plan View of ICD current state). The Southern part of this site is connected by National Highway No.4 with two extension access roads of 200 m length each for entrance and exit. The Northern part of the land has been left as a wetland (pond).</p> <p>2) Trains for containers exclusively are connecting the ICD and the Sihanoukville Port. Each train consists of 40 to 46 flat freight</p>	 <p>Figure 7.2 Plan view of ICD Current State</p>

	<p>wagons (80 ~ 92 TEU / train), towed by diesel locomotives at the front and back. There is one round trip each day on weekdays and two round trips on the weekend.</p> <p>3) Currently, no side tracks are provided for the container freight on the Phnom Penh side ICD. Hence container loading and unloading are carried out on the railway main line adjacent to the ICD site. Cargo handling is carried out by a single RS (Reach Stacker) while freight trains are shifting their positions. Empty containers in the site are handed by one side lifter and a truck crane</p>	
<p>Current issues</p>	<p>1) Since no railway side track is provided, the container cargo (CC) trains are stopping on the railway main line for CC handling, in the future ICD might not be able to operate this way in order to leave the main line clear for the usage of other liquid bulk freight, and passenger cars.</p> <p>2) There is only one RS (reach stacker) for cargo handling, and the container train itself is shifting for loading and unloading work. Hence, the long train queue will be obstacles on the nearby roads until the cargo handling process finishes.</p> <p>3) As shown in Fig. 7.3 below, the existing train diagram (provided by RRC: Phnom Penh in the upper side, and Sihanoukville in the lower side), because there is no side track in the Phnom Penh side, it is impossible for two trains to enter the Phnom Penh ICD at the same time, one of them will need to withdraw to another location.</p> <div data-bbox="464 1352 1358 1615" data-label="Diagram"> </div> <p>Source: RRC</p> <p>Figure 7.3 Existing Container Train Diagram</p> <p>4) The problems are not only about the number of side tracks but also about the shortage of container storage area capacity as well as the amount of cargo handling equipment for the future increase of railway container volume.</p>	

The outline of an ICD improvement plan is described below:

(1) Number of Siding lines and assumed diagram

The route between Phnom Penh - Sihanoukville is a single track line, and side tracks are provided at four locations in the middle of the route. As a result, it is relatively easy to increase the number of service runs by providing side tracks to Phnom Penh ICD. Two side tracks are provided at Phnom Penh ICD with the expectation that cargo loading and unloading will not be operating on the main line but on the side tracks, then two round trips/day can be implemented. The area of the ICD site is limited when considering the area shared with the AGT. However it is possible to increase the number of service runs by providing other side tracks in an area near the ICD in the future. Because two side tracks for the railway container trains are already provided at Sihanoukville Port yard, it is possible to balance the operation between the two terminals by providing side tracks on the Phnom Penh side.

The assumed service schedules for two side tracks are shown in Fig. 7.4

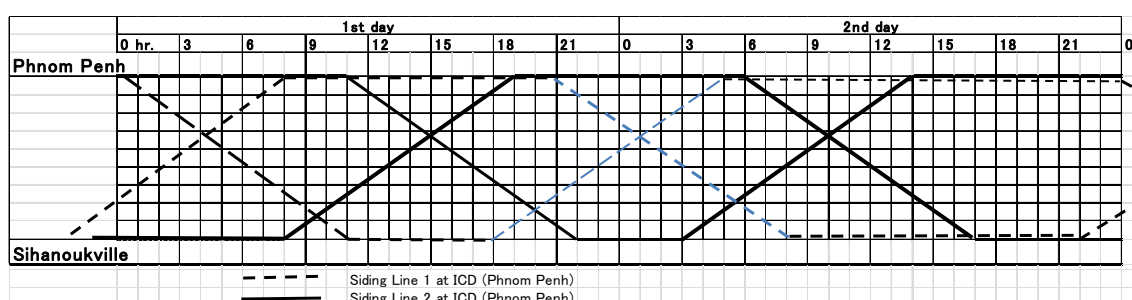


Figure 7.4 Assumed railway container operation diagram

(2) Estimated railway transport capacity

If two side tracks are constructed at Phnom Penh ICD, with crossing operation scheduled at two intermediate stations, the estimated capacity is as follows

- Transport capacity: $46 \text{ wagon/train} \times 2 \text{ TEU/wagon} \times 1 \text{ train/day} / \text{side track} \times 2 (\text{load} \cdot \text{unload}) \times 2 \text{ side tracks} = 368 \text{ TEU/day}$
- Annual container handling capacity: $368 \text{ TEU/day} \times 360 \text{ day/year} \times 65 \% (\text{Assumed occupancy rate in consideration of the weekend cargo container concentration}) = 86,112 \text{ TEU/year}$

If the train can be side tracked at the other side of the main line at ICD (additional

side track as refuge lines), with crossing operation scheduled at four intermediate stations, the estimated capacity is as follows.

- Transport capacity: $46 \text{ wagons/train} \times 2 \text{ TEU/wagon} \times 2 \text{ trips/day/side track} \times 2 (\text{load} \cdot \text{unload}) \times 2 \text{ side tracks} = 736 \text{ TEU/day}$
- Annual container handling capacity: $736 \text{ TEU/day} \times 360 \text{ day/year} \times 65 \% (\text{Assumed occupancy rate in consideration of the weekend cargo container concentration}) = 172,224 \text{ TEU/year}$

Assuming the percentage of railway cargo such as liquid bulk (petroleum products), coal, and heavy cargo are about 10%, then the cargo container capacity will be $172,224 \text{ TEU / year} \times 90\% = 155,000 \text{ TEU / year}$.

At present the container handling volume of Sihanoukville Port is about 390,000 TEU/year (2015). The annual growth rate of the most recent five years is more than 10 to 15%/year. In the near future if the handling volume increases to about 700,000 TEU/year, the share of railway containers will possibly raise to about 22%.

(3) ICD Layout Plan

1) Reach stacker (RS) system plan (See Fig. 7.5, Fig. 7.7) (Emergency)

- Side track: 2 tracks, Refuge track: 2 tracks
- Storage yard: $4 \text{ row} \times 19 \text{ unit (TEU)/row} \times 2.5 \text{ layer (average)} \times 10 \text{ blocks} = 1,900 \text{ TEU}$
- Average dwell time: 4 to 5 days (assumed)
- Annual container storage capacity: $1,900 \text{ TEU} \times 360 \text{ day} / 4 \text{ to } 5 \text{ days} \doteq 171,000 \text{ to } 136,800 \text{ TEU/year}$
- Necessary cargo handling machinery:
 - RS(reach stacker): one for railway loading/unloading line, and two for storage yard :total three (3)
 - Yard Trailer /Chassis: 3 sets

2) RTG⁴ System Plan (See Fig. 7.6、 Fig. 7.8) (Future)

- Side track: 2 tracks, Refuge track: 2 tracks
- Storage yard: 6 row×19unit (TEU)/row ×4 layer (average)×5 block=2,280 TEU
- Average dwelling time : 4 to 5 days (assumed)
- Annual container storage capacity: 2,280 TEU×360day/4 to 5days= 205,200 to 164,160 TEU/year
- Necessary cargo handling machinery:
 - RS(reach stacker) for railway loading/unloading track: one unit
 - RTG storage yard: one unit
 - Yard Trailer /Chassis: 3 sets

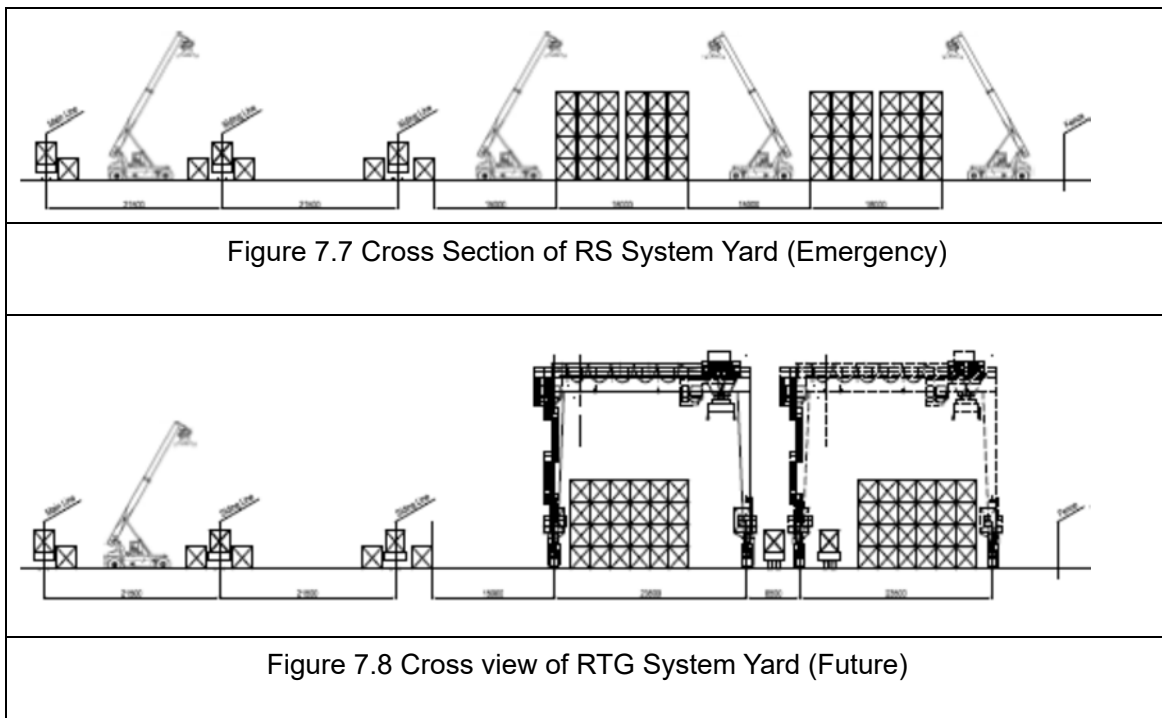


Figure 7.5 RS System Layout Plan (Emergency)



Figure 7.6 RTG System Layout Plan(Future)

⁴ RTG: Rubber Tired Gantry Crane



3) ICD Layout Plan of RS System

The yard layout for the above mentioned item 1)RS (reach stacker) system is shown in Fig. 7.9. In this figure, RS are used for loading and unloading containers in both the train side and container storage yards. Tractor/chassis is used for container transport between the train and the container storage area. In the RS system, two side tracks will be provided at the main line side, and have extensions that can accommodate the 46 wagons/train (about 800m long). The working area of the RS will be paved with heavy pavement.

The RTG system proposed in the above item 2) is considered to be good for the mitigation of the shortage in yard area that will develop when the railway container volume increases in the future.

A custom scanner (X-ray system) will be provided at the northern extremity of the ICD yard. Container freight trains that are finished with the custom scanning will be moved to the northern side track that will be constructed parallel with main track.

In addition, a side track for stand-by of switching locomotives is also to be provided.

The existing buildings will be retained and used as much as possible for such as the

work-shop for cargo handling equipment repairing, warehouse, CFS⁵, and the administration buildings .

Since ICD is a bonded zone, the ICD area, including the above-mentioned after-scan side track, will be enclosed by a security fence. Security and monitoring systems such as CCTV⁶ cameras are also necessary.

About 6ha out of the 16ha of PAS land along the east side has been allocated for the AGT.

Because the ICD and AGT will share the same land, future site expansion will be limited.

In order to increase the number of service runs of container trains in the future, ICD will need to increase the number of side tracks. There is not enough area for the construction of side tracks inside ICD because it will share the same land with AGT. However, if it is possible to provide refuge tracks parallel with the main track on the opposite side of ICD, the ICD yard itself could respond to the future container cargo increase by adding a number of cargo handling machines and container slots.

In addition, considering the future demand, AGT might need to expand such as to the 2nd floor level. Therefore, it is necessary to consider the pier installation or additional space for transition sloped track to the upper floors in the initial design plan.

⁵ CFS: Container Freight Station

⁶ CCTV: Closed Circuit Television

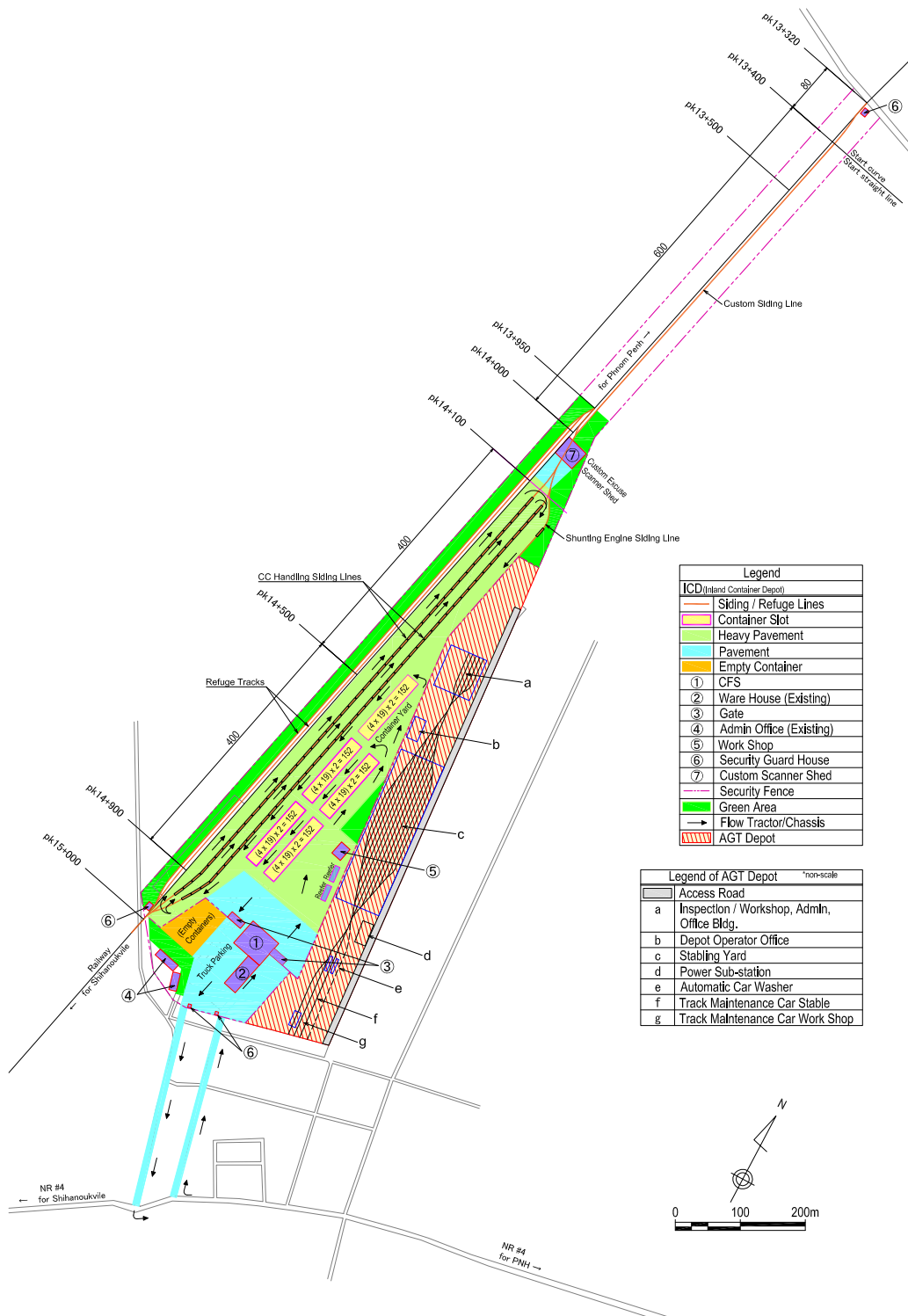


Figure 7.9 Layout Plan of Railway (South Line) ICD (PAS/RRC) at Pk14/15 km (for RS System)

7.1.2 New Container Terminal Expansion at Phnom Penh Port, Port SEZ, Mekong River System Route Improvement

Facility name	New Container Terminal (NCT) Expansion at Phnom Penh Port (Phase 3) and Port SEZ, et.al.
Implementing agency (assumed)	PPAP (Phnom Penh Port Authority)
Location	Mekong River right bank along Pk30km point of NR1.
Current state	<p>Container cargo handling volume of Phnom Penh Port (PPAP) new Container Terminal has been steadily increasing from about 90,000 TEU in 2012 (increase of 8% compared with previous year) to 104,000 TEU in 2013 (Ditto but 16%), and 134,000 TEU in 2014 (Ditto but 28%). However, the handling volume in 2015 was 145,000 TEU (increase 10%), which was lower than the expected volume of 157,000 TEU (increase 17%) that appeared to be happening in the early part of 2015.</p> <p>According to the PPAP, there are some reasons as follows: decrease in Cambodia's economic growth rate from the expected 9-10% to 7%, the orders from the textile industries declined, the rising labor costs, and the increasing in truck transport ratio from Vietnam due to the opening of NR1 - Tsubasa Bridge (May 2015).</p> <p>The handling capacity of NCT of PPAP (area 10ha) that started operation in January 2013 was 150,000 TEU / year (see Fig. 7.10). Currently, there are three cranes, four yard RTG (6 layers +1), and three reach stackers. As an item representing port capacity, the quay (300m long) can handle more than what it is now handling. However, it is necessary to consider short-term implementation of some method for increasing port capacity such as the addition of cargo handling equipment or expanding of the container yard. In addition, it is also necessary to consider deepening the Mekong River and Bassac River that connect with Cai Mep Port of Vietnam, navigation channel alignment, and improvement of navigation aids.</p> <p>PPAP is planning to expand the container terminal port in parallel with the development of about 1,000 ha in the hinterland of the SEZ (Special Economic Zones).</p>
Current issues	As described above, although the operation was started in 2013, container cargo handling volume of NCT has almost reached its capacity. The capacity of the existing facilities can be expanded by PPAP as Phase 2 to 170,000 TEU/year by providing

	<p>additional cargo handling equipment and enlarging the container yard see Fig. 7.10). However, further in the future it will be necessary to consider the improvement of the mooring facilities (piers), container yard, or cargo handling equipment such as gantry cranes and RTGs as Phase 3.</p>
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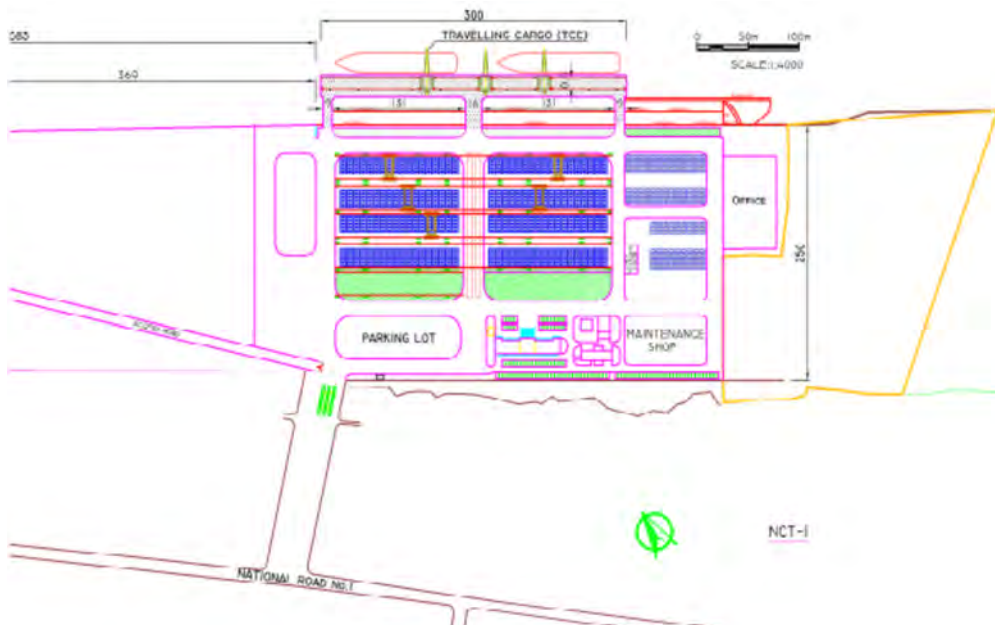
(1) New Container Terminal of Phnom Penh Port

Fig. 7.11 shows the 3rd Phase expansion plan of the above-mentioned new container terminal.

Phase 3 alone is intended to handle 250,000 TEU/year, and then the total capacity of the new container terminal including Phases 1 and 2 will be 420,000 TEU/year.

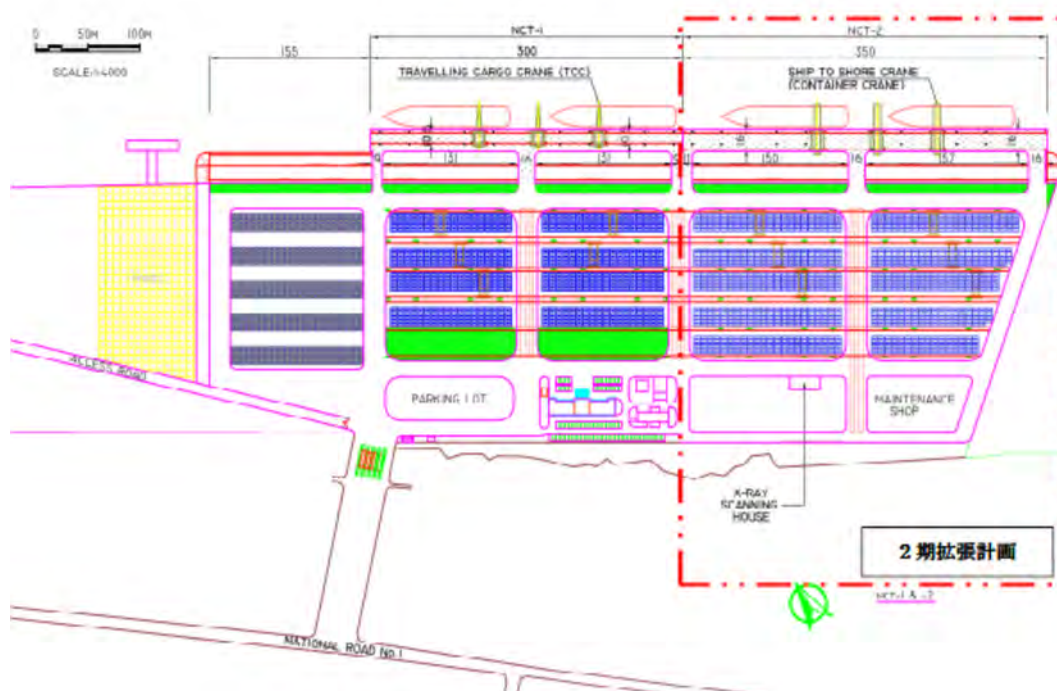
Major facilities of the Phase 3 plan are as follows:

- Berthing facility (open-type wharf) : 350m (Design water depth: -8.5m)
- Container yard: 6.1 ha (pavement area)
- Cargo handling equipment
 - a) Quay Gantry Crane (QGC) : 3 units
 - b) RTG: :6 units
 - c) Tractor /chassis: :15 units, and others



Source: JICA

Figure 7.10 Layout Plan of the existing facility (Phase 1) and Phase 2 at NCT Port (PPAP)



Source: JICA

Figure 7.11 Proposed Expansion Layout Plan of NCT (Phase 3)

(2) SEZ of Phnom Penh

PPAP is planning the construction of 1,000 ha SEZ (Special Economic Zone) in the hinterland of NCT. (1,000 ha including future expansion area as indicated in the Fig. below) The 1st Phase with approximately 200ha in area is under the process of land acquisition. Then PPAP intends to implement the project by public finance for land filling, pavement and relevant utilities with the cooperation of private sector finance. As for the access road, a part of the RR3 will be utilized for that purpose and be a part of the Port SEZ Project as described in the following section.



Source: JICA

Figure 7.12 Phnom Penh Port New Container Terminal (NCT) and SEZ (planned)

7.1.3 Phnom Penh City Ring Road (RR) 3, Mekong Bridge, and dry port

Facility name	Ring road (RR)3, Mekong Bridge, and dry port
Implementing agency (assumed)	MPWT : RR 3, Mekong Bridge PPAP : Dry port (as land owner)
Location	As shown in Fig. 7.13, the Mekong Bridge is planned to be located 3km upstream of the NCT (New Container Terminal) Port of PPAP, near the National Highway (NR1) Pk27km.
Current state	As described in Section 7.1.2, NCT of Phnom Penh Port, located in the vicinity of NR1, Pk30 km, started service in 2013. Container cargo has been transported from NR1 to the consignee's warehouses around Phnom Penh City via the RR2. The land acquisition issue around NR1 that formed a bottleneck in the vicinity of Monivong Bridge that crosses Bassac River has been solved. At the end of 2015, widening construction work was in progress and the bottleneck on the NR1 is expected to be resolved soon.
Current issue	Due to the Phnom Penh City truck ban, container trucks and chassis are restricted from entering the Phnom Penh City center area in the daytime. This is the same reason that the Phnom Penh Old Port container cargo handling service was

	<p>transferred to the NCT soon after the construction of NCT was completed in 2013.</p> <p>Phnom Penh Old Port is located along the Tonle Sap River right bank, near to and downstream of the Japan Bridge and is also within this truck ban area.</p>
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As shown in Fig. 7.12, about 1,000 ha of the SEZ (Special Economic Zones) behind Phnom Penh NCT is planned by PPAP. In the future, with the presence of NR1, NCT and in addition RR3 this area is expected to become a strategic point of the transportation system as well as a new center of industry.

In addition, the truck/container dry ports which are currently assembled in places such as the Phnom Penh airport periphery can be expanded into this area, then the efficiency of the logistics of SEZ and the NCT are expected to be achieved.



Note: Red rectangle indicates the area of following diagram

Source : MPWT

Figure 7.13 Plan of Phnom Penh City Ring Roads and Truck Ban area

For easier implementation of the Mekong Bridge construction, a temporary construction base will be secured within the area of the SEZ. The SEZ access road will be constructed first to be utilized as the construction road and later connected to the approach road to Mekong Bridge, and a part of the interchange road connecting to NR1 and RR3.



Figure 7.14 Location Plan of Phnom Penh Port (PPAP)NCT, SEZ, and RR3 (assumed)

7.1.4 Sihanoukville Port Access Road Improvement

Facility name	Northern shortcut road for Sihanoukville Port
Implementing agency (assumed)	MPWT, PAS
Location	Fishing village near the Northern side of the breakwater at Sihanoukville Port: high density housing area
Current situation	The 3km long area along the north-eastern coast of the Sihanoukville Port basin became a bottleneck for the prefecture road (about 40 km long) starting from the port SEZ then heading towards the north, passing Stung Hav and reaching the No. 4 road at Cheung Kou (See Fig. 7.16). This area has a high density fishing village and houses on land.
Current issue	The traffic volume of the National Road No.4 (NR4) connecting from Sihanouk Port to Phnom Penh to the east is increasing together with the development of Sihanoukville City in recent years. In addition, the nearest hinterland of Sihanoukville Port has hilly topography. Therefore NR4 in this area has a steeply undulating slope that is not supportive for the smooth transport of container vehicles. In addition, because the

	expansion of the new container terminal is planned on the northern side of the port basin area, it is necessary to ensure the existence of the northern access road of Sihanoukville Port.
--	--

As shown in Fig. 7.15 this road will be connecting between the Sihanoukville Port and the northern part of the port, crossing the Port SEZ from the access road of the new container terminal that will be built in the next port development stage, and detouring past the dense fishing village areas going northward along the east side of the existing railway. Some widening and pavement improvement of the road segment between the above short-cut road and NR4 junction will also be required.



Figure 7.15 Northern Shortcut Road of Sihanoukville Port

7.1.5 Feeder Port of Mekong River System

Facility name	Feeder Port of Mekong River System
Implementing agency (assumed)	PPAP, MPWT
Location	See Fig. 7.17 PPAP and MPWT are planning feeder ports along Mekong Tonle Sap Rivers and Lake as enumerated below: ① Koh Roka (Kandal Province) Mekong River left bank, vicinity of Vietnam

	<p>border</p> <p>② Tonle Bet (Kampong Cham Province) Mekong River left bank, vicinity of Kizuna Bridge downstream</p> <p>③ Chhlong (Kratie Province) Mekong River left bank</p> <p>④ Bak Prea (Battambang Province) North end of Tonle Sap Lake, along Sanker River</p> <p>⑤ Kampong Phluk Northern coast of Tonle Sap Lake</p>
Current state	<p>As for ②, there are simple mooring facilities of concrete sheet pile. ① to ④ are in planning. Mainly, those are feeder ports for the local products transport such as agricultural products, fertilizer, and miscellaneous goods. ① is the auxiliary facilities for cross-border procedures at the Mekong River near the border with Vietnam</p> <p>Above ④ or ⑤ are reviewed by MPWT for the Feeder port of container export of rice products.</p>
Current issue	<p>All feeder ports are non-containerized small facilities; hence cargo handling efficiency is low.</p> <p>The transportation of rice from the granaries around Tonle Sap lake currently relies on road transport. Due to the heavy loads of rice the road pavement is frequently damaged.</p>

The distribution of Cambodian rice cultivation is shown in Fig. 7.16. The harvest season of “Rain-fed Lowland Rice”, which covers 80% of the rice cultivation land, is from the end of November to early January. The peak time for rice export is from November to December with some fluctuation. According to the “Cambodian Rice Federation” Cambodia exported approximately 400,000 tons of rice in the 11 months of 2015 until November. It is planned to increase to 1 million tons per year.

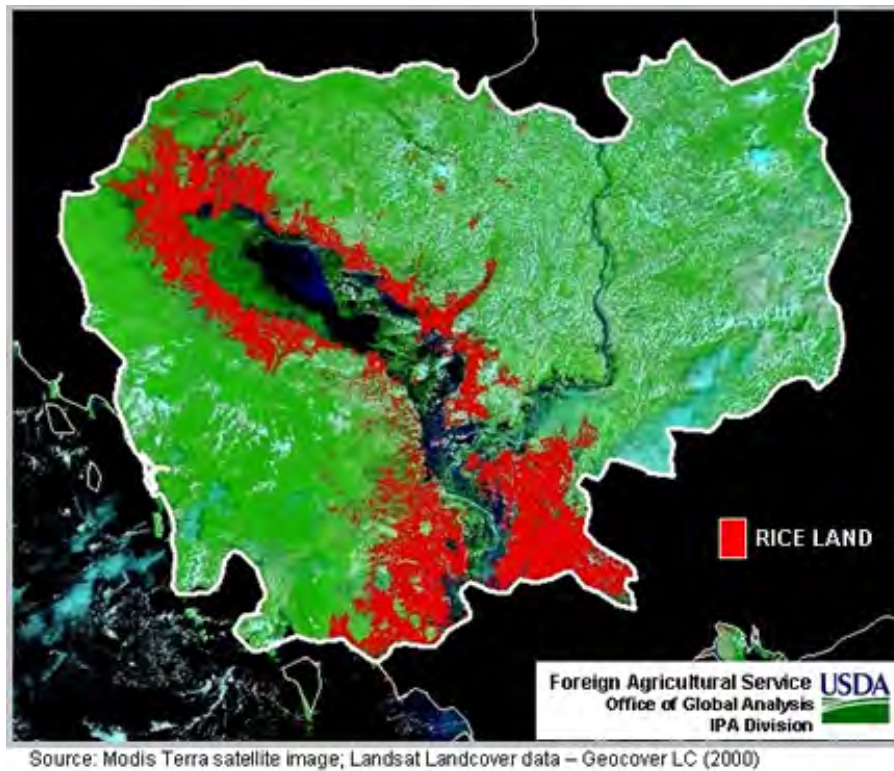
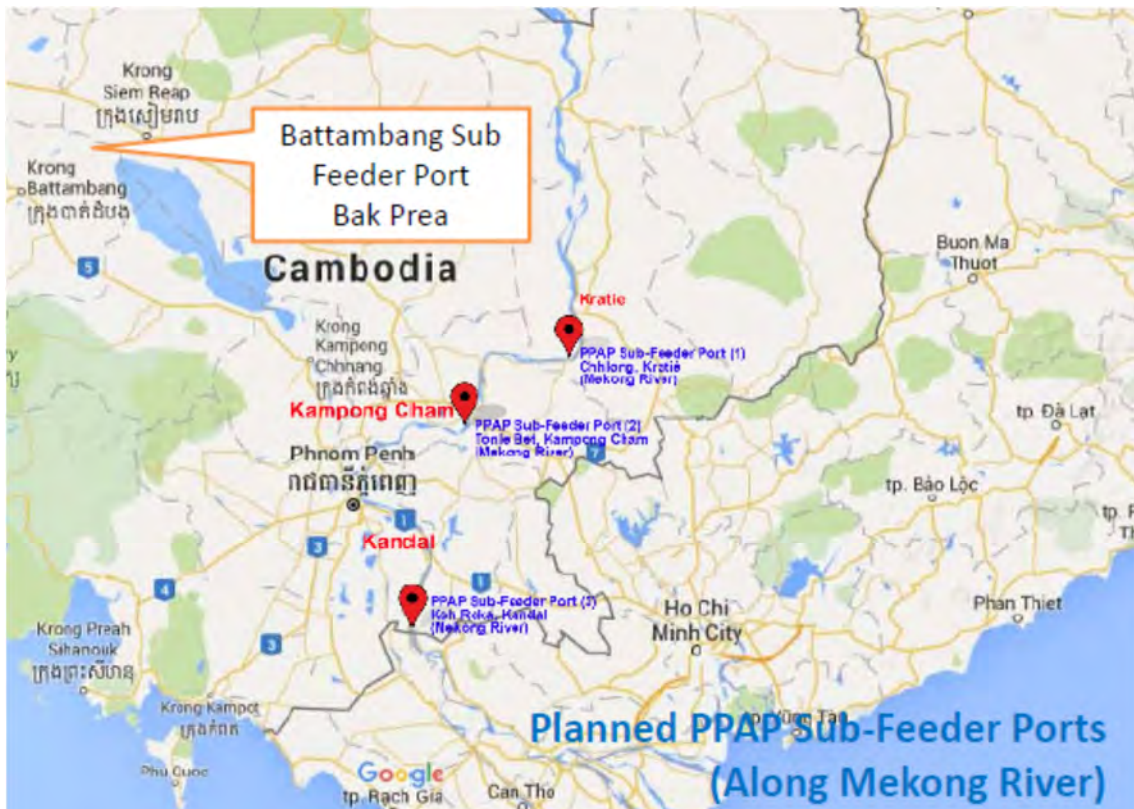


Figure 7.16 Distribution of Rice Cultivation in Cambodia

For solving the road traffic issue for rice transport and for the direct export via Ho Chi Ming City Ports, inland container barge transportation thorough Tonle Sap Lake/River and Mekong River is more suitable. It is the intention of the MPWT to establish a Sub Feeder Port at Bak Prea in Battambang or Kampong Phluk near Siem Reab along Tonle Sap Lake for this purpose.(See the Figure above).



Source: MPWT/PPAP

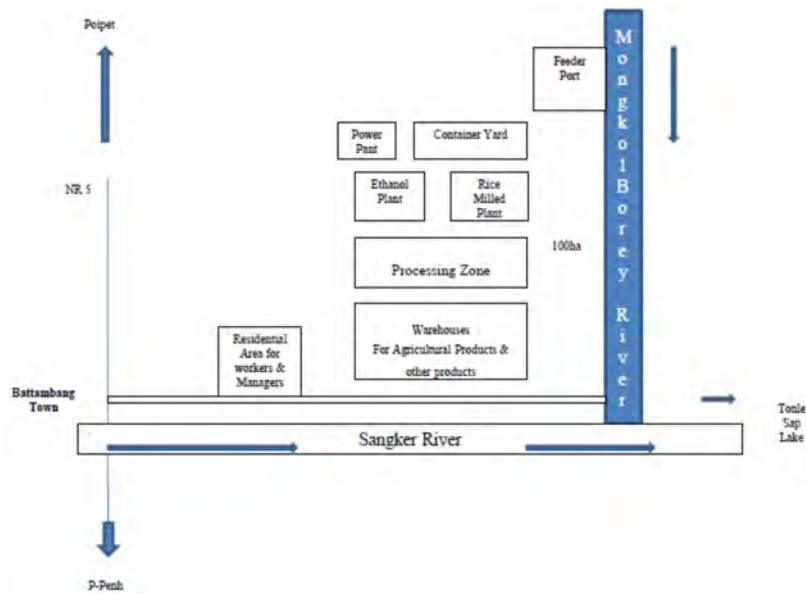
Figure 7.17 Mekong River System: Bak Prea, Kampong Phluk and other Feeder Port Locations

Bak Prea is located 35km northeast of Battambang City along the right bank of the Mongkol Borey River where the Sangker River joins as indicated in Figs. 7.18 and 7.19.



Source: MPWT

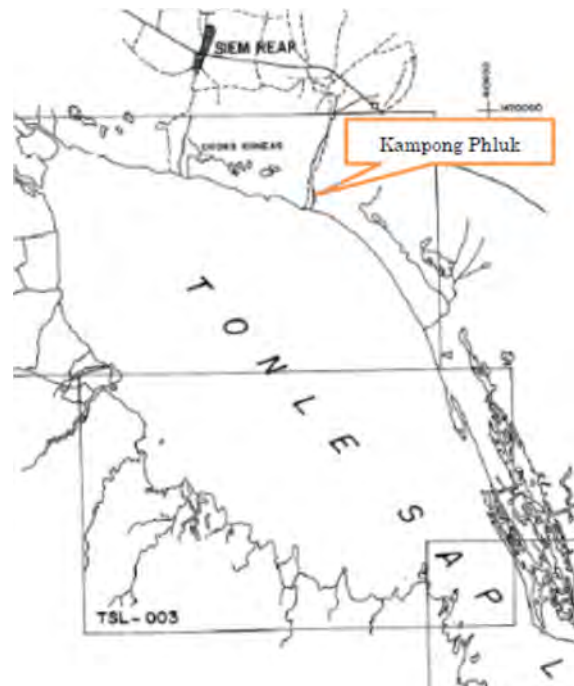
Figure 7.18 Location of Bak Para Feeder Port Site near Battambang City



Source: MPWT

Figure 7.19 Schematic Location Map of Bak Para Feeder Port

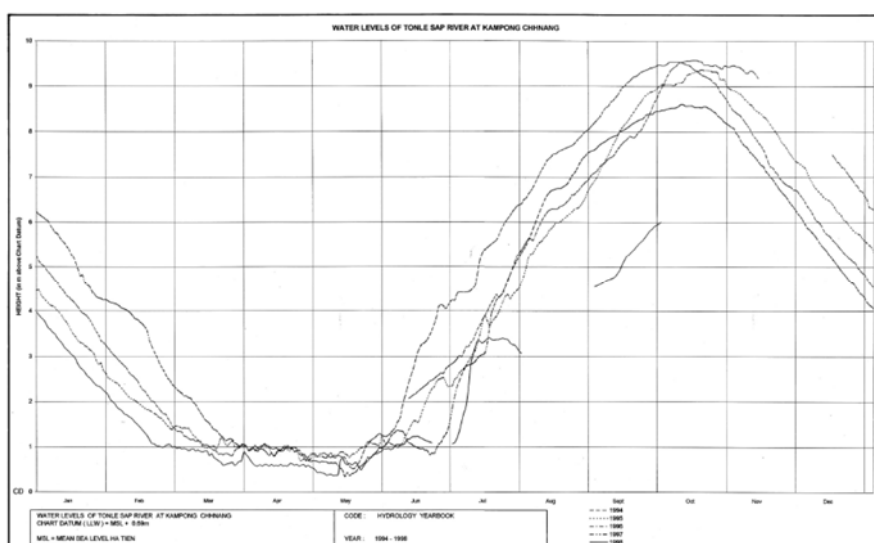
Kampong Phluk is located at northern coast of Tonle Sap Lake near Siem Reab as indicated in Fig. 7.20 below.



Source: MPWT

Figure 7.20 Location of Kampong Phluk

Bak Prea and Kmpong Phluk are located in the tidal zone of Tonle Sap Lake, which has 2,700 km² water area in the dry season and it will expand to 16,000 km² in the rainy season with the lake water level rising by approximately 10 m. (Refer to Fig. 7.21) The rainy season in Cambodia is from May to November and the dry season is from December to April. The lowest water level of Tonle Sap Lake/River is in April.



Source: MPWT

Figure 7.21 Water Level of Tonle Sap River (at Kampong Chnang)

The typical loading capacity and relevant size of self-propelled container barges currently plying between Phnom Penh and Ho Chi Min City Ports are summarized in Table 7.2. As can be seen from the Table, the draft of the barges is approximately 3.6m to 4.4m regardless of the size of the barges.

The water depth of Tonle Sap Lake will be shallower than 1m during dry season in March to May, hence other transportation modal such as North Line of the railway will be utilized.

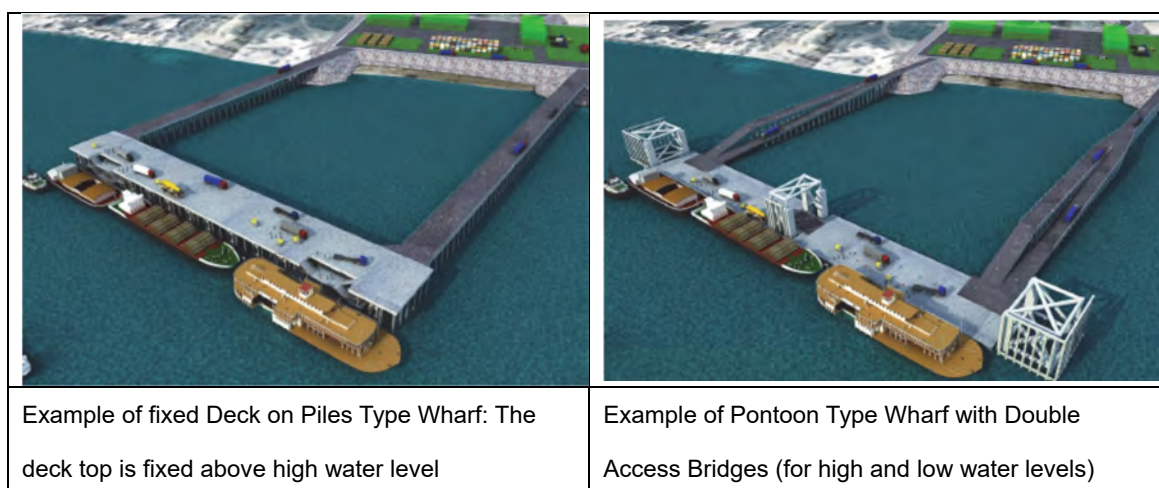
Table 7.2 Hold Size and Container Loading Capacity of Self-propelled Barges for Inland Water ways of Mekong River Systems

Tonnage	Hold Size and Capacity (TEU)				Draft D (m)	Length LOA (m)	Beam B (m)
	Rows	TEU/Row	Layers	Total TEU			
1,854	4	8	3	96	3.80	50	15.6
NA	3	8	4	96	3.60	50	12.9
2,803	4	8	4	128	4.40	73	13.2
1,008	3	6	3	54	3.75	53	9.5

The wharf structure for rice container handling is required to have sufficient strength of the deck and width of the deck to allow the container crane and container trailer/chassis working with a container load of 30 tons/box.

The wharf should have appropriate height to accommodate the great water level

range by providing a high wharf deck to be above the high water level or pontoon type to adjust the deck top elevation. Some examples of different types of wharves are given in Fig. 7.22.



Source: Myanmar Inland Water Transport Study (JICA)

Figure 7.22 Examples of Container Wharves for large Water Level Range

7.2 Information Infrastructure (Tentative)

7.2.1 Introduction of Port EDI

(1) Enactment of Laws and Regulations for Computerization and Simplification of Port Clearance Procedures

Firstly, there needs to be clear regulations that enable the government agencies to accept the application documents in EDI format.

Secondly, if RGC intends to introduce Port EDI at the most effective way, it would be better for RGC to simplify the existing port clearance procedures in accordance with the FAL Convention as stated in Chapter 6. FAL Convention suggests that the documents for port clearance procedures can be reduced to just seven essential forms as follows:

Table 7.3 7 Standard Forms Recommended by FAL Convention

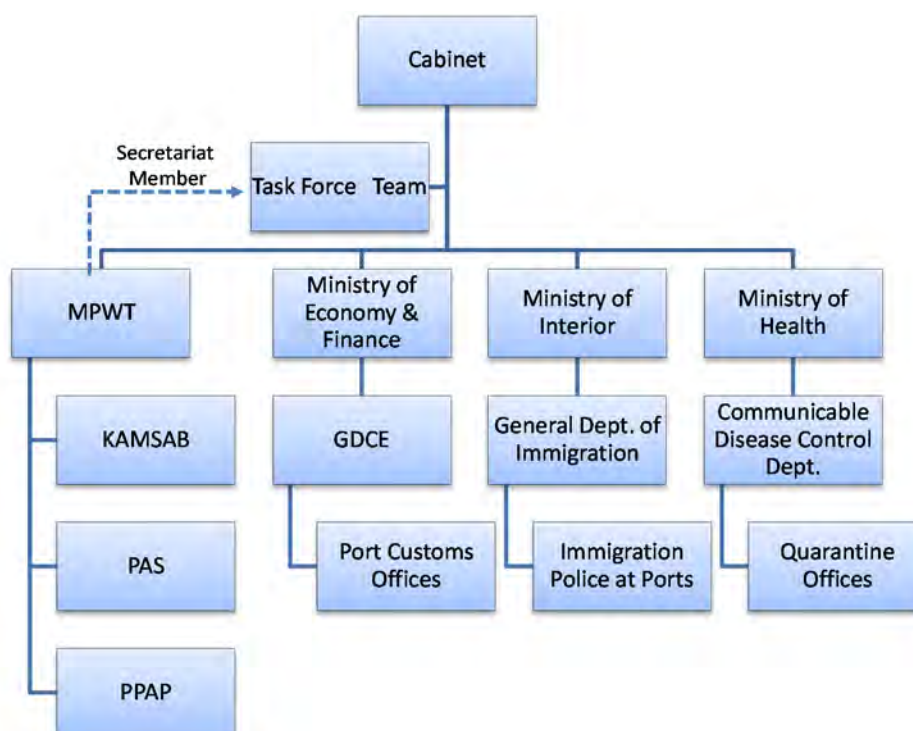
FAL Form1	IMO General Declaration
FAL Form2	IMO Cargo Declaration
FAL Form3	IMO Ship's Stores Declaration
FAL Form4	IMO Crew's Effects Declaration

FAL Form5	IMO Crew List
FAL Form6	IMO Passenger List
FAL Form7	IMO Dangerous Goods Manifest
Not stipulated by FAL	Security-related Information required by the Maritime Safety Committee (MSC)

Source: IMO

(2) Establishment of Port EDI Task Force

As stated in Chapter 6, various government bodies under different ministries are involved in the port clearance procedures. If developing Port EDI in the longer perspective up to when it is integrated into the National Single Window, it would be recommended for RGC to organize a cabinet-based task force or inter-ministry project team to implement the Port EDI project. A particular ministry may be required to take the leadership of the project and coordinate the relevant ministries. MPWT would be appropriate to be assigned to this role. Figure 7.24 indicates a conceptual idea for the task force in this case.



Source: Study Team

Figure 7.23 A Conceptual Idea for Port EDI Task Force

(3) Development of Port EDI System

1) Assistance from an Experienced Country

It would be a realistic option for RGC to be assisted by an experienced country, which would save a considerable amount of costs and time for the system development by RGC.

2) Example of Japanese Assistance for Port EDI

Myanmar Port Authority (MPA) and JICA signed the Grant Agreement (G/A) for the "Project for Port EDI for Port Modernization" in March 2015. Currently the software of the EDI system for MPA is under development towards starting operation in 2017. The project components consist of the port clearance EDI system by use of FAL forms, the sub-systems to rationalize the port management functions of MPA such as an invoice issuing system, statistics management system, logistic monitoring system etc., and hardware such as server and network equipment. The project also include the soft components so that MPA can sustainably operate/maintain the system. The system has a function to connect the National Single Window System which has been also developed by Japanese assistance prior to Port EDI. The system development period after signing of G/A until start of operation will be two years in total, including five months for public tender and contracting of the system developer, eighteen months for software development and one month for commissioning.

7.3 Logistics Improvement Project for Private

7.3.1 Mixed-Loading Service Which Connects between SEZs

(1) The Logistics subject in Bavet

Since the Japanese companies, which moved into SEZ in the Bavet area, have main export and import with Japan, they are performing marine transportation via Ho Chi Minh City. For the export from Cambodia, the use needs of LCL are great because of the purpose of reducing transport cost. However, the logistics company who provides the mixed-loading service between SEZ(s) does not exist in the Bavet area. Therefore, only two choices of mixed loading in Ho Chi Minh City and FCL in the Bavet area exist for the Japanese companies, even when the cargo is little.

In order to secure efficient cargo volume for FCL containers, it is possible to collect the cargo from each SEZ in one dry port, and to export it to a third country. However, since the jurisdiction of customs differs for every SEZ in Cambodia, it is required to carry cargo in to dry ports directly from each SEZ. In that case, since time and cost increase, a logistics company, which provides the service, does not exist.

(2) Potential needs of mixed loading service

The choice of transport means in the Bavet area is restricted. Therefore, it is difficult to reduce logistics cost under the existing structure. Then, the new service that specialized in mixed loading should be inquired. Although export mixed loading in SEZ is possible, it is difficult to secure efficient cargo volume for FCL containers in the Bavet area. If a mixed-loading service that connected among several SEZs by the milk run could be offered, a logistics company can collect sufficient cargo volume. Therefore, a mixed-loading service can be realized.

(3) The proposal of an examination for mix-loading service

Introduction of the mixed-loading service that connects each SEZ in the Bavet area by milk run would reduce the logistics cost. In order to realize it, the pilot project regarding export mixed loading is proposed.

(4) Target area

SEZ Operators in Bavet.

(5) The outline of the pilot project

It is possible to provide an export mixed-loading service that collects the cargo of each SEZ into a dry port under the current regulation. However, the related procedures are required in each SEZ, and the procedures are complicated. Therefore, the foreign-affiliated logistics company omits export mixed loading service under the current regulation. Then, the mixed-loading service under the related regulation would be verified by the pilot project.



Source: JICA Study Team.

Figure 7.24 The mixed-loading pattern under the related regulation

The factor that checks the offer of mixed-loading service will examine by conducting the pilot project, and it will find out the solution simultaneously. When the necessity for institutional problems exists, it should be proposed in regard to the customs management and system simplification.

7.3.2 Educational System and Facility Development of Truck Drivers

(1) The present condition and issues regarding Cambodian truck drivers

The truck maintenance knowledge of truck drivers is greatly dependent on the differences of individuals and companies. We can see the trucks stopped at the road shoulder by the cause of poor maintenance, and they are causes of traffic accident and congestion. Truck failure becomes a delay of transport time for delivery.

(2) Needs of driver education

The operation administrator system has been established in Japan. Therefore, safe driving is realized by the grasp of the healthy situation of the driver with the prior check before operation. In Japan, it is obligatory to equip trucks with a recorder. As a result, the administrator can grasp the number of times of a hasty start and slamming on the brake. Moreover, the operation administrator guides the drivers and is promoting ecological driving. The ecological driving reduces the number of times of hasty start and slamming on the brake. Ecological driving is one of the measures that reduces traffic and freight accidents. The introduction of ecological-driving reduces insurance cost. Moreover, the ecological driving will raise the truck gas mileage. As a result, it leads to a reduction of carbon-dioxide emissions.

Some Cambodian companies are promoting the ecological driving. However, the national educational system has not been established. There is a limited effect with only the business effort. The government should aim at the improvement in skills of all the drivers in Cambodia through the support of the public.

It is expected that the establishment of an AEC community would bring strong activity of further regional trade. Therefore, the establishment of the educational system of the truck drivers and the development of the educational facilities are required.

(3) Objectives

- The educational system for local logistics companies and owner-driver would be established. Moreover, the driver school would be established and the driver's skill would be raised. As a result, both traffic and freight accidents might be reduced.
- The gas mileage of a truck would be raised and emission of carbon dioxide would be reduced.

(4) Summary of the Project

1) Establishment of truck driver education system

The educational system for drivers has been established in Japan. In order to introduce the Japanese system into Cambodia, it is necessary to take customs peculiar to Cambodia into consideration. The system has the desirable educational contents consisting of lectures and training.

2) Installation of educational facility

The facility that can take a lecture on education will be developed. The educational facility includes "the equipment which can perform prior check by driver", "rainy weather run simulation equipment", and "the equipment which contains the crank for the improvement in driving skill".

7.4 Project for Logistics Institutional Development Project

To improve logistics activities in Cambodia, it is essential that the following two laws should be established: one is the Consigned Freight Forwarding Business Act and

the other is the Warehousing Business Act. Throughout the world, these types of laws are generally introduced by the Ministry of Transport with the purpose of ensuring logistics reliability and the transparency of logistics activities.

7.4.1 Consigned Freight Forwarding Business Act

The purpose of this Act is to ensure the sound development of the consigned freight forwarding business and to ensure the smooth provision of freight forwarding business in order to meet the needs of higher and diversified demand of users in the field of freight distribution through ensuring the fair and reasonable management of the consigned freight forwarding business, thereby contributing to the protection of the users' interest and their convenience.

The term "actual forwarding business" in this Act means the freight forwarding conducted by the shipping business operator, airline business operator, railway business operator or motor truck transportation business operator (hereinafter referred to as "actual forwarding business operator"), and the "consigned forwarding" as used in this Act means freight forwarding using a transportation means provided by another forwarding business (limited to those who provide the actual forwarding business).

(1) Introduction

Logistics services have been recognized as the backbone of many sectors. Logistics services encompass several industries, which include all transportation services, distribution, packaging, and warehousing, among others. Not only the transport sector, but also the agriculture and manufacturing sectors necessitate logistics to deliver products to the markets. Along the supply chain, several intermediaries, such as truckers and clearing agents, are engaged in services. However, the regulations on logistics services are not well defined in many developing countries; as a result, the regulatory frameworks for this industry are often opaque.

(2) Complexity of regulations for logistics services

Logistics regulations are spread over multiple sectors and often are not transparent to service providers. First, it is hardly seen that all licensing requirements for logistics service operators are published in one place. For instance, while a logistics

service operator finds regulations on trucking business licenses under a ministry of transport, the same operator still has to confirm with customs to comply with regulations for a bonded warehouse license. Even for warehousing, the operator is subject to follow a fire regulation monitored by a fire department. Furthermore, licensing requirements for foreign operators are often more strict than those for domestic operators. The regulations for foreign operators are stipulated by foreign direct investment laws, which are often prepared by a ministry of commerce.

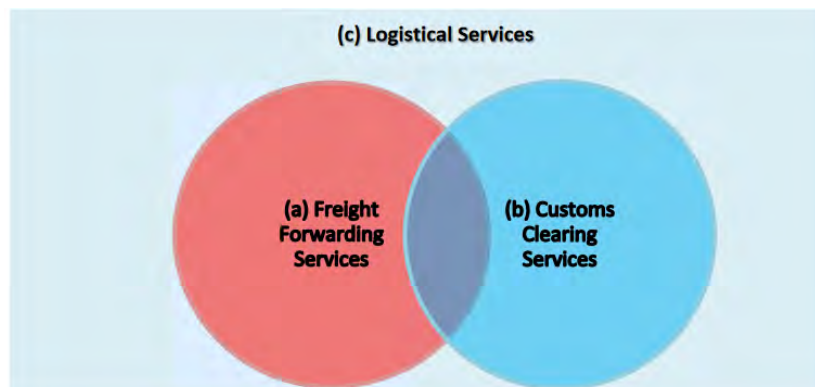
The extreme difficulty with multi-sectionalism to find all regulatory information, nowadays especially online, causes a lack of transparency. There is no “one stop shop”, such as a ministry of logistics, to pull out all logistics service related regulations. Therefore, pieces of logistics regulations are handled and supervised by various separate entities. Making the situation more difficult, some regulatory information is restricted to members of logistics associations and is not available to the public.

(3) Classification of regulations for freight forwarders

Different regulators such as government authorities or industry associations have different levels of legal enforcement power on logistics operators. Regulations outline the requirements for operators to start their business (market entry/access) and to operate their business (operations). In addition, foreign operators often encounter additional formal requirements while domestic operators do not, but self-regulations can be equally applied to all operators.

Recognizing the functions of freight forwarders described in the FIATA definition, it is commonly known that freight forwarders often provide clients with a combination of the services shown in the figure below. However, in some countries, freight forwarders do not always provide customs clearing services. Some of them provide both customs clearing and forwarding services (a+b), but others simply handle the forwarding of cleared goods without engaging in clearing services or working with clearing agents (a). Even though agents only work on customs clearing (b), they are still called C&F agents. Likewise, not all freight forwarders offer the supply chain management, such as warehousing, labeling, and inventory check in storage. Compared to customs clearing business, the freight forwarding business is more

opaque.



Source; World Bank report

Figure 7.25 Classification of regulations for freight forwarders

(4) Items to be regulated (Draft)

1) Market Entry (Access)

a. Establishment

- Minimum capital/Asset requirement
- Physical presence (Person, Address)
- Staff (minimum qualifications for the management staff, etc.)
- Others (having liability insurance at the time to start business, etc.) □
- Discriminative measure for foreign operators

b. Scope of activities

- Separate licenses are required for each logistics activity (license or permit required for freight forwarding, warehousing, and carriage of bonded goods)
- Limited activities in the first years, then will be allowed to expand to more business activities after certain years of successful operations
- Foreign operators may not be able to compete with local operators in certain areas of business (such as carriage of oil, etc.)

c. Other requirements

- Additional permits (such as mayor's or provincial permit, etc.)

- Taxation
- Membership in an industry association (national logistics association, freight forwarders association)

2) Operations

a. Liability

- Liability and its exception
- General Terms and Conditions for contracting
- Liability insurance

b. Staffing (experience / certificate requirements, training)

- Professional certificate from local logistics associations/international organizations
- Professional training requirement for staff (management/operation staffs)

c. Quality control for freight forwarding services

- Operational manual for the industry
- Establishment of standards/criteria for logistics services

d. Disclosure of information

- Publication of freight rates and fees
- Reporting on mitigation efforts to the environment (CO2 reduction)

(5) Regulator for freight forwarders and the industry

These five regulators are the most common and the leading ones among several agencies who commit themselves in regulating freight forwarding business. Where there is no recognition of freight forwarders, many transport and customs related agencies are involved in the industry without a clear leading institution.

Table 7.4 Regulator for freight forwarders and the industry

Regulators	Ministry of Transport	Ministry of Trade / Commerce	Self-regulator	Revenue Authority
Main Focus of Regulations	Transport Service	Support Export-oriented economy / encourage integration of economy into global supply chain	Maximize the welfare of the members of associations	Revenue / Tax collection / Remove goods in bond

Source; World Bank report

7.4.2 Warehousing Business Act

(1) Purpose

The purpose of this Act is to secure proper operation of the Warehousing Business to protect the interests of Warehouse users and to ensure smooth circulation of Warehouse Warrants.

(2) Definition

The term "Warehouse" as used in this Act means a structure for preventing articles from being lost or damaged or a piece of land or a surface of the water to which alterations have been made for preventing articles from being lost or damaged which is used for storage of articles.

The term "Warehousing Business" as used in this Act means a business of storing deposited articles in the Warehouse

(3) Registration

A person who intends to engage in the Warehousing Business shall obtain the registration administered by the Minister of Public Works and Transport (MPWT).

(4) Refusal of Registration

In case where the application for the registration pursuant to the provision falls under any of the following items, MPWT shall refuse the registration.

(5) Posting of Rates

A Warehouseman shall post the storage fees and other charges (limited to those to be received from Consumers), the warehousing contract, the Type of the Warehouse and other matters at a place accessible to users in its business office or other offices pursuant to the provisions of an Ordinance of the MPWT.

(6) Chief Warehouse Administrator

A Warehouseman shall appoint a person who meets the requirements specified by Ordinance of the MPWT, who has the knowledge and abilities required for the appropriate management of the Warehouse, as a chief warehouse administrator for each Warehouse in accordance with the standards set forth by Ordinance of the MPWT such as the size of the Warehouse to manage, to engage in the business relating to the Warehouse management as specified by Ordinance of the MPWT including fire prevention in the Warehouse.

(7) Other Issues

- Facilities and Equipment of Warehouse
- Obligation to Provide Fire Insurance

(8) Penal provisions

A person who falls under any of the following items shall be punished by imprisonment with work, or shall be subject to the cumulative imposition thereof:

7.5 Technical Projects for Logistics Master Plan and Development

7.5.1 Mechanism of Logistics System Development

We can point out the less-developed mechanism for the efficient development of logistics infrastructure and service in Cambodia.

In order to solve the issues mentioned above, it must be necessary to develop the implementation mechanism for the improvement of the national logistics system. For that purpose, it might be required to develop the following four mechanisms.

- The logistics master plan development
- Coordination mechanism
- Role sharing between the public and private sectors
- The mechanism of financing

(1) The logistics master plan development

The development of the logistics master plan needs the accurate data accumulation system and the well-chosen analysis method. For realizing it, it needs three factors,

e.g., the implementing organization, the adjustment system and human resources.

a) Implementing organization

It needs the input from external organizations such as the Japanese Ministry of Land, Infrastructure and Transport.

b) Adjustment system

The inter-Ministry adjustment mechanism is required for developing and authorizing the logistics master plan. The establishment of the adjustment mechanism needs the revision of the legal and regulation system.

c) Human resources

The logistics master plan development needs the planning thinking and scientific analysis capability based on the accurate data. The capability about the data analysis and processing method is required.

(2) The coordination mechanism of the logistics infrastructure development

The purpose of the logistics development is to reduce the total transportation time and costs. The reduction of those needs the connectivity among each transportation mode.

Fundamentally, terminal infrastructure such as a port should be developed close together the access infrastructure such as a road and a railroad. However, there exists a time-lag to develop each transport infrastructure in Cambodia. The development time-lag brings the wasted maintenance cost, and the logistics infrastructure development also requires a huge development cost.

The coordination mechanism for the comprehensive logistics infrastructure development should be established urgently under the development budget constraint.

(3) Role sharing between the public and private sectors

The private sector has a role of the logistics service provider/operator fundamentally. On the other hand, the public has a role of the regulator that provides the regulation and the guidance from viewpoints of healthy competition, securement of safety, user protection, etc.

The Government should foster the private sector as a logistics service provider/operator and take into consideration the role of regulator of logistics service.

(4) The mechanism of financing

In order to attain sustainable economic growth, the large-scale investment in logistics infrastructure is indispensable.

In Japan, the financing scheme of infrastructure development supporting the economic growth after the postwar was the loan by government credit (debt from people) and loan from the World Bank, etc. The saving rate is at a low level in Cambodia, and it is difficult to finance the debt from the people. Therefore, it is thought that the transportation infrastructure development in Cambodia could be developed by the government loan at present.

For that purpose, the effective and efficient planning of the logistics infrastructure development and the implementation are required.

7.5.2 Technical Projects for Logistics Master Plan and Development

In order to develop logistics infrastructure (hardware, software) effectively, it is thought that the development of a logistics master plan, implementation of the priority project in accordance with logistics master plan, and periodical reexamination and progress management of logistics master plan are required. Hereinafter, the PDM proposal of the technical projects concerning development of logistics master plan is shown.

Project Name: The technical transfer project for logistics master plan development

Implementing agency: Cambodia Central Government (MPWT, CDC, MOC, MEF)

Target Area: Whole country of Cambodia

Table 7.5 Target Candidate: The mid-level officer of MPWT, CDC, MOC, and MEF

Project Summary	Index	Acquisition means	External factor
Higher rank target			
An efficient logistics system required for sustainable economic development is established, and it contributes to improvement in national income, and job creation.	<ul style="list-style-type: none"> - Expansion of foreign direct investment - Employment creation - Improvement in income - Increase the logistics efficiency 	Statistical materials Logistics Performance Index (LPI) of the World Bank	The economic conditions of ASEAN and GMS countries will not get worse.
Project target			
An implementation capability and ownership for logistics increase in efficiency improve through experience of logistics master plan development.	<ul style="list-style-type: none"> - Development of logistics master plan - Planned priority project implementation based on the logistics master plan 	<ul style="list-style-type: none"> - Project report document - Field survey 	<ul style="list-style-type: none"> - Reorganization of a government organization
Result			
1. The role and function of a responsible organization (committee)	Result 1 <ul style="list-style-type: none"> - Establishment of the 	<ul style="list-style-type: none"> - Field survey 	

are defined clearly.	committee - Holding of the committee regular meeting		
2. The role and function of each special unit, which constitutes the responsible organization, are defined clearly.	Result 2 - Establishment of the special units - The activity plan document of each special unit	- Field survey	
3. The logistics master plan is drawn up by each special unit	Result 3 - Development of an activity plan - Creation of a progress report - Creation of a logistics master plan - Creation of a road map - Formulation of financial planning	- Field survey - Project report document	
4. Each special unit which constitutes the responsible organization functions with mutual support, and the ownership improves	Result 4 - The number of holding times of the committee regular meeting - The number of WS times of each special unit - The number of holding times of the seminar and WS, the number of participants	- Field survey - Project report document - Questionnaire	
Activity 0-1 Formation of Project Implementation Unit 0-2 Arrangement of Leader about Project			
Activity	Input		
Result 1 1-1 Define the role of the committee. 1-2 Committee creates road map. 1-3 Create the employment handbook of the committee and distribute relevant ministries and agencies widely.	[Japan side] Experts - Long-term specialist (24MM) - Operational coordinator (24MM)	[Cambodia side] Experts - Project manager - Project manager assistance - Counterpart - Drivers	
Result 2 2-1 Install the special units. 2-2 Select the special unit member 2-3 Create the road map of logistics master plan of each special unit.	Short-term specialist - Logistics plan - Organization/system - Infrastructure project - Financial planning	Facilities - Work place (stationery is included) - Training place	
Result 3 3-1 Collect data requirements. 3-2 Examine and argue about advanced examples. 3-3 Hold the special units investigative commission periodically. 3-4 Training implementation in Japan and Malaysia 3-4 Evaluation of Logistics Master Plan	- Industrial policy Equipment - Equipment Copy machine Computer	local cost - Staff transportation expenses - Fuel and light prices - Communication charges	<u>Precondition</u> - Discuss cooperation with other donors.

Logistics Situation and Challenges in Cambodia



August 2016

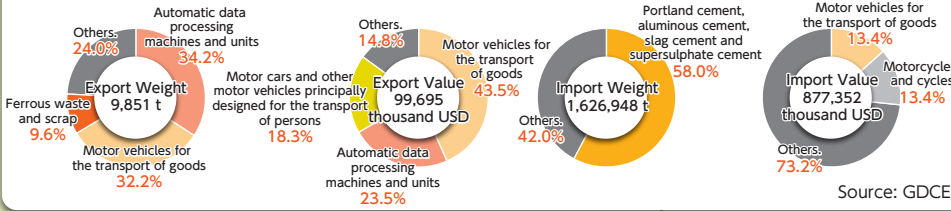
Summary of the Data Collection Study on International Logistics
of the Kingdom of Cambodia

Japan International Cooperation Agency

1 Logistics Network and Trade Characteristics

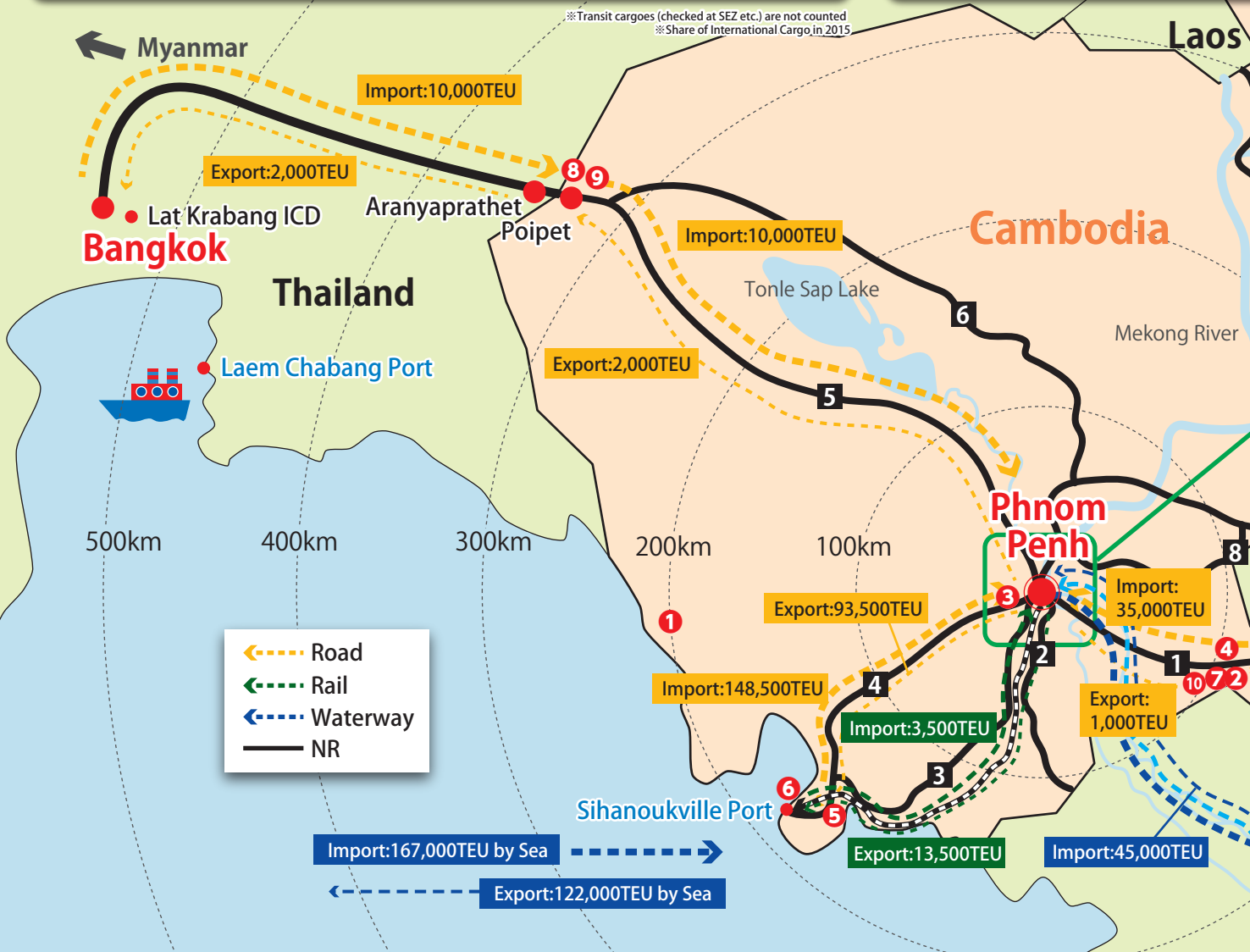
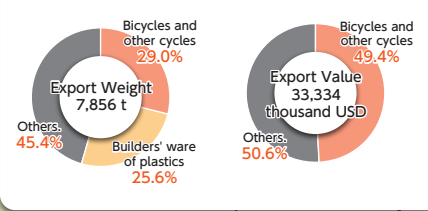
Phnom Penh - Poipet

Status **Border Road** New border facilities being considered (by Thailand assistance) (NR5) 2-lane, to be widened into 4-lane by 2020 (by JICA assistance)



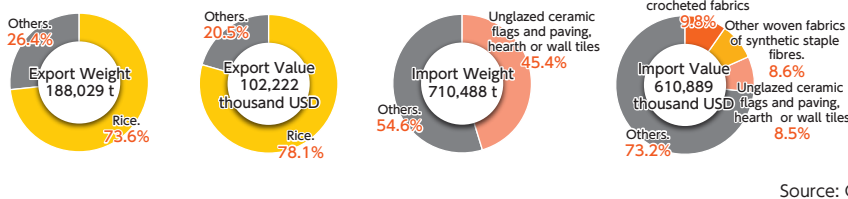
Phnom Penh - Bavet

Status **Border Road** New border facilities being considered (NR1) 2-lane (rehabilitated)



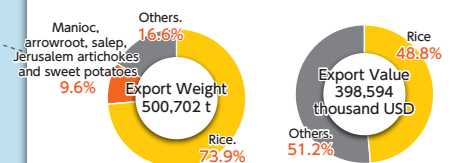
Phnom Penh - Vietnam (inland waterway)

Status **Port Road** Container Yard to be expanded (by PPAP) Ring Road 3 to be constructed (by China assistance)



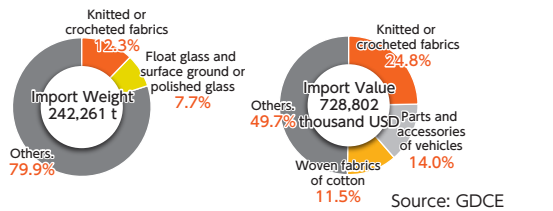
Phnom Penh - Sihanoukville

Status **Port Road Railway** Multi-purpose terminal under study (by JICA) (NR4) 2-lane (partly 4-2-3 operations/day/rehabilitated)



※ Transit cargoes (checked at SEZ etc.) are not counted
※ Share of International Cargo in 2015

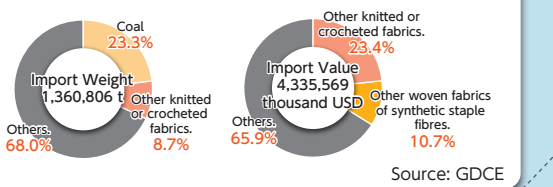
considered.
by ADB and JICA assistance), Expressway (under study by JICA)



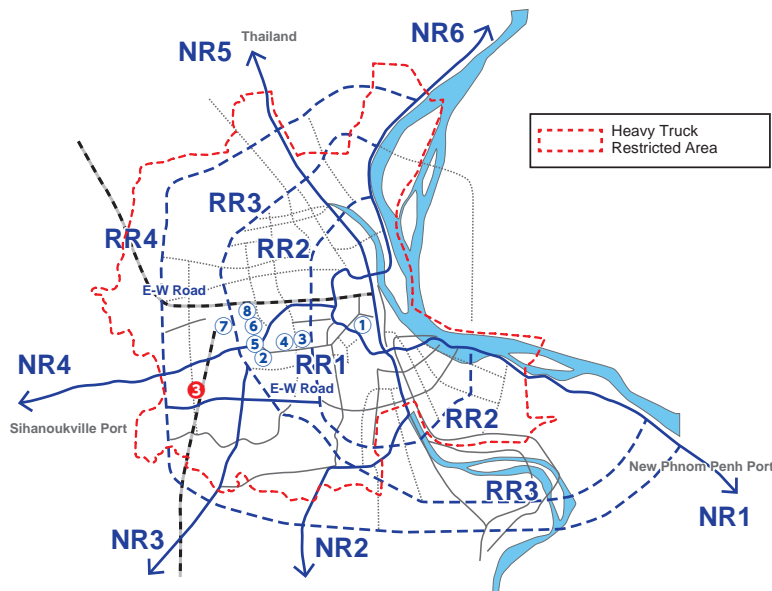
※ Transit cargoes (checked at SEZ etc.) are not counted
※ Share of International Cargo in 2015



under construction, new terminal construction assistance)
lane) under study (by China assistance)
litated by ADB assistance)



※ Transit cargoes (checked at SEZ etc.) are not counted
※ Share of International Cargo in 2015



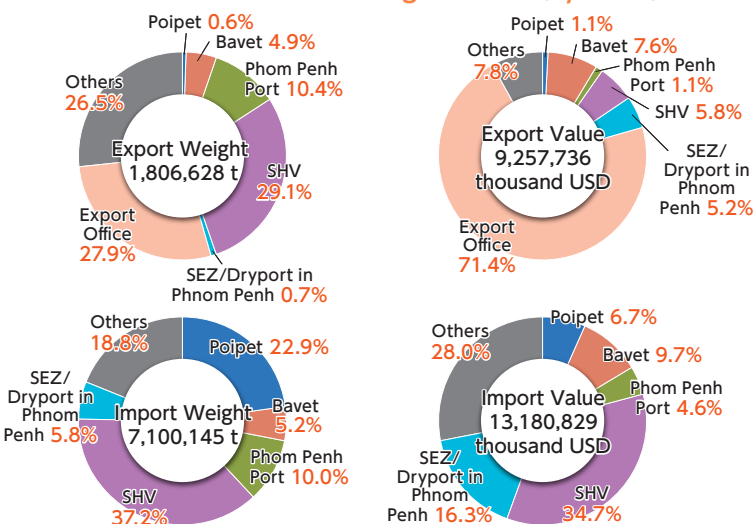
No.	SEZ Name	Export (2015)		Import (2015)	
		Weight (t)	Value (thousand USD)	Weight (t)	Value (thousand USD)
1	Neangkok Koh Kong SEZ	5,144	94,213	12,941	130,809
2	Manhattan SEZ	59,102	342,932	97,389	276,792
3	Phnom Penh SEZ	9,417	460,132	77,444	461,137
4	Tai Seng Bavet SEZ	20,892	318,742	26,934	271,183
5	Sihanouk Ville SEZ	25,011	138,164	1,246,751	210,656
6	Sihanouk Ville Port SEZ	109	3,798	36,287	23,104
7	Dragon King Bavet SEZ	58	5,393	399	3,951
8	Sanco Poi Pet SEZ	-	0	535	1,838
9	Poi Pet O Neang SEZ	351	5,409	679	7,252
10	Sandong Shan Shell SEZ	6,452	23,395	12,271	26,022

Source: GDCE

No.	Dry Port Name	Export (2015)		Import (2015)	
		Weight (t)	Value (thousand USD)	Weight (t)	Value (thousand USD)
1	Hong Leng Huor	545	2,454	70,921	180,014
2	Olair World Wide	430	3,115	30,773	191,950
3	Sokan Transport	155	1,087	7,332	17,190
4	So Nguon CES	21	137	17,149	72,354
5	Tec Srun CES	209	1,615	77,762	597,755
6	Teng Lay	254	1,313	100,022	476,903
7	Toll Cambodia	1,188	4,094	2,508	3,778
8	Union	904	5,203	28,733	145,532

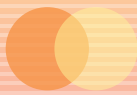
Source: GDCE

Share of International Cargo in 2015 (by route)



Remark:

Bavet includes Manhattan SEZ, Tai Seng Bavet SEZ and Dragon King Bavet SEZ.
Poipet includes Poi Pet O Neang SEZ and Sanco Poi Pet.
SHV includes SHVPort, Sihanouk Ville SEZ and Sihanouk Ville Port SEZ.



1) Bangkok - Phnom Penh Route (Road)



Lat Krabang ICD



Traffic congestion at the Thai border in the morning



Laem Chabang Port



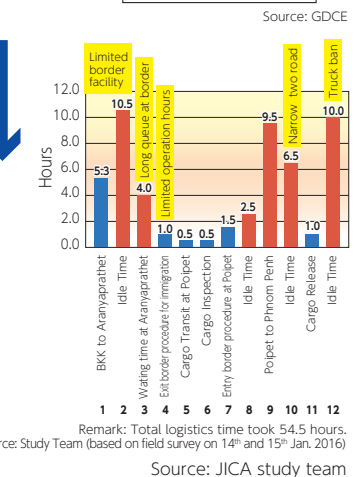
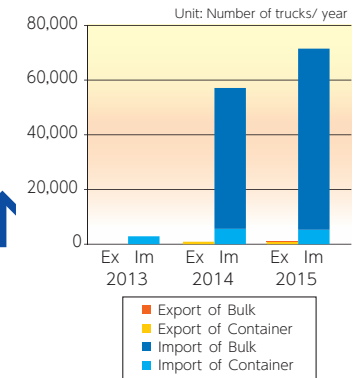
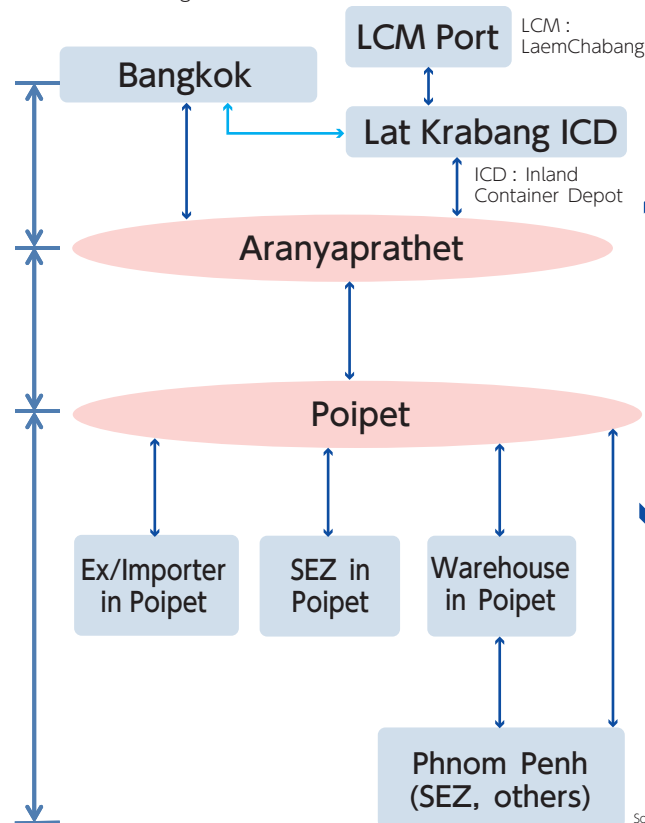
Poipet Border

Distance	240 km	
Time	5 hour	
Cost	Forwarding Charge	\$200
	Transport Charge	\$700

Distance	0 km
Time	1-4 hour

※ 40 vehicles are allowed for cross border transport, to be increased to 500 in 2017.

Distance	390 km	
Time	9.5 hour	
Cost	Forwarding Charge	\$640-690
	Transport Charge	\$600



Road condition of NR 5



Future image of NR5



Future image of new border facility(Tentative)

Characteristics

- Major import cargo categories are motor vehicle and machine, and the major export cargo category is Portland cement.
- The import volume widely exceeds the export volumes. Vehicles and machines as high value goods are imported. Most of cargos are carried by bulk trucks.
- A new border facility will be developed at Poipet. NR5 will be developed to be four-lane road.
- Long queues of trucks waiting for border clearance at the Thai side appear in the early morning.

① Major cargos ② Characteristic of trade ③ Current condition and future plan of facilities ④ Major issues

2) Ho Chi Minh (HCM) - Phnom Penh Route (Road)



Border at Vietnam side



Cai Mep Port (TCIT)



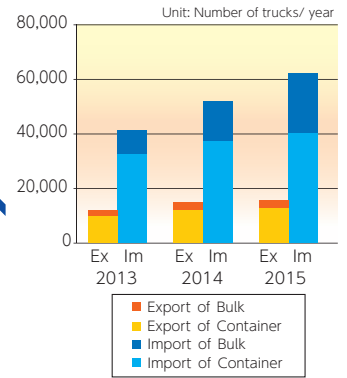
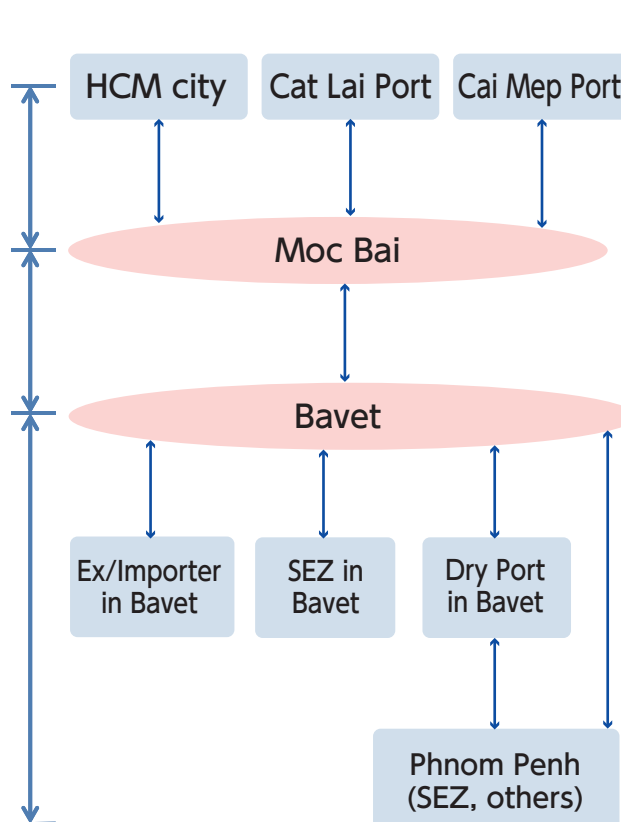
TSUBASA bridge

Distance	70 km	
Time	16 hour	
Cost	Forwarding Charge	\$250
	Transport Charge	\$200

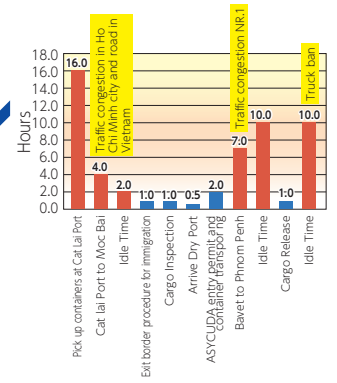
Distance	0 km
Time	1-2 hour

※ 500 vehicles are allowed for cross border transport.

Distance	190 km	
Time	7.5 hour	
Cost	Forwarding Charge	\$640-690
	Transport Charge	\$300



Source: GDCE



Remark: Total logistics time took 52.8 hours. Source: Study Team (base on field survey on 16th and 17th Feb. 2016)

Source: JICA study team



Road condition of Vietnam Side



Future image of Expressway

Characteristics

- ① Major import cargo categories are unmanufactured tobacco, table/kitchen article, etc., and major export cargo categories are textile and fabric.
- ② The import volume exceeds the export volume by around three times, but SEZ cargo volumes between incoming and outgoing are balanced.
- ③ NR1 is partly under expansion. A new expressway between Ho Chi Minh and Phnom Penh is under study.
- ④ Traffic congestion in Vietnam, especially in and around Ho Chi Minh, is severe.

① Major cargos ② Characteristic of trade ③ Current condition and future plan of facilities ④ Major issues

3) Vietnam - Phnom Penh Route (Inland Waterway)



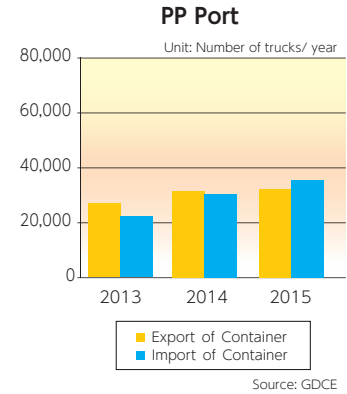
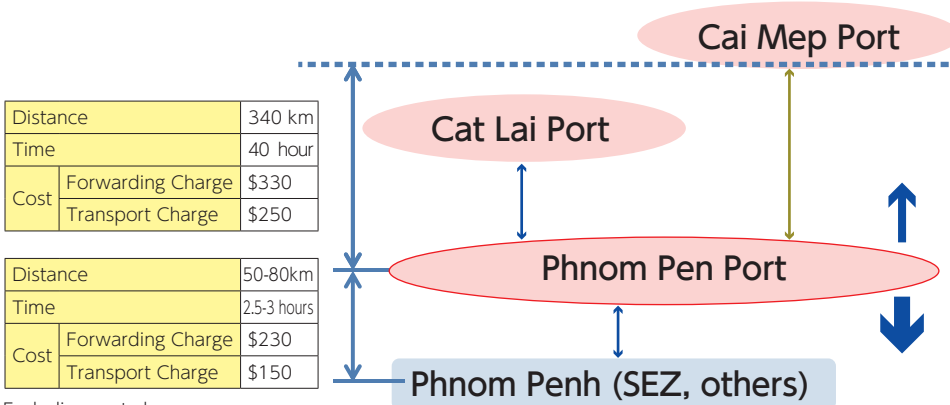
Low bridge in Vietnam



Electric cable above Chi Gao Canal



New Phnom Penh Port



Trade Lane		Barge Operator	Slot Charterer	Yearly Calls	Barges Deployed	Average Ship Size (TEU)	Maximum Ship Size (TEU)	Yearly Capacity (TEU)	Name of Barge
Mekong River Waterway	Phnom Penh /Cai Mep /Ho Chi Minh Feeder	Newport Cypress	15-17 shipping lines	364	7	113	128	41,132	Newport Cypress01, Newport Cypress02, Newport Cypress04,Cai Mep16, Tay Nam10, Tay Nam15, Song Xanh18
		Gemadep	15-17 shipping lines	312	6	79	112	24,648	Gemadep09, Phuoc Long18, Puoc Long20, Puoc Long24, Puoc Long28, Puoc Long32
		Sovereign Base Logistics	15-17 shipping lines	156	3	104	120	16,224	Golden Fortune1, GoldenFortune2, Golden Fortune8
Total				832	16	128	360	82,004	



Container barge in the Mekong River



Border facility on the Vietnam side



Border facility on the Cambodia side

Characteristics

- Major import cargo categories are cement and fabrics, and major export cargo categories is milled rice.
- Laden container volume (TEU) between incoming (45 thousand TEU/year) and outgoing (58 thousand TEU/Year) are balanced.
- Phnom Penh Autonomous Port is expanding the container yard. Ring road 3 is under study.
- Large vessels can not pass a canal and low bridges in Vietnam. Border procedures are longer than other checkpoints.

① Major cargos ② Characteristic of trade ③ Current condition and future plan of facilities ④ Major issues

4) Phnom Penh - Sihanoukville Route (Road and Railway)



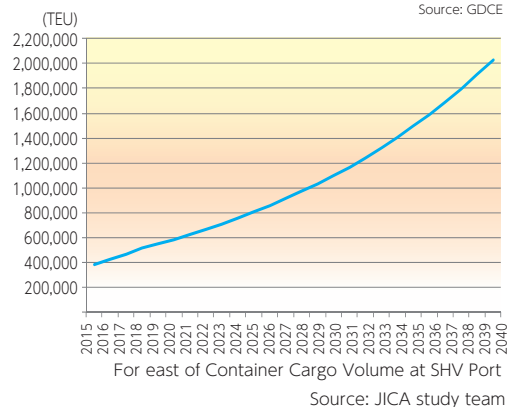
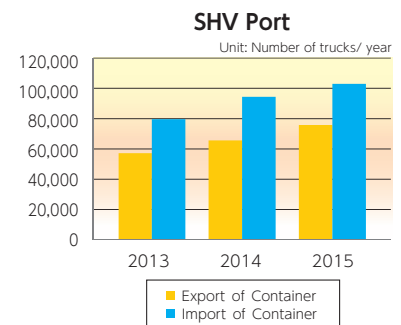
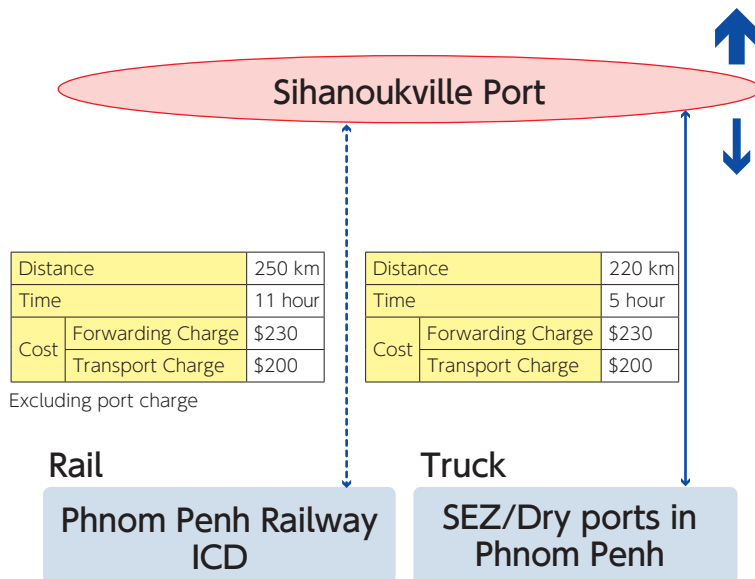
Sihanoukville Port Special Economic Zone
Source: PAS



Container train



NR



Phnom Penh Railway ICD



Sihanoukville Port

Characteristics

- ① Major import cargo categories are fabrics, and major export cargo categories are cassava and milled rice.
- ② Laden container volume (TEU) of incoming (167 thousand TEU/year) slightly exceeds that of out-coming (121 thousand TEU/Year).
- ③ Multi-purpose terminal is under construction. New terminal is under study.
- ④ Traffic accidents happen frequently on NR4. Traffic congestion at the gate of Sihanoukville port is severe, especially on weekends.

① Major cargos ② Characteristic of trade ③ Current condition and future plan of facilities ④ Major issues

2 Major Issues and Challenges

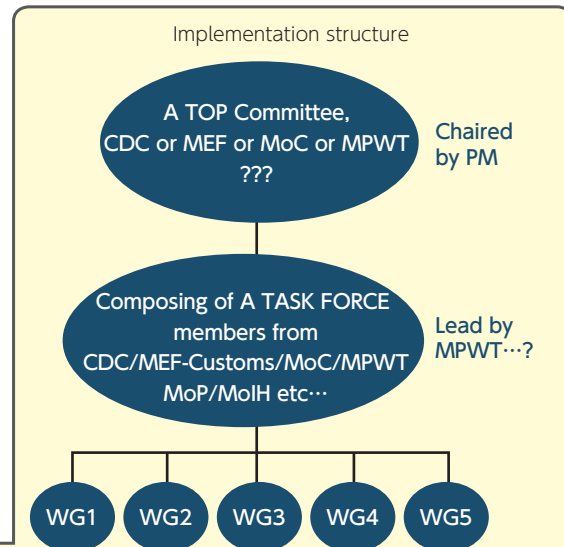
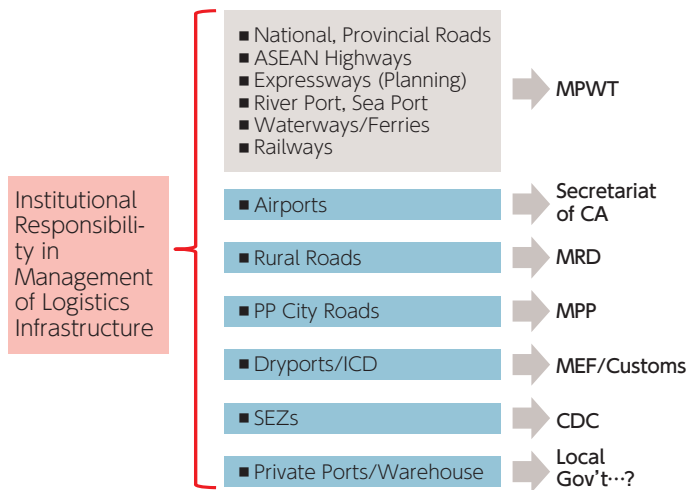
More discussion on issues in the following pages.

		Overall Issues	PP –Thailand route (road)	PP – Vietnam route (road)	PP – Vietnam route (inland waterway)	PP – Sihanoukville route (road and railway)
HARDWARE	Transport facility		<ul style="list-style-type: none"> Narrow and damaged NR5: Expressway is underway 	<ul style="list-style-type: none"> Limited capacity of the borders: New border facility is planned 	<ul style="list-style-type: none"> Shallow and narrow river channel in Vietnam 	<p>Issue 5 Congested and dangerous NR4 Expressway is planned</p> <p>Issue 5 Congested port gate</p> <ul style="list-style-type: none"> Slow railway transport
	Logistics facility	<ul style="list-style-type: none"> Lack of development of transport nodes (ICD; Inland Container Depot etc.) <p>Issue 4 One Way Cargo</p>	<ul style="list-style-type: none"> Limited capacity of the borders: New border checkpoint facility is planned 	<ul style="list-style-type: none"> Limited capacity of the border 	<ul style="list-style-type: none"> Limited port capacity: Expansion in progress 	<p>Issue 6 Insufficient ICD capacity</p> <ul style="list-style-type: none"> Limited port capacity: expansion in progress
SOFTWARE	Law/ Policy/ Regulation	<ul style="list-style-type: none"> Lack of Forwarding Business Act Negative impact of truck ban Negative impact of overloading 	<p>Issue 3 Trans-loading</p>	<p>Issue 3 Trans-loading</p>		
	Mater plan/ Strategic plan	<ul style="list-style-type: none"> Lack of logistics master plan 				
	Organizational structure	<p>Issue 1 Lack of coordination mechanism</p> <ul style="list-style-type: none"> Unclear demarcation among ministries and agencies 				
	Operation/ Procedure/ Information	<ul style="list-style-type: none"> Limited harmonization between customs and port system 	<ul style="list-style-type: none"> Limited operation hours at the border (only daytime) 	<ul style="list-style-type: none"> Limited operation hours at the border (only daytime) 	<p>Issue 8 Lack of Port EDI</p> <ul style="list-style-type: none"> Limited operation hours at the border (only daytime) Redundant documentation 	<p>Issue 8 Lack of Port EDI</p> <ul style="list-style-type: none"> Lack of shipping lines' services to receive/deliver the laden containers at ICD
	Charge/ Tariff	<ul style="list-style-type: none"> Lack of minimum charge regulation 	<p>Issue 2 High forwarding charges</p>	<p>Issue 2 High forwarding charges</p>	<p>Issue 2 High forwarding charges</p>	<p>Issue 2 High forwarding charges</p> <p>Issue 7 High port charges (LOLO; Lift on / Lift off)</p>
Human Resource Development	<ul style="list-style-type: none"> Lack of human resources in logistics/statistics sectors 	<ul style="list-style-type: none"> Insufficient driving skills 	<ul style="list-style-type: none"> Insufficient driving skills 		<ul style="list-style-type: none"> Insufficient driving skills 	

Issue 1 Lack of Coordination Mechanism

Observation ● Infrastructure development has progressed well, but the coordination among stakeholders is limited and overall strategic plan does not exist

Agencies responsible for Logistics Infrastructure



Recommendations

- ▶ ① Formulate a national committee/council for logistics improvement with attention to both top-down and bottom-up approaches.
- ▶ ② Utilize the committee/council to develop, implement and monitor a consolidated action plan

Issue 2 High Forwarding Charges

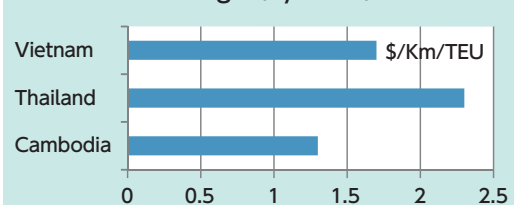
Observation

- While transportation charges are competitive compared with the neighboring countries, forwarding charges are significantly higher.
- Complex procedures for import/export and charges by relevant authorities raise forwarding charges.

Structure of Forwarding Charges (General Cargo)

Service Group	Item
Private sector	Forwarding company charge (import/export process, container transloading), Customs broker charge,
Customs	Customs Process fee, Scanning fee
Camcontrol	Process fee
Immigration	Process fee

Comparison of Transportation Charges (by truck)



Recommendations

- ▶ ① Develop forwarding business act
- ▶ ② Rationalize and computerize import/export procedures*

Necessary System

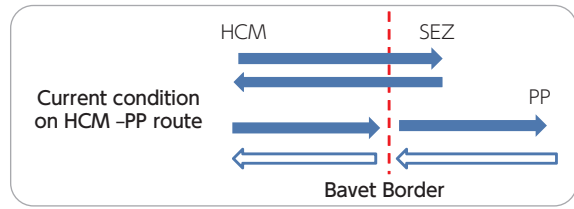
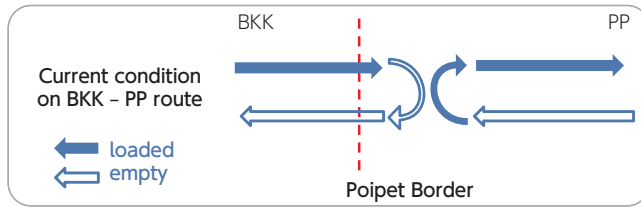
- minimum charge system
- maximum charge system
- license of forwarder business
- liability insurance, etc.

* Automated System for Customs Valuation/Permit is planned to be introduced in 2017

Issue 3 Trans-loading

Observation

- Most trucks exchange bulk cargoes and containers at the border, because of 1) limited CBTA (Cross Border Transportation Agreement) registered vehicles and 2) one-way-cargo.
- Several trucks from Vietnam can directly come to PP without trans-loading, but the limited number of return cargo may discourage forwarders from taking the risk of cross border transport.



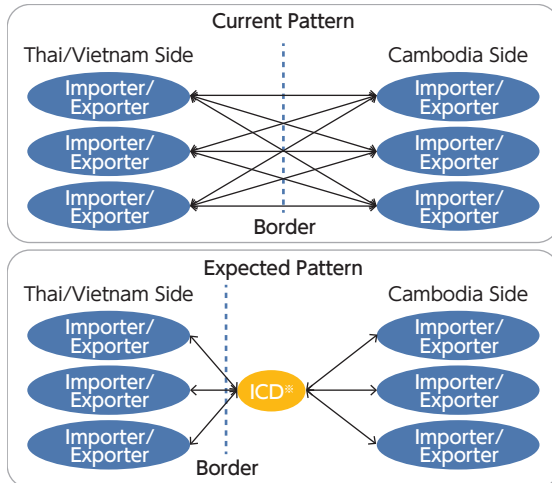
Recommendations

- ▶ Simplify CBTA procedures.
- ▶ Increase number of double-licensed vehicle.

Issue 4 One-way-cargo

Observation

- A lot of one-way-cargo exist due to under-developed export industries.
- Cargos are not consolidated among ICD/Dry port/SEZ.



* Inland Container Depot

Recommendations

- ▶ Consolidate cargoes among ICD/Dry port/SEZ.
- ▶ Develop exporting industries and favorable business environment.



Issue 5 Congested and Dangerous NR1 and 4

Observation

- Poor road condition because of heavy and overloaded trucks.
- Insufficient road safety facilities; many fatal traffic accidents occur.
- Severe traffic congestion at SHV port gate and in Phnom Penh city



Example of fatal accident in NR.4 (MPWT)



Trailer queue inside SHV city (JICA study team)

Recommendations

- ▶ ① Further developing road network especially widening NR4 and enhancing expressway.
- ▶ ② Develop bypass road to SHV port and ring road around Phnom Penh city
- ▶ ③ Expand SHV and PP port and Bavet border facilities

Issue 6 Inufficient ICD and Railway Capacity

Observation

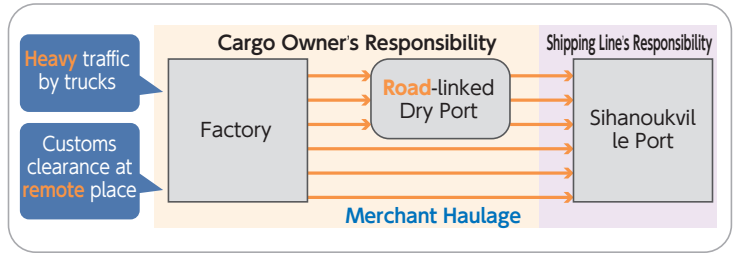
- Rail-ICD at PP only serves a role of transport modes changes between truck and rail.
- Railway usage is limited because of uncompetitive time and cost



ICD PNH

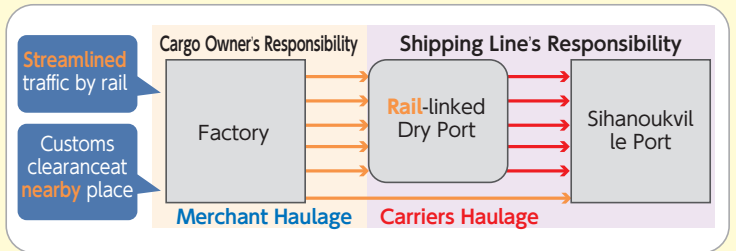


SHV Port freight Station



Recommendations

- ▶ Improve rail track.
- ▶ Enhance one-stop-inspection by informatization.
- ▶ Develop a functional ICD and introduce carriers haulage.



Issue 7 High port charges

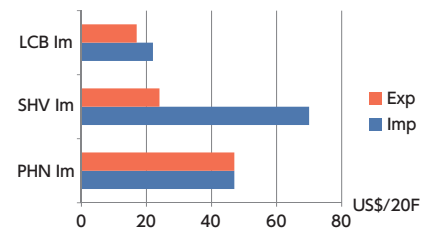
Observation

- LO/LO charges in Cambodia are more expensive than in Laem Chabang Port.
- Various charges are required.

General Structure of Port Charges

Service Group	Major Examples
Navigation	Port Dues, Pilotage, Tug, Mooring
Berth	Berth hire, Wharfage
Cargo Operation	Stevedorage, Wharf handling incl. LOLO, Storage
Lease	Rental Charge
Formality	Service charge (KAMSAB)

Comparison of LO/LO charges (2015)



Source; PAS, PPAP, LCB

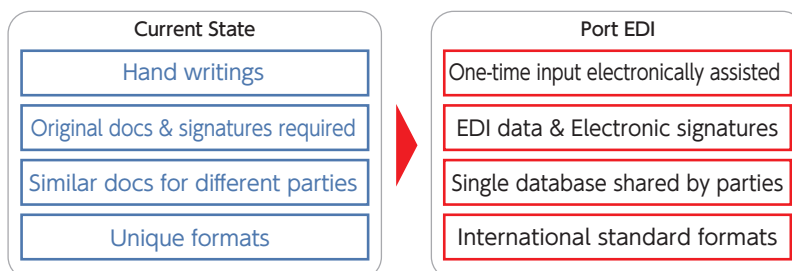
Recommendations

- ▶ Rationalize port charge system and set competitive charges.
- ▶ Improve the efficiency of cargo handling.

Issue 8 Lack of Port EDI

Observation

- Procedures at ports are redundant and time consuming, creating unofficial cost.
- No plan has been formulated to introduce EDI for port clearance procedures.



Recommendations

- ▶ Rationalize, computerize and harmonize port procedures.
- ▶ Integrate Port EDI into National Single Window.



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