Kingdom of Cambodia

The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port (Phase 2)

Project Completion Report

February 2022

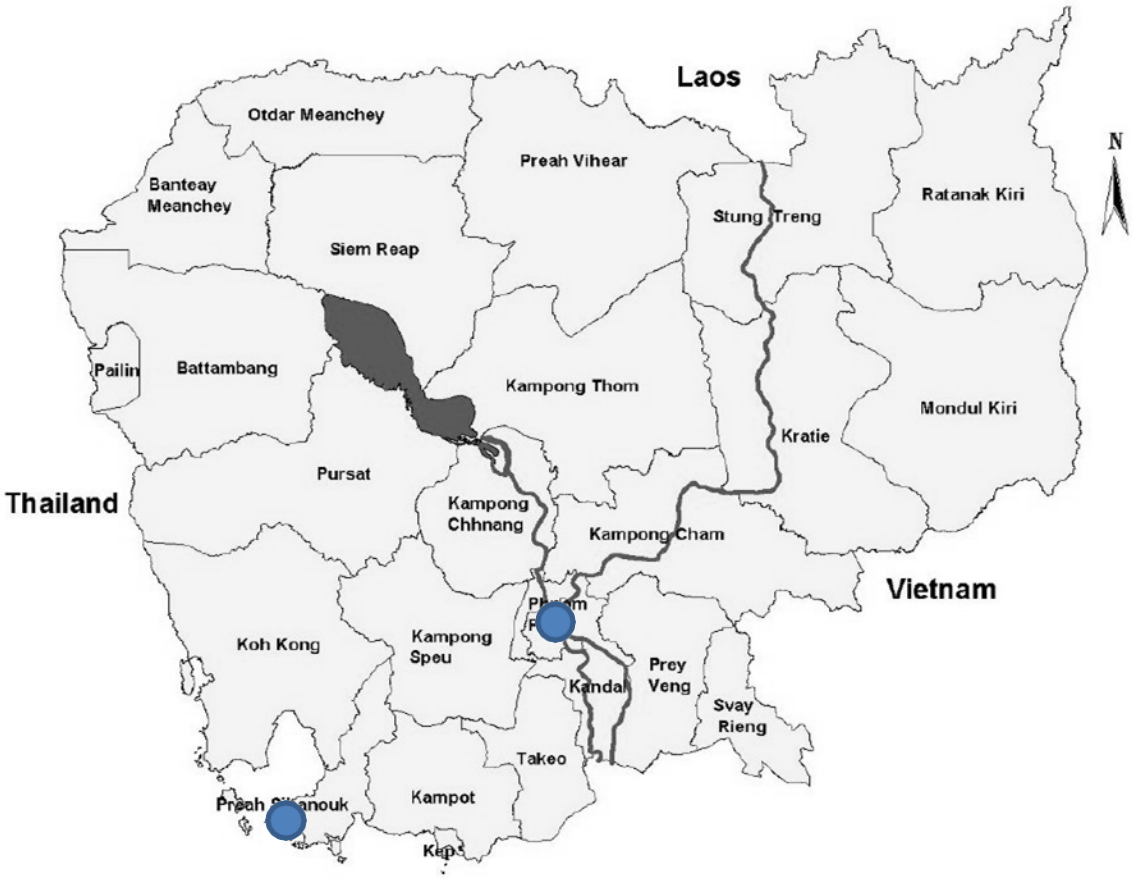
Overseas Coastal Area Development Institute

Contents

Tables and Figures

Abbreviations

C/P	Counterpart
CEO	Chief Executive Officer
CHE	Container Handling Equipment
CT	Container Terminal
CTMS	Container Terminal Management System
CY	Container Yard
EDI	Electronic Data Interchange
EN	Exchange of Notes
G/A	Grant Agreement
GOC	Government of Cambodia
GOJ	Government of Japan
ICD	Inland Container Depot
IDT	Improper document trailers
IT	Information Technology
JCC	Joint Coordination Committee
JICA	Japan International Cooperation Agency
KAMSAB	Kampuchea Shipping Agency and Brokers
KPI	Key Performance Indicator
L/A	Loan Agreement
MEF	Ministry of Economy and Finance
MHC	Mobile Harbor Crane
MPWT	Ministry of Public Works and Transport
NVOCC	Non-vessel Operating Common Carrier
OJT	On the Job Training
PAS	Sihanoukville Autonomous Port
PAT	Port Authority of Thailand
PDM	Project Design Matrix
PIU	Project Implementation Unit
PO	Plan of Operation
PPAP	Phnom Penh Autonomous Port
QGC	Quayside Gantry Crane
RD	Record of Discussions
RTG	Rubber Tired Gantry Crane
SEZ	Special Economic Zone
SOP	Standard Operation Procedure
TEU	Twenty-foot Equivalent Unit
TOS	Terminal Operation System
W/S	Working Shop
WG	Working Group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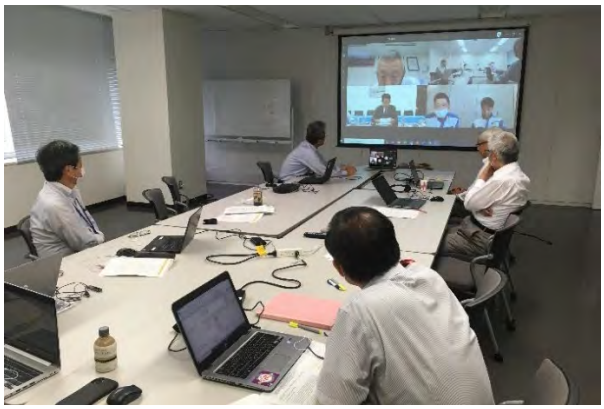


1. Preface

1. The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port (hereinafter referred to as "the Project") was implemented based on the Record of Discussions (hereinafter referred to as "R/D") signed by the Chief Representative of the JICA Cambodia Office and the Chairman/CEO of PAS on February 1, 2018. (R/D was amended afterwards on October 22, 2020, and June 6, 2021.)

2. The project period is 3 years and 10 months from April 2018 to January 2022. 17 Japanese experts were engaged in the field work at the premises of Sihanoukville Autonomous Port (hereinafter referred to as "PAS") through nine dispatches during the course of the Project. Their expertise covered port management, marketing strategy, CTMS operation, container handling equipment, operation of Rail Yard and Multi-Purpose terminal, entry/exit control of port/terminal, traffic flow management, Port EDI system, and so forth.

3. The project was carried out under the supervision of the Joint Coordinating Council (hereinafter referred to as "JCC"), chaired by the Chairman and CEO of PAS. During the nine dispatches, JCC was held five times in total, and the progress of the project was reported each time.

4. The results of the Project are summarized in this Completion Report including the project outline, implementation method, activities, project management and the results of the Project together with the lessons learned through implementing the project.

2. Outline of the Project

2.1 Background of the Project

2.1.1 Outline of Sihanoukville Port

5. Sihanoukville Port (referred to as "the Port") is located in Cambodia's southern Kampong Som Bay around 200 km southwest of the capital Phnom Penh by the national road No.4, and is the largest international trading port in Cambodia.

6. The management and operation of the Port is carried out by PAS which was established in July 1998. PAS is under the supervision of the Ministry of Economy and Finance (MEF) on the financial side and the Ministry of Public Works and Transport (MPWT) on the technical side. PAS is a state-owned enterprise in accordance with the Sub-Decree on the Establishment of Sihanoukville Autonomous Port (No. 50, July 17, 1998), being managed by the Board of Directors consisting of the Chairman and CEO of PAS and representatives of related ministries/agencies. PAS was listed on the Cambodia Securities Exchange (CSX) in June 2017 and became a joint-stock company. As a result, it is necessary to improve management efficiency, ensure transparency, and secure the trust of shareholders/investors by improving operational efficiency and strengthening international competitiveness.

7. The PAS organization (as of December 2021) consists of 14 departments under the Chairman and CEO and 3 Deputy Director Generals, of which the Department of Accounting-Finance, Department of

Planning, Procurement and Statistics and the Department of Marketing are under the direct control of the Chairman and CEO.

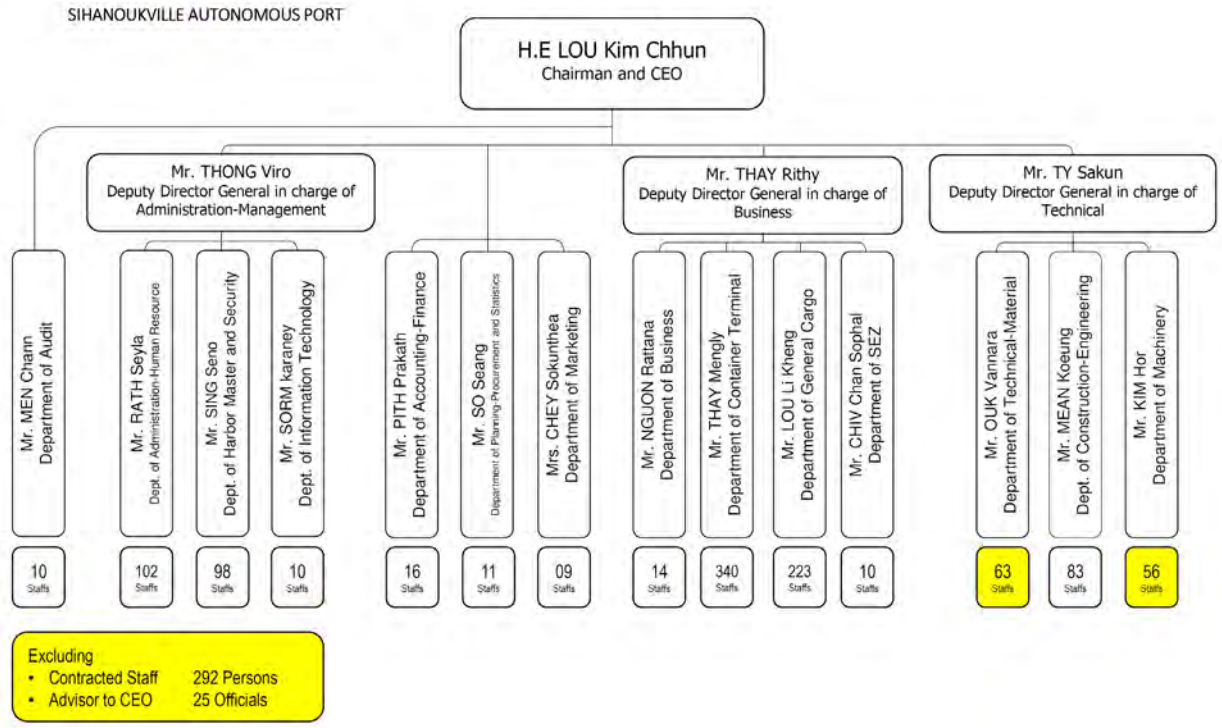

Figure 2-1 PAS Organization Chart (as of December 2021)

8. The Port has a total of 12 berths, yard behind for container and general cargo, and a terminal for passenger vessels. In addition, railway container yard for freight trains traveling to/from Phnom Penh and customs facilities including a container X-ray inspection facility are located in the port.

Figure 2-2 Major Facilities of the Sihanoukville Port (December 2021)

9. The cargo handling at the Port has been increasing steadily for more than a dozen years. The average annual container handling growth rate for the 10 years from 2011 to 2021 is 11.9% while throughput in 2021 is estimated to reach 733 thousand TEUs, exceeding 700,000 TEUs for the first time.

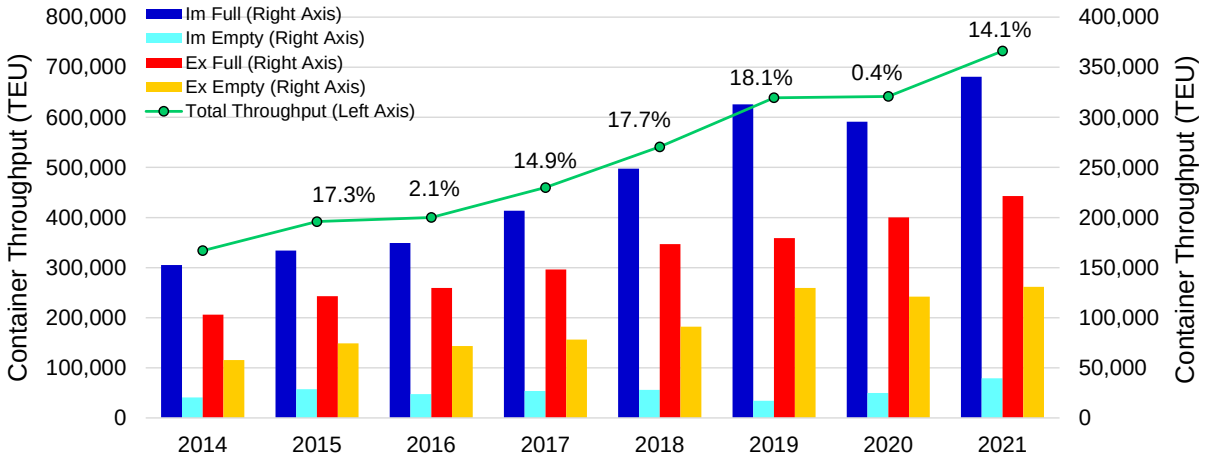

Figure 2-3 Container Throughput at Sihanoukville Port

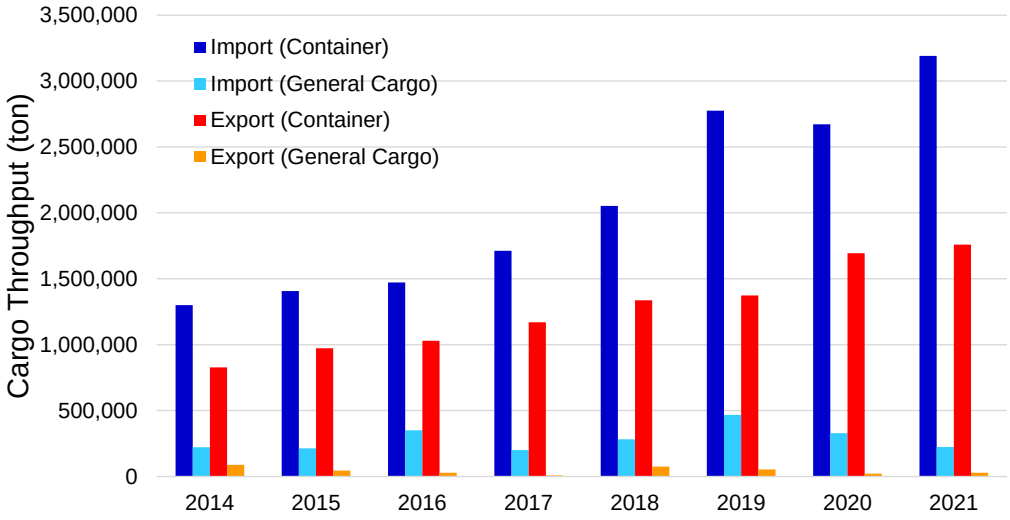

Figure 2-4 Cargo Throughput (tonnage) at Sihanoukville Port

2.1.2 Background of the Project

10. Japan has been continuously implementing technical cooperation related to the management and operation of the container terminal of the Port. In the latest technical cooperation project for "Capacity Development of Container Terminal Management and operation" (hereinafter, " Phase-1 Project"), technical assistance was provided to realize the sustainability of PAS management based on strategic planning and operation which includes the soundness of PAS' finances, efficient terminal operations, and efficient maintenance of cargo handling equipment. On the other hand, in order to further improve port operations, the Cambodian government requested the follow-up technical cooperation as the Phase-2 project (this project) in July 2015. In addition, the improvement of gate congestion, promotion of modal shift, efficient container yard operation, and promotion of information technology have been

identified as issues that should be addressed in the forthcoming project.

11. In addition, as mentioned in the previous section, the container throughput at Sihanoukville Port has been steadily increasing and exceeded 400,000 TEUs in 2016, which was close to the handling capacity at that time (about 500,000 TEU). Accordingly, it was concluded that the expansion of the container handling capacity as well as the improvement of operational efficiency should be addressed immediately.

12. Based on the background above, the Japan International Cooperation Agency (hereinafter referred to as "JICA") conducted a detailed planning survey for this project in November 2017, and considering the changes in the situation after receiving the request, the Cambodian government and relevant organizations agreed to the Record of Discussion (R/D) on February 1, 2018.

2.1.3 Records of Japanese Cooperation related to Sihanoukville Port

13. Since the latter half of the 1990s, Japan has been providing continuous support in terms of both financial and technical cooperation. Major projects are shown below.

Project Title	Type of Cooperation	Period
The study on the master planning and feasibility study of the Sihanoukville Port	Development Study	1996~1997
Sihanoukville Port Urgent Rehabilitation Project	Yen Loan	1999 (L/A) (~Oct. 2006)
Sihanoukville Port Urgent Expansion Project	Yen Loan	2004(L/A) (~Mar. 2010)
The Project for the Improvement of Security Facilities and Equipment in Main International Ports	Grant Aid	2006(G/A)
Sihanoukville Port Special Economic Zone Development Project (E/S)	Yen Loan	2006(L/A)
Transport Policy Advisor	Dispatch of Expert	2006~2016
Sihanoukville Port Special Economic Zone Development Project	Yen Loan	2008(L/A) (~2012)
Sihanoukville Port Multi-purpose Terminal Development Project	Yen Loan	2009(L/A) (~2018)
The Project for the Study on Strengthening Competitiveness and Development of Sihanoukville Port	Technical Cooperation for Development Planning	2011~2012
The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port	Technical Cooperation Project	2013~2016
Project for Productions of Integrated Digital Terrain Model and Electronic Navigational Chart	Technical Cooperation for Development Planning	2013=2016
Port Management Advisor	Dispatch of Expert	2016~2022
The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port (Phase-2)	Technical Cooperation Project	2018~2022
Advisor on SEZ Management	Dispatch of Expert	2018~2022
Sihanoukville Port New Container Terminal Development Project	Yen Loan	2017(L/A)
The Project for Port EDI for Port Modernization	Grant Aid	2019(G/A)

14. The Phase-1 Project was carried out from June 2013 to May 2016. The overall goal of the project as

well as the outputs shown below were achieved in the course of the project.

Overall goal	PAS shall maintain financial transparency and soundness as well as realize efficient terminal operation based on strategic planning and self-sustaining management.
Project purpose	To enhance PAS's capacity for strategic planning as well as port management and operation.
Output 1	A personnel system to realize strategic planning and management is developed and solutions for various issues (organizational streamlining, financial management, investment plans, marketing, etc.) are suggested.
Output 2	Regulations on container terminal operation are developed and PAS personnel acquire relevant know-how.
Output 3	A maintenance and inspection manual as well as a spare parts list for large cargo handling equipment, such as rubber tire gantry (RTG), quay gantry crane (QGC), etc., are prepared, and PAS personnel's capacities for maintenance and inspection are developed.

2.2 Purpose of the Project

15. The Project has been carried out for the purpose of enhancing the capacity of business operations of corporatized PAS (focusing on the container terminal (hereinafter referred to as "CT")) and contributing to trade promotion in Cambodia through modernization of the corporate strategy of PAS. The framework of the Project (Project Design Matrix: PDM) is shown below. The original completion date, April 2021, has been extended by 10 months to January 2022. In addition, the verifiable indicators and their verification methods were applied for the management of the activities, which were approved at the 2nd JCC Meeting. The Kampuchea Shipping Agency and Brokers (KAMSAB) was initially included as one of the direct beneficiaries of the target group, but that organization was abolished in January 2019.

Table 2-1 Project Design Matrix (PDM)

Project Title:	Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port Phase 2
Implementing Organization:	Sihanoukville Autonomous Port (PAS)
Period of Project:	April 2018 to January 2022 (46 months in total)
Target Groups:	(Direct Beneficiary) Staff members of Sihanoukville Autonomous Port (PAS), Ministry of Public Works and Transport (MPWT)
	(Indirect Beneficiary) Users of the Port of Sihanoukville
Project Site	Sihanoukville Autonomous Port (PAS)
Overall Goal	Modernized Corporate strategy (mainly Container Terminal (CT)) of PAS will contribute to trade promotion in Cambodia.
Project Purpose	Capacity of business operation (mainly CT) of corporatized PAS will be enhanced.
Output	Output-1: Capacity to formulate corporate strategy (mainly CT) of PAS will be enhanced. Output-2: CTMS operation capacity will be enhanced. Output-3: Entry and exit control and traffic flow management in port premises (including CT, rail yard and multi-purpose terminal) will be consistently implemented. Output-4: Incoming/outgoing traffic flow congestion will be mitigated at gate as well as outside of Sihanoukville Port premises. Output-5: Vessel arrival/departure procedure will be improved via. Port EDI.

16. The verifiable indicators for the goal, purpose and outputs are:

Goals, Purpose and Outputs	Objectively Verifiable Indicators
Overall Goal	
Modernized Corporate strategy (mainly Container Terminal (CT)) of PAS will contribute to trade promotion in Cambodia.	Annual container throughput of Sihanoukville Port will exceed 800,000TEU in 2023.
Project Purpose	
Capacity of business operation (mainly CT) of corporatized PAS will be enhanced.	Annual container handling capacity of Sihanoukville Port will be enhanced.
Outputs	
Capacity to formulate corporate strategy (mainly CT) of PAS will be enhanced.	1.1 Corporate strategy will be submitted to the shareholders/Investors 1.2 Decision making procedure and approval standard is authorized. 1.3 A medium/long-term facility investment plan for container terminals is formulated.
CTMS operation capacity will be enhanced.	2.1 Dwelling time of import containers will be shortened. 2.2 Dwelling time of export containers will be shortened. 2.3 Berthing / Time of vessels will be reduced.
Entry and exit control and traffic flow management in port premises (including CT, rail yard and multi-purpose terminal) will be consistently implemented.	3.1 Vehicles and motorcycles other than container trailers will not enter CT. 3.2 Turn Around Time of Trailers will be reduced.
Incoming/outgoing traffic flow congestion will be mitigated at gate as well as outside of Sihanoukville Port premises.	4.1 Waiting trailers in front of the terminal gate will be reduced. 4.2 Gate processing time will be reduced.
Vessel arrival/departure procedure will be improved via Port EDI.	5.1 Vessel arrival/departure procedure will be electronically processed by Port EDI. 5.2 Calling vessel statistics will be prepared through Port EDI.

2.3 Activities for the Outputs

17. The activities for the outputs are shown in the table below.

Table 2-2 Outputs and Activities

Outputs and Activities	
Output 1. Capacity to formulate corporate strategy (mainly CT) of PAS will be enhanced.	
	1-1. Analyze formulation process of corporate strategy (mainly CT) of PAS considering the similar best practices at other ports.
	1-2. Analyze applicability of corporate strategy (mainly for CT) formulation process of port operation companies (e.g. certain Japanese companies).
	1-3. Systemize formulation process of corporate strategy (mainly CT) to gain the understanding of shareholders/investors based on the results of 1-1 and 1-2.
	1-4. Develop roadmap to set-up strategic planning department which is responsible for formulating corporate strategy (mainly CT) in PAS.
	1-5. Support setting-up of a strategic planning department in PAS.
	1-6. Support to formulate Standard Operation Procedures (SOP) for selected departments of PAS as well as support the assessment of organization including job specifications.
	1-7. Support the formulation of a facility investment plan for medium/long-term.
Output 2. CTMS operation capacity will be enhanced.	
	2-1. Examine and analyze causes of congestion at gate, traffic flow congestion inside/outside CT.
	2-2. Analyze operational conditions of CT by making full use of CTMS after installation of additional QGCs and RTGs.
	2-3. Develop staff-enhancement plan of PAS to make full use of CTMS after installation of additional QGCs and RTGs.
	2-4. Implement on-the-job-training to make full use of CTMS based on the staff-enhancement plan.

Outputs and Activities	
	2-5. Support to formulate Standard Operation Procedures (SOP) in each cargo handling department.
Output 3. Entry and exit control and traffic flow management in port premises (including CT, rail yard and multi-purpose terminal) will be implemented.	
	3-1. Develop operation plan of entry and exit control based on the analysis conducted in 2-1.
	3-2. Develop container operation plan of multi-purpose terminal linked to CT operation based on the analysis conducted in 2-1.
	3-3. Develop a container operation plan of the rail yard linked to CT operation based on the analysis conducted in 2-1.
	3-4. Implement pilot operation of entry and exit control based on the operation plan to be developed in 3-1 and develop roadmap to full-scale operation.
	3-5. Implement pilot operation of empty container stacking yards and develop roadmap to full-scale operation.
	3-6. Implement pilot operation of container handling at rail yard based on the container operation plan to be developed in 3-3 and develop roadmap to full-scale operation.
Output 4. Incoming/outgoing traffic flow congestion will be mitigated at gate as well as outside of Sihanoukville Port premises.	
	4-1. Support to design a system which publishes the operating status of the container terminal using Web system.
	4-2. Implement pilot operation of the above system and develop roadmap to full-scale operation.
	4-3. Preliminarily design off-dock yard as pre-screening system of improper document trailers (IDTs) with evacuation space based on the analysis (to be conducted in 2-1).
	4-4. Implement pilot operation of pre-screening system of improper document trailers (IDTs) together with evacuation space based on the preliminary design (to be achieved in 4-3) and develop roadmap to full-scale operation. (in case that PAS will introduce the system at its own expense.)
	4-5. Propose countermeasures to cope with the increase of container handling up to 800,000 TEU, and support its implementation.
Output 5. Vessel arrival/departure procedure will be improved via. Port EDI.	
	5-1. Assist Port EDI taskforce (PAS, PPAP, MPWT) to appropriately introduce and operate Port EDI for vessel arrival/departure procedures.
	5-2. Document procedures of vessel arrival/departure will be eliminated soon after Port EDI is introduced.
	5-3. Develop guideline to compile calling vessel statistics via Port EDI data.

18. Some of the activities have been added, modified or deleted as follows in consideration of PAS requests and changes in the situation during the project.

Activities (Original)	Activities (Amendment/adding)
-	1-6. Support to formulate Standard Operation Procedures (SOP) for selected departments of PAS as well as support the assessment of organization including job specifications. (Added in response to the request from PAS.) (from the fifth dispatch)
-	1-7 Support the formulation of a facility investment plan for medium / long-term. (Added because it was found that a medium / long-term investment plan is indispensable for formulating the five-year plan due to the increasing container throughput at the Port.) (from the seventh dispatch)
2-5. Propose data sharing method between CTMS and inquiry system (by telephone, fax and/or e-mail) for availability status of carry-in/carry-out containers (to be developed in 4.1).	(Deleted: it was found that it was not realistic to introduce container status inquiry system based on the observation at the site as well as opinions of PAS and truck companies.) (from the fifth dispatch)

Activities (Original)	Activities (Amendment/adding)
-	2-5. Support to formulate Standard Operation Procedures (SOP) in each cargo handling department. (Added in response to the request from PAS; a part of the activity 1-6.) (from the fifth dispatch)
3-5. Implement pilot operation of container handling at multi-purpose terminal based on the container operation plan to be developed in 3-2 and develop roadmap to full-scale operation.	3-5. Implement pilot operation of empty container stacking yards and develop roadmap to full-scale operation. (Replaced: It would be difficult to handle containers at the multi-purpose terminal at that time. Instead, the operation of empty container stacking yards was focused on in the context of entry/exit control as well as traffic flow management in port premises.) (from the fifth dispatch)
4-1. Preliminarily design inquiry system (by telephone, fax and/or e-mail) for availability status of carry-in/carry-out containers.	4-1. Support to design a system which publishes the operating status of the container terminal using Web system. (Replaced: It was not realistic to introduce container status inquiry system based on the observation at the site as well as opinions of PAS and truck companies. Instead, a system which publishes the operating status of the container terminal using the Web system was proposed to eliminated traffic congestion outside of the Port.) (from the fifth dispatch)
4-2. Implement pilot operation of inquiry system (by telephone, fax and/or e-mail) for availability status of carry-in/carry-out containers and develop roadmap to full-scale operation. (in case that PAS will introduce the system at its own expense.)	4-2. Implement pilot operation of the above system and develop roadmap to full-scale operation. (Replaced corresponding to the modification of 4.1.) (from the fifth dispatch)
-	4-5. Propose countermeasures to cope with the increase of container handling up to 800,000 TEU, and support its implementation. (Added: Countermeasures to cope with the increase of container handling which could reach 800,000 TEUs by the time the new container terminal enters operation,) (from the fifth dispatch)

Project Design Matrix (PDM）

Project Title: Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port Phase 2
Implementing Organization: Sihanoukville Autonomous Port (PAS)
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Target Groups: (Direct Beneficiary) Staff members of Sihanoukville Autonomous Port (PAS), Ministry of Public Works and Transport (MPWT)
(Indirect Beneficiary) Users of the Port of Sihanoukville
Project Site: Sihanoukville Autonomous Port (PAS)

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Overall Goal			
Modernized Corporate strategy (mainly Container Terminal (CT)) of PAS will contribute to trade promotion in Cambodia.	Annual container throughput of Sihanoukville Port will exceed 800,000TEU in 2023.	Annual activity report of PAS.	
Project Purpose			
Capacity of business operation (mainly CT) of corporatized PAS will be enhanced.	Annual container handling capacity of Sihanoukville Port will be enhanced.	Parameters observed by monitoring survey to estimate annual container handling capacity. Annual container handling capacity = Min {Quay-side capacity, Container Yard capacity} Quay-side capacity = N×α×1.65×0.4×356×24 Where Number of QC (Quayside Crane): N Max. Net Productivity of QG (Box/hr/QG): α Utilization ratio pf GC = 0.4 TEU/Box ratio = 1.65 (TEU/Box) CY capacity = V×0.75／1.3×｛365×2／（β＋γ）｝ Where CY storage capacity: V (TEU) Terminal working ratio = 0.75 Peak Ratio = 1.3 Container dwelling time (Import): β(day) Container dwelling time (Export): γ(day)	1. The economic situation of related countries including Cambodia does not deteriorate markedly. 2. New container terminal will start its operation in 2023 as planned.
Outputs			
1. Capacity to formulate corporate strategy (mainly CT) of PAS will be enhanced.	1.1 Corporate strategy will be submitted to the shareholders/Investors 1.2 Decision making procedure and approval standard is authorized. 1.3 A medium/long-term facility investment plan for container terminals is formulated.	1.1 Report submitted to the shareholder meeting 1.2 Monitoring Survey (Authorized document, etc) 1.3 A medium/long-term facility investment plan for container terminals	1. The Cambodian Government continues to give priority to its logistics policy. 2. Cambodian Government can actually control management policy of PAS.
2. CTMS operation capacity will be enhanced.	2.1 Dwelling time of import containers will be shortened. 2.2 Dwelling time of export containers will be shortened. 2.3 Berthing / Time of vessels will be reduced.	2.1 Monitoring survey (6 days [2016]) 2.2 Monitoring survey (5 days [2016]) 2.3 Monitoring survey	
3. Entry and exit control and traffic flow management in port premises (including CT, rail yard and multi-purpose terminal) will be consistently implemented.	3.1 Vehicles and motorcycles other than container trailers will not enter CT. 3.2 Turn Around Time of Trailers will be reduced.	3.1 Monitoring survey 3.2 Monitoring Survey	

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
4. Incoming/outgoing traffic flow congestion will be mitigated at gate as well as outside of Sihanoukville Port premises.	4.1 Waiting trailers in front of the terminal gate will be reduced. 4.2 Gate processing time will be reduced.	4.1 Monitoring survey (61 Vehicles [2018]) 4.2 Monitoring Survey	
5. Vessel arrival/departure procedure will be improved via. Port EDI.	5.1 Vessel arrival/departure procedure will be electronically processed by Port EDI.	5.1 Monitoring survey	
	5.2 Calling vessel statistics will be prepared through Port EDI.	5.2 Monitoring survey	
Activities	Inputs		
Activities for Output 1 1. Capacity to formulate corporate strategy (mainly CT) of PAS will be enhanced. 1-1. Analyze formulation process of corporate strategy (mainly CT) of PAS considering the similar best practices at other ports. 1-2. Analyze applicability of corporate strategy (mainly for CT) formulation process of port operation companies (e.g. certain Japanese companies). 1-3. Systemize formulation process of corporate strategy (mainly CT) to gain the understanding of shareholders/investors based on the results of 1-1 and 1-2. 1-4. Develop roadmap to set-up strategic planning department which is responsible for formulating corporate strategy (mainly CT) in PAS. 1-5. Support setting-up of a strategic planning department in PAS. 1-6. Support to formulate Standard Operation Procedures (SOP) for selected departments of PAS as well as support the assessment of organization including job specifications. 1-7 Support the formulation of a facility investment plan for medium/long-term. ***Activities for Output 2*** 2. CTMS operation capacity will be enhanced. 2-1. Examine and analyze causes of congestion at gate, traffic flow congestion inside/outside CT. 2-2. Analyze operational conditions of CT by making full use of CTMS after installation of additional QGCs and RTGs. 2-3. Develop staff-enhancement plan of PAS to make full use of CTMS after installation of additional QGCs and RTGs. 2-4. Implement on-the-job-training to make full use of CTMS based on the staff-enhancement plan. 2-5. Support to formulate Standard Operation Procedures (SOP) in each cargo handling department.	***<Japanese Side>*** (a) Dispatch of Short-term experts Short-term expert (Output) ・Corporate strategy (mainly CT) analysis of PAS (Overall) ・Co-Team Leader/ Strategic Port Management (2) (Output 1) ・Entry/Exit Control of Container Terminal (Output 3) ・CTMS Operation/ Management information (Output 2) ・Container Handling Equipment (CT) (Output 2) ・Operation of Rail Yard and Multi-Purpose Terminal) (Output 3) ・Traffic Flow Management of Off-dock Yards (Output 4) ・Information System on Container Status (Output 4) ・Port EDI System/ Management Information (2) (Output 5) ・Capacity Enhancement for Marketing (Output 1) ・Baseline Survey/ Study Tours/ Project Administration (Overall) (b) Training ・Study Tour in Japan ・Study Tour in Thailand (c) Equipment	***<Cambodian Side>*** (a) C/P personnel will be appropriately assigned to the project. (b) Appropriate office space will be prepared and provided to the expert team. (c) Appropriate office equipment (electricity, utility, internet environment, desk, chair, etc.) will be prepared and provided to the expert team. (d) Port EDI task force will cooperate with JICA expert team.	<Pre-Conditions> 1. C/P personnel will be appropriately assigned to the project. 2. C/P personnel will remain the same during the project period. 3. Multi-purpose terminal will start its operation in 2018 as planned. 4. PAS will appropriately build and operate off-dock yard at its own expense. 5. PAS will build railway yard and prepare yard equipment at its own expense. 6. Port EDI system will be installed in Cambodia.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Activities for Output 3			
3. Entry and exit control and traffic flow management in port premises (including CT, rail yard and multi-purpose terminal) will be implemented.			
3-1. Develop operation plan of entry and exit control based on the analysis conducted in 2-1.			
3-2. Develop container operation plan of multi-purpose terminal linked to CT operation based on the analysis conducted in 2-1.			
3-3. Develop a container operation plan of the rail yard linked to CT operation based on the analysis conducted in 2-1.			
3-4. Implement pilot operation of entry and exit control based on the operation plan to be developed in 3-1 and develop roadmap to full-scale operation.			
3-5. Implement pilot operation of empty container stacking yards and develop roadmap to full-scale operation.			
3-6. Implement pilot operation of container handling at rail yard based on the container operation plan to be developed in 3-3 and develop roadmap to full-scale operation.			
Activities for Output 4			
4. Incoming/outgoing traffic flow congestion will be mitigated at gate as well as outside of Sihanoukville Port premises.			
4-1. Support to design a system which publishes the operating status of the container terminal using Web system.			
4-2. Implement pilot operation of the above system and develop roadmap to full-scale operation.			
4-3. Preliminarily design off-dock yard as pre-screening system of improper document trailers (IDTs) with evacuation space based on the analysis (to be conducted in 2-1).			
4-4. Implement pilot operation of pre-screening system of improper document trailers (IDTs) together with evacuation space based on the preliminary design (to be achieved in 4-3) and develop roadmap to full-scale operation. (in case that PAS will introduce the system at its own expense.)			
4-5. Propose countermeasures to cope with the increase of container handling up to 800,000 TEU, and support its implementation.			
Activities for Output 5			
5. Vessel arrival/departure procedure will be improved via. Port EDI.			
5-1. Assist Port EDI taskforce (PAS, PPAP, MPWT) to appropriately introduce and operate Port EDI for vessel arrival/departure procedure.			
5-2. Document procedure of vessel arrival/departure will be eliminated soon after Port EDI is introduced.			
5-3. Develop guideline to compile calling vessel statistics via. Port EDI data.			

2.4 Implementation of the Project

2.4.1 Joint Coordination Committee (JCC)

19. A Joint Coordination Committee (JCC') was established to approve the activity plan, evaluate the outputs, and obtain a consensus or share information on important issues. JCC was held five times during the project. The structure and members of JCC are as follows.

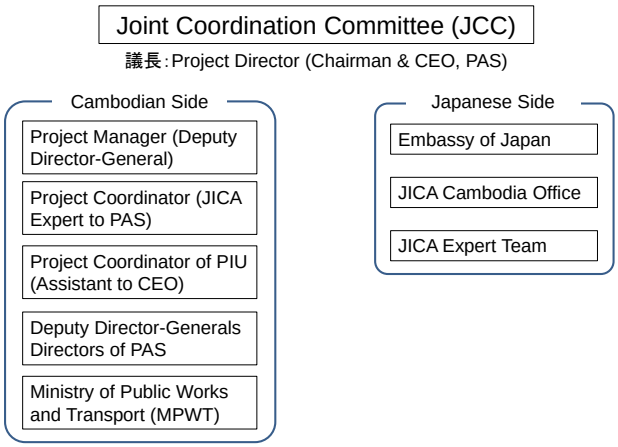


Table 2-3 Members of JCC

Role	Name	Position in PAS
Project Director (Chairman of JCC)	H.E. Lou Kim Chhun	Delegate of the Royal Government in Charge as Chairman & CEO, PAS
Project Manager	Mr. Thay Rithy	Deputy Director General, PAS
Project Coordinator	Mr. Kazuya Narukawa (Mr. Katsuichi Yabunaka)	JICA Expert to PAS
PAS counterpart personnel		
	Mr. Thong Viro (Dr. Chhun Hong)	Deputy Director General
	Mr. Ty Sakun (Mr. Chea Yuthdika)	Deputy Director General
	Mr. So Seang	Director of Planning-Statistics & Procurement
	Mr. Rath Sela	Director of Administration-Human Resource
	Mr. Pith Prakath (Mr. Path Seth)	Director of Accounting-Finance
	Mr. Lou Lykheng	Director of General Cargo Operation
	Mr. Men Chann	Director of Internal Audit
	Mr. Chiv Chansophal	Director of Special Economic Zone
	Ms. Chey Sokunthea	Director of Marketing
	Mr. Sorm Karoney	Director of Information Technology
	Mr. Mean Kirng (Mr. Ty Sakun)	Director of Engineering-Construction
	Mr. Ngoun Ratana (Mr. Pith Prakath)	Director of Business
	Mr. Sing Seno (Mr. Thong Viro)	Director of Harbor Master-Pilotage-Security
	Mr. Thay Mengly (Mr. Srey Narin)	Director of Container Terminal Operation
	Mr. Ouk Vannra (Mr. Ty Sakun)	Director of Technical-Materials
	Mr. Kim Hor (Dr. Neak Sophyan)	Director of Machinery-Electro-mechanic

Role	Name	Position in PAS
Project Coordinator of PIU	Mr. Souk Kol Chenda	Assistant to Chairman & CEO
Other Members	(To be nominated)	Ministry of Public Works and Transport (MPWT)
	(To be nominated)	Embassy of Japan
	(To be nominated)	JICA Headquarters
	(To be nominated)	JICA Cambodia Office

2.4.2 Project Implementation Unit (PIU)

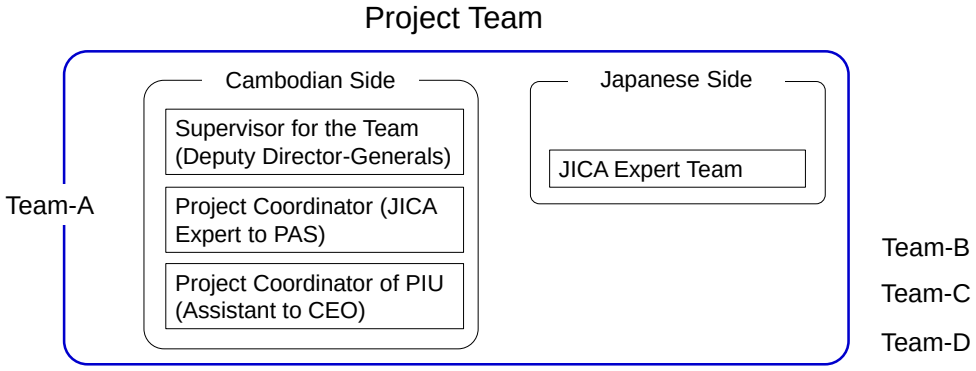
20. In order to share information related to the Project, a Project Implementation Unit (PIU) consisting of PAS staff from general manager class and above in related departments was set up headed by the Project Director. The activities of the Project were reported in each dispatch.

2.4.3 Working Group (WG)

21. In order to carry out activities efficiently and effectively, the following four teams for each output were set up under PIU, and a series of Working Groups were held by each team to report and discuss activities.

1) Team-A: Strategic Management (Output 1)
2) Team-B: Container Operation and Management (Output 2 &3)
3) Team-C: Congestion Mitigation (Output 4)
4) Team-D: Port EDI (Output 5)

22. The structures of the team and team members are as follows: (at the time of inauguration in April 2018)



Team-A: Strategic Management (Output 1)

Name	Position at the PAS	Position in Team A
Mr. Thay Rithy	**Deputy Director-General**	**Supervisor**
Mr. So Seang	Director of Procurement Planning-Statistic Dept.	Team A Leader
Ms. Chey Sokunthea	Director of Marketing Dept.	Deputy Team Leader
Mr. Rath Sela	Director of Admin-Human Resource Dept.	Deputy Team Leader
Mr. Men Chann	Director of Audit Dept.	Deputy Team Leader
Mr. Pith Prakath	Director of Business Dept.	C/P Member
Mr. Chiv Chansophal	Director of Special Economic Zone Dept.	C/P Member
Mr. Sam Sopheap	Chief of Accounting, Accounting-Finance Dept.	C/P Member
Mr. Khem Sitha	Deputy Director of Procurement Planning -Statistic Dept.	C/P Member

Name	Position at the PAS	Position in Team A
Mr. Souk Kolchenda	Assistant to Chairman and CEO	C/P Member
Mrs. Seng Sopha	Official of Admin-Human Resource Dept.	C/P Member
Mr. Ou Sovanrith	Official of Admin-Human Resource Dept.	C/P Member
Mr. Meas Sovanna	Official of Marketing Dept.	C/P Member
Mr. Sem Sophea	Official of Accounting-Finance Dept.	C/P Member
Mr. Oung Jeanot	Official of Business Dept.	C/P Member
Mr. San Chhun	Official of Admin-Human Resource Dept.	C/P Member
Mr. Ouk Somethy	Chief Office Procurement Planning-Statistic Dept.	Permanent Member

Team-B: Container Operation and Management (Output 2 &3)

Name	Position at the PAS	Position in Team B
Mr. Thay Rithy	**Deputy Director-General**	**Supervisor**
Mr. Srey Narin	Director of Container Terminal Operation Dept.	Team B Leader
Mr. Thong Viro	Director of Harbor Master Dept.	Deputy Team Leader
Mr. Rath Sella	Director of Admin-Human Resource Dept.	Deputy Team Leader
Mr. Pith Prakath	Director of Business Dept.	Deputy Team Leader
Mr. Ty Sakun	Director of Technical Materials- Construction Dept.	Deputy Team Leader
Mr. Lou Lykheng	Director of General Cargo Operation Dept.	Deputy Team Leader
Mr. Thay Mengly	Deputy Director of Container Terminal Operation	Deputy Team Leader
Mr. Heang Sophal	Deputy Director of Container Terminal Operation	C/P Member
Mr. Sing Seno	Deputy Director of Harbor Master Dept.	C/P Member
Mr. Pich Oeun	Chief of CHE Section, Container Terminal Operation Dept.	C/P Member
Mr. Ngoun Rattana	Official of Business Dept.	C/P Member
Mr. Koam Sokan	Official of Container Terminal Operation Dept.	C/P Member
Mr. Ouk Vannra	Chief Section of CHE Maintenance, Technical Materials-Construction Dept.	C/P Member
Mr. Kim Hor	Chief Section of Port Electricity, Technical Materials-Construction Dept.	C/P Member
Mr. Chav Vanratanak	Official of Container Terminal Operation Dept.	C/P Member
Mr. Sorm Karaney	Official of Admin-HR Dept.	C/P Member
Mr. Suon Bunsong	Official of Admin-HR Dept.	C/P Member
Mr. Norng Sinal	Official of Gate Clark, Security Section	C/P Member
Mr. Sek Sovannara	Chief of Data, Container Terminal Operation Dept.	Permanent Member

Team-C: Congestion Mitigation (Output 4)

Name	Position at the PAS	Position in Team C
Mr. Chea Yuthdyka	**Deputy Director-General**	**Supervisor**
Mr. Ty Sakun	Director of Director of Technical Materials-Construction Dept.	Team C Leader
Mr. Thong Viro	Director of Harbor Master Dept.	Deputy Team Leader
Mr. Pith Prakath	Director of Business Dept.	Deputy Team Leader
Mr. Rath Sela	Director of Admin-Human Resource Dept.	Deputy Team Leader
Mr. Thay Mengly	Deputy Director of Container Terminal Operation	Deputy Team Leader
Mr. Sing Seno	Deputy Director of Harbor Master Dept.	C/P Member
Mr. Nuon Sophak	Chief Office of Harbor Master Dept.	C/P Member
Mr. Ouk Sovannarith	Chief Office of General Cargo Operation Dept.	C/P Member
Mr. Sorm Karaney	Chief of IT Section, , Admin-HR Dept.	C/P Member
Mr. Hin Pheakdey	Official of Admin-HR Dept.	
Mr. San Chhun	Official of Admin-Human Resource Dept.	C/P Member
Mr. Ly Limhong	Official of Business Dept.	C/P Member
Mr. Hin Pheakdey	Official of Admin-HR Dept.	C/P Member
Mr. Nhim Pisey	Chief of Security Office, Admin-HR Dept.	Permanent Member

Name	Position at the PAS	Position in Team C
Mr. Tieng Ratana	Official of Technical Materials- Construction Dept.	Permanent Member

Team-D: Port EDI (Output 5)

Name	Position at the PAS	Position in Team D
Dr. Chhun Hong	**Deputy Director-General**	**Team Leader**
Mr. Thong Viro	Director of Harbor Master Dept.	Permanent Deputy Team Leader
Mr. Pith Prakath	Director of Business Dept.	Deputy Team Leader
Mr. Thay Mengly	Deputy Director of Container Terminal Operation	C/P Member
Mr. Chan Sokha	Deputy Director of Harbor Master Dept.	C/P Member
Mr. Sorm Karaney	Chief of IT Section	C/P Member
Mr. Souk Kolchenda	Assistant to Chairman and CEO	C/P Member
Mr. Sek Sovannara	Chief of Data, Container Terminal Operation Dept.	C/P Member
Mr. Chav Vanratanak	Official of Container Terminal Operation Dept.	C/P Member
Mr. Suon Bunsong	Official of Admin-HR Dept.	C/P Member
Mr. Kong Vibol	Official of Security Office Admin-HR Dept.	C/P Member

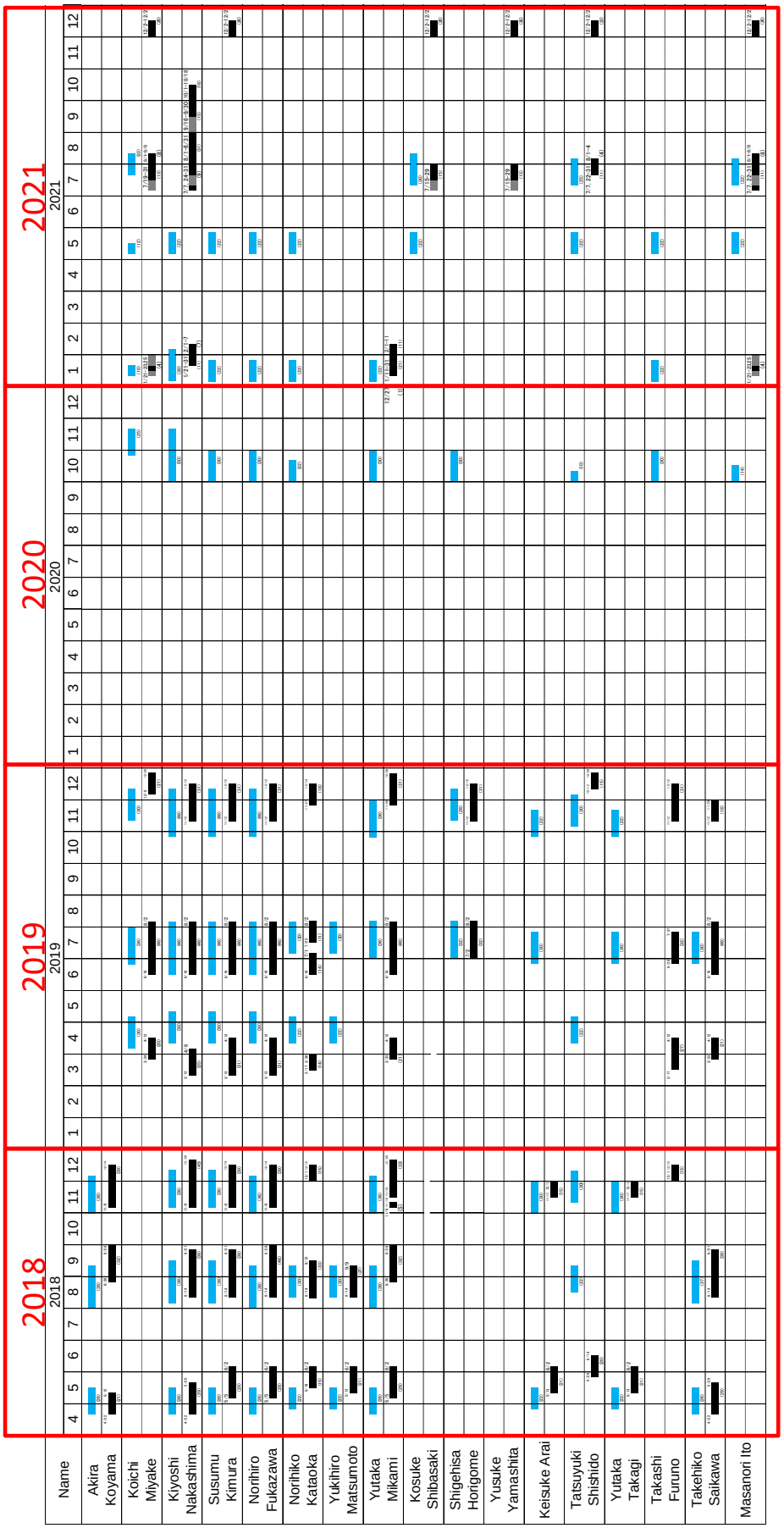
3. Implementation of the Project

3.1 Dispatch of Experts

23. During the project period, 17 Japanese experts were engaged in the field work at the premises of PAS through nine dispatches in the course of the Project. The list of dispatched experts and the records of dispatches are as follows. In 2020, due to the influence of COVID-19, field works could not be conducted. During 2020, PIU was held once remotely and most of the works were carried out by e-mail. Although the field work resumed in 2021, the time for conducting field work was not always sufficient.

Table 3-1 Members of Expert Team

Field	Name of Expert	Predecessor
Leader/Strategic Port Management (1)	Koichi Miyake	Akira Koyama
Co-Leader/Strategic Port Management (2) /Support for Evaluation of Organization (1)	Kiyoshi Nakashima	
Entry/Exit Control of Container Terminal /Support for Evaluation of Organization (3)	Susumu Kimura	
CTMS Operation /Management Information (1) /Support for Evaluation of Organization (2)	Norihiro Fukazawa	
Container Handling Equipment	Norihiko Kataoka	
Operation of Rail Yard and Multi-Purpose Terminal (1)	Yukihiro Matsumoto	
Traffic Flow Management of Off-Dock Yards (1) /Port EDI System (2)	Kosuke Shibasaki	Yutaka Mikami
Traffic Flow Management of Off-Dock Yards /Support for Evaluation of Organization (4)	Yusuke Yamashita	Shigehisa Horigome
Information System on Container Status	Keisuke Arai	
Port EDI System (1) /Management Information (2)	Tatsuyuki Shishido	
Capacity Enhancement for Marketing (1)	Yutaka Takagi	
Capacity Enhancement for Marketing (2) /Operation of Rail Yard and Multi-Purpose Terminal (2)	Takashi Furuno	
Baseline Surveys /Study Tours /Project Administration	Masanori Ito	Takehiko Saikawa


2018
2019
2020
2021
Name
Akira Koyama
Koichi Miyake
Kiyoshi Nakashima
Susumu Kimura
Norihiro Fukazawa
Norihiko Kataoka
Yukihiro Matsumoto
Yutaka Mikami
Kosuke Shibasaki
Shigehisa Horigome
Yusuke Yamashita
Keisuke Arai
Tatsuyuki Shishido
Yutaka Takagi
Takashi Furuno
Takehiko Saikawa
Masanori Ito

3.2 Holding JCC and PIU Meetings

24. JCC meetings and nine PIU meetings were held five times and nine times respectively. Through a series of meetings, the Project progressed smoothly by sharing necessary information among the concerned counterparts. The records of JCC and PIU meeting are shown below.

Table 3-2 Records of JCC and PIU Meetings

	No	Date	Subject	# of Attendants
JCC	1	May 9th 2018	Approval of the Work Plan	30
	2	December 4th 2018	Results of the Baseline Surveys & setting of Target Value of KPIs Progress of the Project in the 1st, 2nd and 3rd Dispatches	33
	3	April 8th 2019	Modification of PDM Progress of the Project in the 4th Dispatch	30
	4	December 23rd 2019	Modification of PDM and KPIs Progress of the Project in the 6th Dispatch	27
	5	December 20th 2021	Achievement of the Project	34
PIU	1	May 17th 2018	Method of Baseline Surveys and Follow-up Surveys	33
	2	August 16th 2018	Progress of the 1st Dispatch and Activity Plan of the 2nd Dispatch	25
	3	September 19th 2018	Results of Baseline Surveys and setting of Baseline/Target Value	24
	4	November 14th 2018	Activity Plan of the 3rd Dispatch	26
	5	March 19th 2019	Activity Plan of the 4th Dispatch	25
	6	June 21st 2019	Activity Plan of the 5th Dispatch	29
	7	November 18th 2019	Activity Plan of the 6th Dispatch	23
	8	September 25th 2020	Follow-up activities on remote basis (KPIs, Topics from the Team) (Web Meeting)	24
	9	July 23rd 2021	Activity Plan of the 8th Dispatch	25

3.3 Workshop

25. In order to provide effective technical assistance in the field works, a series of workshops were held for each outcome in every dispatch. The workshop was held among the members in each Working Group (4 groups; Team-A to D) which were formed under PIU at the time of the first dispatch. The number of workshops held was 34 times in total and the total number of participants reached 728. The records of workshops including the date, agendas and the number of participants are shown in the table below.

Team-A: Strategic Management (Output 1)

No	Date	Agenda	# of Attendants
1	September 14th 2018	Issues related to Output 1	26
2	November 19th 2018	Marketing Action Plan	21
3	December 6th 2018	Introduction to Managerial Accounting	18
4	April 3rd 2019	Methodology of Managerial Accounting	20
5	July 15th 2019	Profit & Loss Statements by Business Sector	20
6	July 29th 2019	Unit Revenues & Unit Costs to be used for the Simulation of 5 Year Management Plan	20
7	Dec 4th 2019	Trial Formulation Works for 5-Year Management Plan	21
8	February 8th 2021	Formulation Works for 5-Year Management Plan	17
9	October 13th 2021	Formulation & technology transfer of 5-Year Management Plan	20
Total			183

Team-B: Container Operation and Management (Output 2 &3)

No	Date	Agenda	# of Attendants
1	August 27th 2018	Issues related to container handling efficiency / sharing information and examining countermeasures (Output 2)	34
2	September 6th 2018	Current situation and issues of motorcycles and cars entering Gate 2, 3, etc. / sharing information and examining countermeasures (Output 3)	32
3	September 13th 2018	SOP for the Lashing Team and Traffic Flow of Trailers inside the Port (Output2)	29
4	September 21st 2018	Proposal of Measures for Enhancement of Container Handling Capacity (Output 2)	17
5	November 16th 2018	1. Comparison of Productivity between Gate and Yard (RTG) using CTMS data (Output 2) 2. Container Storage Plan and Utilization of the Multi-Purpose Terminal (Output 3)	20
6	November 30th 2018	1. Role of the Control Center and Current Issues (Output 2)	23
7	December 11th 2018	1. Issues concerning Vessel Operation and SOP for RTG Operators (Output 2) 2. Current Situation of Motorcycles entering Container Yard C and entering from Gate 3 and Passage (Output 3)	16
8	March 28th 2019	1. Observation of Container Handling at Site / Issues and Countermeasures (Output 2)	24
9	April 5th 2019	1. Current Situation of Motorcycles entering the Container Yard C and entering from Gate 3 and Passage 2. A Guideline for Entry and Exit Control (Output 3)	23
10	July 12th 2019	Traffic Flow of Trailers in the SHV Container Terminal (Output 3)	23
11	July 24th 2019	Follow up of baseline survey and the simulation on weekly container handling based on the berth schedule (Output 2)	19
12	July 31st 2019	1. Follow-up Survey on New KPI of Motorcycles entering the Container Yard-C (Output 3) 2. Necessary number of Cargo Handling Equipment in the SHV Container Terminal (Output 3) 3. Trailers' Traffic Flow Control (Output 3)	24
13	December 2nd 2019	Follow-up Survey on New KPI of Motorcycles entering the Container Yard C (Output 3)	25
14	December 4th 2019	Follow up of baseline survey /SOP for Container Terminal Operation Dept. (Vessel related operation)	17
15	December 5th 2019	Observation of General Cargo Operation and Terminal at Site / Issue and Countermeasures (Output 2)	29
Total			355

Team-C: Congestion Mitigation (Output 4)

No	Date	Agenda	# of Attendants
1	September 21st 2018	Congestion issues (Results of congestion surveys outside the port and at the gate)	13
2	November 8th 2018	Trial Countermeasures for Mitigating the Congestion at Gate 3	24
3	April 9th 2019	Utilization of Off Dock Yard for Import Containers Depot	20
4	July 31st 2019	Utilization of Off Dock Yard for Laden and Empty Containers Depot	24
5	December 22nd 2019	Traffic Situation at the Gate 3	20
6	February 8th 2021	Traffic Situation at the Gate 3	20
Total			121

Team-D: Port EDI (Output 5)

No	Date	Agenda	# of Attendants
1	May 29th 2018	Port Entry/Departure Clearance Procedures and Port EDI	12
2	December 20th 2019	Port EDI and Port EDI Procedure	12
3	February 8th 2021	Guidance on the compilation of cargo statistics by use of Port EDI	20
4	July 28th 2021	Port EDI System and Statistics	25
Total			69

Total number of attendants to the Workshops (Team-A ~ Team D) = 728 persons

3.4 Training

3.4.1 Training in the Third Country (Thailand)

26. In the first year, a study tour to Thailand was conducted as a part of the counterpart training. Nine members from PAS (expenses for six of them were borne by JICA) visited Thailand with the JICA long-term expert for PAS. Participants in the training learned about the management and operation methods of container terminals and related facilities to help improve the management and operation of PAS's container terminals.

Purpose:

To study the situation of container terminals in Thailand and use acquired knowledge to improve the management and operation of container terminal of Sihanoukville port.

Duration:

December 10 to 13, 2018 (4 days)

Place to be visited:

Port Authority of Thailand (PAT)	ESCO Laem Chabang
ESCO Lat Krabang ICD	Industrial Estate Authority of Thailand (IEAT)
State Railway of Thailand (SRT)	JWD Warehouse

Participants:

<PAS>

Mr. Ty Sakun, Director, Technique, Materials and Construction Department (Leader)
Mr. So Seang, Director, Planning-Statistics & Procurement Department
Ms. Chey Sokunthea, Director, Marketing Department
Mr. Pith Prakath, Director, Business Department
Mr. Heang Sophal, Deputy Director, Container Terminal Operation Department
Mr. Souk Kolchenda, Assistant to Chairman and CEO
Mr. Vanratanak Chao, Chief of Yard Planner, Container Terminal Operation Department
Mr. Sek Sovannara, Chief of Data Office, Container Terminal Operation Department
Mr. Suon Bunsong, Deputy Chief of IT Section, Admin-Human Resource Department

<JICA >

Mr. Katsuichi Yabunaka: JICA Expert for PAS
Mr. Kiyoshi Nakashima: Deputy Leader of JICA Expert Team
Mr. Yutaka Mikami: Member of JICA Expert Team (Traffic Flow Management of Off-Dock Yards)

Itinerary:

Dec. 10 (Mon)	Arrival (Bangkok)
Dec. 11 (Tue)	AM: Port Authority of Thailand (PAT)
	PM: ESCO Lat Krabang ICD, State Railway of Thailand (SRT)
Dec 12 (Wed)	AM: ESCO Laem Chabang
	PM: Industrial Estate Authority of Thailand (IEAT), JWD Warehouse
Dec. 13 (Thu)	Departure

3.4.2 Training in Japan

27. In the second year, seven members of PAS visited Japan for two weeks from September 1 to 14 and learned about Japanese ports. In addition to lectures on Japanese ports, they visited Tokyo Port, Yokohama Port, Kobe Port, Osaka Port, and Hakata Port and exchanged opinions with the persons in charge about the management and operation of the container terminals.

Duration:

September 1 to 14, 2019 (14 days)

Place to be visited:

JICA	Port of Hakata
Ministry of Land, Infrastructure, Transport and Tourism (MLIT)	Port of Kobe
	Kobe Customs Office
Port of Tokyo	Kobe-Osaka International Port Corporation
Port of Yokohama	Training Center for Skilled Port Workers (Kobe)
Port of Osaka	

Participants:

<PAS>

Mr. Souk Kolchenda, Assistant to Chairman and CEO (Leader, Coordinator)
Mr. Sorm Karaney, Director, Information Technology Department
Mr. Ouk Somethy, Chief Office, Procurement-Planning-Statistics Department
Mr. Koam Sokan, Chief of Vessel Planner, Container Terminal Operation Department
Mr. Chao Vanratanak, Chief of Yard Planner, Container Terminal Operation Department
Mr. Norng Sinal, Chief of Gate Clark, Security Section, Administration-Human Resources Department
Mr. Ying Koy, Official, General Cargoes Operation Department.

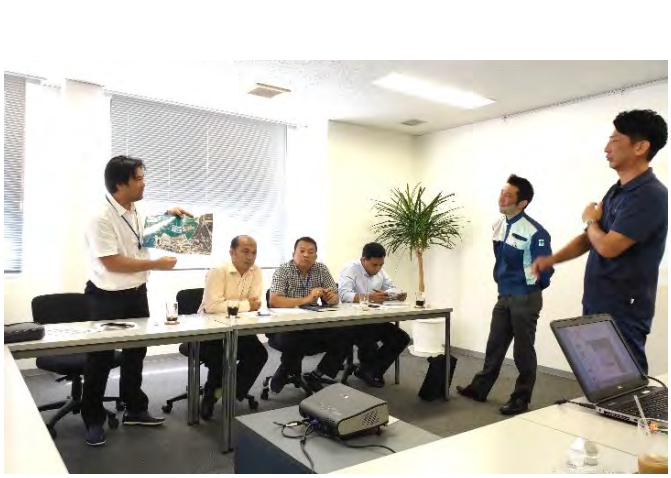
<JICA>

Mr. Katsuichi Yabunaka: JICA Expert for PAS
Koichi Miyake: Leader of JICA Expert Team
Takehiko Saikawa: Member of JICA Expert Team (Baseline Surveys /Study Tours
Mr. Yutaka Mikami: Member of JICA Expert Team (Traffic Flow Management of Off-Dock Yards)

Itinerary:

Sep. 1 (Sun)	Arrival (Tokyo)
Sep. 2 (Mon)	AM: Briefing at JICA
	PM: Courtesy call to JICA Headquarters and MLIT
Sep. 3 (Tue)	AM: Lecture “Traffic Congestion Countermeasures”
	PM: Field visit to Tokyo Port (traffic congestion countermeasures)
Sep. 4 (Wed)	AM: Courtesy call to Yokohama City (Port and Harbours Bureau)

	PM: Field visit to Yokohama Port
Sep. 5 (Thu)	AM: Move to Kobe
	PM: Lecture “Management and operation of PC18 in Kobe Port”
Sep. 6 (Fri)	AM: Field visit to PC18 and observation of shipside operation and countermeasure for traffic congestion
	PM: Field visit to PC18 and observation of maintenance of handling equipment
Sep. 7 – 8 (Sat, Sun)	Holiday
Sep. 9 (Mon)	AM: Field visit to PC18 and observation of terminal operation
	PM: Field visit to PC18 and observation of terminal operation, Kobe customs office
Sep. 10 (Tue)	AM: Courtesy call to Kobe-Osaka International Port Corporation
	PM: Field visit to Training Center for Skilled Port Workers and Osaka port
Sep. 11 (Wed)	AM: Move to Fukuoka
	PM: Field visit to Hakata Port
Sep. 12 (Thu)	AM: Move to Tokyo
	PM: Report drafting
Sep. 13 (Fri)	AM: Presentation of the report
	PM: Evaluation meeting, Closing ceremony
Sep. 14 (Sat)	Departure



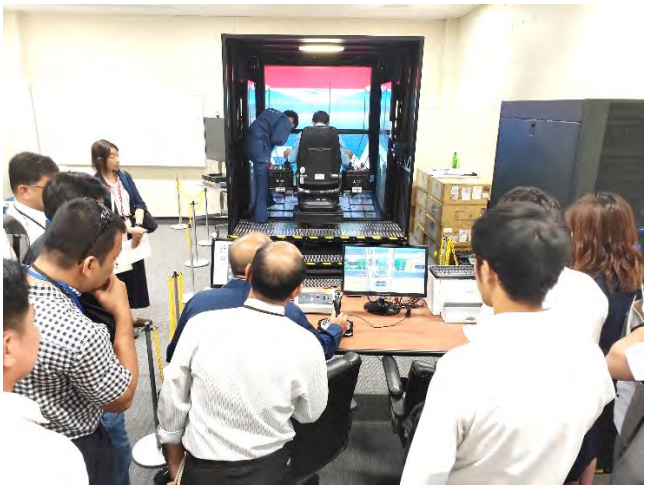



Figure 3-1 Snapshot from Kobe Visit


Figure 3-2 Group Photos (Left: at Hanshin International Port; Right: with the JICA Expert Team

4. Activities Corresponding to the Outputs

4.1 Activities for Output 1

- **Output-1: Capacity to formulate corporate strategy (mainly container terminal) of PAS will be enhanced.**

4.1.1 Outline of the Activities for Output 1

28. **Activity 1-1** "Analyze formulation process of corporate strategy (mainly regarding CT) of PAS considering the similar best practices at other ports" and **Activity 1-2** "Analyze applicability of corporate strategy formulation process (mainly regarding CT) of some port operation companies (e.g. some Japanese companies)" were completed in the 1st year of the Project.

29. **Activity 1-3** "Systemize formulation process of strategic management (mainly regarding CT) to gain the understanding of shareholders/investors based on the results of 1-1 and 1-2" and **Activity 1-4** "Develop roadmap to set-up strategic planning department which is responsible for formulating corporate strategy (mainly regarding CT) in PAS" were supposed to be completed in the 1st and 2nd year in the original Work Plan of the Project. However, as it took longer than expected to conduct the trial formulation works of the 5-year plan, Activity 1-3 and 1-4 were both carried over to the 3rd year of the Project.

30. **Activity 1-5** "Support setting-up of a strategic planning department in PAS" was conducted with the Planning-Statistics & Procurement Dept. which was assigned by PAS management as the department in charge of strategic planning. The expert team elaborated the "Roadmap for the Establishment of Mid-Term Planning Team" to help the Dept. in establishing a new team in charge of the 5-year plan in the Plan-Investment Office of the Dept.

31. **Activity 1-6** "Support to formulate Standard Operation Procedures (SOP) for selected departments of PAS as well as support the assessment of organization" was added to the original PDM and PO in response to the strong request from PAS management. SOPs have been elaborated regarding the key duties of 7 departments in PAS through the project period。

32. **Activity 1-7** " Support the formulation of a facility investment plan for medium/long-term." had not

been in the original PDM and PO, but was added to PDM in October 2020. While the container demand was expected to increase over the medium to long term, investment in port facilities had not caught up to the demand and it was expected that the terminal capacity would become reach its limit in the near future. Therefore, the medium/long-term investment plan was necessary to encourage appropriate investment. Through the formulation and revision of the investment plan, PAS and the Team reached a common understanding which was important for formulating the five-year plan.

4.1.2 Activities for the 5-year plan (Activity 1-1～1-5)

33. **Activity 1-1 to 1-5** are related to the formulation of corporate strategies. Currently PAS formulates a single-year investment plan together with a profit/loss forecast for 1 year at the beginning of every financial year. However, PAS has not yet formulated a medium-term (3 to 5-year) management plan on a regular basis, which is a common practice for listed companies in Japan. As the volume of cargo handled has increased sharply in recent years and may exceed the capacity of PAS in future, it is essential for PAS management to formulate capacity measures and investment plans for the next five years. Therefore, in this project, we agreed with PAS that their management strategy should include a five-year medium-term management plan. To realize this, a trial version (a five-year plan from 2019 to 2023 based on the 2018 operation data) was first prepared, and then based on the method established in this project, a five-year plan from 2021 to 2025 was formulated. Technology related to the formulation method was transferred to the PAS Plan Statistics Procurement Department.

- **Activity 1-1: Analyze formulation process of corporate strategy (mainly regarding CT) of PAS considering the similar best practices at other ports**

34. Considering "the strategic pyramid", a broadly accepted framework that shows the hierarchical levels of strategies, it was agreed that PAS needs to have a "value" and a "strategy" in addition to the "mission" and "vision" that PAS had already published on their website. The "value" was then elaborated by PAS itself and posted on its website. On the other hand, PAS noticed that, in the Japanese port sector, there are many listed or public-owned companies which regularly formulate 3 to 5-year management plans with numerical financial targets. PAS regarded this as an example of good practice in terms of the "strategy" as at that time PAS had only been formulating a single-year plan.

35. Issues were identified regarding how to strengthen the market activities of PAS. In this process, since the weekend congestion at Sihanoukville Port was causing a problem, the Team and PAS marketing staff conducted interviews with cargo owners, shipping lines, truck companies etc. in Sihanoukville and Phnom Penh to ask for their cooperation in alleviating the weekend congestion by shifting cargoes to the off-peak time.

- **Activity 1-2: Analyze applicability of corporate strategy formulation process (mainly regarding CT) of some port operation companies (e.g. some Japanese companies)**

36. It was recognized that 3 to 5-year midterm plans are formulated and published on the web sites by many Japanese listed companies in the port sector including Kobe-Osaka International Port Corp., Tokyo Port Terminal Corp., Yokohama Port Corp., Nagoya-Yokkaichi International Port Corp., Nippon Express.

37. It was agreed that PAS should formulate a 5-year management plan as part of its corporate strategy.

- **Activity 1-3 "Systemize formulation process of strategic management (mainly regarding CT) to gain the understanding of shareholders/investors based on the results of 1-1 and 1-2**

38. It was agreed with PAS management that a 5-year plan for 2019-2023 would be formulated as a trial, and the managerial accounting method would be adopted for its formulation and performance monitoring

39. In the 7th dispatch, a trial version of the 5-year plan (plan for 2019-2023 based on the actual financial results of 2018) was formulated. The formulation process was almost systemized at this stage.

40. In the 8th dispatch, the live 5-year plan (plan for 2021-2025 based on the actual financial results of 2020) was formulated, and the technology of formulation was transferred to the Planning-Statistics and Procurement Dept. and Container Terminal Operation Dept. step by step.

41. As it is important for PAS to promote communications with port users (such as shipping lines, agents, forwarders, customs brokers, land transporters, cargo owners, etc.) and reflect their needs in its day-to-day operations and short/mid-term policy making, the experts conducted visits to port users with the Marketing Dept. staff and transferred knowledge to the staff on the key points for interviews (before COVID-19). After COVID-19, the expert and marketing staff made inquiries to the port users mainly by e-mail.

- **Activity 1-4: Develop roadmap to set-up strategic planning department which is responsible for formulating corporate strategy (mainly regarding CT) in PAS**

42. The Expert found that a committee used to be organized in PAS on a temporary basis to develop a managerial data base, but it had already been dissolved. Instead, the Expert confirmed that the Planning-Statistics and Procurement Dept. is the organization in charge of the formulation of mid-term management plans.

43. Therefore, the "Roadmap for the Establishment of Mid-Term Planning Team" was elaborated by the Expert to define the personnel, tasks, delegation of authorities of a new team on assumption that it is established within the Planning-Statistics and Procurement Dept.

- **Activity 1-5: Support setting-up of a strategic planning department in PAS**

44. To standardize the procedures and minimize the workload of the new team, the "SOP for Formulation/Performance Monitoring of 5-Year Management Plan" was elaborated together with the "Roadmap for the Establishment of Mid-Term Planning Team"

4.1.3 Activities for the formulation of SOPs (Activity 1-6）

- **Activity 1-6: Support to formulate Standard Operation Procedures (SOP) for selected departments of PAS as well as support the assessment of organization**

45. In response to the request from PAS management, the expert team reviewed the existing Job Specifications and SOPs regarding the key duties of 7 departments in PAS (as listed in the table below), extracted the issues, and elaborated SOPs including improvement measures in collaboration with the relevant departments.

Department	Duty
Administration & Human Resource Dept.	Human resource development
Planning Procurement & Statistics Dept.	Formulation/performance monitoring of 5-year management plan
Marketing Dept.	Marketing
Business Dept.	Billing
Container Terminal Dept.	Container terminal operations
General Cargo Dept.	General Cargo Operation
Technical-Materials Dept.	Preventive maintenance of equipment
Construction-Engineering Dept.	Construction/maintenance of facilities,

4.1.4 Formulation of a facility investment plan for medium/long-term (Activity 1-7)

46. Through the exchange of opinions and discussions with the Department of Technical-Materials and Construction-Engineering, the following investment plans for the next five years was created and have been updated.

Development Timeframe up to 2025 (Draft)

: Preparation Work
: Development / Construction
: Operation for Container Handling
: Operation for GC handling

20/Dec/2021

Facility		Ground Slots/Units	Description	Remarks
Quay No.6			Extension of QC Rail	JICA Yen Loan
Quay No.5 / Multi-Purpose Berth				
Yard including outside	Yard C (7.7ha)	2,300	for Laden C (RTG)	
	Yard B (2.6ha)	800	for Laden C (RTG)	
	Yard A (2.8ha)	450	for Laden C (RS) ⇒ RTG yard	Pavement Improvement PAS Finance
	Yard D (1.8ha)	600	for Laden C (RTG)	
	Yard A' (1.6ha)	450	for Laden C (RS) ⇒ RTG Yard	
	Yard E (1.8ha)	-	for General Cargo	
	Yard F (1.5ha)	400 ⇒ 0	for Long-stay C (RS) ⇒ for General Cargo	
	Yard B' (No.5 W/H) (0.7ha)	220	for Laden C (RTG yard)	PAS Finance
	Yard-T (Rail terminal)	80	for Railway / Long-stay C (RS)	
	Yard in Multi-purpose Terminal	-	for General Cargo / Long-stay C (RS)	
	Yard S (SEZ) (4ha-->6ha)	1,100	for Empty C (RS)	(PAS Finance) Cross-mixing pavement
Handling Equipment	QC # of operable QCs	4⇒5⇒6	Installation of additional QCs	PAS Finance
	RTG # of operable RTGs	14⇒16⇒20	Installation of additional RTGs	PAS Finance
	MHC (Mobile Harbor Crane)	2⇒4	1 unit is out of order.	Grant Aid
	Reach Stacker	19		PAS Finance
	Yard-Trailer	34⇒38		PAS Finance
Vessels	Tug Boat	6	3200HP(1), 1900HP(1), 1600HP(2), 800HP(2)	PAS Finance
New Container Terminal 1		Civil	1 berth (350m)	JICA Yen Loan
		Equipment	3 QCs, 9 RTGs, 16 Yard-trailors, 2 RSs	JICA Yen Loan
New Container Terminal 2 & 3		Civil	NCT2: 1 berth (400m) NCT3: 1 berth (430m)	JICA Yen Loan
		Equipment	NCT2: 3 QCs, 10 ARTGs, 17 Yard-trailors, 2 RSs NCT3: 3 QCs, 10 ARTGs, 17 Yard-trailors, 2 RSs	
Technical Cooperation Project		Improve management and operation of the Container Terminal		JICA Grant

4.2 Activities for Output 2

- Container handling capacity will be maximized by enhancing CTMS operation capacity.

4.2.1 Activity 2-1 Examine and analyze causes of congestion at gate, traffic flow congestion inside/outside CT

47. During the 1st and 2nd dispatches, the Team examined the reception procedure for container receiving and delivery at the terminal gate. The study includes the procedures not only by PAS but also by Customs, CAMCONTROL, and immigration police. The Team conducted observations and interviews of Gate clerks, checkers, the forwarders, etc. Finally, the team prepared the following documents.

    - Operation flow of the gate procedures (export full receiving, empty receiving, import full delivery, empty delivery)
    - The list of documents required by PAS and other authorities for each type of operation

48. After the 2nd dispatch, the Team examined the traffic flow of trailers mainly inside the container yard based on the above documents. After identifying issues, measures were proposed at the workshop conducted during the 2nd and 4th dispatches. The Team discussed the measures with PAS at the workshops. (The causes of congestion in front of the Gate-3 are: Existence of improper document trailer, gate processing capacity, checks conducted by police and customs in front of the gate. Therefore, countermeasures to prevent traffic congestion in collaboration with related organizations such as MPWT, police, trucking association were discussed.)

4.2.2 Activity 2-2 Analyze operational conditions of CT by making full use of CTMS

49. PAS utilized almost all the functions of CTMS except for the work instruction control function in vessel loading operation at the beginning of the project. The Team advised PAS to utilize the function for vessel loading operation and PAS started to use it in July 2021.

50. The Team observed container handling operations daily at site, identifying issues, and examining the countermeasures during every dispatch. The issues and their countermeasures were presented at the workshop and discussed with PAS in every dispatch.

51. During and after the 5th dispatch, the Team also took video of the vessel/yard operations from the sky using a drone.

52. Finally, the countermeasures presented at the workshops were documented as the proposal for improving the efficiency and safety of container handling operation.

4.2.3 Activity 2-3 Develop staff-enhancement plan of PAS to make full use of CTMS after installation of additional QGCs and RTGs.

53. The Team examined the operational status and the instruction flow of container handling operation conducted by PAS. The Team found that container handling operation is not efficient because the instruction is field driven rather than Control Center- driven. Therefore, the Team proposed PAS to strengthen the Control Center at the workshop conducted during the 3rd dispatch.

54. Around the 5th dispatch, the efficiency of container handling operation rapidly worsened and many vessel stagnations occurred due to the rapid increase in the number of containers in the yard. To address this issue, PAS newly established the Operation Steering Group in the Container Terminal Operation

Department in order to enhance the functions of the Control Center and to support them. This resulted in a significant improvement in the container handling efficiency. The Team followed up the change in the instruction flow of container handling operation which has been conducted by PAS.

4.2.4 Activity 2-4 Implement on-the-job-training to make full use of CTMS based on the staff-enhancement plan

55. The Team has examined if there is any CTMS data which can be used for representing the operational status of PAS throughout the project. As a result, the Team found that the CTMS data is very useful for calculating the KPI value such as container dwell time, turnaround time of trailers, and the other values for representing the daily operational status. The Team first developed and accumulated programs using the query language of the database, and finally developed the dedicated program for directly calculating the KPI value for PAS. The program can be used even by a person who has no knowledge of software programing nor database query language.

56. Based on the activity above, the Team prepared the CTMS Extended Usage Manual as one of the deliverables.

4.2.5 Activity 2-5 Support to formulate Standard Operation Procedures (SOP) in each cargo handling department.

57. The Team prepared the draft of the SOP for the following two departments. These SOP were prepared based on the observation at site and the offices in PAS and interviews of PAS staff for the activities 2-1, 2-2, and 2-3.

- Container Terminal Operation Department
- General Cargo Operation Department

4.3 Activities for Output 3

- Entry and exit control and traffic flow management in port premises (including CT, rail yard and multi-purpose terminal) will be implemented.

4.3.1 Entry / exit control operation plan related (Activity 3-1 and 3-4)

4.3.1 (1) Issues related to Access Control

58. Together with Activity 2-1, the Team observed the status of vehicle access control at the gates and conducted interviews with personnel to identify issues with gate operations.

59. During the 2nd dispatch, a survey of vehicles other than cargo handling vehicles was carried out on the premises on August 23rd (Thursday), 24th (Friday), 30th (Thursday) and 31st (Friday). The results allowed the Team to grasp the number of unauthorized vehicles (mainly motorcycles) entering the yard. After sharing this information with related organizations in PAS at the Working Group Meeting, the Team proposed to PAS that vehicles and motorcycles other than permitted vehicles should be prohibited from entering through Gate 3 and the passage next to the PAS office, and also proposed that vehicles entering from Gate 2 should be limited to pre-authorized motorcycles and vehicles.

60. The number of motorcycles which entered the premises was surveyed for a total of 6 hours, 3 hours in the morning and 3 hours in the afternoon. It was found that around 230 motorcycles of customs brokers came in and out per hour (1,361 times in total). Many motorcycles come and go from Gate 3.

This creates a dangerous situation as the motorcycles pass in close proximity to trailers. Moreover, the motorcycles often stop in the lanes designated for RTGs and trailers which hinders operations.

61. Following the proposal of the JICA Team, PAS published the “Announcement on Traffic limitation for using entry-exit gate in PAS of Broker Agencies that process the formalities and import-export clearance” in September 2018.

4.3.1 (2) Develop operation plan of entry and exit control

62. Measures to solve the problems of entry / exit control include simplifying the procedures and entry / exit conditions of each institution, introducing a pre-examination system, and flexibly changing the number of operating lanes and operating hours. The Team decided to incorporate improvement measures that PAS could independently introduce, and created an entry / exit control operation plan (draft) that summarizes the tasks to be conducted by each organization.

4.3.1 (3) Implement operation plan and develop roadmap of entry and exit control

63. The Team surveyed the number of motorcycles and cars entering the premises at three locations, Gate 2, Gate 3 of PAS, which is the entrance for motorcycles and cars, and the passage next to the PAS office. The Team created a “A Guideline for Entry and Exit Control” (Stage 1) to limit the number of motorcycles and cars entering the container terminal, and proposed that PAS adopt it as part of its standard operations.

64. The Team expanded the container operation area to Yard C and Yard B, conducted a monitoring survey of motorcycles entering this area, and set a baseline indicator (KPI) for the container cargo handling area.

65. The team created a vehicle entry / exit control operation plan (draft) "Guidelines for entering the Container Operation Area (Stage 2)” and submitted it PAS. Based on this, the Team made efforts to implement the operation plan for the container operation area (Yard C and Yard B) with the cooperation of the Security Department and the Operation Department.

4.3.2 Multi-purpose Terminal container operation plan (Activity 3-2 and 3-5 (Original))

4.3.2 (1) Usage status of Multi-purpose Terminal

66. Before the visit, the Team thought that it might be possible to use the Multi-purpose Terminal as a temporary container storage area since the current container storage area is unable to accommodate the increasing handling volume. Moreover, PAS had already used a part of the multipurpose terminal as a temporary storage place for containers. Therefore, in order to clearly grasp the current problem, the Team conducted a field survey on the usage status of the container terminal.

4.3.2 (2) Examination of Operation Plan of Multi-purpose Terminal

67. Based on the survey mentioned above, the Team examined a provisional multipurpose terminal operation plan (layout, cargo handling method, etc.).

68. However, during the 4th dispatch period, PAS indicated that the Multipurpose Terminal should not be used as a container storage place in principle in light of the increase in the handling of general cargo. For this reason, both sides confirmed that a container operation plan for the multipurpose terminal would not be necessary. It was agreed instead to "Implement an operation plan for an empty container

yard as a trial and develop a roadmap for full-scale operation".

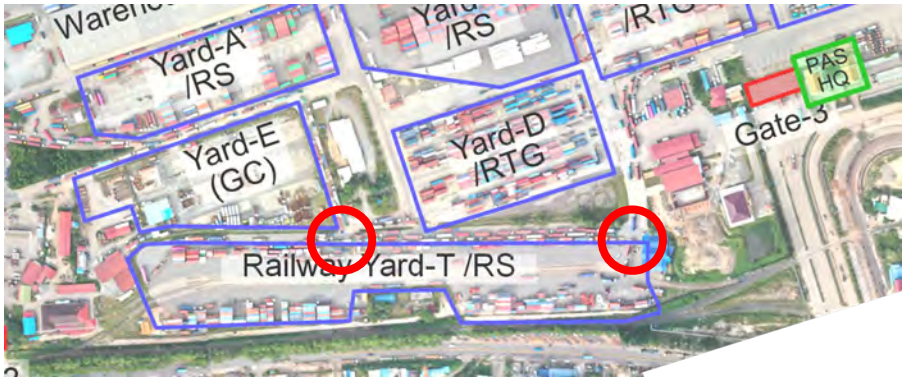
4.3.3 Empty Container Yard operation plan related (Activity 3-5 (After change))

69. Based on PAS's policy regarding the container storage location, the Team examined the operation plan of a container yard including the storage plan of empty containers (including empty containers and actual containers) corresponding to the container handling volume of 800,000 TEU. The Team then explained the plan to the Container Operation Department of PAS and recommended that it be adopted.

4.3.4 Rail Yard container operation plan related (Activity 3-3, 3-6)

4.3.4 (1) Grasp the actual status and organize problems of container operation in the Rail Yard

70. During the third dispatch period, a radiation detection device was installed as per national requirements together with a guard rail and two management gates which were only 3.2m and 3.5m wide. This was an additional factor that had to be considered when examining whether the Rail Yard area could be used as a storage place for empty containers and long-stay containers.



71. By surveying the current cargo handling procedures and methods for export containers in the Rail Yard, it was found that inefficient cargo handling methods were being employed and the layout of the container yard was not optimal. It was also found that trains between Phnom Penh ICD (Inland Container Depot) and Sihanoukville Port CT were not punctual, schedules changed frequently, and also it took time to confirm the container data.

4.3.4 (2) Develop and try to implement operation plan and develop roadmap of Rail Yard

72. Based on the above survey and analysis, the container operation plan "Rail Yard Operation Plan" for the railway yard was presented to the Operation Department. Based on this, the Operation Department redesigned the container storage layout of the Rail Yard, put into practice the container storage plan of the Rail Yard, and increased the number of ground slots. The early disposal of long-stay containers by the Customs has also helped the Operation Department improve the layout of the storage area.

4.4 Activities for Output 4

- **Incoming/outgoing traffic flow congestion will be mitigated at gate as well as outside of Sihanoukville Port premises**

4.4.1 Summary of Activities

73. At the 1st and 2th dispatch, to fully grasp congestion in front of the gate the team surveyed the number of queuing trailers, the length of congestion, the processing time at the terminal gate and the time to

pass through the gate. Initial and target values of the number of trailers waiting and trailers passing through the gate, which were indicators of Output 4, were presented to the PIU, which approved them.

74. Based on the fact that the number of trailers with incomplete documentation was low (less than 1%) in the baseline survey in the first year, changes were made to the PDM. During the 4th to 6th dispatch, the congestion on the off-port roads was predicted based on the baseline survey, the use of the off-dock yard and the assumption of the gate traffic when the container handling volume increases. To address the congestion, the Team held discussions with PAS on how to simplify procedures and on the use of Gate 2. The Team also discussed the effects and challenges of the countermeasures.

75. During the approximately one-year period when travel was not possible due to the COVID-19 pandemic, PAS's yard development progressed, and the traffic survey suggests that the traffic volume has decreased due to the impact of Yard S, an empty container yard in SEZ. In addition, we discussed with PAS about the effects and issues of the use of the gate, assuming the road traffic and gate traffic when the container handling increases.

4.4.2 Support for the design of a system to publish the operating status of container terminals on a web system, and the development of a roadmap for the full-scale operation of the system（Activity 4-1，4-2）

76. At the 4th dispatch, it was decided that a system to publish the operation status information on the web would be examined after the 5th dispatch. However, in 2020, when the field work was suspended, it became clear that the PAS would not be ready in time for the establishment of a public information system on the Web. The team decided to support the establishment of a smartphone-based gate procedure system as a preliminary step instead of the web on a PC.

77. At the 6th dispatch, the Team supported PAS in designing and developing the system to simplify the terminal gate procedures using smartphones. The Team tried to expand the system to include a function for publishing the operating status of the container terminal.

78. The Team continued to support PAS in implementing the system. However, the Team’s efforts have been limited to assisting with the gate simplification system because it has been difficult to travel to Cambodia due to the Covid-19 pandemic.

4.4.3 Preliminary design off-dock yard as pre-screening system of improper document trailers (IDT), trial pre-screening system with waiting area for IDT, and develop roadmap to full-scale operation（Activity 4-3，4-4）

79. During the first and second dispatch, a baseline survey was carried out (measuring the number of congested trailers, length of congestion, gate processing time, etc.) in order to assess the congestion in front of the gates and set indicators, and based on the results, target values were defined and presented to the PIU for approval. At the third dispatch, a special team was formed to deal with traffic congestion in PAS, and it was confirmed that the proposed measures had been effective in reducing traffic congestion, particularly on Saturday mornings.

80. In the second year, changes were made to the PDM based on the fact that the baseline survey in the first year showed a small number of trailers with incomplete documentation (less than 1%). After confirming that the congestion was reduced in the baseline survey conducted for the 4th to 6th

dispatch, the traffic congestion at the gates and on the road traffic outside the port was predicted when the container handling volume increases, and the possibility of speeding up and simplifying the gate procedures and using gate 2 as a countermeasure plan was discussed with PAS. In addition, during the 5th dispatch, the outline of the use of the PAS site, located about 25 km from the SHV port, as an off-dock yard was examined and discussed with PAS.

81. From the third year onwards, due to the impact of COVID-19, travel to Cambodia was not possible for a period of approximately one year. During this period, PAS launched several initiatives such as the expansion of the RTG yard at the existing terminal, the establishment of a new yard for empty containers in the SEZ and the further reduction of gate processing times, which eased the congestion at the gate. At the 8th and 9th dispatches, the Team confirmed that the gate handling was smooth and efficient. In the future, congestion due to increased container handling is a concern, and the main line of movement for trailers is likely to change with the opening of the motorway. Accordingly, discussions were held with PAS on how to deal with this.

4.4.4 Propose countermeasures to cope with the increase of container handling up to 800,000 TEU, and support its implementation（Activity 4-5）

82. This activity was added in view of the fact that, although container volumes are expected to grow steadily in the future, it will take several years before the new container terminal is put into service, and therefore measures are needed to prevent significant congestion in front of the current gates, even when container handling increases. Since the 5th dispatch, the congestion situation under the future increase of container handling (800,000TEU) has been predicted and feasible congestion measures have been proposed.

4.5 Activities for Output 5

4.5.1 Summary of activities

83. As for Output 5, JICA experts have been trying to transfer the technology of the port EDI system through workshops before the start of the system development and deepen PAS’s understanding of the port EDI system based on the progress of the "The Project for Port EDI for Port Modernization (G/A concluded 26 February 2019) " (hereinafter referred to as the Port EDI Project) system development. JICA experts and PAS counterpart personnel have also discussed the arrival and departure of vessels using the port EDI system as well as the handling of statistical information on vessels.

84. During the dispatch from 26 May to 14 June 2018, in addition to holding a workshop JICA experts had meetings with the Project Manager, Team D (in charge of Port EDI), the Harbor Master, the Planning and Statistics Department, PAS/ CIQ, and the Container Terminal Department. JICA experts collected information on vessel arrival / departure procedures and container statistics and reported our findings to the Team D leader and JICA long-term experts. JICA experts had a meeting with MPWT officials in Phnom Penh to collect information and exchange views on the Task Force and other issues.

85. During the dispatch from 12 December to 26 December 2019, the JCC confirmed the status of "The Project for Port EDI for Port Modernization”. JICA experts gave a lecture and exchanged views on the baseline of Output 5 and the significance of the port EDI system with PAS counterpart personnel at the Team D meeting/workshop and reported the results to the JCC. In Phnom Penh, JICA experts exchanged views on the port EDI system development project with MPWT personnel.

86. During the dispatch from 11 January to 11 February 2021, individual meetings were held with each department involved in the workshop for confirming statistical work and collecting statistical data provided independently by each department. The materials created by each department are submitted to the department in charge of statistics.

87. During the dispatch from 22 July to 4 August 2021 (except for the quarantine period), a meeting attended by all concerned parties was held to exchange views on the issues for PAS related to the development of the port EDI system. The Team D meeting was held to confirm the current status and future plans of PAS efforts corresponding to the development of the port EDI system. A workshop on the use of information from the port EDI system for port statistics was held. JICA experts collected information necessary for the drafting "Guideline to Compile Calling Vessel Statistics via Port EDI System (hereinafter referred to as the Statistics Guideline)" and exchanged views with statisticians of PAS. In addition, JICA experts exchanged views with members of IT Department on data interchange between the port EDI system and PAS's CTMS. In Phnom Penh, JICA experts exchanged views with MPWT on the development of the port system and discussed port statistics with MPWT and PPAP.

88. During the dispatch from 3 December to 27 December 2021, meetings with relevant parties were held to share the latest situation of the development of the port EDI system, to carry out the desktop study, and to exchange views on the use of information from the port EDI system for port statistics.

89. The start of the development of the port EDI system was delayed, so the basic information on port EDI was studied in the first dispatch. Activities in the sixth dispatch focused on deepening the understanding of the port EDI system. After the sixth dispatch, due to the COVID-19 pandemic, JICA experts conducted the works in Japan since travel to Cambodia was not possible. The works in Cambodia resumed in February 2021 for the seventh dispatch (followed by the eighth and ninth dispatches).

＜Dispatch＞

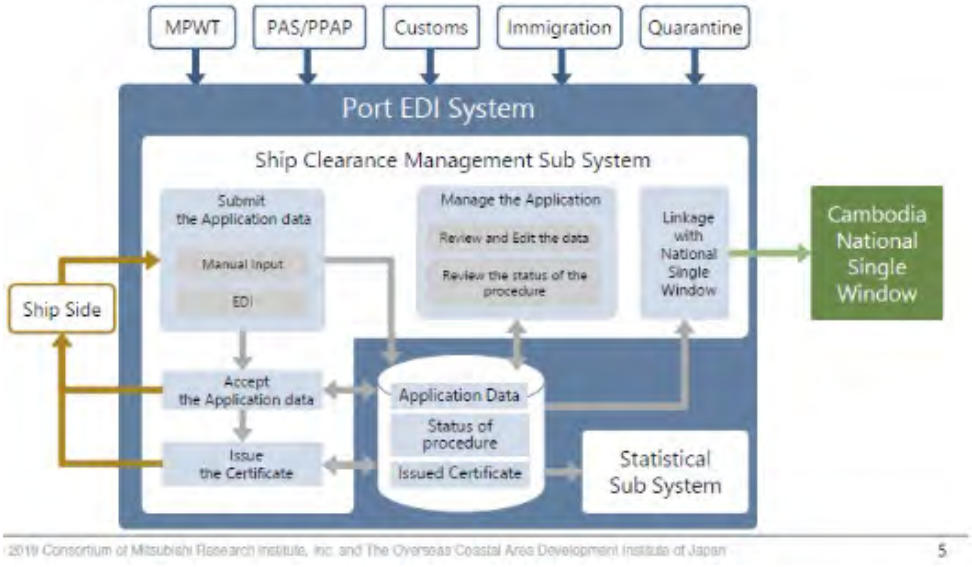
	1st year	**2nd year**	**3rd (4th) year**		
	1st dispatch	**6th dispatch**	**7th**	**8th dispatch**	**9th dispatch**
Activity 5-1	・ Exchange of views on the direction of study with MPWT	・ Exchange of opinions on the activity plan of the Task Force meeting	・	・ Sharing of the status of Task Force activities	・
Activity 5-2	・ Collection of information on PAS port procedures ・ Support for understanding of port procedures ・ Support for understanding of port EDI system	・ Gathering information on PAS port procedures ・ Assistance in understanding port procedures ・ Understanding of Port EDI System ・ Study of port EDI procedures ・ Support for port EDI procedures	・	・ Support for the implementation of port EDI procedures	・ Support for the implementation of port EDI procedures

	1st year	2nd year	3rd (4th) year		
	1st dispatch	**6th dispatch**	**7th**	**8th dispatch**	**9th dispatch**
Activity 5-3	・	・ Organization of statistical data formats and management	・ Guidance on understanding the necessity and importance of statistics ・ Organization of PAS statistical items ・ Organization of PAS statistical work	・ Support for improvement of statistics ・ Organization of port EDI system information items ・ Study and support for the use of port EDI system information	・ Development of guidelines ・ Support for the development of PAS statistics ・ Study of statistics based on port EDI

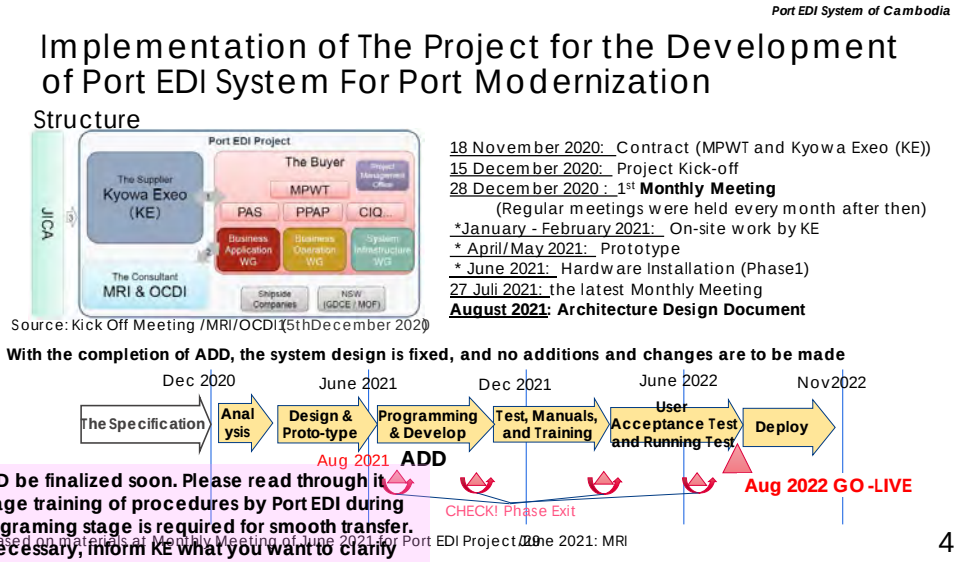
4.5.2 Activities related to the Port EDI Task Force（Activity 5-1）

- Activity 5-1：Assist Port EDI taskforce (PAS, MPWT) to appropriately introduce and operate Port EDI for vessel arrival / departure procedure

90. The discussions at the kick-off meeting of the Port EDI Project and the monthly meetings held thereafter were followed up at the meetings with PAS personnel. JICA experts also introduced Japan's experience in port EDI to enhance the knowledge of relevant staff.



Source: The kick-off meeting of the Port EDI Project Concept of Port EDI System under development

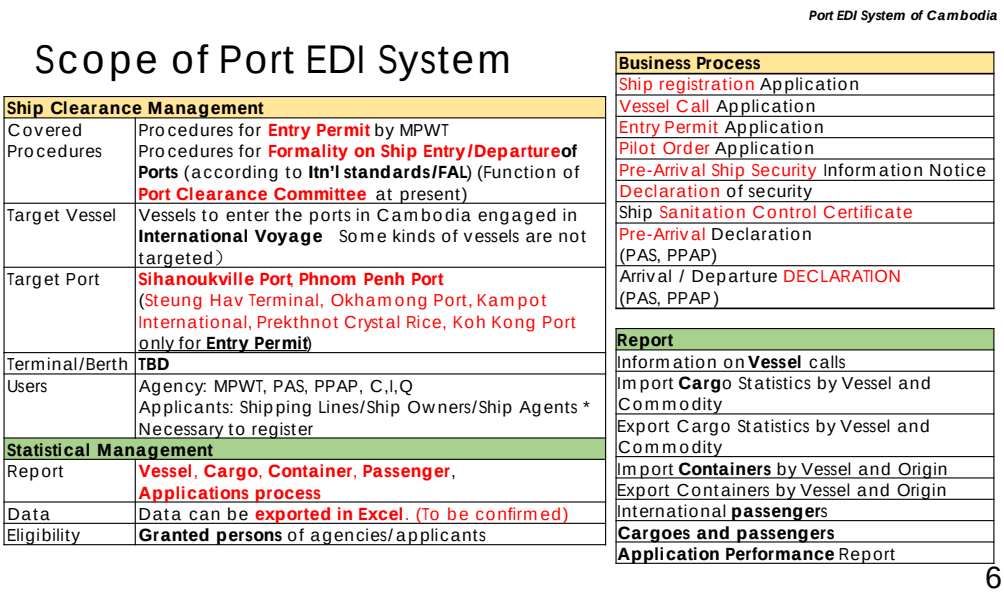


Source: prepared from materials monthly meetings of the Port EDI Project Timeline of the Port EDI System Development

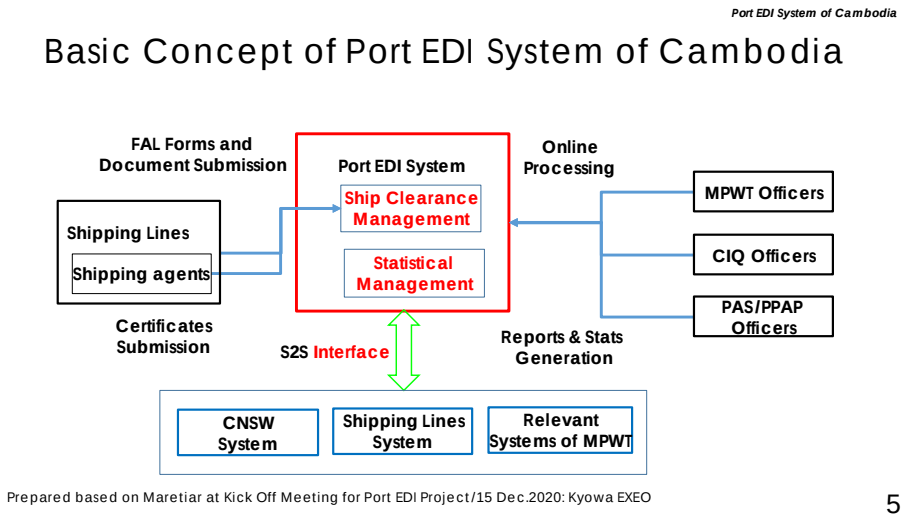
4.5.3 Activities related to the elimination of paperwork after port EDI implementation（Activity 5-2）

- Activity 5-2： Document procedure of vessel arrival/departure will be eliminated soon after Port EDI is introduced

91. PAS staff were made aware of the overall procedures of the vessel arrival/departure procedures using the port EDI system. Due to the delay in the development of the port EDI system, it was not possible to conduct a trial of the procedures for ships using the port EDI system. However, PAS personnel understand how to implement vessel arrival/departure procedures smoothly once operation begins based on the knowledge acquired in the Project (such as studying the Architecture Design Document etc.).



Source: prepared from materials monthly meetings of the Port EDI Project



Source: prepared from materials monthly meetings of the Port EDI Project

4.5.4 Activities on guidelines for the production of port statistics via port EDI data（Activity 5-3）

- Activity 5-3：Develop guideline to compile calling vessel statistics via Port EDI data

92. In order for PAS staff to enhance their knowledge of statistics and effectively use of them in port management and operation, JICA experts introduced the method to compile port statistics using data from the port EDI system and prepared the Statistics Guideline which describes how to compile data and organize port statistics. A trial of the statistical work could not be implemented because of the delay in the development of the port EDI system, but the work can be conducted in accordance with the guidelines.

93. JICA experts identified and organized the items of statistical data currently produced by PAS and the details of the work and system for producing statistical data. During the 7th dispatch, workshops and individual meetings were held with departments involved in statistical work to collect and review the statistical data produced by each department and the basic materials provided by each department to the Statistics Division for use in the preparation of PAS statistics.

94. A workshop was held during the 8th dispatch to impress upon PAS members that the roles and workflows of the relevant departments involved in PAS statistical works had not significantly changed after the introduction of the EDI system. JICA experts explained the scope of data to be used for the statistics and the guidelines on the use of data from the port EDI system. Data acquisition from the port EDI is categorized into four items: vessel information, passenger information, cargo information, and container information. Of these, it was confirmed that vessel information will be targeted at the beginning stage of the port EDI system operation, and that the remaining cargo, passengers and container information will be incorporated based on the experience for vessel statistics. JICA experts also advised them to make discussions on how to share the data captured by the port EDI system among relevant departments including IT Department and how to link with the CTMS and SWSS operated by PAS to capture digital information on cargo and containers.

95. JICA experts have prepared the Statistics Guidelines based on the present situation of PAS statistics and the structure of the data provided by the port EDI system.

5. Project Management (Key Performance Indicators : KPIs)

5.1 Outline of Indicators

96. The progress and results of the Project were confirmed by both parties (PAS and JICA expert team) with the project progress report submitted at the end of each dispatch in the light of verifiable indicators described in PDM as well as Key Performance Indicators (KPIs) which were set at the 2nd JCC meeting based on the baseline survey.

Table 5-1 Verifiable Indicators for the Goal, Purpose and Output

Goals, Purpose and Outputs	Objectively Verifiable Indicators
Overall Goal	
Modernized Corporate strategy (mainly Container Terminal (CT)) of PAS will contribute to trade promotion in Cambodia.	Annual container throughput of Sihanoukville Port will exceed 800,000 TEUs in 2023.
Project Purpose	
Capacity of business operation (mainly CT) of corporatized PAS will be enhanced.	Annual container handling capacity of Sihanoukville Port will be enhanced.
Outputs	
1. Capacity to formulate corporate strategy (mainly CT) of PAS will be enhanced.	1.1 Corporate strategy will be submitted to the shareholders/Investors 1.2 Decision making procedure and approval standard is authorized. 1.3 A medium/long-term facility investment plan for container terminals is formulated.
2. CTMS operation capacity will be enhanced.	2.1 Dwelling time of import containers will be shortened. 2.2 Dwelling time of export containers will be shortened. 2.3 Berthing / Time of vessels will be reduced.
3. Entry and exit control and traffic flow management in port premises (including CT, rail yard and multi-purpose terminal) will be consistently implemented.	3.1 Vehicles and motorcycles other than container trailers will not enter CT. 3.2 Turn Around Time of Trailers will be reduced.
4. Incoming/outgoing traffic flow congestion will be mitigated at gate as well as outside of Sihanoukville Port premises.	4.1 Waiting trailers in front of the terminal gate will be reduced. 4.2 Gate processing time will be reduced.
5. Vessel arrival/departure procedure will be improved via. Port EDI.	5.1 Vessel arrival/departure procedure will be electronically processed by Port EDI. 5.2 Calling vessel statistics will be prepared through Port EDI.

Table 5-2 Key Performance Indicators (KPIs)

Output	Objectively Verifiable Indicator (as per the PDM)	KPI	Baseline (Dec 2018)	Target
Output 2-1	Dwelling time of import containers will be shortened.	Import Container Dwell Time	Full: 4.5 days Empty: 4.2 days	Full: 4 days Empty: 4 days
Output 2-2	Dwelling time of export containers will be shortened.	Export Container Dwell Time	Full: 3.4 days Empty: 10.0 days	Full: 4 days Empty: 6 days
Output 2-3	Berthing time of vessels will be reduced	Berth Productivity	QGC: 20.2 moves/hr Vessel: 30.1 moves/hr	QGC: 25 Vessel: 40
Output 3-1	Vehicles and motorcycles other than container trailers will not enter the container terminal	Number of Vehicles other than Container Trailers	Gate-3: 274 units Passage: 519 units	None (all from Gate-2)
Output 3-2	Turn Around time of trailers	Turn Around Time of	Receiving: 41.4 min	Rec: 30 min

Output	Objectively Verifiable Indicator (as per the PDM)	KPI	Baseline (Dec 2018)	Target
	will be reduced	Trailers	Delivery-A: 53.6 min Delivery-B: 300.7 min	Del-A: 40 min Del-B: 200 min
Output 4-1	Waiting trailers in front of the terminal gate will be reduced	Number of Waiting Trailers	123 trailers	60 trailers
Output 4-2	Trailers passing the gate will be increased	Number of Trailers Passing Gate	80 trailers/hr	104 trailers/hr

5.2 Output 1

97. The Objective Verifiable Indicators for the corporate strategy in PDM are stipulated as "Corporate strategy will be submitted to the shareholders/ Investors". The 5-year plan formulated in this project assumed a large amount of investment for the additional cargo handling equipment and civil works to secure sufficient operational capacity. Consequently, in the 5-year plan, the growth in operating income was rather small compared to the increase in cargo volume. In addition, some deficits were made by some business sectors. In this context PAS was cautious about disclosing this plan to the shareholders and investors. The expert team didn't have sufficient time to reach a consensus with PAS regarding this issue due to the constraints of the COVID-19 pandemic.

5.3 Output 2

98. As for the verifiable indicators 2.1 and 2.2, import container (full) dwell time is 107 % and export container (full) dwell time is 199% compared with the initial values when the project was started. The recent increase of the export dwell time was caused by the vessel stagnation due to QGC failures which occurred several times. Considering that the container throughput increased by 40% during the project period, these dwell times are deemed to be reasonable for import container (full and empty) and export empty container. Regarding export full container, further efforts are required to improve dwell time in the Port.

Output	Objectively Verifiable Indicator (as per the PDM)	KPI
Output 2 (1)	Dwelling Time of Import containers will be shortened.	Import Container Dwell Time

Follow-up Survey	
Survey Method	Dwell time of import container is calculated using the history information of CTMS. The import dwell time is calculated from the discharge time of a container from a vessel and its delivered time from the gate. As the KPI, the average dwelll time of import containers delivered for a month is calculated.
Person in Charge	(PAS): Mr. Srey Narin, Mr. Thay Mengly, Mr. Sek Sovannara, Mr. Som Karoney (JICA Expert Team): Mr. Fukazawa / Mr. Kataoka

Compilation Method of Survey Results

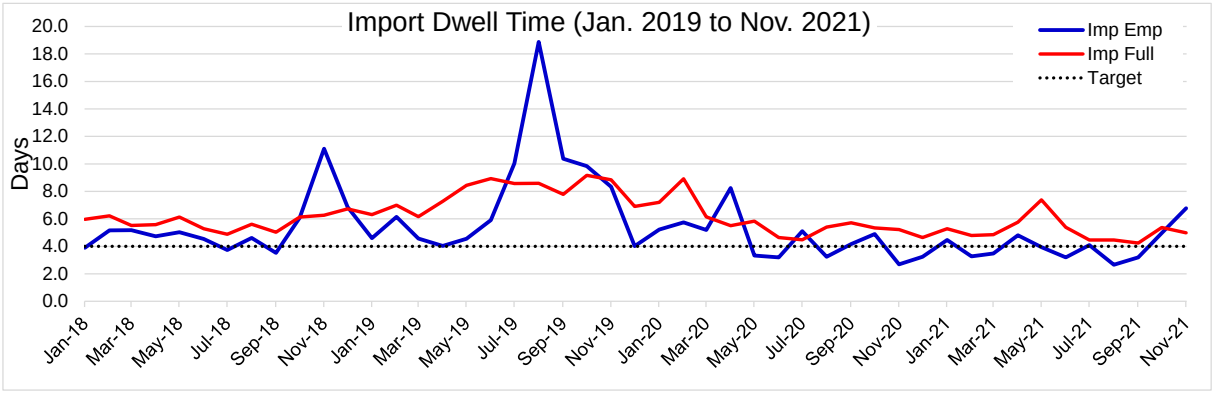
(Results of current survey)

	Jun	Jul	Aug	Sep	Oct	Nov	Average
Empty	3.2	4.1	2.7	3.2	5.0	6.8	4.2
Full	5.4	4.5	4.5	4.2	5.4	5.0	4.8

(Comparison from the begining)

	Baseline	Target Value	Second Survey	Third Survey	Fourth Survey	Current Survey
Import Empty Dwell Time	4.2	4	11.7	4.6	4.0	4.2
Improvement Rate			279%	110%	95%	99%
Import Full Dwell Time	4.5	4	8.7	5.3	5.1	4.8
Improvement Rate			193%	118%	113%	107%

(Improvement Rate = (Surveyed Value/Baseline) x 100)



Output	Objectively Verifiable Indicator (as per the PDM)	KPI
Output 2 (1)	Dwelling Time of export containers will be shortened.	Export Container Dwell Time

Follow-up Survey	
Survey Method	Dwell time of export container is calculated using the history information of CTMS. The export dwell time is calculated from the received time of a container at the gate and its loaded time on a vessel. As the KPI, the average dwelll time of export containers loaded for a month is calculated.
Person in Charge	(PAS): Mr. Srey Narin, Mr. Thay Mengly, Mr. Sek Sovannara, Mr. Som Karoney (JICA Expert Team): Mr. Fukazawa / Mr. Kataoka

Compilation Method of Survey Results

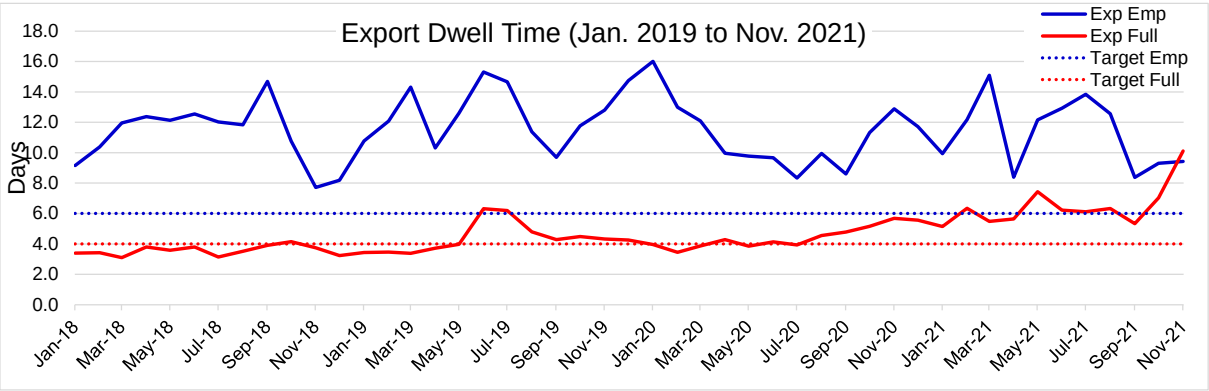
(Results of current survey)

	Jun	Jul	Aug	Sep	Oct	Nov	Average
Empty	12.9	13.8	12.6	8.4	9.3	9.4	11.2
Full	6.2	6.1	6.3	5.3	7.0	10.1	6.8

(Comparison from the begining)

	Baseline	Target Value	Second Survey	Third Survey	Fourth Survey	Current Survey
Export Empty Dwell Time	10.0	6	12.6	9.9	10.5	11.2
Improvement Rate			126%	99%	105%	112%
Export Full Dwell Time	3.4	4	5.1	4.1	5.0	6.8
Improvement Rate			150%	121%	147%	199%

(Improvement Rate = (Surveyed Value/Baseline) x 100)



99. As for the indicator 2.3 of the vessel berthing time, the Team adopted the number of moves per hour by vessel and the number of moves per hour by QGC as KPI. Both of these values have been increased to 135% for the former and to 104% for the latter during the project. The value for the former indicator has already exceeded the target value, 40 moves/hours/vessel and the latter indicator value is approaching the target value, 25 moves/hours/QGC. The Team expects PAS to continue its efforts to improve them.

Output	Objectively Verifiable Indicator (as per the PDM)	KPI
Output 2 (3)	Berthing Time of vessels will be reduced	Berth Productivity

Follow-up Survey	
Survey Method	Berthing Productivity is picked up from the Vessel Schedule List compiled by Container Terminal Operation Department of PAS. Vessel Productivity = (Number of load/discharge moves) / (Berth Time) STS Crane Productivity = (Number of load/discharge moves) / (Operation Time of Cranes) The monthly average Berth Productivity is calculated as the KPI.
Person in Charge	(PAS): Mr. Srey Narin, Mr. Thay Mengly, Mr. Sek Sovannara, Mr. Som Karoney (JICA Expert Team): Mr. Fukazawa / Mr. Kataoka

Compilation Method of Survey Results

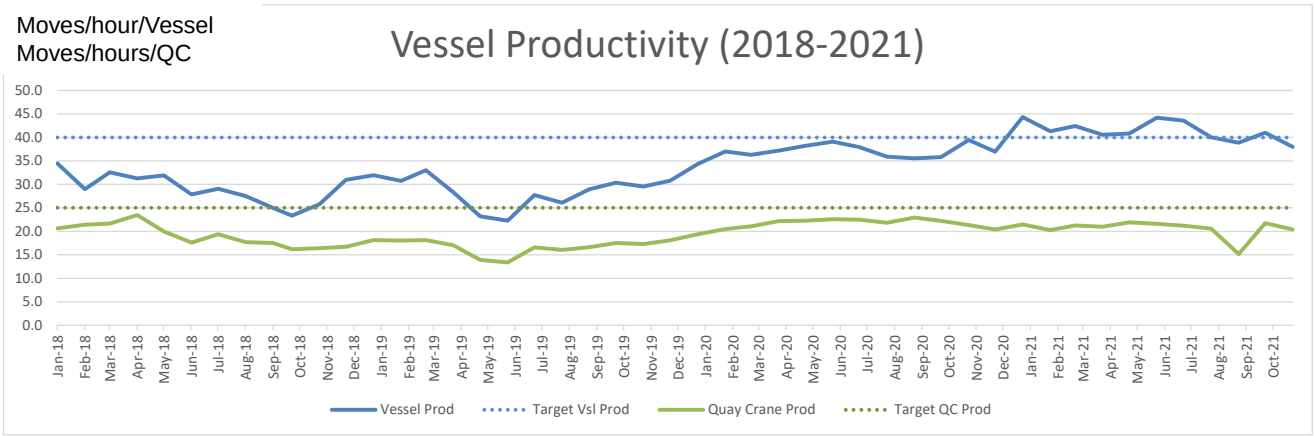
(Results of current survey)

	Jun	Jul	Aug	Sept	Oct	Nov	Average
STS Crane	21.6	21.2	20.6	15.1	21.7	20.4	40.8
Vessel Prod.	44.2	43.6	40.0	38.9	41.0	38.0	21.1

(Comparison from the begining)

	Baseline	Target Value	Second Survey	Third Survey	Fourth Survey	Current Survey
STS Crane Productivity	20.2	25	16.1	22.1	21.8	21.1
Improvement Rate			80%	109%	108%	104%
Vessel Productivity	30.1	40	27.2	37.4	36.9	40.8
Improvement Rate			90%	124%	123%	136%

(Improvement Rate = (Surveyed Value/Baseline) x 100)



5.4 Output 3

5.4.1 Entry / exit control

100. Regarding "Vehicles / motorcycles not related to container operations (document delivery person, etc.) are restricted from entering the container terminal to a certain extent." of Verifiable Indicators 3-1, all units were set to zero (0) as shown below, and monitoring surveys were conducted during site dispatch thereafter based on the baseline survey and discussions with PAS at the Workshop on September 19, 2018. Regarding this, the Team created “A Guideline for Entry and Exit Control (Stage 1)” for cars

and motorcycles entering from Gate 3, Gate 2 and the passages next to the maintenance shop, and then presented it to PAS.

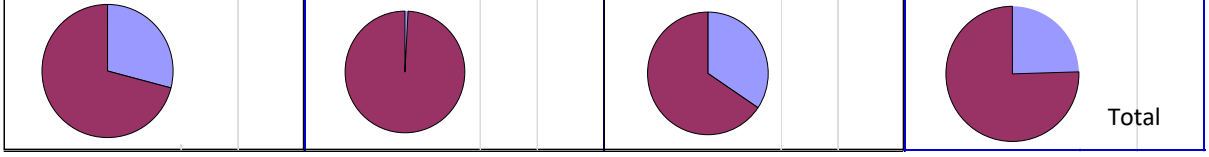
Output	Objectively Verifiable Indicator (as per the PDM)	KPI
Output 3	Vehicles and motorcycles other than container trailers will not enter the container terminal	Number of Vehicles other than Container Trailers

Baseline Survey	
Survey Method	· The number of cars and motorcycles entering the port from gate 2, 3 and passage next to PAS admini. Buil. Total of 6 days (3 hours in the morning and 3 hours in the afternoon) were surveyed in collaboration with the security section of PAS. · At the same time, purposes for cars/motorcycles entering the port were grasped.
Person in Charge	(PAS): Capt. Thong Viro, Mr. Nhem Pisey, Mr. Kong Vibol (JICA Expert Team): Susumu Kimura, Yukihiro Matsumoto

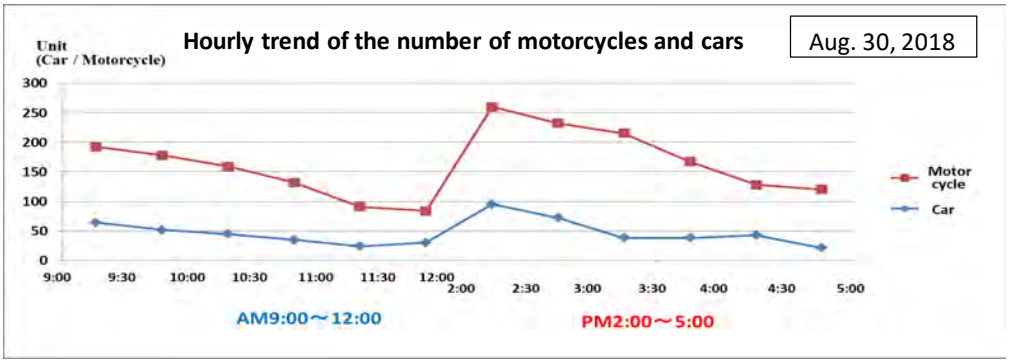
30 August 2018（Baseline）

Survey Date		24-May		25-May		Aug. 23		Aug. 24		Aug. 30		Aug. 31		Average	Average	Baselime	Target
		Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	%	%
Gate 2	Car	259	56.3	285	69.2	234	61.1	283	61.0	351	63.0	278	59	282	61.7	61.7	100.0
	Motorcycle	775	47.5	822	66.2	664	61.1	704	54.3	683	48.8	740	51	731	54.9	54.9	100.0
	Sub-Total	1,034	49.5	1,107	66.9	898	61.1	987	56.1	1,034	52.8	1,018	53	1013	56.6	56.6	100.0
Gate 3	Car	6	1.3	0	0.0	3	0.8	2	0.4	2	0.4	2	0	3	0.6	0.6	0.0
	Motorcycle	436	26.7	128	10.3	160	14.7	259	20.0	317	22.6	331	23	272	19.6	19.6	0.0
	SubTotal	442	21.1	128	7.7	163	11.1	261	14.8	319	16.3	333	17	274	14.8	14.8	0.0
Passage	Car	195	42.4	127	30.8	146	38.1	179	38.6	204	36.6	188	40	173	37.8	37.8	0.0
	Motorcycle	420	25.8	292	23.5	262	24.1	333	25.7	401	28.6	369	26	346	25.6	25.6	0.0
	Sub-Total	615	29.4	419	25.3	408	27.8	512	29.1	605	30.9	557	29	519	28.6	28.6	0.0
Total	Car	460	100.0	412	100.0	383	100.0	464	100.0	557	100.0	468	100.0	457	100.0	100.0	100.0
	Motorcycle	1,631	100.0	1,242	100.0	1,086	100.0	1,296	100.0	1,401	100.0	1,440	100.0	1349	100.0	100.0	100.0
	Total	2,091	100.0	1,654	100.0	1,469	100.0	1,760	100.0	1,958	100.0	1,908	100.0	1807	100.0	100.0	100.0

AVARAGE											
287	29%	61%	2	1%	0%	179	34%	38%	468	26%	100%
698	71%		267	99%		341	66%		1,306	74%	
984			269			521			1,774		



Current Situation of Car & Motorcycle



101. Monitoring results indicate that the number of motorcycles and cars entering from Gate 3 and the passage next to the maintenance shop gradually decreased in the 1st, 2nd, and 3rd survey columns in the table below. In particular, the target value for the number of cars entering to the terminal has been achieved. In addition, the number of motorcycles entering the terminal has decreased significantly.

Output	Objectively Verifiable Indicator (as per the PDM)	KPI
Output 2 (1)	Vehicles and motorcycles other than container trailers will not enter the container terminal	Number of Vehicles other than Container Trailers

Follow-up Survey

Survey Method	· Field survey will be conducted as per the method determined for the baseline survey.
Person in Charge	(PAS): Capt. Thong Viro, Mr. Nhem Pisey, Mr. Kong Vibol (JICA Expert Team): Susumu Kimura, (Yukihiro Matsumoto)

Compilation Method of Survey Results

(Results of current survey)
The following baseline indicators are agreed at 3rd PIU Meeting held on 19th September, 2018 by PAS.

		Baseline	Target Value	First survey	Second Survey (Nov.22, 2019)	Third Survey (Jan. 22, 2021)
Gate 3 Passage	Car	2	0	0	6	0
	Motorcycle	295	0	178	62	52
(Comparison from the beginning)						
	Baseline	Baseline	Target Value	First survey	Second Survey	Third Survey
Gate 3 Motorcycle Passage	Car	2	0	0	6	0
	Motorcycle	295	0	178	62	52
	Car	183	-	-	76	28
	Motorcycle	351	0	701	685	168

Countermeasures to prohibit any customs-motorcycles and cars entering form Gate 3 and Passage

Measures No.	Measures to prohibit entry of bike from Gate 3 and Passage	Department in charge
1	A sign board to prohibit the entry of motorcycles should be installed at the entrance of Access road to Yard C and B. The "Access guard clerk" should be stationed at the entrance of Access road to Yard C and B.	**CT Operation Dept.**
2	The access road for customs broker's motorcycles and cars should be newly constructed at the landside of Rail Yard to lead them from Gate 2 to the Custom Branch Office in a safe manner.	**Port Security Office** **Technical Materials-Construction Dept.**
3	A parking area for customs brokers' motorbikes will be created outside the front gate of PAS Office. (The present parking area for motorcycles in front of the PAS Office will be converted to a parking area for official service cars of the PAS.)	Already achieved.
4	In order to eliminate motorcycles entering Container Yard C and B (Container Operation Area), "Access guard clerk" of the Operation Department will be stationed at each Passage to Yard C and B as shown in the figure below. The Access guard clerk will not allow Custom broker's motorcycles to enter Yard C and B. (**Period of trial: 1 month or more**)	**CT Operation Dept.**
5	PAS employees should always have an ID card and present it to a security guard when passing through the PAS office gate and the passage next to the Maintenance Shop.	**Port Security Office** **Administration Dept.**
6	Security guards of the Port Security Office should be placed at the accesses mentioned above to prevent unnecessary entry. Those who do not have an ID card should be prohibited from entering the gate of PAS office and the passage next to the Maintenance Shop.	**Port Security Office**

102. It was not possible to prevent motorcycles and vehicles entering the container yard only by restricting the entry of motorcycles and vehicles from the side of Gates 2 and 3 shown above. Therefore, a monitoring survey of the entry status of motorcycles was conducted focusing on the RTG operation area, i.e., Yard-C and Yard-B from the 4th dispatch, and measures to limit the entry of motorcycles and vehicles into the container operation area (Yard-C and Yard-B), such as deployment of checkers and/or installment of simple gates or crossing bars at major entry points around the container handling area, were examined. In addition, an entry / exit control operation plan (draft) "Guidelines for entering the Container Operation Area (Stage 2)" was created and presented to PAS.

103. The container operation area is shown in Figure 5-1. The Team proposed to PAS to expand the restricted entry area for cars and motorcycles to this container operation area (Yard C and Yard B). The number of vehicles entering the container operation area from various points (as shown in Fig. 5-1) was surveyed from the 5th dispatch.

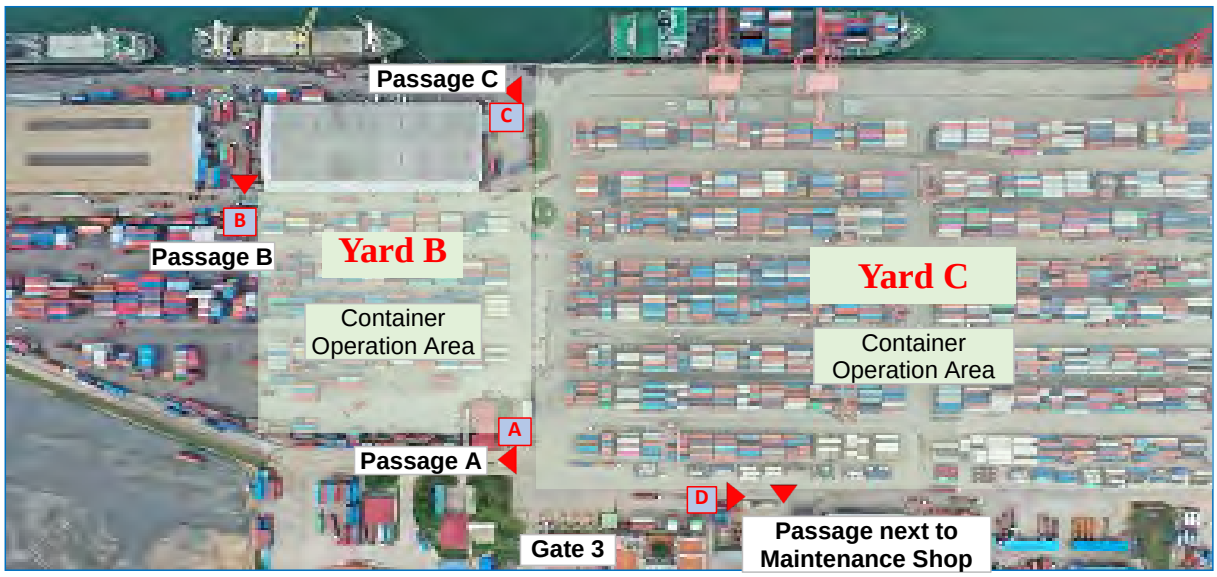


Figure 5-1 Container Operation Area (Yard C and B) and Measurement Points

104. The number of motorcycles and vehicles entering the container operation area from each survey point is shown in Table 5-3. According to the survey results, while cars no longer enter the container cargo handling area, the number of motorcycles entering the container cargo handling area the area could not be reduced to zero. However, the numbers of motorcycles at the Passage-B and Passage-C have been decreasing, indicating that the situation is improving. On the other hand, many motorcycles entering from the Gate-3 and Passage-A were observed during the 9th (final) dispatch. It is assumed that they have business to be conducted at the customs office, Rail Yard, Yard A and Yard D. Accordingly, this issue should be addressed in collaboration with Customs.

Table 5-3 Survey results of motorcycles and vehicles entering the container operation area (Yard C and Yard B)

Traffic Volume (9 am to noon & 2 pm to 5 pm)

Type of Vehicle	Place of Entry	2019/6/4	2019/11/22	2021/1/22	2021/12/11
Motorcycle	Passage around PAS	169	685	168	190
	Gate3	12	62	52	178
	Passage A	237	827	189	452
	Passage B	117	284	87	27
	Passage C	121	192	134	85
	Total	**656**	**2,050**	**630**	**932**
Car	Passage around PAS	67	76	28	30
	Gate3	5	6	0	0
	Passage A	57	51	58	0
	Passage B	29	13	9	5
	Passage C	27	27	12	10
	Total	**185**	**173**	**107**	**45**

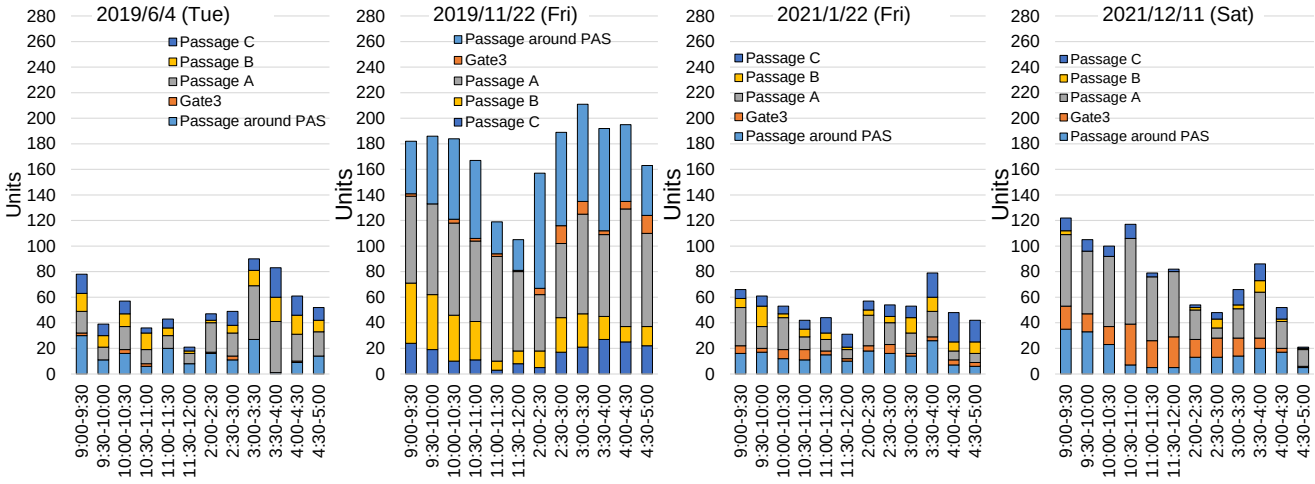


Figure 5-2 Number of Motorcycles entering Container Operation Area

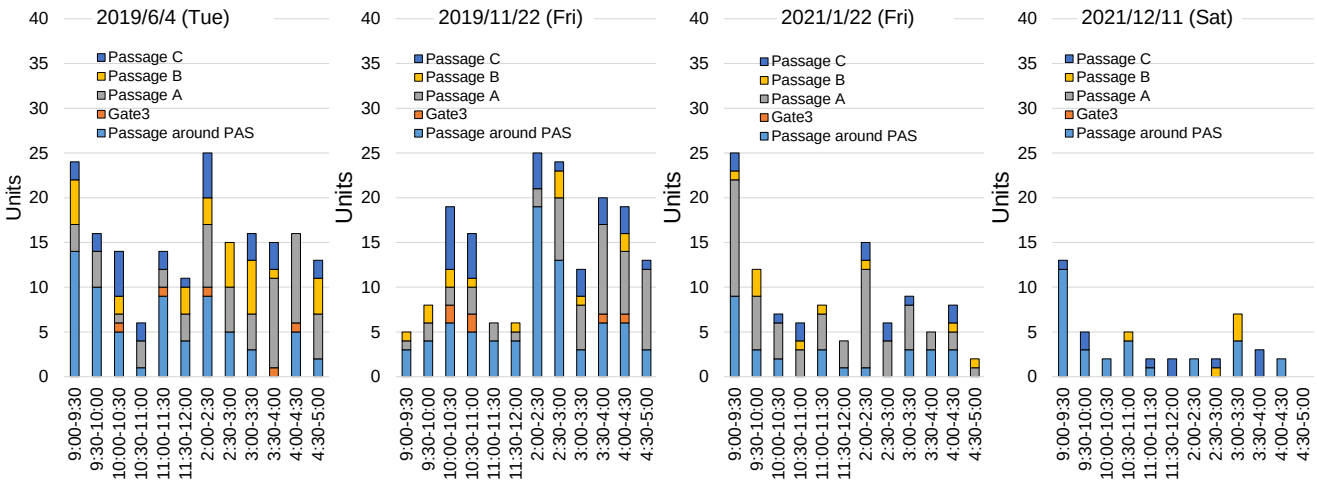


Figure 5-3 Number of Cars entering Container Operation Area

5.4.2 Turnaround Time of Road Trailers

105. As for the indicator 3.2 related to turnaround time, the Team set three categories namely, "Receiving" (Gate-in to discharging export container in the yard), "Delivery A" (Gate-in to loading import container in the yard", and "Delivery-B" (from loading import container to Gate-out) as set in the baseline and carried out monitoring surveys in each dispatch. The target values were set as Receiving = 30 minutes, Delivery-A = 40 minutes, Delivery-B = 200 minutes as a result of discussion with PAS considering the status of Japanese ports as well as the condition of the Port.

106. Based on the monitoring survey, export turnaround time has been reduced to 59%, import pickup time (from gate reception) has been reduced to 60%, and import gate out time (from picking up container) has been reduced to 66%. Import gate out time was significantly improved in 2019 after PAS requested the government to reduce the rate of X-ray inspection for import containers based on the baseline report by the Team (It used to be 100% but was reduced to 10-20% upon the request by PAS). This is one of the largest achievements of the project.

Output	Objectively Verifiable Indicator (as per the PDM)	KPI
Output 2 (4)	Turn Around Time of trailers will be reduced	Turn Around Time of Trailers

Follow-up Survey	
Survey Method	Turn around time of trailers is calculated using the history information of CTMS as below. 1) Receiving: Time from the reception at the gate to the stacking completion in the yard. 2) Delivery a) A: Time from the reception at the gate to the pickup completion in the yard. b) B: Time from the pickup completion in the yard to the delivery completion at the gate. As the KPI, the monthly average trun aound time is calculated.
Person in Charge	(PAS): Mr. Srey Narin, Mr. Thay Mengly, Mr. Sek Sovannara, Mr. Som Karoney (JICA Expert Team): Mr. Fukazawa / Mr. Kataoka

Compilation Method of Survey Results

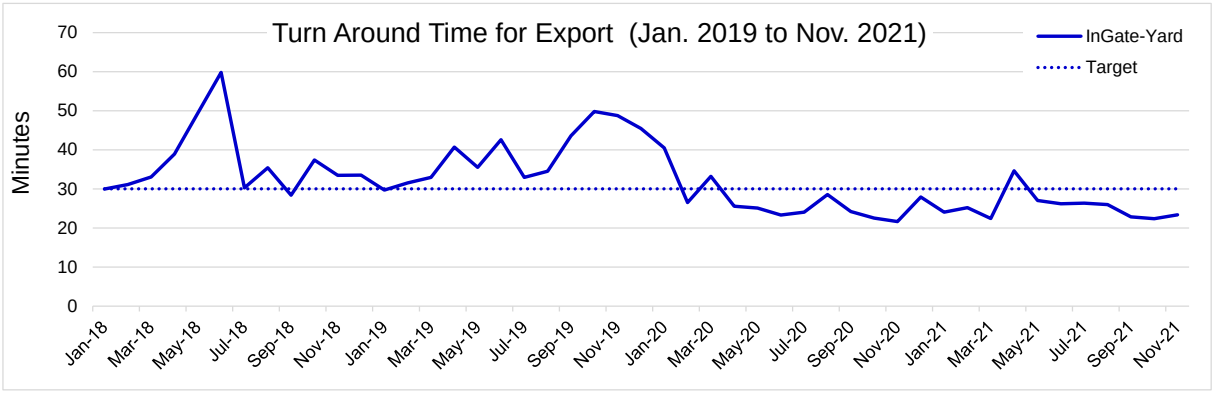
(Results of current survey)

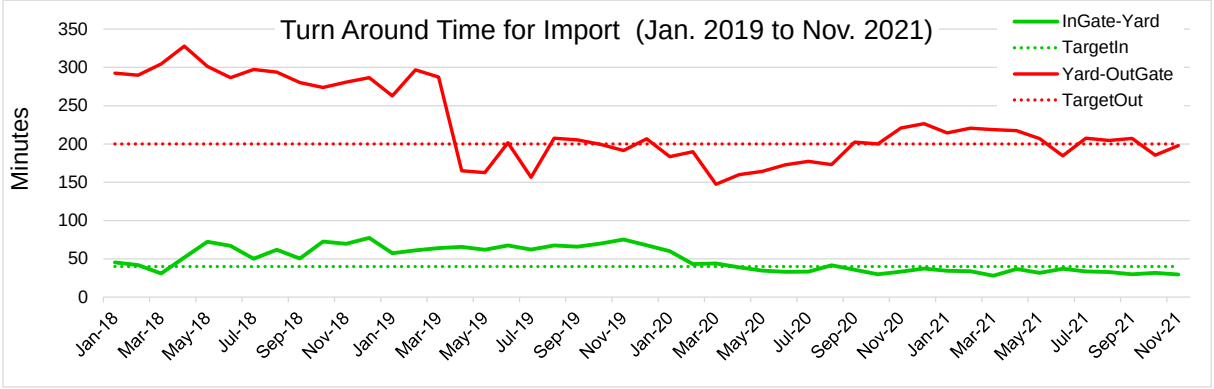
	Jun	Jul	Aug	Sep	Oct	Nov	Average
Receiving	26.2	26.3	26.0	22.9	22.4	23.4	24.6
Delivery A	37.1	33.6	32.7	29.7	31.6	29.4	32.4
Delivery B	184.4	207.6	204.7	207.3	185.4	197.9	197.9

(Comparison from the begining)

	Baseline	Target Value	Second Survey	Third Survey	Fourth Survey	Current Survey
TurnAround Time Receiving	41.4	30	41.8	26.5	24.8	24.6
Improvement Rate			101%	64%	60%	59%
TurnAround Time Delivery A	53.6	40	68	37.6	35.1	32.4
Improvement Rate			127%	70%	65%	60%
TurnAround Time Delivery A	300.7	200	192.9	165.6	201.7	197.9
Improvement Rate			64%	55%	67%	66%

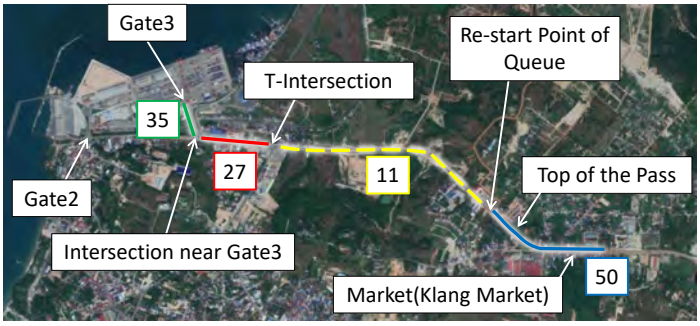
(Improvement Rate = (Surveyed Value/Baseline) x 100)





5.5 Output 4

107. Output 4 Overall, (1) the number of congested trailers at the gate and (2) the number of trailers passing through the gate per hour were set as Key Performance Indicators (KPI), and based on the baseline survey((1): 123 trailers and (2): 80 trailers), the targets were set at (1): 60 trailers and (2): 104 trailers, and monitoring surveys were conducted during each dispatch.



Intersection near Gate3

Four lanes all in one direction are used

Top of the Pass near Klang Market

Output	Objectively Verifiable Indicator	KPIs	Baseline	Target Value (A)	Results (B)	B/A
Output 4-1	Waiting trailers in front of the terminal gate will be reduced	Number of Waiting Trailers	123	60	32	53%
Output 4-2	Trailers passing the gate will be increased	Number of Trailers Passing Gate per hour (All lanes at Gate-3; Friday and Monday)	80	104	106	102%

5.6 Output 5

108. The work related to Output 5 has as its output "vessel arrivals/departures will be improved via port EDI". In view of the fact that this is the same as the objective of the Port EDI Project, the indicators and targets set in the preparatory study for the project have been adopted as the indicators and targets for this project as shown in the table below.

109. The target values of the quantitative indicators are those expected to be achieved three years after the completion of the Port EDI Project and will be evaluated based on the expected achievement of these targets at the end of the project.

Quantitative indicators

Indicator (Quantities)	Base Line (2018)	Target ＊
Duration of the ship clearance committee (hours/vessel)	0.5	0
The utilization rate of the Port EDI System for ship clearance procedures for port entry/departure	0	100%

＊Prospects for achieving the target three (3) years after completion of the Port EDI Development Project

Qualitative indicators

Indicator (Qualitative)	**Situation at the end of the project**
Modernization of port administration	Progress through project implementation
Simplify the business procedures	
Adopt the international standard procedures	

110. Based on the progress of the Port EDI Project and PAS's efforts in the project, and the activities for output 5 in the Project, the prospects for achieving this target at the end of the project and PAS's efforts are monitored. As the operation of the port EDI system has not started yet, status of output 5 remains at the stage of baseline. As for the quantitative indicators, it is aimed to deepen PAS staff's understanding of vessel entry/departure procedures and the system for shifting smoothly to digital procedures after the operation of the system, and to achieving the targets after the commencement of operation. As for the qualitative targets, PAS staff have understood significance and necessity of digitized procedures for vessel entry/departures through lectures and discussions in the workshops.

	1st year (2018/4-	**2nd year (2019/4-**	**3rd-4th year (2020/4-**	**-2022/1)**	**Remarks**
System development					
(Original plan)		2019/07 start		2021/04 launch	
(Change plan)			2020/11 start		2022/08 launch
Task Force etc.			Kick-off meeting	Monthly meetings Prototype User Manual	
Quantitative indicators					
Time of port clearance committee meetings	Committee meetings			Understanding the system	
Rate of electronation of vessel departure procedures	Electronic rate 0%			Understanding the system	
Qualitative indicators					
Simplification of import and export procedures	Learning in WS	Learning in WS		Learning in WS	
International harmonization	Learning in WS	Learning in WS			
Modernization of port administration			Learning in WS	Learning in WS	

(Note) WS: workshop

111. The achievement rating for each of the PDM Verifiable Indicators is as follows.

112. Regarding the indicator of "Vessel arrival/departure procedure will be electronically processed by Port EDI", the development of the port EDI system has been delayed and system operation has not started at the end of the Project. However, PAS staff are members of the Taskforce for Port EDI Project and

understood the port EDI system through discussions at the monthly meetings and lectures in prototype sessions of the Port EDI Project. It is expected that the Port EDI System will be used for managing vessel arrival and departure procedures once it is operated.

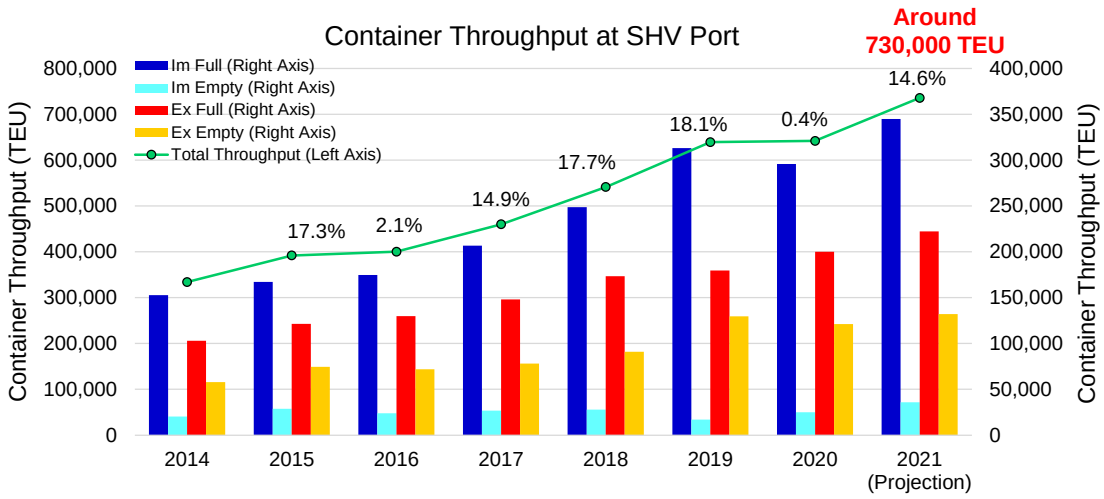
113. Regarding the indicator "Document procedure of vessel arrival/departure will be eliminated soon after Port EDI is introduced", the vessel arrival/departure procedures continue to be carried out on a paper-based basis because the port EDI system has not been developed yet. Under COVID-19 pandemic, the Port Clearance Committee is not held and procedures are implemented via e-mail. The MPWT is steadily implementing the Port EDI Project including users tests for GO-LIVE in August 2022. MPWT has decided to make port EDI procedures statutory, and thus no paperwork will be required once the system is operational. However, it is likely that some cases will arise in actual procedures that are not envisaged, and a certain amount of time will be needed for those who are involved to become familiar with the use of the port EDI system.

114. As for the indicator "Port statistics are developed via port EDI data", PAS statistics are prepared in the same manner in the past due to the delay of the Port EDI Project. Statistics Guidelines (ver.1) for statistics work by using data from the port EDI system have been prepared, and once the port EDI system is up and the data will be available for use, it will be possible to carry out statistical work in accordance with the guidelines. However, at present, the specific items and format of the input data and exported data are not clear. The accuracy and precision of the input data from the shipping companies and agents is also unknown. PAS will gradually become accustomed to the port EDI system and the system will gradually become more user-friendly.

6. Outputs of the Activities

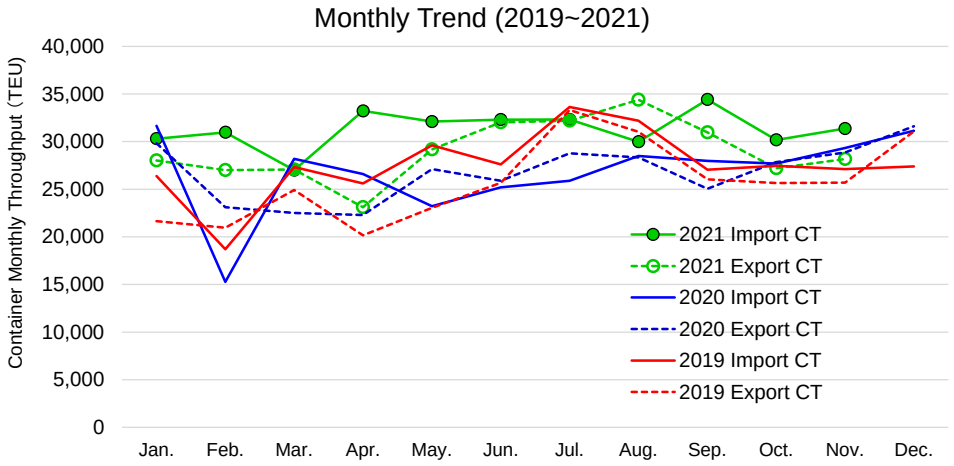
6.1 Output Overall

115. The overall goal is “Modernized Corporate strategy (mainly Container Terminal (CT)) of PAS will contribute to trade promotion in Cambodia” and its indicator is set as “Annual container throughput of Sihanoukville Port will exceed 800,000 TEUs in 2023”. In 2018, when the project started, the container handling volume reached 540,000 TEUs exceeding the original container handling capacity (about 500,000 TEUs) of the Port. In 2020, due to the influence of COVID-19, throughput dropped in the first compared to the previous year and the annual throughput was almost the same as in 2019. However, in 2021, the annual throughput has reached 730,000 TEUs, the highest on record (14% year-on-year increase). As container throughput continues to increase steadily together with growth of the Cambodian economy, throughput is expected to exceed 800,000 TEUs in 2022, that means, the verifiable indicator of the overall goal will be achieved one year earlier.

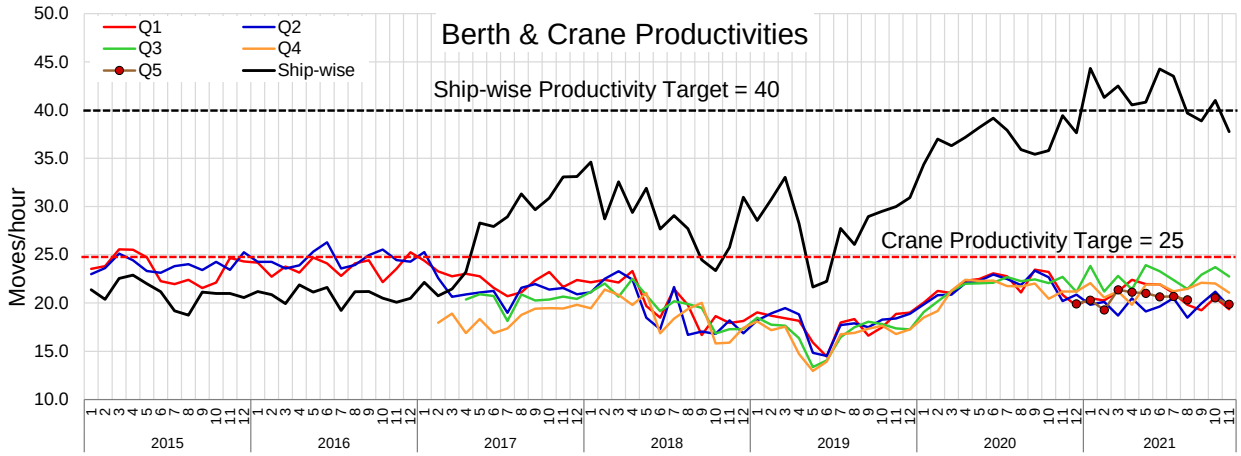


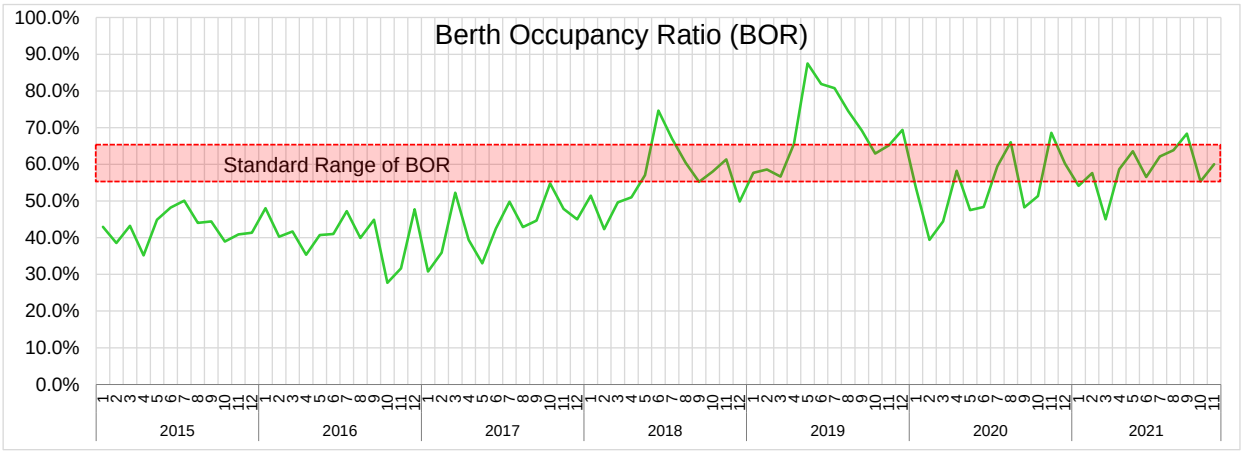
Number of Calling Vessels

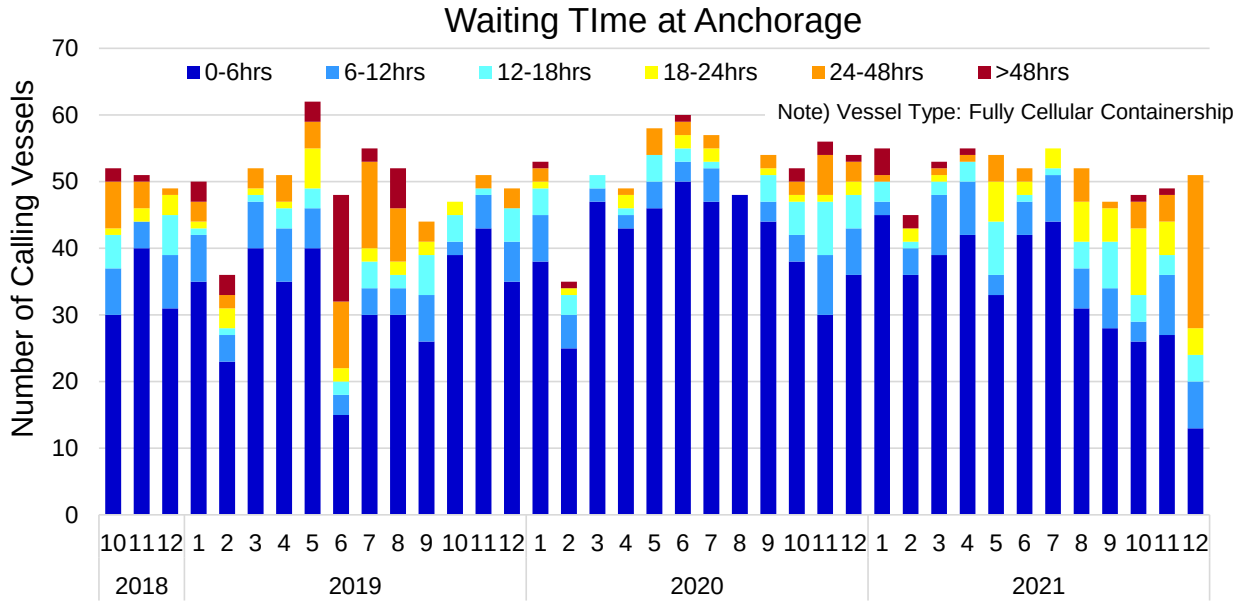
Item		2016	2017	2018	2019	2020	Jan-Nov 2020	Jan-Nov 2021	2021/2020
Calling Vessels	Units	985	844	869	991	995	904	887	-1.88%
Container	Units	667	531	581	621	670	611	599	-1.96%
Conventional	Units	283	283	251	322	307	275	288	4.73%
Passenger	Units	35	30	37	48	18	18	0	-
Calls/day (excluding Tanker)		2.7	2.3	2.4	2.7	2.7	3.0	2.9	-1.6%
TEU/call (for Container Vessel)		600	866	932	1,029	958	948	1,108	16.87%
	box/call	372	527	557	617	572	566	657	16.06%



116. In 2019, due to the rapid increase of import containers from April to summer, the yard capacity of the Port was running short and the traffic in the Port did not flow smoothly. As a result, the quay occupancy rate exceeded 80% and there were always 3-4 ships waiting offshore for berthing. The situation was eventually improved by expanding the yard, re-arranging the traffic flow, and improving the efficiency of container storage etc., which made it possible to handle 640,000 TEUs in 2019. Currently, the annual container handling capacity at the Port has increased to about 750,000 TEUs due to various effort by PAS together with the Team support. As shown below, despite the increase of container handling volume, indicators such as crane productivity, vessel productivity (loading and unloading volume per vessel per hour) and berth occupancy rate have improved significantly since the latter half of 2019. (It should be noted that the waiting time offshore in December 2021 is increasing. It is presumed that the productivity of berth 8 has decreased due to the failure of No2. QGC, and thus, the waiting time offshore might be increasing.







117. Based on the monitoring results as shown above, it is considered that the indicator of Overall Goal, i.e., “Annual container throughput of Sihanoukville Port will exceed 800,000TEU in 2023.”, and the indicator of the Project Purpose, i.e., “Annual container handling capacity of Sihanoukville Port will be enhanced.” have been achieved. The evaluations of the achievement for each output are as follows.

118. In the Verifiable Indicators for Output 1, "1-1 Corporate strategy will be submitted to the shareholders/investors" was not accomplished due to the time constraints caused by the COVID-19 pandemic. However, it could be said that the capacity of Planning-Statistics and Procurement Department to formulate the 5-year plan has been successfully built up during the Project through the meticulous technology transfer to the key staff of the Department. Although the proposal of the plan to the Board of Directors was postponed, it will be possible for PAS to present it to the shareholders/investors by itself in near future through further discussions internally.

119. The output-2 “CTMS operation capacity will be enhanced” has been achieved considering the analysis above as well as the monitoring results described in the Chapter 5 “Project Management”.

120. The output-3 “Entry and exit control and traffic flow management in port premises (including CT, rail yard and multi-purpose terminal) will be consistently implemented” has been almost achieved because the dwell time of trailers has been improved and traffic flow has been re-arranged in accordance with the One-Way traffic policy. On the other hand, it was difficult to realize zero figure regarding the number of motorcycles entering the container handling area during the Project. However, the staff of PAS understand the significance of the entry/exit control as well as the method to restrict the entry and exit, the Team believes that further improvements will be made in the near future.

121. The output-4 “Incoming/outgoing traffic flow congestion will be mitigated at gate as well as outside of Sihanoukville Port premises” has been achieved because the congestion and long queue of the road trailers in front of the Gate-3 has been eliminated.

122. Regarding the ouput-5 “Vessel arrival/departure procedure will be improved via. Port EDI”, it has not been achieved due to the delay in the development schedule of the port EDI system. However, the various activities described in the Chapter-5 has developed the basis to realize the output when the EDI system enters operation. In other words, by building the knowledge of PAS staff and by formulating the guideline for handling the port EDI system, it is expected that the vessel arrival/departure procedure will be improved, and therefore, the output-5 will be able to be achieved.

Table 6-1 Achievement of the Goal, Purpose and Outputs

Goals, Purpose and Outputs	Objectively Verifiable Indicators	Evaluation
Overall Goal		
Modernized Corporate strategy (mainly Container Terminal (CT)) of PAS will contribute to trade promotion in Cambodia.	Annual container throughput of Sihanoukville Port will exceed 800,000TEU in 2023.	Achievable in 2022
Project Purpose		
Capacity of business operation (mainly CT) of corporatized PAS will be enhanced.	Annual container handling capacity of Sihanoukville Port will be enhanced.	Achieved
Outputs		
Capacity to formulate corporate strategy (mainly CT) of PAS will be enhanced.	1.1 Corporate strategy will be submitted to the shareholders/Investors 1.2 Decision making procedure and approval standard is authorized. 1.3 A medium/long-term facility investment plan for container terminals is formulated.	Almost achieved

Goals, Purpose and Outputs	Objectively Verifiable Indicators	Evaluation
CTMS operation capacity will be enhanced.	2.1 Dwelling time of import containers will be shortened. 2.2 Dwelling time of export containers will be shortened. 2.3 Berthing / Time of vessels will be reduced.	Achieved
Entry and exit control and traffic flow management in port premises (including CT, rail yard and multi-purpose terminal) will be consistently implemented.	3.1 Vehicles and motorcycles other than container trailers will not enter CT. 3.2 Turn Around Time of Trailers will be reduced.	Achieved
Incoming/outgoing traffic flow congestion will be mitigated at gate as well as outside of Sihanoukville Port premises.	4.1 Waiting trailers in front of the terminal gate will be reduced. 4.2 Gate processing time will be reduced.	Achieved
Vessel arrival/departure procedure will be improved via. Port EDI.	5.1 Vessel arrival/departure procedure will be electronically processed by Port EDI. 5.2 Calling vessel statistics will be prepared through Port EDI.	Almost achieved

123. Output of each activity is described below.

6.2 Output 1

6.2.1 Achievement on the formulation of corporate strategy (5-year plan)

- **Activity 1-1: Analyze formulation process of corporate strategy (mainly regarding CT) of PAS considering the similar best practices at other ports**

124. The Team pointed out that the management plan currently formulated by PAS was only for a single year and recommended that a mid-term plan be formulated based on a financial simulation. The Team obtained the agreement of PAS on this matter.

- **Activity 1-2: Analyze applicability of corporate strategy formulation process (mainly regarding CT) of some port operation companies (e.g. some Japanese companies)**

125. Since many listed companies in the Japanese port sector formulate a mid-term management plan of 3 to 5 years and publish it on their websites, the Team recommended that PAS formulate such a plan as part of its own management strategy. PAS agreed with the Team's recommendation.

- **Activity 1-3 "Systemize formulation process of strategic management (mainly regarding CT) to gain the understanding of shareholders/investors based on the results of 1-1 and 1-2**

126. PAS agreed to introduce managerial accounting methods for the formulation and performance monitoring of the 5-year plan.

127. The 5-year plan was formulated in 2 stages: "the trial" (plan for 2019-2023 based on actual operation records of 2018) and "the live" (plan for 2021-2025 based on 2020 records). Managerial accounting methods were adopted for both. This technology was transferred to the Planning-Statistics and Procurement Dept. and the Container Terminal Operation Dept.

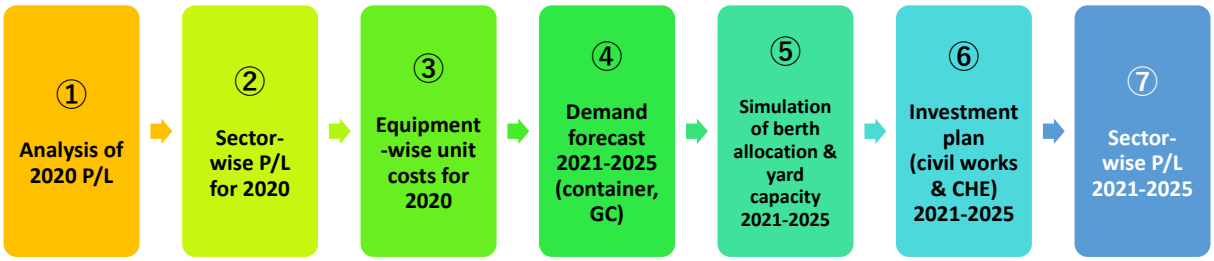


Figure 6-1 Formulation process of 5-year plan

Table6-2 Profit and loss statement by business sector (2020)

2020 P/L by business sector ('000 USD)

			Total	Contr	GC	SEZ	Pilot/tug	Others
Revenue		Stevedoring	35,807	34,340	1,466	0	0	0
		Lift on/off	20,722	20,722	0	0	0	0
		Port charges for ship services	16,708	0	0	0	16,708	0
		Storage	2,813	2,311	502	0	0	0
		Rental income from SEZ	595	0	0	595	0	0
		Passenger ships	66	0	0	0	0	66
		Others	375	15	1	0	0	359
		Revenue total	**77,086**	**57,388**	**1,969**	**595**	**16,708**	**425**
Expense	Comsumable Supplies	Combustible expenses	8,166	5,684	449	93	1,933	7
		Spare parts	8,640	6,216	368	68	1,528	460
		Others	3,848	1,536	1,844	16	445	7
		S. total	**20,654**	**13,435**	**2,661**	**178**	**3,906**	**474**
	Salaries, wages & related expenses		**22,281**	**17,660**	**1,415**	**380**	**2,668**	**157**
	Depreciation & amortisation		**9,392**	**6,259**	**1,125**	**1,525**	**451**	**32**
	Repairs & maintenances		**2,195**	**1,617**	**12**	**4**	**560**	**3**
	Other expenses	Contributions and donations	1,623	1,208	41	13	352	9
		SEZ operating expense	591	0	0	591	0	0
		Others	3,134	2,243	263	52	567	9
		S. total	**5,348**	**3,438**	**314**	**655**	**919**	**21**
	Other losses (net)		**36**	**27**	**1**	**0**	**8**	**0**
	Expense total		**59,905**	**42,355**	**5,610**	**2,742**	**8,511**	**687**
Operating profit			**17,181**	**15,033**	**-3,641**	**-2,147**	**8,197**	**-261**

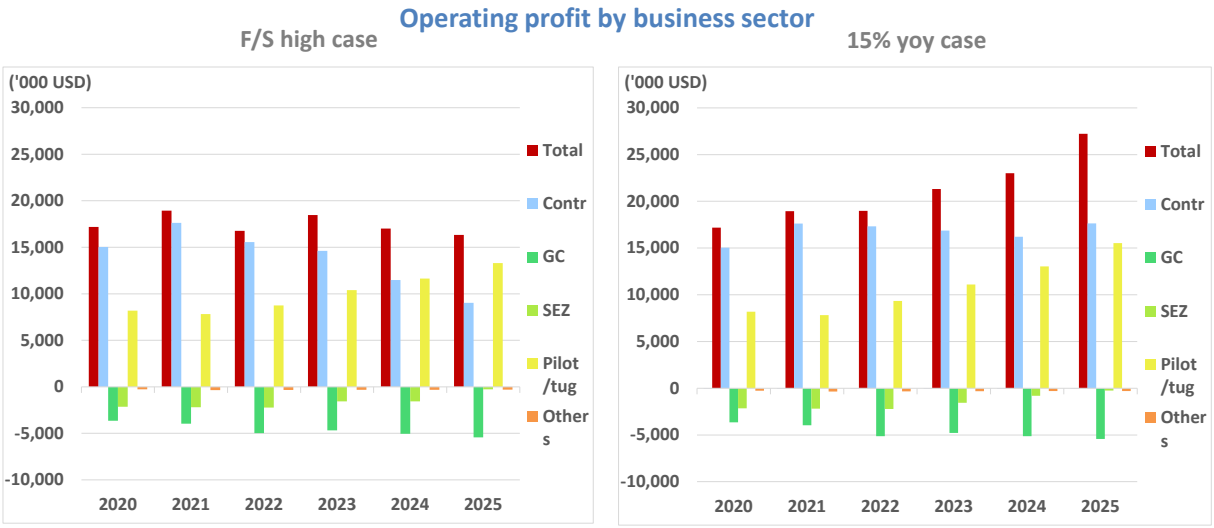


Figure 6-2 Forecast of operating profits by business sector (2020-2025)

128. To enhance the capacity of marketing, the SOP for marketing was prepared and staff of the Marketing Department were instructed how to conduct interviews with potential users. As a result, the Marketing

Department now has the ability to actively visit users and play a more key role in PAS (such as reflecting marketing issues in the management plan or public relation activities).

- **Activity 1-4: Develop roadmap to set-up strategic planning department which is responsible for formulating corporate strategy (mainly regarding CT) in PAS**

129. "Roadmap for the Establishment of Mid-Term Planning Team" was elaborated to define the personnel, tasks, delegation of authorities of a new team to be established in the Planning-Statistics and Procurement Dept.

- **Activity 1-5: Support setting-up of a strategic planning department in PAS**

130. To standardize the procedures and minimize the workload of the new team, the "SOP for Formulation/Performance Monitoring of 5-Year Management Plan" was elaborated together with the "Roadmap for the Establishment of Mid-Term Planning Team。

6.2.2 Achievement on the formulation of SOPs

- **Activity 1-6: Support to formulate Standard Operation Procedures (SOP) for selected departments of PAS as well as support the assessment of organization**

131. SOPs were elaborated on the key duties of 7 departments in PAS (Attached reference 5: "Standard Operation Procedure (SOP)").

SOP Title	Department
Human resource development (Training)	Administration-Human Resource Dept.
Formulation/performance monitoring of 5-year management plan	Planning-Procurement & Statistics Dept
Marketing	Marketing Dept.
Billing	Business Dept.
Container terminal operations	Container Terminal Dept.
Safety and Health Management	General Cargo Dept.
Preventive maintenance of RTG	Technical-Material Dept.
Construction and repair work	Construction-Engineering Dept.

6.2.3 Formulation of a facility investment plan for medium/long-term (Activity 1-7)

- Activity 1-7. Support the formulation of a facility investment plan for medium/long-term.

132. The investment plan for the next five years has been drafted and shared among PAS staff to build a common understanding on future investment requirements.

6.3 Output 2

- Activity 2-1 Examine and analyze causes of congestion at gate, traffic flow congestion inside/outside CT

133. The Team prepared the list of the documents required and the operation flowchart for the gate reception procedure by PAS, Customs, and the immigration police.

134. The Team examined the traffic flow inside and outside the container terminal based on the above documents and proposed the countermeasures to PAS. (Countermeasures are described in 6.5.)

- Activity 2-2 Analyze operational conditions of CT by making full use of CTMS after installation of additional QGCs and RTGs.

135. The Team identified the issues on container handing operation in the yard based on the observation at site and video footage taken by a drone and examined countermeasures. The Team reported these issues to PAS and discussed countermeasures at the 9 workshops held during the project.

136. The Team compiled the proposed countermeasures during the project and prepared the proposal for improving the efficiency and safety of container handling operation as one of the deliverables.

- Activity 2-3 Develop staff-enhancement plan of PAS to make full use of CTMS after installation of additional QGCs and RTGs.

137. The Team proposed to strengthen the Control Center of Container Terminal Operation Department at the workshop with PAS.

138. A new organization, named the Operation Steering Group, was established in the Container Terminal Operation Department by PAS in order to enhance the functions of the Control Center and to support them. The Group contributed to improving the container handling efficiency in the container terminal.

- Activity 2-4 Implement on-the-job-training to make full use of CTMS based on the staff-enhancement plan

139. The program to generate KPI from CTMS raw data was developed and was used to pick up KPI values for the baseline survey. Furthermore, the utilization of CTMS data for analyzing the current status conducted throughout the project was documented as the Extended CTMS Usage Manual.

- Activity 2-5 Support to formulate Standard Operation Procedures (SOP) in each cargo handling department.

140. SOP for Container Terminal Operation Department and General Cargo Operation Department were prepared.

6.4 Output 3

- Activity 3-1 and Activity 3-4: Entry / exit control operation plan

141. "A Guideline for Entry and Exit Control (Stage 1)", for motorcycles and cars entering through Gates 3, 2 and the passage next to the maintenance shop was created and presented to the PAS.

142. Following the recommendation of the JICA Team, PAS promulgated “Announcement on Traffic limitation for using entry-exit gate in PAS of Broker Agencies that process the formalities and import-export clearance” to restrict the entry of motorcycles in September 2018.

143. A vehicle entry / exit control operation plan (draft) "Guidelines for entering the Container Operation Area (Stage 2)" was created. The trial was eventually carried out with the cooperation of the Security Department. However, originally, the Security Department of PAS and the Container Operation Department did not make sufficient efforts to restrict the entry of motorcycles and cars into the container operation area. The issue of responsibility in the event of a traffic accident or serious personal injury in the container operation area needs to be discussed and clarified. The Team and PAS shared the opinion that the Container Terminal Department should take the lead in restricting the entry of motorcycles and cars into the container operation area.

- Activity 3-2: Container operation plan for Multi-purpose Terminal

144. The Team conducted a field survey on the usage status of the container terminal of PAS. Based on the survey, the Team formulated a temporary container operation plan for the Multi-purpose Terminals, "Container Storage Plan and Utilization of Multipurpose Terminal".

- Activity 3-3 and Activity 3-6: Rail Yard container operation plan

145. Based on the condition described 4.3.4 (1), the Team reviewed the storage layout in the Rail Yard and formulated and proposed the "Rail Yard Operation Plan of Container Terminal of the Sihanoukville Port"

- Activity 3-5: Operation plan for Empty container yard

146. During the 4th dispatch period, PAS indicated that the Multipurpose Terminal should not be used as a container storage place in principle in light of the increase in the handling of general cargo. For this reason, both sides confirmed that a container operation plan for the multipurpose terminal would not be necessary. It was agreed instead to "Implement an operation plan for an empty container yard as a trial and develop a roadmap for full-scale operation". Based on the clarification of the policy regarding the container storage location as PAS, the operation of yard as a container terminal including the storage plan of empty containers corresponding to the container handling volume of 800,000 TEU (including empty containers and laden containers) was examined. The Team then explained the plan to the Container Operation Department of PAS and recommended that it be adopted.

6.5 Output 4

- Activity 4-1,Activity 4-2：The operation status information disclosure system using the web

147. As stated above, it is found that PAS was not ready in time for the development of the operation status information disclosure system using the “Web” on computer. Therefore, as a preliminary step, it was decided to support the development of a gate procedure system using “Smartphones". Eventually, PAS developed a simplified gate processing system using smartphones and realized a trial test, which is considered as the first step towards the establishment of an operation status information disclosure system using “Smartphones”.

Figure 6-3 Access control via smartphone (December 2021)

- Activity 4-3：Preliminarily design off-dock yard as pre-screening system of improper document trailers (IDTs: Improper Document Trailers) with evacuation space based on the analysis
- Activity 4-4：Implement pilot operation of pre-screening system of improper document trailers (IDTs)

together with evacuation space based on the preliminary design and develop roadmap to full-scale operation

148. For the above two activities, we conducted a baseline survey of the number of trailers congested in front of the gate and the time it takes to pass through the gate, identified issues and proposed improvement measures in terms of both software and hardware, and exchanged opinions with WGs to achieve the KPI targets. The JICA team proposed to re-establish a relationship with the MPWT, police and trucking companies regarding traffic contraventions, and to set up a team within PAS to deal with congestion issues, in order to find solutions from a new perspective. In October 2018, a special team to deal with congestion was set up in PAS at the initiative of the JICA team, and specific measures were discussed and implemented mainly by this team. After the implementation of the measures, the traffic congestion has improved to the extent that no congestion has been observed since the third dispatch when congestion in front of the gate extended to Route 4. The main measures implemented are described below.

1) All 6 lanes at Gate3 begin operation from 6:00 AM. (Switch between IN / OUT as required)
2) Gate remains open 24 hours on Friday (until Saturday morning)
3) Refrain from weighing at the gate (truck scale) on Saturday morning.
4) Gate clerks and gate checkers are deployed around the gate to give instructions to trailer drivers.
5) Trailers having incomplete documents are allowed to go inside the port and wait in the backyard of the Yard-C.
6) Gate procedures are expedited.

Figure 6-4 Traffic congestion from the gate to the outside of the port (areas classified by color)

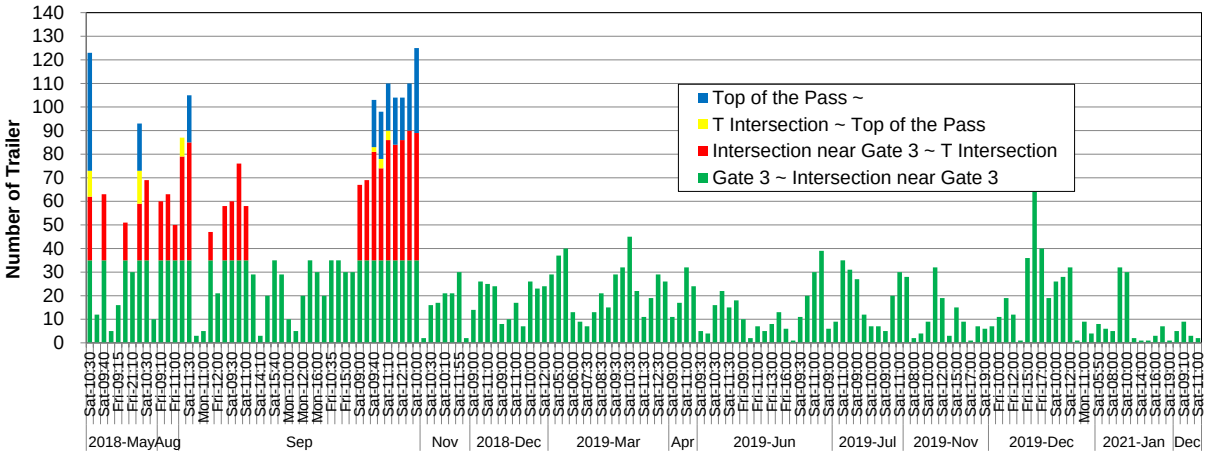


Figure 6-5 Traffic congestion from the gate to the outside of the port (measured results)

149. Regarding the use of 54 ha off-dock yard and the SEZ owned by PAS, which is 25 km away from the port, we conducted a preliminary study and held discussions with PAS during the 5th dispatch. However, due to the fact that traffic congestion has not been severe since November 2019 and the planned Phnom Penh - Sihanoukville highway, PAS will determine whether or not the site will be used as an off-dock yard at a later date, and thus this issue is no longer part of the project scope.

- Activity 4-5：Propose countermeasures to cope with the increase of container handling up to 800,000 TEUs, and support its implementation

150. In the WG of the 7th dispatch, we discussed countermeasures with PAS to alleviate congestion at the gate when the container handling volume increases to 800,000 TEUs including how to effectively use the gate on Saturday mornings when it is congested. In addition, based on the results of the baseline survey and the container handling volume, a "Proposal for countermeasures against mitigating the congestion by utilization of off-dock yard" was prepared.

6.6 Output 5

151. The activities related to Output 5 are planned on basis of the establishment of the port EDI system under the Port EDI Project. In PDM, it is described that “Port EDI system will be installed in Cambodia” is one of Pre-conditions of the Project. However, the Project will be terminated before this pre-condition is met.

152. The Port EDI Project was scheduled to start in July 2019 and to be put into service in April 2021 in the "The preparatory survey on the project for port EDI for port modernization in the Kingdom of Cambodia (December 2018)". However, due to the dismantlement of KAMSAB and the impact of the COVID-19 pandemic, the development of the port EDI system has been delayed. In the current schedule, the development of the system started in November 2020 and the operation will start in August 2022.

153. The port EDI System will be put into service after the termination of the Project. Regarding "5-2 Document procedure of vessel arrival/departure will be eliminated soon after Port EDI is introduced", desktop studies in the prototype sessions and trials in UAT session of the port EDI system will contribute to the smooth shift to non-paper procedures. As for "5-3 Develop guideline to compile calling vessel statistics via Port EDI data", JICA experts prepared the Statistics Guidelines (Ver1) and conducted a desktop study on the flow of using data from the port EDI system for statistics.

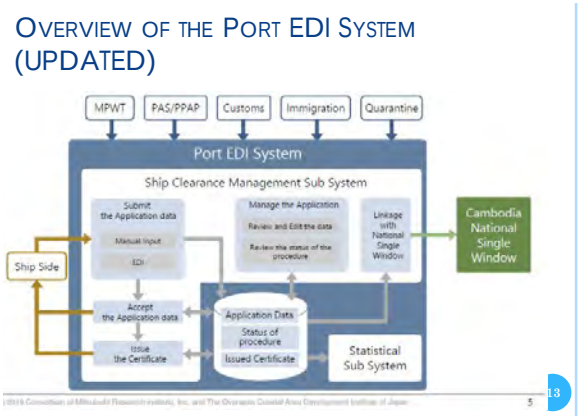
154. As a result of the above-mentioned activities, vessel arrival/departure procedure will be improved via Port EDI after Go-Live of the port EDI system in August 2022. It is expected that the improvement of the knowledge of PAS staff and the development of guidelines for the implementation of the port EDI system will lead to the achievement of Output 5: "Vessel arrival/departure procedure will be improved via. Port EDI”

155. The specific results of the activities are shown below.

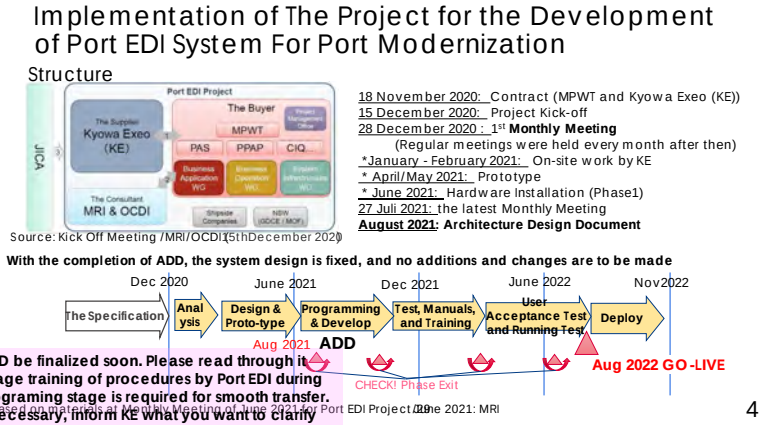
- Activity 5-1：Assist Port EDI taskforce (PAS, MPWT) to appropriately introduce and operate Port EDI for vessel arrival / departure procedure

156. PAS personnel acknowledged the discussion points of the Task Force meeting and the details of the Port EDI system. Specifically, in the Team D meeting (and workshop) held in June 2018, the project was explained to the members and information was shared based on the meeting materials of the Task

Force. In December 2019, the Team explained the main points of "PRAKAS on Establishment of Management Committee On Port Electronic Data Interchange System (Port EDI)" and shared the outline and schedule of the system to be developed. In December 2021, the Team shared with PAS the points of Architecture Design Document and the forthcoming schedule toward the Go-Live in August 2022, and discussed what issues ahead should be tackled by PAS.



Port EDI System of Cambodia



- Activity 5-2： Document procedure of vessel arrival/departure will be eliminated soon after Port EDI is introduced

157. Through workshops and other activities, PAS officials learned about international trends and Japan's experience on port EDI. In addition, they deepened their understanding of the significance and importance of electronic ship arrival and departure procedures.

158. With the commencement of the operation of the port EDI system in Cambodia, PAS staff will understand how to use the system in order to achieve a smooth transition to electronic procedures and that the port EDI system contribute the modernization of the port sector.

- Activity 5-3：Develop guideline to compile calling vessel statistics via Port EDI data

159. Based on workshops and individual meetings, the details of the current statistics of PAS and statistics structure by using data from Port EDI system are summarized in Statistics Guidelines.

160. Guidelines for the use of EDI data have been developed and summarized for the use of PAS port statistics when the port EDI system is in operation.

161. These results will directly contribute to the development of port statistics using port EDI data, which is set as Output 5 when the Cambodian port EDI system is launched.

Guideline to Compile Calling Vessel Statistics via the Port EDI System (structure)

Guideline to Compile Calling Vessel Statistics via Port EDI System

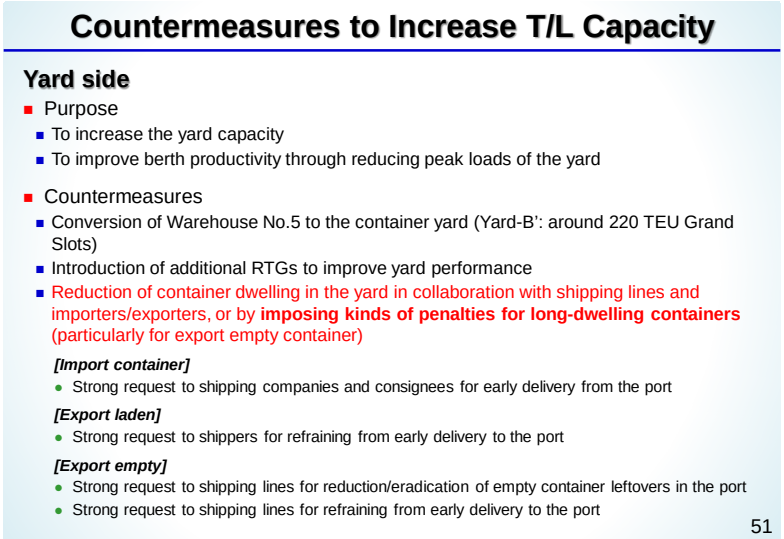
7. Other Activities and Outputs

7.1 Proposal for the Improvement of the Container Terminal Capacity

162. During the 2nd and 3rd dispatch, the Team proposed an urgent measure to improve the terminal capacity including QGC rail extension (25m toward the Berth Bo.6), new bollards at sea beside the Berth No.8, and RTG operation of yards A and B. Among them, the RTG operation of Yard B has already started, and the QCG rail extension is currently scheduled to be implemented in 2022 by PAS. The bollard installation is excluded from the plan because it is difficult to secure the land behind it.

163. During the 8th dispatch, the container demand has been steadily increasing in 2021 and thus it is anticipated that the terminal capacity will be strained until the new container terminal is in operation (at the end of 2025). Therefore, the Team examined measures to improve further the terminal capacity and shared it with PAS.

164. Regarding mobile harbor cranes (MHC), it has been decided to introduce them (2 units) through the Japanese grant aid (E/N: December 2021).



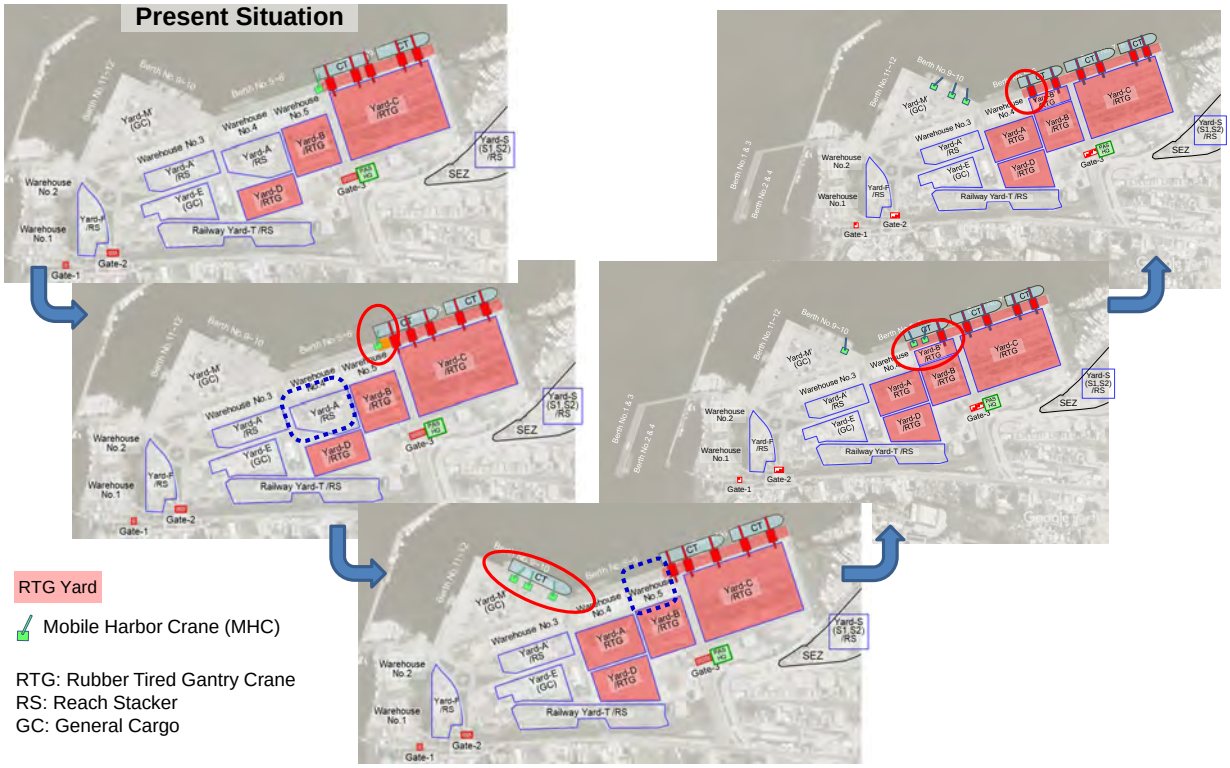


Figure 7-1 Procedure to Improve the Existing Terminal Capacity

7.2 Leveling of Container Receiving Date

165. It is difficult to change the port call date because of 1) connection with the mother vessel at the hub port (e.g., Singapore), and 2) the tight berth window of the Sihanoukville port. On the shipper's side, imported raw materials are stored in the factory's inventory space in the first half of the week. In the middle of the week, export products begins to be replaced and accumulated for the weekend, and shipped to the Sihanoukville Port all at once in the weekend which has become a standard practice in Cambodia. For the clothing industry, inspection work by an outside contractor will be added in the process, i.e., when a certain amount is accumulated, the inspection work is carried out, and then they are vanned into containers.

166. To change the above flow, it would be necessary to obtain the cooperation of shippers regarding such issues as: a) Effective use of factory space considering Free Time in the container yard, b) incentive measures to receive containers on Mondays and Tuesdays when CY inventory is relatively low. The Team proposed several measures including the above but there has not been enough time to elaborate concrete measeures and propose them to individual shippers and/or shippers' organizations. PAS has not yet made a decision on the introduction of incentives to facilitate the cooperation of shippers.

167. In addition, PAS could also act as an agent (or sub-agent) for container leasing companies. Specifically, PAS could set up Inland Container Depots (ICDs) for empty containers in the vicinity of areas where exporters are concentrated, such as Phnom Penh and Sihanoukville, and accept empty containers from importing shipping companies after they have been debarked, cleaned and repaired, and then leased to exporting shipping companies. One of the conditions is that both shipping lines must sign a contract with the same leasing company and use the same leased containers, however since the container leasing industry is an oligopoly, this should not be a problem. This is expected to reduce the number of empty container exports at Sihanoukville Port and help to mitigate congestion at Gate 3 and CY of PAS.

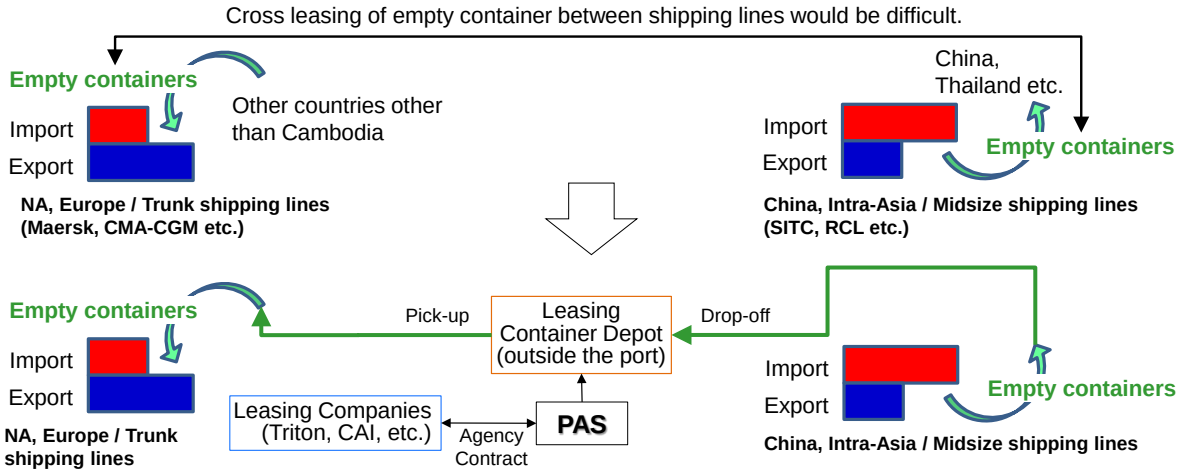


Figure 7-2 Image of Inland Container Depot Operation for Empty Containers

8. Considerations and Lessons Learnt

8.1 Considerations throughout the Project

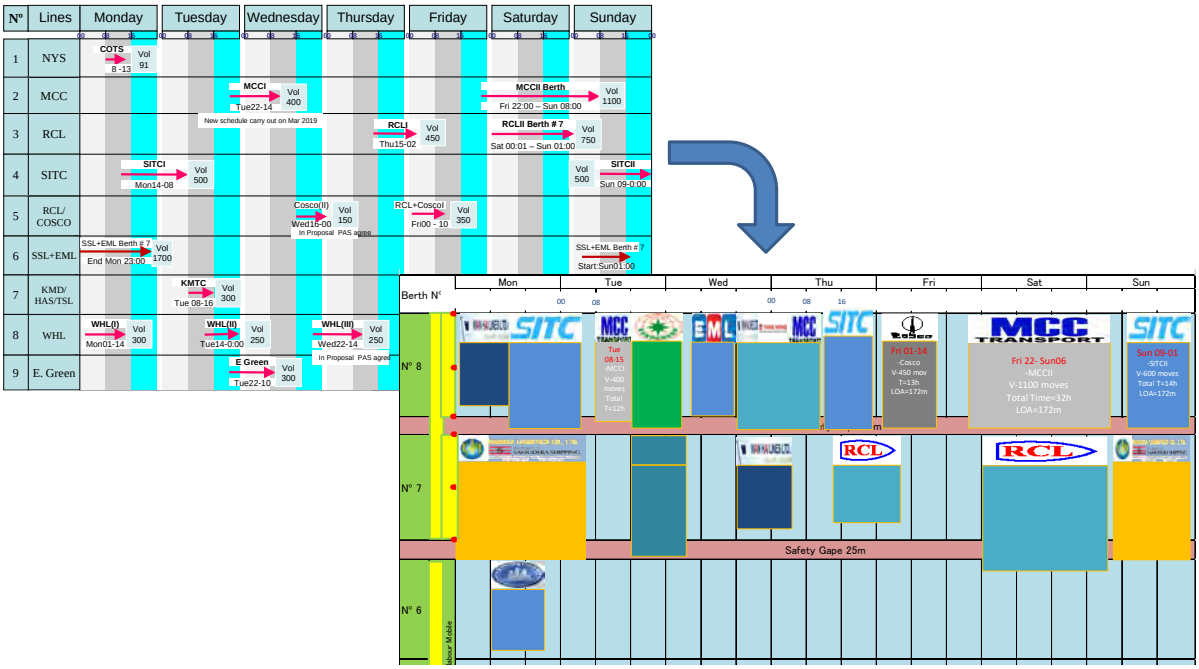
8.1.1 Output 1

8.1.1 (1) Formulation of Corporate Strategy (5-year plan)

168. In the latter half of the Project, when transferring the formulation methods of the 5-year plan to the Planning-Statistics and Procurement Dept., the Team shared Excel files with them so that they can calculate the financial figures by themselves using various formulas. Furthermore, the technology transfer was conducted in Khmer so that they can easily understand the details of calculations. This was accomplished by the expert first transferring his knowledge to his local assistant until she came

to understand completely, after which she transferred her knowledge to the staff of the Planning-Statistics and Procurement Dept. Although this was a time-consuming process, the Team was successful in transferring the technology on a practical level.

169. As a preliminary step for conducting a financial simulation covering a period of 5 years, it is necessary to simulate the berth windows over the same period. To facilitate this, the Team introduced a 2-dimensional berth window chart which shows the day of the week on the horizontal axis and the berth length on the vertical axis. It was immediately adopted by the Container Terminal Operation Dept. for their routine works.



Berth window chart in the old format (left) and proposed new format (right)

170. In the trial formulation of the 5-year plan, it was initially difficult to allocate the amount of spare parts costs to each business sector because the payment slips were not tagged by business sector. After the expert pointed out this issue in the workshop, the Accounting-Finance Dept. voluntarily rectified the procedures to make it easier to identify the sector to which the spare parts costs are allocated. This significantly expedited the cost allocation process.

171. Interviews with users are important for strengthening marketing capacity. However, since the onset of the COVID-19 pandemic, it became difficult to conduct quality interviews since 3 parties need to be connected online (that is, PAS, the user in Cambodia and the expert in Japan). In these circumstances, the expert suggested that the Marketing Department prepare various inquiries (such as evaluation of berth and yard congestion, impact on the Port due to the shortage of containers as well as the lack of space in vessels worldwide, outlook for 2022-2024, possibility of larger vessels calling the Port, etc.) and distribute them by e-mail, which proved useful for receiving feedback from users.

8.1.1 (2) SOP Drafting

172. The Team thought that it was necessary to understand the current business procedure of each Department before drafting SOPs, and asked the managers of all departments to provide necessary documents including job specifications and operation procedures in each business unit at that time. This made it easier for the Team to grasp the current status of each Department and identify issues.

8.1.2 Output 2

8.1.2 (1) Field Observation

173. The Team utilized a drone to take footage from the sky. It is useful for observing the overall movement of the vessel operation and makes it easier to find trailers engaged in wasteful movements. However, it is still necessary to observe the operation visually from the ground because a drone can only record video for 15 minutes and an export is required to operate the drone.

174. During the site observation, the Team often asked the crane operators and truck drivers to ride the equipment during the operation in order to get a close look at container handling operations. It helped the Team grasp the details of the operation and obtain honest opinions from workers.

8.1.2 (2) Improvement of Container Handling Efficiency

175. As for the proposal on improving the lashing tools used at site, the Team brought a lashing tool sample used in ports in Japan. After observing the actual tool, PAS accepted the Team's proposal.

8.1.2 (3) Utilization of Information/Data from CTMS

176. The Team found that the container movement history data in CTMS is useful for obtaining statistical data for various studies in the project. The Team could utilize the CTMS data effectively because most of the movement history data is stored in it, even though the official source for the statistical data for PAS is the data in SWSS. The Team compiled the CTMS data utilized in the project and the methods to obtain them into the Extended CTMS Usage Manual, one of the deliverables of the project.

8.1.3 Output 3

177. PAS's Sihanoukville Port handles not only container cargo but also general cargo, and there are no walls or fences installed in these cargo handling areas. Therefore, motorcycles and general vehicles entered and exited not only from Gate 2 but also from Gate 3 of the container terminal where the road chassis originally entered and exited. For this reason, the Team decided to set the entry / exit survey points for motorcycles and cars in the container yard at Gates 2 and 3 and the passage next to the maintenance area and survey the number of motorcycles and cars entering the container yard. Furthermore, in setting a monitoring index KPI, it was assumed the number of motorcycles and cars entering from the Gate 2, 3 and the passage next to the maintenance shop would not capture the complete picture and therefore Container Yard A and B were set as the container operation area, and the number of units of motorcycles and cars which entered this area has been set as the new KPI.

178. Before the visit, the Team thought that it might be possible to use the Multi-purpose Terminal as a temporary container storage area since the current container storage area is unable to accommodate the increasing handling volume. Moreover, PAS had already used a part of the multipurpose terminal as a temporary storage place for containers. For this reason, the Team conducted a site survey to grasp terminal usage status by PAS, examined a temporary Multi-purpose Terminal operation plan (layout, cargo handling method, etc.) and proposed it as an emergency avoidance plan when the container handling volume suddenly increases.

8.1.4 Output 4

179. One of the innovations in Output 4 is a proposal to work with the relevant authorities including MPWT, police and trucking associations, based on the experience of the project at Chennai Port, India, to reduce the gate congestion. As a result, a "Congestion Management Team" was formed within PAS, and the measures taken by this team helped to eliminate congestion. Employing part-time local students for the baseline survey and ensuring that the same staff were deployed in each dispatch also contributed to the accuracy of the survey.

8.1.5 Output 5

180. The activities related to Output 5 were carried out on the pre-condition that the port EDI system would be developed and put into operation under the separate project “The Project for The Development of Port EDI system For Port Modernization”, but due to the delay of the project, the project had to be closed before the start of operation. Although it was not possible to trial the procedures and statistics through the operation of the system, desktop training was provided to ensure smooth use of the system by PAS after its development and operation, and to achieve the project's goal of "Vessel arrival/departure procedure will be improved via. Port EDI”.

8.2 Lessons Learnt

8.2.1 Lessons Learnt Overall

181. The Project activities became limited since 2020 due to the COVID-19 pandemic. Particularly, no field work could be conducted at the premises of PAS in 2020. However, thanks to the extension of the project period by 10 months, field visits resumed in 2021 and eventually the purpose of the Project has been achieved. In 2020, the Team had the online meeting with PAS. However, it is difficult to conduct a technical cooperation project relying only on remote communications because daily observation at the site as well as regular meetings with counterpart personnel are important elements of such a project.

182. Therefore, in the era of With Corona, it is desirable to create a more convenient system for remote implementation. It goes without saying that we have to establish an infrastructure that can facilitate remote meetings using web, but also deploy local staff as a kind of liaison to continuously engage in the project and communicate with counterparts at any time. In addition, placing a TV camera at the site would allow us to monitor the latest situation.

8.2.2 Output 1

183. The Objective Verifiable Indicators of the management strategy in PDM are stipulated as "Corporate strategy will be submitted to the shareholders/investors", however, as mentioned in the previous sections, it was not accomplished in this project period because the Team didn't have sufficient time to discuss the appropriateness of disclosing the plan with PAS due to the time constraints caused by the COVID-19 pandemic.

184. At the workshop in the 8th dispatch, PAS expressed concerns about the 5-year plan as some business sectors would incur deficits and operating profits would not continue to grow at the same pace. This is due to the fact that a large investment is assumed to be required for the additional cargo handling equipment and civil works to secure sufficient operational capacity. It was also pointed out that the

permission of the Cambodia Securities Exchange might be required for the publication.

185. The discussion with PAS should have been started earlier on how to gain the understanding of shareholders/investors regarding the risk management to prepare for the threat of capacity crunch which may happen in near future.

186. Users' opinions collected by Marketing Department include some elements that should be reflected in PAS's short/mid-term management policies. In this context, it may be a good idea for the Department to be involved in user interviews with the expert. The expert provided the knowhow of the interview survey, but at the same time, the Department should also be actively involved in the policy formulation process and make efforts to reflect the interview results in the policy.

8.2.3 Output 2

187. KPI indicator should have been designed to consider the transition of the container handling volume. In this project, the container handling volume has increased about 40%, which is more than expected. Most of the efforts have been focused on handling the increased container handling volume without worsening the KPI value rather than improving it. The details on how to implement the transition of the container handling volume in KPI shall be examined separately.

188. As for the utilization of CTMS, the Team should start training PAS staff on how to obtain the processed data (such as Excel, etc.) from the raw CTMS data because it requires some technical knowledge and will take time to get used to handling such data. However, the Team could not conduct much training due to the Covid-19 pandemic.

189. The Team has pointed out the issue regarding safety wear from the beginning of the project. Certain improvements have been observed, especially on official occasions, such as at a site observation by the VIP, etc. However, some of the rules, such as wearing helmets and working shoes, are still not respected during the daily operation particularly among the contract workers in the Port. The safety issue should be continuously addressed in the forthcoming project.

8.2.4 Output 3

190. The operation of the container terminal was the main focus during this dispatch. Inadequate coordination between the container terminal department and the general cargo department was observed regarding the use of containers in the general cargo yard due to the increase in the container handling volume. It is important to hold a meeting with the Security Department in addition to the Container Terminal Department and General Cargo Department on prohibiting the entry of motorcycles and cars into the container operation area, and to negotiate a reduction target for the number of entry units, an achievement deadline, and the scope of responsibility for achieving it. However, it was not always possible to sufficiently coordinate among such departments. The Team would like to use this as a lesson when implementing similar projects in the future. It should be noted that the situation where container terminals are located differs considerably depending on the target country and port, and it is completely different from the situation of container terminals in Japan.

191. At the Rail Yard, storage and loading / unloading of import / export containers, temporary storage of long-term storage containers, and storage / loading / unloading of import / export containers by rail transport between Phnom Penh ICD (Inland Container Depo) and Sihanoukville Port were carried out. Although it is difficult to respond quickly to such changes in the situation in a short period of time, it

is hoped that details regarding the movement and identification and import / export procedures of necessary documents of documents regarding customs clearance for import / export containers can be grasped more quickly.

8.2.5 Output 4

192. It is necessary to be able to respond flexibly to changes in the environment both in and around the container terminal such as the traffic situation or infrastructure development. For example, the rapid development of the highway between Phnom Penh and Sihanoukville and the expansion of the road from Sihanoukville Airport to PAS, which was not envisaged when the project began, are factors that will significantly change logistics. It is therefore necessary to be informed as soon as possible and to react flexibly.

8.2.6 Output 5

193. In the case of activities where collaboration with other projects (in this case the Port EDI project) is key, it is considered necessary to have a Plan B in case external conditions are not met during the project implementation period. Where it is clearly anticipated that conditions will be met at the end of the project, the project should be carried out in such a way that the project objectives will be met when those conditions are met and higher-level objectives can be achieved.

9. Attached documents

Reference-1 Record of Discussion

Reference-2 Project Design Matrix (PDM)

Reference-3 JCC Meeting Materials

Reference-4 Minutes of Discussion（JCC）

Reference-5 Standard Operation Procedure (SOP)

Human resource development (Training): Administration-Human Resource Dept.
Formulation/performance monitoring of 5-year management plan: Planning-Procurement & Statistics Dept
Marketing: Marketing Dept.
Safety and Health Management: General Cargo Dept.
Container terminal operations: Container Terminal Dept.
Billing: Business Dept.
Preventive maintenance of RTG: Technical-Material Dept.
Construction/maintenance of facilities: Construction-Engineering Dept.

Reference-6 Deliverables

A. Baseline and Monitoring Survey Report (KPI Monitoring Report)
B. Roadmap for the Establishment of Mid-Term Planning Team
C. Container Management System (CTMS) Extended Usage Manual
D. Proposals for Improving the Efficiency and Safety of Container Handling Operation
E. Guideline for Entry and Exit Control
F. Rail Yard Operation Plan
G. Proposal for Countermeasures against Mitigating the Congestion by Utilization of Off-dock Yard
H. Guideline to Compile Calling Vessel Statistics via Port EDI System
I. Facility Investment Plan for Medium/long-Term

Reference

Reference -1　Record of Discussion

RECORD OF DISCUSSIONS

FOR

The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port Phase 2

AGREED UPON BETWEEN

Ministry of Public Works and Transport
Sihanoukville Autonomous Port

OF

Kingdom of Cambodia

AND

JAPAN INTERNATIONAL COOPERATION AGENCY

Dated February 01st, 2018

Based on the minutes of meetings on the Detailed Planning Survey on the Japanese Technical Cooperation for **The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port Phase 2** (hereinafter referred to as "the Project") signed on December 4, 2017 between Ministry of Public Works and Transport (hereinafter referred to as "MPWT") and Sihanoukville Autonomous Port (hereinafter referred to as "PAS") of the the Kingdom of Cambodia (hereinafter referred to as "Cambodia") and the Japan International Cooperation Agency (hereinafter referred to as "JICA"), JICA held a series of discussions with the Counterpart and relevant organizations to develop a detailed plan of the Project.

The purpose of this record of discussions (hereinafter referred to as "the R/D") is to establish a mutual agreement for its implementation by both parties and to agree on the detailed plan of the Project as described in the followings and the Annexes, which will be implemented within the framework of the Agreement on Technical Cooperation signed on June 17, 2003 (hereinafter referred to as "the Agreement") and the Note Verbales exchanged on June 12, 2017 between the Government of Japan (hereinafter referred to as "GOJ") and the Royal Government of Cambodia (hereinafter referred to as "RGC").

The Counterpart will be responsible for the implementation of the Project in cooperation with JICA, coordinate with other relevant organizations and ensure that the self-reliant operation of the Project is sustained during and after the implementation period in order to contribute toward social and economic development of Cambodia.

Both parties also agreed that the Project will be implemented in accordance with the "Basic Principles for Technical Cooperation" published in December 2016 (hereinafter referred to as "the BP"), unless other arrangements are agreed in the R/D.

The R/D is delivered at Phnom Penh as of the day and year first above written. The R/D may be amended by a minutes of meeting between both parties, except the plan of operation to be modified in monitoring sheets. The minutes of meeting will be signed by authorized persons of each side who may be different from the signers of the R/D.

For

H.E. Sugano Yuichi
Chief Representative
JICA Cambodia Office

For

H.E. Lou Kim Chhun
Delegate of the Royal Government in Charge as Chairman & CEO
Sihanoukville Autonomous Port

Witnessed by

H.E. Tauch Chankosal
Secretary of State
Ministry of Public Works and Transport

Annex 1 Main Points Discussed
Annex 2 Project Design Matrix (PDM)
Annex 3 Plan of Operation (PO)
Annex 4 Implementation Structure
Annex 5 List of Proposed Members of Joint Coordinating Committee (JCC)

Annex 1

MAIN POINTS DISCUSSED

1. Environmental and Social Considerations
   With regard to the Section 10.1 of the BP, the Project is likely to have minimal adverse impact on the environment and society under the 'JICA Guidelines for Environmental and Social Considerations (April 2010)'.

2. Undertaking of PAS
   PAS mentioned that some of the matters described in the BP cannot be executed only with the responsibility and authority of PAS. JICA explained that, since the Project will be implemented based on the official bilateral requests from RGC to GOJ, the entire BP needs to be implemented by PAS, relevant ministries and organizations collectively. PAS showed understanding on JICA's explanation, and explained that in case of necessity, PAS would make necessary coordination and arrangement with relevant Cambodian organizations. The scope that PAS can take responsibility is as follows.
   (1) PAS will provide counterpart personnel and suitable office space with necessary equipment and secretariat services.
   (2) PAS will take necessary measures to ensure that the self-reliant operation of the Project will be sustained during and after the period of the Project, through full and active involvement in the Project by all related authorities, beneficiary groups and institutions.
   (3) PAS will ensure that the technologies and knowledge acquired by the Cambodian national as a result of the Project will contribute to the economic and social development of Cambodia.
   (4) PAS will ensure that the equipment will be utilized effectively for the implementation of the Project in consultation with the JICA experts (hereinafter referred to as "the experts").
   (5) PAS will take necessary measures to ensure that the knowledge and experience acquired by the Cambodian personnel from technical training in Japan will be utilized effectively in the implementation of the Project.
   (6) PAS will provide security-related information to the experts.
   (7) PAS will provide information as well as support in obtaining medical service to the experts.
   (8) PAS will provide credentials or identification card.
   (9) PAS will support to permit the experts to enter, leave and sojourn in Cambodia for the duration of their assignment therein.

3. Ex-post Evaluation
   JICA will conduct the ex-post evaluations together with the "Sihanoukville Port New Container Terminal Development Project" to verify sustainability and impact of the Project and draw lessons, regardless of the description of the BP (Section 6.2).

(END)

Annex 2: Project Design Matrix

Project Title: Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port Phase 2

Version 0

Implementing Organzation: Sihanoukville Autonomous Port (PAS)

Dated ##,##,##

Target Groups: (Direct Beneficiary) Staff members of Sihanoukville Autonomous Port (PAS), Ministry of Public Works and Transport (MPWT) and Kampuchea Shipping Agency and Brokers (KAMSAB)

(Indirect Beneficiary) Users of the Port of Sihanoukville

Period of Project: May 2018 to May 2021 (36 months in total)

Project Site: Sinaoukville Autonomous Port (PAS), Sihanoukville Municipality

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
Overall Goal					
Corporate strategy {mainly Container Terminal(CT)} of corporatized PAS will be modernized.	Annual container throughput of Sihanoukville Port will consistently increase for the long-run.	Annual activity report of PAS.			
Project Purpose					
Capacity of business operation (mainly CT) of corporatized PAS will be enhanced.	Annual container handling capacity of Sihanoukville Port will be enhanced.	Parameters observed by monitoring survey to estimate annual container handling capacity. Annual container handling capacity = Mini. {Quay-side capacity, Container Yard (CY) capacity} Quay-side capacity = N×α×1.65×0.4×356×24 Where Number of QC (Quayside Crane): N Max. Net Productivity of QG (Box/hr/QG): α Utilization ratio pf GC = 0.4 TEU/Box ratio = 1.65 (TEU/Box) CY capacity = V×0.75／1.3×{365×2／(β＋γ)} Where CY storage capacity: V (TEU) Terminal working ratio = 0.75 Peak Ratio = 1.3 Container dwelling time (Import): β(day) Container dwelling time (Export): γ(day)	1. The economic situation of related countries including Cambodia does not deteriorate markedly. 2. New container terminal will start its operation in 2023 as planned.		

Outputs					
1. Capacity to formulate corporate strategy (mainly CT) of PAS will be enhanced.	1. Corporate strategy will be submitted to the shareholders/Investors	1. Report submitted to the shareholder meeting	1. The priority of the logistic policy of the Cambodian Government noes not decrease.		
2. PAS staff will maximize container handling capacity by enhancing CTMS operation capacity.	2.1 Dwelling time of import container will be shortened. 2.2 Dwelling time of export container will be shortened.	2.1 Monitoring survey (6 days [2016]) 2.2 Monitoring survey (5 days [2016])	2. Cambodian Government can actually control management policy of PAS.		
3. Entrance and exit control and traffic flow management in port premises (including CT, rail yard and multi-purpose terminal) will be consistently implemented.	3. Non-container-related vehicles/motorcycles such as document deliverer will be avoided to enter CT	3. Monitoring survey (XX Vehicles/day [2018])			
4. Incoming/outgoing traffic flow congestion will be mitigated at gate as well as outside of Sihanoukville Port premises.	4. Waiting trailers in the queue will be decreased at CT gate.	4. Monitoring survey (61 Vehicles [2018])			
5. Vessel arrival/departure will be appropriately proceeded via. Port EDI.	5-1. Vessel arrival/departure procedure will be electrically processed by Port EDI. 5-2. Document will be eliminated for vessel arrival/departure procedure. 5-3. Calling vessel statistics will be compiled through Port EDI.	5.1. Monitoring survey 5.2. Monitoring survey 5.3. Monitoring survey			

Activities	Inputs	Important Assumption		
Activities for Output 1 **[1. Capacity to formulate corporate strategy (mainly CT) of PAS will be enhanced.]** 1-1. Analyze formulation process of corporate strategy (mainly CT) of PAS considering the similar best practices. 1-2. Analyze applicability of corporate strategy (mainly CT) formulation process of some port operation companies (e.g. some Japanese companies). 1-3. Systemize formulation process of corporate strategy (mainly CT) to gain an understanding of shareholders/investors, based on the results of 1-1 and 1-2. 1-4. Develop roadmap to set-up strategic planning department which is responsible for formulating corporate strategy (mainly CT) in PAS. 1-5. Set-up strategic planning department in PAS. 1-6. Implement third country training as necessary.	**<Japanese Side>** (a) Dispatch of Short-term experts Short-term expert (Activity) ・Corporate strategy (mainly CT) analysis of PAS (Activity 1) ・Container handling operation by making full use of CTMS (1) (Activity 2) ・Container handling operation by making full use of CTMS (2) (Activity 2) ・Entrance and exit control and traffic flow management in port premises (CT) (Activity 3) ・Traffic flow management in port premises (rail yard and multi-purpose terminal) (Activity 3) ・Incoming/outgoing traffic flow congestion mitigation (Inquiry system for availability status of carry-in/carry-out containers) (Activity 4) ・Incoming/outgoing traffic flow congestion mitigation (Off-dock yard as pre-screening system of IDTs) (Activity 4) ・Port EDI operation and vessel arrival and departure management (Activity 5) (b) Training ・Training in/out of Cambodia (c) Equipment **<Cambodian Side>** (a) C/P personnel will be appropriately assigned for the project. (b) Appropriate office space will be prepared and provided to the expert team. (c) Appropriate office equipment (electricity, utility, internet environment, desk, chair, etc.) will be prepared and provided to the expert team. (d) Port EDI task force will cooperate with JICA expert team.	1. Multi-purpose terminal will start its operation in 2018 as planned. 2. Port EDI system will be installed in Cambodia.		

Activities for Output 2 **2. PAS staff will maximize container handling capacity by enhancing CTMS operation capacity.]** 2-1. Scientifically investigate and analyze causes of congestion at gate, traffic flow congestion inside/outside CT. 2-2. Analyze operational conditions of CT by making full use of CTMS after additional QGCs and RTGs were installed. 2-3. Develop staff-enhancement plan of PAS to make full use of CTMS after additional QGCs and RTGs were installed. 2-4. Implement on-the-job-training to make full use of CTMS based on the staff-enhancement plan. 2-5. Propose data sharing method between CTMS and inquiry system (by telephone, fax and/or e-mail) for availability status of carry-in/carry-out containers (to be developed in 4.1). 2-6. Implement third country training as necessary.			
	Pre-Conditions		
	1. C/P personnel will be appropriately assigned for the project. 2. C/P personnel will remain the same during the project period. 3. PAS will appropriately build and operate off-dock yard at its own expense. 4. PAS will build railway yard and prepare yard equipment at its own expense.		

Activities for Output 3 **[3. Entrance and exit control and traffic flow management in port premises (including CT, rail yard and multi-purpose terminal) will be consistently implemented.]**				
3-1. Develop operation plan of entrance and exit control, based on the analysis (to be achieved in 2-1)				
3-2. Develop container operation plan of multi-purpose terminal linked to CT operation, based on the analysis (to be achieved in 2-1)				
3-3. Develop container operation plan of rail yard linked to CT operation, based on the analysis (to be achieved in 2-1)				
3-4. Implement pilot operation of entrance and exit control (based on the operation plan to be developed in 3-1) and develop roadmap to full-scale operation.				
3-5. Implement pilot operation of container handling at multi-purpose terminal (based on the container operation plan to be developed in 3-2) and develop roadmap to full-scale operation.				
3-6. Implement pilot operation of container handling at rail yard (based on the container operation plan to be developed in 3-3) and develop roadmap to full-scale operation.				
3-7. Implement third country training as necessary.				

Activities for Output 4 **[4. Incoming/outgoing traffic flow congestion will be mitigated at gate as well as outside of Sihanoukville Port premises.]**				
4-1. Preliminarily design inquiry system (by telephone, fax and/or e-mail) for availability status of carry-in/carry-out containers.				
4-2. Implement pilot operation of inquiry system (by telephone, fax and/or e-mail) for availability status of carry-in/carry-out containers and develop roadmap to full-scale operation.				
4-3. Preliminarily design off-dock yard as pre-screening system of improper document trailers (IDTs) with evacuation space, based on the analysis (to be achieved in 2-1).				
4-4. Implement pilot operation of pre-screening system of improper document trailers (IDTs) together with evacuation space, based on the preliminary design (to be achieved in 4-3) and develop roadmap to full-scale operation.		**<Issues and countermeasures>**		
Implement third country training as necessary.				
Activities for Output 5 **[5. Vessel arrival/departure will be appropriately proceeded via. Port EDI.]**				
5-1. Assist Port EDI taskforce (PAS, MPWT and KAMSAB) to appropriately introduce and operate Port EDI for vessel arrival/departure procedure.				
5-2. Document procedure of vessel arrival/departure will be eliminated soon after Port EDI is introduced.				
5-3. Develop guideline to compile calling vessel statistics via. Port EDI data.				
5-4. Implement third country training as necessary.				

Annex 3: Plan of Operation

Version 0.0

Dated ## ##, ##

Project Title: The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port Phase 2

Inputs	Year	2018	2019	2020	2021	Remarks	Monitoring: Issue	Monitoring: Solution
		1 2 3 4 5 6 7 8 9 # # #	1 2 3 4 5 6 7 8 9 # # #	1 2 3 4 5 6 7 8 9 # # #	1 2 3 4 5 6 7 8 9 # # #			
Expert								
Corporate strategy (mainly CT) analysis of PAS (Activity 1)	Plan							
	Actual							
Container handling operation by making full use of CTMS (1) (Activity 2)	Plan							
	Actual							
Container handling operation by making full use of CTMS (2) (Activity 2)	Plan							
	Actual							
Entrance and exit control and traffic flow management in port premises (CT) (Activity 3)	Plan							
	Actual							
Traffic flow management in port premises (rail yard and multi-purpose terminal) (Activity 3)	Plan							
	Actual							
Incoming/outgoing traffic flow congestion mitigation (Inquiry system for availability status of carry-in/carry-out containers) (Activity 4)	Plan							
	Actual							
Incoming/outgoing traffic flow congestion mitigation (Off-dock yard as pre-screening system of IDTs) (Activity 4)	Plan							
	Actual							
Port EDI operation and vessel arrival and departure management (Activity 5)	Plan							
	Actual							
Equipment								
	Plan							
	Actual							
Training (Japan / Third country)								
	Plan							
	Actual							

Annex 3: Plan of Operation

Version 0.0

Dated ## ##, ##

Project Title: The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port Phase 2

Monitoring

Activities / Sub-Activities	Year	2018	2019	2020	2021	Responsible Organization: Japan	Responsible Organization: RGC	Achievements	Issue & Countermeasures
		1 2 3 4 5 6 7 8 9 # # #	1 2 3 4 5 6 7 8 9 # # #	1 2 3 4 5 6 7 8 9 # # #	1 2 3 4 5 6 7 8 9 # # #				
Output 1: Capacity to formulate corporate strategy (mainly CT) of PAS will be enhanced.									
1.1 Analyze formulation process of corporate strategy (mainly CT) of PAS considering the similar best practices.	Plan								
	Actual								
1.2 Analyze applicability of corporate strategy (mainly CT) formulation process of some port operation companies (e.g. some Japanese companies).	Plan								
	Actual								
1.3 Systemize formulation process of corporate strategy (mainly CT) to gain an understanding of shareholders/investors, based on the results of 1-1 and 1-2.	Plan								
	Actual								
1.4 Develop roadmap to set-up strategic planning department which is responsible for formulating corporate strategy (mainly CT) in PAS.	Plan								
	Actual								
1.5 Set-up strategic planning department in PAS.	Plan								
	Actual								
1.6 Implement third country training as necessary.	Plan								
	Actual								
Output 2: PAS staff will maximize container handling capacity by enhancing CTMS operation capacity.									
2.1 Scientifically investigate and analyze causes of congestion at gate, traffic flow congestion inside/outside CT.	Plan								
	Actual								
2.2 Analyze operational conditions of CT by making full use of CTMS after additional QGCs and RTGs were installed.	Plan								
	Actual								
2.3 Develop staff-enhancement plan of PAS to make full use of CTMS after additional QGCs and RTGs were installed.	Plan								
	Actual								
2.4 Implement on-the-job-training to make full use of CTMS based on the staff-enhancement plan.	Plan								
	Actual								
2.5 Propose data sharing method between CTMS and inquiry system (by telephone, fax and/or e-mail) for availability status of carry-in/carry-out containers (to be developed in 4.1).	Plan								
	Actual								
2.6 Implement third country training as necessary.	Plan								
	Actual								
Output 3: Entrance and exit control and traffic flow management in port premises (including CT, rail yard and multi-purpose terminal) will be consistently implemented.									
3.1 Develop operation plan of entrance and exit control, based on the analysis (to be achieved in 2-1)	Plan								
	Actual								
3.2 Develop container operation plan of multi-purpose terminal linked to CT operation, based on the analysis (to be achieved in 2-1)	Plan								
	Actual								
3.3 Develop container operation plan of rail yard linked to CT operation, based on the analysis (to be achieved in 2-1)	Plan								
	Actual								
3.4 Implement pilot operation of entrance and exit control (based on the operation plan to be developed in 3-1) and develop roadmap to full-scale operation.	Plan								
	Actual								
3.5 Implement pilot operation of container handling at multi-purpose terminal (based on the container operation plan to be developed in 3-2) and develop roadmap to full-scale operation.	Plan								
	Actual								
3.6 Implement pilot operation of container handling at rail yard (based on the container operation plan to be developed in 3-3) and develop roadmap to full-scale operation.	Plan								
	Actual								
3.7 Implement third country training as necessary.	Plan								
	Actual								

Annex 3: Plan of Operation

Version 0.0

Dated ## ##, ##

Project Title: The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port Phase 2

		Monitoring	
Output 4: Incoming/outgoing traffic flow congestion will be mitigated at gate as well as outside of Sihanoukville Port premises.			
4.1 Preliminarily design inquiry system (by telephone, fax and/or e-mail) for availability status of carry-in/carry-out containers.	Plan / Actual		
4.2 Implement pilot operation of inquiry system (by telephone, fax and/or e-mail) for availability status of carry-in/carry-out containers and develop roadmap to full-scale operation.	Plan / Actual		
4.3 Preliminarily design off-dock yard as pre-screening system of improper document trailers (IDTs) with evacuation space, based on the analysis (to be achieved in 2-1).	Plan / Actual		
4.4 Implement pilot operation of pre-screening system of improper document trailers (IDTs) together with evacuation space, based on the preliminary design (to be achieved in 4-3) and develop roadmap to full-scale operation.	Plan / Actual		
4.5 Implement third country training as necessary.	Plan / Actual		
Output 5: Vessel arrival/departure will be appropriately proceeded via. Port EDI.			
5.1 Assist Port EDI taskforce (PAS, MPWT and KAMSAB) to appropriately introduce and operate Port EDI for vessel arrival/departure	Plan / Actual		
5.2 Document procedure of vessel arrival/departure will be eliminated soon after Port EDI is introduced.	Plan / Actual		
5.3 Develop guideline to compile calling vessel statistics via. Port EDI data.	Plan / Actual		
5.4 Implement third country training as necessary.	Plan / Actual		
Duration / Phasing	Plan / Actual		

Annex 3: Plan of Operation

Version 0.0

Dated ## ##, ##

Project Title: The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port Phase 2

Monitoring

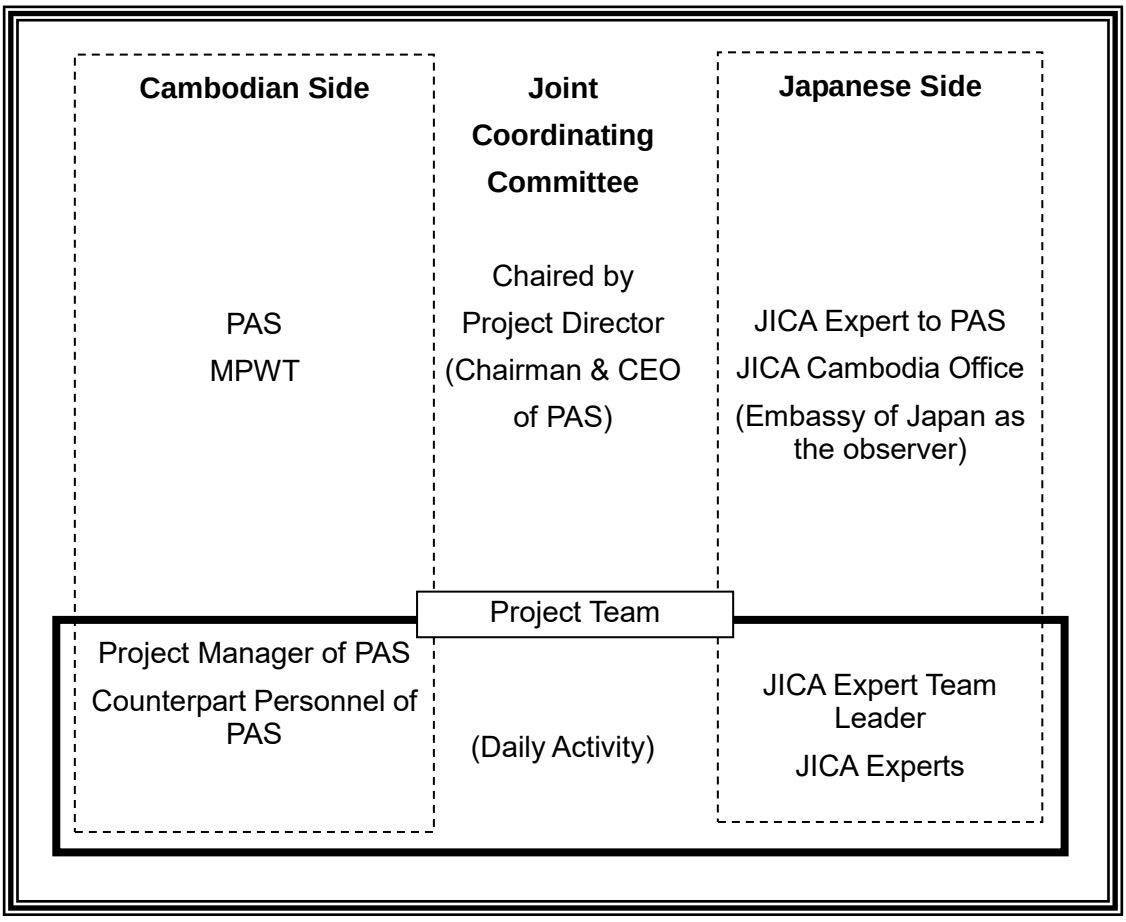
Monitoring Plan	Year	2018												2019												2020												2021												Remarks	Issue	Solution
		1	2	3	4	5	6	7	8	9	#	#	#	1	2	3	4	5	6	7	8	9	#	#	#	1	2	3	4	5	6	7	8	9	#	#	#	1	2	3	4	5	6	7	8	9	#	#	#			
Monitoring																																																		
Joint Coordinating Committee	Plan				■						■						■						■						■						■																
	Actual																																																		
Set-up the Detailed Plan of Operation	Plan																																																	
	Actual																																																	
Submission of Monitoring Sheet	Plan										■						■						■						■						■																
	Actual																																																		
Monitoring Mission from Japan	Plan				■						■						■						■						■						■																
	Actual																																																		
Joint Monitoring	Plan																																																	
	Actual																																																	
Post Monitoring (Year 2022)	Plan																																																	
	Actual																																																	
Reports/Documents																																																		
Minutes of Meeting (JCC)	Plan				■						■						■						■						■						■																
	Actual																																																		
Project Completion Report	Plan																																																	
	Actual																																																	
Public Relations																																																		
	Plan																																																		
	Actual																																																		

Annex 4

Implementation Structure

The Project will be implemented by the Cambodian side in cooperation with JICA. The Project Organization Chart indicating joint implementation structure is shown below:

Joint Implementation Structure of the Project



(END)

Annex 5

List of Proposed Members of Joint Coordination Committee for The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port (Phase 2)

1. Function

The Joint Coordination Committee will meet at least every 6 month and whenever the necessity arises, in order to fulfill the following work functions;

(1) To approve the annual work plan of the Project based on the Project Design Matrix (PDM) and Plan of Operation (PO) under the framework of the R/D.
(2) To evaluate the result of the annual work plan implementation and the overall progress of the Project.
(3) To review and exchange opinion on major issues that arise during the implementation of the Project.

2. Composition

(1) Project Team
1) Project Director, H.E. Lou Kim Chhun, Delegate of the Royal Government in Charge as Chairman & CEO, PAS
2) Project Manager, Mr. Thay Rithy, Deputy Director General, PAS
3) JICA Expert Team Leader
4) JICA Experts
5) Counterpart Personnel of PAS
6) Others whom are to be agreed by PAS and JICA

(2) Other members from Cambodian side
1) Supervising Agency, MPWT
2) Other persons that Cambodian side might consider necessary (KAMSAB, PPAP, consultants, technicians, etc)

(3) Other members from Japanese side:
1) Chief Representative, representative and staff of JICA Cambodia Office
2) JICA Expert to PAS
3) Staff from JICA Headquarters, other domestic and foreign offices
4) Staff from the Embassy of Japan
5) Other persons that Japanese side might consider necessary

* If JICA and PAS agree, other persons also can be the members of JCC.

(END)

MINUTES OF MEETINGS
BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND
SIHANOUKVILLE AUTONOMOUS PORT
FOR AMENDMENT OF THE RECORD OF DISCUSSIONS
ON
The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port (Phase 2)

The Japan International Cooperation Agency (hereinafter referred to as "JICA") and Sihanoukville Autonomous Port (hereinafter referred to as "PAS") hereby agree that the Record of Discussions on "The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port (Phase 2)" signed on February 1st, 2018 will be amended as follows;

1. Revision of Annex 2 Project Design Matrix (PDM)

Before	Amended Version
(Period of Project) May 2018 to May 2021 (36 months in total)	**(Period of Project)** April 2018 to September 2021 (42 months in total)
(Output1 Indicators)	**(Output1 Indicators)** 1.3 A medium/long-term facility investment plan for container terminals is formulated.
(Output1 Means of Verification)	**(Output1 Means of Verification)** 1.3 A medium/long-term facility investment plan for container terminals
(Output1 Activities)	**(Output1 Activities)** 1.7 Support the formulation of a facility investment plan for medium/long-term.
Reason: 1. Container cargo demand in Sihanoukville Port has been rapidly increasing and PAS need to formulate a facility investment plan for medium/long-term to respond to the increasing demand. 2. The Project for Port EDI System is delayed, so it is necessary to extend project period for a half year and postpone the activities for Output 5 to cooperate efficiently with Port EDI Project.	

This amendment will become effective as of October 22, 2020.

Annex 1 ：Record of Discussions (signed on February 01st , 2018)

Annex 2 ：Project Design Matrix（PDM）ver.3.0（Amended Version）

Phnom Penh, Sihanoukville, October 22 , 2020

H.E. Sugano Yuichi
Chief Representative
JICA Cambodia Office

H.E. Lou Kim Chhun
Delegate of Royal Government in
Charge as Chairman & CEO
Sihanoukville Autonomous Port

Witnessed by

H.E. Tauch Chankosal
Secretary of State
Ministry of Public Works and Transport

Project Design Matrix (PDM)

Project Title: Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port Phase 2
Implementing Organization: Sihanoukville Autonomous Port (PAS)
Period of Project: April 2018 to September 2021 (42 months in total)
Target Groups: (Direct Beneficiary) Staff members of Sihanoukville Autonomous Port (PAS), Ministry of Public Works and Transport (MPWT)
(Indirect Beneficiary) Users of the Port of Sihanoukville
Project Site: Sihanoukville Autonomous Port (PAS)

As of May 16, 2019

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important
Overall Goal			
Modernized Corporate strategy (mainly Container Terminal (CT)) of PAS will contribute to trade promotion in Cambodia.	Annual container throughput of Sihanoukville Port will exceed 800,000TEU in 2023.	Annual activity report of PAS.	
Project Purpose			
Capacity of business operation (mainly CT) of corporatized PAS will be enhanced.	Annual container handling capacity of Sihanoukville Port will be enhanced.	Parameters observed by monitoring survey to estimate annual container handling capacity. Annual container handling capacity = Min {Quay-side capacity, Container Yard capacity} Quay-side capacity = N×α×1.65×0.4×356×24 Where Number of QC (Quayside Crane): N Max. Net Productivity of QG (Box/hr/QG): α Utilization ratio pf GC = 0.4 TEU/Box ratio = 1.65 (TEU/Box) CY capacity = V×0.75／1.3×｛365×2／（β＋γ）｝ Where CY storage capacity: V (TEU) Terminal working ratio = 0.75 Peak Ratio = 1.3 Container dwelling time (Import): β(day) Container dwelling time (Export): γ(day)	1. The economic situation of related countries including Cambodia does not deteriorate markedly. 2. New container terminal will start its operation in 2023 as planned.
Outputs			
1. Capacity to formulate corporate strategy (mainly CT) of PAS will be enhanced.	1.1 Corporate strategy will be submitted to the shareholders/Investors 1.2 Decision making procedure and approval standard is authorized. 1.3 A medium/long-term facility investment plan for container terminals is formulated.	1.1 Report submitted to the shareholder meeting 1.2 Monitoring Survey (Authorized document, etc) 1.3 A medium/long-term facility investment plan for container terminals	1. The Cambodian Government continues to give priority to its logistics policy. 2. Cambodian Government can actually control management policy of PAS.
2. CTMS operation capacity will be enhanced.	2.1 Dwelling time of import containers will be shortened. 2.2 Dwelling time of export containers will be shortened. 2.3 Berthing / Time of vessels will be reduced.	2.1 Monitoring survey (6 days [2016]) 2.2 Monitoring survey (5 days [2016]) 2.3 Monitoring survey	
3. Entry and exit control and traffic flow management in port premises (including CT, rail yard and multi-purpose terminal) will be consistently implemented.	3.1 Vehicles and motorcycles other than container trailers will not enter CT. 3.2 Turn Around Time of Trailers will be reduced.	3.1 Monitoring survey 3.2 Monitoring Survey	
4. Incoming/outgoing traffic flow congestion will be mitigated at gate as well as outside of Sihanoukville Port premises.	4.1 Waiting trailers in front of the terminal gate will be reduced. 4.2 Gate processing time will be reduced.	4.1 Monitoring survey (61 Vehicles [2018]) 4.2 Monitoring Survey	
5. Vessel arrival/departure procedure will be improved via. Port EDI.	5-1. Vessel arrival/departure procedure will be electronically processed by Port EDI. 5-2. Calling vessel statistics will be prepared through Port EDI.	5.1. Monitoring survey 5.2. Monitoring survey	
Activities	Inputs		
Activities for Output 1 1. Capacity to formulate corporate strategy (mainly CT) of PAS will be enhanced. 1-1. Analyze formulation process of corporate strategy (mainly CT) of PAS considering the similar best practices at other ports. 1-2. Analyze applicability of corporate strategy (mainly for CT) formulation process of port operation companies (e.g. certain Japanese companies). 1-3. Systemize formulation process of corporate strategy (mainly CT) to gain the understanding of shareholders/investors based on the results of 1-1 and 1-2. 1-4. Develop roadmap to set-up strategic planning department which is responsible for formulating corporate strategy (mainly CT) in PAS. 1-5. Support setting-up of a strategic planning department in PAS. 1-6. Support to formulate Standard Operation Procedures (SOP) for selected departments of PAS as well as support the assessment of organization including job specifications. 1.7 Support the formulation of a facility investment plan for medium/long-term. ***Activities for Output 2*** 2. CTMS operation capacity will be enhanced. 2-1. Examine and analyze causes of congestion at gate, traffic flow congestion inside/outside CT. 2-2. Analyze operational conditions of CT by making full use of CTMS after installation of additional QGCs and RTGs. 2-3. Develop staff-enhancement plan of PAS to make full use of CTMS after installation of additional QGCs and RTGs.	***<Japanese Side>*** (a) Dispatch of Short-term experts Short-term expert (Output) ・Corporate strategy (mainly CT) analysis of PAS (Overall) ・Co-Team Leader/ Strategic Port Management (2) (Output 1) ・Entry/Exit Control of Container Terminal (Output 3) ・CTMS Operation/ Management information (Output 2) ・Container Handling Equipment (CT) (Output 2) ・Operation of Rail Yard and Multi-Purpose Terminal) (Output 3) ・Traffic Flow Management of Off-dock Yards (Output 4) ・Information System on Container Status (Output 4) ・Port EDI System/ Management Information (2) (Output 5) ・Capacity Enhancement for Marketing (Output 1) ・Baseline Survey/ Study Tours/ Project Administration (Overall) (b) Training ・Study Tour in Japan ・Study Tour in Thailand (c) Equipment	***<Cambodian Side>*** (a) C/P personnel will be appropriately assigned to the project. (b) Appropriate office space will be prepared and provided to the expert team. (c) Appropriate office equipment (electricity, utility, internet environment, desk, chair, etc.) will be prepared and provided to the expert team. (d) Port EDI task force will cooperate with JICA expert team.	<Pre-Conditions> 1. C/P personnel will be appropriately assigned to the project. 2. C/P personnel will remain the same during the project period. 3. Multi-purpose terminal will start its operation in 2018 as planned. 4. PAS will appropriately build and operate off-dock yard at its own expense. 5. PAS will build railway yard and prepare yard equipment at its own expense. 6. Port EDI system will be installed in Cambodia.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important
2-4. Implement on-the-job-training to make full use of CTMS based on the staff-enhancement plan.			
2-5. Support to formulate Standard Operation Procedures (SOP) in each cargo handling department.			
Activities for Output 3 3. Entry and exit control and traffic flow management in port premises (including CT, rail yard and multi-purpose terminal) will be implemented.			
3-1. Develop operation plan of entry and exit control based on the analysis conducted in 2-1.			
3-2. Develop container operation plan of multi-purpose terminal linked to CT operation based on the analysis conducted in 2-1.			
3-3. Develop a container operation plan of the rail yard linked to CT operation based on the analysis conducted in 2-1.			
3-4. Implement pilot operation of entry and exit control based on the operation plan to be developed in 3-1 and develop roadmap to full-scale operation.			
3-5. Implement pilot operation of empty container stacking yards and develop roadmap to full-scale operation.			
3-6. Implement pilot operation of container handling at rail yard based on the container operation plan to be developed in 3-3 and develop roadmap to full-scale operation.			
Activities for Output 4 4. Incoming/outgoing traffic flow congestion will be mitigated at gate as well as outside of Sihanoukville Port premises.			
4-1. Support to design a system which publishes the operating status of the container terminal using Web system.			
4-2. Implement pilot operation of the above system and develop roadmap to full-scale operation.			
4-3. Preliminarily design off-dock yard as pre-screening system of improper document trailers (IDTs) with evacuation space based on the analysis (to be conducted in 2-1).			
4-4. Implement pilot operation of pre-screening system of improper document trailers (IDTs) together with evacuation space based on the preliminary design (to be achieved in 4-3) and develop roadmap to full-scale operation. (in case that PAS will introduce the system at its own expense.)			
4-5. Propose countermeasures to cope with the increase of container handling up to 800,000 TEU, and support its implementation.			
Activities for Output 5 5. Vessel arrival/departure procedure will be improved via. Port EDI.			
5-1. Assist Port EDI taskforce (PAS, PPAP, MPWT) to appropriately introduce and operate Port EDI for vessel arrival/departure procedure.			
5-2. Document procedure of vessel arrival/departure will be eliminated soon after Port EDI is introduced.			
5-3. Develop guideline to compile calling vessel statistics via. Port EDI data.			

MINUTES OF MEETINGS
BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND
SIHANOUKVILLE AUTONOMOUS PORT
FOR AMENDMENT OF THE RECORD OF DISCUSSIONS
ON
THE PROJECT FOR CAPACITY DEVELOPMENT ON CONTAINER TERMINAL MANAGEMENT AND OPERATION IN SIHANOUKVILLE PORT PHASE 2

The Japan International Cooperation Agency (hereinafter referred to as "JICA") and Sihanoukville Autonomous Port (hereinafter referred to as "PAS") hereby agree that the Record of Discussions (hereinafter referred to as "R/D") on "The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port Phase 2" signed on February 1st, 2018 and Minutes of Meetings for amendment of R/D signed on October 22nd, 2020 is amended as follows;

1. Revision of Annex 3 Project Design Matrix (PDM)

Current Version	Amended Version
Period of Project April 2018 to September 2021 (42 months in total)	Period of Project April 2018 to January 2022 (46 months in total)
Reason: Because of the global spread of the coronavirus disease 2019 (COVID-19), some of the project activities have been suspended. In order to achieve the project purpose after the project team resume the activities, project duration needs to be extended.	

This amendment will become effective as of July 06 ,2021.

Annex 1: Record of Discussions (signed on February 1st, 2018)
Annex 2: Minutes of Meetings for amendment of R/D (signed on October 22nd, 2020)
Annex 3: Project Design Matrix (PDM) Ver.4.0 (Amended Version)
Annex 4: Plan of Operation (PO) Ver.4.0 (Amended Version)

Phnom Penh, Sihanoukville, July 06 ,2021

Ms. Kamei Haruko
Chief Representative
JICA Cambodia Office

H.E. Lou Kim Chhun
Delegate of Royal Government in Charge
as Chairman & CEO
Sihanoukville Autonomous Port

Witnessed by

H.E. Tauch Chankosal
Secretary of State
Ministry of Public works and Transport

Reference -2 Project Design Matrix (PDM)

Project Design Matrix

Project Title: Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port Phase 2
Implementing Organzation: Sihanoukville Autonomous Port (PAS)
Target Groups:
(Direct Beneficiary) Staff members of Sihanoukville Autonomous Port (PAS), Ministry of Public Works and Transport (MPWT) and Kampuchea Shipping Agency and Brokers (KAMSAB)
(Indirect Beneficiary) Users of the Port of Sihanoukville
Period of Project: April 2018 to March 2021 (36 months in total)
Project Site: Sinaoukville Autonomous Port (PAS)

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Overall Goal			
Modernised Corporate strategy {mainly Container Terminal(CT)} of PAS will contribute to trade promotion in Cambodia.	Annual container throughput of Sihanoukville Port will reach ##TEU in 2023.	Annual activity report of PAS.	
Project Purpose			
Capacity of business operation (mainly CT) of corporatized PAS will be enhanced.	Annual container handling capacity of Sihanoukville Port will be enhanced.	Parameters observed by monitoring survey to estimate annual container handling capacity. Annual container handling capacity = Mini. {Quay-side capacity, Container Yard (CY) capacity} Quay-side capacity = N×α×1.65×0.4×356×24 Where Number of QC (Quayside Crane): N Max. Net Productivity of QG (Box/hr/QG): α Utilization ratio pf GC = 0.4 TEU/Box ratio = 1.65 (TEU/Box) CY capacity = V×0.75／1.3×{365×2／(β＋γ)} Where CY storage capacity: V (TEU) Terminal working ratio = 0.75 Peak Ratio = 1.3 Container dwelling time (Import): β(day) Container dwelling time (Export): γ(day)	1. The economic situation of related countries including Cambodia does not deteriorate markedly. 2. New container terminal will start its operation in 2023 as planned.
Outputs			
1. Capacity to formulate corporate strategy (mainly CT) of PAS will be enhanced.	1. Corporate strategy will be submitted to the shareholders/Investors	1. Report submitted to the shareholder meeting	1. The priority of the logistic policy of the Cambodian Government noes not

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
2. CTMS operation capacity will be enhanced.	2.1 Dwelling time of import container will be shortened. 2.2 Dwelling time of export container will be shortened. 2.3 Berthing Time of vessels will be reduced. 2.4 Turn Around Time of Trailers will be reduced.	2.1 Monitoring survey (6 days [2016]) 2.2 Monitoring survey (5 days [2016]) 2.3 Monitoring survey 2.4 Monitoring survey	decrease. 2. Cambodian Government can actually control management policy of PAS.
3. Entry and exit control and traffic flow management in port premises (including CT, rail yard and multi-purpose terminal) will be ~~consistently~~ implemented.	3.1 Vehicles and motorcycles other than container trailers will not enter CT. 3.2 Turn Around Time of Trailers will be reduced.	3.1 Monitoring survey (XX Vehicles/day [2018]) 3.2 Monitoring Survey	
4. Incoming/outgoing traffic flow congestion will be mitigated at gate as well as outside of Sihanoukville Port premises.	4.1 Waiting trailers in front of the terminal gate will be reduced. 4.2 Gate processing time will be reduced.	4.1 Monitoring survey (61 Vehicles [2018]) 4.2 Monitoring Survey	
5. Vessel arrival/departure procedure will be improved via. Port EDI.	5-1. Vessel arrival/departure procedure will be electrically processed by Port EDI. 5-2. Calling vessel statistics will be prepared through Port EDI.	5.1. Monitoring survey 5.2. Monitoring survey	

Activities	Inputs	Important Assumption
Activities for Output 1 **[1. Capacity to formulate corporate strategy (mainly CT) of PAS will be enhanced.]** 1-1. Analyze formulation process of corporate strategy (mainly CT) of PAS considering the similar best practices at other ports. 1-2. Analyze applicability of corporate strategy (mainly CT) formulation process of some port operation companies (e.g. some Japanese companies). 1-3. Systemize formulation process of corporate strategy (mainly CT) to gain the understanding of shareholders/investors based on the results of 1-1 and 1-2. 1-4. Develop roadmap to set-up strategic planning department which is responsible for formulating corporate strategy (mainly CT) in PAS. 1-5. Support setting-up of a strategic planning department in PAS.	**<Japanese Side>** (a) Dispatch of Short-term experts Short-term expert (Output) ・Corporate strategy (mainly CT) analysis of PAS (Overall) ・Co-Team Leader/ Strategic Port Management (2) (Output 1) ・Entry/Exit Control of Container Terminal (Output 3) ・CTMS Operation/ Management informatin (Output 2) ・Container Handling Equipment (CT) (Output 2) ・Operation of Rail Yard and Multi-Purpose Terminal) (Output 3) ・Traffic Flow Management of Off-dock Yards (Output 4) ・Information System on Container Status (Output 4) ・Port EDI System/ Management Information (2) (Output 5) ・Capacity Enhancement for Marketing (Output 1) ・Baseline Survey/ Study Tours/ Project Administration (Overall) (b) Training ・Study Tour in Japan ・Study Tour in Thailand	1. Multi-purpose terminal will start its operation in 2018 as planned. 2. Port EDI system will be installed in Cambodia.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Activities for Output 2	**<Cambodian Side>**		**Pre-Conditions**
【2. CTMS operation capacity will be enhanced.】 2-1. **Examine** and analyze causes of congestion at gate, traffic flow congestion inside/outside CT. 2-2. Analyze operational conditions of CT by making full use of CTMS after additional QGCs and RTGs 2-3. Develop staff-enhancement plan of PAS to make full use of CTMS after additional QGCs and RTGs were installed. 2-4. Implement on-the-job-training to make full use of CTMS based on the staff-enhancement plan. 2-5. Propose data sharing method between CTMS and inquiry system (by telephone, fax and/or e-mail) for availability status of carry-in/carry-out containers (to be developed in 4.1).	(a) Equipment(a) C/P personnel will be appropriately assigned for the project. (b) Appropriate office space will be prepared and provided to the expert team. (c) Appropriate office equipment (electricity, utility, internet environment, desk, chair, etc.) will be prepared and provided to the expert team. (d) Port EDI task force will cooperate with JICA expert team.		1. C/P personnel will be appropriately assigned for the project. 2. C/P personnel will remain the same during the project period. 3. PAS will appropriately build and operate off-dock yard at its own expense. 4. PAS will build railway yard and prepare yard equipment at its own expense.
Activities for Output 3 **[3. Entry and exit control and traffic flow management in port premises (including CT, rail yard and multi-purpose terminal) will be implemented.]** 3-1. Develop operation plan of entry and exit control based on the analysis conducted in 2-1. 3-2. Develop container operation plan of multi-purpose terminal linked to CT operation based on the analysis conducted in 2-1. 3-3. Develop container operation plan of rail yard linked to CT operation based on the analysis conducted in 2-1. 3-4. Implement pilot operation of entry and exit control based on the operation plan to be developed in 3-1 and develop roadmap to full-scale operation. 3-5. Implement pilot operation of container handling at multi-purpose terminal based on the container operation plan to be developed in 3-2 and develop roadmap to full-scale operation. 3-6. Implement pilot operation of container handling at rail yard based on the container operation plan to be developed in 3-3 and develop roadmap to full-scale operation.			

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Activities for Output 4 **[4. Incoming/outgoing traffic flow congestion will be mitigated at gate as well as outside of Sihanoukville Port premises.]** 4-1. Preliminarily design inquiry system (by telephone, fax and/or e-mail) for availability status of carry-in/carry-out containers. 4-2. Implement pilot operation of inquiry system (by telephone, fax and/or e-mail) for availability status of carry-in/carry-out containers and develop roadmap to full-scale operation. (in case that PAS will introduce the system at its own expense.) 4-3. Preliminarily design off-dock yard as pre-screening system of improper document trailers (IDTs) with evacuation space based on the analysis (to be achieved in 2-1). 4-4. Implement pilot operation of pre-screening system of improper document trailers (IDTs) together with evacuation space based on the preliminary design (to be achieved in 4-3) and develop roadmap to full-scale operation. (in case that PAS will introduce the system at its own expense.) **Activities for Output 5** **[5. Vessel arrival/departure procedure will be improved via. Port EDI.]** 5-1. Assist Port EDI taskforce (PAS, PPAP, MPWT and KAMSAB) to appropriately introduce and operate Port EDI for vessel arrival/departure procedure. 5-2. Document procedure of vessel arrival/departure will be eliminated soon after Port EDI is introduced. 5-3. Develop guideline to compile calling vessel statistics via. Port EDI data.			**<Issues and countermeasures>**

Reference -3 JCC Meeting Materials

Dispatch Schedule of JICA Expert Team

	Role/Field of Expertise	Name	Organaization	FY 2018 Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	FY 2019 Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	FY 2020 Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Work in Sihanoukville	Team Leader/ Strategic Port Management (1)	Akira KOYAMA	OCDI																																				
	Co-Team Leader/ Strategic Port Management (2)	Kiyoshi NAKASHIMA	OCDI																																				
	Entry/Exit Control of Container Terminal	Susumu KIMURA	OCDI																																				
	CTMS Operation/ Management Information (1)	Norihiro FUKAZAWA	OCDI																																				
	Container Handling Equipment	Norihiko KATAOKA	OCDI																																				
	Operation of Rail Yard and Multi-Purpose Terminal	Yukihiro MATSUMOTO	OCDI																																				
	Traffic Flow Management of Off-Dock Yards	Yutaka MIKAMI	OCDI																																				
	Information System on Container Status	Keisuke ARAI	OCDI																																				
	Port EDI System/ Management Information (2)	Tatsuyuki SHISHIDO	OCDI																																				
	Capacity Enhancement for Marketing	Yutaka TAKAGI	OCDI																																				
	Baseline Surveys/Study Tours/ Project Administration	Takehiko SAIKAWA	OCDI																																				
	Submission date (shown by marked △ and report name)				△ WP/MS(Ver.0)							△ MS summary(Ver.1) / MS(Ver.1)					△ MS summary(Ver.2) / MS(Ver.2)							△ MS summary(Ver.3) / MS(Ver.3)						△ MS summary(Ver.4) / MS(Ver.4)						△ MS summary(Ver.5) / MS(Ver.5)				△ FR
	JCC meeting date to be held				①							②					③							④						⑤						⑥				

Basic Approach to Project Implementation

- Technical Aspect -

（1）Technology transfer based on actual business experience

（2）Securing flexibility of the project and offering advice regarding related projects

（3）Consideration on port management and operation as a public company

（4）Realization of container terminal operation which meets international standards

（5）Thorough hands-on approach

（6）Continuous efforts for improvement using PDCA cycle method

（7）Utilization of Japanese experience and practices on port management and operation

（8）Proposal for enhancement of coordination among concerned authorities

- Operational Aspect -

（1）Further enhancement of relations between PAS and Japan

（2）Project management based on PDM, etc.

（3）Timely reporting to JICA offices (Headquarters and Cambodia)

（4）Safety considerations

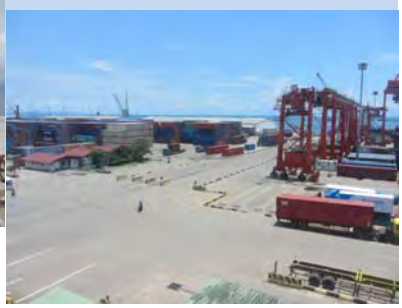
Inputs from Cambodian Side

The Expert Team would like to ask PAS to take the following measures at its own expense for the smooth implementation of the project.

1) C/P personnel is appropriately assigned for the project
2) Appropriate office space will be prepared and provided to the expert team
3) Appropriate office equipment (electricity, utility, internet environment, desk, chair, etc.) will be prepared and provided to the expert team
4) Port EDI task force will cooperate with the JICA expert team
5) Assist the experts in obtaining permission to enter restricted areas etc. and take pictures related to the project
6) Provide funding in case that PAS introduces the container status information system and pre-screening system for IDT

(based on the PDM expect for item 5) &6))

Thank you for your Attention



Koyama@ocdi.or.jp
nakashima@ocdi.or.jp
kimura@ocdi.or.jp
fukazawa@ocdi.or.jp

The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port Phase 2
-- 2nd Technical Meeting --

Function of Technical Meeting (TM)

- To approve the work plan (including PDM (Project Design Matric) and PO (Plan of Operations)) under the framework the R/D signed on 1st February, 2018 between MPWT, PAS and JICA.
- To evaluate the results of activities and progress of the Project, and
- To confirm basic directions of the Project and share information.

The TM meeting will be held twice a year (roughly every 6 months).

(based on the 1st TM material)

December 4th, 2018
The Overseas Coastal Area Development Institute of Japan

Background of the Project

Current issues of PAS and Sihanoukville port

・Improving the efficiency of port management and operation and gaining trust of shareholders/investors as a public company.

・Capacity enhancement and increased efficiency of operation due to limited container handling capacity

Enhancement of port management and operation capacity (mainly container terminal) is urgent.

Purpose of the Project

Capacity of business operation (mainly CT) of corporatized PAS will be enhanced.

(based on the PDM)

Expected Outputs

Output 1: Capacity to formulate corporate strategic (mainly CT) of PAS will be enhanced.

Output 2: CTMS operation capacity will be enhanced.

Output 3: Entry/exit control and traffic flow management on port premises (including CT, rail yard and multi-purpose terminal) will be implemented.

Output 4: Incoming/outgoing traffic congestion will be mitigated at gate as well as outside of Sihanoukville Port premises.

Output 5: Vessel arrival/departure procedure will be improved via Port EDI.

(based on the PDM)

Contents

Ⅰ. Key Performance Indicator (KPI)

1. List of Indicators

The following Indicators were presented and approved at the 1st PIU.
KPI (draft) in the square frame will be presented today as a result of baseline surveys

Output Field	Objectively Verifiable Indicator (as per the PDM)	KPI (Key Performance Indicator) (Draft)
Output 1	Corporate strategy will be submitted to the shareholders/Investors	Report submitted to the shareholder meeting
Output 2 (1)	**Dwelling time of import containers will be shortened.**	**Import Container Dwell Time**
Output 2 (2)	**Dwelling time of export containers will be shortened.**	**Export Container Dwell Time**
Output 2 (3)	**Berthing time of vessels will be reduced**	**Berth Productivity**
Output 2 (4)	**Turn around time of trailers will be reduced**	**Turn Around Time of Trailers**
Output 3	**Vehicles and motorcycles other than container trailers will not enter the container terminal**	**Number of Vehicles other than Container Trailers**
Output 4 (1)	**Waiting trailers in front of the terminal gate will be reduced**	**Number of Waiting Trailers**
Output 4 (2)	**Trailers passing the gate will be increased**	**Number of Trailers Passing Gate**
Output 5 (1)	Vessel arrival/departure procedure will be electrically processed by Port EDI system	Ratio of electronic application
Output 5 (2)	Calling vessel statistics will be prepared through Port EDI	Achievement of generating the statistical report using the data of Port EDI system

2. Follow-up of KPI

The follow-up image of KPI is as follows, which has presented at the 1st PIU

Objectively Verifiable Indicator (as per the PDM)		KPI (Draft)	Baseline (Month/Year)	Target Value	Oct. 2018	Apr. 2019	Oct. 2019	Apr. 2020	Oct. 2020
Output 1	Corporate strategy will be submitted to the shareholders/Investors	Report submitted to the shareholder meeting							
			Improvement Rate						
Output 2 (1)	**Dwelling time of import containers will be shortened.**	**Import Container Dwell Time**							
			Improvement Rate						
Output 2 (2)	**Dwelling time of export containers will be shortened.**	**Export Container Dwell Time**							
			Improvement Rate						
Output 2 (3)	**Berthing time of vessels will be reduced**	**Berth Productivity**							
			Improvement Rate						
Output 2 (4)	**Turn around time of trailers will be reduced**	**Turn Around Time of Trailers**							
			Improvement Rate						
Output 3	**Vehicles and motorcycles other than container trailers will not enter the container terminal**	**Number of Vehicles other than Container Trailers**							
			Improvement Rate						
Output 4 (1)	**Waiting trailers in front of the terminal gate will be reduced**	**Number of Waiting Trailers**							
			Improvement Rate						
Output 4 (2)	**Trailers passing the gate will be increased**	**Number of Trailers Passing Gate**							
			Improvement Rate						
Output 5 (1)	Vessel arrival/departure procedure will be electrically processed by Port EDI system	Ratio of electronic application							
			Improvement Rate						
Output 5 (2)	Calling vessel statistics will be prepared through Port EDI	Achievement of generating the statistical report using the data of Port EDI system							
			Improvement Rate						

3. Sheet for Baseline Survey and Follow-up Survey - case of Output 2 -

Sheet for Baseline Survey (Draft)

(Date) (Person inCharge,PAS)

(Person in Charge, JICA Team)

Output	Objectively Verifiable Indicator (as per the PDM)	KPI
Output 2 (1)	Dwelling Time of import containers will be shortened.	Import Container Dwell Time

Baseline Survey

Survey Method	Dwell time of import container is calculated using the history information of CTMS. The import dwell time is calculated from the discharged time of a container from a vessel and its delivered time at the gate. As the KPI, the average import dwell time of containers delivered for a week is calculated.
Person in Charge	(PAS): Mr. Srey Narin, Mr. Thay Mengly, Mr. Sek Sovannara, Mr. Som Karoney (JICA Expert Team): Mr. Fukazawa / Mr. Kataoka

Compilation Method of Survey Results

(For example; regarding dwell time, 10 samples and the average result of three surveys are adopted.)

	1st survey	2nd survey	3rd survey	Average	Baseline	Target Value
Import Dwell Time						

Remarks

Effectiveness as indicator (adoption or not)

Please attach Reference Figures/Tables and Pictures related to Surveys

Sheet for Follow-up Survey (Draft)

(Date) (Person inCharge,PAS)

(Person in Charge, JICA Team)

Output	Objectively Verifiable Indicator (as per the PDM)	KPI
Output 2 (1)	Dwelling Time of import containers will be shortened.	Import Container Dwell Time

Follow-up Survey

Survey Method	Dwell time of import container is calculated using the history information of CTMS. The import dwell time is calculated from the discharged time of a container from a vessel and its delivered time at the gate. As the KPI, the average import dwell time of containers delivered for a week is calculated.
Person in Charge	(PAS): Mr. Srey Narin, Mr. Thay Mengly, Mr. Sek Sovannara, Mr. Som Karoney (JICA Expert Team): Mr. Fukazawa / Mr. Kataoka

Compilation Method of Survey Results

(Results of current survey)

	1st survey	2nd survey	3rd survey	average
Import Dwell Time				

(Comparison from the beginning)

	Baseline	Target Value	Second Survey	Third Survey	Current Survey
Import Dwell Time					
Improvement Rate			%	%	%

(Improvement Rate = (Surveyed Value/Baseline) x 100)

Please attach Reference Figures/Tables and Pictures related to Surveys

Ⅱ. KPI by Output
(Setting of Baseline and Target Value)

The following baselines and targets values were approved at the 3rd PIU held on September 19th, 2018

1. KPI : Output 2 (1)
Import Container Dwell Time

Output	Objectively Verifiable Indicator (as per the PDM)	KPI
Output 2 (1)	Dwelling Time of import containers will be shortened.	Import Container Dwell Time

Baseline Survey

Survey Method	Dwell time of import container is calculated using the history information of CTMS. The import dwell time is calculated from the discharge time of a container from a vessel and its delivered time from the gate. As the KPI, the average dwelll time of import containers delivered for a month is calculated.
Person in Charge	(PAS): Mr. Srey Narin, Mr. Thay Mengly, Mr. Sek Sovannara, Mr. Som Karoney (JICA Expert Team): Mr. Fukazawa / Mr. Kataoka

Compilation Method of Survey Results

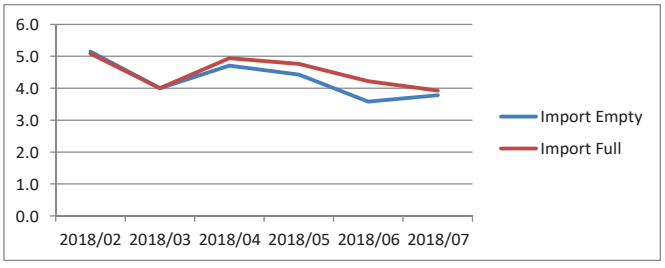
Import Dwell Time is canculated using CTMS data. The data is monthly average of export dwell time

	Feb	Mar	Apr	May	Jun	Jul	Average	Baseline	Target Value
Empty	**5.1**	**4.0**	**4.7**	**4.4**	**3.6**	**3.8**	**4.2**	**4.2**	**4**
Full	**5.1**	**4.0**	**4.9**	**4.8**	**4.2**	**3.9**	**4.5**	**4.5**	**4**

Remarks

Effectiveness as indicator (adoption or not)

Please attach Reference Figures/Tables and Pictures related to Surveys



2. KPI : Output 2 (2)
Export Container Dwell Time

Output	Objectively Verifiable Indicator (as per the PDM)	KPI
Output 2 (2)	Dwelling Time of export containers will be shortened.	Export Container Dwell Time

Baseline Survey

Survey Method	Dwell time of export container is calculated using the history information of CTMS. The export dwell time is calculated from the received time of a container at the gate and its loaded time on a vessel. As the KPI, the average dwelll time of export containers loaded for a month is calculated.
Person in Charge	(PAS): Mr. Srey Narin, Mr. Thay Mengly, Mr. Sek Sovannara, Mr. Som Karoney (JICA Expert Team): Mr. Fukazawa / Mr. Kataoka

Compilation Method of Survey Results

Export Dwell Time is canculated using CTMS data. The data is monthly average of export dwell time

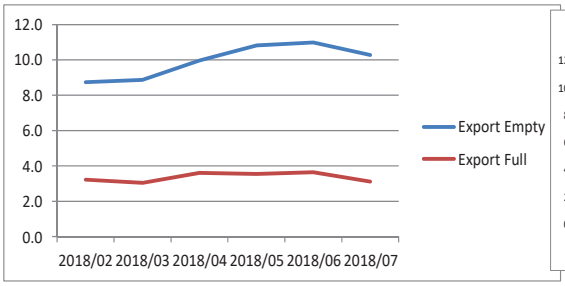
	Feb	Mar	Apr	May	Jun	Jul	Average	Baseline	Target Value
Empty	**8.7**	**8.9**	**10.0**	**10.8**	**11.0**	**10.3**	**10.0**	**10.0**	**6**
Full	**3.2**	**3.0**	**3.6**	**3.5**	**3.6**	**3.1**	**3.4**	**3.4**	**4**

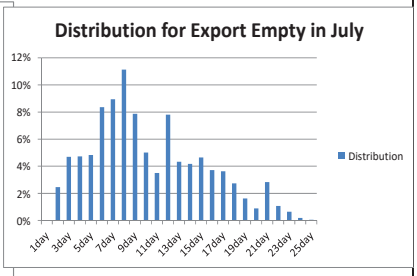
Remarks

Dwell time of Export empty containers is very long.

Effectiveness as indicator (adoption or not)

Please attach Reference Figures/Tables and Pictures related to Surveys





3. KPI : Output 2 (3)
Berth Productivity

Output	Objectively Verifiable Indicator (as per the PDM)	KPI
Output 2 (3)	Berthing Time of vessels will be reduced	Berth Productivity

Baseline Survey

Survey Method	Berthing Productivity is picked up from the Vessel Schedule List compiled by Container Terminal Operation Department of PAS. Vessel Productivity = (Number of load/discharge moves) / (Berth Time) STS Crane Productivity = (Number of load/discharge moves) / (Operation Time of Cranes) The monthly average Berth Productivity is calculated as the KPI.
Person in Charge	(PAS): Mr. Srey Narin, Mr. Thay Mengly, Mr. Sek Sovannara, Mr. Som Karoney (JICA Expert Team): Mr. Fukazawa / Mr. Kataoka

Compilation Method of Survey Results

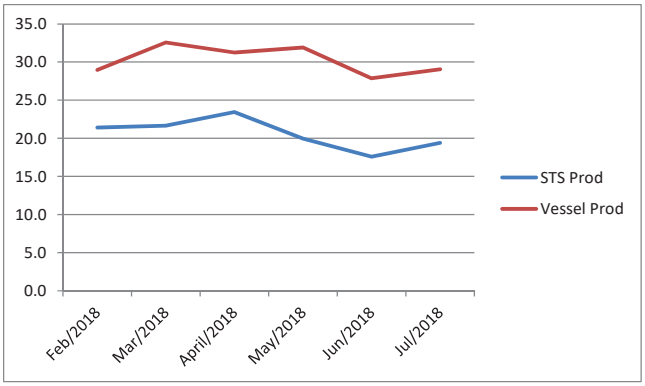
The monthly average Productivities of both vessels and ShipToShore(STS) Crane are shown below.

	Feb	Mar	Apr	May	Jun	Jul	Average	Baseline	Target Value
STS Crane	**21.4**	**21.7**	**23.5**	**19.9**	**17.6**	**19.4**	**20.2**	**20.2**	**25**
Vessel	**29.0**	**32.6**	**31.3**	**31.9**	**27.9**	**29.1**	**30.1**	**30.1**	**40**

Remarks

Effectiveness as indicator (adoption or not)

Please attach Reference Figures/Tables and Pictures related to Surveys



4. KPI : Output 2 (4)
Turn Around Time of Trailers

Output	Objectively Verifiable Indicator (as per the PDM)	KPI
Output 2 (4)	Turn Around Time of trailers will be reduced	Turn Around Time of Trailers

Baseline Survey

Survey Method	Turn around time of trailers is calculated using the history information of CTMS as below. 1) Receiving: Time from the reception at the gate to the stacking completion in the yard. 2) Delivery a) A: Time from the reception at the gate to the pickup completion in the yard. b) B: Time from the pickup completion in the yard to the delivery completion at the gate.
Person in Charge	(PAS): Mr. Srey Narin, Mr. Thay Mengly, Mr. Sek Sovannara, Mr. Som Karoney (JICA Expert Team): Mr. Fukazawa / Mr. Kataoka

Compilation Method of Survey Results

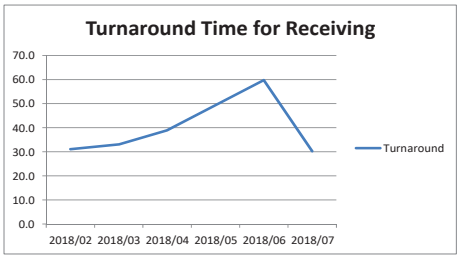
Turn around time is calculated only for full containers

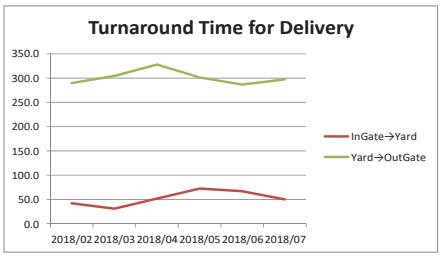
	Feb	Mar	Apr	May	Jun	Jul	Average	Baseline	Target Value
Receiving	**31.1**	**33.1**	**38.9**	**49.4**	**59.8**	**30.3**	**41.4**	**41.4**	**30**
Delivery A	**41.7**	**30.8**	**51.6**	**72.3**	**66.8**	**50.1**	**53.6**	**53.6**	**40**
Delivery B	**289.8**	**304.5**	**327.8**	**301.3**	**286.6**	**297.3**	**300.7**	**300.7**	**200**

Remarks

Effectiveness as indicator (adoption or not)

Please attach Reference Figures/Tables and Pictures related to Surveys





5. KPI : Output 3
Number of Vehicles other than Container Trailers

Output	Objectively Verifiable Indicator (as per the PDM)	KPI
Output 3	Vehicles and motorcycles other than container trailers will not enter the container terminal	Number of Vehicles other than Container Trailers

Baseline Survey

Survey Method	· Security Station of Harbor Master Dept. will provide estimated numbers of general vehicles and motorcycles currently entering the port. · Field survey will be conducted as per the requirement of the PDM. Detailed method of the field survey will be considered based on the analysis of the data above.
Person in Charge	(PAS): Capt. Thong Viro, Mr. Nhem Pisey, Mr. Kong Vibol (JICA Expert Team): Susumu Kimura, Yukihiro Matsumoto

Compilation Method of Survey Results

Survey results of the number of car and motorcycle entring port gate 2,3 and passage next to PAS Admi.Buil. are shown as percentage in the following table. This is the first step to realize that no cars and motorcycles will enter the container terminal itself.

Survey Date		May 24	May 25	Aug.23	Aug.24	Aug.30	Aug.31	Average	Baselime	Target
		%	%	%	%	%	%	%	%	%
Gate 2	Car	56.3	69.2	61.1	61.0	63.0	59	61.7	61.7	100.0
	Motorcycle	47.5	66.2	61.1	54.3	48.8	51	54.9	54.9	100.0
	Sub-Total	49.5	66.9	61.1	56.1	52.8	53	56.6	56.6	100.0
Gate 3	Car	1.3	0.0	0.8	0.4	0.4	0	0.6	0.6	0.0
	Motorcycle	26.7	10.3	14.7	20.0	22.6	23	19.6	19.6	0.0
	SubTotal	21.1	7.7	11.1	14.8	16.3	17	14.8	14.8	0.0
Passage	Car	42.4	30.8	38.1	38.6	36.6	40	37.8	37.8	0.0
	Motorcycle	25.8	23.5	24.1	25.7	28.6	26	25.6	25.6	0.0
	Sub-Total	29.4	25.3	27.8	29.1	30.9	29	28.6	28.6	0.0
Total	Car	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Motorcycle	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Remarks

5. KPI : Output 3
Number of Vehicles other than Container Trailers

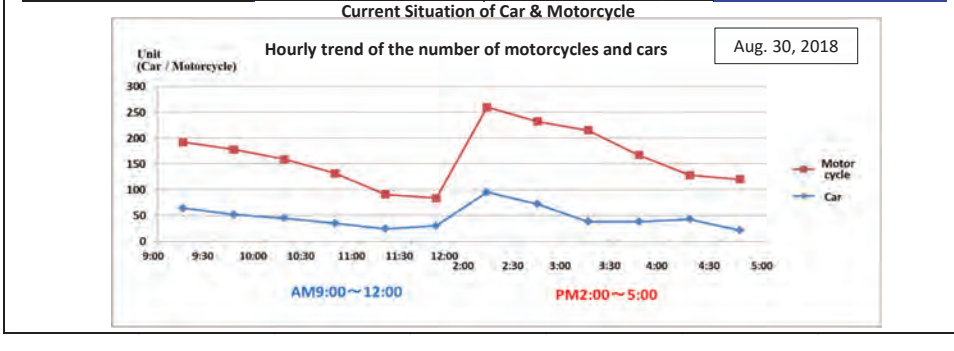
Effectiveness as indicator (adoption or not)

Please attach Reference Figures/Tables and Pictures related to Surveys

Record of the number of motorcycles and cars

Survey Date		24-May		25-May		Aug. 23		Aug. 24		Aug. 30		Aug. 31		Average	Average	Baselime	Target
		Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	%	%
Gate 2	Car	259	56.3	285	69.2	234	61.1	283	61.0	351	63.0	278	59	282	61.7	61.7	100.0
	Motorcycle	775	47.5	822	66.2	664	61.1	704	54.3	683	48.8	740	51	731	54.9	54.9	100.0
	Sub-Total	1,034	49.5	1,107	66.9	898	61.1	987	56.1	1,034	52.8	1,018	53	1013	56.6	56.6	100.0
Gate 3	Car	6	1.3	0	0.0	3	0.8	2	0.4	2	0.4	2	0	3	0.8	0.8	0.0
	Motorcycle	436	26.7	128	10.3	160	14.7	259	20.0	317	22.8	331	23	272	19.6	19.6	0.0
	SubTotal	442	21.1	128	7.7	163	11.1	261	14.8	319	16.3	333	17	274	14.8	14.8	0.0
Passage	Car	195	42.4	127	30.8	146	38.1	179	38.6	204	36.6	188	40	173	37.8	37.8	0.0
	Motorcycle	420	25.8	292	23.5	262	24.1	333	25.7	401	28.6	369	26	346	25.6	25.6	0.0
	Sub-Total	615	29.4	419	25.3	408	27.8	512	29.1	605	30.9	557	29	519	28.6	28.6	0.0
Total	Car	460	100.0	412	100.0	383	100.0	464	100.0	557	100.0	468	100.0	457	100.0	100.0	100.0
	Motorcycle	1,631	100.0	1,242	100.0	1,086	100.0	1,296	100.0	1,401	100.0	1,440	100.0	1349	100.0	100.0	100.0
	Total	2,091	100.0	1,654	100.0	1,469	100.0	1,760	100.0	1,958	100.0	1,908	100.0	1807	100.0	100.0	100.0

AVARAGE				Car			Motorcycle					
Car	287	29%	61%	2	1%	0%	179	34%	38%	468	26%	100%
Motorcycle	698	71%		267	99%		341	66%		1,306	74%	
	984			269			521			1,774		



Current Situation of Car & Motorcycle

6. KPI : Output 4 (1)
Number of Waiting Trailers

Output	Objectively Verifiable Indicator (as per the PDM)	KPI
Output 4 (1)	Waiting trailers in front of the terminal gate will be reduced	Number of Waiting Trailers

Baseline Survey

Survey Method	· Field survey of the number of waiting trailers from the gate to the end point. · Survey time: 9:00-11:00 on Friday, Saturday, Monday
Person in Charge	(PAS): Capt. Thong Viro, Mr. Ty Sakun, Mr. Tieng Ratana, (JICA Expert Team): Keisuke ARAI, Yutaka MIKAMI

Compilation Method of Survey Results

Adopt the maximum number of waiting trailers. Record and compare to the container handling volumes of the same month.

Waiting Trailers	1st survey	2nd survey	3rd survey	4th survey	5th survey	6th survey	Maximum Number	Baseline	Target Value
	12/05/2018	19/05/2018	26/05/2018	01/09/2018	08/09/2018	15/09/2018			
Saturday	123	63	93	105	76	110	123	**123**	**60**

Target Value (60) = Queuing trailers from Gate3 to Intersection near Gate3(35) +
Queuing Trailers from Intersection near Gate3 to T-Intersection on 1 lane of NH4(25)
The other lane of NH4 from the intersection near Gate3 to T-intersection should be used for public.

Remarks The some measures should be taken for improvement.

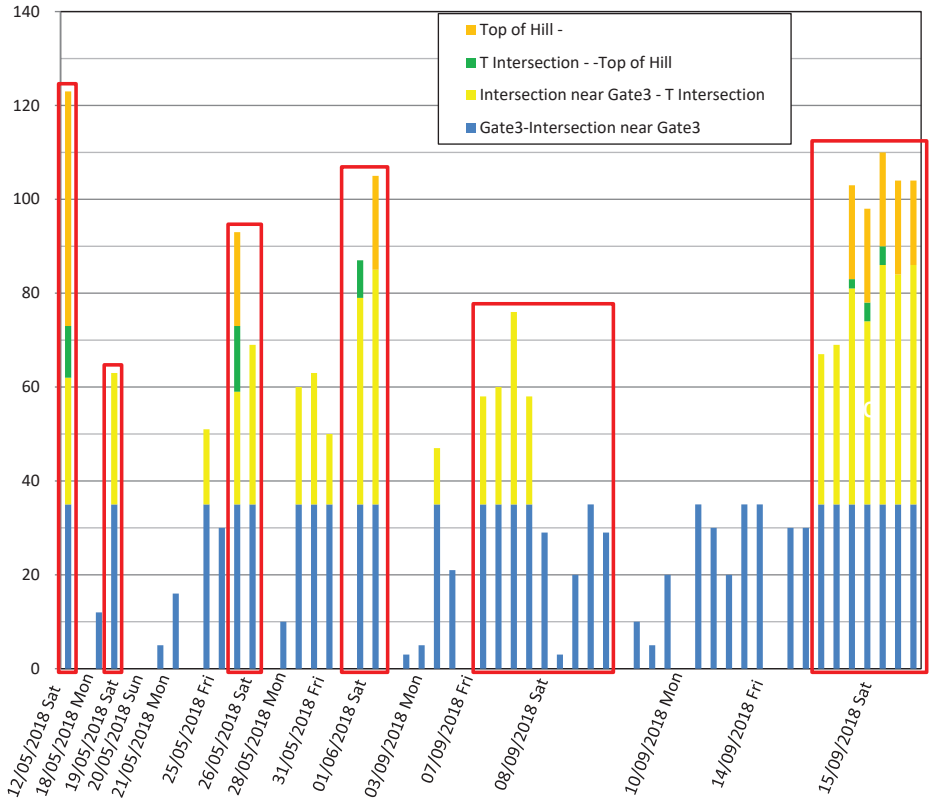
Effectiveness as indicator (adoption or not)

Please attach Reference Figures/Tables and Pictures related to Surveys

Maximum number of waiting trailers in front of the terminal gate

Waiting Trailers	1st survey 2nd week May, 2018	2nd survey 3rd week May, 2018	3rd survey 4th week May, 2018	4th survey 5th week Aug, 2018	5th survey 1st week Sep, 2018	6th survey 2nd week Sep, 2018	Average
Friday	-	12	51	63	47	35	41.6
Saturday	123	63	93	105	76	110	95
Monday	-	5	10	5	35	-	13.8

6. KPI : Output 4 (1)
Number of Waiting Trailers



7.KPI : Output 4 (2)
Number of Trailers Passing Gate

Output	Objectively Verifiable Indicator (as per the PDM)	KPI
Output 4 (2)	Trailers passing the gate will be increased	Number of Trailers Passing Gate

Baseline Survey

Survey Method	· Field survey of the number of trailers pass the gate by lane. · Survey time: 9:30-11:30 on Friday and Monday
Person in Charge	(PAS): Capt. Thong Viro, Mr. Ty Sakun, Mr. Tieng Ratana, (JICA Expert Team): Keisuke ARAI, Yutaka MIKAMI

Compilation Method of Survey Results

Adopt the number of trailers passing gate per hour

18-May-18	21-May-18	25-May-18	28-May-18	31-Aug-18	3-Sep-18	7-Sep-18	10-Sep-18	Average	Baseline	Target Value
Fri	Mon	Fri	Mon	Fri	Mon	Fri	Mon			
49.0	52.0	82.5	101.0	80.5	87.0	81.0	102.0	79.4	80	104

80*1.3=104

Remarks

Effectiveness as indicator (adoption or not)

Please attach Reference Figures/Tables and Pictures related to Surveys

Container Throughput(Prediction(2018&2021)) (TEU)

2013	2014	2015	2016	2017	2018	2021
285,010	**332,893**	**390,564**	**401,182**	**460,198**	**513,381**	**670,000**

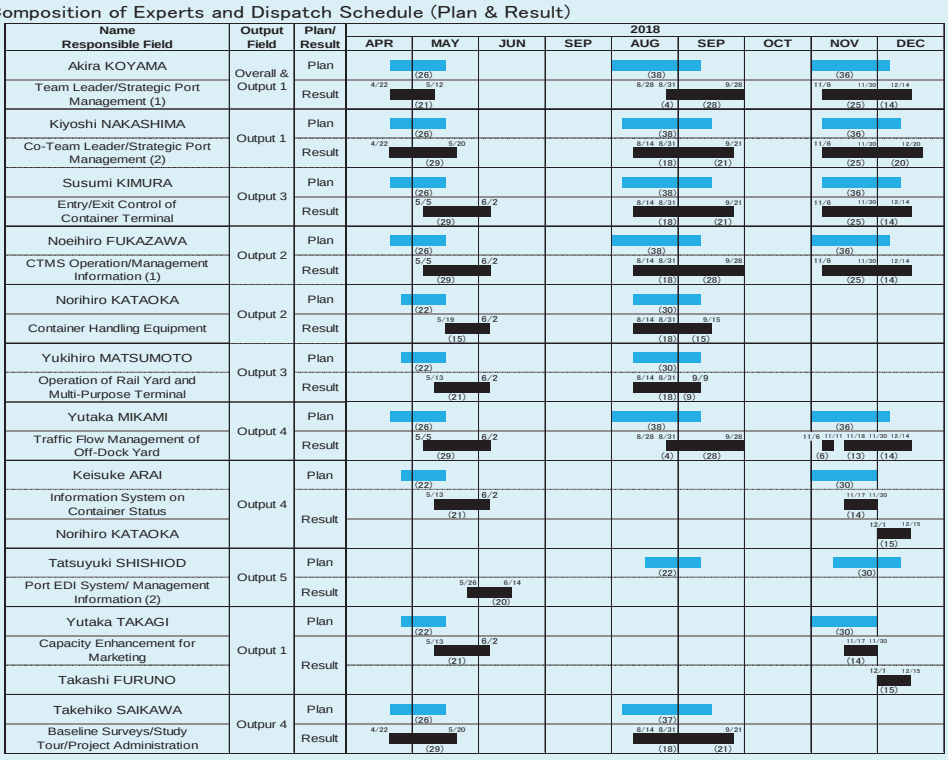
299,472(Jan-July(2018))/7*12=513,381

670,000(2021)/513,381(2018)=1.3..(Target Value/ Baseline)

Part 2: Progress of the Project in the 1st, 2nd and 3rd Dispatches

1. Input of the JICA Expert

Composition of Experts and Dispatch Schedule (Plan & Result)



2. TM & PIU

TM (Technical Meeting)

No.	Date	Subject	Attendants
1	May 9th	The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port Phase 2	30
2	December 4th	Results of the Baseline Surveys and Seeting of Target Value of KPIs Progress of the Project in the 1st, 2nd and 3rd Dispatches	

PIU (Project Implementation Unit)

No.	Date	Subject	Attendants
1	May 17th	Method of Baseline Surveys and Follow-up Surveys	33
2	August 16th	Progress Report of the 1st Dispatch and Activity Plan of the 2nd Dispatch	25
3	September 19th	Results of Baseline Surveys and Setting of Baseline/Target Value	24
4	November 14th	Activity Plan of the 3rd Dispatch	26

3. Workshops

No.	Date	Subject	Attendants
Team-A: Strategic Management (Output 1)			
1	September 14th	Issues related to Output 1	26
2	September 19th	Marketing Action Plan	21
Team-B: Container Operation and Management (Output 2 & 3)			
1	August 27th	Issues related to container handling efficiency/sharing information and examining countermeasures	34
2	September 6th	Current situation and issues of motorcycles and cars entering gates 2,3, etc./sharing information and examining countermeasures	32
3	September 13th	SOP for the Lashing Team and Traffic Flow of Trailers inside the Port	29
4	September 21st	Proposal of Some Measures for Enhancement of Container Handling Capacity	17
5	November 16th	1. Comparison of Productivity between Gate and Yard (RTG) using CTMS data (Output 2) 2. Container Storage Plan and Utilization of the Multi-Purpose Terminal (Output 3)	20
6	November 30th	The Role of Control Center and Current Issues	23
Team-C: Congestion Mitigation (Output 4)			
1	September 21st	Congestion issues (Results of congestion surveys outside the port and at the gate)	13
2	November 8th	Trail Countermeasures for Mitigating the Congestion at Gate 3	24
Team-D: Port EDI Task Force (Output 5)			
1	May 29th	Port Entry/Departure Clearance Procedures and Port EDI	12

4. Output 1 : Capacity to formulate corporate strategic (mainly CT) of PAS will be enhanced.

- **Activity 1-1:** Analyze formulation process of corporate strategic (mainly CT) of PAS considering the similar best practices at other ports.

Compiling method of the statistic information which is closely related to corporate management was illustrated with a workflow chart. Necessity of "Managerial Accounting System" was introduced.

AS a marketing activity, approaching cargo owners in Phnom Penh jointly with PAS staff to solicit their cooperation in shifting traffics from peak time to off-peak time was conducted as per the Action Plan which was prepared by the Team.

- **Activity 1-2:** Analyze applicability of strategic management (mainly regarding CT) formulation process of some port operation companies.

Corporate strategy was defined as a mid or long-term management plan with financial (numerical) targets and examples of mid or long-term management plan that meets the above definition were introduced.

Based on the results above, a suggestion that PAS should formulate a mid or long term management plan with financial (numerical) targets was accepted.

- **Activity 1-3:** Systemize formulation process of strategic management (mainly regarding CT) to obtain the understanding of shareholders/investors based on the results of 1-1and 1-2.

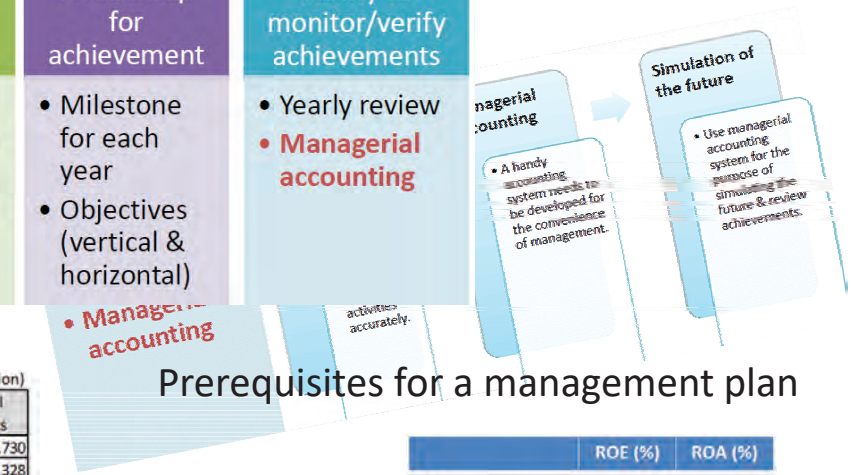
Based on the issues in Activity 1-1, implementation of the "Managerial Accounting System" from the formulation and monitoring viewpoints was studied.

- **Others:**

Upon request of PAS, Job Specifications and SOPs are collecting from all departments in order to examine any issues in the job allocation and the working procedures.

Activity 1-1: Corporate Strategy

A long-term perspective	Clear target	A roadmap for achievement	Ability to monitor/verify achievements
• Mid term: 3-5 years • Long-term: 10 years or more	• Focus on the crucial Issues • Indicated with financial figures	• Milestone for each year • Objectives (vertical & horizontal)	• Yearly review • Managerial accounting



Prerequisites for a management plan

2016 (KHR million)

	ROE	ROA	Profit before tax	Total equity	Total assets
PWSA	7.4%	4.7%	60,591	819,972	1,297,730
GTI	5.7%	4.7%	15,556	274,196	333,328
PPSP	4.6%	3.0%	6,697	146,310	226,710
PPAP	3.7%	2.9%	19,278	521,150	659,557
PAS	6.7%	3.3%	35,846	534,613	1,082,932
Average	6.0%	3.8%	137,968	2,296,241	3,600,257

2017 (KHR million)

	ROE	ROA	Profit before tax	Total equity	Total assets
PWSA	6.3%	3.9%	52,827	839,369	1,362,012
GTI	1.5%	1.3%	4,230	273,364	333,140
PPSP	3.6%	2.4%	5,563	155,503	235,023
PPAP	4.6%	3.7%	25,012	540,301	680,460
PAS	5.9%	3.0%	37,855	646,611	1,280,510
Average	5.1%	3.2%	125,487	2,455,148	3,891,145

ROE & ROA of the listed companies in Cambodia Securities Exchange

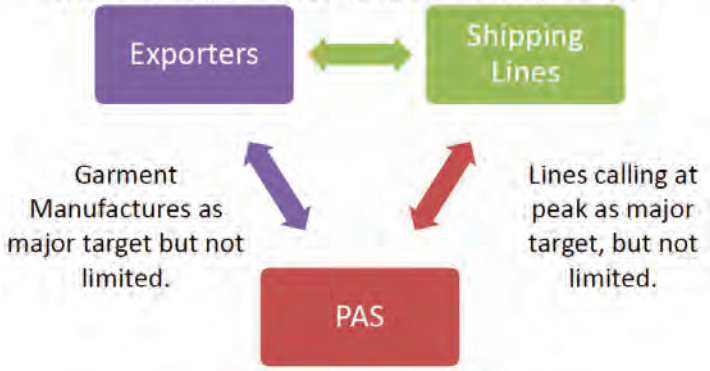
	ROE (%)	ROA (%)
PSA	12.3	8.5
DP World	10.2	4.6
Hutchison Port	4.8	1.8
Cosco Pacific	8.9	5.6
China Merchant	7.1	4.7
PPAP (2017)	4.6	3.7
PAS (2017)	**5.9**	**3.0**

ROE & ROA of the global CT opeartors (2015)

Activity 1-1: Marketing

Marketing Action Plan – Short/Mid --

Actions to alleviate the congestion at peak time
Challenging, but there should be way out!!!



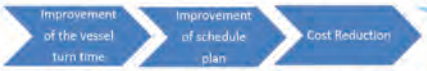
Benefit to Shippers

(1) Better logistics management

(2) Flexibility of booking arrangement

Benefit to Shipping Lines

(1) Improvement of the vessel turn time



(2) Higher possibility of tonnage increase in a week - by bringing in additional vessels

Schedule Change/ leveling of shipping line

☆Actions focused in Phnom Penh

1. Meeting with

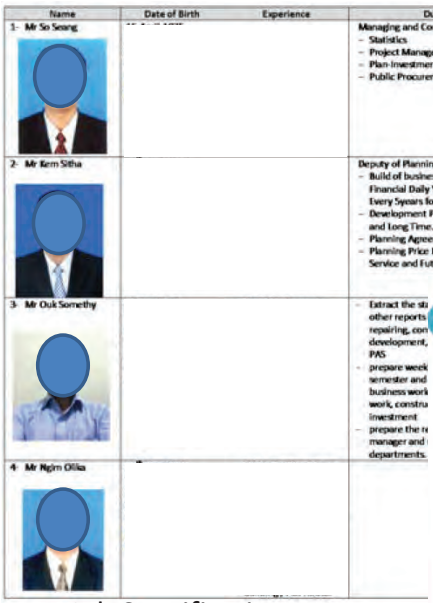
- Individual Major Shippers, GMAC/Industrial or Shippers Association
- Individual Major Shipping Lines,(with extensive peak calling schedu.e)
- Forwarders
- PPAP for joint action

Others: Job Description & SOP

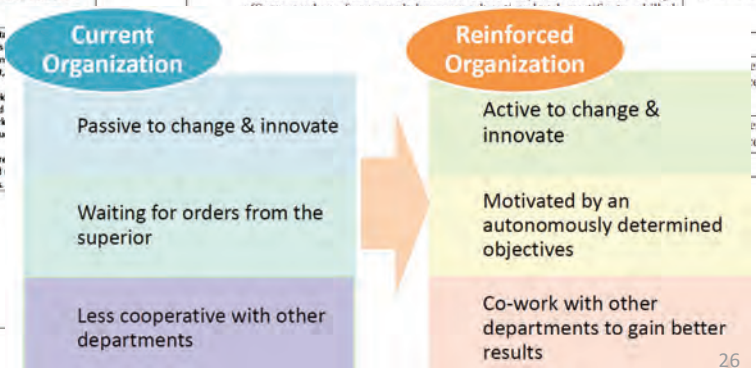
Organization Reinforcement Plan to encourage self-motivation

SOP

Protocols (steps & procedures involved in this task)		
Time	Procedure	Receive/To whom Approve by
Office 2	Human Resource Office	
Duty2-1	-Prepare selection form for Officer employee Workers to work at PAS	
ask 2-1-1	-Prepare selection form for officer employee workers	
day	-Prepare Notification Principle condition and Procedure to recruit Officer Employee Workers to Officially work in PAS.	HE. President general Manager
days	-Provide and accept job application form of Officer employer in PAS and report to Leader	*Human Resource Officer*
days	-Coordinate with commission (Participate by relevant department) to decide on Officer employee in their work Short Listed, Oral and Written Test, Health Check and make decision on candidate nominate (contract officer) who passed	HE. President general Manager
uty2-2	-Manage and arrange Officer, employee, Workers framework base on Education level, certificate and skilled	
ask 2-2-1	-Officer workers employee framework arrangement	
day	After HE. President general director approve on new Officer employee or workers nominate, officer of Human resource Department should arrange	HE. President general director



Job Specification



5. Output 2: CTMS operation capacity will be enhanced.

- **Activity 2-1:** Examine and analyze causes of congestion at gate, traffic flow congestion inside/outside CT.

Reception procedure of trailers at Gate 3 was documented.

Issues of traffic flow of trailers inside the Port were identified and measures were examined.

- **Activity 2-2:** Analyze operational conditions of CT by making full use of CTMS after the installation of additional QGCs and RTGs.

Based on the daily observation of container handling operation at site, issues were identified and improvement measures were presented.

SOP for lashing team in vessel operation was prepared and presented.

- **Activity 2-3:** Implement on-the-job-training to make full use of CTMS based on the staff-enhancement plan.

Productivity between gate 3 and RTG yard was analyzed using CTMS data.

- **Others:**

Urgent measures for enhancement of container handling capacity such as extension of QGC rails, introduction of RTGs in the A/B yard, evacuation of long staying containers from the yard, development of an off-dock yard for empty containers, etc. were examined.

Activity 2-1: Traffic Flow of Yard Trailers

(1) Between Container Berths and CY

☆Short cut (Yellow line) should be prohibited

⇩

Minimize the moves crossing RTG run way for improving the efficiency and safety

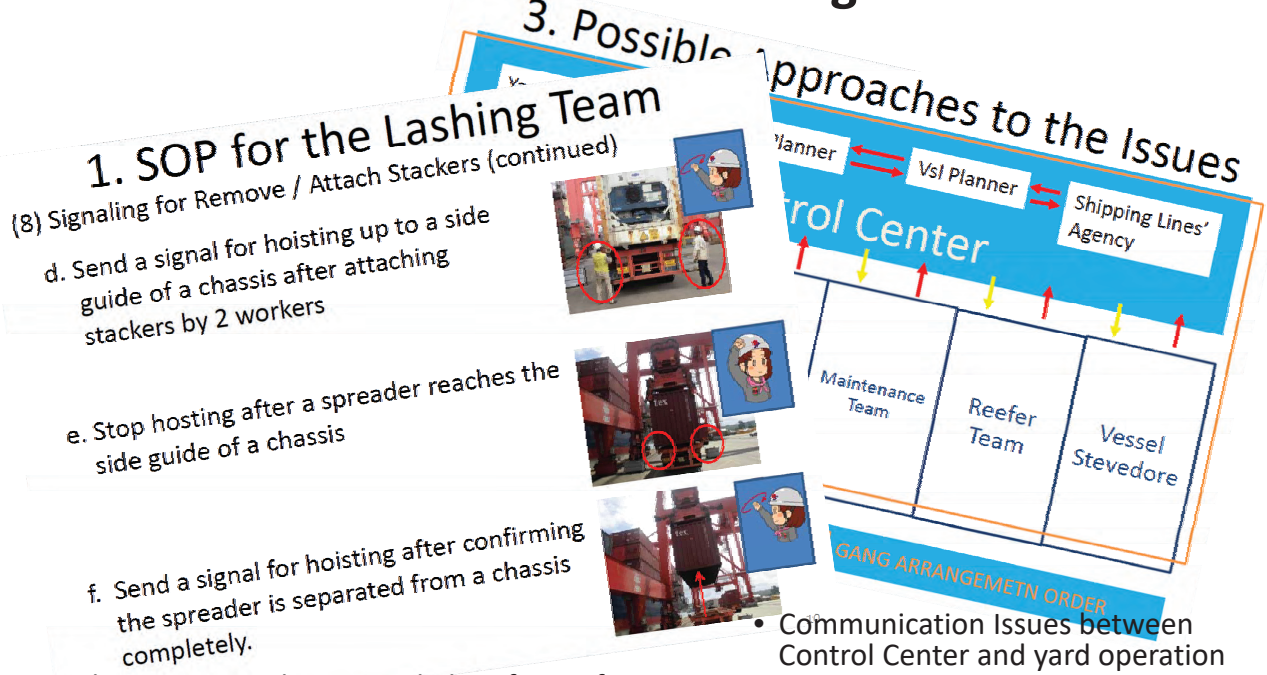
(2) Between Container Berths and Empty Yard

☆Unify the traffic route and prohibit short cuts

⇩

This will improves the efficiency of Reach Stacker/RTG operation and reduces the traffic congestion in the empty yard

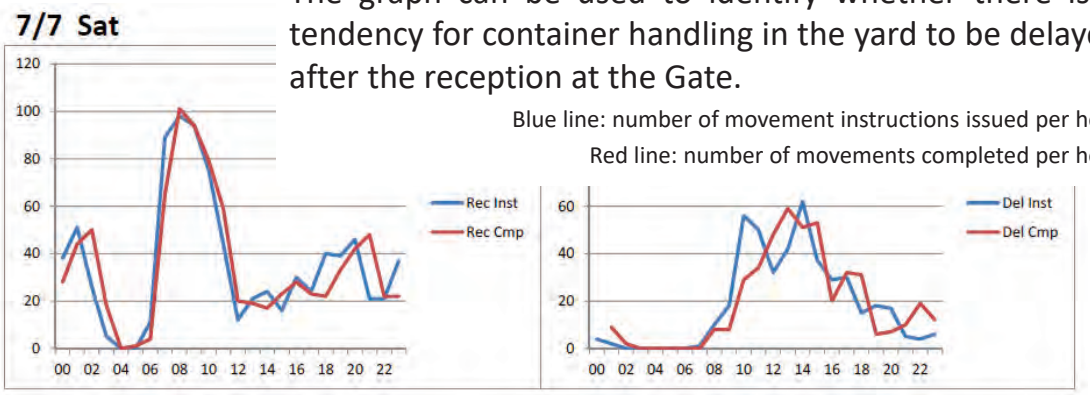
Activity 2-2 : Improvement Measures for Container Handling



- Observation at the site and identifying of issues
- Proposal of improvement measures
- Documentation of SOP (Standard Operation Procedures

- Communication Issues between Control Center and yard operation
- Importance of information sharing

Activity 3-3: Utilization of CTMS Data



The graph can be used to identify whether there is a tendency for container handling in the yard to be delayed after the reception at the Gate.

Blue line: number of movement instructions issued per hour

Red line: number of movements completed per hour

The largest number of containers handled per hour in RTG yard for gate moves is;

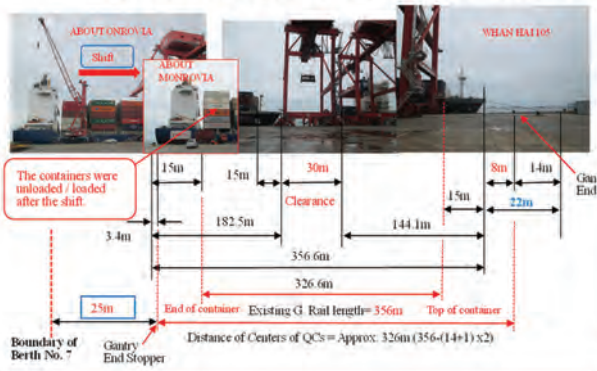
131 container/hour 11:00 – 12:00 on Saturday

(This is the largest number in the recent 6-month period)

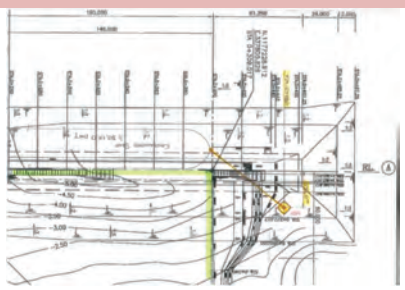
There is no major delay in container handling in RTG yard after the reception at the Gate even on Saturday

Capacity of container handling in RTG yard for Gate moves is not affected by the vessel operation.

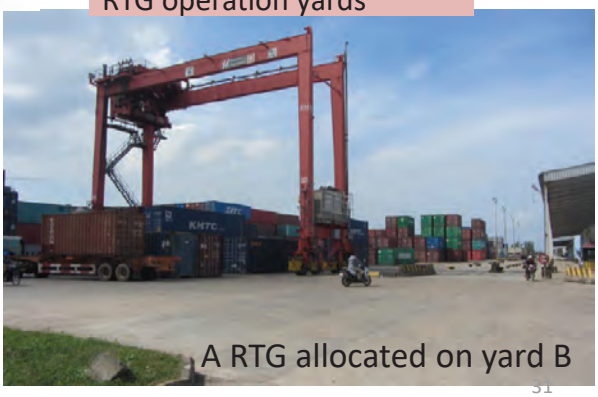
Others: Proposals for urgent improvement measures for Increasing handling capacity



Extension of QGC rails and installation of a new bollard on the sea



Conversion of yard A & B to RTG operation yards



A RTG allocated on yard B

6. Output 3: Entry/exit control and traffic flow management on port premises (including CT, rail yard and multi-purpose terminal) will be implemented.

- Activity 3-1: Develop operation plan of entry and exit control based on the analysis conducted in 2-1.

As stage 1 of entry/exit control, an operation plan of entry/exit control at gate 3 and passage was prepared and the plan has implemented by PAS.

Traffic flows of motorcycles were grasped and better traffic flows were proposed.

- Activity 3-2: Develop container operation plan of multi-purpose terminal linked to CT operation based on the analysis conducted in 2-1.

Present use and usage plan of the multi-purpose terminal were grasped and the scale and layout for an empty container yard were presented.

Empty container storage plans inside/outside the port were studied in connection with conversion yard A & B to RTG operation yard.

- Activity 3-3: Implement pilot operation of entry and exit control based on the operation plan to be developed in 3-1 and develop roadmap to full-scale operation.

A new constraint was identified in the rail yard, which was caused a protective fence and two gates in order to install radioactive detection devices based on US requirements. How to use this area as container storage yard will be examined.

Activity 3-1 : Entry/Exit Control

Announcement
On
Traffic limitation for using entry-exit gate in PAS of
Broker Agencies that process the formalities and import-export clearance

Oreang, Preah Sihanouk Province, September 27, 2018

PAS is pleased to inform ladies, staff and brokers that process the formalities and ies, staff and brokers that process the service quality of PAS as well ing, loading-discharge operation nd import-export clearance with : hrough gate No.3 rance with customs officers, on area. ocess the clearance with PAS, order to prevent the impact and broker agencies that derstand and undertake to nouncement. overnment of Cambodia harge as Chairman& CEO ure and organization seal Lou Kim Chhun

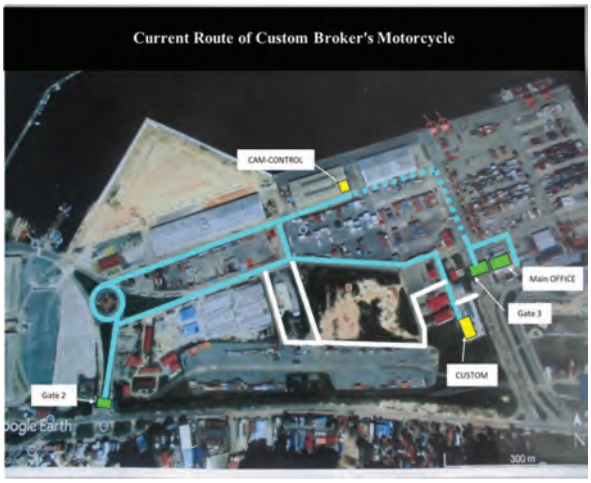
Prohibition of entry/exit from gate 3 and passage is being implemented.

- Survey on the number of motorcycles and cars
- Proposal for entry restrictions of motorcycles and cars from gate 3 and passage next to PAS office
- Issuance of announcement by Chairman of PAS

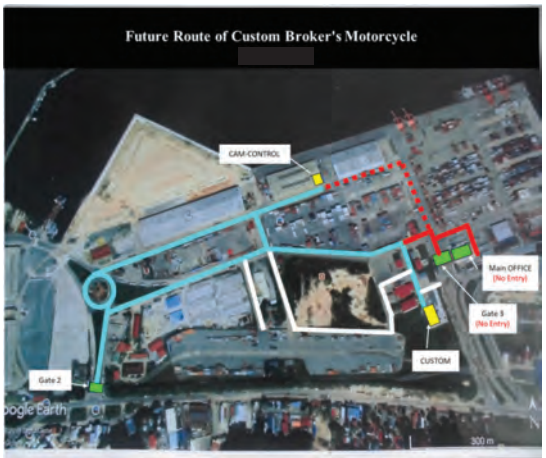
Unfortunately, new rules has not been followed.

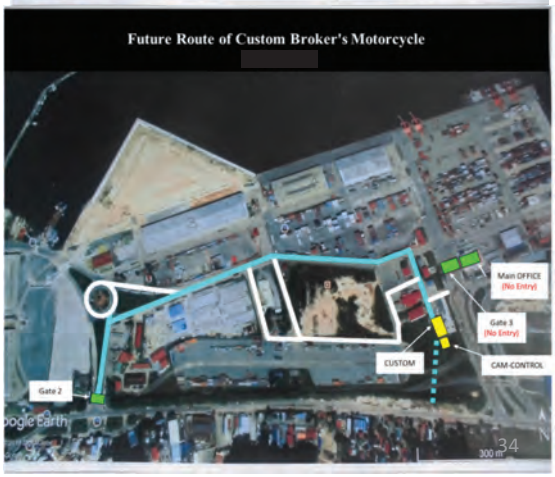
Activity 3-1: Traffic Flows of Motorcycles

Stage 1



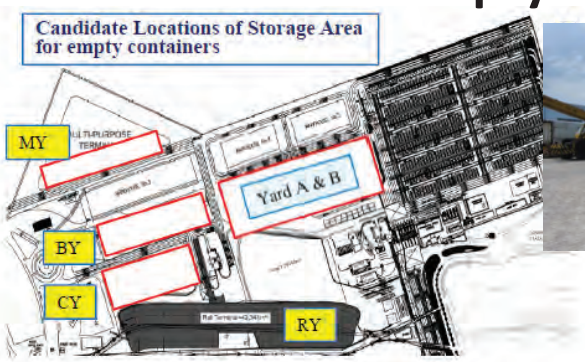
Present





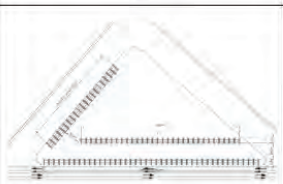
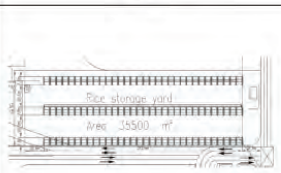
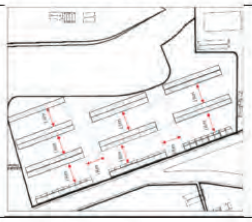
Future

Activity 3-2: Multi-purpose terminal and Candidates for empty containers



Multi-purpose Terminal

Scale and layout of candidate sites for empty containers storage

Location	MY	BY	CY
Layout			
Amount of GS (TEU)	330	320	350 (10x32+8x3=344)
Total GS	1,000		

To secure future demand of empty containers, seeking areas outside the port (inside SEZ, etc.) will be required.

7. Output 4: Incoming/outgoing traffic congestion will be mitigated at gate as well as outside of Sihanoukville Port premises.

- **Activity 4-1:** Preliminarily design inquiry system (by telephone, fax and/or e-mail) for availability status of carry-in/carry-out containers.

Congestion status outside the port were surveyed. As congestion alleviation measures, establishment of a special team and coordination with other organization, etc. were proposed.

Surveys on the gate processing time of trailers and the number of IDTs were also conducted. It was found that the occurrence of IDTs was very low.

There is little need to introduce an inquiry system of container status.

- **Activity 4-3:** Preliminarily design off-dock yard as pre-screening system of improper document trailers (IDTs) with evacuation space based on the analysis (to be achieved in 2-1).

Current status of candidate sites for an off-dock yard outside the port (inside/around SEZ, PAS's property 25km away, etc.) was grasped.

A traffic volume survey of NH No. 4 was conducted to examine possibility of the use of PAS's property as an off dock yard.