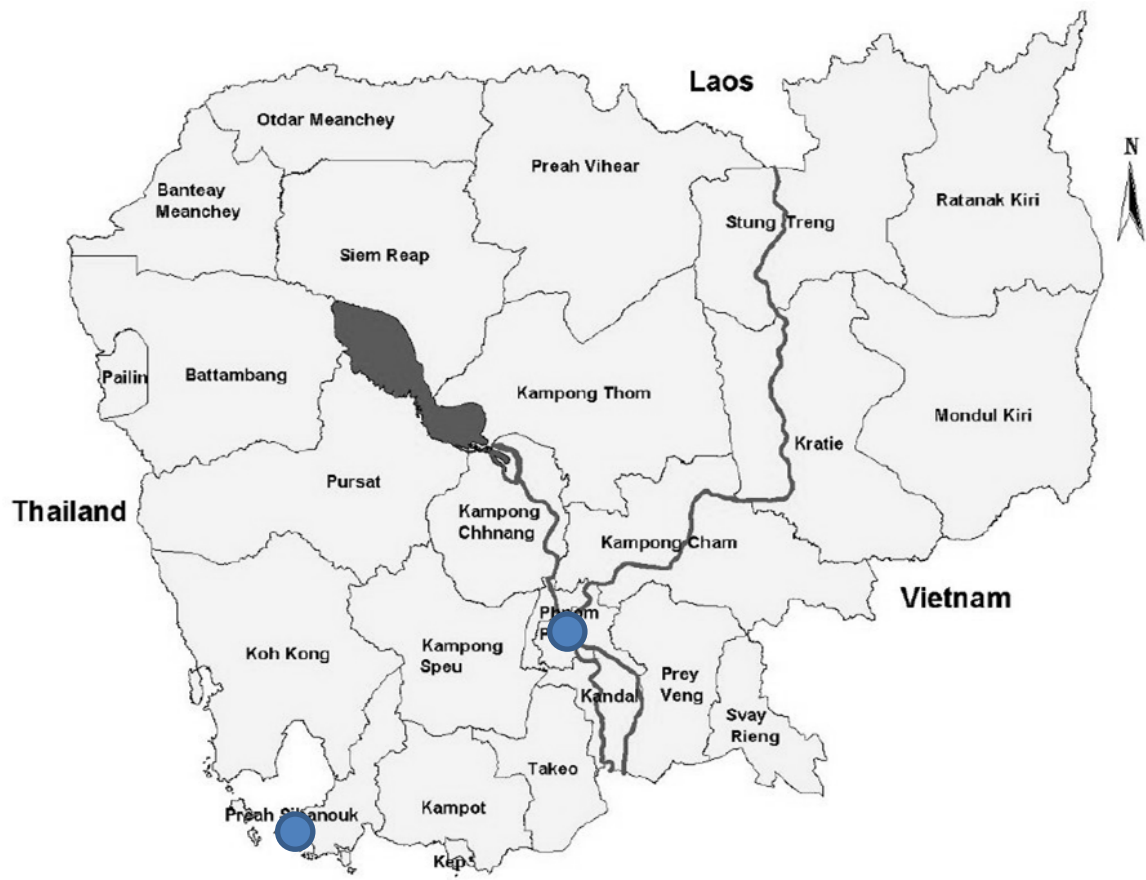


Completion Report

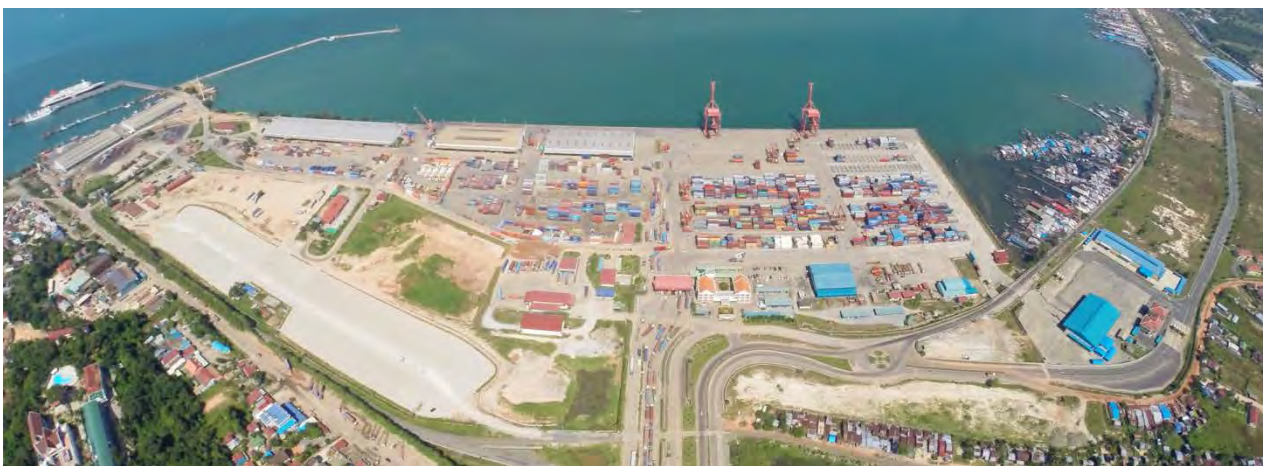
The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port

April 2016

The Overseas Coastal Area Development Institute of
Japan



Location of the Sihanoukville Port



Panoramic view of Sihanoukville Port (PAS Website: <http://www.pas.gov.kh/>)



The 3rd JCC Meeting on 26 June 2015



The 4th PIU Meeting on 30 October, 2014

Abbreviations

A	ATA	Actual Time of Arrival Actual Time of Berthing Actual Time of Departure
C	CEO CHE CMIT C/P CT CTMS CY	Chief Executive Officer Container Handling Equipment Cai Mep International Terminal Co., Ltd. Counterpart Container Terminal Container Terminal Management System Container Yard
E	EBIT EN ETA ETB ETD	Earnings before Interests and Taxes Exchange of Notes Estimated Time of Arrival Estimated Time of Berthing Estimated Time of Departure
G	GOJ	Government of Japan
H	HHI	HYUNDAI HEAVY INDUSTRIES,CO.,LTD
I	IT	Information Technology
J	JCC JICA	Joint Coordination Committee Japan International Cooperation Agency
M	MEF MES MPWT	Ministry of Economy and Finance MITSUI ENGINEERING & SHIPPING Ministry of Public Works and Transport
O	OJT	On the Job Training
P	PAS PAT PDM PIU PIMM PO PPAP	Sihanoukville Autonomous Port Port Authority of Thailand Project Design Matrix Project Implementation Unit Project Implementation and Management Meeting Plan of Operation Phnom Penh Autonomous Port
Q	RD QGC	Record of Discussions Quayside Gantry Crane
R	RTG	Rubber Tired Gantry Crane

S	SEZ SNP	Special Economic Zone SAIGON NEWPORT CORPORATION
T	TCIT TEU TOS	Tan Cang Cai Mep International Terminal Co., Ltd. Twenty-foot Equivalent Unit Terminal Operation System
V	VINAMARINE	Vietnam Maritime Administration
W	WBS	Work Breakdown Structure

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Preface

The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port was implemented based on the Record of Discussions signed by the Chief Representative of the JICA Cambodia Office and the Chairman/CEO of PAS on March 26th 2013.

The project commenced in June 2013 and is scheduled to be completed in May 2016. A long term expert was dispatched by the Japan International Cooperation Agency to Cambodia for the course of the project. In addition, seven experts were dispatched to PAS on twenty-seven (27) occasions from December 4th 2013 to May 16th 2016. Their expertise covered port planning and operation container terminal operation (1) and maintenance and management for large cargo handling equipment.

The project was divided into three phases; the activities in each phase were summarized into Progress Report 1 (March 2014), Progress Report 2 (March 2015) and Progress Report 3 (March 2016). The finishings of the Progress Reports and Work Plans of each phase were reported to the Joint Coordinating Committee which was co-chaired by the Chief Representative of JICA Cambodia Office and the Chairman/CEO of PAS.

The results of the Project are summarized in this Completion Report. In addition, the lessons learned through implementing the Project are outlined.

1. Outline of the Project

1-1 Background

(1) Outline of Sihanoukville Port

Sihanoukville Port is located at the mouth of the Bay of Kompong Som on the Gulf of Thailand and is directly connected via National Route 4 to the capital, Phnom Penh, which is located approx. 250 km away. Sihanoukville Port’s major facilities include an old jetty completed in 1960 (length: 290 m; water depth: 9.0 m), the new quay completed in 1969 (length: 350 m; water depth: 10.5 m) and the container terminal (length: 400 m; water depth: 10.0 m). The container terminal was completed in 2007 through Japan’s yen loan ODA: “Sihanoukville Port Urgent Rehabilitation Project” (E/N: 1999, 4.142 billion yen) and the “Sihanoukville Port Urgent Expansion Project” (E/N: 2004, 4.313 billion yen). It is the only full-fledged container terminal in Cambodia. The port is equipped with two 30.5-ton quay gantry cranes and seven RTGs. The container yard has 2,096 TEU slots. In addition to having storage capacity for empty containers, the port can handle more than 360,000 TEU annually. Container ships of seven regular routes called Sihanoukville Port when the Project commenced. (Currently, Sihanoukville Port is included in eight regular routes)

In addition, a 70-ha port SEZ was completed in 2011 by a yen loan project, the Sihanoukville Port Special Economic Zone Development Project (E/N: 2005, 318 million yen and E/N: 2007, 3.651 billion yen). Currently, preparations are underway to implement the Sihanoukville Port Multipurpose Terminal Development Project (7.176 billion yen), for which an Exchange of Notes (E/N) was signed in 2009. (The project is on-going at present)

Sihanoukville Port is an autonomous port operated and managed by Sihanoukville Autonomous Port (hereinafter, “PAS”), which was established in July 1998 in accordance with the Sub-Decree on the Establishment of Sihanoukville Autonomous Port (No. 50, July 17, 1998). PAS is under the supervision of the Ministry of Public Works and Transport (“MPWT”) with respect to technological aspects and the Ministry of Economy and Finance (“MEF”) with respect to financial aspects. PAS is authorized to engage in management of Sihanoukville Port, terminal operation, and port service provision.

As for the management of PAS, the decision-making body is the board of directors, which consists of seven members. Board members include a representative from MPWT, who is appointed by the head of the national government; representatives from the ministerial meeting, the Ministry of Commerce, the MEF and Preah Sihanouk Province; the CEO and President of PAS; and a representative of PAS personnel. As shown in Figure 1-1, PAS consists of 12 departments.

PAS is an independent management body that pays taxes to the national government.

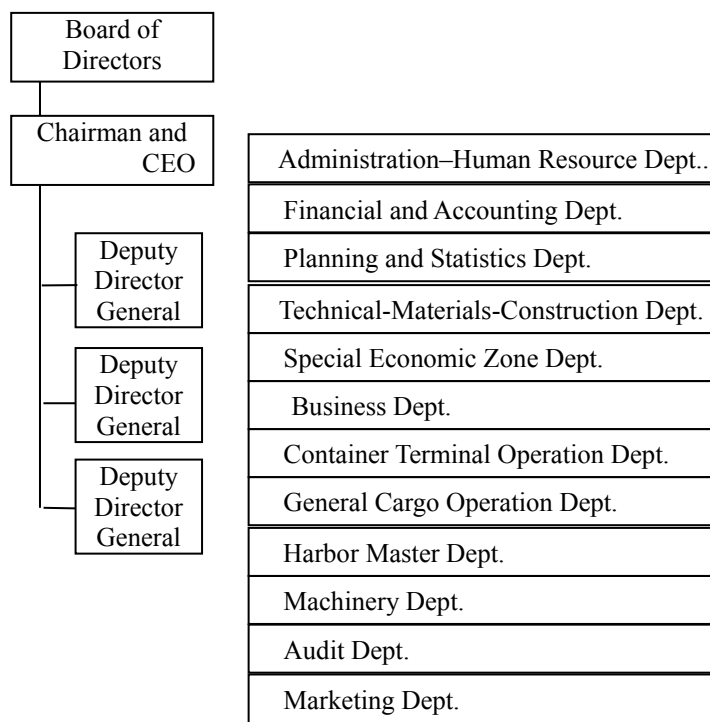


Figure1-1: Organizational Chart of PAS (Jan. 2016)

(2) Initiatives for enhancing efficiency of container terminal operation

Upon the commencement of service of the container terminal, the Japanese government provided technical assistance by dispatching experts in container terminal management and operation, and the government continues to make efforts to achieve technical transfer of container terminal management techniques. Technical assistance provided before this project commenced. Shown in Table 1-1.

Table 1-1: Japan’s technical cooperation on container terminal management at Sihanoukville Port

Technical cooperation activities		2008	2009	2010	2011	2012
Project for Strengthening Port Operation and Management	Dispatch of the long-term expert	2008– 2009				2012
Project for Strengthening Port Operation and Management Dispatch of experts (container operation)	Dispatch of short-term experts	0324–0416				
Project for Strengthening Port Operation and Management Dispatch of experts (organizational systems)	Dispatch of short-term experts	0804–0817				
Project for Strengthening Port Operation and Management Dispatch of experts (port promotion)	Dispatch of short-term experts	0804–0830				
Project for Strengthening Port Operation and Management Dispatch of experts	Dispatch of short-term experts		0129–0314 0401–0430 0601–0620			
Project for Strengthening Port Operation and Management at Sihanoukville Port (advanced terminal training)	Training in Japan		0825–0829 0908–0912 0929–1003			
Dispatch of experts for Sihanoukville Port container operation	Individual experts			0106–0213 0429–0619 0704–0820		
Project for the Study on Strengthening Competitiveness and Development of Sihanoukville Port	Development research				2011–	2012

Note: The figures show the period during which experts were dispatched or the year research was conducted.

(3) Project for the Study on Strengthening Competitiveness and Development of Sihanoukville Port

The Project for the Study on Strengthening Competitiveness and Development of Sihanoukville Port (hereinafter, the “Project for the Study on Strengthening Competitiveness”) was carried out and the report was prepared in July 2012. This project aimed to prepare a future vision for Sihanoukville Port in light of the appropriate division of roles between Sihanoukville and Phnom Penh Ports (target year: 2030, interim target year: 2020), as well as to develop a strategy for strengthening the competitiveness of Sihanoukville Port (target year: 2020) and a basic strategy for port improvement (target year: 2030) in order to realize the vision and formulate programs to that end. The study established a vision for Sihanoukville Port as follows. Given a mission of accelerating Cambodia’s economic development through provision of a hub for marine transport and a coastal industrial base that is competitive internationally, Sihanoukville Port will (1) become an international trade port that directly and effectively connects all of Cambodia with international ports; (2) provide a globally competitive coastal space that serves as a base for exports and agricultural goods processing, marine resources and tourism development, etc.; and (3) become a globally competitive port by providing high quality services that satisfy customers. Toward the achievement of this vision, Sihanoukville Port began making efforts to strengthen its competitiveness. Then, 25 action recommendations for PAS and related organizations to strengthen competitiveness and develop Sihanoukville Port were prepared (refer to Table1-2). This Project has been planned and implemented based on these recommendations.

Table 1-2: 25 Action recommendations from the Project for the Study on Strengthening Competitiveness

Item	Action recommendation
Strengthening of the organization	Organizational restructuring, HR management, HR development
Improvement of cargo handling efficiency	Early gate-in, work efficiency improvement in the yard, acceptance of import containers, improvement and utilization of port access
Enhancement of customer satisfaction	Reduction of port charges, simplification of the port charge system, enhancement of sea route networks
Facility/equipment enhancement, maintenance and management	Enhancement, maintenance and management of gantry cranes and RTGs
Promotion	Generation of demand, port sales
Safe environment	Securing of traffic and navigational safety, environmental improvements
Enhancement of financial strength	Reduction of operating costs, profit improvement, effective utilization of assets, fundraising, risk management

Industrial promotion	Port SEZ
Development and implementation of future plans	Management of the port area, environmental and societal considerations, master plan

1-2 Purpose of the Project

In the Project for the Study on Strengthening Competitiveness, various measures have been proposed to strengthen the competitiveness of Sihanoukville Port against Phnom Penh Port and other ports in neighboring countries. In accordance with the results of the project, PAS has been making efforts to improve, but further guidance for capacity enhancement is still required in some fields. In addition, PAS planned to hold an IPO in 2013 but it was postponed to June 2016. Therefore, more than ever PAS needs to implement financial transparency and sound port management as well as effective port operation and strategic business development to this end. At the same time, it is necessary to strategically attract companies and develop marketing for the use of the Sihanoukville Port Special Economic Zone (Port SEZ), which is located next to the port and developed and operated by PAS.

Against this backdrop, the Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville (hereinafter, the “Project”) aims to strengthen the capacity of PAS to carry out strategic planning as well as management and operation of Sihanoukville Port. The Project has been implemented based on the Record of Discussions (R/D) signed between the Chief Representative of the JICA Cambodia Office and the Chairman and CEO of PAS on March 26, 2013.

1-3 Goal and Activities of the Project

Figure 1-2 shows the overall goal, project purpose, and expected outputs and activities for the Project. Activity 2-3-1 is added based on discussions at 2nd JCC meeting held on April 8th of 2014.

The project has been carried out based on a Project Design Matrix (PDM) under the concept of project cycle management. The original PDM which was approved at the 1st JCC meeting was revised considering the activities in Phase 1. PDM (ver.2) in which several indicators and means of verification in the original PDM were replaced by new values or items was approved at the 2nd JCC meeting. From Phase 2, the project was implemented based on PDM (ver.2).

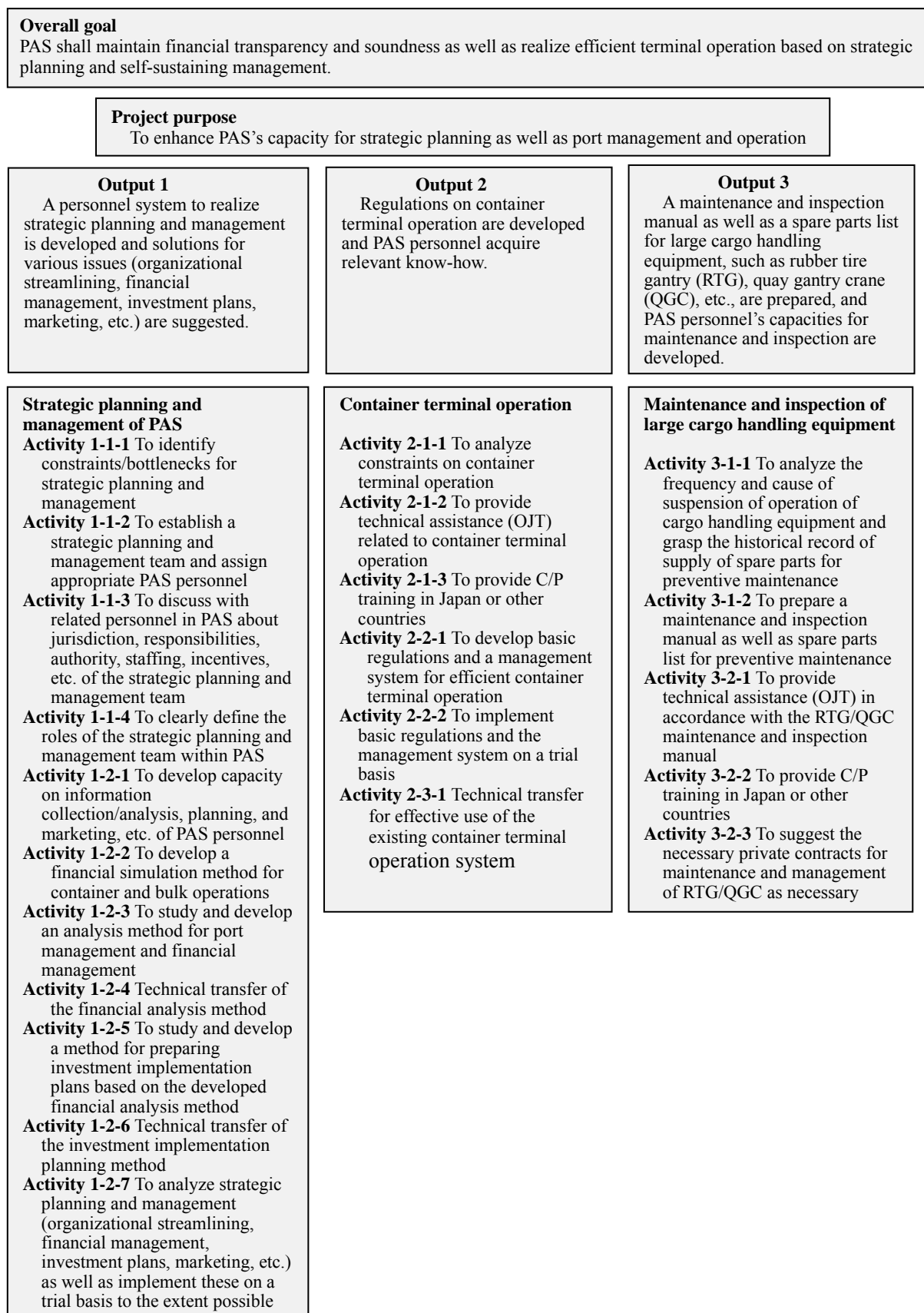


Figure-1-2 Overall goal, project purpose, and expected outputs and activities

LOGICAL FRAMEWORK (PROJECT DESIGN MATRIX: PDM) Ver.2

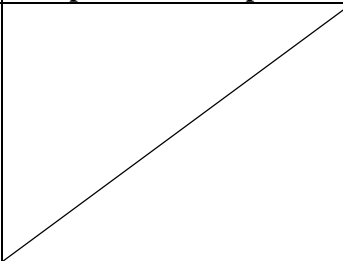
Project Title: The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port

Period (Tentative): June 2013–May 2016

Implementation Organizations: Sihanoukville Autonomous Port (PAS)

Project Sites: Sihanoukville Autonomous Port (PAS)

Target Groups: Staff members of PAS

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall goal PAS shall maintain financial transparency and soundness as well as realize efficient terminal operation based on strategic planning and self-sustaining management.</p>	<p>PAS has developed a strategic management plan and has implemented efficient container terminal operation with financial transparency and soundness in accordance with the plan.</p>	<p>-Evaluation of the content of the PAS strategic plan and management document as well as its achievement status -Evaluation of the feasibility of the PAS management mechanism -Evaluation of the container terminal management and operation system</p>	
<p>Project purpose To enhance PAS’s capacity for strategic planning as well as port management and operation</p>	<p>PAS has developed a strategic management plan. PAS has implemented efficient container terminal operation. Capable personnel have been assigned to management planning.</p>	<p>-Evaluation of the content of the PAS strategic plan and management document as well as its achievement status -Evaluation of the feasibility of the PAS management mechanism -Evaluation of container terminal utilization status -Evaluation of the efficiency of the container terminal operation</p>	<p>-Securing of the necessary budget -Presence of appropriate personnel -Restructuring of basic Project issues through incorporation</p>
<p>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.</p>	<p>-A strategic plan and management document that incorporates the organization, financial management, investment plans, and marketing of PAS has been prepared and the port is managed and operated strategically. - Appropriate personnel have been</p>	<p>- Assessing the availability of PAS strategic plan and management document to port management and operation - Assessing the availability of business plans for 1 year and 3-5 years - Evaluating the scale of container</p>	<p>-Securing of the necessary budget -Presence of appropriate personnel -Restructuring of basic Project issues through</p>

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

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Output 2 Regulations on container terminal operation are developed and PAS personnel acquire relevant know-how.</p> <p>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</p>	<p>allocated to positions for strategic planning and management.</p> <p>-Rules and regulations/guidelines on container terminal operation have been developed. -Efficient terminal operation has been implemented on a trial basis in accordance with the rules and regulations. -Working records on ship and CY operations have been created</p> <p>-A maintenance and inspection manual for large cargo handling equipment has been prepared. -A spare parts list has been prepared. -Maintenance and inspection have been implemented on a trial basis in</p>	<p>terminal by annual container throughput -Evaluating the activities at SEZ by rate of contracted land with business establishments -Evaluating efficiency of personnel allocation by annual container throughput per head (all persons and persons in charge of container operation) -Evaluating financial performance by annual revenue per head and net profit margin</p> <p>-Assessing the availability of the terminal operation rules and regulations/guidelines -Evaluating productivity of ship operation by container handling volume per hour per crane -Evaluating the capacity of container yard by dwelling time of containers -Evaluating the efficiency of yard operation by turn time of external trucks -Evaluating management of operation tasks based on work records/periodic reports</p> <p>-Assessing the availability of the maintenance manual for large cargo handling equipment -Assessing the availability of the spare parts list -Evaluating the number of key spare</p>	<p>incorporation -Sound economic growth of Cambodia</p>

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

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
inspection is developed.	accordance with the maintenance and inspection manual. -Maintenance and inspection have been implemented on a trial basis using the spare parts list.	parts -Evaluating thoroughness of maintenance of cargo handling equipment by operating and suspension rates of cargo handling equipment - Evaluating completeness of furnishing of spare parts by number of incidents of inability to furnish spare parts -Evaluating of management of maintenance and inspection tasks based on work records/periodic reports	
Strategic planning and management of PAS Activity 1-1-1 To identify constraints/bottlenecks for strategic planning and management Activity 1-1-2 To establish a strategic planning and management team and assign appropriate PAS personnel Activity 1-1-3 To discuss with related personnel in PAS about jurisdiction, responsibilities, authority, staffing, incentives, etc. of the strategic planning and management team Activity 1-1-4 To clearly define the roles of the strategic planning and management team within PAS Activity 1-2-1 To develop capacity on information collection/analysis, planning, and marketing, etc. of PAS personnel Activity 1-2-2 To develop a financial simulation method for container and bulk operations Activity 1-2-3 To study and develop an analysis method for port management and financial management	Inputs <u><Japanese side></u> (a)Dispatch of Experts (b)Long-term Expert (Chief Advisor/Strategic Planning and Management) (c)Short-term Experts in the field of -Strategic planning and management -Operation of Container Terminal -Maintenance and Inspection of Cargo-handling Equipment (RTG, QGC) (d) Training C/P training both in and outside of Cambodia (e) Machinery and Equipment Necessary Equipment for the implementation of the project <u><Cambodian side></u> (a)Services of PAS's counterpart personnel and administrative personnel (b)Suitable office space with necessary equipment (c) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA (d)Information as well as support in obtaining medical service		Preconditions PAS has been promoting initiatives based on recommendations made in the Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port.

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

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Activity 1-2-4 Technical transfer of the financial analysis method</p> <p>Activity 1-2-5 To study and develop a method for preparing investment implementation plans based on the developed financial analysis method</p> <p>Activity 1-2-6 Technical transfer of the investment implementation planning method</p> <p>Activity 1-2-7 To analyze strategic planning and management (organizational streamlining, financial management, investment plans, marketing, etc.) as well as implement these on a trial basis to the extent possible</p> <p>Container terminal operation</p> <p>Activity 2-1-1 To analyze constraints on container terminal operation</p> <p>∞ Activity 2-1-2 To provide technical assistance (OJT) related to container terminal operation</p> <p>Activity 2-1-3 To provide C/P training in Japan/other countries</p> <p>Activity 2-2-1 To develop basic regulations and a management system for efficient container terminal operation</p> <p>Activity 2-2-2 To implement basic regulations and the management system on a trial basis</p> <p>Activity 2-3-1 Technical transfer for effective use of the existing container terminal operation system</p> <p>Maintenance and inspection of large cargo handling equipment</p> <p>Activity 3-1-1 To analyze the frequency and cause of suspension of operation of cargo handling equipment and grasp the historical record of supply of spare parts for preventive maintenance</p>	<p>(e) Credentials or identification cards</p> <p>(f) Available data (including maps and photographs) and information related to the Project</p> <p>(g) Running expenses necessary for the implementation of the Project</p> <p>(h) Expenses necessary for transportation within Cambodia of equipment as well as for installation, operation and maintenance thereof</p> <p>(i) Facilities necessary for the JICA experts for remittance as well as utilization of funds introduced into Cambodia from Japan in connection with the implementation of the Project</p>		

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

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Activity 3-1-2 To prepare a maintenance and inspection manual as well as spare parts list for preventive maintenance Activity 3-2-1 To provide technical assistance (OJT) in accordance with the RTG/QGC maintenance and inspection manual Activity 3-2-2 To provide C/P training in Japan or other countries Activity 3-2-3 To suggest the necessary private contracts for maintenance and management of RTG/QGC as necessary			

1.4 Project Implementation Structure

(1) Organizational Framework

The Project was implemented under assistance and guidance by JCC. JCC consists of the Chairman and CEO of PAS (Project Director) and the JICA Cambodia Chief Representative who serve as co-chairs and MPWT representatives.

The overall project was managed by the Project Implementation Unit (PIU) which consists of Project Director and the directors of all PAS departments. Under PIU, a team for the strategic planning and management (Team A), a team for container terminal operation (Team B), and a team for cargo handling equipment maintenance (Team C) were responsible for progress management of practical activities. Sub team on CTMS was organized under Team B at the beginning of Phase 2. The Project Implementation Management Meeting (PIMM), chaired by the Project Manager, was held once at the end of Phase 1 in order to exchange information and coordinate among the respective fields. (See Figure 1-3)

JICA experts and PAS counterpart personnel collaborated in carrying out the project activities. Technology transfer has been implemented through collecting and analyzing information, and fostering basic learning skills, overseas training, workshops, on-the-job training and etc.

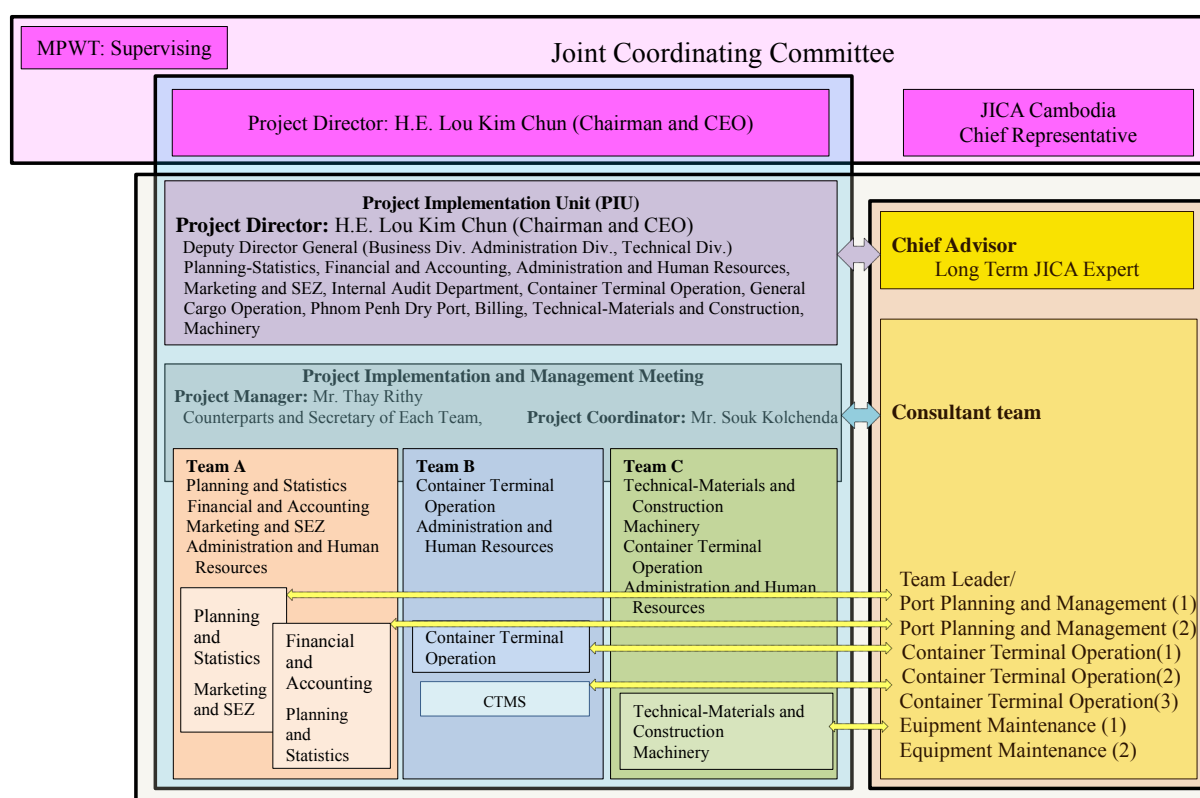


Figure 1-3 Implementation Structure

(2) Implementation Structure of PAS

The members of PIU and PIMM as well as Team A, Team B, Team C and CTMS team as of January 2016 are shown in Table 1-3. Several members changed due to internal transfer or retirements during the term of the Project.

Table 1-3: Members of PIU and each team

The Project Implementation Unit (PIU)

Name	Position at the PAS	Position at the PIU
H.E Lou Kim Chhun	Delegate of the Royal Government of Cambodia	Project Director

Dr. Chhun Hong	Deputy Director General	Member
Mr. Thay Rithy	Deputy Director General	Project Manager, c/p
Mr. Chea Yuthdika	Deputy Director General	Member
Mr. Rath Seyla	Director of Admin - Human Resource Dept.	Member
Mr. Path Seth	Director of Accounting - Finance Dept.	Member
Mr. So Seang	Director of Planning - Statistic Dept.	Member
Mr. Ty Sakun	Director of Technical Materials – Construction Dept.	Deputy Project Manager, c/p
Mr. Chiv Chansophal	Director of Special Economic Zone Dept.	Member
Mr. Pith Prakath	Director of Business Dept.	Member
Mr. Srey Narin	Director of Container Terminal Operation Dept.	Member
Mr. Lou Likheng	Director of General Cargo Operation Dept.	Member
Mr. Thong Viro	Director of Harbor Master Dept.	Member
Mr. Men Chann	Director of Audit Dept.	Member
Mrs. Chey Sokunthea	Director of Marketing Dept.	Member
Mr. Souk Kolchenda	Assistant to Chairman and CEO of PAS	Project Coordinator

Team A: Strategic planning and management of PAS

Name	Position at the PAS	Position at Team A
Mr. So Seang	Director of Planning - Statistic Dept.	Team A Leader, c/p
Mr. Rath Seyla	Director of Admin-Human Resource Dept.	
Mr. Path Seth	Director of Financial - Accounting Dept.	
Mr. Chiv Chansophal	Director of Special Economic Zone Dept.	
Mr. Pith Prakath	Director of Business Dept.	
Mrs. Chey Sokunthea	Director of Marketing Dept.	
Mr. Sam Sopheap	Chief of Accounting, Accounting - Finance Dept.	
Mr. Ou Sovanrith	Official of Admin-Human Resource Dept.	
Mr. Meas Sovanna	Official of Marketing Dept.	
Mr. Sem Sophea	Official of Accounting-Finance Dept.	
Mr. Soam Kakrona	Official of Planning - Statistic Dept.	
Ms. Klok Makara	Official of Planning - Statistic Dept.	
Mr. Ouk Somethy	Chief of Data and Relationship, Planning - Statistic Dept.	Secretary

Team B: Operation and management of container terminal

Name	Position at the PAS	Position at Team B
Mr. Srey Narin	Director of Container Terminal Operation Dept.	Team B Leader, c/p
Mr. Lou Likheng	Director of General Cargo Operation Dept.	
Mr. Thong Viro	Director of Harbor Master Dept.	
Mr. Thay Mengly	Deputy Director of Container Terminal Operation	
Mr. Heang Sophal	Deputy Director of Container Terminal Operation	
Mr. Sing Seno	Deputy Director of Harbor Master Dept.	
Mr. Sath Bunna	Chief Officer of Salary of Admin-HR Dept.	
Mr. Nhim Pisey	Chief of Security Office, Admin-HR Dept.	
Mr. Koam Sokan	Official of Container Terminal Operation Dept.	
Mr. Chav Vanratanak	Official of Container Terminal Operation Dept.	
Mr. Sorm Karaney	Official of Admin-HR Dept.	
Mr. Suon Bunsong	Official of Admin-HR Dept.	

Mr. Ngoun Rattana	Official of Business Dept.	
Mr. Sek Sovannara	Chief of Data, Container Terminal Operation Dept.	Secretary

CTMS Team :Sub-Team under Team B

Name	Position at the PAS	Position at Team CTMS
Mr. Pith Prakath	Director of Business Dpt.	Team CTMS Leader, c/p
Mr. Ouk Vannara	Official of Technical Material and Construction	Deputy
Mr. Kim Hor	Official of Technical Material and Construction	Deputy
Mr. Sorm Karaney	Chief of IT Section	Permanent
Mr. Chan Sokha	Deputy Director of Harbour Master Dept.	
Mr. Sek Sovannara	Chief of Data, Container Terminal Operation Dept.	
Mr. Ouk Somethy	Chief of Data and Relationship, Planning - Statistic Dept.	
Mr. Nhim Pisey	Chief of Security Office, Admin-HR Dept.	
Mr. Chao Vanrattanak	Chief of Yard Planing Section	
Mr. Koam Sokan	Chief of Vessel Planing Section	
Mr. Pen Sodadoung	Chief of CTMS operation Section	
Mr. Korm Sitho	Official in Documentation Section	
Mrs. Chhoung Rattana	Official in Documentation Section	
Mr. Oung Jeanot	Official of Business Dept.	
Mr. Norng Sinal	Official in Gate Clerk	
Mr. Soun Bunsong	Deputy Chief of IT Section	
Mr. Ou Sovanrith	IT Official	Secretary

Team C: cargo handling equipment maintenance

Name	Position at the PAS	Position at Team C
Mr. Ty Sakun	Director of Technical-Materials and Construction Dept.	Team C Leader, c/p
Mr. Neak Sophyan	Director of Machinery Dept.	
Mr. Heang Sophal	Deputy Director of Container Terminal Operation	
Mr. Chea Chanthan	Official of Technical Dept.	
Mr. Kim Hor	Official of Technical Dept.	
Mr. Pich Oeun	Official of Container Terminal Operation	
Mr. Heng Ratha	Official of Technical Dept.	
Mr. Chea Pisethmonkul	Official of Technical Dept.	
Mr. Ouk Vannara	Official of Technical Dept.	Secretary

Project Implementation and Management Meeting member

Name	Position at the PAS	Position at the PIU
Mr. Thay Rithy	Deputy Director General	Project Manager c/p
Mr. Ty Sakun	Director of Materials – Construction Dept.	Deputy Project Manager, c/p
Mr. So Seng	Director of Planning - Statistic Dept.	c/p
Mr. Srey Narin	Director of Container Terminal Operation Dept.	c/p
Mr. Pith Prakath	Director of Business Dpt.	c/p
Mr. Souk Kolchenda	Assistant of Chairman and CEO of PAS	Project Coordinator
Mr. Ouk Somethy	Chief of Data and Relationship, Planning -Statistic Dept.	Secretary
Mr. Sek Sovannara	Chief of Data, Container Terminal Operation Dept.	Secretary

Mr. Ouk Vannara	Official of Technical Dept.	Secretary
Mr. Ou Sovanrith	Official of Admin-HR Dept.	Secretary
Ms. Khlorak Makara	Official of Planning-Statistics Dept.	Secretary

(3) JICA Experts

JICA expert team consists of a long term expert (chief advisor) and seven short term experts.

Table 1-4 JICA Experts

Assigned area	Expert
Chief advisor	Takahiro Jonishi*
	Tetsuro IKEDA*
Group leader/port planning and operation (1),	Tatsuyuki SHISHIDO
Port planning and operation (2)	Sumio SUZUKI
Container terminal operation (1)	Teruki ETO
Container terminal operation (2)	Akihiko SATO
Container terminal operation (3)	Hideto WADA
Maintenance and management for large cargo handling equipment (1)	Toru TAKEHARA
Maintenance and management for large cargo handling equipment (2)	Masao ICHINOSE

*: Mr. Tetsuro IKEDA succeeded to Mr. Takahiro Jonishi's position as the chief advisor in June 2014.

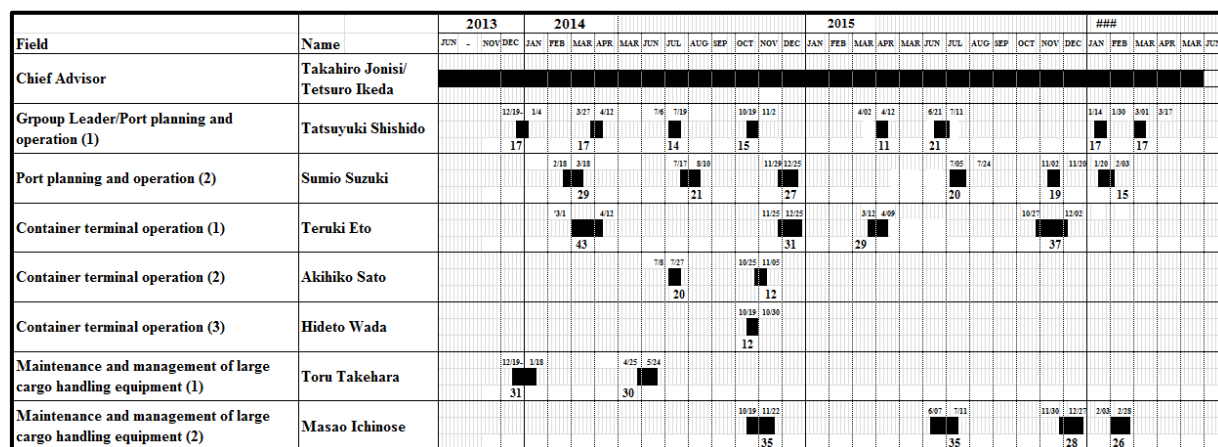


Figure 1-4 Assignment of Japanese Experts

2 Project Implementation

2-1 Project Phase

The JICA long-term expert, the chief advisor of the Project, began activities for the Project in June 2013. The term of the project was divided into three implementation phases: Phase 1 from June 2013 to March 2014, Phase 2 from April 2014 to March 2015, and Phase 3 from April 2015 to May 2016. Phase 1 was the introductory stage during which the activity plan is solidified in cooperation with PAS personnel and JICA experts and accordingly the activities started. Phase 2 was the implementation stage by the means of lectures, workshops, OJT etc. based on the work plan. Phase 3 was the period during which activities were continued in order to pave the way to independent development of PAS after the project ends. The Project has been carried out basically according to the workflow show in Figure 2-1. The project was implemented by paying special attention to project cycle management.

Phase 1 from June 2013 to March 2014

Phase 1 terminated in April 2014 and the Progress Report 1 was approved at the 2nd Meeting of JCC which was held on 8th April 2014. The Work Plan was updated based on the result of the activities in Phase 1 to the Work Plan (ver.2), which was also approved by JCC. In the conclusion of the JCC meeting, participants acknowledged the importance of improving the operation of CTMS.

The main revised points from the original Work Plan were:

- The tables on objectively verifiable indicators and the baseline were replaced by new tables prepared based on the baseline survey in Phase 1;
- Training in overseas will be carried out in Japan and/or the neighboring country; and
- Activity on CTMS was added.

Accordingly PDM, Work Flow, Plan of Operation, Work Breakdown Structure, Implementation Structure, Meeting schedule, Assignment of JICA experts were revised.

The contents of activities on CTMS were decided in Minutes of Discussions for The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port signed by H.E. Lou Kim Chhun, CEO of Sihanoukville Autonomous Port and Mr. Yoshimoto Koyanagi, Deputy Director Japan International Cooperation Agency, on 21 June 2014. The Activity plan on CTMS and detailed plans of training overseas were reported to the 3rd PIU meeting on 17 July 2014 and an activity plan on CTMS and training overseas were carried out according to the reported plan.

Phase 2 from April 2014 to March 2015

Phase 2 terminated in April 2015. The planned activities in Phase 2 were implemented according to the Work Plan (Ver 2) basically. At the end of Phase 2, the values of each indicator were calculated and accessed at the meetings of each team. Considering situations of the activities related to the indicators in Phase 2, it was concluded that target values of several indicators should be revised. PAS made some personal changes and an organizational reform and as a result, several members of PIU and teams were replaced in Phase 2.

The activities and progress of the Project in Phase 2 were summarized in this Progress Report 2 (draft) by PIU and the JICA expert team. The Work Plan (ver.3) was prepared by revising several parts of the previews Work Plan (Ver2). The Progress Report 2 and the Work plan (Ver.3) were reported to the JCC at the 3rd Meeting of JCC held on 23rd June 2015 and approved.

Phase 3 from April 2015 to May 2016

Phase 3 will terminate in May 2016. The planned activities in Phase 3 were implemented according to the Work Plan (Ver 3) ; almost an activities were completed by the end of March. The activities and progress of the Project in Phase 3 were summarized in the Progress Report 3 by PIU and JICA expert team. The report was reported to JCC at the 4th Meeting of JCC held on 15rd January 2016 and approved.

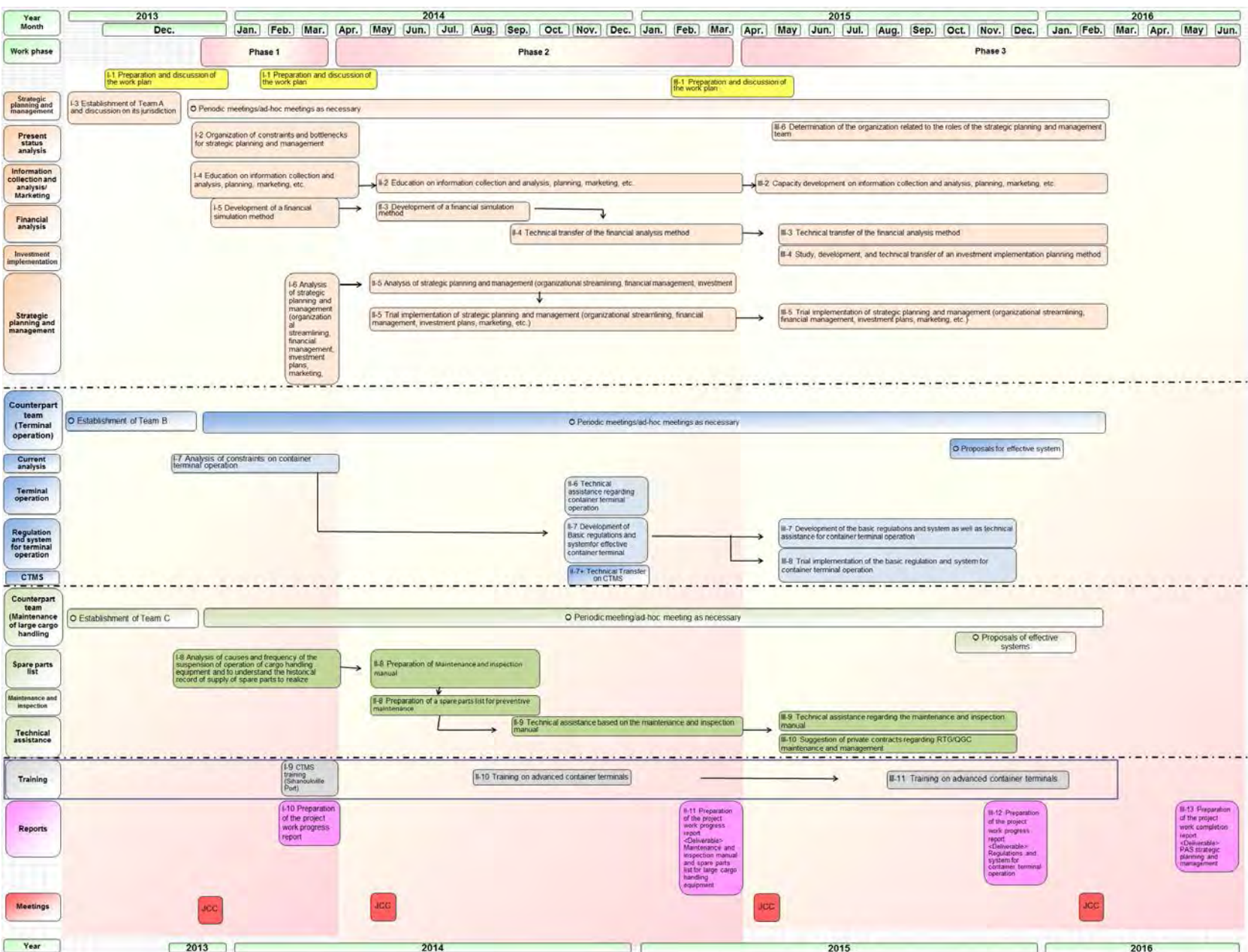


Figure 2-1 Work Flow

2.3 Meeting

Four (4) JCC meetings, nine (9) PIU meetings, one (1) PIMM meeting, sixteen (16) Team A meetings, fifteen (15) Team B meetings, fourteen (14) Team C meetings, thirteen (13) CTMS meetings were held during the term of the Project. Through the series of meetings, project implementation was managed, necessary information was shared among personnel and technology transfer to PAS members was conducted. The schedule of the meetings and the agendas of each meeting are shown in the Figure 2-1 and Table 2-1 to 2-6.

Month	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Phase	Phase 1							Phase 2							Phase 3									
JCC							•				•													•
PIU				•			•				•		•			•						•		
PIMM											•													
Team A							•	•	•	•		•	•	•	•	•	•					•		○
Team B							•	•	•	•	•	•	•	•	•	•	•					•		○
(CTMS)							•	•	•	•			•	•	•	•	•					•		
Team C							•	•	•		•	•	•	•	•	•	•					•	•	○

Figure 2-1 Schedules of Meetings

Table 2-1 JCC meeting

1st Meeting	
Date	27 (FRI) DEC. 2013
Agenda	1. Opening Address H.E Lou Kim Chhun, Project Director (Co-chairman) Mr. Ito Takashi, Senior Representative of JICA (Co-chairman) Representative of MPWT (Supervisor/ 2. Presentation on the draft W/P of the Project 3. Discussion (Question & Answer on the draft W/P of the Project) 4. Conclusion & Adopt on the Work Plan 5. Closing Remark H.E Lou Kim Chhun, Project Director
2nd Meeting	
Date	8 (TUE) APR. 2014
Agenda	1. Opening Address 2. Progress of the Project in Phase 1 3. Work Plan in Phase 2 4. Project Design Matrix 5. Conclusion & Approval of Progress Report (I) and Work Plan (Rev.) 6. Closing Remarks
3rd Meeting	
Date	23 (TUE) JUN. 2015
Agenda	1. Opening Address 2. Presentation on the draft Progress Report of the Project phase 2, 3. Draft Contents of W/P for Phase 3 activities 4. Discussion (Question & Answer on PR/2 and W/P3 of the Project) 5. Conclusion & Decision (Approval of Work Plan for the Phase 3) 6. Comments from all Participants 7. Closing Remark
4th Meeting	
Date	15 (TUE) JAN. 2016
Agenda	1. Opening Address by Co-chair persons(PAS and JICA) 2. Opening Address by MPWT 3. Progress Report 3 by Chief Advisor and Project Manager 4. Toward Project Termination by Chief Advisor

	<ol style="list-style-type: none"> 5. Discussions 6. Conclusion and Decision 7. Comments from All participants 8. Closing Remark by Project Director
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Table 2-2 PIU Meeting

Kick-Off Meeting	
Date	10 (TUE) SEP. 2013
Agenda	<ol style="list-style-type: none"> 1. Opening address (instruction) from CEO 2. Explanation by H.E. Ma about Kick-off of PIU <ol style="list-style-type: none"> (1) Back ground and flow to this new project (2) Basic contents of the project (3) The tentative estimated schedule (procedure) for near future 3. Explanation by Jonishi Expert <ol style="list-style-type: none"> (1) Expected concrete activities of each Team (2) Counterparts (C/Ps) of Expert Jonishi and Short term expert A. (3) Other Remarks (4) Plan of Operation (PO) for Team A 4. Q/A, Discussion, Comments 5. Opinion by 2 DDGs 6. Small speech by Team C/Ps leaders 7. Announcement from Secretary of Team A 8. Report of JICA Training by Mr. Sovannara
1 st Meeting	
Date	24 (TUE) DEC. 2013
Agenda	<ol style="list-style-type: none"> 1. Draft PDM and draft W/P 2. Discussion on PDM and draft work plan 3. Comments from 3 Team Leaders to prepare for Action Plans of Team A, B and C 4. Decision by Project Director / Project Manager to confirm PDM and W/P for 1st stage
2 nd Meeting	
Date	1 (TUE) Apr. 2014
Agenda	<ol style="list-style-type: none"> 1. Project Director's Opening address H.E Lou Kim CHUUN 2. Progress Report Team A by Mr. Chea Sambath 3. Progress Report Team B by Mr. Srey Narin 4. Progress Report Team C by Mr. Chea Yuthdyka 5. Progress Report Team CTMS by Mr. Pith Prakat Break Time 6. JICA Experts' Team Mr. T. Jonishi Expert Team Activities (from the draft summary of Progress Report) 7. JICA Experts' Team Mr. T. Jonishi Confirmation of PDM (proposal of verifiable Indicator and baseline) 8. JICA Experts' Mr. Teruki Eto CT Max Handling Capacity by QGC's Number to install and its productivities Performance of CT operators by Management Capacity and acquired..... Proposal for container terminal Operational Guidelines 9. Presentation for 2nd JCC Meeting on April 8th 2014 T. Jonishi 10. Question & Answer 11. Closing Remarks (Conclusion) H.E Lou Kim CHHUN
3 rd Meeting	
Date	17 (THU) Jul. 2014
Agenda	<ol style="list-style-type: none"> 1. Project Manager's Opening Address by H.E Ma Sunhout 2. Outlines of the Project's Activities by Mr. T. IKEDA 3. Marketing/Port Promotion by Mr. T. SHISHIDO 3. Work Plan on CTMS by Mr. A. SATO 4. Question & Answer 5. Break Time 6. Progress & Work Plan of Team A by Mr. Chea Sambath 7. Progress & Work Plan of Team B by Mr. Srey Narin

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	<ul style="list-style-type: none"> 8. Progress & Work Plan of Team C by Mr. Chea Yuthdyka 9. Progress & Work Plan of Team CTMS by Mr. Pith Prakat 10. Question & Answer 11. Closing Remarks (Conclusion) by H.E Lou Kim CHHUN
4th Meeting	
Date	30 (TUE) Oct. 2014
Agenda	<ul style="list-style-type: none"> 1. Project Director's Opening Address by H.E Ma Sunhout 2. Progress Report of Team A by Mr. Chea Sambath 3. Progress Report of Team B by Mr. Srey Narin 4. Progress Report of Team C by Mr. Chea Yuthdyka 5. Progress Report of Team CTMS by Mr. Pith Prakat 6. Improvement of CTMS by JICA Experts' Team Mr. SATO 7. Report on Statistic Workshop by JICA Experts' Team Mr. T. Shishido 8. Future Plan by JICA Experts' Team Mr. Tetsuro. IKEDA 9. Closing Remarks (Conclusion) by H.E Ma Sunhout
5th Meeting	
Date	15(Fri.) Feb. 2015
Agenda	<ul style="list-style-type: none"> 1. Opening Address 2. Progress Report of Team A, B, C by Team Leaders 3. Report on visiting ports in Thailand on December 4. Middle and long term plan of Sihanoukville port 5. Closing Remarks (Conclusion)
6th Meeting	
Date	23(Tue.) Jun. 2015
Agenda	<ul style="list-style-type: none"> 1. Project Director's Opening Address H.E Lou Kim CHHUN 2. Outlines of the Project's Activities from Feb to May, By Mr. IKEDA 3. Progress Report of Team A, B, C by Team Leaders 4. Progress Report of Phase II and Work Plan of Phase III, By JICA Expert; Mr. Ikeda 5. Question & Answer 6. Closing Remarks (Conclusion) H.E Lou Kim CHHUN
7th Meeting	
Date	28(Wed.) Oct. 2015
Agenda	<ul style="list-style-type: none"> 1. Project Director's Opening Address by H.E Lou Kim CHHUN. 2. Activities of JICA Experts by Mr. T. IKEDA. 3. Progress Activities of Team A by Mr. So Seang. 4. Progress Activities of Team B by Mr. Srey Narin. 5. Progress Activities of Team-C by Mr. Ty Sakun. 6. Progress Activities of Team CTMS by Mr. Pith Prakat. 7. Report on Container Terminals in Vietnam by Ms. Chey Sokunthea 8. Planning Schedule for the Next 3-month by Mr. T. IKEDA. 9. Others (Question & Answer) 10. Closing Remarks (Conclusion) by H.E Lou Kim CHHUN
8th Meeting	
Date	28(Thu.) Jan. 2016
Agenda	<ul style="list-style-type: none"> 1. Project Director's Opening Address by H.E Lou Kim CHHUN. 2. Activities of JICA Experts by Mr. T. IKEDA. 3. Progress Activities of Team A by Mr. So Seang. 4. Progress Activities of Team B by Mr. Srey Narin. 5. Progress Activities of Team-C by Mr. Ty Sakun. 6. Progress Activities of Team CTMS by Mr. Pith Prakat. 7. Strategic Plan of PAS by Mr. Shishido and Dr. Suzuki 8. Report on Container Terminals in Japan by Ms. Makara 9. Others (Question & Answer) 10. Closing Remarks (Conclusion) by H.E Lou Kim CHHUN

Table 2-3 Team A Meeting

1 st Meeting	
Date	25 (WED) Dec. 2013
Agenda	<ol style="list-style-type: none"> 1. Opening Address 2. Work Plan (PDM, Baseline) 3. Work Plan (Contents of Tasks, WBS) 4. Running of Team A by Mr. Shishido 5. Activities up to now by Mr. Jonishi 6. Undertakings of the near future
2 nd Meeting	
Date	02 (THU) JAN. 2014
Agenda	<ol style="list-style-type: none"> 1. To confirm documents of 2013-12-24 (record, reports, Drop Box for Team A) 2. To report to Team A members on JCC meeting result of 2013-12-27 3. To discuss on what we expect Mr. Shishido to assist us until/when he comes back to PAS in end days of March to April 2014. And also what we should prepared for that. 4. To understand and discuss on JICA experts Jonishi and Dr. Suzuki's expected activities in Phase 1 (information and explanation from Expert Jonishi), 5. To consider what Team A should be prepared for Dr. Suzuki's dispatch to Pas in February 2014. 6. To demon straight Jonishi's financial analysis simulator Excel model (It's like only a game but worth to play with)from Expert Jonishi, and to get information on new finance system which will soon adopted to Finance Dep. from Mr. Sopheap. 7. To learn what the other Team study for an acquirement of RTG, finance perception for that etc. 8. To confirm schedule of meetings or other activities' (including workshops, site survey trip etc.) 9. To confirm results of this meeting and how to report to top and share who is absent from this meeting.
3 rd Meeting	
Date	10 (MON) Feb. 2014
Agenda	<ol style="list-style-type: none"> 1. Road map of Team A activities at Phase 1 (by the end of March 2013) 2. Proposal of Jonishi's Activities (Mini seminars) <ol style="list-style-type: none"> (1) Transfer of Jonishi's data analysis (PPAP cargos, income data of 2012) (2) Transfer of financial analysis simulator 3. Activity plan of Dr. Suzuki in Phase 1 <ol style="list-style-type: none"> (1) Transfer of Dr. Suzuki's data analysis (2) Transfer of financial analysis methods 4. Analysis on Constraints and Bottlenecks of PAS Organization 5. Proposal for proper use of Drop Box among PIU by Jonishi 6. Information from tentative Team CTMS Mr. Prakath, Mr. Sorm 7. 2nd PIU and JCC in early of April 8. Others 9. Confirm Results
4 th Meeting	
Date	12 (WED) MAR. 2014
Agenda	<ol style="list-style-type: none"> 1. Open address 2. PAS Operation Standard 3. Report of Team A activities by Mr. Jonishi 4. Proposal for financial management 5. Q and A on mini seminar 07-03-14 6. Other
5 th Meeting	
Date	26 May. 2014
Agenda	<ol style="list-style-type: none"> 1. Opening Address 2. Introduction of Mr. IKEDA Tetsuro By Expert Jonishi 3. Report on workshop on Simplified finical simulation by Expert Jonishi 4. Mini Seminar: Presentation of Workshop Result by Mr. Soam Kakrona and Mr Noun Phally 5. Discussion on finical issue 6. Following on past issue by Mr. Chea Sambath 7. Data exchange between SHV Port V.S PP Port 8. Others

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6th Meeting	
Date	09 July.2014
Agenda	1. Opening Address 2. Work Plan of JICA short term Experts in July and August 3. Management of the progress of activities under Team A
7th Meeting	
Date	05 Aug.2014
Agenda	1. Opening Address 2. Formulation of Marketing Plan and Port Promotion For PAS 3. Financial Simulation and Challenges 4. Discussion
8th Meeting	
Date	21 Oct.2014
Agenda	1. Verification of the progress of the activities related to Team A 2. Roadmap 3. Marketing Plan 4. Discussion
9th Meeting	
Date	23 Dec.2014
	1. Business plan of PAS (One Year Plan and Mid-term Plan) (1) Sample of business plan, Goal and Implementation (2) Financial Indicators (3) Value for Money (Method of Calculation) (4) Financial Simulation of PAS Management 2. Discussion
10th Meeting	
Date	9 th April 2015
	1. Phase 3 plan of JICA Experts 2. Report of Cargo throughput in 2014 and 3 month of 2015 3. Report of board director meeting on 27 March 2015 4. Annual financial report 5. Plan of activities on marketing and promotion in 2015
11th Meeting	
Date	25 th May 2015
	1. Report on PAS's performance and Forecasting a. Report on the cruise ship statistic b. Report on the Container cargoes c. Report on container cargoes forecast of 2016 and 2017 2. Discussion on targets of monitoring indicator a. Scale of container terminal b. Annual container throughput per person 3. Discussion
12th Meeting	
Date	14 th July 2015
	1. Report of Vietnam Visit, Findings of mission and matters to be incorporated (Visited Members) 2. Statistics Reporting, PAS and PPAP (Planning Dept.) 3. Interpretation on month over month container growth of PAS vs. PPAP (Suzuki)
13th Meeting	
Date	21 th July 2015
	1. Container movement analysis - SHV, PP, and Bavet 2. Financial Analysis of New CT - Public vs. Private 3. Business Plan (2015-2017) - Key Focus Areas
14th Meeting	
Date	1 st October 2015
	1. Logistic Analysis (Comparison of Transport Fare)

	2. Cargo Throughput and Analysis 3. Marketing Activities 4. Preparation of IPO
15th Meeting	
Date	16 th November 2015
	1. Business Plan 2016-2018 Expansion and Development 2016-2018 Financial Management 2016-2020 2. Perspective and Impact of IPO Necessary Actions after IPO 3. PPP for Port Development and Operations
16th Meeting	
Date	22 nd January 2016
	1. Monitoring Indicator of 2015 2. Strategic Plan of PAS 3. Analysis of the Cargo Throughput 2015 4. Budget plan of 2016

Table 2-4 Team B Meeting

1st Meeting	
Date	25 (WED) Dec. 2013
Agenda	1. Opening Address 2. Work Plan (PDM, Baseline) 3. Work Plan (Contents of Tasks, WBS) 4. Running of Team B by Mr. Shishido 5. Improvement of Terminal Operation 6. Undertakings of the near future 7. Others
2nd Meeting	
Date	23 (THU) Jan. 2014
Agenda	1. New procedures of the improvement in the yard operation (avoid many move) and speed of the ship's departure (Long berthing) 2. The result of reform for container terminal 3. The result of the meeting between PAS, NiDA, MES on the CTMS & SWSS System 4. The policy set Cutting of Time 5. Drafting contracts with the shipping line (for new contract) 6. Issues Warehouse N-4 7. Discussion 8. Schedule meeting for monthly
3rd Meeting	
Date	14 (THU) Feb. 2014
Agenda	1. The result of the meeting between PAS, NiDA, MES on the CTMS & SWSS System 2. The result of improvement for container terminal 3. Issue Warehouse N-4 4. Discussion 5. Schedule meeting for monthly
4th Meeting	
Date	18 (TUE) Mar. 2014
Agenda	1. Open address 2. How PAS Can Became a Standard Operator by Mr. T. Eto 3. Q and A or Comments for Workshop 4. Others
5th Meeting	
Date	03 April 2014
Agenda	1. Open address 2. Presentation 3. Point to Discussion

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6 th Meeting	
Date	23(Fri) May.2014
Agenda	<ol style="list-style-type: none"> 1. Opening Address (Mr Srey Narin) 2. JICA Expert (Mr.Jonishi, Mr IKEDA) 3. Operation Policy of Meeting (Mr. Sek Sonvannara) 4. Issues improved on operation of container terminal after planed (Mr. Thai Mengly) 5. Principle of Cutting off Time (Mr. Thai Mengly) 6. Discussion 7. Date of meeting for next month 8. Others
7 th Meeting	
Date	31(Thu) July. 2014
Agenda	<ol style="list-style-type: none"> 1. Opening Address\ 2. JICA Expert 3. The Progress of operation after 4 policy set point of the penalty 4. To dived responsible users Machinery and maintenance of machinery (machinery schedule) 5. The Statement after survey between IT section and JICA 6. Discussion 7. Date of meeting next month 8. Others
8 th Meeting	
Date	12 Sept. 2014
Agenda	<ol style="list-style-type: none"> 1. Reporting of summary report of pervious meeting 2. Discussion and find out the solution of remained problem and lack of PAS and Shipping Line 3. Set up future Implementation plan 4. Other
9 th Meeting	
Date	24(Fri) Oct.2014
Agenda	<ol style="list-style-type: none"> 1. Open Address 2. JICA Expert (Short and Long Term) 3. Progress of the operation, after finished the last two meeting 4. Advantage of the making of loading list by the port for loading operation 5. Assessing the ability of the QC driver update 6. Compiling Productivity 6 months (May to October) 7. Commitment in 2015 to increase productivity (28-30boxe)
10 th Meeting	
Date	01 (Mon)Dec.2014
Agenda	<ol style="list-style-type: none"> 1. Opening Address 2. JICA Expert (Short and Long Term) 3. The Progress of the update operation 4. Set the Objective of PAS on cutting off time and shut out 5. Compiling productivity 7 Months (May to November) 6. Others
Additional Meeting (Key Knowledge and Know-how for Maximizing the Capacity and Achieving the “Highest Efficiency at the Lowest Cost” at PAS CT The Progress of the update operation)	
Date	31 (Tue) March.2015
Agenda	<p>Basic Knowledge on Necessary Scales & Sizes (Capacities) of a Container Terminal</p> <ol style="list-style-type: none"> 1) By Berth, 2) By CY-Space, 3) By Container Handling Equipment (including Tools) , 4) Manpower based on handling volumes <p>And those managing points</p>
11 th Meeting	
Date	02 (Tue) June.2015
Agenda	<ol style="list-style-type: none"> 1: Opening Address 2: Time of arrival and the ship's departure for today 3: The productivity container for today

	4: Equipment problem with container operation 5: Result status container who arrived in the yard after set out policies CY-Cut Time and Shut-Out Time 6: Targets of the Project, JICA Expert(Long-term) 7: Others
12th Meeting	
Date	02 (Wed) September 2015
Agenda	1. Opening Address 2. Monitoring work between week 33-34 (16-23 August-2015) 3. Recently machinery 4. Traffic situation in container terminal 5. Human Resource Situation
Workshop on Maintaining PAS's Status as the Only Gateway Port-CT Operator in Cambodia in Future	
Date	13 (Fri) November 2015
Agenda	1. Opening remarks 2. Mr. Eto's Presentation 3. Discussion 4. Closing address
13th Meeting	
Date	22 (Fri) January 2016
Agenda	1. Opening Address 2. Monitoring and Review for 2015 3. Statistical of container in 2015 4. Monitoring Mr.Eto recommendations and actual operation in 2015 a) Crane (QC, RTG, Reach-Stacker) b) Berth Productivities c) Dwelling Time Of Containers d) Turn Time Of External Trucks 5. Traffic situation in container terminal 6. Sets out actions to improve continuing operations for 2016

Table 2-5 CTMS Meeting

1st Meeting	
Date	24 Dec. 2013
Agenda	1. Internal discussion on CTMS among all sections related to CTMS
2nd Meeting	
Date	11 Jan. 2014
Agenda	1. Internal discussion on CTMS among all sections related to CTMS
3rd Meeting	
Date	13 Jan. 2014
Agenda	1.Overall Issues of CTMS (Team , NiDA and Lectures of CTMS training) 2. Issues related to IT section (IT-section, NiDA and Lectures of CTMS training)
4th Meeting	
Date	16 Jan. 2014
Agenda	1 Internal discussion on CTMS among all sections related to CTMS
5th Meeting	
Date	31 Mar.2014
Agenda	1. Issues identified through CTMS training 2. Discussion on the issues and counter measures
6th Meeting	
Date	10 July.2014
Agenda	1. Opening meeting by H.E. Ma Sunhuot 2. CTMS Progress Report by Mr. Sorm Karaney 3. CTMS error report from related sections 4. Work plan and work schedule of CTMS expert by Mr. Sato 5. Others
7th Meeting	

Date	17 July.2014
Agenda	<ol style="list-style-type: none"> 1. Show of screen layout and output items of statistical information 2. Result of Discussion 3. Discussion on RHT Interface 4. Opening meeting by H.E. Ma Sunhuot 5. Showing of RHT screen interface by Mr. Sato 6. Result of discussion
8th Meeting	
Date	25 Jul.2014
Agenda	<ol style="list-style-type: none"> 1. Opening Meeting by H.E. Ma Sunhuot 2. Reporting of Work List of Survey and Training by Mr. Sato 3. Future Work of Mr. Sato
9th Meeting	
Date	27 Oct.2014
Agenda	<ol style="list-style-type: none"> 1. Opening Meeting by Mr. Pith Prakath, CTMS Team Leader 2. Reporting of Mr. Sato's work schedule at PAS, CTMS expert 3. Reporting the result of the survey about the system slowdown, CTMS expert 4. Reporting of the new program for handy terminal used at quay side, CTMS expert 5. Discussion on future plan for CTMS improvement
10th Meeting	
Date	04 Nov.2014
Agenda	<ol style="list-style-type: none"> 1. Opening Meeting by Mr. Pith Prakath, CTMS Team Leader 2. Discussion on input data of ATA, ATB, and ATD; and Final Discharging Port to CTMS
11th Meeting	
Date	22 July 2015
Agenda	<ol style="list-style-type: none"> 1. Opening address by Mr. Pith Prakath 2. Decide the work schedule from July, 2015 to January, 2016. 3. Share the delivery and setting schedule of the hardware. 4. Share the migration method for new system. 5. Check the specification of the hardware and system software.
12th Meeting	
Date	23 July 2015
Agenda	<ol style="list-style-type: none"> 1. Opening address by Mr. Pith Prakath 2. Discussion on discipline and use of functions of CTMS 3. Problem Error from Gate Section (Stacking time from 5-15mins) 4. Requests, Suggestions, and Errors from Container Terminal Operation Department (from each section). 5. Others

Table-2-6 Team C Meeting

1st Meeting	
Date	December 26 th , 2013
Agenda	<ol style="list-style-type: none"> 1. Opening address 2. Recent activities of Team-C 3. Work Plan (PDM, Baseline) by Mr.Shishido 4. Work Plan (Contents of tasks, WBS) 5. Running of Team-C by Mr.Shishido 6. Undertakings of the near future 7. Others
2nd Meeting	
Date	January 14 th , 2014
Agenda	<ol style="list-style-type: none"> 1. Team C Leader address 2. Action Plan and Draft Report by Dr.Takehara <ul style="list-style-type: none"> Survey of physical Condition of QC/RTG Maintenance Workshop Maintenance and Inspection Records QC/RTG Maintenance Team Organization

	<p>Maintenance and Inspection Manual QC/TRG Spare Parts Management</p> <p>3. Undertakings of next Action 4. Others</p>
3rd Meeting	
Date	27 (THU) Feb. 2014
Agenda	<p>1. Team C Leader address</p> <p>2. Survey of Physical Condition of QC/TRG</p> <ul style="list-style-type: none"> - Improvement of QC/TRG condition - Survey Usage time/Working Time of QC/TRG - Brake Down Rate of QC/TRG - Planning for Maintenance Activity QC/TRG <p>3. Crane driver's Report during Operation</p> <p>4. Maintenance Inspection Record</p> <p>5. Maintenance Team Organization</p> <p>6. Maintenance, Inspection Manuel QC/TRG</p> <p>7. Other</p>
4th Meeting	
Date	2 nd May. 2014
Agenda	<p>1. Summary of 1 Quarter Break Down Rate QC/TRG</p> <p>2. Mr. Jonishi Address</p> <p>3. Spare Part Improvement by Mr. Vannara</p> <p>4. Presentation by Dr. Takehara</p> <p>5. Other</p>
5th Meeting	
Date	22 nd May. 2014
Agenda	<p>1. Team Leader Mr. Chea Yuthdyka</p> <p>2. Mr. Jonishi Remark</p> <p>3. Mr. IKEDA's speech</p> <p>4. MES's Spare Part list by Mr. Vannara</p> <p>5. Criteria to Determine the Number of Parts Stock by Mr. Dr. Turo Takehara</p> <p>6. Other</p>
6th Meeting	
Date	22 nd August. 2014
Agenda	<p>1. Opening by H.E Ma Sunhout Project Manager</p> <p>2. Team Leader Mr. Chea Yuthdyka</p> <p>3. Remark By Mr. IKEDA Tetsuro</p> <p>4. Break Down Rate Report By Mr. Ouk Sovannara</p> <p>5. Spare Parts Inventory System By Mr. Chea Pisetmonkul</p> <p>6. Inspection and Operation Manual</p> <p>7. Other</p>
7th Meeting	
Date	24 October. 2014
Agenda	<p>1. Opening by H.E Ma Sunhout Project Manager</p> <p>2. Team Leader Mr. Chea Yuthdyka</p> <p>3. Mr. Ichinose Presentation to team</p> <p>4. Break Down Rate Report Jan. to Sep. & Daily checklist QC/TRG By Mr. Ouk Sovannara</p> <p>5. Technical & Operator Requirement for new QGC/RTG</p> <p>6. Other</p>
8th Meeting	
Date	18 Nov. 2014
Agenda	<p>1. Opening by H.E Ma Sunhout Project Manager</p> <p>2. Team Leader Mr. Chea Yuthdyka</p> <p>3. Mr. Ichinose's summery activity</p> <p>4. Improvement of Daily/ weekly checklist QC/TRG By Mr. Ouk Sovannara</p> <p>5. Revise Spare Parts Classification and Planning for QGC/RTG By Mr. Chea Pisetmonkul</p> <p>6. Other</p>

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

9 th Meeting	
Date	11 Feb. 2015
Agenda	<ol style="list-style-type: none"> 1. Team C Leader Resume Last Activity 2. Report of Translation of Inspection/Operation Manual of QGC/RTG, And new checklist for QGC/RTG Implementation by Mr. Leng Moa 3. Yearly Report of Break down Rate/ Spare Parts Analysis of QGC/RTG by Mr. Vannara 4. Other
10 th Meeting	
Date	11 Feb. 2015
Agenda	<ol style="list-style-type: none"> 1. Team C Leader Resume Last Activity 2. Report of Translation of Inspection/Operation Manual of QGC/RTG, 3. And new checklist for QGC/RTG Implementation by Mr. Leng Moa 4. Yearly Report of Break down Rate/ Spare Parts Analysis of QGC/RTG by Mr. Vannara 5. Other
11 th Meeting	
Date	7 th July 2015
Agenda	<ol style="list-style-type: none"> 1. Team C Leader Resume Last Activities of 10 TH Team Meeting 2. Spare Parts Procurement Plan 3. Monthly Inspection check List <ol style="list-style-type: none"> a) Draft Monthly Check List by Mr. Ouk Vannara b) Draft Check List Base on Operation Manual by JICA Expert Mr. Masao Ichinose c) Present Existing Check List for Electric Parts by Mr. Kim Hor d) Discussion : How to proceed to establish Monthly Check List 4. Analysis of Major Break Down of 2014 QGC/RTG 5. Others. Report of Translation of Inspection/Operation Manual of QGC/RTG,
12 th Meeting	
Date	15 th September 2015
Agenda	<ol style="list-style-type: none"> 1. Team C Leader Resume Last Activities of 11 TH Team Meeting 2. Report on Training course in Japan by Mr. Teang Rothna 3. Report of Daily Checklist for QC/RTG by Mr. Pich Oeun 4. Progress Report of Translation of O&M Manual by Mr. Neak Sophyan 5. Revise Spare Parts Procurement Plan QGC/RTG by Team Leader 6. Break Down Rate of QGC/RTG by Mr. Ouk Vannara 7. Others
13 th Meeting	
Date	11 th December 2015
Agenda	<ol style="list-style-type: none"> 1. Team C Leader Resume Last Activities of 12 TH Team Meeting 2. Suspension Rate Analysis of 2015 Jan. to Nov. by Mr. Ouk Vannara 3. Revise Spare Parts Procurement Plan on RSPL by Mr. Chea Pisetmonkul 4. Progress Report of Daily Checklist for QC/RTG by Mr. Pich Oeun 5. Progress Report of Translation of O&M Manual and Training Program to daily Check list by Mr. Neak Sophyan 6. Monthly Inspection Items & Inspection report QGC/RTG by Mr. Ouk Vannara 7. Study Tour in Japan by Mr. Ouk Vannara 8. General Comments by JICA Expert Mr. Ichinose 9. Others
14 th Meeting	
Date	25 th February 2016
Agenda	<ol style="list-style-type: none"> 1. Team C Leader Resume Last Activities of 13 TH Team Meeting 2. Overview of Equipment Maintenance Management by Mr. Ichinose 3. Progress of Monthly/Weekly Inspection by Mr. Vannara /Mr. Kim Hor 4. Progress of Procurement and Consumed Parts in 2014/2015 by Mr. Mongkul 5. Future Activities for better Maintenance of QC/RTG by Mr. Ichinose 6. Others.

2.4 Seminar/Workshop

Several seminars and workshops were held in each phase. JICA experts made presentations on the subjects that were useful for making discussion on strategies, terminal operation and machinery maintenance. They instructed know how or techniques on simulation models or analytical methods etc. Through discussion at these meetings, technology transfer to PAS counterparts has been conducted. The title, date and agenda of each seminar or workshop are shown in Table 2-7.

Table 2-7 Seminar/ Workshop

Meeting for sharing of Information on Power supply situation in Sihanoukville by Mr. Jonishi	
Date	01 Jul. 2013 ~ through Phase 1
Agenda	1. Information sharing on Reduction of Power price (meeting' report from JICA office)
Mini seminar on Asian Logistics	
Date	10 Sep. 2013 (on the occasion of PIU kick-off meeting held by Team A)
Agenda	1. ASEAN Port Logistics; Port Development and Market (presentation by Mr. Shimada, JICA expert dispatched to MPWT) 1.JICA Training Report by Mr. Sec Sovannara 2.Report of Visiting to Thai Ports lead by JICA office by Mr. Thay Mengly
Meeting for sharing of Information on Port Railways by JICA Expert Mr. Jonishi	
Date	01 Oct. 2013
Agenda	1. Information sharing on railway facilities in the port (meeting' report at JICA office by Mr. Jonishi) 2. Status of Discussions with Rail Company 3. Railway cargo handling situation report from planning Department
Meeting for sharing of Information on quotation on QGC and RTGs by Mr. Jonishi	
Date	03 Jan. 2014 ~ through Phase 1
Agenda	1. Information sharing on Procurement of QGC and RTGs from the Maker
Meeting for sharing of Information on Port Railways by JICA Expert Mr. Jonishi	
Date	01 Feb. 2014~
Agenda	1. Information sharing on railway facilities (exchange of views with JICA office by Mr. Jonishi) 2. Advice on the drawing of rails alignment in the port 3. Construction of the railway which extends into the Multipurpose terminal. (Advised by JICA office)
Seminars on Essential baselines to operate and manage SHV Port CT properly	
Date	05 Mar. 2014/12 Mar. 2014/18 Mar 2014
Agenda	1. Presentation by Mr. ETO 2. Discussion among Management Members (05 Mar.) 3. Discussion among Members of Team A and B (12 Mar.) 4. Discussion among Members of Team C (18 Mar.)
Mini Seminar	
Date	07 Mar. 2014
Agenda	1. Financial analysis (presented by Dr. Suzuki) 2. Discussion 3. Data collection and analysis on cargo comparison between SV Port and PPAP by Mr. Jonishi (and proposed workshop for technical transfer of the files.)
Workshop for Developing PAS's CT operational Guidelines	
Date	19 Mar. 2014/ 20 Mar. 2014/ 24 Mar. 2014/ 25 Mar. 2014/
Agenda	1. CT operational Guideline (presentation by Mr. ETO) 2. Discussions
Meeting for sharing of Information on revision of the contract with MES on remote service for CTMS software and follow-up of the contract	
Date	22 Jan. 2014 ~ through Phase 1
Agenda	1. Negotiation on revision of contents of the contract 2. Explanation of CTMS problems for PAS to MES
Workshop on Enhancement of Port Marketing & Promotion	
Date	15 July 2014

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Agenda	<ol style="list-style-type: none"> 1. Marketing Strategy and Port Promotion 2. Case Study on Attracting Container Vessels 3. Simulation on Route Choice of International Container Cargo 4. Sample Case of Port Promotion 5. Activities for Marketing/Port Promotion
Workshop on PAS Financial Model	
Date	4 August 2014, 6 August 2014
Agenda	<ol style="list-style-type: none"> 1. Brief presentation on Port Selection and Land/River Transportation Choice in Cambodia 2. Discussion on Revenue/Expenditure of Container & General Cargo Operation 3. Others
Work shop on Utilization of Data in CTMS	
Date	28 October 2014
Agenda	<ol style="list-style-type: none"> 1. Specification of Data Discharge Program 2. Utilization of Data in CTMS <ol style="list-style-type: none"> (1) Framework of Utilization of Data in CTMS (2) Data saved in CTMS (3) Data Analysis for Strategic Planning and Management (4) Port statistics (5) What PAS shall Do
Workshop on PAS Business Plan	
Date	4 Dec. 2014, 9 Dec. 2014, 11 Dec. 2014, 23 Dec. 2014
Agenda	<ol style="list-style-type: none"> 1. Cut off Time 2. Cargo handling capacity of existing facilities (and expanded container yard) 3. Necessary size of operational staff
Meeting with Shipping Line Companies	
Date	21 January 2015
Agenda	Discussion on CY Cut off Time and Shut out Time
Meeting with Shipping Line Companies	
Date	7 April 2015
Agenda	<ol style="list-style-type: none"> 1. Changing Information <ol style="list-style-type: none"> (1) Changing Information of Container Discharging from vessel (2) Changing information of Container Loading to vessel 2. Correcting Berthing Time
Workshop on Data Discharging System	
Date	10 April 2015
Agenda	<ol style="list-style-type: none"> 1. Summary of the results of the activities on CTMS 2. Real situations of data in CTMS 3. Data Management
Meeting on Main Findings of Ports in Vietnam	
Date	6 and 7 July 2015
Agenda	<ol style="list-style-type: none"> 1. Main Findings at MARITIME ADMINISTRATION HCMC, Cat-Lai Terminal, TCIT, TCCT, CMIT and Vietnam Seaport Association 2. What PAS shall draw
Meetings with Private Operators	
Date	31 July and 10 August 2015
Agenda	<ol style="list-style-type: none"> 1. Meeting with Mitsubishi Trading Co. and TCB Terminal 2. Meeting with Toyota Trading Co. and Kamigumi Co. To Exchange the idea of PPP operation
Workshop for Ship Planner of The Container Terminal	
Date	30 November 2015
Agenda	<ol style="list-style-type: none"> 1. Ship Planning for Operating 3 QC Exercises and Lessons by Mr. Eto
Workshop on Data Analysis Method	
Date	26 January 2016
Agenda	<ol style="list-style-type: none"> 1. Demonstration of calculation on MS-EXCEL 2. Significance of outputs 3. How to use the templates

	4. Techniques for using MS-EXCEL
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2.5 Training

(1) Training on CTMS

Training on the CTMS system improvement was conducted from 13st January to 16th January 2014 with the participation of personnel from IT, DOCUMENT, GATE CLERK, CONTROL ROOM, VESSEL PLANNER, MAINTENANCE & REPAIR sections of PAS and NiDA. Issues and counter measures were identified through the discussions in the training course.

Lecturer	Akihiko Sato (Software Expert), Hideto Wada (Hardware expert)	
Participants	PAS	
	Mr. Pith Prakath	Chief Office of HR-IT
	Mr. Sorm Karaney	Chief of IT Section
	Mr. Chan Sokha	Harbour Master Department
	Mr. Sek Sovannara	Chief Office of Documentation
	Mr. Ouk Vannara	Official of Technical Material/ Construction
	Mr. Chao Vanrattanak	Chief of Yard Planing Section
	Mr. Koam Sokan	Chief of Vessel Planing Section
	Mr. Pen Sodadoung	Chief of CTMS operation Section
	Mr. Korm Sitho	Official in Documentation Section
	Mrs. Chhoung Rattana	Official of Billing Department
	Mr. Oung Jeanot	Official in Gate Clerk
	Mr. Norng Sinal	Deputy Chief of IT Section
	Mr. Soun Bunsong	IT Official
	Mr. Ou Sovanrith	-
	NiDA	
Subjects of the course	<ul style="list-style-type: none"> -Issues on CTMS at Present and Improvement -Issues on Import and Export Document Systems -Issues on Gate System -Issues on Yard Operation System -Issues on Vessel Planning System -Expansion Plans of Gate -Maintenance of Crane Monitoring System -Survey of the Wi-Fi Environment 	

(2) Technical Visit to Thailand

Training in Thailand was conducted in Phase 2. Eight PAS persons (four persons were sponsored by JICA) visited Thailand together with the chief advisor and JICA project team members as well as a representative of the JICA Cambodia Office. Trainees learned how to manage and operate container terminals and what strategies these terminals have adopted for strengthening competitiveness.

Purpose:

Study on privatized container terminal operation;
efforts for efficient container terminal operation by PAT and terminal operators; and
PAT's policy for port management and operation etc.

Offices /Ports Visited

PAT
Bangkok Port
Laem Chabang Port
Lat Krabang Container Depot

Participants

Team Leader

Mr. Tetsuro Ikeda, JICA Chief Advisor to PAS

PAS

Mr. Thay Rithy, Director of Commercial Dept.

Mr. Thong Viro, Director of Harbor Master

Mr. Thay Mengly, Deputy Director of Container Terminal Operation Dept.

Mr. Pith Prakath, Deputy Director of Administration & Human Resources Dept.

Mr. Chao Vanratanak, Container Terminal Operation Dept.

Mr. Ouk Somethy, Chief of Data and Relationship, Planning &Statistic Dept.

Mr. Nhim Pisey, Chief of Security Office, Admin-HR Dept.

Mr. Ouk Vannara, Technical Material and Construction Dept.

Mr. Sorm Karaney, Chief of IT Section

Mr. Koam Sokan, Container Terminal Operation Dept.

JICA

Mr. Toshikazu Watanabe, Representative, JICA Cambodia Office

Mr. Sumio Suzuki, Expert for Port Planning and Management, JICA Project Team

Mr. Mitsuhiro Fujimoto, JICA Project Team

Visit Schedule

Monday, 15 December 2014: Arrival at Bangkok

Tuesday, 16 December:

AM PAT Headquarters

Business Development and Assets Management Dept.

Human Resources Management Dept.

Office of Financial Management

Mechanical Handling Equipment Dept.

Engineering Dept.

Maritime Dept.

PM Visit to Bangkok Port

Container Terminal 1 and 2

Craft and Cargo Operations Dept.

Training Center

Wednesday, 17 December

AM PAT Laem Chabang Port Office

PM Visit to TIPS Terminal in Laem Chabang Port

Thursday, 18 December

AM Visit to Lat Krabang Container Depot

Friday, 19 December : Return to Sihanoukville

(3) Technical Visit to Vietnam

Training in Vietnam was carried out in Phase 3. The following ten (10) PAS working group members (four of whom participated with funding from JICA) visited VIETNAM together with a chief advisor and JICA project team members. Participants learned about management and operation of container terminals in Ho Chi Minh City and Cai Mep areas of Vietnam and the port administration system of Vietnam.

Purpose

Study on terminal operation at advanced container terminals in Hochi Minh and Cai Mep and port administration of Vietnam

Offices/Ports visited

Maritime Administration of Ho Chi Minh City

Vietnam Seaports Association

Private Terminal Operators

Tang Cai Cat Lai Terminal/SAIGON NEWPORT CORPORATION (SNP)

CMIT/Cai Mep International Terminal Co., Ltd.

TCIT/Tan Cang Cai Mep International Terminal Co., Ltd.

Team Members who participated in the training

PAS Working Group

Mr. Thay Rithy, Deputy Director General, PAS, HEAD of the Mission
Mr. Pith Prakath, Director of Business Dept. PAS
Mr. Thong Viro, Director of Harbor Master Dept. PAS
Ms. Chey Sokunthea, Director of Marketing Dept., PAS
Mr. Thay Mengly, Deputy Director of Container Terminal Operation, PAS
Mr. Sek Sovannara, Chief of Data, Container Terminal Operation Dept., PAS
Mr. Sorm Karaney, Official of Admin-HR Dept., PAS
Ms. Klok Makara, Official of Planning - Statistic Dept., PAS
Mr. Koam Sokan, Official of Container Terminal Operation Dept., PAS
Mr. Chao Vanratanak, Official of Container Terminal Operation Dept., PAS

JICA Team

Mr. Tetsuro IKEDA, Chief Advisor, JICA Project Team
Mr. Tastuyuki SHISHIDO, Expert for Port Planning and Management, JICA Project Team, Mr. Katsuyasu MIURA, JICA Project Team

Schedule

Monday, 29 June 2015 Av. At Hochi Minh
Team Meeting

Tuesday, 30 June

09:00-11:00 MARITIME ADMINISTRATION HCMC

14:00-16:00 Cat-Lai Terminal

Wednesday, 01 July

10:00-12:00 TCIT & TCCT

14:00 -16:00 CMIT

Thursday, 02 July

09:00-11:00 Vietnam Seaport Association

14:00-16:00 Wrap-up Meeting (internal meeting)

Friday, 03 July 09:30 To Sihanoukville

(4) Training in Japan

Training in Japan was conducted in Phase 3.

In Phase 3, four (4) PAS persons visited Japan from November 8-21, 2015. Trainees learned about the Japanese port system and visited the ports of Tokyo, Yokohama and Hakata for site observations and exchanging opinions with port related persons. In addition, they visited Mitsui Engineering and Shipbuilding Co. Oita Works where QGCs of PAS are produced and participated in some programs of a JICA group training course.

PAS Trainees

Mr. Heang Sophal, Deputy Director, Container Terminal Operation, Head of the Mission

Mr. Ouk Vannara, Official, Technical Dept. PAS

Mr. Kim Hor, Official, Technical Dept. PAS

Ms. Klok Makara, Planning-Statistic Dept. PAS

Offices and Ports visited

JICA

Ministry of Land, Infrastructure, Transport and Tourism

Overseas Coastal Area Development Institute

Yokohama City

Port of Yokohama

Port of Tokyo

Tokyo International Container Terminal (TICT)

Fukuoka City

Port of Hakata

Container Terminal of Hakata Port

Schedule

8-Nov Arrival at Tokyo

- 9-Nov JICA Briefing, Program Orientation
Visit to Ministry of Land, Infrastructure, Transport and Tourism)
Visit to OCDE
- 10-Nov Lecture
Institution and Policy for Japanese Ports
Port Planning, Project System, Project Assessment
Japan's Computerization System
- 11-Nov Lecture
Maintenance of Container Cranes
Recent Trend of Cargo Handling Equipment
Automatization of Container Terminal
- 12-Nov Yokohama City and Yokohama Port
Site observation of Yokohama port by ship
Operation and Maintenance planning for Port facilities,
Visit to Container Terminal of Yokohama port
- 13-Nov Tokyo Port
Overview of Tokyo port and measures taken for congestion
Tokyo International Container Terminal (TICT)
Overview of TICT
Maintenance of Cargo handling equipment
Periodic inspection of Cargo handling equipment
Spare parts and management of Cargo handling equipment
Maintenance work, evaluation standard for changing parts
- 14-Nov Holiday
- 15-Nov move to Oita
- 16-Nov Mitsui Engineering and Shipbuilding Co. Oita Works
Long-term maintenance plan for cargo handling equipment (QGC, RTG)
Technical reason of selecting Spare parts
Exchange of views on spare parts for QGCs and RTGs of Sihanoukville Port
move to Fukuoka
- 17-Nov Fukuoka City hall
Overview of Hakata port and long term plan
Container Terminal of Hakata Port
Overview of Container terminal of Hakata port
Outline of Container Handling Equipment
Organization Structure of Cargo Handling Maintenance Operation
- 18-Nov Container Terminal of Hakata Port
Actual Case of QGC/RTG Inspection
Planning of Crane Maintenance Example QGC
Spare Parts for Crane
Management for maintenance parts of cargo handling equipment
- 19-Nov move to Tokyo
Preparing action plans
- 20-Nov Presentation of Action Plan
Closing Ceremony
- 21-Nov Return to Cambodia
- Accompanying experts
Mr. Masao Ichinose (Equipment Maintenance (2))
Mr. Yuichi TANJI (Coordinator for Training in Japan)

3. Outline of Activities

3.1 Activities related to Output 1

Phase 1

Mr. Tatsuyuki SHISHIDO, on the JICA expert in the field of port planning and operation (1), stayed in Sihanoukville two (2) occasions and carried out his duties together with Team-A members in Phase 1. He also gave advice and guidance to PAS counterpart personnel. His first assignment was from 19 December 2013 to 4 January 2014 (17 days) and the second was from 27 March to 22 April in 2014 (17 days). His activities were summarized and reported in Team-A meetings.

The expert participated in the meetings of Team A and explained the relevant parts of the work plan to Team A members. He made a presentation on the outline and implementation of the project at the first PIU meeting which was held on 24 December 2013 as a stepping stone to full-scale implementation. He also participated in the 2nd PIU meeting which was held on 1 April 2015 and reported the results of activities in Phase 1 including Progress Report 1 (draft) and the revised work plan (Ver2).

Dr. Sumio SUZUKI the JICA expert in the field of port planning and operation (2), was dispatched to Sihanoukville from February 18th to March 18th, 2014 (29days) during which period he carried out his duties together with Team-A members in Phase 1. He also gave advice and instructions to PAS counterpart personnel. His activities were summarized and reported in the Team- A meetings.

The expert collaborated with counterpart officers of the Planning Department, Accounting Department and other related departments in identifying constraints and bottlenecks regarding financial management, and in developing and updating a financial simulation model for container and general/bulk cargo operations. The expert joined the meeting of workgroup “Team A” on 12 March 2014, and presented his proposals for financial management and analysis of revenue/cost structure of PAS. The expert also joined a mini-seminar on financial simulation models on 07 March, 2014, and presented his findings and views on the financial management issues of PAS, and introduced preliminary results of the financial simulation model. The expert for Container Terminal Operation joined the meetings of Team A and made presentations on basic issues and challenges faced by PAS regarding container terminal operation. In addition, the expert participated in several seminars.

To promoted strategic planning and management of container and general/bulk cargo operations, the expert recommended that PAS and PPAP exchange monthly cargo statistics. Accordingly, both parties met on 28 February 2014 in Phnom Penh and agreed to exchange necessary statistics at the beginning of every month.

A baseline survey was carried out in order to select indicators and set up the target values for output 1. Six items such as PAS strategic plan and management document, annual container throughput, rate of contracted land with business establishments, annual container throughput per person (all persons and persons in charge of container operation), annual revenue per person and net profit margin were selected. The present values as a baseline and target values of these indicators were set up through discussion at Team B meeting.

Phase 2

Mr. Tatsuyuki SHISHIDO stayed in Sihanoukville on three (3) occasions and carried out his duties together with Team- A members in Phase 2. He also gave advice and guidance to PAS counterpart personnel. His first assignment was from 4 to 19 in July 2014 (14 days), the second was from 19 October to 2 November in 2014 (15 days) and the third was from 2 to 12 April in 2015 (11 days). His activities were summarized and reported in Team- A meetings.

The expert collaborated with Team A members in examining port promotion/marketing and with CTMS Team members in examining the problems of CTMS. In addition, he participated in the 3rd PIU meeting and meetings of Team A and Team CTMS and discussed on strategic planning and management with PAS counterpart personnel. He also made a presentation on marketing/port promotion at a workshop.

The expert collaborated with PAS counterparts on how to use data/information for strategic planning and management and the improvement of CTMS. He participated in the 4th PIU meeting and meetings of Teams A, B, C and CTMS and explained the importance of analysis using scientific data. He also made a presentation on the Utilization of Data from CTMS at a workshop.

The expert drafted the Progress Report 2 and Work Plan Ver.3 under the supervision of a chief advisor and reported to the Project Director. In addition, he had meetings with Team members in charge of Statistics on the use of CTMS data.

Dr. Sumio SUZUKI stayed in Sihanoukville on two (2) occasions and carried out his duties together with Team- A members in Phase 2. He also gave advice and guidance to PAS counterpart personnel. His first assignment was from 17 July to 10 August in 2014 (21 days) and the second was from 29 November to 25 December in 2014 (27 days). His activities were summarized and reported in Team- A meetings.

The expert also collaborated with Team A members in establishing and applying a financial model for the management of PAS. The model is useful for assessing the changes of revenues and expenditures, investment in procurement of cargo handling equipment, and other financial issues.

The expert collaborated with PAS counterparts in examining appropriate business plans for PAS from the viewpoint of financial management. The expert visited the Port Authority of Thailand, a private terminal operator and ICD operator to acquire factual and practical information on port management, terminal operations and land transportation of seaborne cargoes.

Phase 3

Mr. Tatsuyuki SHISHIDO stayed in Sihanoukville on three (3) occasions and carried out his duties together with Team- A members in Phase 3. He also gave advice and guidance to PAS counterpart personnel. The first assignment was from 21 June to 11 July in 2015 (21 days), the second was from 14 to 30 in January 2016 (17 days) and the third was from 1 to 17 in March 2016 (17 days). His activities were summarized and reported in Team- A meetings.

During his first assignment in Phase 3, the expert participated in the 6th PIU Meeting on 23th June and the 3rd JCC Meeting on 26th June and reported the results of the activities in Phase 2 and the work plan in Phase 3. In addition, he arranged the training course for Container Terminal Management and Operation of Vietnam and visited Ho Chi Minh City and Cai Mep Area with ten persons of PAS. Through the course, he assisted PAS personnel in learning advanced container terminal management and operation and port administration of Vietnam. He also carried out technological transfer on the method of analyzing data discharged from CTMS.

During his second assignment in Phase 3, he demonstrated how to analyze data obtained from CTMS at a workshop to PAS staff. He also made a presentation on strategic planning and management including utilization of CTMS data at a Team A meeting. In addition, he drafted Progress Report (3) under the supervision of a chief advisor and reported to the Project Director. He participated in the 8th PIU Meeting on 28th of January.

During his third assignment in Phase 3, the expert consulted the chief advisor regarding reference manuals and the completion report. He compiled technical information, analysis methods and presentation paper into several reference books in order for PAS can utilize after termination of the project.

Dr. Sumio SUZUKI stayed in Sihanoukville on three (3) occasions and carried out his duties together with Team-A members in Phase 3. He also gave advice and guidance to PAS counterpart personnel. The first assignment was from 5 to 24 in July 2015 (20 days), the second was from 2 to 20 in November 2015 (19 days) and the third was from 20 January to 3 February in 2016 (15 days). His activities were summarized and reported in Team-A meetings.

The expert collaborated with “Team A” members in drafting “Business Plan 2015-2017” based on the financial analysis. The Strategic Management of PAS, Business Plan, Goals and Actions, and Financial Analysis of Development Projects were discussed at the Team-A workshop held on July 21st, 2015.

During his second assignment, the expert updated the financial simulation model and revise at the business plan. “Business Plan 2016-2018” was drafted and discussed at the workshop of Team A on 16 November 2015. As the IPO is anticipated in the near future, the expert made on financial performance comparison between PPAP and PAS, as PPAP disclosed its financial situation for selling shares in November 2015.

During his third assignment, the expert revised the financial management plan in the Strategic Management Plan 2016-2018, and joined a meeting of Team A and PIU. The expert collaborated with Team-A in conducting a financial analysis and transferred basic knowledge on investment funding including PPP projects. The contents of the Strategic Management Plan 2016-2018 are shown in the box below.

Contents of Strategic Management Plan 2016-2018

1. Vision
2. Mission
3. Duties of PAS
4. Current Situation
 - 4.1. Strengths of PAS
 - 4.2. Weaknesses of PAS
5. Strategy
 - 5.1. Strategic Targets
 - 5.2. Key Focus Areas
 - 5.3. Improvement of Efficiencies of Container Terminal Operation
 - 5.4. Expansion and Development 2016-2018
 - 5.5. Port Reform
 - 5.6. Tie to Government Policy
6. Financial Management
 - 6.1. Principles
 - 6.2. Financial Management Plan
 - 6.3. Long-term Debt and Corporate Bond
7. Necessary Actions in Key Focus Areas
8. Management Efforts
 - 8.1. Establishment of Strategy Unit
 - 8.2. Target Indicators

3.2 Activities related to Output 2

Phase 1

Mr. Teruki ETO, on the JICA expert in the field of Container Terminal Operation (1), stayed in Sihanoukville one occasion and carried out his duties together with Team-B members in Phase 1. He also gave advice and guidance to PAS counterpart personnel. His assignment was from 1 March to 12 April in 2014 (43 days). His activities were summarized and reported in Team-B meetings.

As PAS has no Guidelines for operating the CT effectively, there was a need to develop certain guidelines which would be internationally acceptable to shipping lines. PAS has been obliged to accept various requirements, such as waiting of late-arrival containers beyond the berth windows agreed without prior notice, which are not usually accepted at normal CTs.

The expert drafted CT Operational Guidelines whose contents are shown in the box. The guidelines for PAS CT were developed based on those in use at Salalah Port CT in Oman and explained in workshops.

Port of Sihanoukville	
CONTAINER TERMINAL OPERATIONAL GUIDELINES	
Preface	
Section A: General	4
A-1 Abbreviations	4
A-2 Working Hours	4
A-3 Entry Passes	5
A-4 General Customs Formalities	5
Section B: Landside Operations	6
B-1 Gate Operations	6
B-2 Terminal Access	6
B-3 Exit Validation	6
B-4 Checking Activity at Gate	7
B-5 Customs Inspection	7
Section C: Vessel Operation	7
C-1 Marine Requirements	8

C-1.1 Working Hours	8
C-1.2 Vessel Arrival Notice	8
C-1.3 Documents Required	8
C-1.4 Pilotage	8
C-2 Berth and Labour Planning	9
C-2.1 Pro-forma Vessel Schedules	9
C-2.2 Initial Vessel Call Information	9
C-2.3 Detailed Vessel Call Information	10
C-2.4 Communication on the “Port of Sihanoukville Ships Working Plan”	10
C-2.5 Vessel Connections	11
C-2.6 Technical Information on the Vessel	11
C-2.7 Notice of Readiness	11
Section D: Load and Discharge Operation	12
D-1 General	12
D-1.1 Gantry Crane Capacity	12
D-1.2 Lashing	12
D-1.3 Hatch Cover Moves and Restows	12
D-1.4 Use of Special Equipment	12
D-1.5 Bay Planning and Stability Calculations	12
D-1.6 Reporting	13
D-1.7 Storage	13
D-1.8 Data Amendment	13
D-2 Discharge Operation	13
D-2.1 Vessel Profile Information	13
D-2.2 Discharge List Information	13
D-2.3 Checking Activity During Discharge (Tally)	13
D-2.4 Reporting	14
D-2.5 Short / Over-landed Container	14
D-3 Load Operation	15
D-3.1 Pre-Plan	15
D-3.2 Load List Information	15
D-3.3 Re-Nomination of Cargo	16
D-3.4 Pro-Forma Cargo Deadline (Cut off Time)	16
D-3.5 Checking Activity during Load (Tally)	18
D-3.6 Reporting	18
D-3.7 Short-Shipped Container	18
D-3.8 Over-Shipped Container	19
D-4 Yard Inventory	19
D-5 Vessel Repair and Supply of Provision	19
Section E: Break Bulk and Over Dimensional Cargo	20
E-1 Requirements	20
E-2 Restrictions	20
Section F: Direct Deliveries	21
Section G: Dangerous Cargo	21
Section H: Leakage/Spillage of Cargo	22
Section I: Container Freight Station Activities	22
Section J: Weighbridge	22
Section K: Miscellaneous Services	22
Section L: Damage and Claims	23
L-1 Damage to Line’s Equipment (Without Prejudice)	23
L-2 Damage to Line’s Vessel (Without Prejudice)	23
L-3 Damage Caused by Third Parties	24
L-4 Damage to Port Facilities/Equipment/Personnel	24
Section M: Longstanding Cargo	24
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O-2.2 ISPS Requirements for the Line	25
O-3 X-Ray Inspection of Containers	26

The baseline survey was carried out in order to select indicators and set up the target values for output 2. The method of verification and the indicators by which the progress of the project is monitored and verified were analyzed based on collected data and through discussions at the team meeting in Phase 1. In addition, values of the indicators at present as the baseline and that at the end of the project as the target were decided.

Regarding output 2, six verification items such as guidelines (rules and regulations) for external customers for managing and operating the terminal (CT) properly, business plans for managing terminal operations in a comprehensive manner, working records on Ship and CY operations for checking the progress against the planned targets, ships operational productivities (container handling volumes per crane per hour in Gross), dwelling time of containers and turn time of external trucks are selected.

Phase 2

Mr. Teruki ETO stayed in Sihanoukville on two (2) occasions and carried out his mainly together with Team-B members in Phase 2. He also gave advice and guidance to PAS counterpart personnel. His first assignment was from 25 November to 25 December in 2014 (31 days) and the second was from 12 March to 9 April in 2015 (29 days).

The container handling volume at PAS CT increased rapidly in 2013 and even more so in 2014 (18% per annum). If the container volume continues to increase at this pace, PAS will face a variety of problems and its current major problem - a lack of CHE – will be exacerbated. The expert drafted a five-year business plan for PAS' CT Ops which detailed the problems/risks PAS would face in the near future. It was suggested that any shortage of stevedoring laborers should be made up by hiring on a temporary basis for the next few years rather than employing people on a permanent basis.

The expert recommended that the CEO to take the following actions in the coming several years based on the aforementioned business plan;

- Installation of 3rd (4th as well) QGC & RTG.
- Conversion of the ECD yard to RTG yard.
- Development of an Off-dock CY due to shortage of container storage space.
- Development of an Off-dock CY by shipping lines instead of PAS
- Development of a new container terminal (CT) due to the lengthy construction period involved.
- Introduction of a CY Cut-off system
- Enhancement of the capacity of PAS on its CT Ops management to operate and manage the Port CT effectively as Cambodia's national Gateway Port Operator by assigning capable human resources to the key position(s); such persons will be tasked with mapping the future direction of PAS and preparing business plans.

Phase 3

Mr. Teruki ETO stayed in Sihanoukville on one occasion and carried out his duties together with Team-B members in Phase 3. He also gave advice and guidance to PAS counterpart personnel. His assignment was from 27 October to 2 December in 2015(37 days). His activities were summarized and reported in Team-B meetings. The expert held several work-shops (meetings) with PAS top management and also with managers and planners in the CT Ops Dept. in order to up-grade PAS' capabilities in both technical and financial aspects.

The expert recommended the following actions in order for PAS to become a self-sustainable port-CT operator. The first goal should be to efficiently operate the existing CT and earn enough revenue for future development needs.

- 1) PAS has to re-organize the CT Ops Dep., consolidating the entire container Ops, and also assigning talented persons to CT Ops management positions, hiring from out-side of PAS if necessary, for practicing systematic CT operations.
- 2) PAS also needs to establish the Labor Management and Control Dep. (LMCD) for upgrading the quality of the labor/CHE-driver force, as well as for introducing certain discipline and order among them.
(There is currently no strict discipline and order among PAS laborers).
 - a) Qualified CHE drivers and Stevedoring labors are another key element for efficient CT operation.
 - b) Such workers cannot be easily obtained in the present circumstances in Cambodia; such workers will have to be cultivated and fostered by PAS itself.
 - c) PAS needs to introduce discipline and order among laborers forces for maximizing their capacities.
 - d) PAS needs to terminate the “ticket” system, after introducing discipline and orders in the entire PAS organization.)
 - e) Recommendations for hiring qualified staffs and laborers:
 - Hire qualified young persons on a 3 month trial-basis.
 - Train/educate them as lashers during that time before deciding to employ them as permanent employees.
 - Keep training them by various OJT, and allow the most talented among them to operate QGC and or RTG, the most important CHE.
 - 5 gangs (5 QGC)/shift (15 gangs for 3 shifts/day’s circumstance in total as maximum) should be the max labor-force for PAS in the future for handling container ships.
 - f) PAS has to establish proper work rules for governing the employees as indicated in the GUIDLINES for managing the container operations at PAS CT; otherwise, PAS will not be able to become a self-sustainable CT operator.
- 3) Certain costs have to be cut for increasing EBIT (operational income) to 35% at minimum.
 - a) The salary system, including manpower allocation by departments, should be changed based on workloads.
 - b) The current system in which 20% of container operation revenue is shared as a bonus should be changed to one based on the real profit.
 - c) Container Ops labors & CHE drivers, should be hired on a temporary basis.
 - d) Required numbers of office staff should be re-examined based on their work-load and appropriate manpower by function/departments should be reallocated.
 - e) Stable out-side electricity should be introduced as early as possible for cutting fuel costs by 50% (or by \$ 3~4/TEU).
 - f) Fuel cost for container operation can be reduced by \$ 1.0/TEU by ordering CHE for the CY- Gate Ops based on the handling volume by shifts, and also terminating the “tickets” system; however, PAS first needs to introduce certain discipline among laborers.

3.3 Activities related on Output 3

Phase 1

Dr. Toru TAKEHARA, the JICA expert in the field of maintenance and management for large cargo handling equipment (1), stayed in Sihanoukville on one occasion and carried out his duties together with Team-C members in Phase 1. He also gave advice and guidance to PAS counterpart personnel. His assignment was from 19 December 2013 to 18 January 2014 (31 days). His activities were reported in Team-C meetings.

In order to grasp the present situation of maintenance of large scale cargo handling equipment by PAS, the following surveys were carried out: a survey on the present situation based on operation records (hour)/down time records, failure reports and accident records, a survey on present situation of crane

productivity based on driver's reports during operation and observations of the maintenance staff; a survey on the workshop by collecting layout drawing of the maintenance shop and the adjacent area and the specification and units of facilities and equipment; a survey on maintenance and inspection records and regular maintenance schedule/program; and a survey on maintenance team organizations based on the personnel list and training record.

In order to grasp the present status of cranes in detail including the necessity of renewal or repair, surveys on RTG-01: MES-RTG, Photo RTG-02: MES, Anti-sway Brake, RTG-01: MES-RTG Gantry Drive Chain, and Photo RTG-04: HHI-RTG Gantry Drive Chain, RTG-05: MES, Hoist Rope Oil Lubrication System, RTG 06: MES, Crane Monitoring System, RTG-07: MES, Trolley Power Cable, RTG-8: HHI-RTG, QC-01: MES, QGC, QC-02: MES, #402 Water-side Rail Brake (Hilmar) and Photo QC-03, QC-04: MES, #401, Gantry Drive Gear oil leakage, QC-05: MES, Trolley Encoder, QC-06: MES, Trolley Encoder Adjusting Mechanism, QC-07: MES, Guide Roller for Hoisting Ropes, QC-08: MES, Hoisting Rope Drum, QC-09: MES, Crane Monitoring System, QC-10: MES, Man-lift (Kinco Manlift), QC-11 and QC-012: MES, Spreader Twist lock rotating mechanism pin, QC-13 and QC-014: MES, Spreader Twist lock lever pin, QC-15 and QC-016: MES, Spreader Twist lock rod, QC-17: MES and Spreader Guide Flipper Motor bracket are conducted by the expert and PAS counterpart personnel.

Present conditions on maintenance and inspection manual of RTG/QGC were surveyed based on the original and additional documents of maintenance and inspection manual, drawings of RTG/QGC (original and additional), and parts catalogs and parts manual books.

Present conditions on spare parts management are surveyed based on such documents as personnel list (title, specialty, career, etc.), normal spare parts list, recommended spare parts list, parts inventory management (system, list, audit), parts order form and parts price, delivery. The survey on spare parts inventory was conducted by the expert. A complete set of original maintenance and inspection manuals of QGCs and RTGs are stocked in a secure place. The original spare parts list is also kept under lock. The spare parts procurement process has been formed. Maintenance and inspections are implemented according to the schedule prescribed in the maintenance and inspection manual.

The baseline survey was carried out in order to select indicators and set up the target values for output 3. Five items, normally maintenance manual for large cargo handling equipment, spare parts list, lists of key spare parts, operating and suspension rates of cargo handling equipment, No. of incidents of inability to furnish spare parts and work records/periodic reports are selected. The present values as a baseline and target values of those indicators were set up through discussions at Team B meetings.

Phase 2

Dr. Toru TAKEHARA stayed in Sihanoukville on one occasion and carried out his duties together with Team- C members in Phase 2. He also gave advice and guidance to PAS counterpart personnel. The assignment was from 25 April to 24 May in 2014 (30 days). His activities were summarized and reported in Team-C meetings.

The expert carried out technology transfer on the maintenance of large scale cargo handling equipment during his stay at PAS. He participated in Team C meetings and gave lectures and presentations on the results of his activities. Main themes in Phase 2 were preparation of a maintenance and inspection manual and spare parts lists.

PAS has been translating of the original manual into Khmer. Dr. Takehara recommended at the most important chapters be translated first. He also stressed the importance of preparing check lists for daily, monthly and yearly inspections.

Crane Maintenance and Inspection Manual for more effective use of the existing manual has been prepared. The contents are shown below.

Crane Maintenance and Inspection Manual

1. Manuals
 - 1.1 Introduction
 - 1.2C-512: MES QGC Inspection check list
 - 1.3C-513: MES RTG Inspection check list
2. How to Use the Manuals
 - 2.1 Instruction

<ul style="list-style-type: none"> 2.1.1 Introduction 2.1.2 Special Attention for the Operational Crane 2.1.3 Special Attentions 2.1.4 Inspection and Maintenance 2.2 Translation to Khmer Language <ul style="list-style-type: none"> 2.2.1 Translation of the Maintenance Manual into Khmer Language 2.2.2 Necessity of Khmer Language Manual 2.2.3 Expert Support of PAS Translation 2.3 Inspection Check List <ul style="list-style-type: none"> 2.3.1 Inspection Check List as the Output 2.3.2 Inspection Check List (Original MES Crane Manual) 2.3.3 PACECO Standard Check List Reference 3. Reference Document; PACECO Maintenance and Inspection Information 4. Attachment
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A recommended spare parts list consists of the normal spare parts, the emergency spare parts, and the damaged replacement parts. The list shows the number of units, cost and lead-time in tabular form. He gave a lecture on how to decide the number of spare parts of QGC at Team C meeting. PAS counterpart personnel learned necessary points of view when PAS procures spare parts for secure maintenance.

Spare Parts List in which consideration for more effective use of the existing spare parts list is described has been prepared. The contents are shown below.

<p>Spare Parts List</p> <ul style="list-style-type: none"> 1. Recommended Spare Parts List <ul style="list-style-type: none"> 1.1 Introduction 1.2 Recommended Spare Parts List as Output <ul style="list-style-type: none"> 1.2.1 QGC Maintenance & Inspection Manual (MES) 1.2.2 RTG Maintenance & Inspection Manual (MES) 2. How to Use the Recommended Spare Parts List <ul style="list-style-type: none"> 2.1 Instruction <ul style="list-style-type: none"> 2.1.1 Explanation of Items of Recommended Spare Parts List 2.1.2 Explanation of Categorized List of Recommended Spare Parts List 3. Remarks <ul style="list-style-type: none"> 3.1 Discussion 3.2 Improvement of Spare Parts Management 3.3 Lecture Related Spare Parts Management 4. Attachment

Mr. Masao ICHINOSE, the JICA expert in the field of maintenance and management for large cargo handling equipment (2), stayed in Sihanoukville on an occasion and carried out his duties together with Team- C members in Phase 2. He also gave advice and guidance to PAS counterpart personnel. His assignment was from 19 October to 22 November in 2014 (35 days). His activities were reported in Team-C meetings.

His work during his stay focused on the following two issues: 1) to assisted Team-C in preparing for daily inspections of QCs and RTGs and 2) to assist Team-C in preparing PAS's spare parts procurement plan for the cranes based on the recommended spare parts list proposed by the JICA expert and MES.

The first issue was raised in the 7th Team-C meeting as the standard inspection & check list recommended by the JICA expert, which had been used by PACEC's maintenance team for undertaking the maintenance work in a middle-east container terminal, did not meet the requirements for the daily inspection in Sihanoukville terminal. To work out a solution, he supported Team-C in revising the daily inspection &

check list for QCs and RTGs(MES). The list was discussed and approved in the 8th Team-C meeting. The revised list for crane operators was adopted from January 2015.

The second issue was taken up for responding to the request of Team-C leader and related staff. The result of the supporting work (reviewing Recommended Spare Parts List) was discussed in the 8th Team-C meeting, and basic procedures for preparation of PAS's spare parts procurement plan for QCs and RTGs (MES) was agreed.

Phase 3

Mr. Masao ICHINOSE stayed in Sihanoukville three (3) times and carried out his duties together with Team- C members in Phase 3. He also gave advices and instructions to PAS counterpart personnel. The first assignment was from 7 June to 11 July in 2015 (35 days), the second was from 30 November to 27 December in 2015 (28 days) and the third was from 3 to 28 in March 2016 (26 days). His activities were summarized and reported in the Team-C meetings.

His activities during his visits were as follows;

- 1) Preparation of a Spare parts Procurement Plan (1st visit & 2nd visit)
- 2) Formulation of monthly inspection and maintenance items and inspection sheet (1st visit)
- 3) Formulation of a monthly inspection and maintenance report (2nd visit)
- 4) Preparation of an equipment breakdown analysis report (2nd visit)
- 5) Preparation of the Guideline for Better Maintenance of QGC & RTG in PAS (3rd visit)

In the activity 1) above, the following tasks were performed;

- a) Detailed study of the past six (6) years breakdown history and replaced parts, and identification of weak points of PAS crane and frequently broken/ replaced parts
- b) Update of Recommended Spare Parts List based on the study above.
- c) Categorization of each parts in the list based on the procurement priority considering damage to the operation in the case of parts shortage, etc.
- d) Identification of parts shortage based on the current inventory clearance
- e) Clarification of required parts (items, quantity, cost, etc.) to be reordered by category and formulation of the Spare Parts Procurement Plan

The Procurement Plan was submitted and authorized in the 11th and 13th team-C meetings.

Following to the daily inspection checklist prepared in the Phase 2 stage, monthly inspection items were identified and the checklist was formulated in the activities 2) and 3) above. Moreover, the monthly inspection and maintenance report was formulated which enables staff to trace the deterioration progress of each device on the crane.

Activity 3) and 4) above comprise the main part of “work record & periodic report on maintenance and inspection tasks” which is one of performance verification items in this capacity development project. Regarding activity 4) above, a sufficient quantity of data related to the breakdown and maintenance records has been accumulated in the database (data accumulation started from January 2014) to carry out the technical analysis on the breakdown of equipment. By this analysis, cause of breakdowns and preventive measures against breakdowns can be identified in a systematic manner. The analysis of the cause and identification of preventive measures for major breakdowns, as well as the yearly trace on the execution of the countermeasures forms the backbone of the maintenance activity. Without this effort, maintenance capacity improvement will not be achieved.

In the activity 5) above, all the activities by the JICA expert were integrated as a reference manual which can be utilized by PAS maintenance engineers when performing maintenance works related to QGCs and RTGs.

In addition to his support activities at site, “Counterpart Training Program” was conducted in Japan from November 8 to 21 (14 days) which was arranged mainly for equipment maintenance training in Japan. In the program counterparts visited advanced container terminals in Japan (Tokyo International Container Terminal, Hakata Port Container Terminal) and a crane manufacturer (MES Oita Factory) and received practical training intensively. The entire document on the equipment maintenance work obtained in the program is incorporated in “the Guideline for Better Maintenance of QGC & RTG in PAS”.

3.4 Activities on CTMS

Akihiko Sato, Terminal Operation Expert (2) and Hideto Wada, Terminal Operation Expert (3) carried out such tasks as analysis of system slowdown, development of software for discharging data stored in CTMS and development of interface software with the alternative handy terminal including technological transfer on these subjects.

Regarding system slowdown, the survey of the processing time in gate works was conducted through monitoring system performance at the gate on the weekend and interviewing gate clerks, documentation section staff, a control center chief and an IT section chief. In addition, data of the processing time over the past few years were checked in Japan. Based on the results of these surveys, the causes of system slowdown were analyzed.

Regarding software for discharging data stored in CTMS, its basic design which was prepared in Japan in advance was introduced to PAS staff and ideas on the software including what data items are necessary to be discharged were exchanged. Based on the discussion, the software was developed in Japan. The software and how to use it were explained to PAS personnel at the meetings during the second assignment of the CTMS Expert. Methods to make use of the discharged data were presented at the meetings.

Regarding interface with the alternative handy terminal, its basic design which was prepared in Japan in advance was introduced to PAS staff and ideas on the interface were exchanged. Wi-Fi environment at the quay side was investigated during the first assignment of CTMS Expert. Based on discussions and findings on the Wi-Fi environment, the software of the interface with the alternative handy terminal was developed in Japan. The software was installed and training on how to handle the alternative handy terminal contents was given to PAS personnel during the second assignment of the CTMS Expert.

During the CTMS experts' stay at PAS, several meetings on CTMS were held and such technology transfer on CTMS as system maintenance, maintenance for special tables of CTMS database, installation of a new printer in one of the gate booths etc. was conducted.

These activities and subsequent outputs were reported to the 4th PIU meeting and summarized in the Technical Note on CTMS.

4. Project Management

4.1 Monitoring

To address the issues necessary to achieve the expected outputs, work breakdown structure (WBS) is used to ensure systematic and reliable project implementation. WBS is a method for organizing project work activities into a hierarchical structure for each output: overall project management items (Summary), practical activity management items (Management), work package items (Work Package), and specific working activity items (Activity).

Progress of the Project has been monitored based on work package items (Work package). Work packages which were conducted in each Phase were marked in WBS.

Table 4-1 WBS of work relayed to strategic planning and management

Development of a personnel system to realize strategic planning and management and presentation of solutions for various issues (organizational streamlining, financial management, investment plans, marketing, etc.)		1	2	3
a1 Organization of constraints and bottlenecks for strategic planning and management (Activity 1-1-1)				
Grasping of the status of long-term planning of port development and operation				
Survey of the long-term plan, operation plan, financial plan, etc.		✓	✓	✓
Extraction of problems in the long-term plan, operation plan, etc.		✓	✓	✓
Organization and analysis of constraints and bottlenecks				
Classification and organization of issues in plan implementation, financial operation, organizational operation, etc.		✓	✓	✓
a2 Establishment and activities of the strategic planning and management team (Activities 1-1-2, 1-1-3, and 1-1-4)				
Establishment of the team				

	Organization and confirmation of the necessity of establishing the team	✓	✓	✓
	Allocation of personnel	✓	✓	✓
	Determination of authorities, responsibilities, and functions	✓	✓	
	Activities of the team			
	Activity plan		✓	✓
	Activity evaluation			✓
a3	Capacity development on information collection and analysis, planning, marketing, etc. for PAS personnel (Activity1-2-1)			
	Information collection, analysis and sharing			
	Information collection	✓	✓	✓
	Information analysis and development	✓	✓	✓
	Measures for utilizing information	✓	✓	✓
	Confirming of the significance of planning			
	Planning method		✓	
	Plan implementation management method		✓	
	Establishment of marketing policy			
	Organization of the significance of marketing		✓	
	Marketing implementation policy		✓	
a4	Development of a financial analysis method (Activities 1-2-2, 1-2-3 and 1-2-4)			
	Development of a financial simulation method for container and bulk operation			
	Development and application of a simple financial simulation model	✓	✓	✓
	Development of a detailed financial simulation model	✓	✓	✓
	Study and development of an analysis method for port operation and financial management			
	Grasping of the respective financial conditions of the container and bulk divisions	✓	✓	
	Technical transfer of the financial analysis method			
	Holding of workshops	✓	✓	
	Training using case studies from neighboring countries and advanced facilities		✓	✓
	OJT for financial analysis			✓
a5	Study and development of the method for investment implementation planning (Activities 1-2-5 and 1-2-6)			
	Study and development of investment evaluation methods			
	Financial evaluation of the project	✓	✓	✓
	Technical transfer of the investment implementation planning method			
	Workshops for comparative analysis of investment options	✓	✓	✓
	Investment plan formulation for priority projects		✓	✓
a6	Strategic management plan (Activity1-2-7)			
	Strengthening of the organization and system			
	Organizational streamlining		✓	✓
	Improvement measures for the organizational structure		✓	✓
	Financial management and investment planning			
	Management of the investment project	✓	✓	
	Cash flow analysis by division			
	Marketing			
	Provision of good terminal service		✓	✓
	Strategic tariff setting		✓	✓
	Alliances and utilization of related facilities		✓	
	Promotion		✓	
	Trial implementation to the extent possible			
	Trial implementation		✓	

Evaluation of trial implementation			
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Table 4-2 WBS of work related to container terminal operation

Development of regulations for container terminal operation and acquisition of know-how by PAS personnel	1	2	3
b1 Analysis of constraints on terminal management and operation (Activity 2-1-1)			
Analysis on constraints on the organization and management			
Analysis of institutional constraint factors	✓	✓	✓
Analysis of constraint factors on work implementation management	✓	✓	
Analysis of constraints on the terminal management division			
Constraints attributable to the system and surrounding environment		✓	
Constraints on input resources		✓	✓
Analysis of constraints on operation sites			
Constraints concerning working environments	✓	✓	
Constraints on workers' experience and skills		✓	✓
b2 Acquisition of technology for container terminal operation (Activities 2-1-2 and 2-1-3)			
Raising of awareness on the container terminal operation policy directly linked to the management strategy			
Sharing of information within organization	✓	✓	✓
Technical improvements in the management division			
Technology for working plan development		✓	✓
Technology for worker allocation			✓
Operation evaluation technology		✓	✓
Technical improvement of on-site workers			
Acquisition of operation skills			✓
Understanding of advanced terminal operation			
Training at advanced container terminals	✓	✓	
b3 Preparation and operation of basic regulations for terminal operation (Activity 2-2-1 and 2-2-2)			
Study on basic regulations			
Work regulations	✓	✓	✓
Work instructions	✓	✓	✓
Work activity records		✓	✓
Trial implementation of operation based on regulations			
Plan for trial implementation		✓	✓
Trial implementation		✓	✓
Improvement plan for operational structure			
Evaluation of trial implementation results			✓
Proposals for the terminal operation system	✓	✓	✓
Technical Transfer on CTMS			
Effective Use of CTMS	✓	✓	✓

Table 4-3 WBS of work related to maintenance for large cargo handling equipment

Preparation of the maintenance and inspection manual for large cargo handling equipment such as rubber tire gantries (RTGs) and quay gantry cranes (QGCs) and spare parts list as well as enhancement of PAS personnel's capacity for maintenance and inspection	1	2	3
c1 Preparation of the maintenance and inspection manual (Activities 3-1-1 and 3-1-2)			
Analysis of the current condition of large cargo handling equipment			
Physical condition of large cargo handling equipment	✓	✓	✓
Operation status	✓	✓	✓
Status of suspension of operation	✓	✓	✓

	Policy on maintenance and inspection of large cargo handling equipment			
	Current status of maintenance and inspection	✓	✓	✓
	Cases of maintenance and inspections at other ports	✓	✓	✓
	Issues for maintenance and inspection	✓	✓	✓
	Preparation of the maintenance and inspection manual			
	Content of the maintenance and inspection manual		✓	✓
	Maintenance and inspection manual and its utilization		✓	✓
c2	Preparation of the spare parts list (Activities 3-1-1 and 3-1-2)			
	Current status of spare parts			
	Current status of spare parts	✓	✓	✓
	Storage of spare parts	✓	✓	✓
	Replenishment and supply of spare parts	✓	✓	✓
	Issues related to spare parts			
	Issues regarding the current conditions of spare parts	✓	✓	✓
	Cases of spare parts storage at other ports	✓	✓	✓
	Spare parts list			
	Content of the spare parts list		✓	✓
	Preparation and management of the spare parts list		✓	✓
c3	Maintenance and inspection in accordance with the manual (Activities 3-2-1 and 3-2-2)			
	Understanding of the maintenance and inspection manual			
	Learning at workshops		✓	
	Case studies on maintenance and inspection		✓	
	Selection of priority inspection items		✓	
	On-site training			
	OJT at the PAS terminal			✓
	Responses to abnormal conditions			✓
	Study on the necessity and feasibility of outsourcing			
	Organization of work to be outsourced			
	Feasibility survey of prospective outsourcing companies			
	Organization of the necessity and feasibility of outsourcing			
	Organization of outsourcing requirements and consensus building within PAS (once the effects and feasibility of outsourcing have been confirmed)			

4.2 Target management

(1) Indicators for Verification and Target

Progress of the Project was grasped and managed by the method of target management under the concept of project cycle management. Based on the results of the baseline survey carried out in Phase 1, numerical targets of indicators which were selected for each output of the Project were set up. The baseline survey was carried out through a collaboration between JICA experts and PAS counterpart personnel. Target values were assessed at the end of the phase and revised as necessary. Status of indicators at the end of the phases are shown in Table 4-4, 4-5, 4-6 with verification method, objectively verifiable item of PDM, baselines and targets.

(2) Progress Management (Output 1)

Six (6) indicators concerned with Team A have been set up based on the baseline survey in Phase 1. The activities related to each indicator in Phase 2 and Phase 3 were evaluated as follows.

PAS' strategic plan and management document

The baseline of this indicator is "Port management is not implemented strategically" and the target is "PAS implements port management and terminal operation based on a strategic plan and management document". A draft Strategic Management Plan(2016-2018) was prepared in Phase 3. This output has been basically achieved.

In Phases 2 and 3, PAS members continued to learn technologies on information collection and analysis, planning, marketing, financial analysis etc. through lectures and discussions at a series of Team A meetings and workshops. Strategic management plan was drafted based on the materials used in these meetings and workshops as well as the discussions in Phase 3. It is expected that PAS shall finalize a strategic management plan until the Project terminates.

Business plans for managing terminal operations

The baseline of this indicator is “Business plans have not been developed” and the target is “PAS developed business plans for managing PAS business properly”.

JICA expert emphasized the necessity of preparing a business plan at every occasion. He gave lectures on drafting a business plan and prepared a draft of a business plan of PAS. PAS counterparts studied and discussed the contents of the plan. Although PAS is not in a position to conduct the container terminal management and operation according to the plan at present, the plan includes a lot of useful information for PAS to develop its business in the near future and shall be used as a reference in daily terminal operation works.

Annual container throughput

The baseline of this indicator is “286,000 TEUs/year (2013)” and the target was originally set up as “340,000TEUs (2016)”. Because of a rapid increase of container throughput in Phase 2, the target was changed to “419,000TEUs (in 2016)” at the end of Phase 2. Container throughput reached 392,000TEU in 2015. The target value remains. The target will be achieved if present trends continue.

Rate of contracted land with business establishments

The baseline of this indicator is “6.7% (2013)” and the target is “50%”. This target was thought to be rather optimistic and as expected the target has not yet been reached. Negotiations with a certain company are in underway at present. It is necessary for PAS to make efforts with a higher target in land sales business.

Annual container throughput per person (all persons and persons in charge of container operation)

The baselines of this indicator are “260 TEU (2013) /all persons and 510 TEU/persons in charge of container terminal operation. The targets were changed to 450 TEU/person from 350 TEU/person and set up as 940 TEU/person in charge of container terminal operation at the end of the Project.

The values at the end of 2015 are 420 TEU and 880 TEU. It is due to a rapid increase of container throughput and the decrease of the number of staff of PAS. The target will be achieved if present trends continue.

Annual revenue per person / Net Profit Margin

The baseline of this indicator is “30,000 USD /person (2012) and 3.1 % of NPM (2012). The targets are 43,000USD /person and 6.0 %” respectively. They were changed to 57,000 USD/person and 16% based on the situation at the end of Phase 2. The values at the end of 2015 have not been obtained yet.

It will take some more time to finalize the value of this indicator considering the preparation for the introduction of IPO. As of March 2016, the value was not obtained. This is an important indicator for the management of stock companies.

(3) Progress Management (Output 2)

Five (5) indicators concerned with Team B have been set up based on the baseline survey in Phase 1. The activities related to each indicator in Phase 2 were evaluated as follows.

Develop guidelines (rules and regulations) for external as well as internal customers for managing and operating the container terminal (CT) in Sihanoukville Port properly

The baseline of this indicator is “PAS CT does not have proper operational guidelines” and the target is “The CT is operated and managed based on the guidelines”.

In Phase 1, JICA expert prepared CONTAINER TERMINAL OPERATIONAL GUIDELINES based on a guideline used at Salalah port-CT. The expert held discussions with PAS core members and adjusted the data in the original document as necessary. The GUIDELINES are completed; however, they should be revised whenever PAS changes its operational rules and or methods by adding extra CHE/tools and or expanding the CY area.

In Phase-2, JICA expert also prepared “SHORT-TERM GUIDELINES FOR OPERATING AND MANAGING PORT Sihanoukville CONTAINER TERMINAL PROPERLY” for upgrading PAS’ Port-CT operations, as well as for PAS to prepare for future expansion of the container business by installing QGC/RTG, modifying ECD to RTG CY, developing Off-dock CY and/ or construction of a new container terminal (CT).

At the moment, however, PAS cannot yet fully utilize the GUIDELINES. For instance, PAS could not introduce the recommended CY Cut-off times because of business circumstances in Cambodia and indecisive management; however, PAS has to set it up by the end of 2016 for maximizing the incremental QGC/RTG. The original target remains.

Working records on Ship and CY operations for checking the progress against the planned targets

The baseline of this indicator is “PAS has no reporting system about working status” and the target is “Ship operation records: 1) Statistic data by status by size, 2) Productivities by cranes by gross & net working hours. CY operation records: 1) Dwelling-time, 2) Turn-time”. Through the analysis, productivity by ship berthing hour emerged as an important indicator and thus ship’s berthing hour is added to the item to be reported at the end of Phase 2. PAS continued to collect and analyze data related to these items. The results were reported to Team B meetings. The original target remains.

Ships operational productivities (Container handling volumes per crane per hour in Gross)

The baseline of this indicator is “18 boxes/hour (QGC) in Gross, 14 boxes/hour (Mobile-crane) in Gross, and 6 boxes/hour (Ship-crane) in Gross”. The target is “25 boxes/hour or more (QGC) in Gross, 20 boxes/hour (Mobile-crane) in Gross, and 10 boxes/hour (Ship-crane) in Gross”. The productivity by ship’s berthing hour is added to an objectively verifiable item with a target value of 30 boxes/ship’s berthing-hour at the end of Phase 2.

However, PAS could not finalize the ships Ops productivity data for the last several months in 2015 due to system troubles according to the chief ship planner. Therefore, data on productivity covers only the first five months of the year. Productivity during the period was 31.3 boxes /hour in Net and 23.7 boxes/hour in Gross by QGC, and 7.1 boxes /hour in Net and 6.2 boxes/hour in Gross by ship-cranes. The berth productivity in the period was 20.8 boxes /hour as a whole. The productivity of a mobile crane was not grasped due to lack of data.

However, these performances of PAS should be revised downwards due to 1) Traverse trouble of No.1 QGC as a result of a lightning strike in Oct. 2015 (current productivity is 19~20 lifts/hour at most), 2) Stabilizer trouble of Mobile crane (current productivity is 6~7 lifts/hour, the same level as the ship’ cranes) and 3) Short age of CHE as well as CY space problems as described already. Moreover, the max workable capacity of the CT is expected to be exceeded and the berth utilization rate will exceed 55% (the limit for a common CT as SVP), until additional QGC/RTG became available in February or March in 2017.

Dwelling time of Export containers and Import containers, and Number of containers which dwell more than three (3) months

The baseline of this indicator is “4 days, 6 days and 500 boxes”. Its target is “4 days, 5 days or less and 100 boxes”. The values at the end of 2015 have not yet been obtained. PAS needs to take the necessary action to obtain these values.

Turn time of external trucks

The baseline of this indicator is “50 minutes per activity as Max on busiest day.” and the target is “30 minutes per activity as Max on busiest day”. The target value has been set up under the assumption that sufficient CHE” will be installed. The values at the end of 2015 have not yet been obtained due to insufficient number of CHEs. PAS needs to take the necessary action to obtain these values.

(4) Progress Management (Output 3)

Six (6) indicators concerned with Team C have been set up based on the baseline survey in Phase 1. The activities related to each indicator in Phase 3 were evaluated as follows.

Maintenance manual for large cargo handling equipment

The baseline of this indicator is “There is an original maintenance manual for large cargo handling equipment. (Some in Khmer)” and the target is “Prepare the maintenance manual by Khmer language for large cargo handling equipment”.

Translation into Khmer has been completed during the Phase 3 activities. This manual is a translated version of general part of the original instruction manual covering the following; for QGC, “Vol. 1 instruction manual for operation and maintenance (mechanical parts) for Mitsui-Pacco 30.5 ton Portainer”; for RTG, “Vol. 3 instruction manual for operation and maintenance part I (mechanical); for Mitsui-Paceco rubber tired transfer model No. RT4023-8I-4”. A broad range of operation and maintenance work is covered in the manual. However, to use this manual for a particular job, i.e. daily or monthly inspection, it would be necessary to add more detailed information as in its current form the manual has the nature of a general reference manual. A supplementary document (Crane Maintenance and Inspection Manual) which provides commentary on how to use the existing manual was prepared in Phase 2.

For daily inspection works of QGCs & RTGs, the specified maintenance manuals were re-compiled according to the daily checklists. The training of RTG operators has commenced. This training session should be continued for RTG operators. The training of QGC operators is expected to commence following the RTG operator training.

Monthly inspection checklist for maintenance staff was prepared in Phase 3. Preparations are being made to train maintenance staff based on the list.

Availability of spare parts lists

The baseline of this indicator is “There is an original spare parts list” and the target is “Prepare the list of key spare parts”. A supplementary document (Spare Parts List) which provides commentary on how to the existing spare parts list was prepared in Phase 2.

Original spare parts list provided by the crane supplier at the time of crane installation was updated during Phase 2 and Phase 3 activities from the following viewpoints;

- (1) Incorporating the results of “a study on spare parts for quay gantry crane” conducted by the Japan association of cargo handling equipment (JACMS) which is usually referred to when preparing standard spare parts list in quay gantry crane installation in Japan. (in Phase 2).
- (2) Incorporating records on breakdown and maintenance of cranes over a six-year period in Sihanoukville Container Terminal since 2009 (in Phase 3).
- (3) Adding parts price and lead time to the original spare parts list based on information obtained from crane manufacturers (in Phase 2 and Phase 3).

The updated spare parts list, which is called the Recommended Spare Parts List (RSPL), is utilized as basic information for preparation of Spare Parts Procurement Plan.

Lists of key spare parts by items

The baseline of this indicator is “Key spare parts were not designated.” And the target is “one (1) set of key spare parts by items”.

The updated spare parts list (RSPL) was categorized into three procurement priority groups from the viewpoints of parts life (frequency of replacement), serious damage to terminal operation (operation stop), lead time and cost of the parts, and key spare parts were selected from the high priority groups. This selection was made in the process of spare parts procurement planning. Key spare parts list is defined in the Spare Parts Procurement Plan as category A and B (Refer to “the Guideline for Better Maintenance of QGC & RTG in PAS”).

Operation and suspension rate of cargo handling equipment

The baseline and the target of this indicator are “QGC suspension rate: 0.9 % (2012/2013) and less than 1% and RTG(MES) suspension rate: less than 2.6% (2012/2013) and less than 2%, and RTG(HHI) suspension rate: less than 28% (2012/2013) and 25%” respectively.

Suspension rate of QGC in 2015 (1.47%) is slightly over the target rate. Main reason that the target was not achieved is due to long crane stoppages caused by i) two types of electrical equipment failure (Cable reel motor burn out and PLC/ driver start fault by electric control room A/C broken), and ii) electrical equipment damage (A/D module, main hoist pulse generators, etc.) caused by a lightning attack. These

crane stoppages could be avoided by keeping sufficient spare parts in stock. Therefore, this target should be kept as a long term maintenance performance indicator.

Suspension rate of RTG(MES) is quite higher (5.92%) than the target rate in 2015. Main reason that the target was not achieved is due to the long crane stoppages caused by i) engine trouble (fuel injector and engine governor failure) in RTG #204, #205 and #206, and ii) transplant of main hoist pulse generator of RTG #206 into QGC #402 which was damaged by a lightning attack. Breakdown analysis in 2015 shows that the most effective way to reduce these long crane stoppages would be to stock the necessary spare parts.

As RTG breakdown rate in container terminals in advanced countries runs at less than 2 per cent, the target rate (less than 2%) should be kept and efforts to achieve this target should be continued even after this project has been completed unless extreme redundant RTGs are installed in this terminal.

Regarding RTG (HIT), suspension rate in 2015 (9.1%) was less than the target rate (25%), and also less than the rate in the previous year (40%). Main reason for this improvement is that PAS procured the required spare parts which had been unfurnished for a long time.

Number of incidents of inability to furnish spare parts

The baseline of this indicator is “Available data is not obtained”, and the target is “Prepare spare parts procurement plan and budgeting “, and “Prepare breakdown analysis report”. By these targets, number of incidents of inability to furnish spare parts will be clarified and required spare parts will be identified as a countermeasure.

In order to improve and sustain this performance indicator, a spare parts procurement plan was prepared in Phase 3 and budgeting for procurement of the parts in category A and B is in progress.

In Phase 3, breakdown analysis (in 2015) was made and analysis report was prepared (Refer to “the Guideline for Better Maintenance of QGC & RTG in PAS”). The outline of the report was presented in the 8th PIU Meeting by the Team-C leader.

Work records/periodic reports

The baseline of this indicator is “Periodic reports are not prepared” and the target is “Prepare periodic reports”.

There are two (2) kinds of periodic reports on status of maintenance and inspection tasks for QGCs and RTGs; one is an inspection and maintenance report (monthly or quarterly), and the other is a breakdown analysis report (semi-yearly or yearly). The former is a report related to monthly inspection and maintenance records of tasks performed by the maintenance group in the terminal, which includes operation and breakdown hours, number of containers handled, inspection and maintenance result by item, measuring data for wire ropes, brake linings and insulation resistance, and remarks on major breakdowns. The latter is a breakdown analysis report which includes breakdown rate, detailed hours for operation and breakdown, major breakdown analysis (cause, influence to operation, required spare parts, etc.) and preventive measures against recurrence of breakdowns.

Regarding the monthly work record on inspection and maintenance work, a prototype of the monthly inspection & maintenance report has been formulated in the Team-C meeting (the 11th & the 13th meeting) in Phase 3. Training on monthly inspection procedure for maintenance staff will be started in January 2016, and monthly inspection work and preparation of monthly inspection and maintenance report is expected to start from April 2016.

Regarding the breakdown analysis report, a prototype of the yearly report for 2015 has been prepared in Phase 3. Using this report as a template, the yearly breakdown analysis report will be prepared after 2016. It will be necessary to report to the PAS top management to ensure that the countermeasures identified in the analysis are implemented.

Table 4-4 Indicators (baseline, actual value, target) related to 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.

Verification method	Objectively verifiable item	Baseline	Progress at the end of Phase 2	Progress at the end of 2015	Target (upon Project completion) [Target before revision at the end of Phase2]
Availability of PAS strategic plan and management document	PAS strategic plan and management document	Port management is not implemented strategically.	PAS strategic plan and management document is under discussion	PAS Strategic Management Plan was drafted under discussion of the Project	PAS implements port management and terminal operation based on a strategic plan and management document
Availability of business plans for 1 year and 3-5 years	-Business plans for managing terminal operations	Business plans have not been developed.	Skelton and core data of a business plan were prepared. Business plan is under discussion based on the documents	Business Plans for the container terminal operation was prepared.	PAS developed business plans for managing PAS business properly.
Scale of container terminal	Annual container throughput	286,000 TEU/year(2013)	334,000 TEU	392,000 TEU	<u>419,000 TEU</u> [340,000TEU]
Activities at SEZ	Rate of contracted land with business establishments:	6.7% [4%]	One company contracted and two companies are operation in rental factory. PAS is currently negotiating with some companies	One company contracted and two companies are operation in rental factory. PAS is currently negotiating with some companies and engaged land lease with one company	<u>50%</u> <u>PAS continue to approach a new company quarter bases</u>
Efficiency of personnel allocation	Annual container throughput per person (all persons and persons in charge of container operation)	260 TEU/person (2013) [266TEU/person] 510 TEU/person in charge of container terminal operation [XXX TEU/person in charge of container terminal]	300 TEU/person 650TEU/person in charge of container terminal operation	420/TEU/person 880 TEU/person in charge of container terminal operation	<u>450 TEU/person</u> [350TEU/person] <u>940 TEU/person in charge of container terminal operation</u> [XXX TEU/person in charge of container terminal]

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Financial performance	Annual revenue per person Net Profit Margin	30,000 USD /person (2012) [<i>29,700 USD/person (2012)</i>] 3.1 % (2012)	33,000 USD (2013) 38,000 USD (2014) 3.6% (2013) 10.0% (2014)	xxx USD (2015) *1 xxx % (2015) *1	57,000USD/person [<i>42,700USD /person</i>] 16.0 % [6.0%]
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(note) *1): data has not been obtained yet.

*2) : Italic letters show original values.

Table 4-5 Indicators (baseline, actual value, target) related to Output 2

Regulations on container terminal operation are developed and PAS personnel acquire relevant know-how.

Verification method	Objectively verifiable item	Baseline	Progress at the end of Phase II	Progress at the end of 2015	Target(Project completion)
Availability of the terminal operation rules and regulations /Guidelines	Guidelines (rules and regulations) for external customers for managing and operating the terminal (CT) properly	PAS CT does not have proper operational guidelines.	Port Sihanoukville CONTAINER TERMINAL OPERATIONAL GIUDELINES (Draft) was prepared. and it is under discussion.	Port Sihanoukville CONTAINER TERMINAL OPERATIONAL GIUDELINES (Final Draft) was prepared	The CT is operated and managed externally based on the guidelines.
Rationality of management of container terminal operation task	Working records on Ship and CY operations for checking the progress against the planned targets	PAS has no reporting system about working status	Related data was collected and analyzed. The results were reported to Team B meetings.	Related data was collected and analyzed. The results were reported to Team B meetings.	Ship-ops records: 1) Statistic data by status by size 2) Productivities by ship's berthing-hours, and cranes by gross & net working hours. CY Ops records: 1) Dwelling-time 2) Turn-time
Productivity of stevedoring work (Low cost cargo handling service)	Ships operational productivities (Container handling volumes per ship's berthing-hour, and crane per hour in Gross) * Berth productivity is measured for the ships worked by QGC alone. * The numbers are effective,	24 boxes/ship's berthing -hour 18 boxes/hour /QGC 14 boxes/hour /Mobile-crane 6 boxes/hour /Ship-crane in	26 boxes/ship's berthing -hour 24 boxes/hour /QGC 16 boxes/hour /Mobile-crane 6.1 boxes/hour /Ship-crane in Gross (Data by Feb. 2015)	26 boxes/ship's berthing -hour 25 boxes/hour /QGC 9 boxes/hour /Mobile-crane 6.2 boxes/hour /Ship-crane in Gross (Data by Dec. 2015)	30 boxes/ship's berthing -hour 25 boxes/hour /QGC or more 20 boxes/hour /Mobile-crane 10 boxes/hour /Ship- crane In Gross *It may be affected by waiting for O/B containers to come for the weekend callers.

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	until installing 3 rd (and or 4 th) QGC	Gross			
Operating capacity of container yard	Dwelling time of containers 1) Export containers 2) Import containers *Including extra 1 day for planning Number of containers which dwell more than three (3) months	1) 4 days 2) 6 days 500 boxes	1) 3.8 days 2) 5.5 days 141 boxes (Data by Feb. 2015)	1) 3.2 days 2) 4.2 days 259 boxes	1) 4 days 2) 5 days or less 100 boxes
Operating efficiency of container yard	-Turn time of external trucks	50 minutes per activity as Max on busiest day.	Could not measure in this period, due to tight works of the manager.	xxx Minutes per activity as Max on busiest day*1)	30 minutes per activity as Max on busiest day. *After installing enough CHE.

(note)*1) : data has not been obtained yet.

Table 4-6 Indicators (baseline, actual value, target) related to Output 3

Progress of each verification method and item related to the maintenance and inspection for large cargo handling equipment in Phase 3 is summarized in the following table.

Verification method	Objectively verifiable item	Baseline	Progress at the end of Phase 2	Progress at the end of 2015	Target (upon Project completion)
Availability of the maintenance manual for large cargo handling equipment	Maintenance manual for large cargo handling equipment	There is an original maintenance manual for large cargo handling equipment.(Some in Khmer)	Original Maintenance Manual provided by the machine supplier is available. Translation into Khmer is in process	Original Maintenance Manual provided by the machine supplier is available. Translation into Khmer has been completed (QGC and RTG)	Prepare the maintenance manual by Khmer language for large cargo handling equipment.
Availability of spare parts list	spare parts list	There is an original spare parts list	Prepared the spare parts list	Preparation of spare parts list has been completed	Prepare the list of key spare parts
Availability of key spare parts list	Lists of key spare parts by items	Key spare parts was not designated.	A work for identifying key spare parts is underway.	The list of key spare parts is included as a part of spare parts procurement plan	One (1) set of key spare parts by items
Thoroughness of maintenance of cargo handling	Operating and suspension rates of cargo handling	<u>QGC(2012/2013)</u> Suspension rate: 0.9 % <u>RTG/MES (2012/2013)</u>	<u>QGC(2014)</u> Suspension rate: 1.9 % <u>RTG/MES (2014)</u>	<u>QGC(2015)</u> Suspension rate: 1.4 % <u>RTG/MES (2015)</u>	<u>QGC</u> Suspension rate: less than 1%

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equipment	equipment	Suspension rate: less than 2.6%, <u>RTG/HHI (2012/2013)</u> Suspension rate: less than 28%,	Suspension rate: 7.6%, <u>RTG/HHI (2014)</u> Suspension rate: 40%,	Suspension rate: 5.9 %, <u>RTG/HHI (2015)</u> Suspension rate: 9.1 %,	<u>RTG/MES</u> Suspension rate: less than 2% <u>RTG/HHI</u> Suspension rate: less than 25%
Completeness of furnishing of spare parts	Number of incidents of inability to furnish spare parts	Available data is not obtained.	Basic data for preparing procurement plan and budgeting and breakdown analysis report are is collected and analyzed.	Spare parts procurement plan has been prepared. Authorized by the top management and budgeting is in process. Breakdown analysis report in 2015 has been prepared	Prepare spare parts procurement plan and budgeting Prepare breakdown analysis report
Management status of maintenance and inspection tasks	Work records/periodic reports	Periodic reports are not prepared.	Key contents to be reported periodically are under discussion.	Prototype of monthly work record on maintenance and inspection tasks (Monthly Inspection & Maintenance Report) has been prepared. Yearly report on breakdown analysis has been prepared	Prepare periodic reports.

5. Outputs and Project Purpose

5.1 Inputs

A long-term expert (the first expert was replaced by a new expert at the end of Phase 1) and seven (7) short-term experts were engaged in the project. The total input of the short-term experts is 20.97 MM in Cambodia (including in Thailand and Vietnam for technical visits) and 2.71 MM in Japan. In addition, another person assisted in the implementation of training in Japan (0.75 MM). The original input was 22.35 MM and 2.08 MM was added based on the revised PDM which was approved at the first JCC.

With respect to training, two system engineers were dispatched to PAS as lecturers for a CTMS training program (4 days) at Sihanoukville. In addition, JICA invited four PAS personnel to take part in training in Thailand (5 days), in Vietnam (5 days) and in Japan (two weeks) respectively.

Table 5-1 Input of JICA Experts

Expert	Field	Cambodia	Japan
Takahiro JONISHI*	Chief advisor	One year	-
Tetsuro IKEDA*		Two years	-
Tatsuyuki SHSHIDO	Group leader/port planning and operation (1)	4.30 MM	0.17MM
Sumio SUZUKI	Port planning and operation (2)	4.37MM	0.17MM
Teruki ETO	Container terminal operation	(1)	4.67MM
Akihiko SATO		(2)	1.07MM
Hideto WADA		(3)	0.40MM
Toru TAKEHARA	Maintenance and management for large cargo handling equipment	(1)	2.03MM
Masao ICHINOSE		(2)	4.13MM
Total		20.97MM	2.71MM*

*Input of personnel in charge of Training in Japan (0.75MM) is not included

Table 5-2 Training

Course	Place	Period	Persons
CTMS	Sihanoukville	4 days	2 Lecturers
Thailand	Bangkok, Laem Chabang	5 days	4 PAS Trainees
Vietnam	Ho Chi Minh, Cai-Mep	5 days	4 PAS Trainees
Japan	Tokyo, Yokohama, Ohita, Fukuoka	2 weeks	4 PAS Trainees

PAS set up Project Implementation Unit (PIU), Project Implementation and Managing Meeting (PIMM) and four teams (Team A, Team B, Team C and CTMS Team.) as counterpart groups of the Project, which were composed of 16 persons, 11 persons, 13 persons, 14 persons, 9 persons and 17 persons from the concerned departments respectively. A cumulative total of 80 persons participated in the Project as counterparts. Some persons were appointed as the members of plural groups

Nine (9) PIU meetings (including a kick-off meeting), one (1) PIMM, sixteen (16) Team A meetings, fifteen (15) Team B meetings (including special sessions), twelve (12) CTMS Team meetings and fourteen (14) Team C meetings were held until the end of January 2016. In addition, eight (8) workshops and three (3) seminars and nine (9) pertinent meetings were held.

PAS organized ninety-one (91) meetings including four (4) JCC meetings and served as the secretariat for them. In addition, PAS provided necessary office space for JICA experts. .

PAS dispatched six (6) persons to the training in Thailand and Vietnam organized by JICA using its own funds.

Meetings and Workshop

	Fixed Member	Meetings
Regular Meeting	—	—
Joint Coordinating Committee	*	4
Project Implementation Unit	16	9

Project Implementation and Managing Meeting	11	1
Team A (output 1)	13	16
Team B (Output 2)	14	15
Team CTMS (Output 2)	17	12
Team C (Output 3)	9	14
Workshop	-	8
Seminar	-	3
Other Meeting	-	9
Total	80	91

* A Chief representative of JICA Cambodia Office and CEO of PAS co-chaired the JCC meeting. A representative of MPWT participated in the JCC meeting as a supervisor.

** PIU members attended the JCC meeting.

5.2 Activity

(1) Strategic Planning and Management of PAS

Regarding **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”, PAS counterpart personnel in cooperation with JICA experts, enhanced their knowledge and acquired skills on strategic planning and management through discussions at the Team A meetings, lectures and workshops, trainings in Thailand, Vietnam and Japan. Outputs have been effectively utilized in daily tasks.

Activity 1-1-1 “To identify constraints/bottlenecks for strategic planning and management” was carried out at relevant meetings, Team A meetings and workshops. **Activity 1-1-2** “To establish a strategic planning and management team and assign appropriate PAS personnel” was achieved by deploying key persons of departments related to strategic planning and management. They made efforts to enhance their knowledge in the Project. **Activity 1-1-3** “To discuss with related personnel in PAS about jurisdiction, responsibilities, authority, staffing, incentives, etc. of the strategic planning and management team” and **Activity 1-1-4** “To clearly define the roles of the strategic planning and management team within PAS” were conducted through discussions at Team A meetings and reporting outcomes to PIU meetings.

Activity 1-2-1 “To develop capacity on information collection/analysis, planning, and marketing, etc. of PAS personnel” was conducted through workshops on data analysis method, port marketing and other pertinent subjects, exchanging opinions at Team A meetings and training in Thailand, Vietnam and Japan. **Activity 1-2-2** “To develop a financial simulation method for container and bulk operations”, **Activity 1-2-3** “To study and develop an analysis method for port management and financial management”, **Activity 1-2-4** “Technical transfer of the financial analysis method”, **Activity 1-2-5** “To study and develop a method for preparing investment implementation plans based on the developed financial analysis method” and **Activity 1-2-6** “Technical transfer of the investment implementation planning method” were implemented through lectures and the introduction of financial analysis models which were developed by JICA experts and the results of analysis using the models at workshops or Team A meetings. **Activity 1-2-7** “To analyze strategic planning and management (organizational streamlining, financial management, investment plans, marketing, etc.) as well as implement these on a trial basis to the extent possible” was conducted through learning analysis methods and examining the result of analysis as well as carrying out target management on a trial basis from a viewpoint of strategical planning and management.

(2) Container Terminal Operation

Regarding **output 2** “Regulations on container terminal operation are developed and PAS personnel acquire relevant know-how”, PAS counterpart personnel, in cooperation with JICA experts, enhanced their knowledge and acquired skills on container terminal operation through discussions at the Team B meetings, lectures and workshops, trainings in Thailand, Vietnam and Japan. In addition, CTMS team members learned techniques and skills on CTMS through lectures of CTMS training, discussions at CTMS team meetings and program development and its installation. Outputs have been effectively utilized in daily tasks.

Activity 2-1-1 “To analyze constraints on container terminal operation” was conducted through lectures by a JICA expert, evaluation of actual status of the indices which were set up at the end of Phase 1 and discussions at Team B meetings. **Activity 2-2-1** “To develop basic regulations and a management system for efficient container terminal operation” and **Activity 2-2-2** “To implement basic regulations and the management system on a trial basis” were implemented through lectures and workshops and discussions at Team B meetings. A JICA expert drafted Container Terminal Operation Guidelines. PAS counterpart personnel discussed the guidelines and how they could be applied. Some parts of the guidelines were reflected in daily terminal operation. **Activity 2-1-2** “To provide technical assistance (OJT) related to container terminal operation” was carried out through the above-mentioned activities.

Activity 2-1-3 “To provide C/P training in Japan/other countries” was conducted in Thailand (ten PAS personnel participated in the training), Vietnam (ten PAS personnel participated in the training) and Japan (four PAS personnel participated in the training).

Activity 2-3-1 “Technical transfer for effective use of the existing container terminal operation system” was conducted through lectures and workshops, program development and discussions at CTMS Team meetings. A program for discharging stored data in CTMS was developed. Software for operation handy terminals was developed and installed into new equipment.

(3) Maintenance and Inspection of large scale Equipment

Regarding 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 is developed” PAS counterpart personnel, in cooperation with JICA experts, enhanced their knowledge and acquired skills on maintenance and inspection of QGC and RTG through discussions at the Team C meetings, data analysis on work conditions of QGCs and RTGs and trainings in Thailand, Vietnam and Japan. Outputs have been effectively utilized in daily tasks.

Activity 3-1-1 “To analyze the frequency and cause of suspension of operation of cargo handling equipment and grasp the historical record of supply of spare parts for preventive maintenance” was conducted through lectures by a JICA expert, investigations of present conditions of equipment, exchange of opinions based on lectures, evaluation of status of the indices which were set up, confirmation of records of consumption of spare parts and discussions at Team C meetings. **Activity 3-1-2** “To prepare a maintenance and inspection manual as well as spare parts list for preventive maintenance” and **Activity 3-2-1** “To provide technical assistance (OJT) in accordance with the RTG/QGC maintenance and inspection manual” were conducted through summarizing points to be considered in the existing manual and spare parts list, evaluation of status of the indices which were set up and discussions at Team C meetings.

Activity 3-2-2 “To provide C/P training in Japan or other countries” was conducted in Thailand (ten PAS personnel participated in the training) Vietnam (ten PAS personnel participated in the training) and Japan (four PAS personnel participated in the training). Regarding **Activity 3-2-3** “To suggest the necessary private contracts for maintenance and management of RTG/QGC as necessary”, PAS intends to conduct basic maintenance and management of RTG/QGC by itself; accordingly, technical transfer was implemented under this precondition.

Table 5-4 Results of Activities

Strategic planning and management of PAS		
Activity 1-1-1	To identify constraints/bottlenecks for strategic planning and management	done
Activity 1-1-2	To establish a strategic planning and management team and assign appropriate PAS personnel	done
Activity 1-1-3	To discuss with related personnel in PAS about jurisdiction, responsibilities, authority, staffing, incentives, etc. of the strategic planning and management team	done
Activity 1-1-4	To clearly define the roles of the strategic planning and management team within PAS	done
Activity 1-2-1	To develop capacity on information collection/analysis, planning, and	done

marketing, etc. of PAS personnel	
Activity 1-2-2 To develop a financial simulation method for container and bulk operations	done
Activity 1-2-3 To study and develop an analysis method for port management and financial management	done
Activity 1-2-4 Technical transfer of the financial analysis method	done
Activity 1-2-5 To study and develop a method for preparing investment implementation plans based on the developed financial analysis method	done
Activity 1-2-6 Technical transfer of the investment implementation planning method	done
Activity 1-2-7 To analyze strategic planning and management (organizational streamlining, financial management, investment plans, marketing, etc.) as well as implement these on a trial basis to the extent possible	done
Container terminal operation	
Activity 2-1-1 To analyze constraints on container terminal operation	done
Activity 2-1-2 To provide technical assistance (OJT) related to container terminal operation	done
Activity 2-1-3 To provide C/P training in Japan/other countries	done
Activity 2-2-1 To develop basic regulations and a management system for efficient container terminal operation	done
Activity 2-2-2 To implement basic regulations and the management system on a trial basis	done
Activity 2-3-1 Technical transfer for effective use of the existing container terminal operation system	done
Maintenance and inspection of large cargo handling equipment	
Activity 3-1-1 To analyze the frequency and cause of suspension of operation of cargo handling equipment and grasp the historical record of supply of spare parts for preventive maintenance	done
Activity 3-1-2 To prepare a maintenance and inspection manual as well as spare parts list for preventive maintenance	done
Activity 3-2-1 To provide technical assistance (OJT) in accordance with the RTG/QGC maintenance and inspection manual	done
Activity 3-2-2 To provide C/P training in Japan or other countries	done
Activity 3-2-3 To suggest the necessary private contracts for maintenance and management of RTG/QGC as necessary	*

*PAS intends to carry out basic maintenance by itself

5.3 Outputs

In light of the present status of the indices which are shown in PDM, **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” is expected to be achieved at the termination of the project.

Regarding the index of “A strategic plan and management document that incorporates the organization, financial management, investment plans, and marketing of PAS has been prepared and the port is managed and operated strategically”, a draft Strategic Management Plan was prepared based on discussions at workshops on organizations, financial management, investment plan and marketing or team A meetings. Regarding “Appropriate personnel have been allocated to positions for strategic planning and management”, Team A members experienced project implementation under target management and regular reporting and information sharing. Knowledge and skills gained by the experiences are necessary for carrying out tasks based on strategic planning and management.

The draft strategic management plan was prepared based on discussions at team meetings or workshops and the activities of each team. Therefore it is considered that PAS staff can understand the contents properly. On the other hand, the business plan, which shows what action PAS should take in order to become a container terminal operated according to international standards, has not yet been put into effect. However, the plan includes a lot of suggestions for solving current problems

and outlines a roadmap for expanding the capacity of PAS container terminal. Accordingly, the plan should be put into effect as early as possible.

Regarding staffing personnel, counterpart personnel who participated in the project learned management techniques based on project cycle management. The project was managed based on numerical targets which were set up for the indicators related to the above-mentioned indices. Annual container throughput (a basic indicator for the activity of a container terminal), net profit (a basic indicator on the financial status of an organization), container throughput per person, annual revenue per person (indicators for organization productivity) and rate of contracted land of SEZ were selected as indicators for target management and numerical targets were set up for each indicator. Through a trial of management based on the numerical targets, several issues were identified and solutions were found. PAS personnel recognized the issues that need to be resolved and discussed what measures PAS should take.

In light of the present status of the indices which are shown in PDM, **output 2 “Regulations on container terminal operation are developed and PAS personnel acquire relevant know-how “** is considered to have been achieved.

Regarding the index of “Rules and regulations/guidelines on container terminal operation have been developed”, Container Terminal Operation Guidelines was drafted by a JICA expert and its applicability to operation of PAS container terminal was assessed through daily operation and discussions at team B meetings. The guidelines will be modified to improve their applicability to the PAS container terminal and then authorized. Regarding the index of “Efficient terminal operation has been implemented on a trial basis in accordance with the rules and regulations”, introduction of a cut-off time system or counter measures against long stay containers which are described in the guidelines have been introduced or discussed.

Numerical targets which indicate the efficiency of terminal operation were set up: container handling volumes per ship’s berthing hour; those per crane-hour in Gross; dwelling time of containers; number of long-stay containers and turn time of external trucks. The project was managed on a trial basis by comparing the present status of these indices with the targets.

Regarding the index of “Working records on ship and CY operations have been created”, records of performance of ship operation and yard operation were prepared and reported to Team C meetings regularly. The productivities which were analyzed based on performance data were also reported and discussed at the meetings.

In light of the present status of the indices which are shown in PDM, **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 is developed.”** is considered to have been achieved.

Regarding the index of “A maintenance and inspection manual for large cargo handling equipment has been prepared”, points to be considered in the existing inspection and maintenance on manual were summarized. In addition, a manual for daily inspection was prepared. Regarding the index of “A spare parts list has been prepared”, points to be considered in the existing Inspection and maintenance on manual were summarized. In addition, a key spare parts list was prepared based on an analysis of spare parts consumption in the past. Regarding the index of “Maintenance and inspection have been implemented on a trial basis in accordance with the maintenance and inspection manual”, daily maintenance and inspection works were carried out on a trial basis by grasping the actual situation of maintenance and inspection including the suspension rate of QGC and RTG. The maintenance and inspection works were assessed by comparing current values with numerical targets; corrective measures were then discussed at the meetings of Team C. Regarding the index of “Maintenance and inspection have been implemented on a trial basis using the spare parts list”, a plan of preparing necessary spare parts including a procurement program was prepared.

Table Achievement of Outputs

<p>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.</p>	<p>will be basically achieved</p>
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Output 2: Regulations on container terminal operation are developed and PAS personnel acquire relevant know-how.	achieved
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 is developed.	achieved

5.4 Project Purpose

The purpose of the project is **“To enhance PAS’s capacity for strategic planning as well as port management and operation”**. Whether these targets have been achieved will be verified based on the indices of “PAS has developed a strategic management plan”; “PAS has implemented efficient container terminal operation” and “Capable personnel have been assigned to management planning”.

A draft of the Strategic Management Plan has been prepared as one of the results of output 1. The plan will be finalized by the end of the project. Some actions in key focus areas shown in the plan have been carried out on a trial basis in the project. In addition, the organizational structure and target management shown in the plan are basically the same as the implementation structure of the project. Therefore, PAS will have no difficulty in implementing the plan under management mechanism shown in the plan.

Regarding container terminal operation, PAS recorded approximately 400 thousand TEUs of annual container throughput in 2015. It is thought that the activities in the project for improving container terminal operation contributed to the increase in container throughput. In the project, PAS personnel learned inspection and maintenance works at advanced terminals and a procurement plan of key spare parts list was prepared based on the idea of preventive maintenance. Preparation of necessary spare parts according to the plan will contribute to efficient container terminal operation.

The project implementation system functioned effectively. This means that capable persons for management planning were assigned as counterpart personnel of the project. The assigned personnel increased their knowledge and skills on strategic planning and management through implementing the project under the system.

The container throughput of Sihanoukville port will increase in the future. Although PAS must continue to take necessary actions including capacity development for improving efficiency in terminal operation, PAS staff’s capability on strategic planning and management which has been enhanced in the project will be effectively utilized.

5.5 Overall Goal

It is expected that the **overall goal** “PAS shall maintain financial transparency and soundness as well as realize efficient terminal operation based on strategic planning and self-sustaining management” will be achieved in three to five years after termination of the project. It will be verified by the index of “PAS has developed a strategic management plan and has implemented efficient container terminal operation with financial transparency and soundness in accordance with the plan”.

It is recommended that PAS conduct its business under the similar implementation system such as a hierarchical implementation structure, target management with numerical target and regularly reporting which were adopted on a trial basis in the project. In doing so, PAS will be able to achieve the overall goal.

5.6 Output Documents

In addition to this completion report, the following documents were prepared. They are attached at the end of this report.

- Strategic Management Plan(2016-2018)
- Port of Sihanoukville CONTAINER TERMINAL OPERATIONAL GUIDELINES
- Crane Maintenance and Inspection Manual
- Spare parts List

6. Considerations and lessons learned

6-1 Considerations

JICA dispatched a long term expert to PAS who stays at Sihanoukville for the term of the Project and short term experts on specific themes according to an assignment plan. On the other hand, PAS established an implementation structure for the project which is composed of PIU which takes a role of project management and four teams which consist of key persons of the relevant departments. Activities of each team are centered in implementing the project. In principle, each team is to hold meetings on a monthly basis. On the other hand, PIU meeting is held four times a year to share information on the activities of each team. The following measures were taken to facilitate project implementation.

(1) Selecting Key Indicators and Setting up Numerical Targets

It is essential that all persons involved in the project understand the present situation, issues and future direction of PAS objectively and clearly. Therefore, key indicator items related to strategic planning and management, container terminal operation and maintenance of large scale equipment were selected and concrete numerical values were given to each indicator as a target. Attention was given to grasping the situation of terminal operation and maintenance objectively by comparing actual status of indicators with the targets. The indicator items and the numerical target values were decided at the end of Phase 1 based on the discussions at each team meeting.

(2) Regular Reporting

Terminal operation works and maintenance and inspection works are carried out by PAS staff day-to-day. It is desirable that signs of improvement in management and operation of the container terminal according to the progress of the project be grasped regularly. However, information on the actual situation is not shared fully among persons concerned and problems which occurred in terminal operation or maintenance are not reported timely to the management level at present.

Each team has held meetings regularly to grasp latest status of terminal operation and shared information among team members. The results of each team meeting were reported to PIU. By doing this, the project has been implemented under a common understanding among all concerned parties regarding the current situation and problems.

(3) Pursuit of realizing internationally competitive port

PAS is responsible for carrying out management and operation of the port of Sihanoukville which is the sole port with a full-fledged container terminal in Cambodia. PAS has to provide infrastructures and services which meet international standards. Lectures on how to do management and container operation efficiently, advices on capacity development and change of perception of PAS personnel and recommendations on necessary measures in order to become a container terminal that meets international standards were given at workshops or meetings in the project. The aim was to instill in them what is required to be an internationally competitive container port.

6-2 Lesson learned

(1) Activities based on Regular Team Meetings

Team A (strategic planning and management), Team B (container terminal operation), Team C (maintenance and inspection) and CTMS Team (CTMS system) are composed of key persons of the relevant departments in a cross sectoral manner. The project has been implemented by placing the activities of each team as a core. Each team held meetings regularly for sharing information and holding discussions on their assigned themes.

In this way, the activities of the project were reviewed by all team members on a regular basis. The progress of the project was confirmed and assessed through discussions by team members under a common understanding.

(2) Hierarchical Implementation System

This project was implemented under a hierarchical system: supervision by JCC composed of a chief representative of JICA, CEO of PAS and a representative of MPWT, project management by PIU

composed of management level of PAS and project implementation by Team A, Team B, Team C and CTMS Team. Activities for each output were carried out by each team and were reported at PIU meetings.

One of the benefits of this system is that discussions on the theme of each team were made in detail among team members. In addition, communication between personnel at the implementation level and a management level was encouraged. At PIU meeting, management level personnel could hear the opinions of those in the front lines and vice versa. This facilitated communication across the entire organization.

(3) Target Management with Numerical Targets

Based on the baseline survey in Phase 1, indicator items for target management and their target values were set up. Although availability of data on indicators or possibility of achieving a target within the period of the project was not fully assessed, concrete numerical target values were set up. It is essential to carry out target management on a trial basis in the project.

Although some indicators fell short of the target, PAS counterpart personnel were introduced to the concept of project cycle management in implementing the project and were able to understand the importance of target management for strategic planning and management.

(4) Combination of a Long-term Expert and Short-term Experts

Container terminal operation works and maintenance and inspection of equipment works are carried out by PAS day-to-day. Information/data which is necessary for project implementation is obtained from these works. On the other hand, it is desirable that outputs of the project are reflected in the day-to-day works as needed. In addition, the project was implemented based on the meetings which were held regularly.

A long-term expert gave instructions and advice regularly and as needed and short-term experts gave technical guidance and technical transfer on specified subjects during the stay at PAS. The project was implemented effectively under role allotment and effective coordination between the long-term expert and short-term experts. This style of assistance contributed to the effective implementation of the project.

(5) Flexible Project Implementation

Following the training on terminal operation system (PAS uses a system named CTMS); the necessity of technical transfer on CTMS was recognized for effective project implementation. The importance of technical transfer on CTMS was acknowledged at the first JCC meeting and an activity of “Technical transfer for effective use of the existing container terminal operation system” was added to PDM.

The problems on the system that occurred in operation were resolved. In addition, data stored in CTMS became available for analyzing the performance of terminal operation which contributed to effective project implementation. Sometimes it may become necessary to revise the plan in the course of the implementation stage and then a flexible approach is required.

Appendix

- 1. Record of Discussions**
- 2. Minutes of Discussions**
- 3. PDM**
- 4. Work Flowchart**
- 5. Work Breakdown Structure**
- 6. Assignment of Experts**
- 7. Training in Overseas Countries**
- 8. Conclusion of JCC Meeting**

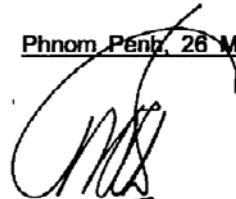
1. Record of Discussions

RECORD OF DISCUSSIONS
ON
THE PROJECT FOR CAPACITY DEVELOPMENT
ON CONTAINER TERMINAL MANAGEMENT AND OPERATION
IN SIHANOUKVILLE PORT
IN
THE KINGDOM OF CAMBODIA
AGREED UPON AMONG
MINISTRY OF PUBLIC WORKS AND TRANSPORT,
SIHANOUKVILLE AUTONOMOUS PORT
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

Phnom Penh, 26 March, 2013

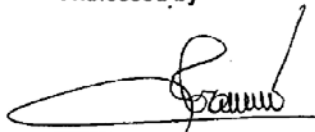
井崎 宏

H.E. Izaki Hiroshi
Chief Representative
Cambodia Office
Japan International Cooperation Agency
Japan



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

Witnessed by



H.E. Tram Iv Tek
Minister
Ministry of Public Works and Transport
Royal Government of Cambodia

In response to the official request of the Royal Government of Cambodia (hereinafter referred to as "RGC") to the Government of Japan (hereinafter referred to as "GOJ"), the Japan International Cooperation Agency (hereinafter referred to as "JICA") held a series of discussions with Ministry of Public Works and Transport of RGC(hereinafter referred to as "MPWT"), Sihanoukville Autonomous Port (hereinafter referred to as "PAS") and relevant organizations to develop a detailed plan of The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port (hereinafter referred to as "the Project").

Both parties agreed the details of the Project as described in the Appendix 1.

Both parties also agreed that PAS as direct counterpart and MPWT as supervising agency 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 the Kingdom of Cambodia (hereinafter referred to as "Cambodia").

The Project will be implemented within the framework of the Note Verbales to be exchanged between GOJ and RGC.

Appendix 1: Project Description

PROJECT DESCRIPTION

I. BACKGROUND

Cambodia has two major public ports, Phnom Penh Port and Sihanoukville Port. Sihanoukville Port is the sole international deep sea port in Cambodia, while Phnom Penh Port is a river port being connected with Southern Part of Vietnam. For the development of the Cambodia, appropriate competitive relationship between these two ports is significantly important to stimulate nationwide logistics by providing better service effectively.

As for Sihanoukville Port, JICA conducted "The Project for the Study on Strengthening Competitiveness and Development of Sihanoukville Port" between 2011 and 2012, where various strategies for strengthening competitiveness of Sihanoukville port were proposed.

Even though there is recognizable progress by PAS's own effort, some areas need additional support from technical point of view. In addition, PAS will face IPO (Initial Public Offering) during 2013 at the earliest, so PAS will be required to be based on more strategic planning and management, and efficient operation. Under the circumstances, "(1) Strategic planning and management" "(2) Operation of Container Terminal" "(3) Maintenance and Inspection of Cargo-handling Equipment (RTG, QGC)" were selected as focused target areas for assistance in "The Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port", which has been conceptualized in order to contribute to further strengthening of competitiveness of the Sihanoukville port.

II. OUTLINE OF THE PROJECT

1. Title of the Project

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

2. Overall Goal

PAS maintain sound financial sustainability, efficient terminal operation and effective maintenance of cargo handling equipment based on the strategic planning and management of PAS in a self-sustaining way

3. Project Purpose

Capacity of port management and operation, strategic planning is enhanced.

4. Outputs

4.1 Strategic planning and management

- Human resource capacity of strategic planning and management of PAS is developed.
- PAS staff and JICA-experts will jointly suggest solutions against various issues such as streamlining of organization, financial management,

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investment plan, marketing etc.

4.2 Operation of Container Terminal

- PAS staff acquires the skill for efficient port management and operation.
- Basic regulation and system for efficient port management and operation is developed.

4.3 Maintenance and Inspection of Cargo-handling Equipment (RTG, QGC)

- Manual for maintenance and inspection of RTG/QGC and list of spare-parts are prepared.
- Capacity and system of PAS staff for maintenance and inspection of RTG/QGC is developed.

5. Activities

5.1 Strategic planning and management

- Analyze the constraint or bottlenecks for strategic planning and management
- Establish Strategic management and planning team (and appoint appropriate PAS staff for the team)
- Train PAS staff for data collection and analysis, planning, marketing, etc.
- PAS staff and JICA-experts will jointly analyze and implement strategic planning and management such as streamlining of organization, financial management, investment plan, marketing, etc.

5.2 Operation of Container Terminal

- Analyze the constraint for container terminal operation
- OJT for port management and operation
- C/P training in Japan or Third country
- Establish basic regulation and system to enhance the efficient port operation
- Trial implementation of the basic regulation and system

5.3 Maintenance and Inspection of Cargo-handling Equipment (RTG, QGC)

- Analyze the cause and frequency of suspension of cargo-handling equipment as well as past record of supply of spare parts for the equipment to achieve preventive maintenance.
- Prepare manual for maintenance and inspection of RTG/QGC and list of spare-parts for preventive maintenance
- OJT for PAS staff according to the manual for maintenance and inspection of RTG/QGC
- C/P training in Japan or Third country (if necessary)
- Suggest necessary private contract regarding maintenance and inspection of RTG/QGC (if necessary)

6. Input

(1) Input by JICA

(a) Dispatch of Experts

Long-term Expert (Chief Advisor/Strategic Planning and Management)

- Short-term Experts in the field of
 - Strategic planning and management
 - Operation of Container Terminal
 - Maintenance and Inspection of Cargo-handling Equipment (RTG, QGC)
- (b) Training
 - C/P training both in and outside of Cambodia
- (c) Machinery and Equipment
 - Necessary Equipment for the implementation of the project

(2) Input by PAS

PAS will take the following necessary measures to provide at its own expense.

- (a) Services of PAS's counterpart personnel and administrative personnel as referred to in II-6
- (b) Suitable office space with necessary equipment
- (c) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA
- (d) Information as well as support in obtaining medical service
- (e) Credentials or identification cards
- (f) Available data (including maps and photographs) and information related to the Project
- (g) Running expenses necessary for the implementation of the Project
- (h) Expenses necessary for transportation within Cambodia of the equipment referred to in II-5 (1) as well as for the installation, operation and maintenance thereof
- (i) Necessary facilities to the JICA experts for the remittance as well as utilization of the funds introduced into Cambodia from Japan in connection with the implementation of the Project

7. Implementation Structure

(1) Direct Counterpart: PAS

- (a) Project Director: H.E. Lou Kim Chhun, Delegate of the Royal Government in Charge as Chairman & CEO
- (b) Project Manager: H.E. Ma Sun Hout, Deputy Director General

(2) Supervising Agency: MPWT

(3) JICA Experts

The JICA experts will give necessary technical guidance, advice and recommendations to PAS on any matters pertaining to the implementation of the Project.

(4) Joint Coordinating Committee

Joint Coordinating Committee (hereinafter referred to as "JCC") will be established in order to facilitate inter-organizational coordination. JCC will be held at least once a year and whenever deems it necessary. JCC will approve an annual work plan, review overall progress, conduct monitoring

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and evaluation of the Project, and exchange opinions on major issues that arise during the implementation of the Project. And PAS will make presentation regarding short and long-term policy / specific action plan for strengthening PAS. JCC will be co-chaired by Project Director and representative from JICA.

8. Project Site(s) and Beneficiaries

The project sites will be Sihanoukville Autonomous Port. The direct beneficiaries are staff of PAS. Effective and efficient operation and management of PAS will contribute to stimulate the logistics of entire Cambodia.

9. Duration

Total duration of the project will be 3 years from the first arrival of JICA experts.

10. Reports

PAS and JICA experts will jointly prepare the following reports in English.

- (1) Progress Report on semiannual basis until the project completion.
- (2) Project Completion Report at the time of completion.

III. UNDERTAKINGS OF MPWT AND RGC

PAS and MPWT will take necessary measures to:

- (1) ensure that the technologies and knowledge acquired by the Cambodian nationals as a result of Japanese technical cooperation contributes to the economic and social development of Cambodia, and that the knowledge and experience acquired by the personnel of Cambodia from technical training as well as the equipment provided by JICA will be utilized effectively in the implementation of the Project; and
- (2) grant privileges, exemptions and benefits to members of JICA experts referred to in II-5 (1) above and their families, which are no less favorable than those granted to experts and members of the missions and their families of third countries or international organizations performing similar missions in Cambodia.

IV. EVALUATION

JICA will conduct evaluation and survey to mainly verify sustainability and impact of the Project and draw lessons on project completion. PAS and MPWT are required to provide necessary support for them.

V. PROMOTION OF PUBLIC SUPPORT

For the purpose of promoting support for the Project, MPWT will take appropriate measures to make the Project widely known to the people of Cambodia.

VI. MUTUAL CONSULTATION

JICA, PAS and MPWT will consult each other whenever any major issues arise

in the course of Project implementation.

VII. AMENDMENTS

The record of discussions may be amended by the minutes of meetings between JICA, PAS and MPWT.

The minutes of meetings will be signed by authorized persons of respective side who may be different from the signers of the record of discussions.

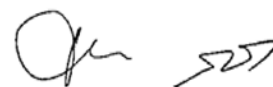
2. Minutes of Discussion

Minutes of Discussions
for
**The Project for Capacity Development on
Container Terminal Management and Operation in Sihanoukville Port**

The Discussion was held for the project for capacity development on container terminal management and operation in Sihanoukville Port (hereinafter referred to as "the Project") between H.E. Lou Kim Chhun, Delegate of the Royal Government of Cambodia in charge as Chairman & CEO of Sihanoukville Autonomous Port (hereinafter referred to as "PAS") and Mr. Yoshimoto KOYANAGI, Deputy Director, Economic Infrastructure Department, Japan International Cooperation Agency (hereinafter referred to as "JICA") on May 21st, 2014.

As a result of the discussion based on the conclusion of the 2nd JCC Meeting on, 8 April 2014, both sides confirmed the main items described below.

- JICA and PAS confirmed that appropriate use of Container Terminal Management System (hereinafter referred to as "CTMS") is important for efficient and strategic terminal operation by overcoming the issues which were identified through the training and discussion on CTMS in Phase 1 of the Project.
- Taking into considerations the abovementioned view, JICA will extend their cooperation for the improvement of CTMS. However, the items to be covered by the project among the abovementioned issues are limited because they are the issues to be improved by PAS constitutionally.
- JICA is planning to dispatch the experts to examine the possibility of improvement of CTMS necessary for facilitated implementation of the Project and to conduct technical transfer regarding such improvement.
- Potential tasks of the experts are 1) investigation on the causes of system slowdown at weekends, 2) adding the function of interface with alternate handy terminals which shall be procured by PAS to the original ones <which were out of production>, and 3) adding the function of discharging data stored in CTMS.
- PAS makes efforts to take other measures with own expense for the



improvement of CTMS than those taken by JICA.

- PAS promised that the CTMS will be properly maintained with the arrangement of necessary amount of budget and number of personnel, and future improvement of CTMS will be conducted by PAS's discretion after the JICA's cooperation.



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

Sihanoukville, May 21, 2014



Mr. Yoshimoto Koyanagi
Deputy Director
Economic Infrastructure Department
Japan International Cooperation Agency

3. PDM

LOGICAL FRAMEWORK (PROJECT DESIGN MATRIX: PDM) Ver.2

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

Period (Tentative): June 2013–May 2016

Implementation Organizations: Sihanoukville Autonomous Port (PAS)

Project Sites: Sihanoukville Autonomous Port (PAS)

Target Groups: Staff members of PAS

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall goal PAS shall maintain financial transparency and soundness as well as realize efficient terminal operation based on strategic planning and self-sustaining management.</p>	<p>PAS has developed a strategic management plan and has implemented efficient container terminal operation with financial transparency and soundness in accordance with the plan.</p>	<ul style="list-style-type: none"> - Evaluation of the content of the PAS strategic plan and management document as well as its achievement status - Evaluation of the feasibility of the PAS management mechanism - Evaluation of the container terminal management and operation system 	/
<p>Project purpose To enhance PAS's capacity for strategic planning as well as port management and operation</p>	<p>PAS has developed a strategic management plan. PAS has implemented efficient container terminal operation. Capable personnel have been assigned to management planning.</p>	<ul style="list-style-type: none"> - Evaluation of the content of the PAS strategic plan and management document as well as its achievement status - Evaluation of the feasibility of the PAS management mechanism - Evaluation of container terminal utilization status - Evaluation of the efficiency of the container terminal operation 	<ul style="list-style-type: none"> - Securing of the necessary budget - Presence of appropriate personnel - Restructuring of basic Project issues through incorporation
<p>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.</p>	<ul style="list-style-type: none"> - A strategic plan and management document that incorporates the organization, financial management, investment plans, and marketing of PAS has been prepared and the port is managed and operated strategically. - Appropriate personnel have been allocated to positions for strategic planning and management. 	<ul style="list-style-type: none"> - Assessing the availability of PAS strategic plan and management document to port management and operation - Assessing the availability of business plans for 1 year and 3-5 years - Evaluating the scale of container terminal by annual container throughput - Evaluating the activities at SEZ by rate of contracted land with business establishments - Evaluating efficiency of personnel allocation by annual container throughput per head (all persons and persons in charge of container operation) - Evaluating financial performance by annual revenue per head and net profit margin 	<ul style="list-style-type: none"> - Securing of the necessary budget - Presence of appropriate personnel - Restructuring of basic Project issues through incorporation - Sound economic growth of Cambodia
<p>Output 2 Regulations on container terminal operation are developed and PAS personnel acquire relevant know-how.</p>	<ul style="list-style-type: none"> - Rules and regulations/guidelines on container terminal operation have been developed. - Efficient terminal operation has been implemented on a trial basis in accordance with the rules and regulations. - Working records on ship and CY operations have been created 	<ul style="list-style-type: none"> - Assessing the availability of the terminal operation rules and regulations/guidelines - Evaluating productivity of ship operation by container handling volume per hour per crane - Evaluating the capacity of container yard by dwelling time of containers - Evaluating the efficiency of yard operation by turn time of external trucks - Evaluating management of operation tasks based on work records/periodic reports 	

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>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 is developed.</p>	<p>-A maintenance and inspection manual for large cargo handling equipment has been prepared. -A spare parts list has been prepared. -Maintenance and inspection have been implemented on a trial basis in accordance with the maintenance and inspection manual. -Maintenance and inspection have been implemented on a trial basis using the spare parts list.</p>	<p>-Assessing the availability of the maintenance manual for large cargo handling equipment -Assessing the availability of the spare parts list -Evaluating the number of key spare parts -Evaluating thoroughness of maintenance of cargo handling equipment by operating and suspension rates of cargo handling equipment -Evaluating completeness of furnishing of spare parts by number of incidents of inability to furnish spare parts -Evaluating of management of maintenance and inspection tasks based on work records/periodic reports</p>	
<p>Strategic planning and management of PAS Activity 1-1-1 To identify constraints/bottlenecks for strategic planning and management Activity 1-1-2 To establish a strategic planning and management team and assign appropriate PAS personnel Activity 1-1-3 To discuss with related personnel in PAS about jurisdiction, responsibilities, authority, staffing, incentives, etc. of the strategic planning and management team Activity 1-1-4 To clearly define the roles of the strategic planning and management team within PAS Activity 1-2-1 To develop capacity on information collection/analysis, planning, and marketing, etc. of PAS personnel Activity 1-2-2 To develop a financial simulation method for container and bulk operations Activity 1-2-3 To study and develop an analysis method for port management and financial management Activity 1-2-4 Technical transfer of the financial analysis method Activity 1-2-5 To study and develop a method for preparing investment implementation plans based on the developed financial analysis method Activity 1-2-6 Technical transfer of the investment implementation planning method Activity 1-2-7 To analyze strategic planning and management (organizational streamlining, financial management, investment plans, marketing, etc.) as well as implement these on a trial basis to the extent possible Container terminal operation Activity 2-1-1 To analyze constraints on container terminal operation Activity 2-1-2 To provide technical assistance (OJT) related to container terminal operation Activity 2-1-3 To provide C/P training in Japan/other countries Activity 2-2-1 To develop basic regulations and a management system for efficient container terminal operation Activity 2-2-2 To implement basic regulations and the management system on a trial basis Activity 2-3-1 Technical transfer for effective use of the existing container terminal operation system Maintenance and inspection of large cargo handling equipment Activity 3-1-1 To analyze the frequency and cause of suspension of operation of cargo handling equipment and grasp the historical record of supply of spare parts for preventive maintenance Activity 3-1-2 To prepare a maintenance and inspection manual as well</p>	<p>Inputs <u><Japanese side></u> (a)Dispatch of Experts (b)Long-term Expert (Chief Advisor/Strategic Planning and Management) (c)Short-term Experts in the field of -Strategic planning and management -Operation of Container Terminal -Maintenance and Inspection of Cargo-handling Equipment (RTG, QGC) (d) Training C/P training both in and outside of Cambodia (e) Machinery and Equipment Necessary Equipment for the implementation of the project <u><Cambodian side></u> (a)Services of PAS's counterpart personnel and administrative personnel (b)Suitable office space with necessary equipment (c) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA (d)Information as well as support in obtaining medical service (e)Credentials or identification cards (f)Available data (including maps and photographs) and information related to the Project (g)Running expenses necessary for the implementation of the Project (h) Expenses necessary for transportation within Cambodia of equipment as well as for installation, operation and maintenance thereof (i) Facilities necessary for the JICA experts for remittance as well as utilization of funds introduced into Cambodia from Japan in connection with the implementation of the Project</p>		<p>Preconditions PAS has been promoting initiatives based on recommendations made in the Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port.</p>

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
as spare parts list for preventive maintenance Activity 3-2-1 To provide technical assistance (OJT) in accordance with the RTG/QGC maintenance and inspection manual Activity 3-2-2 To provide C/P training in Japan or other countries Activity 3-2-3 To suggest the necessary private contracts for maintenance and management of RTG/QGC as necessary			

<参考>

PDM (当初)

LOGICAL FRAMEWORK (PROJECT DESIGN MATRIX: PDM)

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

Period (Tentative): June 2013–May 2016

Implementation Organizations: Sihanoukville Autonomous Port (PAS)

Project Sites: Sihanoukville Autonomous Port (PAS)

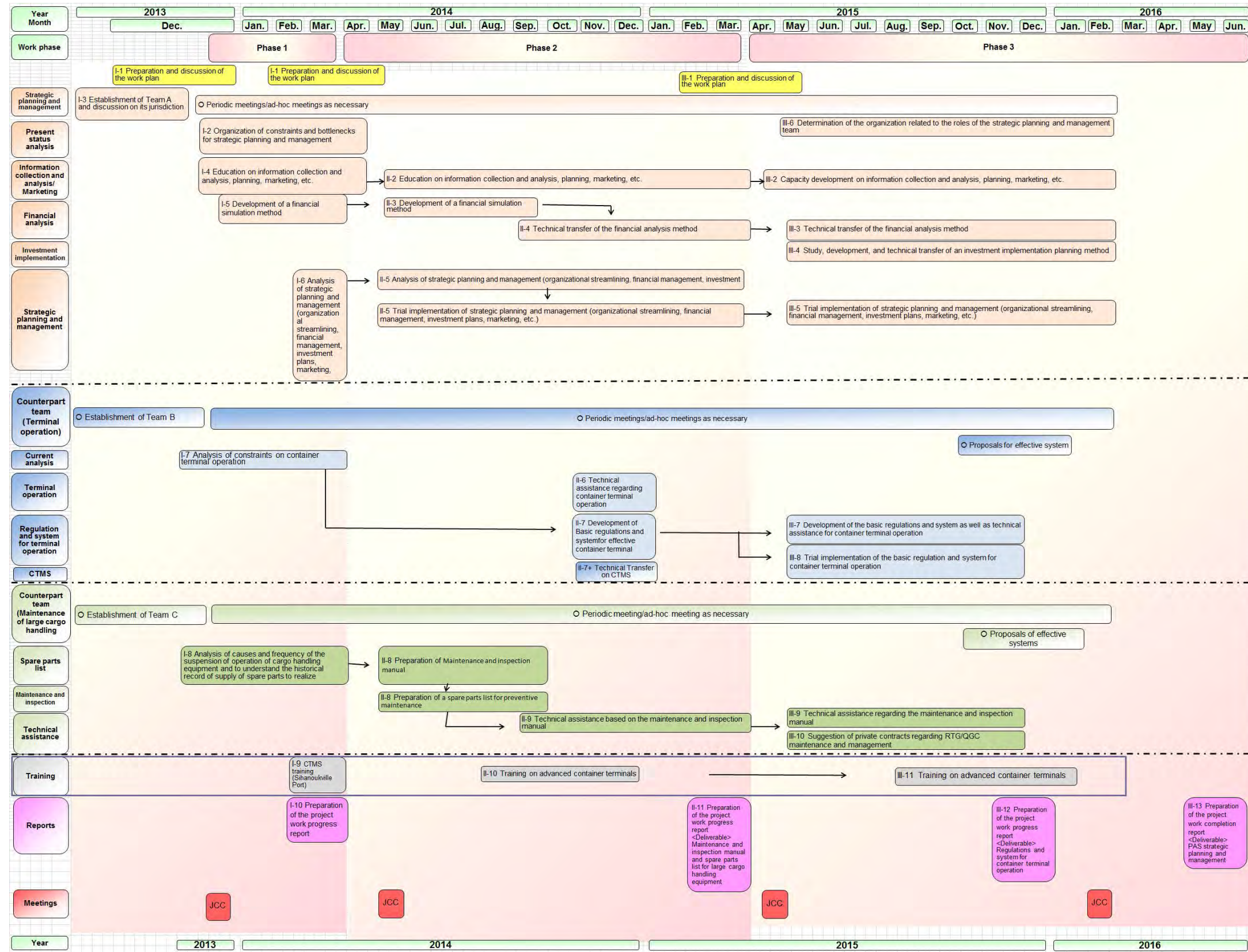
Target Groups: Staff members of PAS

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall goal PAS shall maintain financial transparency and soundness as well as realize efficient terminal operation based on strategic planning and self-sustaining management.	PAS has developed a strategic management plan and has implemented efficient container terminal operation with financial transparency and soundness in accordance with the plan.	-Evaluation of the content of the PAS strategic plan and operation document as well as its achievement status -Evaluation of the feasibility of the PAS management mechanism -Evaluation of the container terminal management and operation system	/
Project purpose To enhance PAS's capacity for strategic planning as well as port management and operation	PAS has developed a strategic management plan. PAS has implemented efficient container terminal operation. Capable personnel have been assigned to management planning.	-Evaluation of the content of the PAS strategic plan and operation document as well as its achievement status -Evaluation of the feasibility of the PAS management mechanism -Evaluation of container terminal utilization status -Evaluation of the efficiency of the container terminal operation	-Securing of the necessary budget -Presence of appropriate personnel -Restructuring of basic Project issues through incorporation
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.	-A management plan has been developed that incorporates the organization, financial management, investment plans, and marketing of PAS. -Personnel have been assigned to management planning and operation.	-Availability of the PAS strategic plan and operation document -Evaluation of the efficiency of personnel allocation -Evaluation of financial indicator values -Evaluation of the periodic container service level -Evaluation of container transaction size -Evaluation of corporate activities at SEZ -Understanding of the plan	-Securing of the necessary budget -Presence of appropriate personnel -Restructuring of basic Project issues through incorporation -Sound economic growth of Cambodia

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Output 2 Regulations on container terminal operation are developed and PAS personnel acquire relevant know-how.</p> <p>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 is developed.</p>	<p>-Regulations on container terminal operation have been developed. -Efficient terminal operation has been implemented on a trial basis in accordance with the operating regulations.</p> <p>-A maintenance and inspection manual for large cargo handling equipment has been prepared. -A spare parts list has been prepared. -Maintenance and inspection have been implemented on a trial basis in accordance with the maintenance and inspection manual. -Maintenance and inspection have been implemented on a trial basis using the spare parts list.</p>	<p>implementation status</p> <p>- Availability of the terminal operation regulations and system - Evaluation of allocation of operation staff/equipment - Productivity of stevedoring work - Provision of low-cost cargo handling services - Management status of operation tasks</p> <p>-Availability of the maintenance manual for large cargo handling equipment -Availability of the spare parts list -Thoroughness of maintenance of cargo handling equipment -Completeness of furnishing of spare parts -Responsibility of management</p>	
<p>Strategic planning and management of PAS Activity 1-1-1 To identify constraints/bottlenecks for strategic planning and management Activity 1-1-2 To establish a strategic planning and management team and assign appropriate PAS personnel Activity 1-1-3 To discuss with related personnel in PAS about jurisdiction, responsibilities, authority, staffing, incentives, etc. of the strategic planning and management team Activity 1-1-4 To clearly define the roles of the strategic planning and management team within PAS Activity 1-2-1 To develop capacity on information collection/analysis, planning, and marketing, etc. of PAS personnel Activity 1-2-2 To develop a financial simulation method for container and bulk operations Activity 1-2-3 To study and develop an analysis method for port management and financial management Activity 1-2-4 Technical transfer of the financial analysis method Activity 1-2-5 To study and develop a method for preparing investment implementation plans based on the developed financial analysis method Activity 1-2-6 Technical transfer of the investment implementation planning method Activity 1-2-7 To analyze strategic planning and management (organizational streamlining, financial management, investment plans, marketing, etc.) as well as implement these on a trial basis to the extent possible</p> <p>Container terminal operation Activity 2-1-1 To analyze constraints on container terminal operation Activity 2-1-2 To provide technical assistance (OJT) related to container terminal operation Activity 2-1-3 To provide C/P training in Japan/other countries Activity 2-2-1 To develop basic regulations and a management system for efficient container terminal operation Activity 2-2-2 To implement basic regulations and the management system on a trial basis</p>	<p>Inputs <Japanese side> (a)Dispatch of Experts Long-term Expert (Chief Advisor/Strategic Planning and Management)</p> <p>Short-term Experts in the field of - Strategic planning and management - Operation of Container Terminal - Maintenance and Inspection of Cargo-handling Equipment (RTG, QGC)</p> <p>(b)Training C/P training both in and outside of Cambodia</p> <p>(c)Machinery and Equipment Necessary Equipment for the implementation of the project</p> <p><Cambodian side> (a)Services of PAS's counterpart personnel and administrative personnel (b)Suitable office space with necessary equipment (c) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA (d)Information as well as support in obtaining medical service (e)Credentials or identification cards (f) Available data (including maps and photographs) and information related to the Project (g)Running expenses necessary for the implementation of the Project (h) Expenses necessary for transportation within Cambodia of equipment as well as for installation, operation and maintenance thereof (i) Facilities necessary for the JICA experts for remittance as well as utilization of funds introduced into Cambodia from Japan in connection with the implementation of the Project</p>		<p>Preconditions</p> <p>PAS has been promoting initiatives based on recommendations made in the Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port.</p>

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Maintenance and inspection of large cargo handling equipment</p> <p>Activity 3-1-1 To analyze the frequency and cause of suspension of operation of cargo handling equipment and grasp the historical record of supply of spare parts for preventive maintenance</p> <p>Activity 3-1-2 To prepare a maintenance and inspection manual as well as spare parts list for preventive maintenance</p> <p>Activity 3-2-1 To provide technical assistance (OJT) in accordance with the RTG/QGC maintenance and inspection manual</p> <p>Activity 3-2-2 To provide C/P training in Japan or other countries</p> <p>Activity 3-2-3 To suggest the necessary private contracts for maintenance and management of RTG/QGC as necessary</p>			

4. Work Flowchart



5. Work Breakdown Structure

WBS for work related to strategic planning and management

Development of a personnel system to realize strategic planning and management and presentation of solutions for various issues (organizational streamlining, financial management, investment plans, marketing, etc.)		
a1 Organization of constraints and bottlenecks for strategic planning and management (Activity 1-1-1)		
	Grasping of the status of long-term planning of port development and operation	
	Survey of the long-term plan, operation plan, financial plan, etc.	
	Hearings on the development plan, operation plan, and financial plan documents and obtaining of such documents	
	Extraction of problems in the long-term plan, operation plan, etc.	
	Comparison of plans upon formulation and at present; extraction of issues	
	Organization and analysis of constraints and bottlenecks	
	Classification and organization of issues in plan implementation, financial operation, organizational operation, etc.	
	Confirming of issues and constraints in implementing plans, organizational operation, and financial operation	
	a2 Establishment and activities of the strategic planning and management team (Activities 1-1-2, 1-1-3, and 1-1-4)	
		Establishment of the team
Organization and confirmation of the necessity of establishing the team		
Current evaluation of the organization; organization of necessary functions		
Allocation of personnel		
Analysis on the necessary personnel and personnel allocation		
Determination of authorities, responsibilities, and functions		
Confirmation of the affairs under jurisdiction, organizational structure, preparation of regulations for establishment and identification of the function of the secretariat		
Activities of the team		
Activity plan		
Preparation and implementation of the activity plan		
Activity evaluation		
Plan implementation management, plan progress monitoring, and evaluation of results		
a3 Capacity development on information collection and analysis, planning, marketing, etc. for PAS personnel (Activity 1-2-1)		
	Information collection, analysis and sharing	
	Information collection	
	Confirmation of information source, sustainable information collection system, and information management method including sharing of information	
	Information analysis and development	
	Study on information processing technologies and the system for information development	
	Measures for utilizing information	
	Information sharing and utilization policy	
	Confirming of the significance of planning	
	Planning method	
	Study on the necessity and positioning of the plan	
	Plan implementation management method	
	Study on plan implementation methods and plan implementation management methods	
	Establishment of marketing policy	

	Organization of the significance of marketing
	Confirmation of the necessity of marketing and study on marketing perspectives and issues
	Marketing implementation policy
	Study on the marketing action plan and organization of the implementation system
a4 Development of a financial analysis method (Activities 1-2-2, 1-2-3 and 1-2-4)	
	Development of a financial simulation method for container and bulk operation
	Development and application of a simple financial simulation model
	Application of a simple model and guidance on the basic concepts of financial analysis
	Development of a detailed financial simulation model
	Analysis of PAS revenue/expenditure structures, calculation of profit-loss, balance sheets and cash flow, and calculation of project investment evaluation indicators
	Study and development of an analysis method for port operation and financial management
	Grasping of the respective financial conditions of the container and bulk divisions
	Preparation of revenue and expenditure breakdowns by PAS division
	Study on the long-term management plan and the effects of tariff reduction etc.
	Technical transfer of the financial analysis method
	Holding of workshops
	Holding of workshops for the strategic planning and management team
	Training using case studies from neighboring countries and advanced facilities
	Analysis of financial statements of advanced container terminals and international port terminals in neighboring countries; comparative analysis of port tariff structures and unit prices
	OJT for financial analysis
	Implementation of financial analysis for terminal operation
a5 Study and development of the method for investment implementation planning (Activities 1-2-5 and 1-2-6)	
	Study and development of investment evaluation methods
	Financial evaluation of the project
	Study of evaluation indicators and evaluation of investment risk
	Technical transfer of the investment implementation planning method
	Workshops for comparative analysis of investment options
	Formulation of investment options for the project
	Investment plan formulation for priority projects
	OJT for evaluation of alternative investment plans
a6 Strategic management plan (Activity 1-2-7)	
	Strengthening of the organization and system
	Organizational streamlining
	Identification of priority functions and the effects of streamlining
	Improvement measures for the organizational structure
	Organization of responsibilities and functions for the improved organization and organizational improvement measures
	Financial management and investment planning
	Management of the investment project
	Monitoring of expenditures and revenue, grasping of deviations from the plan, and formulation of countermeasures
	Cash flow analysis by division
	Grasping of unprofitable divisions, study on cost reduction methods, and contraction/withdrawal

Marketing	
Provision of good terminal service	Improvement of operating efficiency, customer satisfaction, provision of a reliable birth window, organization of measures for providing the required cargo handling performance
Strategic tariff setting	Concept of tariff setting, strategic tariffs
Alliances and utilization of related facilities	Development of a strategy for using the dry port, warehouse, and SEZ
Promotion	Study on attracting sea routes and cargo
Trial implementation to the extent possible	
Trial implementation	Organizational improvement, financial management, investment plans, marketing
Evaluation of trial implementation	Monitoring, evaluation, recommendations

WBS of work related to container terminal operation

Development of regulations for container terminal operation and acquisition of know-how by PAS personnel	
b1 Analysis of constraints on terminal management and operation (Activity 2-1-1)	
Analysis on constraints on the organization and management	Analysis of institutional constraint factors Analysis of constraint factors concerning decision-making mechanisms, management of budget/organization/plan implementation, and human resource development
Analysis of constraint factors on work implementation management	Organization of issues related to personnel allocation and working activity targets
Analysis of constraints on the terminal management division	Constraints attributable to the system and surrounding environment Requests for improvement to the surrounding environment and improvement of organizational regulations
Constraints on input resources	Personnel allocation and development of facilities and cargo handling equipment
Analysis of constraints on operation sites	Constraints concerning working environments Analysis of issues related to work systems, cargo handling equipment, etc.
Constraints on workers' experience and skills	Analysis of issues related to work implementation methods, assigned personnel, etc.
b2 Acquisition of technology for container terminal operation (Activities 2-1-2 and 2-1-3)	
Raising of awareness on the container terminal operation policy directly linked to the management strategy	Sharing of information within organization Documentation, improvement of the periodic reporting system, Sharing of risk management information
Technical improvements in the management division	Technology for working plan development Acquisition and organization of necessary information, study on optimal working procedures, and OJT
Technology for worker allocation	Acquisition and organization of necessary information, study on optimal worker allocation, and OJT
Operation evaluation technology	

	Organization of work records, performance analysis, documentation, thorough practicing of periodic reporting, and OJT
Technical improvement of on-site workers	
	Acquisition of operation skills
	Acquisition of skills and OJT for container yard operation, and cargo loading/unloading and gate operation
Understanding of advanced terminal operation	
	Training at advanced container terminals
	Understanding of management strategy, management and operation systems and productivity of advanced terminals; and acquisition of practical knowledge on advanced CT operation
b3 Preparation and operation of basic regulations for terminal operation (Activity 2-2-1 and 2-2-2)	
Study on basic regulations	
	Work regulations
	Organization of the purpose and necessity of work regulations, organization of matters to be prescribed, and preparation of work regulations
	Work instructions
	Organization of the purpose and necessity of work instructions, organization of matters to be included, and development of work instruction forms
	Work activity records
	Organization of the purpose and necessity of work activity records, and organization of matters to be included, development of work activity record forms and a utilization method for the content of work activity records
Trial implementation of operation based on regulations	
	Plan for trial implementation
	Preparation of a trial implementation plan and organization of trial implementation
	Trial implementation
	Preparation and implementation of the trial implementation system
Improvement plan for operational structure	
	Evaluation of trial implementation results
	Organization of evaluation viewpoints and analysis of trial implementation results, including regulation sources, working instructions, work records, etc.
	Proposals for the terminal operation system
	Development of an operation system draft, sharing of recognition among stakeholders, and study of the training system and plan
Technical Transfer on CTMS	
	Effective use of CTMS
	Training, Identification of issues

WBS of work related to maintenance for large cargo handling equipment

Preparation of the maintenance and inspection manual for large cargo handling equipment such as rubber tire gantries (RTGs) and quay gantry cranes (QGCs) and spare parts list as well as enhancement of PAS personnel's capacity for maintenance and inspection

c1 Preparation of the maintenance and inspection manual (Activities 3-1-1 and 3-1-2)

	Analysis of the current condition of large cargo handling equipment
	Physical condition of large cargo handling equipment
	Preparation of the cargo handling equipment list, grasping of the physical condition of cargo handling equipment, and evaluation of the physical condition of cargo handling equipment
	Operation status
	Confirmation of operation status; collection and analysis of operation records and failure

	records
	Status of suspension of operation
	Grasping of the frequency of suspension of operation and conditions at the time of suspension; analysis of causes of suspension, historical records of failures, accidents and repairs; and summary of issues and improvement of equipment
	Policy on maintenance and inspection of large cargo handling equipment
	Current status of maintenance and inspection
	Review of the maintenance and inspection plan, confirmation of the content of maintenance and inspection implemented, and confirmation of the system for maintenance and inspection implementation
	Cases of maintenance and inspections at other ports
	Collection of cases as well as extraction and organization of matters that may be useful as a reference
	Issues for maintenance and inspection
	Organization of technical and system-related issues regarding maintenance and inspection
	Preparation of the maintenance and inspection manual
	Content of the maintenance and inspection manual
	Acquisition of the existing maintenance and inspection manual, extraction of matters included in the manual, and study and organization of the manual content
	Maintenance and inspection manual and its utilization
	Summary of the maintenance and inspection manual and utilization measures
	c2 Preparation of the spare parts list (Activities 3-1-1 and 3-1-2)
	Current status of spare parts
	Current status of spare parts
	Grasping of the actual conditions of spare part storage system and physical conditions of stored spare parts
	Storage of spare parts
	Confirmation of the spare part storage method and system
	Replenishment and supply of spare parts
	Confirmation of the spare part supply method, replenishment plan, and over-supply and shortage statuses
	Issues related to spare parts
	Issues regarding the current conditions of spare parts
	Organization of issues related to spare parts storage and supply/replenishment
	Cases of spare parts storage at other ports
	Collection of cases as well as extraction and organization of matters that may be useful as a reference
	Spare parts list
	Content of the spare parts list
	Collection of cases for the spare parts list and organization of matters included in the spare parts list
	Preparation and management of the spare parts list
	Summary of the spare parts list and study of the spare parts list management method
	c3 Maintenance and inspection in accordance with the manual (Activities 3-2-1 and 3-2-2)
	Understanding of the maintenance and inspection manual
	Learning at workshops
	Understanding of the importance of maintenance and inspection; reviews of the current system for maintenance and inspection, personnel allocation (engineers and skilled workers) as well as work and repair costs; understanding of the points to consider in maintenance and inspection work; selection of effective evaluation indicators;

	quantification of current development standards based on evaluation indicators; and understanding and consensus building on how to implement maintenance
	Case studies on maintenance and inspection
	Study of the situations related to maintenance and inspection at other ports, inspection tours of maintenance and inspection at other ports, and reviews of the usability of maintenance and inspection systems and manuals at other ports
	Selection of priority inspection items
	Selection of priority maintenance and inspection items based on current maintenance and inspection levels, personnel systems, and case studies of other ports; correction of and agreement upon the evaluation method; and correction of the maintenance and inspection system and manual (as necessary)
	On-site training
	OJT at the PAS terminal
	Start-up inspections; periodic inspections; and organization, analysis and evaluation of inspection results
	Responses to abnormal conditions
	Review of the existing manual for responses to equipment failure (emergency measures, procedures, reporting, and recurrence prevention methods, etc.); review of the present responses implemented upon equipment failure; extraction of problems with current responses to equipment failures and studies of corrective measures; and studies on the applicability of total preventive maintenance (TPM)
	Maintenance and inspection system
	Improvement of the system
	Organization of issues related to the maintenance system and proposals for system improvement
c4 Study on outsourcing of maintenance and inspections (Activity 3-2-3)	
	Study on the necessity and feasibility of outsourcing
	Organization of work to be outsourced
	Extraction of weak points of the PAS maintenance system and prospective work to be outsourced
	Feasibility survey of prospective outsourcing companies
	Feasibility survey of large cargo handling equipment maintenance companies in Cambodia and feasibility survey of large cargo handling equipment maintenance companies in Japan and other countries
	Organization of the necessity and feasibility of outsourcing
	Organization of the effects and feasibility of outsourcing; study on the outsourcing maintenance and inspection system
	Organization of outsourcing requirements and consensus building within PAS (once the effects and feasibility of outsourcing have been confirmed)
	Consensus building on outsourcing within PAS
	Organization of contract items (requirements), estimations of costs, and consensus building on outsourcing

6. Assignment of Experts

Field	Name	Phase 1				Phase 2								Phase 3				###			
		2013		2014		2013		2014		2015		2013		2014							
		JUN	NOV/DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB		MAR	APR	MAY
Chief Advisor	Takahiro Jonisi/ Tetsuro Ikeda	[Solid black bar]																			
Group Leader/Port planning and operation (1)	Tatsuyuki Shishido	12/19-14	17	3/27	4/12	7/6	7/19	10/19	11/2	4/02	4/12	6/21	7/11	1/14	1/30	3/01	3/17				
Port planning and operation (2)	Sumio Suzuki			2/18	3/18		7/17	8/19	11/29	12/25		7/05	7/24	11/02	11/26	1/20	2/03				
Container terminal operation (1)	Teruki Eto			3/1	4/12				11/25	12/25		3/17	4/09	10/27	12/01						
Container terminal operation (2)	Akihiko Sato						7/6	7/27	10/25	11/05											
Container terminal operation (3)	Hideto Wada								10/19	10/30											
Maintenance and management of large cargo handling equipment (1)	Toru Takehara	12/19-14	1/18			4/25	5/24														
Maintenance and management of large cargo handling equipment (2)	Masao Ichinose								10/19	11/25		6/07	7/11	11/00	12/7	2/08	2/28				
Group Leader/Port planning and operation (1)	Tatsuyuki Shishido		2															1	2		
Port planning and operation (2)	Sumio Suzuki		2																	3	
Container terminal operation (1)	Teruki Eto																				
Container terminal operation (2)	Akihiko Sato								20	17											
Container terminal operation (3)	Hideto Wada								20	10											
Maintenance and management of large cargo handling equipment (1)	Toru Takehara																				
Maintenance and management of large cargo handling equipment (2)	Masao Ichinose																			4	
Coordination for Training	Yuichi Tanji																			15	

7. Training in Overseas Countries

Training in Japan

Term: 8 to 21 November 2015

Trainees

Mr. Heang Sophal, Deputy Director, Container Terminal Operation, Head of the Mission
Mr. Ouk Vannara, Official, Technical Dept. PAS
Mr. Kim Hor, Official, Technical Dept. PAS
Ms. Klok Makara, Planning-Statistic Dept. PAS

Training in Thailand

Term: 15 to 19 December 2014

Trainees:

Mr. Thay Rithy, Director of Commercial Dept.
Mr. Thong Viro, Director of Harbor Master
Mr. Thay Mengly, Deputy Director of Container Terminal Operation Dept.
Mr. Pith Prakath, Deputy Director of Administration & Human Resources Dept.
Mr. Chao Vanratanak, Container Terminal Operation Dept.
Mr. Ouk Somethy, Chief of Data and Relationship, Planning & Statistic Dept.
Mr. Nhim Pisey, Chief of Security Office, Admin-HR Dept.
Mr. Ouk Vannara, Technical Material and Construction Dept.
Mr. Sorm Karaney, Chief of IT Section
Mr. Koam Sokan, Container Terminal Operation Dept.

Training in Thailand

Term: 29 June to 3 July 2015

Trainees:

Mr. Thay Rithy, Deputy Director General, PAS, HEAD of the Mission
Mr. Pith Prakath, Director of Business Dept. PAS
Mr. Thong Viro, Director of Harbor Master Dept. PAS
Ms. Chey Sokunthea, Director of Marketing Dept., PAS
Mr. Thay Mengly, Deputy Director of Container Terminal Operation, PAS
Mr. Sek Sovannara, Chief of Data, Container Terminal Operation Dept., PAS
Mr. Sorm Karaney, Official of Admin-HR Dept., PAS
Ms. Klok Makara, Official of Planning - Statistic Dept., PAS
Mr. Koam Sokan, Official of Container Terminal Operation Dept., PAS
Mr. Chao Vanratanak, Official of Container Terminal Operation Dept., PAS

8. Conclusion of JCC Meeting

The 1st JCC Meeting 27 December 2013

CONCLUSION
of
The 1st Joint Coordinating Committee
for
**The Project for Capacity Development on
Container Terminal Management and Operation in Sihanoukville Port**

Following the provision on 7-(4) of the RECORD OF DISCUSSIONS ON THE PROJECT FOR CAPACITY DEVELOPMENT ON CONTAINER TERMINAL MANAGEMENT AND OPERATION IN SIHANOUKVILLE PORT signed on March 26, 2013 (hereinafter referred to as "the R/D"), the 1st meeting of the Joint Coordinating Committee (hereinafter referred to as "JCC") for the project for capacity development on container terminal management and operation in Sihanoukville Port (hereinafter referred to as "the Project") was held on 27th December, 2013.

At the meeting of JCC, the Work Plan (Draft) including the Project Design Matrix (hereinafter referred to as "PDM") was presented by the Project Implementation Unit (hereinafter referred to as "PIU") and the JICA expert team. Following the presentation, JCC approved the PDM and the Work Plan (Draft) of the Project.

JCC noted that descriptions on Verifiable Indicators and Means of Verification in the Project Design Matrix in the Work Plan and descriptions in Table 9 shall be finalized in the Progress Report 1 after further examination in Phase 1.

JCC acknowledged that CTMS is important for efficient container terminal operation but there are several serious issues at present. JCC will discuss how to deal with it at the next meeting based on the result of the CTMS training in January 2014.

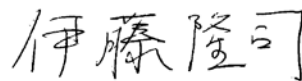
JCC acknowledged that there are several external factors concerned with container terminal operation and recommends to clarify such factors and to identify what PAS would like to request to relevant agencies.

JCC agreed to have next JCC meeting in early April, 2014, to discuss the Progress Report 1 and the Work Plan which may be revised based on the activities in Phase 1.

Sihanouville, 27th of December, 2013



H.E. Lou Kim Chhun
Chairperson and CEO of PAS
Sihanoukville Autonomous Port



Takashi ITO
Senior Representative
Cambodia Office
Japan International Cooperation Agency

CONCLUSION
of
The 2nd Joint Coordinating Committee
for
The Project for Capacity Development on
Container Terminal Management and Operation in Sihanoukville Port

In accordance with the provision on 7-(4) of the RECORD OF DISCUSSIONS ON THE PROJECT FOR CAPACITY DEVELOPMENT ON CONTAINER TERMINAL MANAGEMENT AND OPERATION IN SIHANOUKVILLE PORT signed on March 26th, 2013 (hereinafter referred to as "the R/D"), the 2nd meeting of the Joint Coordinating Committee (hereinafter referred to as "JCC") for the Project for Capacity Development On container Terminal Management and Operation in Sihanoukville Port (hereinafter referred to as 'the Project') was held on 8th April, 2014.

At the meeting of JCC, the Progress Report of phase 1 (Draft) including the Revision of Project Design Matrix (hereinafter referred to as "PDM") was presented by the Project Implementation Unit (hereinafter referred to as "PIU") and the JICA expert team, and JCC approved this Report.

Following the presentation, JCC approved the Progress Report of Phase 1 including the PDM version 2.

JCC noted that descriptions on Verifiable Indicators and Means of Verification in the Project Design Matrix in the Work Plan and descriptions in Table 9 are acknowledged, and the PDM version 2 was approved accordingly.

JCC acknowledged that the Container Terminal Management System (hereinafter referred to as "CTMS") is important for efficient container terminal operation. PAS and JICA confirmed to take necessary efforts to improve the operation of CTMS subject to the financial and human resources availabilities

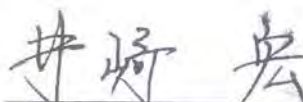
JCC agreed to have next JCC meeting in early April, 2015, to discuss the Progress Report 2 and the Work Plan which may be revised based on the activities in Phase 1 and 2.

JCC approved the modified Work Plan which may be commenced from Phase 2.

Sihanoukville, 8th April, 2014



H.E. Lou Kim Chhun
Delegate of the Royal Government of
Cambodia in charge as Chairman & CEO
of PAS



H.E. IZAKI Hiroshi
Chief Representative
Cambodia Office
Japan International Cooperation Agency

CONCLUSION
of
The 3rd Joint Coordinating Committee
for
**The Project for Capacity Development on
Container Terminal Management and Operation in Sihanoukville Port**

Following the provision on 7-(4) of the RECORD OF DISCUSSIONS ON THE PROJECT FOR CAPACITY DEVELOPMENT ON CONTAINER TERMINAL MANAGEMENT AND OPERATION IN SIHANOUKVILLE PORT signed on March 26, 2013 (hereinafter referred to as "the R/D"), the 3rd meeting of the Joint Coordinating Committee (hereinafter referred to as "JCC") for the project for capacity development on container terminal management and operation in Sihanoukville Port (hereinafter referred to as 'the Project") was held on 26th June, 2015.

At the meeting of JCC, the Progress Report 2 (DRAFT) and the Work Plan (Ver.3) (DRAFT) were presented by the Project Implementation Unit (hereinafter referred to as "PIU") and the JICA expert team.

JCC acknowledged that the project has made progress in Phase 2 with discussions at a series of meetings of Team A, Team B, Team C and Team CTMS as well as studies at workshops organized by JICA experts at the core.

JCC acknowledged that the project is managed by monitoring the verifiable indicators which are shown in Project Design Matrix (ver2) (hereinafter referred to as "PDM-2") under the policy of the project cycle management and emphasized that the activities in Phase 3 should be implemented considering the implication of the indicators for achieving the project purpose described in PDM-2.

Following the discussion, JCC approved the Progress Report 2 (DRAFT) and the Work Plan (Ver. 3) (DRAFT) .

JCC confirmed that next JCC meeting shall be held before termination of the Project and the date shall be decided considering progress of the Project in Phase 3.



H.E. Lou Kim Chhun
Chairperson and CEO of PAS
Sihanoukville Autonomous Port

Sihanoukville, 26th of June, 2015



Itsu ADACHI
Chief Representative
Cambodia Office
Japan International Cooperation Agency

CONCLUSION
of
The 4th Joint Coordinating Committee
for
**The Project for Capacity Development on
Container Terminal Management and Operation in Sihanoukville Port**

Following the provision on 7-(4) of the RECORD OF DISCUSSIONS ON THE PROJECT FOR CAPACITY DEVELOPMENT ON CONTAINER TERMINAL MANAGEMENT AND OPERATION IN SIHANOUKVILLE PORT signed on March 26, 2013 (hereinafter referred to as "the R/D"), the 4th meeting of the Joint Coordinating Committee (hereinafter referred to as "JCC") for the project for capacity development on container terminal management and operation in Sihanoukville Port (hereinafter referred to as "the Project") was held on 15th March, 2016.

At the meeting of JCC, the Progress Report 3 (DRAFT) by the Project Implementation Unit (hereinafter referred to as "PIU") and the JICA expert team was presented.

JCC acknowledged that the project has made progress in Phase 3 with discussions at a series of meetings of Team A, Team B, Team C and Team CTMS, studies at workshops organized by JICA experts and the training through the technical visit to Vietnam.

JCC acknowledged that the project has been managed by monitoring the verifiable indicators which are shown in Project Design Matrix (ver2) (hereinafter referred to as "PDM-2") under the policy of the project cycle management and the project purpose has been almost achieved by March 2016.

Following the discussion, JCC approved the Progress Report 3.

Finally, JCC expressed its respect for the efforts of PAS counter personnel and showed the expectation of achieving the overall goal followed by the fruits of the project.

Sihanouville, 15th of March, 2016



H.E. Lou Kim Chhun
Chairperson and CEO of PAS
Sihanoukville Autonomous Port



Takashi ITO
Senior Representative
Cambodia Office
Japan International Cooperation Agency