Republic of Indonesia

FY2018 Ex-Post Evaluation of Japanese ODA Loan

"Urgent Rehabilitation Project of Tanjung Priok Port"

External Evaluator: Kenichi Inazawa, Octavia Japan Co., Ltd.

0. Summary

This project involved responding to increasing demand of the passenger and cargo handling volume, by widening and deepening the existing shipping lanes, and promoting efficiency of shipping transportation; thereby contributing to enhance Tanjung Priok Port's functions as an international hub port. The relevance of this project is high given the consistency with Japan's ODA policy, the need for improvements and development to address rising container handling volume by way of new terminal construction at Tanjung Priok Port, and the fact that expansion of logistics functions, etc. by development of port and harbor facilities was indicated in *the National Medium Term Development Plan (2000-2004)*, *Master Plan for Port Development and Logistics in and Around Greater Jakarta Metropolitan Area*, etc., formulated by the Government of Indonesia. As for efficiency, project cost was within the initial plan due to the influences of foreign exchange rate fluctuations, though improvements to the existing roads at the port were cancelled. The project period exceeded the initial plan due to delay in the procedures for the procurement of the consultant; therefore, the project's efficiency is fair. As for quantitative effect indicators, since some actual figures did not achieve the target figures, the verification of the project effect is not possible, but this project has contributed to the safety and efficiency of ships entering and leaving port by dredging shipping lanes and securing access lanes (300m on average: two-way movements enabled) and dredging (secured sufficient depth for ships carrying up to 16,000 TEU to enter and leave the port). In addition, the project is believed to be contributing to some degree to the expansion of the port's functions as an international hub port, based on the fact that direct transportation from intermediate ports is increasing. Therefore, effectiveness and impact of this project is judged to be fair. The sustainability of the effects realized from the project implementation is high, since there are no issues in terms of the institutional, technical, and financial aspects of operation and maintenance of each organization in charge of the operation and maintenance of the project.

In light of the above, this project is evaluated to be satisfactory.

1. Project Description

Project Location

Breakwater Constructed under This Project

1.1 Background

Indonesia is the world's largest island nation covering ten thousand and several thousands of small and large islands, encompassing a vast area spanning 2,000 km north to south and 5,000 km east to west. Therefore, the reinforcement and facilitation of transportation capacity in the maritime shipping sector is important for the country's economic development. Prior to the start of this project, container handling volume in Indonesia was increasing. Tanjung Priok Port is Indonesia's largest international trade port, with a total cargo handling volume of 51 million tons (results for 2001). Of this, the container handling volume totals 20 million tons (2.8 million TEU). In 2006, the port's handling volume was expected to exceed its capacity limit (3 million TEU). Therefore, there was an urgent need to deepen and widen the shipping lanes, etc., accommodate the growing size of ships, and address growing the handling volume.

1.2 Project Outline

The objective of this project is to respond to increasing demand of the passengers and cargo handling volume, by widening and deepening the existing shipping lanes, and promoting efficiency of shipping transportation; thereby contributing to enhancing Tanjung Priok Port's functions as an international hub port.

Loan Approved Amount/ Disbursed Amount	12,052 million yen / 10,551 million yen
Exchange of Notes Date/ Loan Agreement Signing Date	March 31, 2004 / March 31, 2004
Terms and Conditions	Main: Interest Rate: 1.30% Repayment Period: 30 years (Grace Period: 10 years) Conditions for Procurement: General Untied
Borrower /	The Directorate General of Sea Transportation, Ministry of Transportation (hereafter, "DGST"); however, the real executing

Executing Agencies	agency is the Indonesia Port Authority under DGST. The organization mainly responsible for the port's operation and maintenance is the Tanjung Priok Port Bureau of Indonesia Port Corporation II (hereafter, "IPC II").
Project Completion	September, 2014
Target Area	Tanjung Priok Port near the capital Jakarta
Main Contractor (Over 1 billion yen)	PT. Adikarya (Indonesia) /Toyo Construction Co., Ltd. (Japan) (JV)
Main Consultant (Over 100 million yen)	PT. Wiratman & Associates (Indonesia) / PT. Rayakonsult (Indonesia) / Nippon Koei Co., Ltd. (Japan) / Japan Port Consultants, Ltd. (JV)
Related Studies (Feasibility Studies, etc.)	F/S "Study for Development of Greater Jakarta Metropolitan Port" (2003, JICA)
Related Projects	【ODA Loan】 "Tanjung Priok Access Road Construction Project (I)" (2005, JICA) "Tanjung Priok Access Road Construction Project (II)" (2006, JICA) "Patimban Port Development Project" (2017, JICA) 【Technical Cooperation】 "Cooperation Implementation Design Study for Urgent Rehabilitation Project for Tanjung Priok Port" (2005-2006, JICA) "Enhancement Strategy Planning Project for Port EDI" (2017-2019, Technical cooperation project for development plan survey)

2. Outline of the Evaluation Study

2.1 External Evaluator

Kenichi Inazawa, Octavia Japan Co., Ltd.

2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted with the following schedule.

Duration of the Study: October 2018-November 2019

Duration of the Field Study: January 20-February 3 and April 7-13, 2019

3. Results of the Evaluation (Overall Rating: B[1])

3.1 Relevance (Rating: ③[2])

3.1.1 Consistency with the Development Plan of Indonesia

Prior to the start of this project, the Government of Indonesia formulated *the National*

[1] A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

[2] ③: High, ②: Fair, ①: Low

Development Plan (2000-2004), which emphasized greater development of transportation infrastructure as developing of the country's economic base. In addition, according to DGST, the policy issues cited as important in *the Shipping Sector Development Strategy Program* being formulated at the time of the project's appraisal (2004) were the capacity and competitiveness reinforcement of the country's domestic marine shipping, as well as increasing the safety and quality of marine shipping services, etc.

At the time of the ex-post evaluation, the Government of Indonesia has formulated *the National Medium Term Development Plan (2015-2019)*, which clearly states that development of transportation infrastructure underpinning economic growth is a priority of national development. In addition, Indonesia has developed the concept of *the Global Maritime Fulcrum*, under which it is focusing on expanding logistics functions and increasing connectivity through the development of port and harbor facilities. Additionally, Indonesia's Ministry of Transportation has formulated *the Master Plan for Port Development and Logistics in and Around Greater Jakarta Metropolitan Area*, which calls for drastic improvements in logistics in the Jakarta Metropolitan Region.

In light of the above, throughout the time of the project's appraisal and the time of the ex-post evaluation, the port development and port sector are emphasized; therefore, consistency with policies and measures in both the national plan and sector plan, etc., is acknowledged.

3.1.2 Consistency with the Development Needs of Indonesia

Prior to the start of this project, container handling volume in Indonesia was increasing each year. Tanjung Priok Port is Indonesia's largest international trade port, with a total cargo handling volume of 51 million tons (results for 2001). Of this, the container handling volume totals 20 million tons (2.8 million TEU). In 2006, the port's handling volume was expected to exceed its capacity limit (3 million TEU), but the depth of its primary areas was between 10 and 14 meters, which is shallower than other ports in Southeast Asia. Therefore, there was an urgent need to deepen and widen, etc. the shipping lanes, accommodate the growing size of ships, and address growing cargo handling volume.

At the time of the ex-post evaluation, Indonesia is experiencing rapid economic growth. Although cargo handling volume is rising at ports nationwide in Indonesia, there are constraints on the capacity of handling volume and concerns have been raised that port congestion is slowing down logistics. The Jakarta Metropolitan Region accounts for approximately 30% of the country's GDP. The region mainly has a high concentration of companies in the manufacturing field along

with overseas investment, leading to growing the handling volume. The container handling volume of Tanjung Priok Port, which accounts for 90% or more of the cargo in the Jakarta Metropolitan Region and around 50% of the entire country's cargo, is 6.9 million TEU (data for 2018), but demand of container handling volume is expected to rise to 10.2 million TEU in 2025. Therefore, in 2016 New Priok Port (Kalibaru Terminal) commenced operations nearby the port[3]. In addition, ground transportation in the Jakarta Metropolitan Region is faced with chronic congestion, giving rise in need for faster cargo transportation and diversification of cargo transportation volume. In addition, aimed at drastic improvement in the Jakarta Metropolitan Region's logistics, development of a new port is underway at the east of the Jakarta Metropolitan Region separate from the Tanjung Priok Port area[4].

In light of the above, throughout the time of the project's appraisal and the time of the ex-post evaluation, the need for port facility development and securing capacity of container handling volume are recognized as important; thus, consistency with development needs is acknowledged.

3.1.3 Consistency with Japan's ODA Policy

Prior to the start of this project, Japan's Ministry of Foreign Affairs formulated *the Country Assistance Policy for Indonesia* in 2001, which cited the following as key fields: (1) achieving equality, (2) human resources development and education, (3) environmental conservation, (4) support for industrial restructuring and (5) development of industrial infrastructure (economic infrastructure). Additionally, *the Medium-Term Strategy for Overseas Economic Cooperation Operations* prepared by JICA in April 2002 positioned "infrastructure development aimed at economic growth" as a key field and stated as a specific measure that assistance will be provided in order to promote economic growth through economic and social infrastructure development. In addition, JICA (Former JBIC) formulated *the Country Assistance Strategy* in October 2003, which cited "develop an environment for the growth of private sector-led investment" as one key issue.

This project involved the widening of shipping lanes and improvements such as increasing depth, etc. to address growing demand for container handling volume at Tanjung Priok Port, and

[3] Container capacity at New Priok Port (Kalibaru Terminal) will be 1.5 million TEU per year, with further expansion planned (+1.5 million TEU per year). This port was constructed by a Japanese consortium headed by Mitsui & Co., Ltd. A joint venture company called New Priok Container Terminal 1 (NPCT 1), which includes IPC II, Mitsui & Co., Ltd., NYK Line, and Singapore's PSA International, is in charge of the port's operation.

[4] Indonesia's Ministry of Transportation conducted the review for the new port's development in 2015, and selected the Patimban area of Subang in West Java as the most ideal candidate for the new port's development. It requested the *Patimban Port Development Project* from Japan and in 2017 JICA concluded an ODA loan agreement (approved amount of 118.9 billion yen). This is one of the measures to support "Demand of container handling volume is expected to rise to 10.2 million TEU in 2025" in the main text.

contributed to the economic growth of Indonesia, which matches the key fields, etc. noted above. Consequently, consistency with Japan's ODA policy is acknowledged.

This project has been highly relevant to Indonesia's development plan and development needs, as well as Japan's ODA policy. Therefore, its relevance is high.

3.2 Efficiency (Rating:②)

3.2.1 Project Outputs

This project took place at the Tanjung Priok Port and involved the widening and dredging of waterways inside and outside the port, along with improvements of roadways inside the port. Table 1 presents the project's output plan and results.

Table 1: Planned Outputs and Actual Results of this Project

Plan at the time of the appraisal (2004)	Results at the time of the ex-post evaluation (2018)
1) Construction of breakwater (1,695 m) 2) Widening of shipping lanes (125 m in one direction → 300 m in both directions) 3) Dredging (average of 4 m, 8.255 million m^3) 4) Improvements to existing roads inside the port (7,180 m^2) 5) Consulting services (detailed design, bid assistance, construction supervision, operation and maintenance assistance)	1) Construction of breakwater: reduced from initial plan (1,469 m) 2) Widening of shipping lane: as planned (two-way traffic; 300 m in both directions) 3) Dredging: almost as planned (average of 4 m, 8.019 million m^3) 4) Improvements to existing roads inside the port: developed by IPC II using its own funds (not implemented using this project's funds) 5) Consulting services: as planned [Additional outputs] Navigation and support system (supervision and control system): 1

Source: Document provided by JICA, answers to the questionnaires and site survey (actual at the time of ex-post evaluation).

The following provide analysis concerning the differences between the plan at the time of the project appraisal and the results at the time of the ex-post evaluation appearing in Table 1:

1) Construction of breakwater

During the project implementation, container handling volume at Tanjung Priok Port increased and the development of a new terminal was considered[5]. Dealing with the safe and efficient

[5] Specifically, New Priok Port (Kalibaru Terminal) explained in 3.1.2 Consistency with Development Needs of Indonesia.

entering and leaving of ships was also important. The executing agency decided on a policy to reduce the length (m) of the breakwater while confirming the project's effects would be secured by development of the project's breakwater[6];

2) Widening of shipping lane

Implemented as planned. The expansion of shipping lanes by this project enabled two-way passages, contributing to alleviate the congestion caused by ships entering and leaving port and to promoted safety;

3) Dredging

Implemented almost as planned. There is roughly 200,000 m^3 difference between the plan and the results, but according to the Indonesia Port Authority, this difference can be explained by the topography of the sea floor. Specifically, in the initial plan the dredging amount was estimated based on the measured depth, but the difference arose due to undulation in the actual topography.

The dredging secured a depth of 14 m in the waters of the shipping lanes[7]. Furthermore, after the completion of this project, IPC II carried out dredging of further 2 m using its own funds, securing a depth of 16 m. As a result, it is possible for 16,000 TEU class ships to enter and leave the port[8];

4) Improvements to existing roads inside the port

Removed from the scope of this project. This is because during the project implementation in April 2008 DGST removed eight of the 11 existing road sections for improvement per 4) from the scope of the ODA loan and submitted a request to JICA saying IPC II would like to complete the work using its own funds, and JICA agreed to this request. As a result, the scope of this project was reduced to three sections ([1] expansion of existing roads [Pulau Payayun Road], [2] construction of new roads, and [3] construction of Pasoso elevated interchange). The road improvement work on the eight sections excluded from the scope was completed by July 2013 by IPC II using its own funds[9]. Later, the development of the three sections still remained, but IPC II decided to use its own funds to complete all development so that no additional delays would be

[6] Through this study, interviews with the Indonesia Port Authority and IPC II and visual inspections during site surveys confirmed that there is no influence on entering or leaving port, the number of sailings, or the initially planned safe operations.

[7] Prior to the start of this project, there were places with a depth of 10 m, 12 m and 14 m, and the sea floor was not flat in the vicinity of shipping lanes, but now all areas have a depth of 14m.

[8] In case of a depth of 14 m, ships up to approximately 15,000 TEU can enter and leave the port.

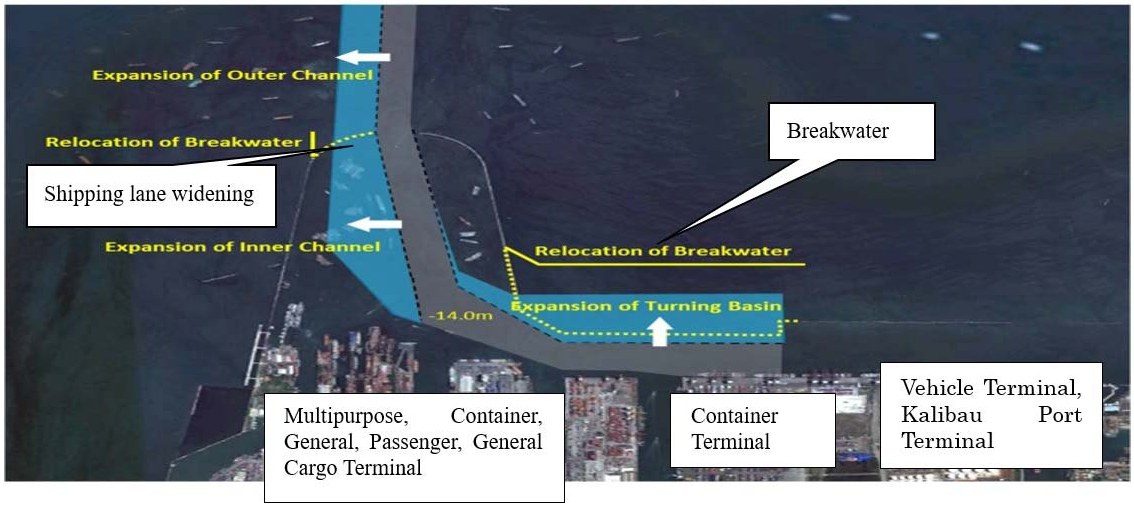
[9] This is because of delays in the procurement of the consultant after the start of the project, and DGST was unable to finalize purchase negotiations with Indonesian Railway Company (PT.KAI) concerning land for one of the sections (Pasoso elevated interchange). PT.KAI agreed to a lease and not to sale, because it was unwilling to sell the land. According to interviews with DGST, this is because PT.KAI expected to receive large sums of income by leasing the land.

incurred or no internal procedures would be required. According to interviews with IPC II, for some sections, work was carried out to avoid impacts on the flow of traffic by developing detours inside the port. When these locations were visited at the time of this field survey, it was confirmed that no particular influences were occurring; and

5) Consulting Services

Implemented as planned.

Furthermore, one navigation support system (supervision and control system) was introduced as an additional output[10]. As explained in 3.3.1 Effectiveness and Quantitative Effects, during the project implementation, Tanjung Priok Port introduced this system to reinforce its communication system and realize safe operations as the number of ships was increasing.



Source: Documents provided by DGST

Figure 1: Location of Project Site (Tanjung Priok Port)

[10] The procurement amount is about 120 million yen. Moreover, the installation site was onsite at IPC II, which is in the middle south side of Figure 1: Location of Project Site (Tanjung Priok Port).

Source: Documents provided by DGST

Figure 2: Breakwater before the project starts (upper) and after completion (lower)

Photo 1: Improvement site of existing road inside the Port, which was developed by IPC II's Funds

Photo 2: Navigation and support system (Additional Output)

3.2.2 Project Inputs

3.2.2.1 Project Cost

The total project cost at the time of the project's appraisal was planned to be 14,179 million yen (of this 12,052 million yen was covered by ODA loans). The actual total project cost was 11,719 million yen (of this 10,551 million yen was covered by ODA loans), which was within the

plan (approx. 83% of the plan). The main reasons were (1) the cancellation of improvement work on existing roads in the port and (2) the effects of foreign exchange rate fluctuations during the project implementation (yen's appreciation, weak rupiah's depreciation).

3.2.2.2 Project Period

Table 2 shows the project's initially planned and actual periods. At the time of the project's appraisal, the project period was planned for six years and four months from March 2004 to June 2010 (76 months). However, the actual project period was 10 year seven month period from March 2004 to September 2014 (127 months), exceeding the plan (approx. 167% of the plan)[11]. The main reasons for this was delay of consultant procurement procedure, bid failure related to procurement of the construction supervising consultant and the need to conduct the bid over again. Specifically, at the time of initially selecting this consultant, only one company had bid; therefore, according to the rules of the Government of Indonesia, bid procedures were cancelled and the bid had to be carried out again. In addition, another reason that can be cited is the time required for the bidding procedure and the document approval procedure within DGST.

Table 2: Planned and Actual Periods

	Planned	Actual
(Whole project)	March 2004–June 2010 (76 months)	March 2004–September 2014 (127 months)
1) Selection of Consultant	March 2004–February 2005	May 2006–November 2009
2) Consulting Services	March 2005–June 2010	February 2010–September 2014
3) Detail Design and Procurement Period of Contractors	March 2005–January 2008	March 2004–February 2012
4) Construction Works	June 2007–June 2010	March 2012–September 2014
5) Warranty Period	July 2010–June 2011	October 2014–September 2015

Source: JICA's documents, Answers to the questionnaires

3.2.3 Results of Calculations for Internal Rates of Return (Reference only)

Financial Internal Rate of Return (FIRR)

The Financial Internal Rate of Return (FIRR) was recalculated at the time of the ex-post

[11] Furthermore, through interviews with DGST, the Indonesia Port Authority, and IPC II, the definition of project completion was confirmed as the time at which construction is completed. The basis for this definition is the fact that ships began entering and leaving the port and operation and maintenance commenced at the same time as the project completion.

evaluation based on revenue from the port usage fees as the benefits and using the construction cost and using operation and maintenance costs required for this project as costs, and assuming a project life of 30 years. The result was 9.0%, which is slightly higher than 8.26% calculated at the time of the project's appraisal. The main factor behind this is believed to be steadily increasing income from port fees (annual growth rate of 10% over the most recent four years).

Economic Internal Rate of Return (EIRR)

The Economic Internal Rate of Return (EIRR) was recalculated at the time of the ex-post evaluation based on reduced waiting time for ships and cargo as the benefits and using the project construction costs and facility maintenance costs as costs, and assuming a project life of 30 years. The result was 22.95%, which is higher than 18.9% assumed at the time of the project's appraisal. Reason for this is that the dredging and shipping lane safety improvements provided by this project have confirmed to still have a higher degree of effects on reducing wait times, although wait times for ships and cargo have increased slightly at the time of the ex-post evaluation due to the increase in container handling volume.

[Summary of Efficiency]

Outputs were implemented almost according to plan. Also, project cost was within the initial plan due to the influences of foreign exchange rate fluctuations (strong yen and weak rupiah) and the cancellation of improvements to the existing roads at the port. The project period exceeded the initial plan mainly due to delays in the procedures for the procurement of the consultant. Based on the above, the project cost was within the plan and the project period exceeded the plan, and therefore, efficiency of the project is fair.

3.3 Effectiveness and Impacts[12] (Rating:②)

3.3.1 Effectiveness

3.3.1.1 Quantitative Effects (Operation and Effect Indicators)

Table 3 shows quantitative effect indicators (baseline, target and actual) of this project.

Table 3: Operation and Effect Indicators (baseline, target and actual) of This Project

Indicators (Unit)	Baseline (Before start of the Project)	Target (: two years after completion)	Actual		
			2016 (Two years after completion)	2017 (Three years after completion)	2018 (Four years after completion)
1) Domestic Passengers (Unit: 1000 people)	1,672 (2000)	2,282	229	200	213
2) International Passengers (Unit: 1000 people)	0 (2000)	200	18	7	19
3) Bagged and General Cargo (Unit: 1000 ton)	10,357 (2000)	16,248	17,317	17,117	18,991
4) Container Cargo (Unit: 1000 ton)	20,951 (= Equivalent to approximately 2.8 million TEUs) (2000)	41,933 (=Equivalent to approximately 5.8 million TEUs)	5.5 million TEU	6.1 million TEU	6.9 million TEU
5) Ro/Ro Cargo (Unit: 1000 ton)	-	4,801	28.4	81.5	113.9
6) Ro/Ro Vehicle (Unit: Number of vehicle)	-	1,391	473,414	610,259	599,131

Source: JICA's documents (Baseline and Target), Answers to the questionnaires (Actual)

First, there are some differences between the indicators at the time of the project's appraisal and the indicators obtained by information collected through this survey. As background, at the time of this project's appraisal, 3) bagged cargo had a standard figure of 47,963 thousand tons and a target figure of 80,829 thousand tons; 4) general cargo had a standard figure of 43,437 thousand tons and a target figure of 80,829 thousand tons. However, after verifying the indicators at the time of the project's appraisal through interviews with the executing agency, etc., and carefully examining the content of existing documents (*Study for Development of Greater Jakarta Metropolitan Port*[13]), this survey found that content of Table 3, or in other words, would be more realistic if the standard figure for 3) Bagged and general cargo is 10,357 thousand tons and target figure is 16,248 thousand tons, and if the standard figure for 4) Container cargo is 20,951 thousand tons (converted to approx. 2.8 million TEU) and the target figure is 41,933 thousand tons

[12] Sub-rating for Effectiveness is to be put with consideration of impacts.
[13] Survey report with quantitative effect indicators set for Tanjung Priok Port (submitted in December 2003)

(converted to approx. 5.8 million TEU)[14]. With regard to container handling volume, first of all, at the time of the project's appraisal, it was clearly stated that this project only exerts the limited effect of extracting the potential of the cargo handling equipment because it does not include the project to increase the cargo handling equipment in the port (i.e. land creation accompanied by landfill). Therefore, it is considered that the container handling volume was not set as an indicator. However, as stated in 3.1.2 Consistency with Development Needs of Indonesia, "In 2006, the port's container handling volume was expected to exceed its capacity limit (3 million TEU)," and from the time of the project's appraisal, it was clear that container cargo and the entering and leaving of ships transporting this cargo would increase. Also, in the mid-term review survey, container handling volume was mentioned as one of the operation effect indicators to be referred to. Furthermore, container handling data were collected through the ex-post evaluation survey; therefore, there is meaning in measuring container cargo as a supplementary indicator for effectiveness and quantitative effects. As a result, in this evaluation, the indicators of container cargo that were not used at the time of project's appraisal are listed in Table 3 and organized as analysis targets.

Next, target figures at the time of the project's appraisal were set two years after completion. Completion of the main construction for this project was in September 2014; therefore, the second and subsequent years after completion (2016 and later) is set as the target year, and comparison and analysis were carried out for target figures and actual figures for 2016 to 2018. As for target figures, according to interviews[15] with business stakeholders, particularly with regard to Ro/Ro cargo and Ro/Ro vehicles, it was not clear whether targets were compiled based on sufficient statistical information or how exactly they were set at the time of the project's appraisal[16]. Given this situation, the review was carried out as follows.

1) Domestic passenger traffic and 2) International passenger traffic

The actual figures indicate that none of the target figures have been attained. As indicated above,

[14] As background, the indicators at the time of the project's appraisal (2004) had weak supporting evidence and the reason why they were set was unclear. Therefore, it was determined that it would not be appropriate to link the indicators at that time with the evaluation judgement using the ex-post evaluation survey. When DGST and the Indonesia Port Authority were asked about the indicators set in the *Study for Development of Greater Jakarta Metropolitan Port*, they promised that the standard and target figures for bagged cargo, general cargo and container cargo, in other words the 3) Bagged and General Cargo from 3) and the same figures for Container Cargo from 4), is realistic. Therefore, of the indicators at the time of the project's appraisal (2004), the standard and target figures for 3) Bagged and General Cargo and 4) Container Cargo were revised.

[15] Interviews with DGST, the Indonesia Port Authority, IPC II, the JICA Indonesia Office, etc.

[16] Comments from the Indonesia side included: "During project implementation, there were many tasks at Tanjung Priok Port such as cargo handling, transportation, logistics, and development inside facilities, making it extremely chaotic and congested. A system for monitoring various data and data management was not in place. At the time of the project's appraisal (around 2003 to 2004), this situation should have been even more chaotic, but no one is around who knows about the situation at the time. It is believed that some form of estimates was probably used."

it is unclear how the standard and target figures at the time of the project's appraisal were set, but they have been declining since the start of this project[17]. The main reason is growth in domestic air transportation demand year by year. In particular, in recent years a growing number of low cost carriers (LCC) have entered the market. Expanding air travel routes and lower fares have caused the number of passengers using Tanjung Priok Port to decline. According to the Indonesia Port Authority and cruise ship operators that use the port, "Passenger traffic is declining a little every year, while the convenience of air travel is growing."

3) Bagged cargo and general cargo

Exceeded the target figure. According to the Indonesia Port Authority and IPC II, this is because "While it depends on the economic situation, in recent years the Jakarta Metropolitan Region is seeing infrastructure development and there is a definite trend of increasing handling volume of cement and other construction materials (bagged cargo)."

4) Container cargo[18]

A comparison using TEU equivalent indicates that the actual figure exceeds the target figure. The reasons are the entry of companies in the manufacturing field and concentration of overseas investment, in addition to economic vitalization and progress of infrastructure development in the Jakarta Metropolitan Region, located nearby, in recent years. As discussed in 3.1.2 Consistency with Development Needs of Indonesia, a new port is expected to open since Tanjung Priok Port alone faces limitations in container handling volume in the future. Furthermore, for reference, Table 4 presents the demand forecast for container handling volume used in the feasibility survey prepared prior to the start of this project. The results data for 2018 in Table 3 (6.9 million TEU) surpasses the demand forecast for that year, indicating robust growth.

[17] Although these are the total number of international and domestic passengers, as the changes in data from 2007 to 2015, 452 thousand in 2007, 575 thousand in 2008, 427 thousand in 2009, 423 thousand in 2010, 427 thousand in 2011, 398 thousand in 2012, 386 thousand in 2013, 316 thousand in 2014, 271 thousand in 2015.

[18] In the case of general cargo, etc., loading requires many workers. Since there are days where work is not possible due to the weather, sometimes loading and unloading do not go according to schedule, causing delays in product arrival or departure. However, in the case of container cargo, the use of large cranes makes loading quick and easy, and this work is rarely affected by weather. There are few times when arrival at or departure from port does not go according to schedule. This provides ship companies with the benefit of being able to reduce transportation costs and the number of days in transit. In addition, container ships operate at high speeds and are seaworthy, while they also have large openings on their upper decks and reinforced hulls. As stated above, general cargo, etc., and container cargo have unique characteristics. Considering container handling volume was expected to grow at Tanjung Priok Port from the initial start of the project, there is meaning in including container cargo in the evaluation indicators as a supplemental indicator per Table 3.

(Reference) Table 4: Trends of Tanjung Priok Port's Container Handling Volume
(Demand Forecast Prior to the Start of this Project)

(Unit: thousands of TEU)

2005	2010	2015	2016	2017	2018
2,963	4,092	4,404	4,474	4,569	4,663

Source: Feasibility study documents

5) Ro/Ro Cargo

Did not reach the target figure. However, as explained in the introduction, this survey did not determine how the target figures were established. Meanwhile, with regard to actual figures in recent years, IPC II commented, "Small scale Ro/Ro ships are being operated. The target figure is unknown." As a result, it is difficult to compare Ro/Ro cargo before and after the project.

6) Ro/Ro Vehicles

As explained in the introduction, the basis for setting the standard figures and target figures is unclear, but the actual figures are higher. According to interviews with project stakeholders such as DGST, the Indonesia Port Authority, IPC II, etc., "Prior to this project's appraisal, Ro/Ro vehicles were used on several occasions to transport new vehicles or used vehicles between islands domestically in Indonesia." On the other hand, from 2006 to 2007 after the start of this project, a vehicle terminal was developed at Tanjung Priok Port, and as a result, transportation via this port to neighboring countries became more active.[19] The target figure at the time of the project's appraisal (1,391 vehicles) is believed to be a numerical target that did not consider the development of a vehicle terminal[20]. Since it is believed the number of vehicles did not consider the completion of this terminal, comparison of the target figure and actual figures is not appropriate.

(Reference) Number of ships entering and leaving

For reference, Table 5 presents the trends in the number of ships entering and leaving Tanjung Priok Port. As explained above, at the time of the ex-post evaluation, 16,000 TEU-class ships can enter and leave the port, which is because sufficient depth was secured (up to 16 m) and shipping lanes was widened, and it is surmised that this also contributes to the safe operation of ships, which were increasing[21].

[19] It was confirmed through interviews with project stakeholders that the number of vehicles manufactured and assembled in Indonesia is increasing and the volume of exports to neighboring countries (Thailand, Vietnam, India, etc.) is on the rise, too.

[20] Detailed accounts could not be obtained through interviews, but the reason is that the annual figure of 1,391 vehicles is too small considering the size of facilities located to Tanjung Priok Port.

[21] According to the Indonesia Port Authority and IPC II, no major accidents have occurred in recent years.

(Reference) Table 5: Number of Ships Entering and Leaving Tanjung Priok Port
(Actual Figures)

(Unit: Numbers of ships)

2005	2010	2015	2016	2017	2018
15,384	16,707	31,780	33,370	34,662	35,771

Source: IPC II

Photo 3: Tanjung Priok Port (1)

Photo 4: Tanjung Priok Port (2)

3.3.1.2 Qualitative Effects

Prior to the start of this project, this project was expected to secure the transportation efficiency and safety of ships at Tanjung Priok Port and improve ground access through the development of roads inside the port. The width of shipping lanes in the area[22] where ships enter and leave the port was 125 to 150 m (one-way travel), but through this project's shipping lane widening, the average width increased to 300 m, making two-way travel possible. In addition, dredging (approx. 200,000m^3) achieved a depth of 14 m (however, as described above, currently the depth is 16 m at the time of the ex-post evaluation), which makes it possible for ships to quickly and safely enter and leave the port. In addition, the construction of a breakwater and introduction of a navigation and support system mean that the breakwater reduces impacts from large waves during inclement weather and the system makes it possible for ships to safely dock and disembark inside the port. At the time of the ex-post evaluation, ships of up to 16,000 TEU can enter and leave the port. In light of the above, it is judged that this project contributes to securing the transportation efficiency and safety of ships in the port[23]. Furthermore, existing roads inside the port were improved by IPC II using its own funds, and a person in charge at IPC II commented that, "Prior to the improvements, some parts of these roads were not paved sufficiently, but now the paved area has

[22] Mainly indicates outside shipping lanes, inside shipping lanes and turning area (area where ships make turns inside the port).
[23] The shipping lane width of 300 m (two-way movements) and water depth of 16 m, etc., in the area where ships enter and leave the port are specified in Ministerial Decree No. 17 2017 (DGST decree on shipping lanes) and Ministerial Regulation No. 57 2015 (DGST decree on navigation).

increased and control equipment such as traffic signals has been introduced, facilitating the flow of traffic." Based on this comment, it is judged that transportation access within the port is improving.

3.3.2 Impacts

3.3.2.1 Intended Impacts

Contribution to expanding functions as an international hub port

Table 6 presents the water depth and container handling volume of Tanjung Priok Port and major Southeast Asian ports. The water depth in the main areas of Tanjung Priok Port is no longer inferior to that of major Southeast Asian ports.

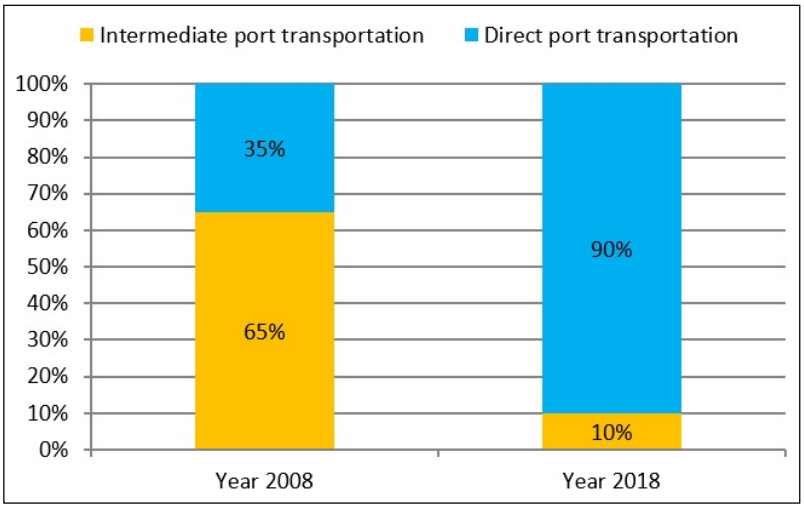
Table 6: Water Depth and Container Handling Volume of Tanjung Priok Port and Major Southeast Asian Ports

Name of port	Depth *Note (m)	Container Handling Volume Million TEU (year)
Hong Kong	14.0 - 16.5	20.8 (2017)
Singapore	14.8 - 18.0	33.7 (2017)
Port Klang	15.0 - 17.5	13.2 (2016)
Laem Chabang	14.0 - 16.0	7.67 (2017)
Tanjung Priok	10.0 - 16.0	6.10 (2017)

Source: Hong Kong Marine Department, Maritime and Port Authority of Singapore, Port Klang Authority, Port Authority of Thailand, IPC II
Note: The variance of water depth is due to the water depth of shipping lanes and water depth of other locations. The deepest depth corresponds generally to the water depth of shipping lanes.

Figure 3 presents changes in intermediate port transportation and direct transportation of cargo handled in Tanjung Priok Port. The year 2008 was prior to the start of this project's construction of a breakwater and dredging and the year 2018 is after completion of this work. The percentage for intermediate port transportation indicates cargo transported to the port via another port, while direct transportation involves cargo transported directly from the port to ports in Europe, North America, Japan, etc. Container ships are categorized into large ships that only travel in deep shipping lanes and call on major ports with highly developed facilities and small ships that serve feeder routes connecting major ports with other small- or medium-sized ports. Prior to the start of this project, many large ships called on this port after reloading cargo at another larger port such as Singapore, without heading directly for this port. In other words, this port was generally served by feeder transportation of ocean-going container ships. The reason is that this port's depth was shallower than other ports and its shipping lanes were narrower. Up until the time of the ex-post evaluation, however, a deeper depth (16 m) and wider shipping lanes (two-way traffic:

average of 300 m in both directions) were secured at the port. As a result, the safety, speed, and efficiency of ships entering and leaving the port were increased, making it possible for ships of up to 16,000 TEU to enter and leave the port. DGST, the Indonesia Port Authority, and IPC II commented that "Compared to at the start of this project, ships now call directly on Tanjung Priok Port without first stopping in another major port such as Singapore. Container handling volume has increased and the port is increasing its functions as an international hub port. Revenue from the port's cargo handling fees, cargo storage fees, etc. is also increasing. We also believe transportation costs and time are being reduced for ship companies, trading companies, insurance companies, etc." Based on the above, it is judged that this project has fulfilled a role in contributing to the expansion of the functions of Tanjung Priok Port as an international hub port.



Source: Documents from DGST and IPC II

Figure 3: Changes in Intermediate Port Transportation and Direct Transportation of Cargo at Tanjung Priok Port

(The year 2008 indicates the situation prior to the start of this project's construction of a breakwater and dredging and the year 2018 indicates the situation after completion of this work)

As reference, Table 7 presents the changes and comparison of import and export value for Tanjung Priok Port and the whole Indonesia. In addition, Figure 4 presents changes in Indonesia's foreign direct investment (FDI) and Figure 5 shows data for the investment amounts by country (actual figures for 2018). At the time of the ex-post evaluation, it is believed that large quantities of construction materials are being distributed through the port to the Jakarta Metropolitan Region where the construction industry is booming. As indicated in Table 7, given that the port's import and export value is increasing with each passing year, and that the port accounts for a large percentage of 30 to 40% of Indonesia's total import and export value at the time of the ex-post evaluation, it is believed that increases in transactional volume at Tanjung Priok Port underpins

Indonesia's economy. Furthermore, as indicated in Figure 5, given that the investment amount from Japan is relatively large (2nd most after Singapore), it is believed this project contributes to the national interests of both Japan and Indonesia.

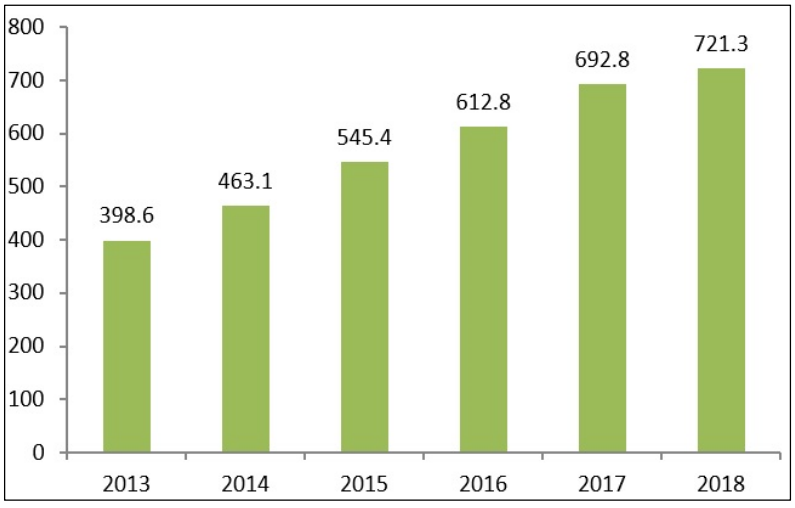
(Reference) Table 7: Changes and Comparison of Import and Export Value for Tanjung Priok Port and Whole Indonesia

(Unit: Million US dollars)

Year	Tanjung Priok Port		Whole Indonesia	
	Export	Import	Export	Import
2004	21,696	21,074	71,585	46,525
2005	24,074	24,227	85,660	57,701
2006	26,076	24,267	100,799	61,066
2007	28,011	30,899	114,101	74,473
2008	31,692	54,384	137,020	129,197
2009	28,163	40,917	116,510	96,829
2010	34,238	60,072	157,779	135,663
2011	40,079	77,261	203,497	177,436
2012	42,699	81,103	190,032	191,691
2013	41,708	77,412	182,552	186,629
2014	42,599	72,616	175,981	178,179
2015	40,681	58,736	150,366	142,695
2016	40,462	58,169	145,186	135,653
2017	45,311	66,822	168,828	156,986
2018	44,331	70,886	165,882	173,346

Source: Statistics Indonesia (BPS)

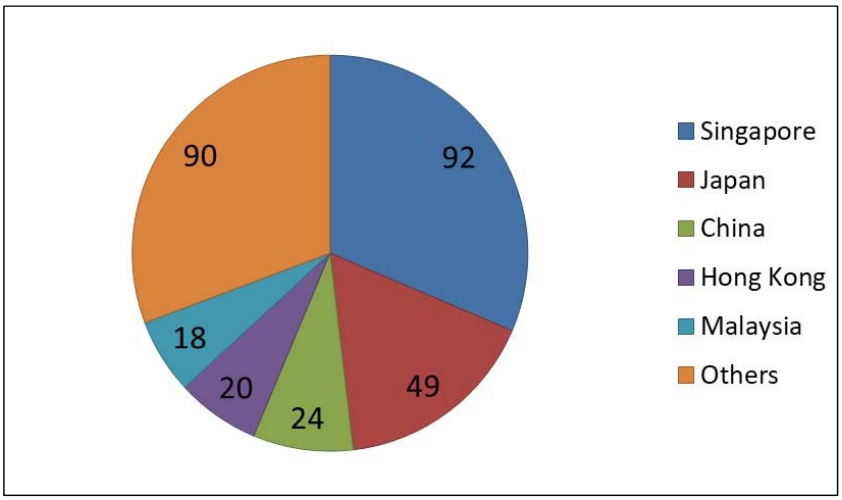
(Unit: Trillion Rupiah)



Source: Indonesia Investment Coordinating Board (BKPM)

(Reference) Figure 4: Amount of Direct Investment from Abroad to Indonesia (FDI)

(Unit: 100 million US dollars)



Source: Indonesia Investment Coordinating Board (BKPM)

(Reference) Figure 5: Investment Amounts by Country (Actual figures for 2018)

3.3.2.2 Other Positive and Negative Impacts

1) Impacts on the Natural Environment

The Environmental Assessment Report (ANDAL), *Environmental Management Plan* (RKL) and *Environmental Monitoring Plan* (RPL) regarding this project were approved by Indonesia's Ministry of Environment and Forestry in March 2004.

IPC II is responsible for environmental monitoring and inspections at Tanjung Priok Port. According to answers to the questionnaires and interviews with DGST, the Port Authority, and the IPC II, during the project implementation and after completion, no environmental issues occurred in terms of air pollution, water quality, noise, vibrations, impacts on the ecosystem, etc. If a problem were to occur (e.g. water pollution caused by an oil spill from a ship, etc.), IPC II is required to report immediately to the Indonesia Port Authority and Ministry of Environment and Forestry. Furthermore, IPC II submits an environmental monitoring report to the Indonesia Port Authority on a quarterly basis[24]. Table 8 contains a comparison of environmental monitoring data measured inside the port with Indonesia's water quality standards (examples), which could be confirmed through this survey. All items of water quality are within the Indonesian water quality standards and no problem is identified.

[24] The Indonesia Port Authority supervises the environmental monitoring of IPC II.

Table 8: Environmental Monitoring Measurement Data (Top) and
Indonesia's Water Quality Standards (Bottom)

	First quarter of 2018 (actual figures) *Note 1			
	Total Suspended Solids (TSS)	Oil	PH	Cadmium (Cn)
Average value for 10 measurement locations inside the port	45.56 mg/l	0.39 mg/l	7.98	0.001 mg/l or less
Indonesia's Water Quality Standards *Note 2	80 mg/l or less	5 mg/l or less	6.5 - 8.5	0.01mg/l or less

Source: IPC II
Note 1: Average data for the first quarter of 2018 (actual figures for indicators are main data only)
Note 2: Decree of the State Minister of the Environment: "Number 51of 2004 Regarding Standard Quality of Seawater (Appendix I)"

Dredged sediment is treated and disposed of appropriately. Sediment is disposed of in waters 40 to 50 km off the coast following the country's laws. An affiliated company of IPC II is contracted to perform dredging work. Every year, IPC II estimates the necessary dredging amount and consigns the work to an affiliated company once a every year after applying for budget. In addition, it was confirmed by interviews with DGST, the Port Authority, and the IPC II that there were no complaints from fishermen on water pollution caused by dredging and dumping of gravel, sediment, and decrease in the catch amount.

2) Resettlement and Land Acquisition

There was no land acquisition or resettlement under this project, since this project was only construction within the port facilities.

[Summary of Effects and Impacts]

Regarding quantitative effects, domestic passenger traffic and international passenger traffic of Tanjung Priok Port have seen a downward trend in ship passenger traffic due to an increase in air travel demand. Bagged cargo and general cargo, along with container cargo, have differing standard figures and target figures at the time of the project's appraisal, but when comparing with the target figure data scrutinized in this survey, figures exceed the standard figures. In regard to Ro/Ro cargo and Ro/Ro vehicles, the method for setting standard figures and target figures was unclear; thus, a strict comparison with actual figures is difficult. On the other hand, regarding the securing of transportation efficiency and safety of ships, given that positive comments were obtained from project stakeholders and direct transportation from intermediate ports to the port is

increasing after the start of this project, it is believed that Tanjung Priok Port is expanding its functions as an international hub port. Based on a holistic review of the above, the effectiveness and impact of the project is judged to be fair.

3.4 Sustainability (Rating: ③)

3.4.1 Institutional/Organizational Aspects of Operation and Maintenance

The executing agency of this project is DGST. However, the Indonesia Port Authority, an organization under DGST, is substantially responsible[25]. Yet, IPC II is mainly responsible for the port operation and maintenance work for this project[26].

The IT Systems Department of IPC II is mainly responsible for the dredging of shipping lane locations developed by this project along with the operation and maintenance of the navigation and support system. The staff of this department are also in charge of the roads developed inside the port using IPC II's own funds. Four persons are responsible for dredging and the navigation and support system, while six persons are in charge of roads inside the port. As explained in 3.4.4 Status of Operation and Maintenance, the need for maintenance of the breakwater will be reviewed during 2019 and the situation is expected to be addressed in 2020 as needed.

In this survey, through questionnaires and interviews with the senior management of each organization, it was confirmed that no problems have been observed in terms of the personnel aspects, functional aspects in terms of organizational structure, the Indonesia Port Authority's system[27] for supervising IPC II and initiatives related to the use of the port's facilities, and the situation of IPC II securing and storing equipment for maintenance. The Indonesia Port Authority and IPC II commented that "Each organization has a sufficient workforce and field operations are being carried out with the right organizational structure."

In light of the above, it is determined that there is no problem in terms of the operation and maintenance system of this project.

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[25] The Indonesia Port Authority has the responsibility, supervision and authority for various approvals regarding the facilities, equipment, etc., of Tanjung Priok Port. In addition, it is in a position to supervise IPC II. The Indonesia Port Authority and IPC II conclude long-term concession agreements and approve the use of the port's facilities. Furthermore, every year IPC II pays on average 2.5% of the total revenue (sales) from port usage fees and warehouse storage fees to the Indonesia Port Authority as concessions.

[26] IPC II employs a workforce of 519 (the total number of people working at the Tanjung Priok Port Bureau). Furthermore, IPC II is a state-owned enterprise whose stock is owned by the Government of Indonesia.

[27] IPC II underwent an organizational restructuring and realignment in 2016. There was some turnover of staff and budgeting/financial operations, and some operations were spun off into separate companies, but it was confirmed through interviews with IPC that these changes will not have any impact on the operation and maintenance of this project.

3.4.2 Technical Aspects of Operation and Maintenance

Highly experienced staff are assigned to IPC II. Through interviews with IPC II's staff, it was confirmed that they have in-depth knowledge of operation techniques and maintenance methods for dredging equipment and ships. Many employees who engage in operation and maintenance work are civil, electrical or mechanical engineers and possess qualifications of at least a degree from a four-year university. In addition, regarding training, as one example, IPC II hosts training throughout the year that covers the topics of "port seminar on dredging," "basics of project management," and "equipment and material inspections for civil engineering works." IPC II's employees take part in this training. In addition, it was confirmed that IPC II carries out on-the-job training (OJT) for newly hired staff at the appropriate time.

IPC II has also prepared a manual on operations and maintenance practices, including dredging. It was confirmed that maintenance is carried out following this manual as needed. Moreover, it was confirmed through questionnaires and interviews with employees in charge that information sharing is also taking place between employees on maintenance technologies and techniques.

In light of the above, it is determined that there is no technical problem in terms of operation and maintenance of this project.

3.4.3 Financial Aspects of Operation and Maintenance

Table 9 contains the required maintenance budget allocated by IPC II (Tanjung Priok Port Branch), which is responsible for operation and maintenance, for dredging and roads inside the port (maintenance portion covered by its own funds) and Table 10 provides the financial income and expenditure situation of the branch (for the most recent three years).

Table 9: Operation and Maintenance Budget Regarding Dredging and Roads inside the Port

(Unit: 100 million Rupiah)

	2017	2018	2019
Dredging	Approx.500	525.8	1,228.4
Roads inside the Port	120.75	75.01	90.33

Source: IPC II

Table 10: Financial Situation of Tanjung Priok Branch Office, IPCII (Last three years)

(Unit: 100 million Rupiah)

Year	Total Sales	Operating Expenses	Operating Income	Pre-tax Income
2016	1,004.5	1,879.9	-875.4	-185.9
2017	15,275.0	9,088.8	6,186.2	5,975.2
2018	17,613.5	9,591.1	8,022.4	8,088.5

Source: IPC II

IPC II is an independent organization that carries out operations using its own funds, relying on port operation revenue without subsidies or support from other organizations. In interviews, the senior management and persons in charge of finance for IPC II commented, "We have secured a sufficient budget for dredging and roadwork inside the port. We establish a budget as needed and we have not experienced impacts on maintenance due to budgetary shortfalls. Expenditures needed for equipment purchases or repairs are made without delay." As Table 9 indicates, the budget required for dredging in 2019 was larger than the previous year, which is because relatively larger scale dredging[28] was carried out and ample budget was set aside for this work. According to the branch, such large-scale dredging is conducted once in several years, but on a single year basis, a budget of approximately 50 to 60 billion rupiah is allocated for the shipping lane area. As commented above, it was noted that no shortfalls have occurred and the budget fully meets requirements. The budget for operation and maintenance of roads inside the port declined year on year in 2018, but according to IPC II, there was a need to carry out large-scale paving and installation of traffic signal facilities, which necessitated a large budget be appropriated. There was no budget shortfall in 2018, instead the necessary budget was set aside and allocated. The same holds true for 2019.

As Table 10 indicates, IPC II's most recent profit before income tax is growing. The reason why total sales and operating costs for 2016 are lower than the other two years is that 2016 was the transition period for the organizational restructuring and finances were reorganized following relevant departments being spun off into individual companies. This does not particularly mean that sales are declining. In interviews, senior management and persons in charge of finance of IPC II commented, "Cargo handling volume is rising each year and sales are growing. Our financial condition has not been negatively impacted, including in 2016 following financial reorganization after spin offs, and we are able to fully fund financial needs (including the budget for operation and maintenance in Table 9) using our own funds. Concession fees are paid to the Indonesia Port Authority without delay. We are turning a profit."

Based on the above, it is believed there are no problems in terms of the financial aspects of operation and maintenance.

3.4.4 Status of Operation and Maintenance

At the time of the ex-post evaluation, the breakwater developed by this project is not expected

[28] Furthermore, it carries out dredging in areas around a number of other terminals and berths, in addition to shipping lanes.

to require maintenance due to its structural characteristics. However, the Indonesia Port Authority and IPC II plan to conduct inspections in 2019 and verify the need for maintenance operations. If maintenance work is needed, it says a budget will be set aside and the work will be carried out in 2020. As for dredging, IPC II carries out dredging every year after having secured a budget. IPC II measures the level of accumulated sediment every year from a maintenance boat using sensors. After measuring the required amount, it estimates the work volume and budget. In regard to the navigation and support system, IPC II regularly carries out inspections and operation checks. In addition, IPC II cleans, removes garbage, paves, repairs roads inside the port, etc., on a regular basis.

Sufficient amounts of spare parts for dredging work and the navigation and support system are secured. According to staff in charge of maintenance, there are times when it takes time to complete procurement procedures, but no major delays have occurred to date.

No major problems have been observed in the institutional, technical, financial aspects and current status of the operation and maintenance system of this project. Therefore, the sustainability of the project effects is high.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

This project involved responding to increasing demand of the passenger and cargo handling volume, by widening and deepening the existing shipping lanes, and promoting efficiency of shipping transportation; thereby contributing to enhance Tanjung Priok Port's functions as an international hub port. The relevance of this project is high given the consistency with Japan's ODA policy, the need for improvements and development to address rising container handling volume by way of new terminal construction at Tanjung Priok Port, and the fact that expansion of logistics functions, etc. by development of port and harbor facilities was indicated in *the National Medium Term Development Plan (2000-2004)*, *Master Plan for Port Development and Logistics in and Around Greater Jakarta Metropolitan Area*, etc., formulated by the Government of Indonesia. As for efficiency, project cost was within the initial plan due to the influences of foreign exchange rate fluctuations, though improvements to the existing roads at the port were cancelled. The project period exceeded the initial plan due to delay in the procedures for the procurement of the consultant; therefore, the project's efficiency is fair. As for quantitative effect indicators, since some actual figures did not achieve the target figures, the verification of the

project effect is not possible, but this project has contributed to the safety and efficiency of ships entering and leaving port by dredging shipping lanes and securing access lanes (300m on average: two-way movements enabled) and dredging (secured sufficient depth for ships carrying up to 16,000 TEU to enter and leave the port). In addition, the project is believed to be contributing to some degree to the expansion of the port's functions as an international hub port, based on the fact that direct transportation from intermediate ports is increasing. Therefore, effectiveness and impact of this project is judged to be fair. The sustainability of the effects realized from the project implementation is high, since there are no issues in terms of the institutional, technical, and financial aspects of operation and maintenance of each organization in charge of the operation and maintenance of the project.

In light of the above, this project is evaluated to be satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

None.

4.2.2 Recommendations to JICA

The mid-term review report for this project (2009) recommends, "It is desirable to refer to the relevant indicators (e.g. ship call, general cargo, cargo total, container handling volume (TEUs))." Therefore, it is desirable to carry out the review and re-establishment of related effects and quantitative effect indicators to create an indicator monitoring system aimed at the ex-post evaluation.

4.3 Lessons Learned

(Importance of reviewing the establishment of indicators as needed, based on an appropriate understanding of the environment surrounding the project)

At the time of the project's appraisal, despite expectations that future container handling volume demand would increase, container handling volume was not established as an effectiveness/quantitative effect indicator at the time of the project's appraisal. In addition, at the time of the mid-term review (FY2009), the report for this project (2009) recommended, "It is desirable to refer to the relevant indicators (e.g. ship call, general cargo, cargo total, container handling volume (TEUs)) available from official documents such as the annual report of the port,from the viewpoint of complementing the operation and effect indicators." Nevertheless, container handling volume was not reviewed as an indicator. Detailed background information

could not be obtained, but if cargo, passenger traffic demand, etc., are expected to increase significantly in the future, the project executor and persons in charge of the appraisal should secure the credibility of indicator settings at the time of the appraisal and strive to review indicator settings as needed if a mid-term review is conducted for use in measuring the effects at the time of the ex-post evaluation. If a similar project is formed and implemented in the future, it will be important to measure the effects of the project and ensure monitoring is conducted thoroughly, based on an appropriate understanding of the environment surrounding the project.

Comparison of the Original and Actual Scope of the Project

Item	Plan	Actual
1.Project Outputs	1) Construction of breakwater (1,695 m) 2) Widening of shipping lanes (125 m in one direction → 300 m in both directions) 3) Dredging (average of 4 m, 8.255 million m^3) 4) Improvements to existing roads inside the port (7,180 m^2) 5) Consulting services (detailed design, bid assistance, construction supervision, operation and maintenance assistance)	1) Construction of breakwater: reduced from initial plan (1,469 m) 2) Widening of shipping lanes: as planned (two-way traffic; 300 m in both directions) 3) Dredging: almost as planned (average of 4 m, 8.019 million m^3) 4) Improvements to existing roads inside the port: developed by IPC II using its own funds (not implemented using this project's funds) 5) Consulting services: as planned (detailed design, bid assistance, construction supervision, operation and maintenance assistance) [Additional outputs] Navigation and support system (supervision and control system): 1
2.Project Period	March 2004 - June 2010 (76 months)	March 2004 - September 2014 (127 months)
3.Project Cost Amount Paid in Foreign Currency	7,745 million yen	6,068 million yen
Amount Paid in Local Currency	6,434 million yen	5,651 million yen
Total	14,179 million yen	11,719 million yen
ODA Loan Portion	12,052 million yen	10,551 million yen
Exchange Rate	1 Rupiah=0.014 yen 1USD=118.79 yen （March 2004）	1 Rupiah=0.009 yen 1USD=90.18 yen (Average rate for the period of the construction (2010-2014) based on rates issued by the IMF's International Financial Statistics Data
4. Final Disbursement	June 2016	