Indonesia

Kupang and Bitung Port Development Project

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Field Survey : Sep. 2007 - Mar. 2008

1. Project Profile and Japanese ODA Loan

Map of Project Area

Loading at Completed Container Berth of Bitung Port

1.1 Background

Indonesia is the world's largest country of archipelago comprising more than 15,000 islands which scatter over a vast territory that extends 1,800 km vertically and 5,100 km horizontally. Under this geographical condition, the maritime transportation plays a critical role for inter-island human communication and commodity distribution in Indonesia, and also for redressing the regional economic gap prevailing within the country. As the two ports under this Project are located in East Nussa Tenggara and North Sulawesi Provinces which belong to relatively underdeveloped Eastern Indonesia, their development was much expected also in the scheme of the Eastern Indonesia Development.

1.2 Objective

To strengthen the port capacity by developing port facilities of Bitung Port in North Sulawesi Province and Kupang Port in East Nusa Tenggara Province, and thereby contributing to the regional development of Eastern Indonesia through enhanced maritime transport.

1.3 Borrower/Executing Agency : Government of Indonesia／Directorate

General of Sea Transportation, The Ministry of Transportation

1.4 Outline of Loan Agreement

Loan Amount/Disbursed Amount	5,250million yen/4,997 million yen
Exchange of Notes/Loan Agreement	December 1996 / December 1996
Terms and Conditions - Interest Rate - Repayment Period - Grace Period - Procurement	 2.7%（Consulting Service 2.3%）、 30 years 10 years General Untied
Final Disbursement Date	December 2005
Main Contractors (over 1 billion yen)	Rinkai Construction (Japan) / Marubeni Corporation (Japan) / PT. Adhi Karya (Indonesia) (JV), Tomen Corporation (Japan)
Consulting Services (over 100 million yen)	Japan Port Consultants (Japan) / PT.Wiratman & Associate (Indonesia) (JV)
Feasibility Study(F/S), etc.	The Study on Integrated Modernization Plan for Sea Transportation in Eastern Indonesia, 1994, JICA

Bird's Eye View of Kupang and Bitung Ports

2. Evaluation Result (Rating: A)

2.1 Relevance (Rating: a)

2.1.1 Relevance at the Time of Appraisal

The 6th Five Year National Development Plan (REPELITA VI), 1994~1998, attached importance on the port development with due attention to the regional development of Eastern Indonesia to redress the regional economic disparity. The prioritized objectives for the port development were as follows:

a. Develop international transit ports that function as cargo handling bases.
b. Capacity expansion and facility improvement of non-commercial ports to promote economic development of remote areas.
c. Facility strengthening of inland and regional container transport and cargo distribution bases by developing container, bulk and Ro-Ro[1] facilities to cope with globalized trading.

On the background above to implement the national policy, the Government of Indonesia formulated an integrated master plan for sea transportation (Vol. I, The Study on Integrated Modernization Plan for Sea Transportation in Eastern Indonesia <The Study>) in 1994 assisted by JICA which comprehensively guides the development of 17 transit ports (including Kupang and Bitung) and 85 small ports in Eastern Indonesia up to the year 2005. The Study phased the planned development into 4 stages according to the urgency of the development need and placed Kupang and Bitung, together with other three leading ports, in the Package I category which should be primarily dealt with in the first stage during 1994~96.

Cargo volume was estimated to increase up to 740 thousand tons annually in Kupang port and 2,120 thousand tons annually in Bitung port by the year 2000 in the feasibility study. Since both ports are located in the areas with high potential growth, this Project was of great importance.

2.1.2 Relevance at the Time of Evaluation

In the Medium-Term National Development Plan (Rencana Pembangunan Jangka Menengah Nasional : RPJM-N) <2004-2009>, Chapter 26: Regional Development recognizes unbalanced economy still prevailing between urban–non-urban, Java-outer Java and West–East Indonesia, and puts high priority on development of North Sulawesi and East Nusa Tenggara Provinces as

[1] Roll on Roll off (Cargo handling without unloading from the truck)

economically backward regions. In parallel, Chapter 33: Infrastructure Development takes the substandard port facilities as a bottleneck of smooth sea transportation and emphasizes importance of their further improvement. By the same token, the departmental medium-term strategic plan (Rencana Strategis: RENSTRA) <2005-2009> of the Directorate General of Sea Transportation (DGST), the Ministry of Transportation, plans to implement facility enhancement of 25 Strategic Ports including Kupang and Bitung to cope with increasing cargo volume of domestic as well as international trade.

As the submarine oil exploitation in the Timor Gap and Timor Sea[2], which used to be a background of the expected high demand for Kupang Port, ceased to directly belong to Indonesia since the independence of East Timor in 2002 and the regional economic growth of the East Nusa Tenggara Province is experiencing slowdown, the materialized handling volume of Kupang Port is far less than what has been originally expected (annual volume of cargo handling was 380 thousand tons in 2006). To the contrary, Bitung Port is enjoying increasing volume of cargo handling, about 3,000 thousand tons in 2000 and 3,600 thousand tons in 2006[3]. To cope with this rapid increase in cargo handling demand, the government has started berth extension for another 130 m assigning its own budget[4].

Thus, the Project corresponds to the national and other relevant development plans of Indonesia both at the times of the appraisal and ex-post evaluation, and remains to be highly relevant.

2.2 Efficiency (Rating: b)

2.2.1 Output

The Project consists of the following civil works for facility construction and other components of the port development, procurement of equipment and consulting services for the Project implementation. The table below shows the actual output in comparison with the original plan at the Project appraisal.

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2 Cf. Footnote No. 5 on page 6.

3 Cf. **2.3.1 Effectiveness Measurement by Operation and Effect Indicators**

4 Cf. Photograph on the front page "Loading at Completed Container Berth of Bitung Port." The object in front is the new berth under construction.

Table1：Comparison of Planned and Actual Outputs

Original Plan		Actual Output	
Item	Quantity	Item	Quantity
(Kupang Port)			
1. Reclamation	160,000 ㎥	1. Reclamation	140,000 ㎥
2. Construction of Yard	8,000 ㎡	2. Construction of Yard	21,000 ㎡
3. Construction of Cement Berth	1 unit	3. Construction of Multi-purpose Berth	1 unit
4. Construction of Heavy Cargo Berth	1 unit		
5. Construction of Access Road	1,150 m	4. Construction and Rehabilitation of Access Road	257 m
6. Procurement & Installation of Handling Equipment	1 set	5. Procurement & Installation of Handling Equipment	1 set
(Bitung Port)			
1. Dredging	86,000 ㎥	1. Dredging	291,832 ㎥
2. Reclamation	62,000 ㎥	2. Reclamation	144,162 ㎥
3. Construction of Yard	37,000 ㎡	3. Construction of Yard	46,868 ㎡
4. Construction of Container Berth	1 unit	4. Construction of Container Berth	1 unit
5. Construction of Access Road	810 m	5. Construction of Access Road	820 m
6. Procurement & Installation of Handling Equipment	1 set	6. Procurement & Installation of Handling Equipment	1 set
		7. Reconstruction of Local Wharf	1 unit
		8. Construction of Waste Treatment Plant	1 unit
		9. Construction of Navigation Lights	3 units
Common to Both Ports (M/M: Man-Month)			
Consulting Services		Consulting Services	
D/D & Tender Assist	216.0MM	D/D & Tender Assist	363.5MM
Construction Management	308.0MM	Construction Management	585.8MM
Maintenance	4.0MM	Maintenance	4.0MM
Total	528.0MM	Total	953.3MM

Basic designs outlined by the feasibility study were reviewed during the detailed design stage of the consulting services, and resultant major modifications were made as follows.

(Kupang Port)

(1) Alteration of Berths' Design

The originally designed heavy-cargo berth to be as a base for the Timor Gap Sub-marine Oil Exploitation and cement berth for an incoming large-scale cement factory were replaced by a single multi-purpose berth due to the change in political and economic circumstances caused by the independence of East Timor from Indonesia and preceding economic crisis[5] and as a preparation for diversification of cargo type in the future.

Multi-purpose Birth of Kupang Port

(2) Reduction of Access Road and Expansion of Container Yard

The port development was originally planned for the old and new port areas separately and the access road was designed to be placed along the southern seaside behind the new multi-purpose berth. However, it was finally decided that the road be prepared by expanding the existing one to the seaside to connect the new port with the old area and passenger terminal. This design change cut the road length considerably and provided wider area to be developed as an expanded container yard to accommodate more cargo.

Access Road and Gate of Kupang Port

Container Yard, Forklift and Crane at Kupang Port

[5] The expected joint exploitation with Australia of the submarine oil field located between the Timor Island and Australia left Indonesia after the independence of East Timor. The establishment of the cement factory was also suspended having been affected by the economic crisis. An idea arose to lease the idle berth constructed in the adjacent area by a private oil company ELNUSA counting on the launching of the Timor Gap oil exploitation. It is another factor for Kupang Port to change its use of the new berth.

(Bitung Port)

(1) Expansion of Container Yard, Demolishment and Reconstruction of Conventional Wharf

The Area of container yard was expanded to cope with accelerated increase of container cargo, and demolition and reconstruction of the local wharf was added in relation to the above expansion.

(2) Environmental Conservation

The construction of a waste treatment plant was added to the project scope to strengthen environmental conservation, and additional reclamation was implemented to provide a damping site for dredged soil.

(3) Water Depth Enhancement

Water depth was enhanced from -7.5 m to -10.0 m to cope with increased number of ship calls and larger vessels, and it required increased dredging volume.

(4) Safety Measures

Three units of navigation lights were added to the project scope to enhance safety of cargo handling operation at the port.

Navigation lights of Bitung Port

(5) Increased Man-Month (M/M) of Consulting Services

a. To deal with the amendment of the physical scope above, the volume of consulting services was increased in the detailed design and tender assistance stages.

b. As mentioned later, the Project implementation was considerably delayed. It imposed two-year extension of the loan disbursement period and M/M

expansion of the consulting services for the construction management up to 1.9 times as long as the original schedule.

c. Due to the additional requests from the Indonesian side, the review of the integrated master plan for sea transportation and integration of project monitoring system were added to the original consulting scope.

2.2.2 Project Period

Under the initial plan, the project period was from December 1996 to September 2002 (70 months), but the actual project period was from December 1996 to October 2005 (107 months) including two-year extension of the loan disbursement period, which turned out 53% longer than planned.

Major reasons of the implementation delay are (1) the above mentioned scope change, (2) prolonged procurement period due to the change of handling equipment to cope with accelerated cargo handling volume in both ports and (3) postponed commencement of the civil works due to the requirement of more prudent environmental survey in advance.

2.2.3 Project Cost

Planned project cost was 7,000 million yen (of which Japanese ODA loan was 5,250 million yen), and the total project cost at the time of ex-post evaluation was 6,434 million yen (of which Japanese ODA loan was 4,997 million yen), 8.1% smaller than planned[6]. In spite of the fact that the actual volume of output exceeded the planned, the total project cost was held within plan on a yen basis. It is mostly due to the significant depreciation of Rupiah currency brought by the Asian economic crisis in 1997.

Although the project cost was below the initial plan, the project period considerably exceeded the plan and therefore the efficiency of this project is judged to be moderate.

2.3 Effectiveness (Rating: a)

2.3.1 Effectiveness Measurement by Operation and Effect Indicators

A series of tables below shows annual trends of operation and effect indicators.

[6] As reliable cost data were unavailable from the executing agency of the Project because of its imperfect project accounting, the figures here are based on information provided by the consultant.

(Kupang Port)

Table 2: Number and Total Gross Tonnage of Ships Serviced

Unit	Appraisal (1996)	2000	2001	2002	2003	2004	2005	2006
Call	1,300	1,675	1,706	2,930	2,390	2,809	2,623	2,607
1,000GT	900	2,588	2,868	4,782	4,657	4,778	4,143	3,272

Table 3: Cargo Volume (including container, bulk and other general cargoes)

Unit	Appraisal (1996)	2000	2001	2002	2003	2004	2005	2006
1,000tons	430	344	324	426	300	317	317	382

Table 4: Volume of Container Cargo

Unit	Appraisal (1996)	2000	2001	2002	2003	2004	2005	2006
TEU	-	7,333	7,840	8,865	12,320	15,684	18,988	19,254

TEU(Twenty-Foot Equivalent Unit): the volume of containers converted to the volume of a container 20 feet in length.

Table 5: Berth Occupation Ratio (BOR)

Unit	Appraisal (1996)	2000	2001	2002	2003	2004	2005	2006
%	72	80	78	82	77	74	60	66

Table 6: Average Waiting Time <TRT: Turn Round Time>

Unit	Category	Appraisal (1996)	2001	2002	2003	2004	2005	2006
Hour	Foreign Ships	-	93	222	369	167	20	20
	Domestic Ships	-	98	70	37	83	25	21

Sources (Table 2~6): Questionnaire answers from Pelindo III & IV

Recent relatively inactive domestic economic situation in the East Nusa Tenggara region as well as the release of the Timor Gap submarine oil exploitation depressed the cargo volume for Kupang Port. The cargo demand fell short of the original forecast and some of the indicators like “number and total gross tonnage

of ships serviced" and "cargo volume" stay at a stably low level[7]. However, other indicators representing increase in "volume of container cargo" and reduction of "average waiting time" show a conspicuously favorable trend.

(Bitung Port)

Table 7: Number and Total Gross Tonnage of Ships Serviced

Unit	Appraisal (1996)	2000	2001	2002	2003	2004	2005	2006
Call	2,632	4,849	4,967	5,217	4,340	4,315	5,992	5,478
1,000GT	3,720	6,451	6,121	7,987	6,808	6,518	7,382	7,076

Table 8: Cargo Volume (including container, bulk and other general cargoes)

Unit	Appraisal (1996)	2000	2001	2002	2003	2004	2005	2006
1,000tons	1,177	2,992	3,324	3,598	3,420	3,699	4,076	3,583

Table 9: Volume of Container Cargo

Unit	Appraisal (1996)	2000	2001	2002	2003	2004	2005	2006
TEU	-	66,737	80,386	83,861	92,898	102,648	103,265	100,933

TEU(Twenty-Foot Equivalent Unit) : the volume of containers converted to the volume of a container 20 feet in length.

Table 10: Berth Occupation Ratio (BOR)

Unit	Appraisal (1996)	2002	2003	2004	2005	2006
%	57.0	73.8	65.0	67.0	70.2	58.3

Table 11: Average Waiting Time <TRT: Turn Round Time>

Unit	Category	Appraisal (1996)	2000	2001	2002	2003	2004	2005	2006
Hour	Foreign Ships	-	104	74	101	67	56	53	55
	Domestic Ships	-	98	74	101	71	59	61	64

Sources (Table 7~11): Questionnaire answers from Pelindo III & IV

[7] Cargo handling volume since 2000 is lower than not only the amount forecasted for 2000 at the Project appraisal (1996), which is 741 thousand tons, but also the actual performance in 1996, 430 thousand tons.

Supported by the growing demand for maritime cargo transportation in the region, the cargo handling volume of Bitung Port is expanding beyond the forecast at the Project appraisal[8]. Moreover, there was a significant increase in the volume of container cargo. On the other hand, the reduction of "average waiting time" is not as significant as the reduction achieved in Kupang Port, which may reflect the increasing number of ship calls and handling volume.

2.3.2 Recalculation of Internal Rate of Return (IRR)

The Economic Internal Rate of Return (EIRR) was estimated in the feasibility study, "The Study on Integrated Modernization Plan for Sea Transportation in Eastern Indonesia," as follows.

Table 12: Assumptions and Result of EIRR Estimation In Feasibility Study

Project Life	30 years from commencement of operation
Cost	1. Investment Cost (Civil Works, Procurement of Equipment, Consulting Services, Physical Contingency) 2. Operation & Maintenance Cost (1% (structures) and 5% (equipment) of Investment Cost) 3. Replacement Cost (Durable Periods: 25 years (cargo handling boats) and 20 years (Crane and other handling machines). Residual value at the end of the project life is counted as negative cost.
Benefit	Saving of Average Waiting Time
EIRR	Kupang Port: 15.3%、Bitung Port: 16.4%

EIRR was updated in the ex-post evaluation based on basically the same method as the Feasibility Study above. The result was 15% as a whole[9], which is close to the one estimated beforehand in the feasibility study and means that expected project effect is being achieved at the time of the ex-post evaluation.

2.3.3 Qualitative Effect

To supplement the attempt for project effect measurement from a macro

8 The estimated volume for 2000 was 2,119 thousand tons in the demand forecast of the Project appraisal in 1996, but the actual amount realized since 2000 exceeds the forecast to a great extent.

9 Individual calculation for each port is not possible because the separate cost records are unavailable.

standpoint, a beneficiary survey was conducted by means of an interview survey based on questionnaire to beneficiary companies which have been utilizing the port facilities for their businesses since the time before the Project. The numbers of respondents by the business type are as follows.

Table13：Number of Respondents

(Unit: company)

Type of Business / Ports	Land Transport	Marine Transport	Loading & Unloading	Agent	Total
Kupang	5	9	9	3	26
Bitung	10	3	1	0	14
Total	15	12	10	3	40

Almost all the respondents indicated facility constraints for their business before the Project, and they mostly appreciate the improvement in port services and safety after the Project. Major questions and type of answers they made are as follows:

Table 14: Overall Evaluation of Facility Improvement by the Project

	Excellent	Good	Fair	Poor	No Answer	Total
Kupang	15%	54%	27%	0%	4%	100%
Bitung	6%	67%	27%	0%	0%	100%

Table 15: Whether has the safety of the ports been improved after Project?

	Considerably Improved	Improved	No Change	Worsened	No Answer	Total
Kupang	8%	69%	19%	0%	4%	100%
Bitung	31%	69%	0%	0%	0%	100%

Table 16: Whether have the port services been improved after Project?

	Considerably Improved	Improved	No Change	Worsened	No Answer	Total
Kupang	15%	81%	0%	0%	4%	100%

Bitung	19%	62%	19%	0%	0%	100%

Based on above results, it is judged that the effects have been realized by the implementation of this project largely as planned, and that the effectiveness of the project is therefore high.

2.4 Impact

2.4.1 Contribution to Regional Development

The gross regional domestic product (GRDP) has been increasing by 3.6% and 4.4% in North Sulawesi and East Nusa Tenggara provinces respectively on average from 2001 to 2005. While economic growth in East Nusa Tenggara has a descending trend recently, GRDP in North Sulawesi has been increasing steadily every year, reaching 4.9% in 2005, which is reflected in a remarkable increase of vessels entered and freight volume in Bitung port. Although the net contribution of the project toward GRDP growth can hardly be estimated, it would be rational to conclude that the improvement in port services and resultant efficient maritime transportation has positively supported the regional economic growth.

2.4.2 Environmental and Social Impact

1. Impact on Natural Environment

The following series of environmental impact assessment was implemented before the Project and found no adverse impact for its implementation.

(1) Environment studies in the Feasibility Study by JICA (Chapter 9), 1994

(2) AMDAL (Analisa Mengenai Dampak Lingkungan: Environmental Impact Analysis) by Indonesian Government, 1996

(3) Additional Environmental Study by JBIC[10], 2000

Periodic environmental monitoring is also conducted internally by PELINDO III and IV[11] respectively in the operation and maintenance stage. No negative impact on natural environment was reported in the past studies.

2. Resident Resettlement and Land Acquisition

Since the Project is to rehabilitate existing port facilities, neither resident resettlement nor land acquisition was executed for its implementation.

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[10] An environmental study was conducted by the executing agency with a specified focus on anticipated negative impact of water pollution by the dredging works for Bitung Port on the coral reef and pearl farming in the region. The study result was further reviewed by an environmental expert dispatched by JBIC in 2000, and came to the conclusion that the negative impact of the Project implementation would be minimal.

[11] Cf. **2.5.1.1 Institutional Structure for Operation and Maintenance**

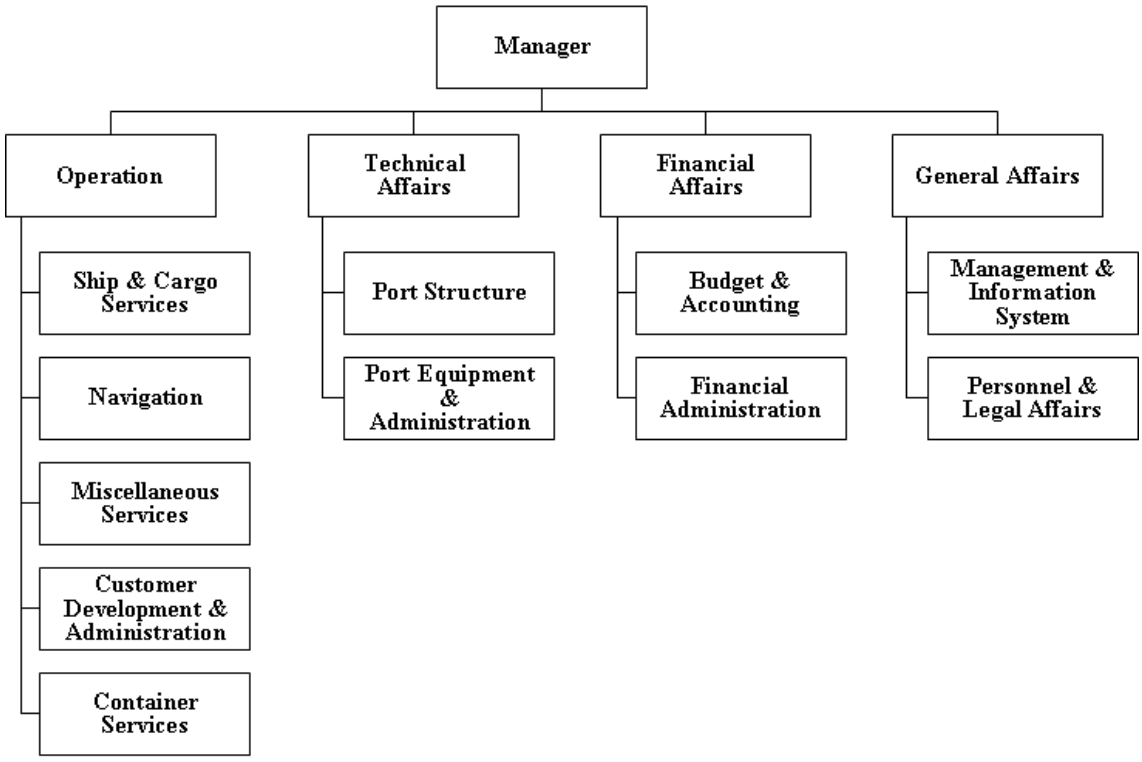
2.5 Sustainability (Rating: a)

2.5.1 Implementing Agencies

2.5.1.1 Institutional Structure for Operation and Maintenance

Sea ports in Indonesia are operated and maintained by state-owned Indonesia Port Corporations (PT. (Persero) Pelabuhan Indonesia: PELINDO) regionally. Kupang and Bitung Ports are under PELINDO III and IV respectively, and their branches are charged with direct operation and maintenance tasks with the following standard organizational structure.

Figure 1: Organizational Structure of PELINDO Braches



The facilities developed under the Project are operated by the Ship & Cargo Services division under the Operation Department, and maintained by the Port Structure and Port Equipment & Administration divisions under the Technical Affairs Department comprehensively. PELINDO classifies operation and maintenance works into four levels according to the degree of intensity and required technical level, and normally outsources high degree works to contractors. The Operation Department and Technical Affairs Department of both ports are

sufficiently staffed in terms of number and skill to conduct their own tasks.

2.5.1.2 Technical Capacity

As stated above, PELINDO branches basically perform only lighter maintenance works up to the Level I (simple repair, cleaning and changing spare parts) and Level II (replacement, inspection, adjustment, measurement and other routine maintenance works) internally, and technical capacity is judged to be sufficient. Educational background of staff in port branches is generally high (26% and 64% out of the total staff of Bitung and Kupang respectively have background of higher education). Technical training programs are also actively conducted being led by each headquarters at Surabaya and Makassar. The headquarters are of the opinion that further technical enhancement is still needed for strengthened operation and maintenance capabilities. The port offices also want to brush up the capacity to handle container related facilities.

2.5.1.3 Financial Status

Overall, financial conditions of PELINDO III and IV are sound with positive company profit and sufficient cash flow. However, individual financial performance of Bitung and Kupang ports is in marked contrast. As observed in **2.3 Effectiveness**, Bitung Port, taking advantage of 50% tariff increase in 2005 on the service upgrade enabled by the facility improvement under the Project, runs well with favorable operational performance and financial condition also supported by vigorous maritime transportation demand in the region. On the other hand, Kupang Port, failing to enjoy sufficient port revenue increase due to the dull regional service demand, fell in a great loss in 2004 incurring a great amount of the depreciation after the Project facility has been transferred from the government. However, it little affects the Kupang port's operation and maintenance requirement financially being provided with enough fund allocation, because (1) the non-cash accounting loss by the depreciation does not significantly affect the company's cash position, (2) operation and maintenance is a priority of the company and funded in preference to others and (3) PELINDO III is financially strong overall running the two biggest international hub ports of Indonesia; namely Tanjung Priok of Jakarta and Tanjung Perak of Surabaya.

2.5.2 Conditions of Operation and Maintenance

The following problem was pointed out during the field survey of the ex-post evaluation. All the facilities developed under the Project are supposed to be

transferred from the government (Directorate General of Sea Transportation) to PELINDO in charge of each sea port concerned. However, the physical facility transfer failed to accompany a part of relating technical specifications, operation manuals and other technical documents. The field survey could not successfully find where those documents were currently held. As it will possibly hinder future operation and maintenance practices in the field[12], prompt measures should be taken to settle this issue.

Some managerial failures of a part of the facility were found in the field as above, but the conditions of operation and maintenance at both ports are by and large satisfactory.

3. Conclusion, Lessons Learned and Recommendations

3.1 Conclusion

Based on the above analysis, it is concluded that the Project is highly satisfactory.

3.2 Lessons Learned

Project cost has not been well managed by the executing agency. It is required to arrange a rational project accounting system and clarify responsibility for record keeping during the establishment of the total management structure for project implementation. The state of practice is to be monitored under the mid-term review and other supervision schemes during the project implementation and remedied if inappropriate.

3.3 Recommendations

1. To the Directorate General of Sea Transportation, Ministry of Transportation, PELINDO III, IV

The missing technical documents pointed out in **2.5 Sustainability 2.5.2 Conditions of Operation and Maintenance** should be sought and forwarded to the field as soon as possible. It is necessary to establish reliable document management systems and rules of their delivery in order not to repeat these kinds of managerial failure.

[12] The field survey observed a case in which the automatic switching device of the generator in Kupang Port was out of order and obliging the staff in charge to manually operate the machine on electric failure. It could not be repaired without the technical manual which should have been forwarded upon the physical facility transfer.

2. To the Directorate General of Sea Transportation, Ministry of Transportation, PELINDO III, IV

The port facilities developed are effective enough and their comprehensive improvement was much appreciated by port users. However they are also of the opinion that there are still weaknesses in some kinds of the equipment like cranes, tugboats. Therefore, seeking the opinion of the service users, necessary improvement to rectify identified weaknesses is to be further sought to maximize the effect of the Project.

Comparison of Original and Actual Scope

Item	Plan	Actual
Output	(Kupang Port) ・Reclamation 160,000 ㎥ ・Construction of Yard 8,000 ㎡ ・Construction of Cement Berth 1 unit ・Construction of Heavy Cargo Berth 1 unit ・Construction of Access Road 1,150 m ・Procurement & Installation of Handling Equipment 1 set (Bitung Port) ・Dredging 86,000 ㎥ ・Reclamation 62,000 ㎥ ・Construction of Yard 37,000 ㎡ ・Construction of Container Berth 1 unit ・Construction of Access Road 810 m ・Procurement & Installation of Handling Equipment 1 set	(Kupang Port) ・Reclamation 140,000 ㎥ ・Construction of Yard 21,000 ㎡ ・Construction of Multi-purpose Berth 1 unit ・Construction and rehabilitation of Access Road 257 m ・Procurement & Installation of Handling Equipment 1 set (Bitung Port) ・Dredging 291,832 ㎥ ・Reclamation 144,162 ㎥ ・Construction of Yard 46,868 ㎡ ・Construction of Container Berth 1 unit ・Construction of Access Road 820 m ・Procurement & Installation of Handling Equipment 1 set ・Reconstruction of Local Wharf 1 unit ・Construction of Waste Treatment Plant 1 unit ・Construction of Navigation Lights 3 units
Project Period	December 1996～September 2002 (70 months)	December 1996～October 2005 (107 months)
Loan Agreement	December 1996	December 1996
Consultant Selection	December 1996～June 1997	December 1996～August 1997
Consulting Service	November 1997～October 2001	November 1997～October 2005
Tender・Contract	December 1996～September 1999	June 1998～May 2001
Civil Work・Procurement	October 1999～September 2002	July 2001～October 2005
Project Cost		
Foreign Currency	1,770 million yen	3,029 million yen
Local Currency	5,230 million yen	3,405 million yen
Total	7,000 million yen	6,434 million yen
(Japanese ODA loan amount)	(5,250 million yen)	(4,997 million yen)

Exchange Rate	Rp. 1 = 0.047 yen (as of April 1996)	Rp. 1 = 0.013 yen (Weighted average during project implementation)