

(On-site Evaluation: June 2007)

### Ex-Post Monitoring of Completed ODA Loan Project

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Project Name: Indonesia Semarang Port Development Project (2-1,2-2) (L/A No. IP-379, IP-393)

#### Loan Outline

Loan Amount/Disbursement Amount	:	11,120 million yen /	6,621 million yen
Phase I:	:	7,530 million yen /	4,918 million yen
Phase II:	:	3,590 million yen /	1,703 million yen
Loan Agreement	:	September 1991 (Phase I), October 1992 (Phase II)	
Loan Completion	:	October 1999 (Phase I), November 1999 (Phase II)	
Ex-Post Evaluation	:	FY2002	
Executing Agency	:	Republic of Indonesia / Directorate General of Sea Communications (DGSC)	

#### Project Objective

By improving and constructing container pier and yards, and procuring machinery and materials for Semarang Port on the island of Java, this project aimed to meet the increased demand for container transport at Semarang Port, and thereby help stimulate the region's economy.

Consultants: Japan Port Consultants (Japan), PT. Wiratman & Associates (Indonesia), etc.

Contractors: PT SAC Nusantara (Indonesia), PT Kalirayasari (Indonesia), Yala (Indonesia) (JV), Nissho Iwai, Tomen Corporation, etc.

#### Overview of Results

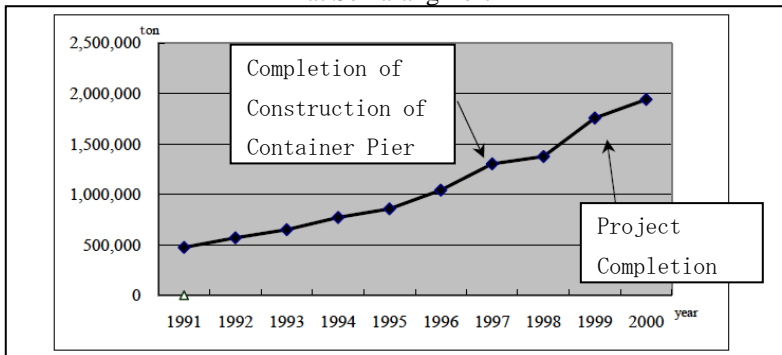
Item	At Time of Ex-Post Evaluation	At Time of Monitoring
<b>Effectiveness and Impact</b>		<p>Since the ex-post evaluation, the volume of container freight handled has increased by an average of 7% per annum. Average demurrage time has remained very short (1 hour) and thus efficiency has been high. In addition, the project has made contributions to the regional economy and has a large impact.</p>
<b>Effectiveness</b>	<p>(1) Improvement of Services at Container Facilities (Average Demurrage Time (Days / Ship))</p> <p>By improving the container facilities, the time associated with unloading cargo has been greatly decreased, and the time that ships spend waiting has also fallen. The time needed to perform operations can now be predicted, and port management has become efficient.</p>	<p>(1) Improvement of Services at Container Facilities Average Demurrage Time (Days / Ship))</p> <p>Due to the improvement of the container facilities at Semarang Port, cargo handling operations have become extremely efficient. Since 2000, the year in which the ex-post evaluation was conducted, the period of time that ships wait at sea has been maintained at about 1 hour per ship.</p>

Terminal personnel are more precisely informed of unloading timing by the cargo owner, and so customer satisfaction has also risen.

- Time Ships Spend Waiting At Sea (Average Demurrage Time) (Days / Ship)
  - 48 - 72 hours (1991)
  - 5 - 7 hours (1997)
  - 1 hour (1998 - 2000)

(2) Volume of Container Freight Handled (tons)  
 Building container facilities has made transport of containers in and out of central Java smoother. As shown in the table below, the amount of container freight handled has risen an average of 17% per annum, from 569,000 tons in 1991 to 1,942,259 tons in 2000.

Fig 1: Handling of Container Freight at Semarang Port

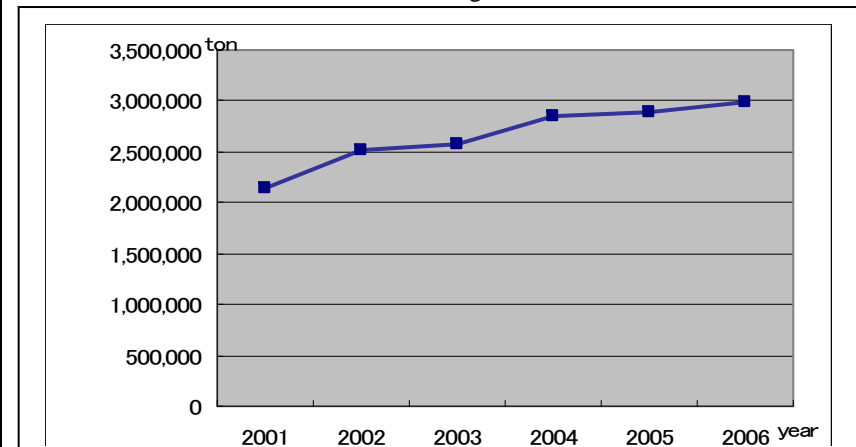


Source: Semarang Port Office

- Time Ships Spend Waiting at Sea (Average Demurrage Time) (Days / Ship)
  - 1 hour (2001 - 2006)

(2) Volume of Container Freight Handled (tons)  
 Thanks in part to the increase in the export of goods (especially furniture) from Central Java province, the annual volume of container freight handled has increased by an average of 7% per annum, from 1,942,259 tons in 2000 (the year of the ex-post evaluation) to 2,998,183 tons in 2006.

Fig 1: Handling of Container Freight at Semarang Port



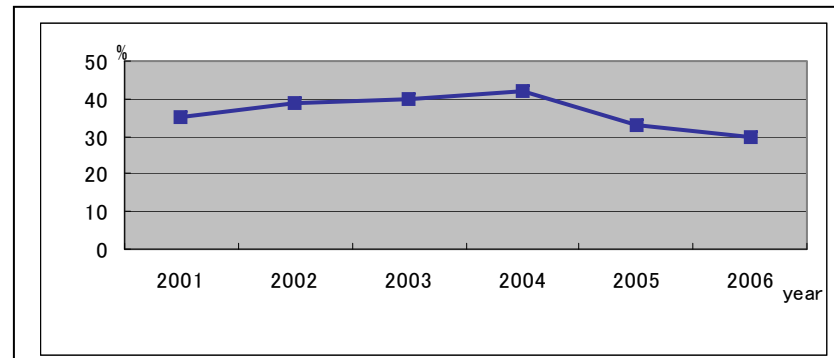
Source: Semarang Port Office

(3) Occupancy of Berths (%)  
 \* Basic indicator not gathered at the time of the ex-post evaluation.  
 NA% (at time of 2000 ex-post evaluation)

(4) FIRR (%): 23%  
 (Calculation Basis) Based on actual cost and benefit of handling container freight (details unclear, however). Calculated on the assumption that benefit in years after 1999 was the same as for benefit in 1999.

(3) Occupancy of Berths (%):  
 Because usage by shipping companies tends to be concentrated on Fridays, Saturdays, and Sundays, figures range from 30% - 42% (2001 - 2006). (65% - 91% accomplishment of two-berth\* target (46%))

\* Two berths were constructed through this project.



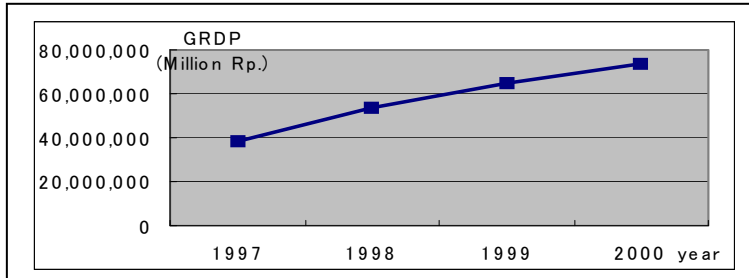
Source: Semarang Port Office

(4) FIRR (%): 34%  
 (Calculation Basis) Calculated taking project construction costs and operation and maintenance fees for container facilities as costs, and the Semarang Port Office operating profit deriving from container usage as benefit. Benefit since 1999 was assumed to be the same as that for 1999, the year in which the ex-post evaluation was conducted. Because it has in fact improved over that level, FIRR has shown improvement.

**Impact**

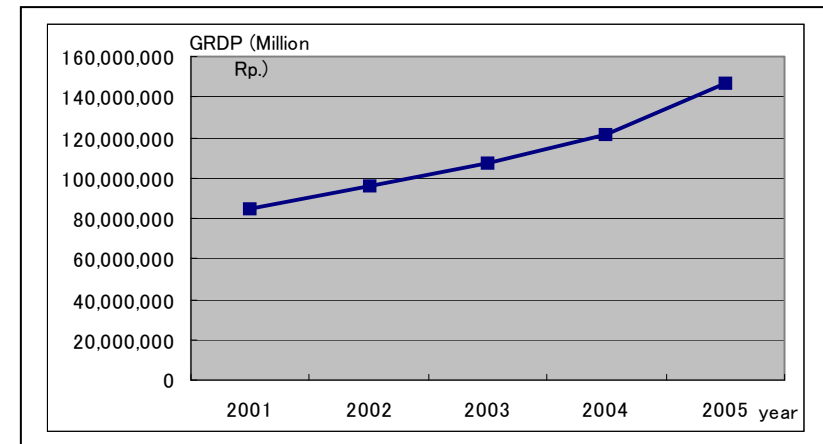
(1) Impact on the Regional Economy  
 Due to the increase in container freight handling at Semarang Port, new container routes have been opened up between Indonesia and Malaysia, Taiwan, Japan, China, and the Philippines. Trade opportunities have increased as a result, and there has been a large impact on the regional economy.

(1) Impact on the Regional Economy  
 GRDP (Million Rp.) for Central Java Province, where Semarang Port is located.  
 GRDP has steadily increased from 73,988,511 in 2000 (the year of the ex-post evaluation) to 146,939,394 in 2005. In recent years, the furniture industry has been promoted in Semarang City and the city's suburbs. Because this project



(2) Impact on the Environment  
No problems worthy of note.

has helped support the export of furniture, it is considered that the project is contributing to the increase in GRDP of Central Java Province, where Semarang City is located.



Source: Indonesia Statistics Bureau

Survey of Beneficiaries (Complementary to the Analysis of Impact on the Regional Economy)

A survey of beneficiaries was conducted on 15 companies that use the container yard at Semarang Port. All 15 companies reported that the project had helped increase their company's trade volume (the export of furniture and other goods) and to increased earnings thanks to that trade. One of those companies had a three-fold increase in earnings thanks to heightened trade between 2000 and 2006. With respect to the issue of services provided by the Semarang Port Office (procedures for ship entry and exit from the port, as well as the administration of taxes on imported and exported commodities), 11 companies reported that they were satisfied with the services, and four reported that they were dissatisfied on account of procedural delays.

(2) Impact on the Environment

An environmental impact assessment is conducted twice annually by the Semarang Port Office, which is under the jurisdiction of the project's executing agency (DGSC). According to those assessments, the project has had no negative impact on the environment.

**Sustainability**

(1) Technology: Manager-level training is performed at Surabaya, and general employee training is conducted at Semarang Port. In addition, training on the computer-based container handling system introduced under this project is performed by employees with sufficient experience.

(2) System: The Semarang Port Office is a state-run business 100% financed by the government. It is an office of Indonesia Port Corporation III (IPCIII), headquartered in Surabaya. The company is in charge of operating and maintaining 37 ports, including Semarang Port. At the end of 2000, the Semarang Port Office has 424 employees. There are plans to entrust container freight operations to private entities.

(3) Finances:  
From 1997 - 1999, IPC III's operating revenue averaged 52% of total revenue, and profitability was high. Administrative conditions were extremely stable, with current ratio averaging an 362%. In addition, from 1998 - 2000, operating revenue averaged 67% of total revenue for Semarang Port, and profitability was extremely high. Current ratio averaged 324%, and administrative conditions were extremely stable.

(4) Operation and maintenance conditions:  
The facilities and machinery built or provided through this project are well managed. In 2001 the port acquired ISO9002 certification. The container handling system has been operating smoothly.

There are absolutely no problems with technology, system, or finances, nor are there any problems with the maintenance or operation of facilities or machinery built or provided through this project. However, for an external reason that ground subsidence for the Semarang Port has been a serious problem, and sustainability is extremely concerned.

(1)Technology: Manager-level training is performed at Surabaya, Tanjung Priok, Jakarta, etc. and training for general employees is performed at Semarang Port. Training on the computer-based container handling system introduced under this project is also currently being conducted by employees with sufficient experience. Furthermore, an operation and maintenance manual updated as necessary is distributed to all employees, and operation and maintenance is performed on facilities daily. Overall, the technical capability of the Semarang Port Office is high.

(2) System: The Semarang Port Office continues to be a state-run business 100% financed by the government. It is an office of Indonesia Port Corporation III (IPCIII), headquartered in Surabaya. The company is in charge of operating and maintaining 45 ports, including Semarang Port. As of 2007, the Semarang Port Office has 339 employees.

(3) Finances:  
From 2000 - 2006, IPC III's operating revenue averaged 48% of total revenue, and as before, profitability remains high. Current ratio averaged 321%, and administrative conditions were extremely stable. In addition, from 2001 - 2006, operating revenue averaged 69% of total revenue for Semarang Port. (Other revenue derived from fixed assets sale and gains from investment activities.) Profitability was extremely high, current ratio averaged 402%, and administrative conditions were extremely stable.

(4) Operation and maintenance conditions:  
In 2007, the year in which this survey was conducted , the facilities and machinery built or provided through this project are well managed. The container handling system has been operating smoothly. However, excess pumping of underground water throughout Semarang City, including the Semarang port area, has caused the Semarang Port container yard to sink an average of 25cm per year. (At the time of this survey , port employees

		<p>measured the container yard's elevation above sea level at measurement point (1) on the attached map. Whereas the elevation was 3.12m in 2000, it was only 1.36m in 2007.) Should the current trend continue, then the container yard is expected to begin to suffer damage in rainy seasons or at high tide by 2011, and by 2013 at the latest, the entire container yard is expected to be submerged. (2008: 1.11m/2009: 0.86m / 2010: 0.61m / 2011: 0.36m / 2012: 0.11m / 2013: 0.14m). In addition, the yard behind the general cargo terminal is sinking at an average of 25cm per year. At one of the four measurement points (labeled 2, 3, 4, and 5 on the attached map), the rate is 29cm per year (pt. 4), and the sea level ordinarily rises above land level. (The yard was 1.83m above sea level in 2000, and only 0.20m above in 2007.) The land-based facilities (freight station, and the like) are in ruins. If the rate of subsidence continues, the ordinary seal level is predicted to rise above the other three locations by 2010 at the latest. At the same time, the Semarang Port Office is consumed with daily operation and maintenance tasks. They are not paying attention to the sinking land, which is undermining their work, and are not taking any countermeasures against this problem (It is considered that at the point of the ex-post evaluation, the problem of sinking land had not yet been brought to light).</p> <p>In conclusion, Semarang Port is suffering from severe land subsidence, and operation and maintenance conditions continue to be a major concern. Sustainability is highly questionable, and the issue may have a negative impact on future effect and impact.</p>
<p><b>Lessons Learned, Recommendations, Information Resources and Monitoring Methods</b></p> <p>(1) Lessons learned at the time of ex-post monitoring and recommendations for securing sustainability</p>	<p>Lessons learned and recommendations None</p>	<div style="border: 1px solid black; padding: 5px;"> <p>As explained above, on account of external factors, namely, the excessive pumping of groundwater, the Semarang Port grounds are continuing to sink rapidly. It is hoped that the container yard (or all of Semarang Port) will be swiftly rehabilitated (countermeasures for the subsiding ground level). In addition, it is hoped that supply and demand of water be managed for all of Semarang City to contribute to the fundamental solution of the sinking land of the port.</p> </div> <p>(1) Lessons None.</p> <p>(2) Recommendations for the Semarang Port Office and DGSC In order to preserve this project's high rate of efficiency and impact long into the future, urgent measures are needed to counter the ground subsidence of all of Semarang Port caused by excess groundwater being pumped out. But as stated under "Operation and Maintenance Conditions" above, it is hoped that such rehabilitation measures would not target just the container yard project area, but the whole of Semarang Port. Recommendations for the Semarang City government, the Central Java</p>

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y		<p>Province government, and the Indonesian government (public project ministries, and the like).</p> <p>As the fundamental cause of ground subsidence at Semarang Port is excessive pumping of groundwater throughout Semarang City, a fundamental solution to this problem is needed. The following two approaches must be taken. The first is demand management; that is, control over the amount of groundwater pumped out. To that end, legal measures that strengthen regulations on pumping water and an enforcement system for same (including monitoring and punishment of violators), together with economic measures including reform of water rates (price hikes), and educational measures including information campaigns to conserve water need to be undertaken. The second is supply management; that is, cultivation of groundwater and of the water supply originating from groundwater. To that end, plans are needed to provide new infrastructure for supplying water.</p> <p>In response to the above circumstances, the JBIC signed another loan agreement, Integrated Water Resources and Flood Management Project for Semarang, in March 2006, establishing the following concrete flood control and water supply measures.</p> <ol style="list-style-type: none"> <li>1. Improvements along the Garang River (river improvement, drainage channel collection, fixed weir rehabilitation, bridge raising)</li> <li>2. Improvement of municipal drainage facilities (improvements along the Semarang River, improvement of a drainage pump station)</li> <li>3. Jatibalan Station Target Dam Construction (construction of a multipurpose dam, construction of a conservation and sand erosion control dam in the upstream region)</li> </ol> <p>In addition, the Indonesian government is contemplating rehabilitation projects to raise breakwaters and piers in Semarang Port.</p> <p>These measures are considered to help provide fundamental solutions for this project.</p>
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