East Jakarta Industrial Area (EJIA) Revival and Jakarta Bay Industrial Zone (JBIZ) Development Plan

Study Report

March, 2008

Engineering and Consulting Firms Association, Japan
Japan Development Institute (JDI)
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### Abbreviations

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<td>ADB</td>
<td>Asian Development Bank</td>
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<td>AMDAL</td>
<td>Environmental Impact Assessment in Indonesia</td>
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<td>BAPPENAS</td>
<td>National Development Planning Agency of Republic of Indonesia</td>
</tr>
<tr>
<td>BBK</td>
<td>Batam, Bintan, and Karimun</td>
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<tr>
<td>BOT</td>
<td>Build-Operate-Transfer</td>
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<td>BPS</td>
<td>Statistics Indonesia</td>
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<td>EJIA</td>
<td>Bekasi-Cikarang Industrial City</td>
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<tr>
<td>BPS</td>
<td>Statistics Indonesia <em>(Badan Pusat Statistik)</em></td>
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<td>ECFA</td>
<td>Engineering Consulting Firm Association in Tokyo, Japan</td>
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<tr>
<td>FDI</td>
<td>Foreign Direct Investment</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>HPI</td>
<td>Human Poverty Index</td>
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<td>Jabotabek</td>
<td>Jakarta-Bogor-Depok-Tangerang-Bekasi</td>
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<td>JBIZ</td>
<td>Jakarta Bay Industrial Zone</td>
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<tr>
<td>JETRO</td>
<td>Japan External Trade Organization</td>
</tr>
<tr>
<td>METI</td>
<td>Ministry of Economy, Trade, and Industry of Japan</td>
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<tr>
<td>MOU</td>
<td>Memorandum of Understanding</td>
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<tr>
<td>PPAT</td>
<td>Land Deed Official <em>(Pejabut Pembuat Akte Tanah)</em></td>
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<tr>
<td>PPP</td>
<td>Public Private Partnership</td>
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<td>SEZ</td>
<td>Special Economic Zone</td>
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<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
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<td>UUPP</td>
<td>The Basic Agrarian Law <em>(Undang-undang Pokok Agraria)</em></td>
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1 Preface

Japan Development Institute (JDI) has been assisting many developing countries in the past 30 years including Indonesia. Current Chairman of JDI, Dr. Shoichi Kobayashi was the main consultant/advisor of the East Jakarta Industrial Area (EJIA: Bekasi-Cikarang Industrial area) from 1989. EJIA was one of the most successful industrial developments in not only in Indonesia but also in Asia as a whole. However, due to the overwhelming size of EJIA (4,000 hector with 2,000 companies and 400,000 workers) and the slow progress of transport infrastructure, the traffic congestion in the area became one of the worst in Asia creating a daunting problems which become so serious that some firms are starting to leave for other countries.

JDI was asked to examine the urgent problems of EJIA in the summer of 2006 by Ministry of Economy and Industry of Japan and JETRO. Responding to the request, JDI dispatched Dr. Kobayashi to Jakarta in November and met many people in both private and government sectors. Understanding the seriousness of the problems faced by EJIA, JDI requested Engineering Consulting Firms Association (ECFA), Japan to support the EJIA area study in August, 2007 and approved in September 2007.

JDI, therefore, dispatched a study team consisting of following four experts:

1. Team Leader/Industrial Economist: Dr. Shoichi Kobayashi
2. Port Development Expert: Mr. Nobuo Kawamura
3. Regional and SEZ expert: Mr. Sumiyuki Otsuki
4. Social/Urban Planner: Ms. Yumiko Ota

The study team visited Indonesia from November 25th to December 6th and discussed the matters with various agencies.

Based on the field survey and discussions with many officers and private businessmen in Indonesia, we have examined possible solutions for EJIA and come up with a conclusion that besides improving the traffic congestion within the EJIA for an immediate solution, the Indonesian Government should develop a new deep sea port with 15 meter jetties as a tool to disperse the traffic concentrating toward the Tanjung Priok Port for the already operating investors. Today nearly all other competitors, such as China, Vietnam, Thailand, Malaysia and India, have developed deep sea ports with over 15 meter depth in order to accommodate the newest container ship frequently used in shipping (Post Panamax ships).

We are hoping that our preliminary study and recommendations are used by the Indonesian Government to make a decision for reviving EJIA, which shall be made soonest.

We are confident of our implementation plan and recommendations, and looking forward to working together with all concerned people to implement this urgent and important project, which would contribute to solving current traffic problems and reviving EJIA as well as the new JBIZ area as a Growth Industrial Corridor of Indonesia.

Finally, the study team would like to express sincere thanks to many people who assisted us by providing valuable information and data during our study. Especially we note our appreciation to following parties:

1) Japan Jakarta Club (JCC)
2) Ministry of Public Works
3) Ministry of Transportation
4) Directorate General of Sea Communication, Ministry of Communications
5) BKPM
6) Western Java Government

Sincerely yours

Shoichi Kobayashi Ph.D,
Chairman & Chief Economist
Japan Development Institute (JDI)
Summary and recommendations

Summary

1) Background
After the Asian Financial Crisis of 1997 and the political crisis after the resignation of the President Suharto in 1998, the Indonesian economy declined and entered the Ice age: FDI was nearly stopped and capital flights took place. GDP growth marked only a few per cent per year. The largest industrial cluster of East Jakarta Industrial Area (EJIA) also suffered from the crisis, yet continued to attract the largest number of FDI within the country. However, still the economic damage was big, thus actions have been examined between Japan and Indonesia as shown below:

- 2005: Prime Minister Koizumi and President Yudhoyono agreed to improve the existing problems of EJIA and Indonesia as a whole: Strategic Investment Action Plan (SIAP)
- Jakarta Japan Club (JJC) has been actively discussing the investment & trade issues since 2005, and occasionally held a workshop to solve problems
- Singapore proposed a plan to develop the Riau Islands territories of Batam, Bintan and Karimun (BBK) as Special Economic Zone (SEZ) with an act to make more free trade & investment in 2006 & 2007

However, no sign of significant actions particularly for EJIA have been taken by the Indonesian Government. Because EJIA is the center of economic activity, it is urgent to take drastic actions in all aspects to improve FDI environment and to keep FDI inflow to EJIA and Indonesia as a whole.

2) Study objective
Understanding the importance of EJIA and the seriousness of the problems, a study was made focusing on three objectives:

- To identify possible immediate to mid-term solutions for the revival of EJIA to become a globally attractive site again.
- To propose the development of a new international port and SEZ along the east Jakarta Bay as a long-term solution for the problems surrounding EJIA and for the reemergence of Indonesia in the FDI market.
- To formulate a new Industrial Growth Corridor by connecting EJIA and the new Jakarta Bay Industrial Zone (JBIZ) with an International Port.

3) Political and economic trend of Indonesia
Political Trends: Created political instability by the fall of President Suharto
- After Suharto’s resignation in 1998, political instability continued until recently
- Halfway-decentralization, without a clear direction and lack of coordination among ministries and between central and local government, poses an impediment on country’s economical development

Economical trends: prosperity during 1989-1997 entered to the Ice Age after the financial crisis (1998-2004), and now slowly recovering:
- Attractive period for investors: 1989-1997
- The Ice Age for FDI after the 1997 Financial Crisis: Capital flight form Indonesia: 1998-2003
- Slow recovery period due to an unclear investment policy: 2004-present
4) Problems of Indonesia
   Indonesia enjoyed a high reputation of providing an investor friendly environment during the 1989-1997, however her ranking position fallen in Asia as follows:
   - Based on JETRO survey in 2006, Indonesia was 10th
   - Based on ADB Bank survey in 2005, Indonesia was 5th

(1) Specific problems faced for attracting FDI by Indonesia
   Indonesia now seems to be considered by potential investors to have several weaknesses compared with other Asian countries. The specific weaknesses are:
   - Insufficient supporting industry
   - High foreign currency risk
   - Weak R&D skill/capacity
   - Inadequate infrastructures especially roads, port and power.
   - Complex tax system
   - Political instability
   - Imperfect transparency in administrations and business operation
   - Tedious and time consuming custom clearance
   - Unprotected property rights
   - Weak communication capacity
   - Rising cost of labor
   - General inefficiency of public administration
   - Judicial costs of doing business in the country
   - Uncertainty in rules, responsibilities, and resources of the sub-national governments caused by decentralization

5) Role of EJIA & challenges
   The East Jakarta Industrial Area (EJIA) is now the biggest industrial cluster with 4,000 hectares industrial land accommodating 2,000 operating companies which generates $11 billion foreign currency earning per year, which equals to 11% of nation’s total non oil earning, and employs 400,000 people directly. EJIA is;
   - The biggest industrial cluster and contribution to national economy; GDP, employment, and foreign currency earning
   - Still having potentials to grow as a leading FDI hub

Challenges of EJIA
   In order to revive EJIA, the following 4 items must be tackled to find ways to improve them.
   - Unclear future vision
   - Inadequacy of key infrastructures
   - Inefficient government regulations
   - Complex administrative system and a lack of coordination

6) Possible solutions for EJIA & Indonesia
   Short-Term
   - Internal road networks improvement
   - Dry port & One-stop service (SEZ application)
   - Designation of EJIA as SEZ
Indonesia East Jakarta Industrial Area (EJIA) Revival and Jakarta Bay Industrial Zone (JBIZ) Development Plan

Medium-Long Term
- Jabodetabek ring road
- Tanjung Priok port and surrounding area & railway connections

Long Term
- Eastern sea board plan of Indonesia
- Develop an international port & airport with high standards expressway from Bekasi & Jakarta.
- Growth corridor (EJIA-new port industrial area) as SEZ

7) Preliminary Jakarta Bay Industrial Zone (JBIZ) plan

Existing condition of the proposed site

(1) Physical condition:
- Currently the area is prevailed with unproductive fishponds and low bush land
- Limited access road to the site: only by sea using fishing boats

(2) Socio-economic condition
- Villagers are living at sub-standard living condition with fishing and aquaculture as main income generation activities
- No public facilities and services
- Limited commercial services as well

Existing problems & challenges
- Among many problems the proposed site (11,000 hectar) is currently facing, five items are especially critical for a successful development of the site as JBIZ.
  - Access to the site,
  - Land acquisition and licensing,
  - Regulations of port development (one port in one province),
  - Environmental measures, and
  - Development cost & financing.

Vision and target of JBIZ
- Forming a new Growth Corridor: East Jakarta Growth Corridor to revive EJIA and Indonesia as a FDI hub again.
- Vision: developing a Garden City balanced between environment and modern city life with high standards infrastructure.

Type of Industries
- JBIZ with a modern deep sea port, could attract various heavy industries, and inside the JBIZ & along the JBIZ-EJIA Corridor, Automobile, electronics and precision machinery and other light consumer goods industries are expected to be attracted:
  - Near port: chemical, oil tanks & petrochemical, steel and metal fabrication, food processing and ship repair & building, engineering & plant manufacturing which requires port.
  - Inside the city and satellite towns: similar to Bekasi industrial parks, motorcycle & parts, auto & auto parts, textile, electronics & parts, food processing and consumer goods.

Tentative land use of JBIZ (11,000 hectar)
- Tentative land use of the JBIZ is divided into 5 zones with a large reservation forest (2,000 hectar) and public zone (2,000 hectar).
  - Port & SEZ (industrial zone): 2,000 hectar (200 hectar for port and 1,800 for SEZ): 20%
- Environmental protection & reservation forest zone: 2,000 hectar for conservation zone: 20%
- Commercial & administration zone: 2,000 hectar 20%
- Housing & tourism zone: 3,000 hectar 30%
- Infrastructure, facilities & utilities: 2,000 hectar 20%

Transport system
(1) Express way and internal roads
- With 4 lanes at the beginning and expand to 6 lines later.
- Internal roads will be divided into three: (i) main road with 6 lines, (ii) minor road with 4 lines and (iii) local street with two lines.
(2) Railway
- Railway shall be planned for both passenger and cargo railway.
- Timing of implementation will be from Phase 2.

International port and airport
(1) International port
(i) Existing Tanjung Priok port
- Being the only port in the capital region, the demand for Tanjung Priok Port is expected to grow in the future.
- Tanjung Priok port is too shallow and limited in space behind the jetties to become an internationally competitive port.
(ii) Need for a new port in east Jakarta
- It is essential for Indonesia to construct a new deep sea port in the eastern Jakarta region to compete with other Asian countries.
(iii) Concept & design of the new international port
- In order to build 15 meter depth port, new concept & design need to be adopted: a floating breakwater and Trestles jetty will be proposed.
- Initial size is 4 barths with 50 hectar container & bulk yard.
(iv) Sailing yacht and fishing port
- In order to support fishermen, a fishing port will be constructed near the river mouth
- Also a sailing yacht harbor will be constructed at the tourism zone
(2) International airport
- A new international airport is likely to be needed between JBIZ and EJIA considering the prospective population increase by JBIZ and inadequate facilities at the current international airport.

8) Cost & revenue of JBIZ (Phase 1 port & expressway)
Estimated cost for public projects is $560 for Phase 1 and other projects will be developed by private sector with an estimated cost of $400 million as shown below:
- Cost of port development: $560 million for Phase 1
- Cost of highway development: $75 million
- SEZ, housing and commercial development cost: Phase1: 2000 hectar x $200 = $400 million

9) Economic and financial return
- Estimated financial return of the public portion is: 20.54%

10) Social & economic aspects
Economic impacts
• Creation of new employments as much as 200,000 by direct employment.
• Improvement of public and commercial facilities and services
• Easy access to Bekasi and Jakarta:

Social impacts
The site area is sparsely populated without public facilities, thus, relocations of households are expected to be limited. Relocations of households are likely to be supported by the local government and need to be carried out smoothly in a short time. However, the new development if JBIZ is also expected to bring social benefits, such as;

• Improvement of public services
• Improvement of housing condition
• Improved access to Jakarta city

11) Environmental impacts
Environment impacts will be measured in (i) reduction of forest & wet land, (ii) possible worsening of waste water, air pollution and solid waste from industries and urban area, and (iii) traffic congestion from automobile. These environmental impacts should be minimized by adopting proper treatment facilities from the planning stages.

• Install waste water treatment plants, which will clear national environmental regulations
• For solid waste, a proper solid treatment plants and dump ground shall be constructed.
• Forest reserve and eco zone of 2,000 hector will be preserved permanently in order to create a high standard of living condition as a Garden City.

12) Action plan & tentative schedule
The following schedule is tentatively planned and an immediate action plan is recommended as shown below:

• Physical survey and a formulation of a master plan: 2008-2009
• Land acquisition and resettlement of households: 2008-2009
• Construction of an access road to the project site from the edge of the ring road: 2009-10
• Phase 1: Development of access road and port by the public finance and SEZ, and housing/commercial zone by the private sector: 2009-2013
• Phase 2: Further development of SEZ and housing/commercial zone plus railway: 2014-2018
• Phase 3: Expansion of port and SEZ plus expansion of housing/commercial zone and airport : 2019-2023

Recommendations
1. EJIA has been facing urgent and critical problems for not only to attract new investors but also to keep already invested companies at EJIA.
2. Therefore, we are recommending the Indonesian Government (both central and local) to take immediate actions planned in a short-term and medium-term:

Short-term actions
• Internal road networks Improvement
• Dry port & One-stop service (SEZ application)
• Designation of EJIA as SEZ
Medium-long term actions

- Jabodetabek ring road
- Tanjung Priok port and surrounding area & railway connections

3. Also in order to revive EJIA and Indonesia to attract new FDI, the development of JBIZ with a 15 meter deep sea port will be needed as soon as possible, therefore, we are strongly recommending to implement the JBIZ plan by a close coordination between public and private sector (PPP) just as the EJIA project since 1989:

- Eastern Sea Board plan of Indonesia (JBIZ Plan)
- Develop an international port & airport with high standards expressway from Bekasi & Jakarta.
- Growth corridor (EJIA-JBIZ: East Jakarta Growth Corridor :EJGC) as SEZ
3 Background and Objective

3.1 Background

The East Jakarta Industrial Area (EJIA) was first initiated during the late 1980s by Japan-Indonesia consortium to call more investments into Indonesia, and stimulate the economy. This plan was implemented in 1990s, and EJIA was successfully grown to the biggest industrial city in Indonesia. Currently, the size of the industrial city grew to 4,000 hectares of industrial zone with 2,000 factories, which is being the work place for nearly 4.0 million populations, and contributing to 17% of the total export which amounted for US$11 billion in 2006. However, this huge success is also causing a growing problem to EJIA: it grew too large without sufficient provision of infrastructures.

The insufficiency of infrastructures, mainly logistic facilities of road and dry port, is impeding the sites’ (industry’s) competitiveness and continuous growth by creating a traffic jam from commuters and cargo transporters within the EJIA area. Jakarta itself is already notoriously known by its heavy traffic, and industries have already been suffering from the time cost to transport cargos to the Tanjung Priok port, which is the only port in the capital region. Some companies in EJIA has already expressed that if the traffic jam gets heavier within the industrial area, they need to seriously consider minimizing or shutting down their factories. In addition, compared to other fast growing Asian countries like China, Vietnam, Thailand, India and Cambodia, Indonesia is losing attractiveness from investors’ point of view. Regulations for industrial activity are complex, and custom operations are inefficient. As a result, the investment climate falls sharply into unfavorable condition.

In order to solve the existing problems of EJIA and Indonesia as a whole, Japan and Indonesia initiated a program to jointly work out the identified problems in the past few years. As a result, some positive remarks has been coming up, however, the fundamental weakness of EJIA and Indonesia, especially in the infrastructure issues, is not systematically recognized nor fully tackled yet. In this study, in order to find a more comprehensive solution for EJIA and Indonesia to revitalize incoming Foreign Direct Investment (FDI), the study team was formed to examine and propose a long-term vision of its infrastructure and industrial cluster development in east Jakarta, and to overcome the fundamental problem of insufficient infrastructures to keep Indonesia an attractive destination for FDI. The study in Indonesia was conducted from November 25 to December 4, 2007, and from March 19th to 22nd, 2008.

3.2 Objective

Since the overall situation and problems have already identified through several studies conducted in the past, the main objective of this study is targeted to provide a concrete solution and to formulate the infrastructure development plan which can support economic activities in EJIA and the revitalization of Indonesian investment climate. In specific, the objectives will be as follows;

- To identify possible immediate to mid-term solution for the revival of East Jakarta Industrial Area (EJIA) to become a globally attractive site again.
- To propose the development of a new international port and SEZ along the east Jakarta Bay as a long-term solution for the EJIA problem and for the reemergence of Indonesia in FDI market.
- To formulate a new Industrial Growth Corridor by combining EJIA and a new Jakarta Bay Industrial Zone (JBIZ) with an International Port.
4 Political and economic trends in Indonesia

Since Indonesia became to be known as one of the global investment destinations from the early 1980’s, it has experienced both ups and downs in its economic profile. This transition will be carefully studied and summarized in the following sections to fully understand the current situation of Indonesia. The findings will be integrated in the revitalization plan with detailed suggestions which Indonesia should aim for the future success.

4.1 Political trend

The economic and political trend of Indonesia can be largely divided into “pre-financial crisis” and “post-financial crisis” phases. In terms of politics, Indonesia has gone through a large reform in executive, judicial, and legislative regimes after Suharto’s resignation in 1998. At the end of his autocracy, civilians became more involved in the election by directly voting for their President, and “democratization” was pursued. The implementation of regional autonomy measures in 2001 was supposed to be one of the attempts to this democratic shift.

Today, regions and cities have become the key administrative units responsible for providing most governmental services including infrastructures for residents. However, this decentralization occurred before strengthening the institutional capacity of local governments enough. In other words, local governments gained the right and power to provide social benefits before the fiscal function was clearly defined between the central and local governments. This lack of clarity in the framework of jurisdiction from decentralization created a situation that local governments still depending on the central government for funds as well as for technical assistance, and yet service execution is demanded at the local administration level. As we will see in the following section, this halfway-decentralization poses an impediment on country’s economical development as well.

4.2 Economical trend

The economical trend of Indonesia can be interpreted in accordance with the trend of FDI flow into Indonesia. FDI boomed with the creation of EJIA, and stagnated with the Asian Financial Crisis, and now slowly coming back as the crisis settles down. In general, however, Indonesia is still short in meeting its 7% economic growth target, at the same time, suffering from a high unemployment rate of 10.4%.

Prior to the financial crisis in late 90s, Indonesia was one of the fastest growing South-East Asian countries with its fairly open regime that attracted many private investors, both domestic and foreign. This pro-private investor economy was first started in Suharto’s New Order Regime in 1966. In 1967, a new Foreign Investment Law was enacted to stimulate private investments, such as giving generous tax concessions and guarantees, and the formation of the Capital Investment Coordinating Agency (BKPM) to promote FDI. Although Indonesia’s FDI-friendly policy once swung back to protectionist policies during the oil boom in mid-1970s to early 1980s, domestic and foreign investment, particularly in labor-intensive manufacturing industries for export-oriented projects, was highlighted again in 1980s. Indonesia was also attractive in the sense of low-labor-cost compared with other countries like South Korea and Taiwan which began to have higher wages at that time.

The contribution of private sectors was so large that the per capita GDP grew from $70 in 1966 to $1,000 by 1996. This was largely due to the government’s effort to eliminate regulatory obstacles to attract investors, such as a provision of infrastructures and essential social services which is symbolized by the start of EJIA. EJIA project started in 1989 as a model case of Industrial Park Program and began to be operated from 1990, and continuously has been the favorite destination for major international private companies, mainly from Japan, over years. As a result, it became the largest industrial zone in the country.
Large size development projects like EJIA was also possible because of the country’s high GDP growth rate, which was constantly kept over 7% during 1991-1995. Because of the country’s constant growth, the government was able to allocate a large budget to development, and this development allowed the economy to boost even more. However, these significant investment opportunities did not last long because of the poor governance and over extended borrowings of overseas money, which also led Indonesia to be one of the most suffered countries by the 1997 Asian Financial Crisis.

Figure. 4-1 Spending on development projects


The financial crisis, which first hit Thailand in June, 1997 was initially seen unharmed to Indonesia. However, as Indonesian government decided the trading band to be between 8-12% and implemented the floating exchange rate system in reaction to the Thai Baht’s break, the value of Rupiah also started to decline sharply. In 1998, the inflation rate of Rupiah marked 60%, which caused increases in prices and rage among people against the time’s President Suharto. As the Indonesian economy stagnated, the investors’ confidence also dropped, and the unfavorable exchange rate led to a low domestic demand for imports and an absence of new investments, as it can be seen in Figure 4-2 below. Unlike Thailand and South Korea, which also suffered as much as Indonesia did from the crisis but able to recover because of their stable regime, the Indonesian government was unable to respond speedily and effectively to the crisis, which in the end led the nation-wide economic stagnation and the fall of President Suharto.

Figure. 4-2 Changes in FDI Amount

During 2000-2003, the main driving force of the economic growth in Indonesia was private and public consumptions while investment remained discouraged.
Recovery period: 2004-Present

In 2004, for the first time after the crisis, Indonesia’s GDP growth exceeded 5%. However, although with 6% economic growth in 2007, Indonesia seems not to be back on the track of a brisk recovery in that the level of investment has not been fully recovered. According to the report published by JETRO in 2006, the rate of contribution of investments to GDP was only 22% in 2005, and 23.6% in 2006. Compared with the 30% contribution before the financial crisis (in 1996), the level of investment is still low.


However, the majority of the authorities in the central government simply appreciates the current recovery level in the economic growth, and does not fully understand underlining causes of this partial recovery, and an exploration of potential growth in investments has not yet attained. Therefore, the real start of Indonesia’s recovery may be accomplished by making the authorities realize the interferences which is still discouraging foreign investors.

5 Problems and challenges for Indonesia

The broad challenge Indonesia is currently facing is how to attract the FDI market again, whereas international investor is now paying more attentions to other successful Asian countries, such as China, Vietnam, Thailand, Malaysia, and India. The first step is to understand the current problems of Indonesia in FDI market, and to realize the differences between other successful Asian countries and Indonesia.

5.1 The current position of Indonesia in a competitive global FDI market

Observing the FDI trend, Indonesia was once one of the hottest and most attractive countries for FDI from the late 1980s to the mid-1990s. However, as it is seen, Indonesia lost its competitive edge after the Asian Financial Crisis followed by the political instability from 1997. As other Asian countries, which also suffered from the financial crisis, began to recover, Indonesia was left behind in being a destination for foreign investors. This desperation is also reflected in the GDP growth rate in Asia as it is shown below in Figure 5-1.
The interesting point, but problematic for Indonesia, of the east Asian economic development is that, even South Korea and Thailand, which suffered from the Asian Financial Crisis as much as Indonesia did, never experienced a reduction in FDI inflows (see Figure 5-2) while Indonesia faced serious downturn. Figure 5-2 implies that Indonesia had to make a serious effort in improving their investment environment, particularly in a way more than it did at any time in the past.

Source: ADB “Asia Economic Monitor 2007”

*1992-97: shows average annual
5.2 Major problems for doing business in Indonesia

In the report of “Indonesia: Country Strategy and Program: 2006-2009”, Asian Development Bank (ADB) refers the reason of low FDI inflows into Indonesia since the financial crisis as follow:

- Political instability
- The rising cost of labor
- The general inefficiency of public administration
- The judicial costs of doing business in the country
- The uncertainty in rules, responsibilities, and resources of the sub-national governments caused by decentralization

The “World Development Indicators, 2005” assembled by the World Bank further illustrates the investors’ point of view in policy uncertainty, the level of corruption, and a lack of confidence in courts uphold in property rights and etc, which are graded in comparison with other countries. In this study, Indonesia’s major business constraints are considered lying in policy uncertainty, corruption, and weak confidence in courts uphold in property rights.

Table 5-1 Selected Investment Climate Indicators of Selected Asian Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Policy uncertainty</th>
<th>Corruption</th>
<th>Courts</th>
<th>Crime</th>
<th>Bureaucracy</th>
<th>Electricity</th>
<th>Labour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Major constraint (%)</td>
<td>Major constraint (%)</td>
<td>Lack confidence courts uphold property rights (%)</td>
<td>Major constraint (%)</td>
<td>Average time to clear customs days</td>
<td>Major constraint (%)</td>
<td>Regulation (major constraint, %)</td>
</tr>
<tr>
<td>Indonesia (2004)</td>
<td>48</td>
<td>42</td>
<td>41</td>
<td>22</td>
<td>5</td>
<td>22</td>
<td>17</td>
</tr>
<tr>
<td>Malaysia (2003)</td>
<td>22</td>
<td>15</td>
<td>19</td>
<td>11</td>
<td>4</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Philippines (2003)</td>
<td>30</td>
<td>35</td>
<td>34</td>
<td>27</td>
<td>3</td>
<td>33</td>
<td>25</td>
</tr>
<tr>
<td>PRC (2002/03)</td>
<td>33</td>
<td>27</td>
<td>18</td>
<td>20</td>
<td>8</td>
<td>33</td>
<td>21</td>
</tr>
</tbody>
</table>

Source: World Bank “World Development Indicators, 2005”

5.2.1 A lack of key infrastructures

Port development

In order to become an investor-friendly country, the availability of reliable transportation infrastructures becomes a key, however, the road connectivity to ports is primarily the utmost problem in Indonesia.

The port is an important facility regarding to the level of FDI inflows. In fact, 90% of Indonesian trades are transported via sea, and roughly half of it is through the Tanjung Priok port located in the outskirts of Jakarta. However, these ports are not functioning as an international hub, but the reality is that 80% of the export goods from Indonesia are first sent to either Singapore or Malaysia at transit and then reloaded to larger vessels for final destinations. The maximum depth of T.J. Priok port is only 12m, thus it is not good enough to accommodate the super Panamax size ship, which is frequently used for exporting goods in a large quantity today. Besides this reason, the study conducted by USAID in 2005 also attributes to three main reasons for T.J. Priok’s poor performance.
Poor operation rate
The berth occupancy rate is 59% while the world accepted average is 40%, the vessel turn-around time is 76 hours, and the working time ratio of the workers in the TJ Priok port is not sufficient because only 1/2-1/3 of the time a ship is at the port is allocated for service.

Lack of available infrastructures
There is a limited space for container storage and stuffing in the port site, which makes the users to transport empty container to surrounding storage yard, which causes a higher distribution cost. In addition, because of the long and shallow channel of T.J. Priok’s seabed, it requires about 0.6 million Cm³ of soil to be dredged every year which also costs about $1.2 million (0.6 million Cm³ x $2).

Poor connectivity between users and port
Because the port is located within the heavily congested capital area, transportations of cargos to and from the port requires longer time and higher cost than most competing ports in Asia.

The Indonesian government is indeed aware of this problem, and the plan to expand the TJ Priok port to be able to accommodate more cargos is undergoing. However, what the Indonesian government is not entirely aware of is that the expansion of TJ Priok port is not a complete solution. If the demand is exceeded the planned capacity of the port, the space created through expansion would fill in quickly. Moreover, the cost of dredging and the inability to accommodate large size ships do not change. Therefore, for a long-term solution, a development of a new deep sea port with a depth of over 15 meters is absolutely needed, just as all of the successful countries in Asia have done in the past two decades.

Road transport network
The economic loss does not only occur at the port, but also occurs during the traffic congestion on the way to the port or just transporting within EJIA and between EJIA to Jakarta. The problem of traffic jam in the Jabodetabek area (Jakarta-Bogor-Depok-Tangerang-Bekasi) is actually a chronic problem, which seems to be worsening even more. According to the study done by BAPPENAS in 2005, at present, the economic loss caused by the traffic congestion in the region could be as much as $68 million per year. The same study also attributed to two main reasons for this congestion as 1) the progress of suburbanization, and 2) the increase of cars and motor cycles on the road.

The population size of Jabodetabek was amounted to around 21 million people in 2000. However, the increase rate of population in Jakarta and Bogor-Depok-Tangerang-Bekasi (Bodetabek) is different. While the population growth in Bodetabek between 1990 and 2000 was 3.7%/year, it was only 0.2% in Jakarta during the same period. This implies that the suburbanization has rapidly proceeded, mainly because people began to seek better life quality, housing circumstance and environment, and cheaper housing/land cost out of Jakarta. The population movement toward suburban area also causes longer trips between residence and workplace, and more traffic volume on the roads.

The reason for the increase of motor cycles and cars can be various but the most noticeable one will be the deficiency of public transportation service, cheaper fuel prices, and lower price of motor cycles. The popularity of motor cycles mainly derives from the middle class, which contributed to 60% increase of registered motor cycles between 1998 and 2002. (Motor cycles increased from 1.5 million to 2.4 million, and cars increased from 1 million to 1.4 million during the same period).

In order to reduce the traffic congestion, toll roads have been introduced, and especially for the road from EJIA to the T.J. Priok port, a new ring road is planned to be completed by 2009. However, local roads (not highways) are still in need for improvements. However, constructions of local roads
cannot be implemented by the central government’s own decision because of the increased power of the local governments. Since traffic congestion does not only influence workers’ commuting time, but also affects logistic time and cost of industrial cargos, this problem particularly needs to be tackled. So far, the most likely solution is to create a new port outside of the most congested capital area along with connecting expressways to divert the traffic flow.

5.2.2 Inefficient custom regulation process

In addition to the cost of time to transport goods from EJIA to the T.J. Priok port, there is also a cost of extra unofficial fee for carrying out a custom process. This has long been a problem for foreign industries in Indonesia, and even worsened after the role of local administrations was reinforced. In order to prevent foreign investors from leaving the country, there is a need to practice a consistent and transparent custom process. One possible solution could be a creation of a dryport service. At this dryport mechanism, industries can conduct their custom clearance without going all the way to the T.J. Priok. By actualizing this mechanism, not only the custom process will become convenient, but also, it will relieve the congestion at the T.J. Priok port. If this dryport service worked out at EJIA, it could be spread to other industrial clusters in Indonesia as well. This Dry port mechanism shall be described more in detail in the following section.

5.2.3 Land ownership and relocation of houses

The Basic Agrarian Law (UUPP), enacted in 1960, was a comprehensive legal effort to modernize Indonesian landownership. Although it is almost impossible for foreign individuals or foreign legal entities to legally own or use land in Indonesia under UUPP, there are two methods which enable even foreigners to have an authority over Indonesian land. One is to set an Indonesian citizen or legal entity as a nominee from the purchaser to buy the land on behalf of the purchaser. This method also enables the purchaser to have an exclusive authority to utilize, sell, transfer, or lease the land without any reference to the nominee by issuing “Power of Attorney”. The other way is to establish an Indonesian company. In Indonesia, a 100% foreign equity companies can also be the legal land owner of the land.

Although these ways for foreigners to obtain a piece of land in Indonesia is highly useful for calling in FDI, the process and the system is not well organized. Land transfers and land title deeds are drafted by a Land Deed Official known as Pejabat Pembuat Akte Tanah or PPAT who are very commonly also Notaries. Unfortunately, the vast majority of Indonesian Notary who commonly handle land transfer procedures lacks the knowledge and skill to properly advise foreigners on matters of secure land title. In addition, the duration of the process of obtaining land licenses is usually long and slow as it is indicated in Table 5-2 below, because so many agencies are involved. This does not only cause a delay in business process, but also a hesitation in investors’ motivation. Consequently, a system reformation together with capacity building for PPAT is needed.
Table. 5-2 Land Registration Procedures in Indonesia

<table>
<thead>
<tr>
<th>Registration Requirements:</th>
<th>Time to complete</th>
<th>Cost to complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Procedure</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Obtain location clearances from the municipal authority</td>
<td>1 day</td>
</tr>
<tr>
<td>2</td>
<td>Obtain location clearances from the country/regional authority</td>
<td>1 day</td>
</tr>
<tr>
<td>3</td>
<td>Obtain lot plan with site map</td>
<td>1 day</td>
</tr>
<tr>
<td>4</td>
<td>Confirm project compliance with zoning requirements</td>
<td>1 day</td>
</tr>
<tr>
<td>5</td>
<td>Obtain zoning and road construction diversion to determine project compatibility with the existing or planned roads</td>
<td>1 day</td>
</tr>
<tr>
<td>6</td>
<td>Obtain land use permit from the governor</td>
<td>35 days</td>
</tr>
<tr>
<td>7</td>
<td>Obtain statement letter and site planning map from City Planning Office</td>
<td>24 days</td>
</tr>
<tr>
<td>8</td>
<td>Obtain architectural assessment from City Architectural Advisory Team</td>
<td>33 days</td>
</tr>
<tr>
<td>9</td>
<td>Register with Land and Building Tax Office</td>
<td>11 days</td>
</tr>
<tr>
<td>10</td>
<td>Obtain a statement of uncontested ownership of the land</td>
<td>8 days</td>
</tr>
<tr>
<td>11</td>
<td>Obtain a building permit (BMB)</td>
<td>21 days</td>
</tr>
<tr>
<td>12</td>
<td>Obtain an environment management plan and an environment monitoring plan</td>
<td>7 days</td>
</tr>
<tr>
<td>13</td>
<td>Obtain an official report on completion of construction and compliance with the building permit (BMB)</td>
<td>28 days</td>
</tr>
<tr>
<td>14</td>
<td>Obtain a building usage permit (BPB)</td>
<td>49 days</td>
</tr>
<tr>
<td>15</td>
<td>Obtain building usage appropriateness (KMB)</td>
<td>49 days</td>
</tr>
<tr>
<td>16</td>
<td>Register the warehouse with the regional office of the Ministry of Industry and Trade</td>
<td>9 days</td>
</tr>
<tr>
<td>17</td>
<td>Obtain electricity connection</td>
<td>8 days</td>
</tr>
<tr>
<td>18</td>
<td>Obtain water and sewerage connection</td>
<td>1 day</td>
</tr>
<tr>
<td>19</td>
<td>Obtain telephone connection</td>
<td>4 days</td>
</tr>
</tbody>
</table>

* Takes place simultaneously with another procedure.

Source: Doing Business.org, 2007

5.2.4 Uncompetitive labor practices and frequent labor disputes

Although the Indonesian economy is growing, the growth is not sufficient enough to absorb the 2 million new entrants to the job market every year. The 4-5% economic growth that used to be said as sufficient enough to keep the unemployment rate low is now renewed to 7% growth rate. The current 10.4% unemployment rate can be largely attributed to the unattractive exiting labor market in Indonesia. The major cause of the reluctance of foreign investors to locate their factory in Indonesia and workers' average minimum wage has been rapidly increased. According to the interview survey conducted during our study, the minimum wage within EJIA itself is growing 10% a year, and now reached over 1 million Rupiah (about 12,000 Yen) per month. This cost is not really an attractive indication for investors.

Another concern expressed by foreign investors about the labor practice in Indonesia is the unsatisfactory labor regulation. In details, it is hard for employers to control strikes or to discharge employees without certain amount of negotiations with labor unions. In fact, numbers of Korean and Japanese companies used to operate in Indonesia relocated its factories to other Southeast Asian countries like Vietnam because of the cost incurred by labor.

There have been some attempts in the past years to change the labor regulation to make it appealing for investors, however, every attempt has met with strong oppositions from the public. This is largely due to governments and investors’ attempt to renew the nation’s labor regulation suddenly and completely. If we suggest changing the labor regulation partly in a designated area like within EJIA as a start, and gradually spread to other areas once the new regulation was accepted from the employees, the practice can be realized in a nation as a whole. In fact, this method has already tried
in Cambodia and widely accepted as an effective method. However, in order to enable this method, the strong governmental support is necessary.

5.2.5 Complex administration system and a lack of coordination

The country’s major reconstruction to decentralize the political power gave initial benefits, but also challenges in local governments. As it is stated before, local and regional governments have been given a large responsibility on providing social services in 2001. To provide about 30 functions of social service, finance sources are deemed to come from local government’s own revenues, shared revenues, and transfers from the national government and borrowings. However, according to the ADB report in 2006, local government’s own revenue-raising accounts only about 6% of total revenues, and the rest is largely dependent on fiscal transfers from the national government. However, because the national government’s revenue itself lowered with the decreased FDI, the fiscal dependency led to deterioration in social and physical infrastructures, and insufficient public services. In an attempt to create own revenue sources, many regions imposed arbitrary taxes, which ended up in even worse investment climate. To make the country attractive again, there is a serious need of reconstructing the administrative system.

The inconsistency between national and local governments is also being problematic. There is a concern that even if the government makes regulations for investors to do business easier, the actual implementation is not always performed in a satisfactory level. One of the reasons of this low implementation level is because, from government officials’ view, legal reform is not a visible change enough to impress the public who has the power to vote for local officials. However, if Indonesia is seriously considering calling back investors, a sound and stable administrative system is one of the pre-requisites.

5.2.6 A insufficiency of strong political will

For a successful revival of EJIA, a leader needs to show his/her strong desire to commit him/herself for the project, so that investors trust him/her. This trust also should be built between political leaders and domestic large companies, such as Ciputra, who direct its investment to other South Asian countries after the financial crisis, just like foreign investors did. In order to stabilize the Indonesian economy, domestic investors are important as much as foreign investors are.

Another important aspect of a leader with a strong political will is to clarify the Indonesian industrial policy/goal. The current industrial policies seem to be a mix of different policies directing to different goals. In the study, some industries expressed that they are confused because although the Indonesian government is showing a will to make a situation favorable for foreign investors, the actual action has not been achieved in a sufficient level. Actual action-taking and clear future vision adds credibility to the Indonesian government’s ability, and eventually increases confidence in investors’ view to continuously support the Indonesian economy.

5.3 Challenges of Indonesia for attracting FDI

Considering major problems listed above, for the revival of the Indonesian economy, there are numbers of challenges that the government needs to tackle in the future. Among them, the major challenges are summarized below.

1) To reach a consensus among key stakeholders on economic revival policy

Because the Indonesian economy is slowly reviving, some stakeholders consider safer to just let it go, rather than adopting an innovative reform to further fasten the revival process. However, the current Indonesian economy is mostly sustained by individual consumptions, and the industries leading the economy are very limited. For example, energy, power plant, and four and two wheel industries are relatively performing better, however, this is largely due to the
increasing domestic demand. If Indonesia could not make an access to the international market, its economic growth will be limited. In addition, the speed of the labor force increase is outnumbering the employment demand from these three sectors. Therefore, an immediate policy addressing to the expansion of FDI, and subsequent employment creation measures need to be taken.

2) To shift toward a more transparent and efficient governmental system
The major reason for Indonesia to be not able to attract foreign investment, as other South Asian countries are doing, is because the governmental system is not working efficiently enough to act quickly according to the changes and demands in the market. The inconsistent administrative system between the central and local government is one of the cause, the insufficiency of strong political will to direct the country toward one goal is another. To tackle these challenges, the first step is to make stakeholders understand the needs and benefits, and subsequently the role of investment in reviving the Indonesian economy. Eventually, the solutions to overcome these challenges are to be clearly stated.

6 Role and challenges of East Jakarta Industrial Area (EJIA)

6.1 Role of EJIA
The East Jakarta Industrial Area (EJIA) is the biggest industrial cluster in Indonesia, which possesses a possibility to become an even bigger globally competitive industrial hub, which leads not even the Indonesian but also the South-East Asian economy.

Figure. 6-1 Bekasi-Cikarang Industrial City

Source: Jakarta Japan Club Infrastructure Committee

The development of the Bekasi, Cikarang, and Cibitung area was started by the Industrial Estate Program introduced in 1989 by Engineering Consultant Firm Association (ECFA). In this program, about 100 industrial estates were approved in Indonesia. EJIA, a cluster of five industrial estates, was the first model industrial estate city project. With the strong support by the Indonesian
government, the first factory operated by Sony was opened in 1990; which was only one year after the project started. The popularity of EJIA even rose with a sudden appreciation of Japanese Yen from 1986 which was staggering over 100% (ex. 240 Yen=1 USD in 1986 was reached to less than 90 Yen=1USD in 1988) within two years. Such appreciation of Japanese Yen made nearly every Japanese manufacturing company to seek a new low cost operation base in Asian countries, and EJIA served perfectly to those demand.

Currently, EJIA is consisted with 7 industrial clusters as listed below;

- Jababeka Industrial Park Kawasan Industri JABABEKA
- PT. Mulia Industri
- Delta Silicon
- B.I.I.E Hyundai
- MM2100 Industrial Town: 63 Japanese companies
- East Jakarta Industrial Park(EJIP): 74 Japanese companies

These 7 industrial estates together have occupied an area of 4,000 hectares, which is the largest industrial cluster in Indonesia. With this capacity and service provisions for international companies, EJIA has long been a major receiver of foreign investors. In addition, because there are varieties of industries locating in the area from parts factories to assembly factories, large companies like HONDA and EPSON could finish their production process within EJIA. This industrial accumulation in manufacturing cluster enabled investors to reduce the cost and time of production, thus having increased Indonesia’s competitiveness. However, EJIA itself also stopped growing with the nation-wide drastic slowed down of crucial infrastructural developments after the economic crisis in 1997.

### 6.2 Challenges of EJIA for future economic growth

1) **Unclear future vision**
   As long as the country’s future development vision and projection on its economic growth model is unclear, the future business plan for companies in EJIA will not be decided. Before these foreign companies get exasperated by Indonesian government’s weak commitment, an action should be taken.

2) **Inadequacy of key infrastructures**
   Ineffective road network is certainly being the main reason for both current and future EJIA investors’ hesitation on expanding its business in Indonesia. Traffic jam is occurring not only inside of Jakarta city, but also around Jabodetabek and inside EJIA. Although Japanese companies, the major contributor to the growth of EJIA has been working on planning a new road network connection among EJIA area, the ineffectiveness of the national government to coordinate the designated local governments is slowing down the process. The commitment from Indonesian government is crucial to solve the problem.

3) **Inefficient government regulations**
   The major regulation trouble is occurring in the field of labor, custom, and land lease. The current regulation which prohibits employers to fire inefficient workers in reasonable circumstances and strong labor union is discouraging EJIA investors to expand its business. The inefficient custom process at the port is also slowing down the business operation. Moreover, the processes of obtaining land and relocating houses for public purpose are too slow for investors to acquire a quick business chance. Therefore, there is a serious need to find a win-win situation between labor unions and employers, to adopt an one-stop custom service in EJIA, and finally to simplify the land lease process to solve the deficits in the current regulation system.

4) **Complex administrative system and a lack of coordination**
The gap between central and local governments is casting uncertainties and ineffectiveness in administration system. For example, there is a plan to construct a new highway around Jabodetabek by the central government to especially relieve the traffic pressure in the city road leading to the T.J. Priok port. This plan to improve the road connectivity is also every EJIA investors’ wish. However, the different fiscal and planning policy of the regional government governing the local road connecting the highway and the port does not allow the improvement in local road, and thus the functionality of the highway will not be fully appreciated. Therefore, coordination between local and central governments to share a common goal and method to reach for a sustainable economic growth should be reached.

**BOX. 6-1 Batam-Bintan-Karim (BBK) Islands’ success for attracting FDI by introduction of SEZ system.**

The Singapore government and the Indonesian government have been working closely together for the development of Batam-Bintan-Karim (BBK) Islands for nearly two decades, which became another important industrial cluster of Indonesia (700 foreign companies with 20,000 sub-contractors for mainly electrical & electronics parts industry). However due to serious political and economical problems of Indonesia in the recent years, FDI to the BBK region has been negatively affected reducing number of investors down since 1997. In order to revive the BBK region as industrial cluster centered around Singapore, the Singapore government made a proposal to designate the entire BBK Region to be a Special Economic Zone (SEZ), which means to have a special liberal and better incentives plus flexible & efficient regulations related to investment plus import & export process and labor practice in 2006. Both governments signed a MOU and actual agreement was signed in 2007. The result of MOU and agreement was very significant. The FDI to BBK Islands jumped 20 times in 2007 to reach $2.0 billion only up to July 2007. Considering the successful result of BBK SEZ application, the EJIA and proposed new port development with industrial corridor should seriously consider to adopt a similar SEZ regulation to the area to make sure that the largest industrial cluster (EJIA) should able to revive again and continue to expand together with the new port development project.

them, for those particularly seen as growing concerns of EJIA, as it was explained in Chapter 6.2 above, the following solutions can be proposed.

**7.1 Shot-term solution**

The stagnation in smooth traffic and cargo transition is identified as the main constraint in business operations of EJIA. And yet, the transaction flow between Jakarta and Tanjung Priok port is not only the current issue, but it is also realized that the inefficient internal movement of goods and cargoes has been posing a pressing concern for already operating factories and ones considering new investment in the zone at hand. Therefore, in the short term, tackling to ease the internal access among 7 industrial estates within the zone can be a primal target to attain a smooth movement of cargoes in the site and to stimulate subcontractor’s activities in the zone.

**7.1.1 Internal road network improvement**

The following is a concept drawing showing reinforced internal linkage roads in Bekasi-Cikarang Industrial Zone.
<table>
<thead>
<tr>
<th>No</th>
<th>Project Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Analysis and feasibility study (FS) development of road network Industrial Area in Cikarang – Bekasi</td>
</tr>
<tr>
<td>2.</td>
<td>Constructing highway Cibitung (Cikarang) – Cilincing</td>
</tr>
<tr>
<td>3.</td>
<td>Constructing highway Cimanggis – Cibitung</td>
</tr>
<tr>
<td>4.</td>
<td>Constructing highway access to Tanjung Priok</td>
</tr>
<tr>
<td>5.</td>
<td>Constructing flyover Cikarang – Cibarusah / access toll</td>
</tr>
<tr>
<td>6.</td>
<td>Improvement of national road (Bekasi – Cikarang)</td>
</tr>
<tr>
<td>7.</td>
<td>Improvement / enlargement of Cibarusah Road (Lemahabang – Mekarmukti)</td>
</tr>
<tr>
<td>8.</td>
<td>Providing 2 Units Steel Frame Bridge Length 60m for Bridge in MH. Thamrin Road (Cikarang River)</td>
</tr>
<tr>
<td>9A.</td>
<td>Adding lane toll Jakarta Cikampek at the part of Cibitung- Cikarang stage I KM 25+175 to KM 28+675 (3.5 KM)</td>
</tr>
<tr>
<td>9B.</td>
<td>Adding lane at Cibitung- Cikarang Stage II KM 28+675 to KM 31+400 (2.725KM)</td>
</tr>
<tr>
<td>10.</td>
<td>Relocation Pondok Gede Timur TollGate (19 booths) to Cikarang become (29 booths)</td>
</tr>
<tr>
<td>11.</td>
<td>Adding lane Cikarang – Cikarang Timur KM 31+400 to 34+400 (3 KM)</td>
</tr>
<tr>
<td>12.</td>
<td>Adding lane Cikarang – Cikarang Timur KM 34+400 to 37+400 (3 KM)</td>
</tr>
<tr>
<td>13.</td>
<td>Improving / widening Cibarusah road (Mekarmukti – plan of Flyover Cikarang, MH. Thamrin – Cibarusah – Cibucil</td>
</tr>
<tr>
<td>14.</td>
<td>Improving Mekarmukti – Cikarang road</td>
</tr>
<tr>
<td>15.</td>
<td>Constructing building under the bridge of MH.Thamrin road (Cikarang river)</td>
</tr>
<tr>
<td>16.</td>
<td>Widening Inspection Road of Tarum Barat</td>
</tr>
<tr>
<td>17.</td>
<td>Improving Bali Road at the Norhtern side of toll way</td>
</tr>
<tr>
<td>18.</td>
<td>Constructing road between Industrial Estates MM2100- Bekasi Fadjar-EJIP-Lippo Cikarang</td>
</tr>
<tr>
<td>19.</td>
<td>Constructing road between area of Lippo Cikarang – Delta Mas</td>
</tr>
<tr>
<td>20.</td>
<td>Constructing new interchange - flyover between Cibitung – Cikarang Timur, including new road between area North – South direction.</td>
</tr>
<tr>
<td>21.</td>
<td>Constructing underpass Cikarang – Cibarusah / MH Thamrin</td>
</tr>
<tr>
<td>22.</td>
<td>Constructing new road connected to primary artery road</td>
</tr>
</tbody>
</table>
Indonesia East Jakarta Industrial Area (EJIA) Revival and Jakarta Bay Industrial Zone (JBIZ) Development Plan

Source: MOU concerning road infrastructure development to support industrial area in Cikarang - Bekasi
Concerning this internal road development project, MOU has been signed among central, regional and local government, and 7 industrial estates located in the zone, and the implementation is expected to be performed accordingly. However discrepancy of roles and responsibilities in road development among the Indonesian government seems to pose a critical delay on the internal road construction within the zone. The main constrain is the fact the main responsibility of the financial and planning arrangement of traffic and public works is basically transferred to the local government, and yet the policy and budgetary function is assumed to be remained in a central government. Hence, the role of the local government became the execution force of the policy of the central government with limited financial resources. The central government still has the collection right of taxes, although the freedom of budgetary process is admitted in the local government in the law. At this point, it is emerged that the local government has a role and responsibility to develop road infrastructure, and yet budgetary allocation from central to local government has not been well functioning for the actual implementation of the road project.

To avoid the delay in project implementation due to the organization and financial dysfunction, a new budgetary arrangement and taxation regime might need to be introduced, and in that special-purpose tax revenues from gasoline tax, toll fee and likes should be treated under the law as a special revenue for a long-term road construction, and the budget should timely be allocated to the local government with the most prioritized road development project, which in turn, conferred within the road development planning committee of central and local governments.

7.1.2 Introduction of dryport plan

Considering the problem of factory operators have no choice but to use the exiting congested logistic line to the Tanjung Priok port as a solo port in the region, an introduction of a dryport mechanism might be a short-term optimal option. The dryport functions as if the port is located in an inland area, which is to say, every function of a port, such as custom clearance, hand-over to forwarder and others, is assembled in the dryport. The merits of dryport are that, when the dryport locates physically close to the factories, the transportation cost for factory operators can be minimized, at the same time, when the dryport has enough capacity to handle cargoes, the longtime procedures of cargo transaction due to congestion of pre-existing sea port can be eased.

7.1.3 Introduction of One-stop Service system

The hearings from factory operators in the zone during our study revealed that the function and merits of investment and business solution mechanism of one stop service in BKPM which was established in 1990s, seems to be diluted under the present situation. Since the application of decentralization and hand-over of administrative power to regional and local government, the focal point of investor’s business and administrative appealing channel has been actually diversified. In this sense, the essence of one stop service has lost in a mere façade.

The reinforcement of investor-friendly environment is crucial for revitalizing Bekasi-Cikarang Industrial Zone. Central government should consider the fact that already operating investors show concerns on the complex and troublesome business administration, which in turn could reflect negative impacts on inviting new investment to the zone and to the country at the end.

A practical tactic to once again reverse the administration process from a multi-facial and dimensional channel to an one-stop focal process can be performed by a creation of a new organization or a reinforcement of BKPM backed up by a law to manifest straightforward investment policy and an elimination of uncertainty and corruption from a complex licensing system. Comparatively speaking, at the point of attractiveness in investment climate, the position of Indonesia lies behind other Asian countries. One possible reason must be Indonesia’s insufficient effort on administrative reform. Licensing and giving permission are government’s primal role, and yet showing off the attractiveness of the country must be other role which the government has to play.
The one-stop service should mark a country’s first step once again to reinstall the credibility of safe investment and business operation in Indonesia.

7.2 Mid-term solution

The main target in middle term revitalization program of EJIA is restructuring of the metropolitan urban traffic system. Namely JABODETABEK ring road construction is proposed.

7.2.1 Jabodetabek ring road

Currently the council is formulating a development master plan, and the following figure illustrates the project location of Jabodetabek ring road construction.

The urbanization together with the traffic pressure toward the central Jakarta has been and will be enhanced in accordance with the following projection. In the figure, the traffic especially from Bekasi area was projected to be 10 times bigger in 2002 compared with 1985.

*Figure. 7-1 Increase of commuting traffic demand from part in surrounding to Jakarta: 1985 - 2002*

Source: The Study on Integrated Transportation Master Plan (SITRAMP) for the Jabodetabek Phase 2. Final Report, 2004
To ease this traffic pressure, the master plan of 2nd JORR (Outer-outer Ring Road) project has been proposed. The total road length of 2nd JORR reaches about 110km and the project has the purpose not only to correspond to the traffic demand in the region but also to promote the sub-center and the regional developments that is positioned in suburb of Jakarta to ease over-centralization.

**Figure. 7-2 Master plan of 2nd JORR**

Source: The Study on Integrated Transportation Master Plan (SITRAMP) for the Jabodetabek Phase 2. Final Report, 2004

In practical side, the way of financing the road development could be an issue. In JICA report, a special fund accrued from gasoline tax, property tax, and toll fee is supposed to be allocated to the project fund. At the same time, to generate sufficient revenue, the percentage of gasoline tax is also proposed to be increased from 5% to 20% by 2010. Moreover, an increase in toll fee is proposed, yet this proposal is required a president approval thus a further discussion may need to be elaborated.
Indonesia East Jakarta Industrial Area (EJIA) Revival and Jakarta Bay Industrial Zone (JBIZ) Development Plan

Source: The Study on Integrated Transportation Master Plan (SITRAMP) for the Jabodetabek Phase 2. Final Report, 2004

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7.2.2 Designation of EJIA and new JBIZ as growth corridor

The EJIA with already occupied industrial area of 4,000 ha is the largest industrial zone in Indonesia and still have a potential to attract more investors (only 15.5% of 26,000 ha is occupied by registered Industrial Estate land areas). However, comparing with other Asian countries, the proposed three actions of EJIA is not sufficient to attract more investors. EJIA must show that the Indonesian Government is seriously competing with other Asian players in terms of attracting FDI in the future. One of such gestures is the designation of EJIA and newly proposed JBIZ to be SEZ. Actual SEZ regulations can be the same as the SEZ regulations adopted for the BBK Islands in 2007 or could be modified a little to adjust for differences in the location.

7.2.3 Improvement of Tanjung Priok Port and surrounding areas

Tanjung Priok port has been continuously improved for the past three decades such as the installation of RoRo berth in 2007, and the proposal of extending the container handling berth by 2010. However, the basic concern that Tanjung Priok is facing is the problem of limited land available in hinterland area and the very shallow depth for the modern international port. In order to compete in the global shipping market, the depth of the port must be above 15 meters with sufficient handling yards with a good connectivity by highways and railway thus cargos can be handled smoothly and quickly (within 24 to 36 hours). However, Tanjung Priok Port is not able to meet the requirements even though the future improvement is considered. For the long run, thus, Indonesia needs a new bigger and deeper international port as soon as possible.

7.3 Medium to long-term solution

Given the potential opportunities to revitalize Indonesia’s investment climate in manufacturing industries to address both export and huge domestic consumer’s market, it subsequently becomes obvious that Jakarta area needs to prepare another major international port facility. Currently, the Jakarta municipal government proposing a western sea port in Bojonegara, Banten. However, in the western side of Jakarta, there are not much industrial cluster and the area often suffers from floods due to the existence of swamps. In addition, even after the construction of a new port, major transport cargos have to come through the already crowded greater Jakarta city center from the Eastern side.

To the contrary, the eastern side of Jakarta has the country’s largest industrial cluster, Bekasi-Cikarang Industrial Zone and potentiality to grow further. In the proximity of the zone, there has been no access route toward Tanjung Priok port except the one existing express way. Although there is a plan to bypass the Jakarta city center and the construction of another express way is proposed as a BOT project, if the underlying problem of congested Tanjung Priok port has not been solved, again the potential of another expressway can be halved.

7.3.1 Construction of the eastern sea board

By being close to the already existing main industrial cluster, Bekasi-Cikarang Industrial Zone, the eastern bay of Jakarta seems ideal to develop a new port. In addition, the decentralization measure of urban function together with a new suburb township development should be considered as a region’s integrated industrial township development project.

Considering several concerns to come up with the proceeding of the Jakarta eastern sea board development project, the following five issues can be raised and compared for the final selection among three candidates;

1) Access to the site,
2) Land acquisition and licensing.
3) Regulations of port development (one port in one province),
4) Environmental measures and
5) Development cost

1) Access to the site
Currently, there is no major access road to the proposed three sites. And yet, access road should be a must and toll road construction project needs to be an integrated part of this industrial township development. Supposed financing in land acquisition for toll road, a division of the the central government (Ministry of Settlements and Regional Infrastructure: Kimpraswil) is considered to conduct the necessary arrangements. However, the current financial capacity is dubious due to the insufficient budget allocation to the road development executive body of the local government. Consequently, a collaboration with private finance must be considered for the implementation of the Eastern Sea Board project.

2) Land acquisition and licensing
For the land acquisition of an industrial estate, as practiced in the case of Bekasi-Cikarang industrial zone, the private sector should be brought into the land development project through a concession arrangement. Moreover, it is recommended to apply the government policy that the real estate development should be allowed to be carried out together with a route area development scheme because a rise in land price of surrounding area can boost large-scale real estate development including road and housing projects.

3) Regulations of port development (one port in one province)
In the aspect of port development policy and regulation, there is a memorandum that only one regional port can be developed in one province. If it is received as it is, east Jakarta bay port development could be against the rule. However, if we pay an attention to the current state, it is obvious that a regional sole port of Tanjung Priok is already over-congested and it can be stated that Jakarta province where country’s most developed industrial cluster and population locate should have a special arrangement of allowing several international ports development to support these industrial and social activities. The practice is not uncommon; on the contrary, as worked out in Tokyo bay and Thailand’s eastern sea board, having several sea ports in metropolitan industrial center could cast positive effects on region’s development with economic growth, industrial cluster, and logistic integration. Hence, we strongly recommend lifting one port in one province policy to allow another port development project in east Jakarta bay.

4) Environmental measures
As we consider environmental measures in developing international port and large-scale industrial zone together with township, it is to be noted in the planning process that the proposed area is categorized as an environmentally reserved area. In that sense, special measures need to be taken. In this chapter, the specific issues and measures are not pointed out in detail, yet the statements and suggestions shall be given in the following chapter 12.

5) Development cost and development time
Due to the closeness to Jakarta and EJIA plus proposed tolled road intersection, the project site is definitely the best site in terms of the development cost and the development time. Although, the physical condition of the site needs to be studied in more detail, once the master plan and detail designing of physical infrastructure were made, the site can be developed within 5 years as a target year.

7.3.2 The role of eastern sea board together with EJIA
A new east Jakarta bay port will not be merely developed to function as an import-export handling facility, but also as a gateway for industrial cluster locating in EJIA. At the same time, the port should be designed to play a role to facilitate industrial activities with highly efficient logistic
channels. On the other hand, an integrated industrial township to be developed with the new port should be considered as a supporting base for EJIA and its role is partly to take over the government administrative functions and to induce relocations of government facilities. Moreover, the eastern sea board (new port and SEZ) and EJIA should be designated as an investment promotion zone with special status of Special Economic Zone (SEZ) just as BBK Island has been applied.

**Figure. 7-3 Development Zone (Jabodetabek 2018 as of Apr. 2003)**

Source: The Study on Integrated Transportation Master Plan (SITRAMP) for the Jabodetabek Phase 2. Final Report, 2004

8 **Preliminary development plan for the Jakarta Bay Industrial Zone (JBIZ)**

The Jakarta Bay is located at the north of North Jakarta City with 13 different rivers flowing into the area. Although the area is located in close proximity to Jakarta City, the area has not been developed in the past. The distance from the existing industrial cluster in Bekasi-Cikarang, Jakarta City, and Tanjung Priok port are about 40km, 30km and 20km respectively. In this chapter, the existing condition as well as the future development plan of the Jakarta Bay Industrial Zone (JBIZ) will be studied.
8.1 Existing condition of the project site

8.1.1 Physical condition

The east Jakarta Bay area consists of three major sub-systems - mangrove forests, coral reefs and sea grass beds - which contribute to the rich ecosystem in the area. Although it is only recently that the area increasingly getting popular tourists through ecotourism programs, the area along the coast of Jakarta Bay has been received attractions as a seaside resort for rich people in the past 20 years. However, with the rapid development of the Jabodetabek, the coastal resorts of the Jakarta Bay have increasingly affected natural ecosystem transformation, non-sustainable practices on resource exploitation, and pollution.

The proposed JBIZ site at the tip of Bekasi Peninsula, which is located about 40 km from EJIA and 30 km from the Jakarta City center, is currently categorized as rural area. The area has alluvial soil created by two rivers which brings soil and sand from mountain to down steam. The area is low land from 0 to 3 meter high above the sea level. The current land use is dominantly either fish ponds or bushes/trees near the shore, where is isolated without road access. The only way to go through is to pass narrow roads or use boats. As a result, the area is sparsely occupied by small fishing villages located along rivers.

8.1.2 Socio-Economic condition

Among the people living in the eastern tip of the bay, the majority seems to be poor living squatters on the marshland along rivers. Most people are living by fishery and aquaculture. Their main mode of transportation is fishing boats through sea and rivers since there are limited access roads connecting from the urbanized area of Jabodetabek. Most houses are illegal settlements, thus public facilities such as schools, hospitals, government offices, post offices, and formal electric power and
fixed telephone system are not fully provided in the area.

According to the study conducted by Statistics Indonesia (BPS), BAPPENAS, and UNDP, the Human Poverty Index (HPI) for towns situated along the Jakarta Bay - namely Bekasi, North Jakarta and Tangerang districts - were 20.8%, 23% and 25.1% respectively. By knowing the HPI for the entire Jakarta province being 15.5%, the index indicates that the communities living in these three districts are at low-medium category of poverty condition. The following table shows the elements of calculating HPI and comparison among different districts along the Jakarta Bay.

**Table. 8-1 Human Poverty Index within the Jakarta Bay Area (1998)**

<table>
<thead>
<tr>
<th>Municipality/District</th>
<th>Population does not reach age of 40 years (%)</th>
<th>Adult illiterate (%)</th>
<th>Population without access to clean water (%)</th>
<th>Population without access to health care (%)</th>
<th>Malnutrition of infant (%)</th>
<th>HPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tangerang</td>
<td>13.6</td>
<td>5.7</td>
<td>67.8</td>
<td>20.0</td>
<td>18.5</td>
<td>25.1</td>
</tr>
<tr>
<td>Bekasi</td>
<td>14.3</td>
<td>2.9</td>
<td>74.9</td>
<td>0.0</td>
<td>11.6</td>
<td>20.8</td>
</tr>
<tr>
<td>North Jkt</td>
<td>7.9</td>
<td>2.3</td>
<td>72.7</td>
<td>0.8</td>
<td>26.2</td>
<td>23.1</td>
</tr>
<tr>
<td>Jakarta Province</td>
<td>7.9</td>
<td>2.2</td>
<td>40.2</td>
<td>2.0</td>
<td>23.7</td>
<td>15.5</td>
</tr>
</tbody>
</table>

Note: *Kepulauan Seribu* was a part of North Jakarta District before 1999 (regional autonomy decree No. 22/1999).

Source: “Local Millennium Ecosystem Assessment: Condition and Trend of the Greater Jakarta Bay Ecosystem”, 2004

If the proposed development of a new port and industrial area were to be conducted in the Jakarta Bay, the economic contribution to the area is expected to be significant. There will not only be job opportunities at the industrial site and residential/entertainment sites, but also the new development will serve as the facilitator for improving the existing socio-economic infrastructures, such as the sewage system which is contributing to the low rate of clean water access in the area (see Figure 8-2). In addition, the process of the urbanization is expected to bring people’s well-being as well as an economic driver.

**Figure. 8-2 Population without Access to Clean Water in Jakarta Bay Area**

Source: “Local Millennium Ecosystem Assessment: Condition and Trend of the Greater Jakarta Bay Ecosystem”, 2004
8.2 Land use plan for JBIZ

In the current plan, the proposed land use of the Jakarta Bay Industrial Zone (JBIZ) will be mainly divided into five zones:

1. Port & SEZ industrial zone: 2,000 hector (200 hector for port and 1800 for SEZ): 20%
2. Environmental protection & reservation forest zone: 2,000 hector for conservation zone: 20%
3. Commercial & administration zone: 2,000 hector 20%
4. Housing & tourism zone: 3,000 hector 30%
5. Infrastructure, facilities & utilities: 2,000 hector 20%

The five zones intended to bring new economic benefits to the area and the country as well as preserving the current ecological natures.

The zoning map indicated above is just the initial allocation of land use. In addition, the total size of each land use may change during the course of expansions. During the phases of making the concrete master plan, the zoning should be carefully planned to address the issues of disaster preventive, substitute land for relocated people, sustainable and well balanced environmental protection. Because of the site’s nature surrounded by water, and its recent forest loss, in the past years, the site is expected to be vulnerable to natural disasters, such as floods and tsunami. In fact, disaster prevention is a very political issue in both pre- and post-disaster phases, thus political will and leadership are essential to attain this issue.
8.3 Transportation system within JBIZ and connectivity

8.3.1 Road networks

Currently, there are a few narrow roads leading to the project site from EJIA. In order to improve connectivity with Jakarta City and EJIA, a construction of new access road is essential. The expansion of existing roads seems to be a first choice, and yet, economical way of road development needs to be realized. Since along the existing roads, there are many dwellings, it might be better to think of a new road construction project in less-populated farming field. Besides, the new bypass toll way is under planning and the toll between EJIA and Tanjung Priok port could provide a good entrance and exit section to be connected with an extension road towards project site.

Figure 8-4 Access road towards project site

Source: Google Map modified by study team

The main access road toward the new port should be planned with high standard expressway with 3 lanes in each direction (initial stage 2 lanes). By putting the transport rate at 100km per hour, the travel time from EJIA to the site will be half an hour, and 45 minutes to one hour from Jakarta City.

While the bypass road between EJIA and Tanjung Priok port is supposed to be developed by BOT method with private initiative, the new extension road toward the site has a little chance to invite private players at this stage since the transportation demand forecast in the section is difficult to project, and the project risk can be evaluated high until the realization of the port construction and the industrial zone become certain. So it should be rather hard to proceed the road extension project
as a private project. In this study, this road construction project is, thus, recommended to plan as a public project with close coordination with a developer of EJIA-Tanjung Priok port bypass road.

8.3.2 Satellite Town and Dry Port & SEZ system

Between JBIZ and EJIA, 4 satellite towns (about 2000 hectar each) are initially planned to be developed around the gateways of toll road. Their economic activities are interlinked along the mainstream of the highway, industrial integration will be enhanced, and subsequently each zone and satellite cities will formulate an area-wide industrial cluster which named as an economic growth corridor as illustrated below (Figure 8-5).

**Figure. 8-5 The concept of satellite town and economic growth corridor**

Source: Google Map modified by study team

8.3.3 Railway

The first railway in Indonesia opened in 1876, and then slowly extended to current lines. Today, the railway passenger mostly uses the train along suburban commuter and in the major inter-city. The effort to increase railway use among commuters is strengthened by the Jabodetabek Railway Project in 1981 by aiming to cover 20% of the transport modes in Jabodetabek by railways. Since then, together with the expansion of the railway network, the number of Jabodetabek commuter trains increased by 260% from 137 trains/day in 1992 to 356 trains/day in 2001. The passenger volume was increased from 130,000/day to 410,000/day in the same duration. Currently, the railroad tracks connect Jakarta to its neighboring regions: Depok and Bogor to the south, Tangerang and Serpong to the west, and Bekasi, Karawang, and Cilanpek to the east.
Although with the rapid expansion of railway systems, the Jabodetabek area is still short in the mass transportation system to relieve its current traffic congestion. Especially, if the Jakarta Bay is to be developed as an industrial/residential site, an increase in transportation volume is certainly expected. Therefore, besides improving the road network between Jakarta and EJIA, a plan to expand the current railway system should also be considered. The railway should have both passenger railway and cargo railway allowing smooth and efficient movement of people and cargoes. The timing of a railway construction should be in the Phase 2 (2014-2018) when a sufficient demand for both passengers and cargos will be expected.

8.3.4 Airport

In the long run of JBIZ development, the role of an airport must be significantly highlighted. The existing Jakarta International Soekarno-Hatta Airport has several problems faced in its operation. The first constrain is its limited capacity against the number of flights coming into Jakarta. Consequently, passengers would frequently have to wait in the crowded lobbied. Secondary, the area the airport locates often suffered from serious flood by which the transportation between the airport and cities occasionally cut off.

In industrial operations, an airport plays an important role to transfer people and goods in a long distance with relatively short period. Even the transportation cost could be higher than using shipping lines, especially in the high-tech manufacturing industries, an airport is a basic facility to import inputs-materials and to export output-products to overseas market. When the stage of the development in JBIZ was shifted to more high-end industries, an airport must be developed to facilitate those industrial operations as well as to mitigate the present air-transport situation in Jakarta.

8.4 Construction of an international port

In order to make EJIA attractive location for FDI once again, a globally competitive international port is essential. Moreover, facing its handling capacity limit of current Tanjung Priok port, we are proposing to develop 15 meter depth container and bulk cargo ports with 4 to 6 berths in JBIZ in stage of the Phase 1 (2008-2013).
8.4.1 Existing port demand and existing port facility in eastern Jakarta

The Tanjung Priok port was started as the main gateway to Western Java and still remains as the gateway for industries in and around Jakarta. The demand for Tanjung Priok port has been growing with the GDP growth. During the high growth period in 1990’s until 1997, the demand for the Tanjung Priok port was over 14%, however, after the economic crisis, the demand for Tanjung Priok port has been reduced to 5% annually in average. Due to the recovery of the Indonesian economy, however, in the recent years, the demand for Tanjung Priok port increased to 3.4 million TEU in 2004. Based on the JICA study, the demand for port is likely to expand for 113% from 2000 to 2012. In responding to this future demand, the expansion of the Tanjung Priok port is currently underway. However, in the light of the global competition for attracting FDI, Indonesia must develop an internationally competitive deep sea port at JBIZ as soon as possible.

- In Jakarta metropolitan area, there are 4 existing port, i.e. Tanjung Priok Port, Banten Port, Sunda Kerapa port and Cirebon Port.
- Tanjung Priok port covers 99% of the total container in the metropolitan ports, therefore the outline of the Tanjung Priok port will be discussed as to point out the problems regarding port in the following section.

1) Layout of the Tanjung Priok port.
   The following figure shows the layout of the port facilities.

**Figure. 8-7 Layout of Tanjung Priok port facilities**

### Table 8-2 Channels

<table>
<thead>
<tr>
<th>Channel</th>
<th>Location</th>
<th>Length (m)</th>
<th>Width (m)</th>
<th>Depth (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel - I</td>
<td>North of JICT, Koja, RoRo port</td>
<td>3,840</td>
<td>100</td>
<td>10-14</td>
</tr>
<tr>
<td>Channel - II</td>
<td>Inside of west Breakwater</td>
<td>1,700</td>
<td>100</td>
<td>14</td>
</tr>
<tr>
<td>Channel - III</td>
<td>Approach Channel</td>
<td>1,470</td>
<td>125</td>
<td>14</td>
</tr>
<tr>
<td>Channel - IV</td>
<td>Oil Terminal</td>
<td>990</td>
<td>50</td>
<td>12</td>
</tr>
<tr>
<td>Channel - V</td>
<td>Kali Japat</td>
<td>1,700</td>
<td>75</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>9,700</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 8-3 Basins

<table>
<thead>
<tr>
<th>Basins</th>
<th>Length (m)</th>
<th>Width (m)</th>
<th>Depth (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nusantara - I</td>
<td>1,700</td>
<td>105</td>
<td>4-6</td>
</tr>
<tr>
<td>Nusantara - II</td>
<td>1,020</td>
<td>55</td>
<td>4-6</td>
</tr>
<tr>
<td>Port - I</td>
<td>1,080</td>
<td>170</td>
<td>4-10</td>
</tr>
<tr>
<td>Port - II</td>
<td>1,020</td>
<td>142</td>
<td>4-12</td>
</tr>
<tr>
<td>Port - III</td>
<td>1,040</td>
<td>185</td>
<td>10-11.5</td>
</tr>
<tr>
<td>North Koja front basin</td>
<td>265</td>
<td>150</td>
<td>14</td>
</tr>
<tr>
<td>TPK Koja front basin</td>
<td>450</td>
<td>150</td>
<td>14</td>
</tr>
</tbody>
</table>

1) Berth, Warehouse and Open storage yard

### Table 8-4 Berth, Warehouse and Open storage yard

<table>
<thead>
<tr>
<th>Item</th>
<th>Owner</th>
<th>Length (m)</th>
<th>Depth (m)</th>
<th>Unit</th>
<th>Area</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berth</td>
<td>Pelindo II</td>
<td>7,737</td>
<td>6-12</td>
<td>Mainly conventional</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>JICT</td>
<td>1,637</td>
<td>9-14</td>
<td>Container</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Koja CT</td>
<td>450</td>
<td>14</td>
<td>Container</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>773</td>
<td>4-12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Warehouse</td>
<td></td>
<td>45</td>
<td>186,100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Container Open Storage Yard</td>
<td></td>
<td>26</td>
<td>230,300</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Cargo Open Storage Yard</td>
<td></td>
<td>77</td>
<td>381,700</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2) Navigational situation

- The navigational and maneuvering water area is very limited. Shallow coast line reaches to -10m depth line at 4km offshore and provided channel by dredging. Sedimentation amount reaches to 600,000m3/ annum or with the thickness of approximately 1.0m.
- All channel in the port is just one-way except for small ships (please refer to Figure 8-8 below). Two-way is possible only outside of the port. The port has only one (1) entrance gate. The operational entrance is only West entrance (dredging down to -14m). East entrance is closed for commercial vessels and is using only for very small boats as such fishing boat and tug-boat etc, due to the insufficient water depth of around -5m.
- Main channel is also overlapping with turning basin. Each mooring basin is too narrow to secure safe and smooth berthing. These serious restrictions cause a severe congestion for increasing ship calls, particularly for large-size vessels thus the capacity of the port is very limited.
- The border between the areas for business handling and general use for residents is blur, thus causing traffic.
Available land
A back up land is quite limited due to its closeness to urbanized area. In reality, because of the limited space, the depots for empty containers are scattered around the port, thus causing an additional time cost for port users to carry in containers with goods at one place, and to pick up empty containers at different places. In addition, due to the low-grade local road condition around the port, the access to empty container depots is problematic. If the demand for T.J. Priok will be to grow, there must be more container depots to be created, however, within the port area, there is no space for further expansion.

Cargo handling by packing at Tanjung Priok Conventional Terminal

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Cargo</td>
<td>9.4</td>
<td>9.8</td>
<td>6.0</td>
<td>4.0</td>
<td>5.5</td>
</tr>
<tr>
<td>Bag Cargo</td>
<td>3.8</td>
<td>2.8</td>
<td>2.4</td>
<td>1.5</td>
<td>1.8</td>
</tr>
<tr>
<td>Liquid Cargo</td>
<td>10.1</td>
<td>10.7</td>
<td>10.5</td>
<td>11.0</td>
<td>9.2</td>
</tr>
<tr>
<td>Bulk Cargo</td>
<td>7.2</td>
<td>6.8</td>
<td>7.1</td>
<td>10.1</td>
<td>10.0</td>
</tr>
<tr>
<td>Container</td>
<td>2.4</td>
<td>5.6</td>
<td>7.4</td>
<td>9.4</td>
<td>11.7</td>
</tr>
<tr>
<td>Total</td>
<td>33.0</td>
<td>35.6</td>
<td>33.3</td>
<td>36.1</td>
<td>38.2</td>
</tr>
</tbody>
</table>

*Major commodities of dry bulk cargo are cement/clinker and grains.

The insufficient cargo handling capacity at the port is also adding problems. Because there are not enough cranes and other facilities to carry containers/cargos inside the port, the port cannot carry out handlings for import cargos and export cargos at the same time, thus causing a wait for pick-ups among the port users. In addition, the operation system is not carried out smoothly.
among different sectors of the port.

8.4.2 Demand forecast and supply capacity

1) Throughputs at Tanjung Priok International Port

Throughputs during the Past 10 years at Tanjung Priok International Container port are as shown below.

Table. 8-6 Throughputs in the Past 10 years at Tanjung Priok International Container Terminal and Conventional Terminal

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1.4</td>
<td>1.6</td>
<td>1.7</td>
<td>1.9</td>
<td>2.0</td>
<td>1.99</td>
<td>2.18</td>
<td>2.05</td>
<td>2.46</td>
<td>2.33</td>
</tr>
<tr>
<td>Throughputs at Conventional Terminal</td>
<td>0.49</td>
<td>0.54</td>
<td>0.77</td>
<td>0.86</td>
<td>1.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Throughputs at International Container Terminal</td>
<td>2.48</td>
<td>2.72</td>
<td>2.82</td>
<td>3.32</td>
<td>3.39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The increasing ratio is really small and throughputs in the past 7 years are nearly flat with the amount of 1.9 to 2.2 million TEU.

2) Demand forecast for container port in the Tanjung Priok port and supply capacity at the JBIZ New Port.

- Target years for the estimation are selected as 2013, 2018 and 2025.
- Assumed the operation of JBIZ new port will start from 2013.
- Adopted increasing ratio of throughputs between 4 ~ 5.0 % are very conservative, despite a comparison with 5 ~ 6.0 % GDP in the past 4 years.
- Maximum capacity of existing Tanjung Priok International Container Terminal is 2.6 million TEU.
- Maximum capacity after Tanjung Priok rehabilitation is 3.07 million TEU.
- Construction schedule for Phase-2 to Phase-4, is as per the remarks in the following table (the estimation is based on the JICA study report published in 2001 and “Tanjung Priok Port Directory 2006 Edition” published by PT Pekabuhan Indonesia II).
<table>
<thead>
<tr>
<th>Year</th>
<th>a. Increasing ratio (%)</th>
<th>b. Tg.Priok International Container Terminal</th>
<th>c. Tg.Priok Conventional Terminal</th>
<th>d. Handling capacity of Tg. Priok</th>
<th>e. Demand</th>
<th>f. Deficit of supply capacity</th>
<th>g. Handling capacity of JBIZ new port</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>4</td>
<td>2.42</td>
<td>1.10</td>
<td>3.52</td>
<td>3.52</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>4</td>
<td>2.52</td>
<td>1.15</td>
<td>3.67</td>
<td>3.67</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>4</td>
<td>2.62</td>
<td>1.29</td>
<td>3.91</td>
<td>3.91</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>4</td>
<td>2.73</td>
<td>1.34</td>
<td>4.07</td>
<td>4.07</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>4</td>
<td>2.83</td>
<td>1.39</td>
<td>4.22</td>
<td>4.22</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>4</td>
<td>2.95</td>
<td>1.45</td>
<td>4.40</td>
<td>4.40</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>5</td>
<td>3.07</td>
<td>1.5</td>
<td>4.57</td>
<td>4.80</td>
<td>-0.23</td>
<td>1.0</td>
<td>Handling capacity by New JBIZ port operation, Phase-1, 4 container wharves</td>
</tr>
<tr>
<td>2013</td>
<td>5</td>
<td>3.07</td>
<td>1.5</td>
<td>4.57</td>
<td>4.80</td>
<td>-0.23</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>5</td>
<td>3.07</td>
<td>1.5</td>
<td>4.57</td>
<td>5.04</td>
<td>-0.47</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>5</td>
<td>3.07</td>
<td>1.5</td>
<td>4.57</td>
<td>5.29</td>
<td>-0.72</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>5</td>
<td>3.07</td>
<td>1.5</td>
<td>4.57</td>
<td>5.55</td>
<td>-0.98</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>5</td>
<td>3.07</td>
<td>1.5</td>
<td>4.57</td>
<td>5.83</td>
<td>-1.26</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>5</td>
<td>3.07</td>
<td>1.5</td>
<td>4.57</td>
<td>6.12</td>
<td>-1.55</td>
<td>2.0</td>
<td>New JBIZ port operation, Phase-2, 4 container wharves</td>
</tr>
<tr>
<td>2019</td>
<td>5</td>
<td>3.07</td>
<td>1.5</td>
<td>4.57</td>
<td>6.43</td>
<td>-1.86</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>5</td>
<td>3.07</td>
<td>1.5</td>
<td>4.57</td>
<td>6.75</td>
<td>-2.18</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td>5</td>
<td>3.07</td>
<td>1.5</td>
<td>4.57</td>
<td>7.09</td>
<td>-2.52</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>2022</td>
<td>5</td>
<td>3.07</td>
<td>1.5</td>
<td>4.57</td>
<td>7.44</td>
<td>-2.87</td>
<td>3.0</td>
<td>New JBIZ Phase-3, Operation 4 container wharves</td>
</tr>
<tr>
<td>2023</td>
<td>5</td>
<td>3.07</td>
<td>1.5</td>
<td>4.57</td>
<td>7.81</td>
<td>-3.24</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>2024</td>
<td>5</td>
<td>3.07</td>
<td>1.5</td>
<td>4.57</td>
<td>8.20</td>
<td>-3.63</td>
<td>4.0</td>
<td>New JBIZ Phase-4 port operation 4 container wharves</td>
</tr>
<tr>
<td>2025</td>
<td>5</td>
<td>3.07</td>
<td>1.5</td>
<td>4.57</td>
<td>8.61</td>
<td>-4.04</td>
<td>4.0</td>
<td></td>
</tr>
</tbody>
</table>
Table. 8-8 Future throughputs for the Target years at Tanjung Priok and the New Port

(Unit: million ton)

<table>
<thead>
<tr>
<th>Year</th>
<th>① Increasing ratio % 3 ~ 4</th>
<th>② Demand T.J.Priok Conventional Terminal</th>
<th>③ New Port</th>
<th>Total supply capacity</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>4</td>
<td>10.4</td>
<td></td>
<td>10.1</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>4</td>
<td>11.25</td>
<td></td>
<td>10.1</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>3</td>
<td>11.93</td>
<td></td>
<td>10.1</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>3</td>
<td>12.7</td>
<td></td>
<td>10.1</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>4</td>
<td>13.2</td>
<td>3.0</td>
<td>13.1</td>
<td>Handling capacity by new port operation, Phase-1,2 bulk cargo wharves</td>
</tr>
<tr>
<td>2018</td>
<td>4</td>
<td>16.07</td>
<td>6.0</td>
<td>16.1</td>
<td></td>
</tr>
<tr>
<td>2022</td>
<td>4</td>
<td>18.8</td>
<td>9.0</td>
<td>19.1</td>
<td>New port operation Phase-3, 2 bulk cargo</td>
</tr>
<tr>
<td>2025</td>
<td>4</td>
<td>21.15</td>
<td>12.0</td>
<td>22.1</td>
<td>New port operation Phase-4, 2 bulk cargo wharves</td>
</tr>
</tbody>
</table>

① Assumed maximum capacity of bulk cargo is 10.1 million tons, recorded approximately 40% increase in 2004.
② Annual increasing ratio is applied 3 ~ 4 %.

8.4.3 The development plan of the new international port

1) Needs of a new International Port in Eastern Jakarta
   - Need of smooth access to international port
     As mentioned in previous chapter, access to existing Tanjung Priok port is hard.
   - Need of deep sea port
     Concerning high price of fuel and high charter cost of container vessels, neighboring countries have developed deep container wharf and deep bulk terminal.

2) Introduction of competitive port
   (1) Proposed site stretches deep-water basin to be able to accommodate Post Panamax type container vessels and 50,000 tones class oceangoing bulk cargo vessels.
   (2) Floating breakwater (1,200m) utilizing second-hand tankers for prevailing north-west monsoon are allocated along the original sea bed of more than 16m, so that approach channel and deep sea wharves are easily provided.
   (3) Trestles with the length of approximately 2,300m, with the combination of steel and pre-stressed concrete pile foundation and RC super-structure allocate up to deep-water basin.
   (4) Proposed four (4) container wharves for both west and east side (Length: 700m, Water depth: 15 to 16m) and two bulk cargo wharves. (Length: 700m, Water depth: 14 to 15m) in Phase-1 and start operation in 2013.
   (5) Proposed also New JBIZ port Phase-2 in 2018, 4 container wharves and two-bulk cargo wharves would be in operation.
   (6) New JBIZ Phase-3 in 2022 start operation, providing 4 container wharves and two bulk
cargo wharves.

(7) New JBIZ Phase-4, in 2024 start operation, providing 4 container wharves and bulk cargo wharves.

**Figure. 8-8 Layout of JBIZ new port**

![Jakarta Bay International Port](image)

Source: Study Team

*Please note that the perspective view is just a conceptual layout and likely to be modified after the detailed design.

8.4.4 Sailboat harbor and fish port

Considering the existing fishermen in the site area and future potential of site as week-end tourism site, we are recommending to construct both a fishing port and a sailing/yacht harbor near the tip of the river.

1) Fisherman village
   (1) As mentioned in chapter 8.1.2 Socio-Economic condition, among 30,000 people living in the eastern tip of the bay, most people are living by fishery.
   (2) If proposed development of a new port and new town proceed, fresh fish supply to the people living this new town will be getting great benefit. Utilities such as water, fuel, ice and electric supply for the people necessary provide.
   (3) The estuary along the river will become fisherman’ village.

2) Sailing harbour and Water front town
   (1) Sailing harbour will be easily constructed along the river and can be connected by canal into new town, as if waterfront town beside Jakarta fishing port.
   (2) Utilization of a base camp for ecotourism visitors to thousand islands etc. will be quite attractive.
8.5 Proposed industries to be attracted to JBIZ

Within JBIZ, an industrial zone able to accommodate various enterprises will be developed. In the current plant, there will be two types of industrial zones: one near the port for heavy industries, and the one in the back of the area for light industries. The followings are possible industries to be attracted in the zone:

(1) Near port: chemical, oil tanks & petrochemical, steel and metal fabrication, food processing and ship repair & building, engineering & plant manufacturing
(2) Inside JBIZ: Similar to Bekasi industrial parks, motorcycle & parts, auto & auto parts, textile, electronics & parts, food processing and consumer goods

9 Expected cost and revenue of the project

1) Industrial estate (2 SEZ with 1800 hector)
   The development cost of 2 SEZ with 1800 hector is expected to be $360 million ($200 per hector) without land cost. As the EJIA, the development of two SEZ will be done by private sector.

2) Port
   The port for Phase 1(4 berths and 50 hector bulk and container yard) is expected to cost $560 million. The financing of port should be done by the public sector using over sea sensational loan (such as JBIC or ADB loan) first, and once the port is well established, the private BOT system may be used from the Phase 2 just as Thailand has been adopted.

3) Expressway
   The expressway with 50 Km length is likely to cost $75 million ($1.5 million per 1 km), however, because the proposed expressway is extended from the now-under-construction-new-highway financed by a Malaysian company, and because once the port development is decided, a large profitability is likely to be recognized among the private sector, it should be financed by the same Malaysian company or jointly financed with any other private investors interested in the project.
10 Financial and Economic Analysis of Port Construction

10.1 Financial Analysis

The following financial analysis is carried out based on the cost and revenue incurred from the development of a new port along the Jakarta Bay area. A more detailed numbers are shown in Appendix 3.

1) Fund required for Investment and Operation Cost Estimation
   (1) Conditions
      The project cost estimation is carried out on the following premises;
      (i) The following cost is not incurred.
      • Environmental Impact Assessment (EIA)
      • License application fee for project implementation
      • Compensation for relocation on any related project sites
      • Import tax of related consumable materials and equipments
      • Transportation fee for necessary materials for port construction
      (ii) Exchange rate of currency
           The exchange rates of currencies used in this study are as follows;
           1.00 USD = 107 Japanese Yen (as of February, 2008)
      (iii) Inflation
           For the cost and revenue assumption, we have not considered the inflation rate in this study for the period now onwards in both foreign currency and local currency portions of the project.

   (2) Construction Cost
      We have estimated the construction cost of the plant under aforesaid conditions as follows;

   Table. 10-1 Construction Cost
   (Unit: million USD)

   | Port Construction Cost | 407 |
   | Engineering Cost       | 33  |
   | Contingency            | 122 |
   | Total                  | 562 |
   Source: Study Team

   (3) Operation Cost
      The operational costs are broadly divided into three categories; operation and maintenance (O&M) costs, and tax.

      (i) The O&M cost per year is estimated as shown in the table below.

   Table. 10-2 Annual O&M Costs
   (Unit: million USD)

   | O&M Item              | 2012 | 2013 | 2014 | 2015-
   |-----------------------|------|------|------|------
   | Civil Work Cost       | 8    | 8    | 8    | 8    |
   | Administration Cost   | 20   | 20   | 20   | 20   |
   | Equipment Maintenance | 16   | 16   | 16   | 16   |
   | Total                 | 45   | 45   | 45   | 45   |
   Source: Study Team
* The total O&M cost of USD44.7 million was rounded-off to USD45 million.
* The Civil Work Cost is estimated to be about 1% of the total port facility cost, and Likewise, 4% for Administration Cost, and 5% for Equipment Maintenance Cost.

(ii) Taxes
Import Tax for machinery and equipments to be used for the construction is deemed to be exempted. The VAT shall also be exempted.

The corporate tax on taxable income shall be incurred 30% on taxable earnings (for earnings more than 0.1 billion Rupiah), in addition to the 20% withholding tax.

(4) Depreciation
The depreciation cost is set in the following premise.

Port
(i) Depreciation period:
20 years
(ii) Selection of depreciation method:
Assume the salvage value of the total initial investment will become 0 (null) in 20 years, and the value is redeemed evenly.

(5) Planning for required fund
The fund proportion of loan and equity for this project is planed as follows.

<table>
<thead>
<tr>
<th>Table. 10-3 Planning for Loans (Unit: million USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
</tr>
<tr>
<td>Equity</td>
</tr>
<tr>
<td>Loan</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

(Source: Study Team)

The interest rate on the loan is stated below.

<table>
<thead>
<tr>
<th>Table. 10-4 Interest Conditions for JBIC Loan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loan supplied period</td>
</tr>
<tr>
<td>Interest rate</td>
</tr>
<tr>
<td>Period of repayment</td>
</tr>
<tr>
<td>Grace period</td>
</tr>
</tbody>
</table>

(JBIC February, 2008)

* Interest rate 2.06% per year is subjected to projects with more than 8.5 years of repayment period.
* Grace period of 10 years is subjected to projects with more than 30 years of period of repayment.
* The maximum amount of loan is 60% of the total cost.
* If you wish to have a fix interest rate, an additional 0.2% of interest rate will be subjected upon the 1.89% interest rate.
(i) Interest during Construction
Interest during construction is calculated as shown below provided that 2.06% of interest rate is incurred.

<table>
<thead>
<tr>
<th>Period</th>
<th>Loan Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>4</td>
</tr>
<tr>
<td>2011</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
</tr>
</tbody>
</table>

(ii) Project Cost
Consequently, the total project cost of the port development is estimated to be as follows;

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Cost</td>
<td>562</td>
</tr>
<tr>
<td>Interest during construction</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>573</td>
</tr>
</tbody>
</table>

2) Planning for operation income
The cost of constructing a port is projected to be eventually covered by the operation income from port handling. The total revenue from port handling (for both container and bulk cargo handling) is assumed as follows;

<table>
<thead>
<tr>
<th>Year</th>
<th>Unit Price (per TEU)</th>
<th>Handling Amount Handling(million TEU)</th>
<th>Revenue (million USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td></td>
<td>0.23</td>
<td>35</td>
</tr>
<tr>
<td>2013</td>
<td></td>
<td>0.23</td>
<td>35</td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td>0.47</td>
<td>71</td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td>0.72</td>
<td>108</td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td>0.98</td>
<td>147</td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td>1.0</td>
<td>150</td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td>1.55</td>
<td>233</td>
</tr>
<tr>
<td>2019</td>
<td>USD 150.00</td>
<td>1.86</td>
<td>279</td>
</tr>
<tr>
<td>2020</td>
<td></td>
<td>2.0</td>
<td>300</td>
</tr>
<tr>
<td>2021</td>
<td></td>
<td>2.0</td>
<td>300</td>
</tr>
<tr>
<td>2022</td>
<td></td>
<td>2.87</td>
<td>431</td>
</tr>
<tr>
<td>2023</td>
<td></td>
<td>3.0</td>
<td>450</td>
</tr>
<tr>
<td>2024</td>
<td></td>
<td>3.64</td>
<td>546</td>
</tr>
<tr>
<td>2025</td>
<td></td>
<td>4.0</td>
<td>600</td>
</tr>
<tr>
<td>2026</td>
<td></td>
<td>4.0</td>
<td>600</td>
</tr>
<tr>
<td>2027</td>
<td></td>
<td>4.0</td>
<td>600</td>
</tr>
<tr>
<td>2028</td>
<td></td>
<td>4.0</td>
<td>600</td>
</tr>
<tr>
<td>2029</td>
<td></td>
<td>4.0</td>
<td>600</td>
</tr>
<tr>
<td>Total Revenue from Container Handling:</td>
<td>6,085 million USD</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The revenue from bulk cargo handling is estimated to be about 10% of the revenue from container handling.

\[ 6,085 \times 10\% = 608.5 \text{ million USD} \]

3) **Financial Internal Rate of Return (FIRR)**

(1) Project scheduling
The conditions of financial analysis of this project are as follows.

(i) Schedule of construction
   - Start of engineering: Jan. 2010
   - Start of construction: Dec. 2010
   - Period of construction: 24 months

(ii) Schedule of operation
   - Start of commercial operations: April 2012

(2) Financial internal rate of return

(i) Methodology
   The value of internal rate of return (IRR) is calculated as an equivalent value to make a net present value of the sum of income and cost to be 0 (zero). Thus, normally, when IRR gets larger than a normal and mid-term interest rate in the market, the validity of the project is often evaluated.

(ii) Results
   The IRR calculated under the aforesaid conditions comes to 20.54% as per the attached appendix. The result could indicate that the FIRR of this value is commercially viable. Furthermore even adopting the discount rate of 10%, Net Present Value (NPV) could indicate a positive 758 million USD, which is accumulated income surplus against the accumulated cost in the project period. Benefit Cost ratio (B/C ratio) also comes to 1.69.

<table>
<thead>
<tr>
<th>NPV (Discount rate: 10%)</th>
<th>B/C (Discount rate: 10%)</th>
<th>Financial internal rate of return: (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>758 million USD</td>
<td>1.69</td>
<td>20.54</td>
</tr>
</tbody>
</table>

(iii) Sensitivity Analysis of FIRR
   To evaluate the project in more comprehensive way, we conducted a sensitivity analysis with fluctuating parameters on construction cost, handling charge and handling amount of goods at the rate of 10% from the base case. The results of calculations are as follows.
### Table. 10-9 Sensitivity Analysis (%)

<table>
<thead>
<tr>
<th>Item</th>
<th>-10%</th>
<th>Base</th>
<th>10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Cost</td>
<td>21.7%</td>
<td>20.5%</td>
<td>19.5%</td>
</tr>
<tr>
<td>Handling Charge (per TEU)</td>
<td>19.1%</td>
<td>20.5%</td>
<td>21.7%</td>
</tr>
<tr>
<td>Handling Amount of Goods</td>
<td>19.1%</td>
<td>20.5%</td>
<td>21.7%</td>
</tr>
<tr>
<td>Management Cost</td>
<td>20.9%</td>
<td>20.5%</td>
<td>20.2%</td>
</tr>
</tbody>
</table>

#### Figure. 10-1 Sensitivity Analysis

![Sensitivity Analysis Graph](chart.png)

Source: Study Team

(iv) Result of Sensitivity Analysis

According to the analysis, the largest influence is accrued from the changes in handling price and amount of handling goods, and those two shall shift their value in parallel. The management cost, including the cost of civil work, equipment maintenance, and administration, has the least impact because its value is relatively small, and its fluctuations are estimated to be relatively stable against other price fluctuations. Consequently, it can be concluded that the project profitability would be most directly impacted by changes in handling charge/amount of handling goods and management cost. In other words, it is indicated that these two elements are the critical factors for this project.

#### 10.2 Economic Analysis

Economic impacts from the project implementation is studied to evaluate if the project could minimize the opportunity cost, and realize the optimal distributions of the generated economic benefit against the incurred cost, in comparison with an alternative use of the resources to be used in the proposed project.

**Discussion of indirect economic benefits**

The main purpose of the proposed new port construction is to reduce the time and cost of transporting goods to the already over-capacity working Tanjung Priok Port through the heavily
congested highways in Jakarta city. The benefit from this project, thus, is to be found in minimizing the cost of the burden trip in the congested highway between EJIA to the T.J Priok Port, which is to say making the alternative route attractive by improving infrastructures necessary to increase investment by the development of JBIZ.

In summary, the followings are the possible economic benefits Indonesia is likely to enjoy when this project is implemented.

- Increased efficiency in container handling at the new port.
- Decreased time of transporting goods between EJIA and ports.
- Better life quality at the development site of a new port and SEZ.
- Better accessibility between the Jakarta Bay area and Jabotabek for residents.
- Possible increase in foreign investors because of the increased quality of port handling and traffic.

10.3 Evaluation

This project should have rooms for considering improvements to become a much profitable project for Indonesia. Specifically, the installation of other traffic modes—namely, railways and airports—between Jakarta city and Jakarta Bay area is necessary. This will not only diversifies the transportation mode of goods for investors, but also for commuters, which together lightens the transportation cost by road.

This new port and SEZ development is initially aimed to improve the heavily congested highways and container cargo handling at the Tanjung Priok Port to avoid the current investors at EJIA to escape from Indonesia in search of a more efficient industrial place in other Asian countries. Nevertheless, ultimately, this project is not only for the current foreign investors at EJIA, but also for the prospective investors who might open plants at the newly constructed Jakarta Bay Industrial Zone (JBIZ) adjacent to the new port. The attractiveness of Indonesia as an investment destination will not only increase by the increased accessibility between industrial zones and the port, but also by improving administration and law system regarding business, land acquisition, and labor through this new project. Moreover, the development will enable the currently under-developed area of Jakarta Bay to transform to an urbanized area integrated with the rest of Jabotabek area. By urbanizing the area, people’s life quality will be improved by better social infrastructures, as well as through increased employments possibly occur at the new port, JBIZ, and a commercial zone adjacent to JBIZ. After all, in the long-term, this project will transform Indonesia into a commercially valuable place as well as to a high-quality living space. The realization of this project is, thus, could be said economically highly-significant from the perspective of improving the socio-economic and business-related environment in the region.

11 Social & economic aspect of the project

Existing socio-economic condition of villages in the site area is very poor due to a poor access and limited public facilities. Possible social and economic impacts of the proposed JBIZ development are likely to be the following:

(1) Creation of new employments

At the moment, there are very limited employment opportunities where people are engaged in only fishing or aquaculture at fishponds and limited small informal shops. Once the new port and SEZ start their development, the area is likely to change considerably just as the Bekasi region did with the industrialization in the past 20 years. In details, it is expected that this new development will bring about 200,000 direct employment, with additional new employments by spillover effect at the service sector which likely to create an additional 200,000 to 300,000 new employments within JBIZ.
(2) Improvement of public and commercial facilities and services
Currently, villagers are forced to go to Jakarta by boats or by taking narrow unpaved roads to buy goods or to receive any service, which takes over one hour by boats (20 Km). There is also a very limited access to government offices, hospitals, post offices, and other public services. However, once the area’s access toward the city via roads and railways was improved with a progress of the JBIZ development, it is likely that there will be an improved access to all of public and commercial facilities including education, healthcare, post office, trading business and other commercial facilities.

(3) Improvement of living conditions
When there is a large development project, developers are normally asked by the local government to support the community development by improving the basic infrastructures and public services, as it also practiced in the Bekasi Industrial City project. Even if the whole community will not be benefited by the initial development, a spillover effect will likely to happen over the years.

(4) Possible traffic congestion and environmental deterioration
Once the JBIZ project is progressed, an increased volume of traffic, waste-water discharges and air pollution may occur in the future as the EJIA experienced in past years. In order to avoid such negative impacts, a proper planning, formulation of regulations and its implementation are essential. In details, for risk prevention, local and central governments should form a joint committee for the planning stage, and continue to coordinate and monitor the progress of project.

Besides the economic and social impacts listed above, partial relocations of households may be necessary. Since the actual site for the new port and SEZ is not determined, the exact amount of households need to be relocated is not estimated yet. However, in case of relocation, there will be sufficient amount of compensation and support from local governments. For elements that need to be considered upon relocation is listed in Appendix 1.

12 Potential environmental impacts of the project
Indonesia is known by its abundant and diverse ecological nature. However, recently Indonesia is facing a danger of staggering proportions of a loss of forests and bio-diversity. This is mainly caused by the poor management and regulation of the forest access and use. There are some environmental preservation activities from conservation NGOs and Forest Law Enforcement and Governance (FLEG) program from the World Bank to improve the current situation. However, since 60% of the country is covered by forestlands, the impact of this loss is serious. The poor, who consists 75% of the Indonesian population, is living in the rural area covered by forests, thus being the major victims of decreasing benefits from the natural resources. In addition, since Indonesia hosted the most recent World Environmental Conference in Bali, December, 2007, the government policy toward environmental issues is remained keen. Therefore, the proposed port and industrial zone development project at the Jakarta Bay area should be carefully planned and justified in the balance of environmental concerns to receive a support from the government and people.

12.2 The current state of Indonesian environment
In order to justify the new development, the counter major policies toward the most concerned environmental issues of Indonesia should be clearly addressed in the project proposal. The following shows the most pressing environmental issues in Indonesia as remarks.

1) Water quality degradation
Although large factories possess effluent treatment facilities of water, many of the small and
middle size factories do not, and often just release industrial effluent into natural rivers. In addition, sewage systems in Indonesia are not really well maintained outside of Jakarta (see Figure 12-1), thus household drainage is also released to rivers or let it absorbed to the ground. Since the proposed construction plan assumes to host a considerable size of industrial cluster, a proper law to regulate effluent treatment and standard treatment facilities should be mandated.

Table. 12-1 Comparison of Urban Water and Sewage Service

<table>
<thead>
<tr>
<th>Country</th>
<th>GDP/capita (US$1997)</th>
<th>Urban water coverage %</th>
<th>Urban Sewerage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolivia</td>
<td>950</td>
<td>74</td>
<td>41</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>1,140</td>
<td>98</td>
<td>18</td>
</tr>
<tr>
<td>China</td>
<td>860</td>
<td>95</td>
<td>65</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1,110</td>
<td>36</td>
<td>1</td>
</tr>
<tr>
<td>Philippines</td>
<td>1,220</td>
<td>60</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: International Seminar on Urban Water and Sanitation Sector Reform in the Context of Regional Authority, 2001

Figure. 12-1 DO Levels in Jakarta Bay: 1999-2000


Figure. 12-2 BOD Levels in Jakarta Bay: 1999-2000


Figure 12-2 and 12-3 shows dissolved oxygen (DO) level and biochemical oxygen demand.
(BOD) level in Jakarta Bay. A-D indicates different areas in Jakarta Bay, as A being the closest to the shore. According to “Environment Monitor 2003” released by the World Bank, for the use of swimming and diving, BOD level should be below 20, and DO level should be above 5. For industrial use too, BOD level should be kept below 20. Thus, the figure shows that the planned area is already showing some kind of difficulties regarding to the environmental impact of the development.

2) Air quality degradation
The major factor of the recent air quality degradation is the increased use of automobiles in urban cities. As it can be seen in Figure 12-3 below, the use of private cars and motor cycles are likely to increase more in the future. If the proposed port and industrial township development is developed, an increased amount of motor transportation between Jakarta Bay and other major cities is predicted to be add to it. Therefore, together with a policy to relieve the traffic volume, a counter measure for the likely air quality degradation should be considered.

![Figure 12-3 Vehicle Population in Metro Jaya](image)


3) Waste material management
In Indonesia, the garbage collection system is divided into two categories: hazardous waste and others. Among the non-hazardous waste, those which can be sold in market are usually collected, but those cannot be are again just released to rivers. The proposed industrial township development will certainly increase the industrial and household waste in the Jakarta Bay area, thus a proper garbage collection system and waste disposal infrastructures are necessary.

To clearly articulate to these problems, a prediction on possible environmental impact of the development needs to be studied. In the next chapter, the system of an environmental impact study will be discussed.

12.3 Environmental impacts of the development

The Jakarta Bay area, where study team is proposing a new port and industrial site development, is partly categorized as preserved area. The area was originally covered with mangroves until 20-30 years ago, when people started to remove mangroves in order to convert the land into brackish-water fishponds. Sensing the environmental degradation in the area, the central and local government jointly decided to recover the mangrove again. Among the total 11,000ha of the area, 5,000ha was
allocated to preserve mangrove forests, and 8,000ha was allocated for development. Furthermore, among the 5,000ha preserved land, 2,500ha was preserved for forests, and the other 2,500ha was decided to be used for eco-tourism. However, these human impacts may cause habitat loss, habitat degradation and resource depletion. Moreover, if the management interventions do not take place, the cascading impact will likely to decrease the functional role of the ecosystem and its services to human well-being. Therefore, once 8,000ha of the area is permitted for a development, a construction in one area could cause negative impacts to the surrounding area. Thus still a considerable amount of an environmental impact study is needed. The following table shows the possible factors that might affect the environmental condition of the site.

Table. 12-2 Factors affect the environmental condition in Jakarta Bay

<table>
<thead>
<tr>
<th>Indirect driver</th>
<th>Direct driver</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Habitat loss</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demographic</td>
<td>population growth, urbanization, land-use change</td>
<td>Coastal developments, housing demands, industrial sites, ports</td>
</tr>
<tr>
<td>Socioeconomics</td>
<td>demand for live fish aquaria, fish</td>
<td>Destructive fishing (dynamic, cyanide, muro-ani, bottom trawl) Aquaculture-related habitat conversion (shrimp ponds)</td>
</tr>
<tr>
<td>Technology</td>
<td>Lack of emission control</td>
<td>Global warming (increase sea level rise)</td>
</tr>
<tr>
<td>Sociopolitics</td>
<td>Poor developed policy at local or national level</td>
<td>Coastal deforestation (mangrove deforestation) Mining (sand and coral mining)</td>
</tr>
<tr>
<td><strong>Habitat degradation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td>Demand of clean water (industries, hotels, recreation centres)</td>
<td>Saltwater intrusion (deep water wells, uncontrolled population growth in Seribu islands)</td>
</tr>
<tr>
<td></td>
<td>Lack of sewage treatments, nutrient load</td>
<td>Eutrophication (nutrients)</td>
</tr>
<tr>
<td>Sociopolitics</td>
<td>Lack of regulations</td>
<td>- Alien species invasions (shipping industries, ballast water discharge). - Uncontrolled tourism activities</td>
</tr>
<tr>
<td></td>
<td>Lack of law enforcement</td>
<td>Land-based pollution: trace metals, Sea-based pollution: oil spill</td>
</tr>
<tr>
<td><strong>Resource depletion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socioeconomics</td>
<td>Strong economic demand, marine resource harvest</td>
<td>Overexploitation of high value resources</td>
</tr>
<tr>
<td>Sociopolitics</td>
<td>Lack of empowering local communities</td>
<td>Direct take of low value of species</td>
</tr>
<tr>
<td></td>
<td>Lack of alternative income generating</td>
<td>Intensive extraction of resources</td>
</tr>
</tbody>
</table>

Note: drivers that are discussed are as follows, indirect driver (demographic, socioeconomics and technology), and direct driver (land-use change, marine resource harvest and nutrient load).

Source: “Local Millennium Ecosystem Assessment: Condition and Trend of the Greater Jakarta Bay Ecosystem”, 2004

To properly measure the potential environmental impacts, once the master plan for the new development is formulated, the Environmental Impact Assessment (EIA), which is known as AMDAL in Indonesia, should be conducted by the developers and approved by the government. (The details of AMDAL are explained in Appendix 2.)
The impact on mangroves, water resources, noises, and ecosystems are especially needed to be monitored carefully. In addition, considering the fact that Indonesia has the second most diverse ecosystem after Brazil, the impact to the global environmental issues are also needs to be considered. From this point, a considerable amount of concerns is predicted to be arisen from environmental groups and conservation NGOs.

12.4 After the development

If the development project is successfully approved and completed, the next phase of environmental policies will be followed. The newly constructed port, industrial zone, and residential and entertainment areas for the workers will certainly urbanize the area. As it can be seen in Jakarta, urbanized area has problems particularly for it. For example, pollution management including the access to clean water and sanitation facilities, air quality management, forest fires prevention, industrial waste management, and garbage collection system is crucial. In order to properly manage all these systems, a solid and effective environmental regulations and policies need to be organized. In addition, for monitoring environmental management systems, a special-purpose committee should be organized. The creation of a monitoring committee is particularly important because the current degraded environmental state of Indonesia is said to be caused by the absence of a proper monitoring system, which ensures the implementation of Indonesian environmental laws.

13 Action plan for JBIZ project preparation and development schedule

The following shows the tentative development schedule for the JBIZ project.

1) Physical survey and a formulation of a master plan: 2008-2009
   The 11,000 hector site is already designated and signed by the Bekasi and Western Java Government and development agreement to be converted for industrial and commercial/housing project. As a result, a license for development is already issued for the 11,000 hector site. A preliminary survey for topology is already completed by the developer, however, more detail survey for shore line and sea bed for the port site are needed. Once the physical surveys are completed, a master plan for the JBIZ should be formulated within 2008, including the port and the expressway feasibility study as Phase 1. Environment Impact Assessment (EIA) study should be also conducted within 2008-2009 in order to get a final implementation approval.

2) Land acquisition: 2008-2009
   Land acquisition should be carried out as soon as the master plan and feasibility study are completed.

3) Construction of an access road to JBIZ from the edge of the Ring Road: 2009-10
   Access road is necessary as the first step to develop the JBIZ project since there is no road to the site area at the moment. In order to reduce initial cost, 4 lanes road will be constructed and expanded to 6 lines in the future as the traffic demand starts to increase in the Phase 3.

   • Phase 1 - Development of access road and port by the public side, while SEZ and housing / commercial zone by the private sector: 2010-13
     For the Phase 1 development, port and access road will be key components which are likely to be financed by the public sector. Oversea concession loan (such as ABD and/or JBIC) is most likely to be suitable. Other components such as SEZ, commercial and housing projects should be constructed by the private sector.

   • Phase 2 - Further development of SEZ and housing/commercial zone plus railway: 2014-2018
     The expansion of SEZ and housing/commercial zone should be continued by the private sector as the industry and population attracted to JBIZ. Railway and airport projects should start in Phase 2 by the public sector. Also the expansion of the port should be continued either
by the public or private sector based on the expanding demand of cargos.

- **Phase 3 - Expansion of port and SEZ plus expansion of housing/commercial zone and airport:**
  2019-2023

  As the JBIZ start expanding along the EJIA-JBIZ Corridor (population of eastern Jakarta region may reach 10 million by 2020), a new international airport should be constructed to cover the eastern Jakarta region. The private sector should continue to expand SEZ, housing and commercial zone.

**Table. 13-1 Major events in each phases**

<table>
<thead>
<tr>
<th>Development phases</th>
<th>2010-13 (Phase 1)</th>
<th>2014-2018 (Phase 2)</th>
<th>2019-2023 (Phase 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Road and port by Public loan</td>
<td>- Expansion of SEZ</td>
<td>- Start of airport operation</td>
<td></td>
</tr>
<tr>
<td>- SEZ, commercial housing by private sector</td>
<td>- Railway and airport development</td>
<td>- Expansion of SEZ, commercial and housing</td>
<td></td>
</tr>
</tbody>
</table>

Source: Study team
### Figure 13-1 Development Flow Chart

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Required Investment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Survey and Formulation of a Master Plan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land acquisition and resettlement of households</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road: $75 million</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port: $50 million</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEZ: $200 x 1,000ha = $200 million</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port Expansion: $560 million</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEZ: $200 x 2,000ha = $400 million</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Railway: $380 million</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Airport: $1,300 million</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEZ: $200 x 3,000ha = $600 million</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overall Process</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Road</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction of access roads (increase to 4 lanes)</td>
</tr>
<tr>
<td>Expansion of the road to 6 lanes will be completed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of port facilities</td>
</tr>
<tr>
<td>Expansion of the port facilities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SEZ, Housing, Commercial Zone</th>
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</thead>
<tbody>
<tr>
<td>SEZ, housing, commercial site development by private sectors</td>
</tr>
<tr>
<td>Expansion of SEZ, housing, commercial zone according to the population increase</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Railway, Air Port</th>
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<tbody>
<tr>
<td>Start the construction of railways, first for goods transportation</td>
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<tr>
<td>Railway operation started, connecting JBIZ, EJIA, and Jakarta city</td>
</tr>
<tr>
<td>Start the construction of a new international airport</td>
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<tr>
<td>Start of a new international airport operation</td>
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</tbody>
</table>
14 Conclusion

As globalization progresses, the world economy will be more integrated. Apparently, the gap between those who can attract the international investment and those who cannot will be widen further. Hence, if Indonesia desires to be the former, it needs to increase her attractiveness. Indonesia’s economic prosperity from her human and natural resources and the success of EJIA have already caught wide range attentions from investors, yet they are starting to recoil in inadequacy and in-efficiency of Indonesia’s infrastructure and business environment. Thus, this is a moment for Indonesia to show its actual and full competence so as to keep and even accelerate foreign investment as industrial and business operation base.

In this circumstance, the development of JBIZ will not only increase Indonesia’s capacity to accommodate more manufacturing investors, but also revive EJIA by improving the access to the port, and the port handling capacity as a whole. In addition, the presence of another port in JBIZ to carry out trades in the metropolitan area would create a sound competition between the T.J. Priok port and new JBIZ port. In the market economy, it is well known that positive competitions would lead to better service provision and cost-efficient operations. Therefore, in the end, it is expected the development of JBIZ will also enhance the capacity of the T.J. Priok port. With two international ports and improved access roads together with enough space to accommodate investors in EJIA and JBIZ, Indonesia will surely arise again as a strong manufacturing and service provision center in this global world.
Appendix 1 : Suggestions for relocations people in the project site

The construction of a new port and industrial cluster on the Jakarta Bay does not only bring a positive economic impact to the area, but also it may pose a negative social impact. The major social problem likely to be caused by the development is the possibility of relocating households which already living in the area. In fact, when the study team visited the area in December, 2007 there was a considerable cluster of households. However, weak tenure rights have been a major factor affecting smallholders’ behavior. The formal legal framework has provided only limited recognition of land rights which is based on traditional (adat) law. Moreover, even this limited recognition could easily be over-ridden by concessionaires. Once a concessionaire received approval in principle (izin prinsip), they had an exclusive right to purchase land, leaving smallholders in a weak bargaining position and vulnerable to coercion. The following shows important elements that the Indonesian government and developers need to consider when relocating people.

1) Numbers of Households needed to be Relocated
The impact of reallocation needs to be minimized as much as possible. Therefore, a sufficient amount of survey is needed first to decide the site for a new port.

2) Securing New Houses for the Relocated
The new housing site for replacement should be chosen in a way to minimize the impact on relocated people.

3) The Problem of Squatters and compensation system
In past examples, squatters often claimed their right to stay in the site, either because they were permitted to stay through officials audibly (not legally), or they have been living there for a long time (indigenous rights). Their rights and amount of compensation measures may need to be lawfully settled.

A sufficient compensation system is needed to be established through negotiations between the government and households. In order to reach a fair result, a proper cost analysis should be conducted for the relocated people. The major measurements will be the cost to their jobs, the value of their current houses, the cost of their change in living, and the risk they may suffer by relocation. In addition, there is a problem of whether to pay compensation only for immediate cost, or to pay even after the relocation is completed as the compensation for future possible risks. The decision to whether provide compensation to squatters must be decided too.

4) Attention to the Socially Weak People
Any agency or developer must pay a close attention to people who are said to be socially weak, for example women, children, elderly, the poor, and the minorities. Especially, since the Jakarta Bay area is currently occupied by the poor, a careful attention to the possible changes to their lives should be paid.

5) A Monitoring System for the Relocated
There is a need to implement a proper monitor system to report people’s living after the reallocation as well (indicators will be access to public services, commute time, jobs, income, surrounding environment, access to schools, neighborhoods, the size of houses…etc). If any cause not explained during the negotiation between the government and the households were to arise, actions needed to be taken. For the Jakarta Bay area, since most of the households are engaged in fisheries for living, if people are relocated to in-land, their income source will be limited. In this case, a proper training to adjust to other jobs should be conducted.

6) Impacts to Households which do not need to be Relocated
There is also a need for a monitoring system for households which do not need to be relocated.
Changes in their lives, jobs, and environment should be closely monitored so that the government can react to any issues.
Appendix 2: The concept and process of AMDAL

AMDAL was first implemented in 1986, and modified in 1993 and 1999 as a tool to encourage both public and private developers to include environmental concerns to their projects. The application of AMDAL is basically required to all developments that may exceed 10,000 ha. The result of AMDAL affects to project approval permissions to ensure a better enforcement. The actual impact assessment study is usually taken care by local governments, but supervised by the national government if the impact is suspected to be spread to a broader society. The process of AMDAL is shown in Figure 12-4 below.

Process of AMDAL

Source: World Bank “AMDAL Reform and Decentralization: Opportunities for Innovation in Indonesia”
## Appendix 3

### Cash Flow

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<tr>
<td>Loans</td>
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<tr>
<td>Annual Revenue</td>
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<td>10%</td>
<td>12%</td>
<td>14%</td>
<td>16%</td>
<td>18%</td>
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<td>22%</td>
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<td>38%</td>
<td>40%</td>
<td>42%</td>
<td>44%</td>
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<tr>
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<td>27%</td>
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<td>48%</td>
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<td>54%</td>
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### Profit & Loss

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<tr>
<td>Income after Tax</td>
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<td>35%</td>
<td>40%</td>
<td>45%</td>
<td>50%</td>
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<td>100%</td>
<td>105%</td>
<td>110%</td>
<td>115%</td>
<td>120%</td>
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### Financials

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<tr>
<td>Interest Rate</td>
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<td>4%</td>
<td>6%</td>
<td>8%</td>
<td>10%</td>
<td>12%</td>
<td>14%</td>
<td>16%</td>
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<td>22%</td>
<td>24%</td>
<td>26%</td>
<td>28%</td>
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<td>32%</td>
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<td>40%</td>
<td>42%</td>
<td>44%</td>
<td>46%</td>
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### Appendices

**Appendix 1**

- 1. Production Quantity
- 2. Revenue from Container Handling (per ton per year)
- 3. Revenue from Bulk Cargo Handling
- 4. Net Profit
- 5. Income before Tax
- 6. Dividends
- 7. Retained Earnings
- 8. Outstanding Balance
- 9. Depreciation

**Appendix 2**

- 1. Production Quantity
- 2. Revenue from Container Handling (per ton per year)
- 3. Revenue from Bulk Cargo Handling
- 4. Net Profit
- 5. Income before Tax
- 6. Dividends
- 7. Retained Earnings
- 8. Outstanding Balance
- 9. Depreciation

**Appendix 3**

- 1. Equity
- 2. Loans
- 3. Annual Revenue
- 4. Net Loss Total

**Appendix 4**

- 1. Income after Tax
- 2. Interest Payable
- 3. Revenue from Container Handling
- 4. Revenue from Bulk Cargo Handling
- 5. Net Profit
- 6. Income before Tax
- 7. Dividends
- 8. Retained Earnings
- 9. Outstanding Balance
- 10. Depreciation

**Appendix 5**

- 1. Production Quantity
- 2. Revenue from Container Handling (per ton per year)
- 3. Revenue from Bulk Cargo Handling
- 4. Net Profit
- 5. Income before Tax
- 6. Dividends
- 7. Retained Earnings
- 8. Outstanding Balance
- 9. Depreciation

**Appendix 6**

- 1. Income after Tax
- 2. Interest Payable
- 3. Revenue from Container Handling
- 4. Revenue from Bulk Cargo Handling
- 5. Net Profit
- 6. Income before Tax
- 7. Dividends
- 8. Retained Earnings
- 9. Outstanding Balance
- 10. Depreciation

**Appendix 7**

- 1. Income after Tax
- 2. Interest Payable
- 3. Revenue from Container Handling
- 4. Revenue from Bulk Cargo Handling
- 5. Net Profit
- 6. Income before Tax
- 7. Dividends
- 8. Retained Earnings
- 9. Outstanding Balance
- 10. Depreciation
インドネシア・ジャカルタ東部地域産業集積地インフラ開発計画調査

要約版
要約

1) 背景
1997年のアジア金融危機、1998年には長きに渡ってインドネシアを統治してきたスハルト大統領の失腳と立て続けに政治・経済を大きく揺るがす出来事を経験したことにより、インドネシア経済は大きく停滞し、いわゆる“氷河期”へと突入した。この間、インドネシア経済の成長を支えてきた外国直接投資は勢いを失い、国内の有力企業も国外への投資に目を向けた結果GDPの成長は毎年数パーセントに留まるほどの成長となった。インドネシア最大の産業集積地である東部ジャカルタ産業集積地（EJIA: East Jakarta Industrial Area）も停滞するインドネシアの中では最も多くの外国投資を引き付けたが、経済的打撃からは逃れられなかった。そこでこの経済危機に対応するため、近年、インドネシアと日本で下記のような共同政策がとられた。

- 2005: 小泉前首相とユドヨノ大統領はEJIAとインドネシア全体にわたる問題に跨って取り組むことを発表（Strategic Investment Action Plan: SIAP）。
- インドネシアに進出している日本の企業及びJBICから成るジャカルタ・ジャパンクラブ（JJC）は2005年以来投資・経済に係る問題の解決にワークショップなどの開催を通じて取り組んでいる。
- シンガポールの提案によりバタム、ピタン、カリマンタン島（BBK）を経済特別区（SEZ）として指定し、2006年から2007年にかけて自由貿易・投資を促進してきた。

しかしこうした取り組みにも関わらず、EJIAを取り巻く問題の解決としてインドネシア政府を主体とする改善事業の推進は依然として低調である。しかし、EJIAのインドネシアに対する経済的貢献度合いから考えると、外国投資を促進するための具体的な政策と実現案が早急にとらえてもらるべきである。また、現状インドネシアが直面するさらなる経済開発・投資誘致の阻害要因を排除する取り組みはEJIAの発展のみならず、インドネシア全体の経済発展へもつながる。

2) 調査の目的
現在のインドネシアの状況を理解した上で、今回の調査は下記の3点に重点が絞られた。

- EJIAへ再度外国投資を呼び戻すための短・中期的な政策の提言
- 長期的な経済基盤整備計画・現状打開策として、東部ジャカルタ地域に新たな港を開発する案の検討
- インドネシアの長期的な経済発展につながるジャカルタ湾に面した新港を起点とする新しい産業集積地（Jakarta Bay Industrial Zone: JBIZ）とEJIAをつなぐ産業成長回廊の開発案の提言

3) 背景: インドネシアの政治・経済的動向
政治的動向: スハルト前大統領の失脚後の政情不安
- 1998年のスハルト前大統領の失脚後に起きた政情不安は現在までに残っている。
- スハルト前大統領の独裁的な政治後、中央政権の政治も地方分権へと改革が進められているが、地方政府の財政能力の確保及び中央政府と地方政府の連携の確立がなされる以前に改革が進行しているため、政策と行政の間に齟齬が生じており経済発展にも影響を及ぼしている。

- 1989-1997: EJIAの完成や外国投資企業寄りの政策が取られ、大きく経済が発展した。
2004-現在: 少しずつ経済は回復基調にあるものの、はっきりとした投資政策が打ち出されていないため成長は小規模に留まっている。

4) インドネシアが抱える問題
1989-1997年かけて、その投資家寄りの政策からインドネシアは投資先として高い人気を誇っていたが、アジア諸国における現在の評価は下記のようなランキングにも見られる通り、低下しつつある。

日本貿易振興機構(JETRO)の2006年調査: 10位
アジア開発銀行(ADB)2005年調査: 5位

(1) 外国投資の呼び込みを妨げる問題
投資家の目から見て、他のアジア諸国と比べてインドネシアは下記のような問題点を抱えている。

経済成長の中心となり得る産業の不足
高い外貨リスク
低い研究開発能力
道路、港、電力、通信設備など主要インフラの不足
複雑な税政策
政治的不透明度
ままりを欠く税関制度
不十分な財産権保護制度
労働賃金の上昇
行政制度の効果の低さ（地方政府の能力の不足）
ビジネスに係る法律コストの高さ

5) EJIAが担う役割と問題点
EJIAは現在4,000 haの敷地で毎年約$11億もの利益を出す2,000ほどの企業から成る。これによりインドネシア全体の収益の約11%に匹敵するとともに、約400,000人の直接雇用を担っている。よってEJIAは、

GDP成長率、雇用、そして収益の安定に最も貢献している産業集積地であると共に、今後も外国投資を呼び込む際にの強力な吸引力となりうる重要な拠点である。

EJIAが抱える問題点
アジア金融危機後一度停滞したEJIAの成長を再度促すためには、下記の4点の解決が不可欠である。

不透明な経済目標
外国産業を呼び込むために不可欠な主要インフラの不足
非効率な法制度
複雑な行政制度及び地方・中央政府の連携不足

6) EJIAとインドネシア経済の復興のための主な解決策

短期的解決策
EJIA内及びその周辺地域を結ぶ連結道路の整備・向上
・一括で税関制度を行なえるような Dry port の導入
・EJIA への SEZ 法の適応

中・長期的解決策
・ジャカルタ及びその周辺地域（Jabodetabek）を結ぶ高速道路の建設
・Jabodetabek の海運の 90% を担うタンジュンプリオク港の施設の向上
・タンジュンプリオク港周辺状況（道路やコンテナ集積場等）の向上と電車などの公共機関によるジャカルタ中心部からのアクセスの改善

長期的解決策
・東部ジャカルタ地域全体を今後の産業発展を担う地域として選定した開発計画の策定と実行
・東部ジャカルタ地域の産業発展を促すような港、国際空港の建設及びそれらとジャカルタ市内・EJIA を結ぶ高速道路の建設
・東部ジャカルタ産業成長回廊としての新たな経済特区の建設

7) ジャカルタ湾産業集積地(Jakarta Bay Industrial Zone : JBIZ) 開発計画案

JBIZ 候補地の現状
(1) 土地及び周辺地域の状況:
・ 現在 JBIZ の建設箇所の候補として挙げられているジャカルタ湾東岸地域は生産性の低い養魚場と低木で覆われている。
・ 候補地への陸路からのアクセスは舗装されていない狭い道に限られており、現段階では車両によるアクセスは困難である。候補地に住む住民の多くは漁業に携わっており、市内への移動も専ら小型船に頼っている。

(2) 社会・経済状況:
・ JBIZ 建設候補地の住民の多くは漁業・その他水産業に従事しており、Jabotabek 中心部からのアクセスが限定されていることから政府によるインフラ供給が十分でなく、生活水準は平均以下に留まっている。
・ 公共施設及び公共サービスは地方政府舎以外ほとんど存在していない。
・ 人口が少ないことから、商業サービスなども発展していない。

JBIZ 候補地の問題点
約 11,000 ヘクタールの産業地開発計画を進めるにあたっては、JBIZ 候補地が現在直面している問題点の中でも下記の 5 点が特に重要となる。
・ ジャカルタ周辺地域から JBIZ 候補地へのアクセスの悪さ
・ 土地の買収及び使用権の確保
・ 各州に建設が許可される港の数に関する制約 (1 州 1 港)
・ 環境保護対策（開発候補地に残るマングローブの森林が世界的にも保護の対象となっているため）
・ 開発に係るコスト及び資金調達

JBIZ 建設による利点
・ 外国投資の呼び込みによるインドネシア経済の復興：JBIZ 建設により、JBIZ とジャカルタ周辺地域及び EJIA との交通の便が発達することが期待される。これにより JBIZ と EJIA を結ぶ産業成長回廊が開発され、外国企業の産業アウトソーシング先としてだけでなく、部品工場から組み立て工場までのラインが一か所に整うことで産業の拠点としての魅力も高まり、より多くの外国投資を引き付ける。結果的に、EJIA 及びインドネシア経済の復興が達成される。
・ 産業発展と環境保護の共存：JBIZ の開発計画の中にはマングローブの森林保護地
の選定及びエコツーリズム地の確保も予定している。これにより新港・SEZ 建設
と並行して行われる予定の商業施設・住居施設に入居・訪問する人々への都市部の
便利な環境と緑豊かな生活の両方を供給することができる。

JBIZ 入居予定産業
JBIZ に建設される予定の港は建設から 100 年余り経っているタンジュンプリオク港と比べ
ても最新設備を整える予定であり、多くの投資企業を引き付けることが可能である。尚、港
と隣接する SEZ は、主に重工業産業を対象とした地区と、軽工業用地区にゾーニングされ
る予定である。それぞれの SEZ に入居が予定される産業としては以下のものが挙げられる。

- 重工業 SEZ: 化学産業、石油化学産業、鉄鋼業、食品加工、船舶修理産業、技術
  産業、等。
- 軽工業 SEZ: 二輪車・四輪車製造及び部品工場、繊維工業、電気製品及び部品工
  場、食品加工、等。

JBIZ 候補地土地利用案: 11,000 hectar
現在の土地利用案として、下記の 5 つのゾーンに分けることを提案予定である。

図 1: 土地利用図案

Source: Study team

- 新港及び SEZ: 2,000 ヘクタール (港: 200 ヘクタール, SEZ: 1,800 ヘクタール): 20%
- 森林保護区: 2,000 ヘクタール: 20%
- 商業施設及び行政施設: 2,000 ヘクタール: 20%
- 住居施設・エコツーリズム: 3,000 ヘクタール: 30%
- その他の施設: 2,000 ヘクタール: 20%

交通機関
(1) 高速道路・一般道路
現在 EJIA に進出している企業の多くはジャカルタ市内を通ってタンジュンプリオク港に輸
出品を運んでいるが、ジャカルタ市内と周辺地域をつなぐ主要道路である高速道路 1 本に
交通経路が限られているため、交通量多寡となり交通渋滞が日常茶飯事である。この状況は輸送に係る時間的コスト及び経済的コストを高めるため、外国投資の同地域への進出を踏襲させるだけでなく、現在既に入居している企業の撤退をも誘引している状況である。そのため、JBIZの開発にあたっては、周辺地域のみならず特にジャカルタ市内とEJIAからの交通アクセスを確保し、代替案を提供することで地域の交通量の循環を施すねらいもある。地域のアクセス道路整備は以下のような計画の下行われるべきである。

- 現在片側2車線の高速道路を4車線、6車線へと段階的に拡大する。
- 一般道路に関しても、以下の3通りの開発を行う：(i)高速道路と産業集積地やその他人口が集中する施設を結ぶ一般道は6車線へと拡大、(ii)主要一般道から外れる一般道は4車線、そして(iii)工業団地間及び敷地内道路等の道路ついては2車線を確保する。

(2) 鉄道
- 現在主に郊外から都市への通勤手段として使われている鉄道に関しては、通勤用と産業輸送用の2種類に分けてジャカルタ市内・周辺地域とJBIZ・EJIAを結ぶように建設を進める。
- 鉄道の建設はJBIZ開発計画中のフェーズ2での完成を目指す。

新港と国際空港
(1) 新港
(i) タンジュンプリオク港の現況
- 現在ジャカルタ市及び周辺地域の需要を一手に引き受けているため、インドネシアの経済発展と共にその需要はさらに高まる予想である。
- しかし、都市部に位置することからもタンジュンプリオク港の敷地は限られており多くコンテナを保存しておけないと、港自体が海抜の低い土地に建設されているため、毎年浚渫費用として高額の維持費がかかる。
- タンジュンプリオク港の深さは現在13mほどであり、これは現在海運手段として広く使われている約15mの深さが必要な大型のパナマックス船を入港させるには足りない。そのため、タンジュンプリオク港に入港する船の多くはシンガポールもしくはマレーシアにて一度積荷を卸し、大型の船に移し替えているという手段を使っているが、2重にコストがかかること。

(ii) 東部ジャカルタ地域における新たな港の需要
- 現在急成長を続けている他のアジア地域に対応するためには、大型のパナマックス船を入港させることができ、効率よくコンテナを収納し、運び出すことのできるコンテナヤードの土地を確保できる新たな港の建設が必要である。

(iii) 新港のコンセプト及び設計案
- 15mの深さを確保するために浮き防波堤及びトレッスル突堤港を組み合わせたデザインを採用する予定。
- 初期段階の港のサイズは4バースほどであり、これに約50ヘクタールのコンテナ・積み荷用の敷地が隣接される。
図2：新港設計案

(ⅳ) ヨット・漁船用港
- JBIZの新港の建設予定地には漁業を営む住民が居住していることから、それに配慮した施設が必要である。そのため、産業輸送用の港と併設して漁業用ポート及び一般の小型船などの入港用に専用の港を河口付近に建設する予定である。
- これと同様の一般小型ヨット用の港はエコツーリズム地として予定されている湾岸にも建設予定である。

(2) 新国際空港
- JBIZが建設されることにより、候補地周辺とJBIZへと続く道路に沿って新たに都市・工業団地が開発されることが予想されるため、人口増加・産業の多角化が起きる。このJBIZ建設予定周辺地域と現在のスカルノハット国際空港との距離、および空港設備の老朽化が進んでいることからも新たな国際空港が必要になることが予想される。

8) 開発計画コスト（フェーズ1：新港及び高速道路の建設）
フェーズ1では、新港、ジャカルタ市内とJBIZを結ぶ高速道路、及びSEZ等の一部の建設の完成を予定している。各費用は下記のように予想されるが、そのうち新港の建設についてはJBICなど公的なローンを使用しての資金調達を計画している。高速道路は既にマレーシアの民間企業がJabotabekの環状道路建設権を獲得しており、JBIZへと続く高速道路はこの環状道路を延長する形で賄えるため、民間企業出資の建設が望ましい。また、SEZや商業・住居施設についても、ひとつ新港とアクセス道路が建設されれば、経済的利益を見込んで多数の民間企業が建設に興味を示すことが予想されることから、こちらも民間主導の資金供給を計画している。
新港建設費用: 約$560 million
高速道路建設費用: 約$ 75 million
SEZ, 商業・住居施設: 2000 ヘクタール x $200 = $400 million

9) 内部収益率 (Internal Rate of Return: IRR)
新港建設に係る IRR: 20.54%

10) 社会経済利益
経済的利益
新港及びSEZの建設により200,000 人ほどの新たな直接雇用の創出が予想される。
人口増加により商業施設、公共機関の改善・増加
ジャカルタ市内及び周辺地域へのアクセスの改善

社会的利益
新港・SEZ等の建設により住民移転の可能性も考えられるが、現在の低い人口密度を考えると少数に留まる予想である。また、住民移転が必要となった場合にも地方政府を中心として公平な移転を行う。こうした影響のほかに、下記のような住民にとっても好ましい状況が予想される。

公的サービスの改善: SEZの建設によりこれまで供給のなかった下水設備、通信網等のインフラが改善されることが予想される。
生活水準の改善: インフラ設備の改善により、人々の生活水準が上がるだけでなく、SEZと並行して新たに建設される住居施設により、より良い生活環境が提供される。

11) 環境影響評価
JBIZの開発による環境影響は(i) 森林・湿地帯の減少具合(ii) SEZ入居予定の企業及び都市開発により排出される廃水、大気汚染、廃棄物等の量、そして(iii) 人口増加によるJBIZ内での渋滞具合によって測ることができる。こういった予想される環境影響に対して、廃水処理設備や産業廃棄物規定など設備や政策の執行を通じて、正しく管理されるべきである。また、EJIAは既に1990年代よりこういった問題に取り組んできており、多いに参考になる。

12) 開発スケジュール案
JBIZの開発計画は現在下記のように組まれており、それと合わせて各インフラ事業の連携のとれた対応が求められる。

詳細調査及びマスタープランの作成: 2008-2009
土地の買収（住民移転が必要である場合はそれの実行）: 2008-2009
既に建設が始まっている環状道路からJBIZ候補地への高速道路の延長: 2009-2010
フェーズ1: 高速道路、新港、SEZ、商業・住宅施設の建設: 2009-2013
フェーズ2: SEZ、商業住居設備の拡張及び鉄道の建設、新国際空港の開発計画: 2014-2018
フェーズ3: SEZ、商業住居施設の拡張、新国際空港の建設: 2019-2023

結論
1. 1990年代にインドネシアの経済成長を支えてきたEJIAは、アジア金融危機後の外国投資離れによる影響で新たな投資を呼び込めないどころか、現在既に入居している企業の離散も止められないほど、インドネシアの投資環境は低下している。
2. インドネシアはちょうど金融危機後の氷河期を乗り越え、今まさに少しずつ復調してきてい
る段階であるため、さらなる投資家離れを抑制、さらには投資誘致を促進するために、インドネシア政府は段階に合わせて、短・中・長期的な解決策を取るべきである。

短期的解決策
- EJIA 内及び周辺地域のアクセス道路の改善
- 税関制度を一括に行えるような Dry port (SEZ)の採用
- EJIA の SEZ としての選定

中・長期的解決策
- Jabodetabek 環状道路の建設
- タンジュンプリオク港及び周辺地域、鉄道網の改善
- 新港湾を中心とする工業団地開発の推進

3. ただし、インドネシア全体の経済状況を復興するには、現況のインフラ改善のみならず新たな設備投資が不可欠である。これの最たるものは貿易を支える新たな港と SEZ、商業・住宅設備を併設した JBIZ の建設である。また JBIZ の開発に際しては公的機関・民間企業の共同事業で進める PPP(Public Private Partnership) 手法を採用することが強く推奨される。