Indonesia’s Connectivity and Logistics Challenges: Findings from World Bank advisory work for IPC

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Plan of the talk

1. Logistics, maritime connectivity and Indonesian prosperity
2. Logistics Costs
3. Maritime Connectivity
4. Regulations and Facilitation
5. Port Development
6. Conclusions and Implementation
SCOPE AND METHODOLOGY

I Connectivity and Reducing Logistics costs

Scope
Logistics performance and impact
Estimate of logistics costs
Logistics and freight Services (3PL, trucking, FF, warehousing)
Trade Facilitation
Maritime connectivity

Logistics
Baseline assessment
Interviews (logistics, commerce, operators)
Surveys of performance (FF, industry & commerce, truckers, Regulatory assessment
Trade Facilitation (survey)

Maritime sector
Shipping survey
Network analysis and connectivity modeling
Port performance analysis

Framework for Reform and Plan of actions
i. Governance and organization
ii. Supply chain fluidity
iii. Development and quality of services
iv. Performance of infrastructure

II Port Development priority projects and financing
I. Assess the soundness of the West - East corridor pendulum concept.
II. Assess secondary ports [Pilot Container Terminals] requiring capacity adaptation and susceptible to contribute to the pendulum
III. Assess the investments and operational improvements needs in these ports, and suggest a financing strategy for implementation.
1 LOGISTICS, MARITIME CONNECTIVITY AND INDONESIAN PROSPERITY
• Indonesia’s GDP needs to grow by some 8% annually to avoid the middle-income trap and to improve the well-being of bottom 40% of its population.

• Given Indonesia’s geographic nature, connecting supply chains and spatially separated sources of supply and demand is critical to diversification and cohesion.

• Without improving freight logistics, the country will suffer missed opportunities from greater internal and international economic integration.

Reducing poverty & vulnerability

Diversifying economic activities

Tapping emerging opportunities
Higher connectivity helps linking poorer regions to growth centers.

- Vulnerable households and poverty rates are higher in remote areas of Indonesia:
  - 55% of the population in Papua are poor and vulnerable, compared with 30% of the population in West Java.
  - In Java and Sumatra the poverty rates are higher in districts that are isolated.

- For growth to reduce poverty and facilitate shared prosperity, Indonesia has to remove barriers that are preventing lagging regions from linking to growth poles.

Source: SUSENAS
RELIABLE FREIGHT LOGISTICS WILL HELP PRODUCERS TO THE DEMAND OF THE EMERGING CONSUMER CLASS

- 18% of the population are “consumer class” =46% of household consumption,
- 43% of the population are “emerging consumer class” c= to 37% of household consumption
  - Consumer class consumption is growing by 21% per year
  - Java still host 60% of the consumer class
  - But regions in eastern Indonesia are also showing a rapid increase in their consumer class
  - These new consumers are changing the pattern of consumption demand: higher demand of processed products over “basic goods”
  - Associated to change in wholesale and distribution system and modernization of logistics (e.g. retail chains)

Where are the new consumer class?
Everywhere!

Source: SUSENAS data

CAGR of Consumption by Middle-Class (2006 - 2012)
The Impact of Connectivity

Low Connectivity can
- Increase the cost of goods imported from the hubs whether Indonesian or not
- Reduce competitiveness by reducing opportunities of shipping goods produced in the outer regions

Impact of low connectivity can also be seen by the consumer through final prices:
- Against a common misconception, the connectivity effect is much more than just the transportation markup (estimated at only 2-6% in Eastern Indonesia), a universal feature
- On top of connectivity the productivity of the retail sector may explain even more divergences between the freight emission poles (e.g. Surabaya) and remote areas
- Urban congestion and wage disparities also add to logistics and retail costs.
2 LOGISTICS COSTS
Maritime supply chain in Indonesia is long and fragmented

- Extremely fragmented supply chains to Easter Indonesia
- No supply chain continuity: it can hardly run backward to support domestic or international export
Total Logistics Costs for goods shipped from the two hubs in Java, are primarily of value of time:

Freight accounts for 1.5 to max 6% of the value of goods.

In trade value of time is typically estimated at 1% per day applied to a lead time equals to:
- Shipping time
- Time at port (unloading unstuffing)
- Delays accounting for the frequency of calls (e.g. missing a boat)
3 ways to improve the connectivity:

1. **Reduction of maritime lead time** and uncertainty in lead time: a 1% improvement leads to 5% improvement in connectivity

2. **Better connection between port and hinterland** in remote locations

3. A denser structure of the network with more connections, which as opposed to 1 and 2 cannot be easily achieved by policies in the short medium term

Connectivity Index and Consumer Price Index (CPI) are closely related.

Connectivity is closely related to the price level at Province level:
Higher connectivity, Lower price difference
Transport cost does not explain half of logistic cost in Indonesia

- **Total Logistics Costs/Sales = 20%**
- **Logistics cost/sales is a firm level concept**, it enables comparisons of logistics performance across industrial sectors and countries.
- Surveys in many OECD and emerging economies: Japan, Finland, Germany, France, Brazil, Thailand...
- More consistent and revealing about performance than logistics cost/GDP.
- Survey of 205 firms in Jakarta, Bekasi, Semarang, Surabaya, Medan
- **Logistics cost/sales of Indonesian manufactures is around 18-19%**, which is higher than that in Thailand and Malaysia (15% and 13%)

### Components of Logistics Cost/Sales (%)

- **Transport & Cargo Handling**: 8% (40%)
- **Inventory**: 5% (25%)
- **Warehouse**: 3% (15%)
- **Logistics Administration**: 3% (15%)  

Source: WB & LPEM-FEIU survey in 5 cities in Indonesia
Producers care more about reliability than costs of logistics

It is important to know how service providers (LSPs) and users of those services (manufacturers) perceive relative importance of key logistics performance:

*(Survey based on LPI methodology)*

- LSPs emphasize low freight cost (39%) slightly over reliability (30%) and timeliness (31%). (lesser perception of the importance of quality as compared with rich countries?)

- Meanwhile, manufacturers tend to put more emphasis on reliability (41%) over cost (28%) and timeliness (29%). The findings highlights that reliable supply chain is critical especially in Indonesian context

Source: WB & LPEM-FEU surveys of freight forwarders and manufacturers in Jakarta, Surabaya, Bekasi Semarang, Medan, Makassar and Palembang
3 MARITIME CONNECTIVITY
Shipping Connectivity can be weaken due to cost & inefficiencies at the port and hinterland supply chains

Factors that **REDUCE** the maritime connectivity

- **Cost and delays associated with maritime services**, frequency of service, network structure
- **Port Supply Chain inefficiency**, which has to do with port operation, as well as handling practices by shippers:
  - In Eastern Indonesia it is frequent that ports are used as storage areas, using the yard for stripping the containers
- **Hinterland supply chains inefficiencies including:**
  - Stripping of containers on port premises
  - Local truck transportation and additional loading unloading to trucks or smaller ships to distribute the goods

What is **special to Indonesia**

- **Very long distances**
- **Predominance of point to point route as opposed to loops**, i.e. few routes among all the possible (double start structure of the network)
- **Extreme fragmentation of the supply chain due** especially at destinations in Eastern Indonesia:
  - Multiple labor intensive stuffing, unstuffing, loading unloading
<table>
<thead>
<tr>
<th>City</th>
<th>Percentage</th>
<th>City</th>
<th>Percentage</th>
<th>City</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMBON</td>
<td>9.5%</td>
<td>JAKARTA</td>
<td>38.0%</td>
<td>PEKANBARU</td>
<td>4.5%</td>
</tr>
<tr>
<td>BALIKPAPAN</td>
<td>10.1%</td>
<td>KENDARI</td>
<td>8.0%</td>
<td>PONTIANAK</td>
<td>9.7%</td>
</tr>
<tr>
<td>BANJARMASIN</td>
<td>15.3%</td>
<td>LUWUK</td>
<td>2.9%</td>
<td>SAMARINDA</td>
<td>10.7%</td>
</tr>
<tr>
<td>BATAM</td>
<td>6.2%</td>
<td>MAKASSAR</td>
<td>18.3%</td>
<td>SURABAYA</td>
<td>40.5%</td>
</tr>
<tr>
<td>BENGKULU</td>
<td>5.6%</td>
<td>MEDAN</td>
<td>22.9%</td>
<td>TARAKAN</td>
<td>3.9%</td>
</tr>
<tr>
<td>BENOA</td>
<td>6.9%</td>
<td>PADANG</td>
<td>12.1%</td>
<td>TERNATE</td>
<td>3.0%</td>
</tr>
<tr>
<td>BITUNG</td>
<td>8.8%</td>
<td>PALEMBANG</td>
<td>5.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GORONTALO</td>
<td>4.4%</td>
<td>PANJANG</td>
<td>6.0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Domestic Maritime Network Connectivity

- The results are consistent with the knowledge of the importance of the ports.
- The two main hubs (Jakarta and Surabaya) are connected to almost half of the network.
- Medan and Makassar play an intermediary role (not Bitung).
Connectivity Index and Consumer Price Index (CPI) are closely related

3 ways to improve the connectivity:

1. Reduction of maritime lead time and uncertainty in lead time: a 1% improvement leads to 5% improvement in connectivity

2. Better connection between port and hinterland in remote locations

3. A denser structure of the network with more connections, which as opposed to 1 and 2 cannot be easily achieved by policies in the short medium term
Domestic Liner Shipping: Some insights

- Domestic shipping network mainly consists of single-port-to-single port routes out of Java with some exceptions where multi-port routes have been introduced to serve the outer islands;
- Domestic liner shipping in Indonesia is provided by less than 10 shipping companies,
- Domestic shipping companies are involved in a full range of business activities:
  - Terminal operations;
  - Domestic freight forwarding;
  - Container leasing;
  - Warehousing/ 3PLs;
  - Trucking;
  - Container Yard Operation.
- The largest companies carried between 250,000 TEUs to 500,000 TEUs each per year in 2013, mainly servicing clients with FCL shipments.
- According to shipping companies, the process for renewing vessel licenses and certificates has become more cumbersome: requirement is one a year and is done manually.
- The absence of third-party liability insurance is one of the reasons why ships are abandoned in the ports.
Example from maritime: domestic freight rates in Indonesia are already responding to market mechanism

- Shipping rates are determined by distance on the routes or ship capacity, consistent with market efficiency:
  - Shorter distances get higher rates, and longer distances get lower rates
  - Rates increase with ship capacity: Bigger ships have lower rates per distance
  - However rather load factors average <50%, range 10-80%

- Shipping rates increase is lower compared to the the increase in distance

- Shipping lines introduce progressively larger ships on more active routes, resulting in economies of scale

\[
rate \sim (\text{distance})^{\frac{1}{2}} (\text{boat capacity})^{-\frac{1}{4}}
\]
Domestic Liner Shipping Survey

Q3 Assessment of Port Performance

Name of terminal berthed (if more than one):

Do you operate stevedoring services at the port?  
- Yes
- No

Which ship discharge/charge equipment do you generally use:

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Sometimes</th>
<th>Always</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quay crane</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ship crane</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

At this port, under normal circumstances, how much time do you spend for the following (hours) — see graph in Annex 1:

<table>
<thead>
<tr>
<th></th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waiting time</td>
<td>Less than 1 day</td>
</tr>
<tr>
<td>Approach time</td>
<td>2-4 hours (long)</td>
</tr>
<tr>
<td>Postpone time</td>
<td></td>
</tr>
<tr>
<td>Working time at berth (effective)</td>
<td>Less than 1 day (depends on volume)</td>
</tr>
<tr>
<td>Working time at berth (idle)</td>
<td></td>
</tr>
<tr>
<td>Total turnaround time (ETD-ETA)</td>
<td></td>
</tr>
</tbody>
</table>

How would you rate the efficiency of the following services provided by the port and other parties?

### Pre-berthing

<table>
<thead>
<tr>
<th>Problematic</th>
<th>Mediocre</th>
<th>Average</th>
<th>Good</th>
<th>Excellent</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Availability of slots and programming (berth window)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Port operating times</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Pilotage services</td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>d) Maritime infrastructure (channel)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) Others (please explain):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### At berth

<table>
<thead>
<tr>
<th>Problematic</th>
<th>Mediocre</th>
<th>Average</th>
<th>Good</th>
<th>Excellent</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Productivity of stevedoring services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Working hours of stevedores</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Quality of terminal equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Availability of terminal equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) Quality layout of infrastructure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f) Facilities for crew</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g) Timeliness of shippers loading at Call</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h) Ship services at ports</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) Others (please explain):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Efficiency of Port and Port Services

- Improvements in seaside access to ports (channel), quality of the layout of the infrastructure (berth) as well as terminal equipment (quay- and yard-side) need to be approached on a case-by-case basis through the development of detailed feasibility studies and technical designs;

- Surveys of domestic shipping lines undertaken for the study suggest the efficiency of port services are equally affecting them from meeting their schedule:
  - **Pre-berth:**
    - Availability of slots and programming (berth window) is problematic (i.e., Belawan, Biak, Manokwari, Sorong, Surabaya);
    - Maritime pilotage services are not efficient (i.e., Ambon, Belawan, Jakarta, Jayapura, Surabaya).
  - **At berth:**
    - Working hours and productivity of labor/longshoremen (TKBM) are problematic and mediocre (i.e. Ambon, Anggrek, Bengkulu, Bitung, Gorontalo, Jayapura, Surabaya, Toli-Toli) with no change over the past 5 years – the the contrary, in some cases it is reported to have worsened;
  - **At yard:**
    - Stuffing and stripping of containers
    - Ship turnarounds in ports are generally slow.
Port Performance and Efficiency

- Surveys of domestic shipping lines undertaken for the study suggest that port performance compared to 5 years ago has improved (in general);

- However, the time spent at some ports is sometimes as much as half of the sailing time (ex. Belawan-Jakarta, Surabaya-Makassar):

- Higher container handling charges are not associated to quality of service, but reflect the bargaining power of unionized labor. In fact it is higher in places (Papua) where total turnaround time (ETD-ETA) is highest:

<table>
<thead>
<tr>
<th>Port of destination</th>
<th>Waiting time</th>
<th>Time at berth (effective)</th>
<th>Time at berth (idle)</th>
<th>Turnaround time</th>
<th>Container Handling Charges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sorong</td>
<td>24 hours</td>
<td>16-21 hours</td>
<td>10 hours</td>
<td>50-89 hours</td>
<td>IDR2,168,290</td>
</tr>
<tr>
<td>Jayapura</td>
<td>24 to 72 hours</td>
<td>48 hours</td>
<td>60 hours</td>
<td>72 to 96 hours</td>
<td>IDR1,840,094</td>
</tr>
</tbody>
</table>
There is a **strong association between shipping time on the domestic routes and time at ports** (turnaround time).

The primary explanation is that in many ports there is significant dispersion of turnaround time around the average, i.e. **turnaround times are mostly uncertain and unreliable**.

Shipping line have to anticipate this uncertainty in their schedule.

The **causes of uncertainty include, port performance, quality of service, and congestion**.

Cumulative effect of lower reliability: more uncertainty at port increase shipping time

3 days at ports => 2 days more shipping
4 REGULATIONS AND FACILITATION
Complex rules for investing in the sector reduce access to market and efficiency

Logistics integrators have to go through multiple permits for each activity

- Typically they need to **separate the business into different legal entities for each activity**, for instance, trucking, freight forwarding and warehousing need to be registered with different agencies.

Restrictions in FDI undermines flexibility to establish integrated logistics providers

- The Government revised its negative investment list (DNI) in July 2007. All transportation services (freight forwarding, road transport, maritime transport services, air cargo transportation services etc.) are now subject to minority (49%) foreign ownership. However, warehousing is subject to lower threshold (33%) except for investment in Eastern Indonesia.
- There are gateway (i.e., port of entry) restrictions on foreign companies looking to provide express delivery service (EDS) and freight-forwarders. No such restrictions apply to local firms.

Prevalence of permits for transport operators

- Ministry of Transport reported that it processed 2,000 permits/day. Recently the Ministry also reduced processing time, extended the time validity of permits, simplified requirements, and increased the use of ICT in processing permits. However, it is not clear whether the Ministry plans to streamline, thorough review, remaining permits to ensure their alignment with competition, quality and safety.

Monopolies for certain key activities

- Similar in fixed-line and energy sector in Indonesia, dominant players (e.g. labor union, dominant SOEs) often has influence over bottlenecked infrastructure facilities such as the port. While the situation might be similar to that where private firms have control on such infrastructure, the regulatory framework to ensure access on ‘last mile’ infrastructure and competitive conduct of dominant players is not yet clearly enforced.
Problems with implementing VAT in freight logistics

Possible issues with implementation of value-added tax (VAT) in freight logistics:

- **Uncertainty with VAT on international freight**: Logistics operators often asked to pay VAT from international freight services. This situation prompts many companies to set aside funds to guard against tax penalties.

- **Uncertainty over the scope of services subject to VAT on freight-forwarding**: The rate is 10% of 10% of the transaction value, but it is not clear which services fall under the rule. Should the transaction value include freight charges and other activities (storage, document handling, etc.)?

- **Lack of clarity on VAT on individual services related to international shipment**: It is not clear whether 1% of 10% rate should be used in collecting VAT for the domestic trucking, storage and handling services that are associated with international shipping.

- **Inability to offset output VAT with VAT paid on inputs**: Express delivery and freight forwarding are not allowed to credit VAT paid on inputs. Major domestic shipping companies have complained that they cannot credit VAT on bunker fuel purchased from PT. Pertamina.

*These additional costs are passed to consumer*
Port trade facilitation issues and dwell cause additional lead time and logistics costs for producers.

- Container dwell time measures total time spent for taking out containers from the time a vessel arrives at port.
- Longer dwell time means delays in the availability of the goods, increase in uncertainty and higher inventory level and carrying costs.
- Long dwell time causes and uncertainty are disruptive to productive activities (especially exports and re-exports).
- Data from JICT suggests a very little correlation between cargo handled and dwell time.
  - It suggest that port infrastructure cannot fully explain long delays in clearing containers, although the port is operating close to full capacity.
  - Instead, new non-tariff measures (NTMs) with long bureaucratic process are likely to cause problems in pre-customs clearance and customs inspections.

There has been little correlation between dwell time and import volume.

Source: WBG analysis on JITC data

- New import restrictions
- Restrictions on importers registration (API)
Importers’ hurdle in submitting the custom declaration (PIB), is the primary explanation of dwell time for international logistics.

Importers submit custom declaration (PIB) with paperwork from other sources. Sources of complications and delays include:

1. **Many technical requirements**, often with no strong justification by international standards (e.g., the pre-shipment inspection by the MoT).
2. **Submission of PIB is delayed** by documents and certificates most of which are issued after ship arrival:
   - Delays in obtaining the customs manifest receipt BC11 (about 30% is submitted after arrival of the vessel) or the PSI report
   - Some documents can only be submitted to the relevant ministries after the vessel arrives (COO, original B/L, Surveyor Report)
3. **Processing is inefficient** due to too many manual interventions:
   - Requirement of hard copies and lack of automation by non-customs agencies. Implementation of the national window has been slow and very partial.
   - A large majority of importers including in the priority channel (80%) experience rejection (SKEP) of their submission resulting in additional delays.

**Current facilitation efforts target automation of processes but do not question the current requirements => needs review mechanism**

<table>
<thead>
<tr>
<th>Documents which potentially add the delay for PIB submission</th>
<th>Number of days delay after vessel arrives</th>
<th>% respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommendation Documents</td>
<td>31</td>
<td>6.4</td>
</tr>
<tr>
<td>Import license</td>
<td>29</td>
<td>10.6</td>
</tr>
<tr>
<td>SNI</td>
<td>8</td>
<td>12.1</td>
</tr>
<tr>
<td>Pre-Shipment Verification certificate <em>(Surveyor Report)</em></td>
<td>3</td>
<td>12.1</td>
</tr>
<tr>
<td>Insurance Policy</td>
<td>3</td>
<td>3.5</td>
</tr>
<tr>
<td>Certificate of Analysis</td>
<td>3</td>
<td>3.5</td>
</tr>
<tr>
<td>Quarantine Document</td>
<td>2.9</td>
<td>5.7</td>
</tr>
<tr>
<td>BPOM Document</td>
<td>2.5</td>
<td>8.5</td>
</tr>
<tr>
<td>Packing List</td>
<td>2.5</td>
<td>5.0</td>
</tr>
<tr>
<td>Commercial Invoice</td>
<td>2.5</td>
<td>4.3</td>
</tr>
<tr>
<td>Bill of Lading</td>
<td>2</td>
<td>12.1</td>
</tr>
<tr>
<td>BC11</td>
<td>1</td>
<td>14.2</td>
</tr>
</tbody>
</table>

Source: WB survey on MITA importers
5 Port Development
Field visits to **18 ports** in order to:

- **Assess port infrastructure**: condition and length of the berths, available container yard space, available handling equipment.

- **Assess port environment**: available draft, access channel to the port, access roads to port, other port related activities near the container port.

- **Safeguard aspects**: urbanization around the port, workers safety, impact of port development on the local natural environment.

- Gathering up-to-date data on port characteristics / operations.

=> **Detailed port assessment piloted in 11 ports**
Pre-Feasibility Studies for 11 ports (so far)

Ambon, Kupang, Jayapura, Kendari, Tobelo and Malahayati have been identified as pilot ports for which pre-feasibility studies.

Port investments needs are based on a operational concept on redeveloped port infrastructure in line with expected traffic.

=> IRR of incremental investment needs over revenue from incremental traffic.

Pre-feasibility studies with the same methodology have been conducted for MOT: Tanjung Perak, Kuala Tanjung, Bitung, Bau Bau and Anggrek.

For all 11 pilot ports financing strategies have been drafted based on 3 financing schemes to materialize the investment consisting of; corporate financing, public financing and public-private partnership.

Main findings

- Tanjung Perak and Bitung have high IRR’s 25 % - 35%

- Secondary ports among others Ambon, Kupang, Jayapura have moderate IRR’s of 10% - 20%

- Ports operated under the Ministry of Transportation such as Tobelo, Bau Bau and Anggrek have a low IRR under a public financing scheme, PPP are only feasible through Viability Gap Funding.

- In 9 out of 11 ports infrastructure investment need is far smaller than the equipment investment need => landlord model can be a suitable port development mechanism.
The investment includes amongst others; refurbishment and strengthening of 225 meters of berth, paving 5.5 hectares of container yard, installing 3 STS cranes and supporting equipment (RTG, Empty container handlers, terminal tractors and trailers.

Investments differ per port based on port infrastructure needs but this case of Ambon is representative to secondary ports.
5 Conclusions and Implementation
Key Messages

1. Connectivity is very correlated to prosperity and national cohesion.
2. Supply chain Reliability and value of time are more important than freight costs,
3. The freight logistics sector respond to market mechanism but operate in a very complicated regulatory environment.
4. Connectivity is not just about infrastructure, regulations and trade facilitation are critical to reliability and logistics costs.
5. Incremental investments in secondary ports to accommodate projected traffic increase have a good ROI
6. Scarcity of data (performance or even volume) available for policy making
A Framework for Freight Logistics Reform

• Problems in Indonesia’s freight logistics unmask an interconnected relationship of 4 key areas: infrastructure, governance, fluidity and service quality/competence

• While better infrastructure is important to streamline freight logistics and improve connectivity, it needs to be combined with three areas

• Distributing goods to outer islands in Eastern Indonesia will always be more expensive than in Western Indonesia due to economies of scale issues.

• But efficiency and reliability of supply chains can be improved by addressing and prioritizing reforms simultaneously in 4 key areas through a plan of action