Nederland Maritiem Land

Indonesia Maritime Hotspot

Final Report

Coen van Dijk
Pieter van de Mheen
Martin Bloem

High Tech, Hands On

Maritime by Holland.

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July 2015

Nederland Maritiem Land serie (mostly in Dutch)

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Indonesia Maritime Hotspot

Final report

Maritime by Holland (Nederland Maritiem Land)

NML facilitates the Dutch maritime network. It is a market-driven initiative that was created in 1997 following a re-energised national shipping policy. Its core aim is to join-up the various maritime sectors and link them with government and academia. Doing this allows the creation of joint initiatives which strengthen individual sectors and promote the Netherlands as a significant maritime nation. Knowledge sharing across the network is facilitated to mutual advantage.
A privately funded organisation, NML seeks to co-finance a range of projects to further the interests of the Dutch maritime community. It is governed by a board of directors selected from the network to provide a range of skills that reflect the entire spectrum of the membership.
The Board consist of:
W. van Sluis (chairman), Mw. T. Netelenbos (vice-chairman), R. Paul (secretary/treasurer) and, in alphabetical order, Dr.ir. B. Buchner, ing. K. Damen, E.M. van Dijk, ir. J.J.C.M. van Dooremalen, S.J. van der Goot, W. Heijliger, M.H.T. Jansen, F. Kevenaar, J.P. Klaver, R.W.F. Kortenhorst, A. Meijer, Vadm b.d. W. Nagtegaal, A.H.J. Otto, K.J. Overtoom, A. Roelse, A.P.H. Vergroesen, L-G R. Verkerk, A.A.N. Vink, P. Zoeteman.
The director is A. Uytendaal.

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PWC Consulting Indonesia
Coen van Dijk / Pieter van de Mheen
E coen.van.dijk@id.pwc.com
I www.pwc.com/id

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E info@efficienta.nl
I www.efficienta.nl

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Summary

The "Indonesian Maritime Hotspot" initiative is one of a series of programs introduced by the Stichting Nederland Maritiem Land, or NML. This program is executed with the objective to present a view on Indonesia's maritime sector. In particular, it should help maritime stakeholders and key players to answer the challenges and investigate improvement opportunities the Dutch maritime industry can contribute to Indonesia's development.

General look of the Indonesian maritime industry

Indonesia offers many investment opportunities for foreign investors in numerous maritime sub sectors because of the following:

- Indonesia has favourable geographic characteristics. It possesses an abundance of both renewable and unrenewable resources such as fisheries and offshore oil and gas. Moreover, Indonesia's strategic geographic location between two oceans and two continents creates high trading potential. As an archipelago consisting of more than 17,000 islands, a well-functioning shipping industry is a basic requirement.
- The Global Maritime Fulcrum program of the new government has motivated the central government to directly implore and invite foreign companies to invest in various Indonesian maritime sub sectors.
- Increased trade likely to be brought by the ASEAN Economic Community will accelerate the need for investment in maritime infrastructure, as well as bring an influx of goods to and from Indonesian ports.
- Nevertheless, there are certain challenges towards investing in Indonesia's maritime sector. They are:
- Regulations and governance imposed challenges prohibit or limit foreign investments in certain sub sectors.
- Rules and regulations are frequently subject to change.
- Local bureaucracies, with numerous government institutions handling the same issues, are often complicated and tough to navigate, especially for foreign companies with limited experience and/or local connections.

Ports and terminals

Ports infrastructure is the focus of Indonesia's maritime development. This focus becomes even more significant since most of the nation's over a 1000 ports are underperforming compared to its regional competitors. The current government's Global Maritime Fulcrum program has opened investment opportunities for foreign companies to participate in Indonesia's port constructions, operation, maintenance, rental of equipment, and parts supplies.

The main challenges in port investment, however, lay in unclear regulations and the domination of Pelindo I to IV as port operators in Indonesia.

Shipping

The shipping industry holds a major role in Indonesia's trade, since 90% of Indonesia's export commodities are delivered via water transportation. The implementation of the Cabotage legislation, along with the Medium-term National Development Plan 2014-2019, is likely to spur an increase in national flagged vessels.

Shipping lines face operational issues such as port inefficiencies causing increased waiting and turnaround time, and risks of labour disputes. The shipping sector is dominated by local players, especially since the implementation of the Cabotage law. Business opportunities for foreign investors seem limited directly in shipping but there is obvious need for education (skill development), maintenance, spare parts, repair and refitting.

Ship building

The shipbuilding industry plays an important part in supporting the achievement of Indonesia's maritime objectives. The government has issued regulations that encouraged the growth of the industry, while at the same time hindering it from achieving maximum growth by imposing high tariffs and tax. The Global Maritime Fulcrum, however, has put the government into planning for reducing, or even abolishing, these tariffs altogether to encourage further growth of local players, as well as to entice foreign investors.

Currently the local shipyards have limited capabilities to produce vessels with high capacity and higher cost efficiency, there is limited capability in maintenance and there is an absence of local suppliers for many components and equipment. The average age of the Indonesian fleet is old. Consequently there is an increasing need for maintenance and repair capabilities. The new building and maintenance of more technologically-advanced vessels and refitting jobs cannot be done at local shipyards.

Challenges in the sub sector lay in the risks of labour disputes, the lack of skilled labour and government regulations. Smaller companies would benefit from a collective/central approach to identify and connect to the right partners.

Offshore oil and gas

Indonesia has abundant offshore unrenewable resources. While the country became a net oil importer in 2004 – forcing the government to withdraw its OPEC membership – the nation is looking to re-join the organisation. There are large oil reserves, mainly in the eastern part of Indonesia, which can contribute to achieving this. The exploration of these reserves, however, will be technically challenging and costly. It is also predicted that the increasing popularity of gas as an energy source would push the production volume of offshore gas. The abovementioned trends will lead to a high demand for capital, technical knowledge, as well as materials and equipment supply. This sub sector is one with numerous regulations, many of which can be unclear, prone to changes, and are dedicated to protecting national interests. These regulations are announced to be increased and enforced recently. This makes it challenging for foreign companies to set up and run a sustainable business effectively in the near future.

Fishery

The Indonesian fishery sector can be categorised into two main activities: capture fisheries, and aquaculture or "fish farming". Due to its sustainability, the government is putting more effort and stronger focus on aquaculture. Despite its abundant marine resources, the sector is still relatively underdeveloped and hence provides significant room for growth.

Investment in the production of fishing boats and fisheries processing facilities as well as seaweed, are three highly potential investment prospects. Investments in technology such as cold storage and commercialising Indonesia's ability in tuna aquaculture, or any other types of offshore aquaculture products, are also promising. Investors, however, might face obstacles in the form of poor transportation facilities and infrastructure.

Maritime education

There is expected growth in local maritime education, driven by the higher importance and priority placed on the capacity and capability of Indonesian maritime human resources. The education sub sector is one which the Netherlands holds a strong link with Indonesia.

The need for education is a recurring topic within all sub sectors of the maritime industry, regardless of whether it is related to operating ports, ships, natural resources or logistics. The lack of skilled labours ranges from white to blue colour in every sub sector. Specifically repair, maintenance and refitting are areas which are largely impacted. There is also an unmet demand for local seafarers, especially for higher ranked officers with greater skill requirements. This poses an opportunity for Dutch companies and institutions to train these workers. The precedents set by various Dutch institutes would make it easier to establish more maritime education programs in joint effort with local institutes. Besides technical training, Dutch players will also be welcomed in investing in education facilities.

Delta technology

Delta technology consists amongst others of dredging, port construction, and land reclamations. It is a market with high potential for years to come, especially because dredging and land reclamation are the main supporting functions to the government's focus on coastal protection and ports development. Dutch players are currently still a strong force in the local delta technology sub sector however are increasingly exposed to competition. Furthermore, some competing foreign constructors enter the Indonesian market by offering their services below market prices and consequently "buying" themselves into the market.
On top of technical assistance, advanced research and development, joint efforts as well as knowledge transfers to local stakeholders, are also likely to be welcomed, thus positioning the Netherlands as a niche technology player. While the Netherlands has an excellent name in delta technology and coastal engineering, it will benefit even more from presenting a joint effort not only as an industry, but also combined with financing constructions.

Conclusion and recommendations

While rich in natural resources and investment potential as well as focused in its maritime ambitions, Indonesia can be a challenging market due to its malleable regulations that at times can be unclear and prone to changes. Connections and good relations with local players, related government institutions, and other stakeholders are likely to bring advantages and ease both the set up and daily operation of foreign businesses. Internally, Dutch maritime organisations have to bundle their forces and create a collective effort in establishing and promoting their ventures in Indonesia.

Our recommendations and suggestions of next steps fall into the following five categories:

1. Implement pilot projects that generate and expand a sustainable footprint and bridge head for the Dutch maritime industry (all sub sectors) in Indonesia. Two cases can be identified: 1) sparking off a maritime community, and 2) realising a supply of fishing boats, and ensuring the provision of maintenance and training.
2. Carry out further in depth studies to gain further insight into the fishing and ship building sub sectors. Compared to the other sectors the Dutch representation in these sub sectors is not yet very strong. The political and economic need is urgent while at the same time the protective regulations seem to offer a positive incentive. In addition, it would be a good idea to investigate the cross sub sector maintenance/supply situation in more detail, due to the fact that there is a lack of capability and parts.
3. Provide practical solutions to help companies to take their first successful steps into Indonesia. This can be done through various means, such as providing assistance in relation to searches for partners, promotion (showcases, trade shows, round tables, bid books), and/or establishing a (virtual) Dutch Indonesian Maritime Desk to act as an entry point.
4. Bundle initiatives and ideas to increase impact and avoid repeated work.
5. Endorse initiatives with a bilateral memorandum of understanding (MoU) between the Government of Indonesia (GOI) and the Dutch Government.

Introduction

Stichting Nederland Maritiem Land (NML) is an organisation that facilitates the Dutch maritime network and connects it with national and international industry players, policy makers and the media. One means by which the organisation realises this is through the "Maritime Hotspot" program. The title of "Maritime Hotspot" is bestowed to regions which are believed by NML to hold a presence over the global maritime sectors. It aims to enhance cooperation, strengthen relationships, and encourage economic growth between the Netherlands and these regions; creating values in the global maritime sectors – both public and private.

Recently, Indonesia was named as a Maritime Hotspot. PricewaterhouseCoopers Consulting Indonesia, in conjunction with Marstrat BV in the Netherlands, was commissioned to conduct market research, in particular to investigate opportunities the Dutch maritime industry can contribute and challenges likely to be faced.

The objective of this paper is to present a view on Indonesia's maritime sector, with the end goal to provide both local and foreign players – commercial or non-profit – a look into Indonesia's various maritime sectors. It should help maritime stakeholders and key players from diverse organisations, sub sectors and regions to answer local maritime challenges and fulfil the improvement opportunities presented here, hence creating a mutual benefit between the two or more parties engaged.

To achieve this, we executed two simultaneous research projects in the Netherlands and Indonesia, conducting desktop research and interviews with local and international players in both countries. The results of these researches are presented in Rotterdam to the members of the NML. Additional insights gained during and after the presentation are incorporated into this final report

This paper is presented in two main parts, preceded by an executive summary and followed by a conclusion and recommendations. The first part explains the five components impacting the development and potential of the Indonesian maritime sector in general. The second part provides a more detailed overview of seven sub sectors of the Indonesian maritime industry as indicated by NML. These seven sub sectors are:

1. Ports and terminals
2. Shipping
3. Shipbuilding
4. Offshoring
5. Fishery
6. Maritime education
7. Delta technology (dredging, land reclamation and constructions)

Each sub sector in Chapter 2 provides the following information:

- General information
- Key facts
- Main players
- Industry trends
- Specific regulations
- Challenges
- Opportunities
- Summary and conclusions

1. Indonesia as an emerging maritime nation with plenty of investment potential

Indonesia offers numerous investment opportunities in the various sectors within its maritime industry. This section will outline the four main components that render the country with numerous marine investment prospects. These elements are:

- The natural geographic characteristics rich in maritime natural resources and a strategic geographical location
- High expected allocation of government budgets towards maritime infrastructure through the Global Maritime Fulcrum initiative
- Increased trade, thanks to the ASEAN Economic Community, will also accelerate the need for investment in maritime infrastructure
- Rules and regulations impose challenges

However, certain regulations and the complexity of Indonesian governance might impose challenges towards investing in Indonesia's maritime sector. These challenges are:

- Certain investment regulations which protect national interests and limit foreign involvement
- Complicated bureaucracy
- Non-transparent public and private decision making structures

This section will further analyse the aforementioned components that make Indonesia a potential place to invest in the maritime sector, as well as the challenges.

1.1. The Indonesian geographic characteristics hold unlimited maritime natural resources

Indonesia is the largest island country in the world, with abundant natural resources. With a total land area of 1.9 million km^2, it has the fourth longest coastline of any country – 54716 km – and over 17,480 islands[1]. It bridges Asian countries to Australia (as well as providing a passage to the western hemisphere), a total area of approximately 5 million km^2, 60% of which is offshore.

[1] Rokhmin Dahuri. "Membangun Indonesia Indonesia Sebagai Negara Maritim yang Maju, Adil-Makmur, Kuat dan Berdaulat"

The government of Indonesia claims an exclusive economic zone (EEZ), which brings the total area to about 7.9 million square kilometres.

Research conducted in 2015 by the Ministry of Marine Affairs and Fisheries put the long-term potential for Indonesian maritime revenue at up to US$800 billion per year[2], gained from various sectors such as shipping, offshore, fisheries and naval tourism. As of now, the maritime sector contributes to 20% of the nation's GDP (US$880 billion). This figure can be further maximised when compared to other marine countries like Iceland, Norway, Japan, South Korea, China and Thailand. These countries, while having less natural maritime resources than Indonesia, have maritime sectors which contribute 30% of their GDP[1].

Figure 1: Indonesia's marine resource map

Source: Ministry of Marine Affairs and Fisheries

Sea Transportation

Indonesia has developed along the coastline, which can be seen in the fact that two thirds of Indonesia's major cities are based in coastal areas. Around 60% of its total population lives along the shoreline[3]. Indonesia relies heavily on various forms of sea transport to connect the islands and to link it to the outside world.

[2] "Cornered Maritime Giant". Republika, retrieved June 2015, http://www.republika.co.id/berita/koran/teraju/15/06/08/npmbo61-raksasa-laut-yang-tersudut

[3] Purwaka and Sunoto. "Coastal Resources Management in Indonesia: Legal and Institutional Aspects"

It is evident that domestic transport in Indonesia should rely heavily on maritime transport and therefore Indonesia potentially has access to low transport costs with almost unlimited capacity. However, logistic costs are high compared to neighbouring countries, consequently indicating room for improvement (see chapter 2.1.). Sea transportation carries over 90% of Indonesia's internationally traded goods[4].

Natural Resources

Indonesia has the world's greatest diversity of fish. It produces over 9 million tonnes of fish per year, 65% of which are from wild capture marine and inland fisheries[5].

From the unrenewable resources sector, Indonesia is one of the biggest natural gas producers in the world with around 101.5 TCF (trillion cubic feet) in proved reserves, of which around 60% are located offshore[6]. It is also a major producer of oil and gas and was a member of OPEC from 1962 to 2008, when Indonesia withdrew after becoming a net importer of oil. In early 2015 the government announced the allocation of different offshore working area projects, with total value of US$100 million. This shows the potential of the country's offshore oil and gas areas that is yet to be discovered.

Maritime Culture

With a population of hundreds of millions, Indonesia's maritime industry is as abundant in its human resources as in its natural resources. The maritime sectors are supported by hundreds of thousands of maritime workers. Many of these workers are blue-collar labourers working as dock workers, stevedores, operators or doing shipyard labour. The white-collar labourers educated in Indonesia are marine scientists and researchers, naval security providers, technicians and seafarers. For the training of these marine workers there are many maritime educational institutes, most of which specialise in marine and nautical studies.

1.2. Indonesia focuses on GMF and allocates government budget on investments

President Joko Widodo allocates government budget on investments in various sectors.

[4] Kobe Hasan. Shipping in Indonesia: Opportunities and Challenges. Norton Rose (Asia) LLP, retrieved May 2015, https://www.marinemoneyoffshore.com/node/6944

[5] Christopher Matthews. "Indonesia, FAO to strengthen fisheries and aquaculture cooperation". Food and Agriculture Organization, retrieved May 2015, http://reliefweb.int/report/indonesia/indonesia-fao-strengthen-fisheries-and-aquaculture-cooperation

[6] Bambang Widarsono. "National Natural Gas Reserves and Production: An Analysis on Potentials and Productions". Lemigas, 2013.

Figure 2 Indonesia's investment priority sectors

Power Generation	35 GW new projects	7 GW projects in the pipeline			
Labor-intensive industry	Textile	Food & Beverages	Furniture	Toys	
Import-substitution industry	Chemical & Pharmaceutical	Iron & Steel			
Export-oriented industry	Electronics	CPO & derivative products	Wood products, pulp & paper	Automotive	
	Machinery	Rubber products	Fish & derivative products	Shrimp	
Downstream industry of natural resources	Cacao	Sugar	Smelter		
Martime	Shipping	Ship building	Sea port	Cold Storage	ICT for maritime
Tourism	Strategic tourism areas	MICE			

Source: Investment Strategic Plan 2015-2019, Indonesia Investment Coordinating Board

The program that focusses on the country's maritime sector is called Global Maritime Fulcrum or the GMF. This program acts as one of his cabinet's main agendas, with the end goal to transform Indonesia into the centre hub and into one of the main influencers of the world's maritime landscape. At an East Asia Summit (EAS) in 2014, the President announced five underlying pillars of the GMF doctrine mentioned in the figure below.

Figure 3: Five pillars of the Global Maritime Fulcrum

Maritime culture	Revival of Indonesia's maritime culture, creating link between Indonesa's archipelagic geography, identity, and livelihood
Marine resources	Improvement of the management of oceans and fisheries through the development of the fishing industry and building maritime "food sovereignty" and security.
Archipelagic connectivity	Boost in Indonesia's maritime economy by improving island connectivity through water highways, port infrastructure, shipping industry and maritime tourism.
Naval development/ maritime security	Bolstering Indonesia's maritime defences to support maritime sovereignty and wealth, and realising the role in maintaining navigation safety and maritime security.
Maritime diplomacy	Maritime and border issues as the heart of diplomacy, encouraging the development of maritime diplomacy that inspires Indonesia's partners to work together to eliminate conflict arising over illegal fishing, breaches of sovereignty, territorial disputes, piracy and environmental concerns.

Source: The Jakarta Post

In all the pillars a common theme is that Indonesia is focusing on being a maritime driven economy that benefits the livelihood of its people. There are already several government initiatives that reflect on the GMF. Mostly these initiatives relate to enhancing inter-island connectivity through the development of maritime infrastructure and shipping capacity/fleet size, development of the shipbuilding industry, as well as attracting foreign investors.

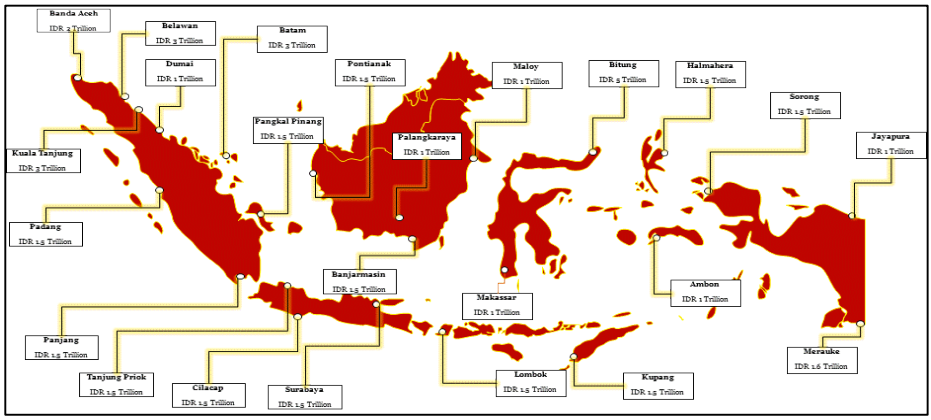
Enhancing inter-island connectivity

One of the generally agreed upon keys to the GMF is the importance of inter-island connectivity. With the GMF, the government is aiming to reduce the cost of domestic logistics through the marine highway initiative. Poor port infrastructure has made shipping goods between the islands of Indonesia very expensive, and the government aims to reduce this. This initiative will also bring Indonesian ports closer to the benefits of international shipping. The program consists of the construction, expansion, or upgrade of 24 existing or new commercial ports, over a thousand non-commercial seaports, and the procurement of hundreds of container and passenger vessels, altogether valued at around US$55 billion[7].

The initiative more than ever drives a greater need for marine constructors. The expansion of Tanjung Priok Port, for example, commenced in 2014 and calls for construction work in land reclamation, retaining walls, an access bridge, the container yard and quay structures. The expansion of Manyar Port Terminal requires private constructors to dredge and maintain the access channels to ports of Surabaya and Bengkulu. As of now, the Indonesian dredging and land reclamation sectors consist of mostly foreign players, in particular Dutch companies.

[7] NationalDevelopment Planning Agency

Figure 4: Indonesian Ports' expansion plan value



Source: the Jakarta Globe

Development of shipbuilding industry

The Head of Indonesia Investment Coordinating Board, or BKPM, Franky Sibarani has stated that one of the government's focuses is the shipbuilding industries, especially those outside Batam Island. Furthermore, it has stated that the works to realise the relief of taxes and import duty for shipyards are under way, although as of the time of this report there is not yet a definite list of specific areas exempted from import duties and taxes.

In the same spirit, the Co-ordinating Minister of Maritime Affairs, Indroyono Soesilo has promised that his office is ready to grant fiscal or non-fiscal incentives to investors in ship construction and repair.

Attracting foreign investors

Securing the required level of funding for the development agenda set out in the maritime doctrine will not be easily accomplished. The National Ports Master Plan has indicated a significant requirement for investment in Public Private Partnerships (PPP). 70% Of the marine highway initiative budget is expected to be funded by the private sector[8]. In addition to this, the President has also openly implored foreign investors to provide the funding required especially in completing upgrades to the country's ports.

[8] Indonesian Investment Coordinating Board

Table 1: Budgeting plan for infrastructure developments in Indonesia

No.	Sector	State Budget	Regional Budget	State-Owned	Private	TOTAL
1	Road	28.3	16.7	5.4	16.7	67.1
2	Railways	12.5	-	0.9	10.2	23.6
3	Sea Transportation	41.5	-	19.9	13.7	75.0
4	Air Transportation	7.1	0.4	4.2	2.1	13.8
5	Land Transportation (included ASDP)	4.2	-	0.8	-	5.0
6	City Transportation	7.5	1.3	0.4	0.4	9.6
7	Electricity	8.3	-	37.1	36.3	81.7
8	Energy (Oil and Gas)	0.3	-	12.6	29.3	42.2
9	Information Technology and Communication	1.0	1.3	2.3	18.6	23.2
10	Water Resources	23.0	5.7	0.6	4.2	33.4
11	Drinking water and waste	18.9	16.5	3.7	2.5	41.6
12	Housing	32.0	3.7	1.0	7.3	44.0
	Total Infrastructure	184.6	45.4	88.9	141.0	460.0
	Percentage	40.14%	9.88%	19.32%	30.66%	100.00%

Source: BKPM's Investment Strategic Plan 2015-2019

One of the regulations supporting foreign investment is Law No. 25 of 2007, which provides incentives for foreign investors in the form of:

A. Reduction of net income tax
B. Import duty exemption or relief
C. Value Added Tax exemption or deferment
D. Accelerated depreciation or amortisation
E. Land and Buildings Tax relief for specified business fields in specified regions or areas or zones

In addition to this, Presidential Regulation No. 38 of 2015 regulates that foreign entities are allowed to bid for infrastructure tenders without setting up a local company in Indonesia. Only after a foreign bidder is named as the winner is the foreign company required to set up a local business.

1.3. Increased trade through the ASEAN Economic Community will accelerate the need for investment in marine infrastructure

The ASEAN Economic Community, or the AEC, defines a full liberation and integration of borderless ASEAN economies covering the free flow of goods, services, investment, capital and skilled labour. The plan strives to make production and distribution networks in ASEAN deeper, wider, and more entrenched in the East Asian and global economy.
The abolishment of tariffs and trade barriers within the region is likely to bring impacts in the shape of:

1. An influx of goods to and from Indonesian ports
2. Availability of cheap and skilled labour from other ASEAN countries

Influx of goods
The ultimate aim of AEC is to support and encourage trade flows between ASEAN countries. With a vast market size of 248 million people, Indonesia is a lucrative export market for countries in the region. Labour resource availability will also make it easier for Indonesia (compared to smaller countries with limited labour pools) to export goods to other countries.
Indonesia is likely to expect higher than ever port traffic as a result of fewer tariffs and regulations that previously hindered exports and imports.

Availability of cheap and skilled labour
The AEC also regulates the free flow of skilled labour in the ASEAN region. The ASEAN Agreement on the Movement of Natural Persons, or the MNP, provides ease in temporary movement of each country's labour force.

As with the case of influx of products, this means there will be more skilled labour available from neighbouring ASEAN countries. Specific skill sets that are more difficult to attain are likely to be cheaper as well as easier to employ locally with the implementation of the AEC.

1.4. Regulations and governance might impose challenges for investments in certain maritime sectors

Despite an open invitation from the government for foreign investors in the maritime industry, the mechanism of certain legal related matters might impose challenges to foreign investors. Most of these challenges are in the form of regulations that limit foreign investment, as well as red tape in government institutions.

Certain investment regulations limit foreign investment in a number of maritime sectors

To regulate maritime activities, the government has introduced several regulations related to the maritime sector. Many of these regulations were put in place to protect the industry's sustainability, as well encourage the development of local industry players. Furthermore, these regulations are often unclear and might leave room for differing interpretations, causing confusion in their implementation. This section will provide a look into these related regulations, with a focus on those that may limit foreign investment in the area.

Prohibited Areas of Foreign Investment

Presidential Regulation No.39 of 2014 the 'Investment Negative List' (the Negative List) ruled that several sectors are prohibited to any foreign investment. The rationale behind closing business fields to foreign investment is to safeguard various national interests like monetary protections, national defence and security concerns, environmental, cultural, and others.

Table 2: List of Business Fields Closed to Investment and Business Fields Open, with Conditions, to Investment

Sector	Business field
Fishery	Capturing of Fish Species listed in Appendix I Convention on International Trade in Endangered Species of Wild Fauna and Flora. The use (removal) of coral/atoll from nature for construction material/lime/calcium and souvenir/jewellery, also live or dead coral (recently dead coral) from nature.
Industry	Certain oil and gas support services.
Transportation	Providing and Implementation of Land Terminals Implementation and Operation of Weight Stations Vessel Traffic Information System (VTIS)
Communication and Informatics	Management and Implementation of Radio Frequency and Satellite Orbit Spectrum Monitoring Stations

Source: President Regulation No.39/2014

Caps on Foreign Ownership

Furthermore, Presidential Decree No. 39 of 2014 limits foreign ownership of certain business ventures in Indonesia. In such cases, a foreign investor must form a joint venture with one or more Indonesian organisation.

Table 3: Business Fields Closed to Investment and Business Fields Open, with Conditions, to Investment.

Sector	Business field
Provisions of port facilities	Subject to foreign ownership limit of 49% but can be increase to up to 95% for port provision services in a public–private partnership scheme during the concession period (before 24 April 2014, it was subject to a 49% limit).
Offshore drilling services	Subject to a foreign ownership limit of 75%
Certain oil and gas construction services	Either closed to foreign investment or subject to limits ranging from 49% to 75%
Cold storage businesses in Kalimantan, Sulawesi, Nusa Tenggara, Maluku and Papua	Subject to foreign ownership limit of 67%

Source: President Regulation No.39/2014

In addition to the limitations in foreign shareholding percentage, certain sub sectors of maritime and fishery, energy and mineral resources, industrial, transportation and education sectors must also meet one or more of the following conditions:

- Venture must be made in partnership with a local business partner;
- Venture is required to be in a certain location; and
- Venture requires a special licence from the relevant Minister.

The Cabotage Law

The Cabotage regulation prohibits foreign vessels operating within Indonesia's waters. It was implemented to encourage the development of the local shipping and shipbuilding industry and prevent competition from numerous foreign vessels engaging in Indonesian water transportation. However, there are several exemptions to this regulation that allow the movement of foreign vessels domestically.
The Maritime Law No 17 of 2008, or the Cabotage Law, sets out the following principles:

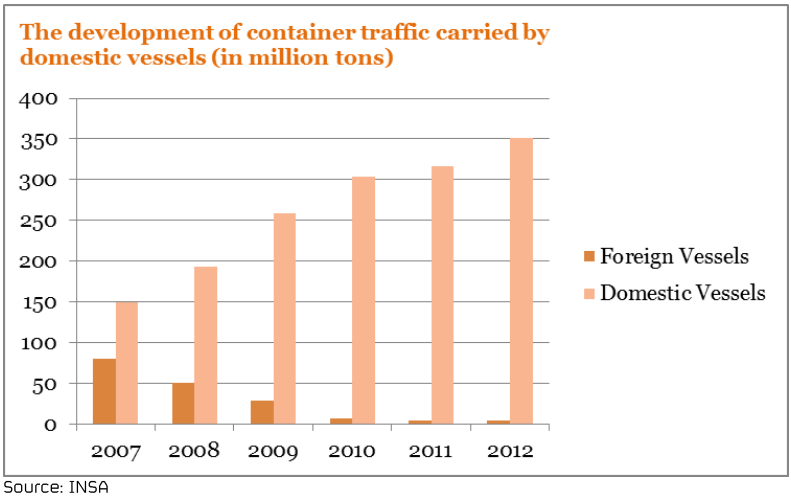
- Activities relating to domestic sea transportation must be performed by an Indonesian company using Indonesian flagged vessels which are manned by Indonesian crews
- Non-Indonesian flagged vessels are prohibited from carrying passengers and/or goods between islands and ports in Indonesian waters

In 2011 the Indonesian government further expanded the regulation to include activities of oil and gas companies. This was done to encourage Indonesia's shipbuilding industry to grow and protect members of companies of the Indonesian Shipowners Association (INSA).

The regulation also limits foreign shareholdings in Indonesian shipping companies to 49%. Foreign investors in the sector who previously held majority stakes in relevant companies have since been required to divest their holdings to below 50% and implement structuring options that enable them to protect the value of their investment from an economic and management perspective.

At the time of this law's introduction, players in the industry were given three years to adjust to new requirements, with formal implementation taking place on 7 May 2011. Through this three year period, there was a substantial uptick in the capacity of domestic vessels from 192.76 million tonnes in 2008 to 316.48 million tonnes by 2011. INSA data show that the number of Indonesian vessels rose to 13,244 in 2014, from 11,628 in 2012. Furthermore, the Indonesian shipbuilding industry is now able to construct 19 types of offshore vessels with its growing local expertise, which increased from only nine types of vessels in the past years.

Figure 5: The development of container traffic carried by domestic vessels (in million tonnes)



Source: INSA

Local shipyards were unable to meet demand for a variety of specialised ships, particularly offshore vessels. This put significant risk of production losses in the oil and gas industry. To tackle this, exemptions were created in 2011. The regulation and its subsequent revisions listed exempted offshore vessels.

Figure 6: Revised Cabotage exemption deadlines

Vessel type	Description
Oil and gas survey	Exemption status subject to certain requirements
Drilling	
a) Jack-up rig	
b) Semi-submersible rig	
c) Deep water drillship	Exempted until December 2015
d) Tender-assist rig	
e) Swamp-barge rig	
Offshore operation support	Exemption status subject to certain requirements
Dredging	Exemption status subject to certain requirements
Salvaging and underwater works	Exemption status subject to certain requirements

Source: MOT Regulation No. 10/2015

Except for drilling purposes, the exemption of foreign vessel types listed on the revised regulation is subject to certain requirements, for example a recommendation letter from INSA which shows an absence or shortage in Indonesian-flagged vessel needed for the intended operation, such that it requires foreign-flagged vessels. Any exemption granted will be applicable for one year.

Foreign vessels not designated in the regulation can also obtain special exemption from the Ministry of Transportation, through evaluation by a special team. This team consists of members of the Directorate of Sea Traffic and Transportation, the Directorate of Seaports and Dredging, and the Legal Department of the Directorate General of Sea Transportation, among other government bodies. Once the evaluation process is successful, foreign owned vessels will receive a permit to operate in Indonesian waters for a maximum of one year[9].

Offshore vessel types that are readily supplied by members of INSA are subject to fully enforced Cabotage principles. Anchor handling tug supply ships (AHTS), for example, was on the exemption list but removed when Indonesian shipyards achieved the ability to supply the vessels domestically starting 2013[10].

Numerous regulatory bodies that heighten bureaucracy and complicate investing process

Many international investors believe that bureaucracy is one of the main challenges when investing in Indonesia. There are no fewer than 13 national agencies or stakeholders in relation to maritime affairs. They lack coordination and clear resource management strategies. Companies looking forward to establishing their business often face confusion and frustration navigating between these agencies. As a way to tackle this, the government established a One Stop Integrated Service as a means to create a more investor-friendly climate.

This section elaborates on the different ministries and their responsibilities in relation to different maritime sub sectors, as well as the aforementioned implementation of a One Stop Integrated Service.

Coordinating Ministry of Maritime Affairs

In 2014, the President added the Coordinating Ministry of Maritime Affairs to his cabinet. The Ministry's duty includes coordination of the Ministry of Marine Affairs and Fisheries, Ministry of Energy and Mineral Resources or ESDM, Transportation Ministry and Tourism Ministry.

[9] "Cabotage Timetable for Offshore Vessels in Indonesia". Global Business Guide Indonesia, retrieved May 2015,http://www.gbgindonesia.com/en/main/business_updates/2014/upd_cabotage_timetable_for_offshore_vessels_in_indonesia.php

[10] "Pertamina Trans Kontinental Bangun 2 Unit Kapal". BUMN News – Pertamina, retrieved July 2015, http://www.bumn.go.id/pertamina/berita/2456/Pertamina.Trans.Kontinental.Bangun.2.Unit.Kapal

It has four deputies in charge of infrastructure, maritime sovereignty, marine life development, and natural resources and services. It has set a five year objective of 31 million tonnes in fishery production and tourist income of US$ 18 billion by 2019[11]. Being a new ministry with no fixed budget nor abundance of dedicated staff, this can be a challenging objective. A strong cooperation with other ministries will be necessary to achieve this objective.

Ministry of Transportation - Directorate of Sea Transportation
Tackling the connectivity issues is mainly the responsibility of the Ministry of Transportation's Directorate of Sea Transportation. It is responsible for sea transportation including ports, sea hubs and highway infrastructure and sea carrier services. Thus, the ministry is indirectly a major stakeholder for shipping affairs and delta technology, mainly for dredging and land reclamation.

Ministry of Marine Affairs and Fisheries
Working across various sub sectors of the Indonesian maritime affairs is the Ministry of Marine Affairs and Fisheries. It is tasked with:

- Overseeing marine resources management (including fisheries), ocean and coastal conservation
- Economic development of remote islands
- Guarding the interest of Indonesia's maritime sovereignty, including expansion of the Country's sea areas, and efforts to eliminate illegal fishing and damage to the coastal ecosystem

Administrative Ministries
The responsibility of maintaining information related to maritime affairs was distributed to seven different agencies operating under numerous ministries, all of which hold no maritime assets of their own[12]. They are:

- Ministry of Law and Human Rights
- Coordinating Ministry for Political, Judicial and Security Affairs
- Ministry of Home Affairs
- Ministry of Foreign Affairs
- National Intelligence Agency
- Indonesian National Defence Forces Headquarters and
- The Attorney General's Office

[11] Coordinating Ministry of Maritime Affairs
[12] Supriyanto and Rusdi. "Maritime Security Agencies in Indonesia: More Not Merrier". S. Rajaratnam School of International Studies, 2013

Indirect Stakeholders Ministry

Other indirect stakeholders of maritime affairs are:

- Ministry of Energy and Mineral Resources - Directorate General of Oil and Gas, overseeing the offshoring industry
- Ministry of Industry, overseeing the shipbuilding industry, especially in creating stimulus, financial incentives, and supporting technological advancement of the industry
- Ministry of Education, overseeing marine education in conjunction with the responsible ministry of the maritime sub sector

One Stop Integrated Service

In January 2015, the government established the One Stop Integrated Service (PTSP) at the BKPM. Through the PTSP, the government is aiming to ease, as well as speed up, investment licensing procedures for foreign investors. 22 Ministries and government agencies have delegated their licensing procedures to the PTSP[13]. Therefore documents related to permits can be obtained at BKPM, except permits from provinces and districts, or those from the ministries yet to delegate their duties to the PTSP.

Figure 7: The 22 ministries/government agencies involved in PTSP

Ministry of Energy & Mineral Resources		Ministry of Communication and Informatics	
Ministry of Environment and Forestry		Ministry of Manpower	
Ministry of Industry		Ministry of Public Works and Public Housing	
Ministry of Agrarian & Spatial/BPN		Ministry of Marine and Fishery	
Ministry of Trade		Ministry of Education and Culture	
Ministry of Agriculture		Ministry of Defense	
Ministry of Finance		National Police (POLRI)	
Ministry of Transportation		National Agency of Drug and Food Control	
Ministry of Law and Human Rights		National Standardization Agency (BSN)	
Ministry of Health		National Encryption Agency (LEMSANEG)	
Ministry of Tourism		PT PLN Persero	

Source: BKPM

[13] Indonesian Investment Coordinating Board

1.5. Conclusion

Indonesia's maritime sector offers a lot of investment opportunities. This is due to three factors:

1. The natural geographic characteristics of Indonesia is rich in maritime natural resources. Indonesia possesses an abundance of both renewable and unrenewable resources such as fisheries and offshore oil and gas. Its thousands of islands shaping the country also create a high traffic in water transportation, which create the need for numerous marine facilities and transportation means. Moreover, strategic geographical location between two oceans and two continents creates high trading potential.
2. There is a high allocation of government budget towards maritime infrastructure through the Maritime Fulcrum initiative. The Maritime Fulcrum is a focus work program for the new cabinet, with the objective of turning the country into a maritime driven economy. The high capital and funds needed to facilitate this program pushed the central government to directly implore foreign companies to invest in Indonesian maritime infrastructure and transportation.
3. ASEAN Economic Community is likely to increase trade, which will accelerate the need for investment in maritime infrastructure. The abolishment of tariffs and trade barriers within the region is likely to bring an influx of goods to and from Indonesian ports, hence making the development of marine infrastructure even more essential for the country to able to compete with neighbouring countries.

Nevertheless, there are certain challenges towards investing in Indonesia's maritime sector, in particular due to regulatory and governance matters. Presidential Regulation No.39 of 2014 the 'Investment Negative List' (the Negative List) governed certain sectors that are prohibited to any foreign investment, or open to investment but with limited foreign ownership. Furthermore, the many ministries and licences that an investor has to steer through create challenges when navigating the Indonesian bureaucracy.

Furthermore, the four elements as discussed in this paragraph are the biggest influences in the progressive development of the Indonesian maritime industry, of which any foreign institution looking forward to taking part in the Indonesian maritime sectors should take into consideration, regardless of the specific maritime discipline.

2. The maritime sectors

With huge water areas and unlimited natural resources, Indonesia's maritime sector is a multifaceted one. There is an endless list of sub sectors, subfields, and maritime potential from which a party looking to invest can benefit.

As discussed before, we focus on seven maritime sub sectors, which are:
1. Ports and terminals
2. Shipbuilding
3. Shipping
4. Offshore
5. Fishery
6. Maritime education
7. Delta technology (dredging, land reclamation and construction)

The Indonesian Navy is also an important maritime player, mainly as a driver for innovation and technology development in the shipbuilding sector. Inland shipping plays a role in certain areas, but is seen as a part of 'shipping', unless indicated otherwise. The yachting and leisure industries are not taken under consideration in this report.

This chapter will provide an analysis and deeper look into each of the above sub sectors. Each sub sector consists of:
- Overview
- Trends
- Key players
- Recent trends
- Regulations
- Opportunities and challenges

The results of interviews with Dutch companies doing business in Indonesia are integrated in this chapter. This way a clear bilateral picture is taken, providing input for the conclusions in chapter 3.

2.1. Ports and terminals

Indonesia is preparing a series of initiatives on the development of port infrastructure. The government is not only searching for investors, but also allocates high central budgets. The goal is to expand, upgrade and develop both new and existing ports. Also central to this initiative is the efficiency of existing ports. This section will provide a look into Indonesia's ports sector, including its current state, the key players, Indonesia's focus on port development and its implications for foreign investors.

Overview

Currently, in total there are over 1000 ports across the archipelago. They can be categorised into:

- Commercial ports
- Non-commercial ports
- Special ports, coal terminals and fishing harbours

Commercial ports

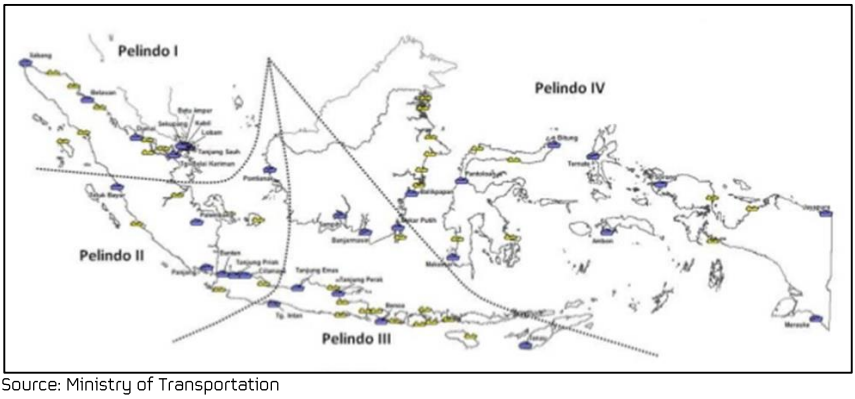
Commercial ports serve international and domestic sea transportation. They are used mostly for commercial purposes that include container, cargo, car and multipurpose terminals. These ports are managed by four state-owned port operators known as the Pelindo I, II (or Indonesia Port Corporation/IPC), III and IV ("Pelindos"). In total, they manage around 111[14] ports in Indonesia.

From the 111 ports, around 25 ports serve as a hub for international transportation. These ports play an important part in Indonesia's goal to become a hub between international and domestic sea transportation. The largest Indonesian ports as of today are located in:

- Belawan in Medan
- Tanjung Priok in Jakarta
- Tanjung Perak in Surabaya
- Makassar in South Sulawesi

For eastern Indonesia, Pelindo II is planning to develop a port in Sorong in West Papua. It aims to be the trading gateway between Indonesia and Australia and Papua New Guinea.

Figure 8: Pelindo managed commercial ports



Source: Ministry of Transportation

[14] The Indonesian Ministry of Transportation

Non-commercial ports

Non-commercial ports are relatively small in size and are not equipped with adequate port facilities for heavy trading activities. Based on data in 2009, there are approximately 5337 non-commercial ports in the region. They are managed by local government, regional owned port operators or private sector companies. In the case of private sector managed ports, they are usually also given licenses by central or local government to operate special ports for the purpose of transporting goods/commodities between the port and transhipment points e.g. CPO, oil and gas, etc.

Below are some examples of non-commercial ports:

Figure 9: Examples of non-commercial ports

Labuhan Haji Port, East Lombok

Source: EU Indonesia Business Dialogue

Special Purpose Ports

Special Purpose ports are mostly dedicated for transport of commodities such as oil and gas, coal, cement, fisheries and timber. Currently it is estimated that there are 177 special ports across Indonesia.

Indonesian fish landing places are categorised into three main categories: Types A, B and C or classes I, II and III. They are managed by the Directorate General of Fisheries, Ministry of Marine Affairs and Fisheries and also the provincial governments.

Below are examples of special purpose ports:

Figure 10: Examples of special purpose ports

Paiton Power Plant Coal Port | Cilacap Fishing Port

Source: Business.com; Ministries of Marine Affairs and Fisheries

Port performance

Port performance remains poor in Indonesia due to neglect and financial constraints over the past years. Many of the ports do not fit international standards and have impeded the country's internal and external maritime commerce. According to a World Bank Logistics Performance Index study, Indonesia is ranked 53rd, behind Singapore, Malaysia, Thailand and Vietnam, in terms of logistic performance.

Table 4: Logistic Performance Index

No	Country	Year	Customs	Infra-structure	International shipments	Logistics competence	Tracking & tracing	Time-liness
1	Singapore	2014	4.01	4.28	3.7	3.97	3.9	4.25
2	Malaysia	2014	3.37	3.56	3.64	3.47	3.58	3.92
3	Thailand	2014	3.21	3.4	3.3	3.29	3.45	3.96
4	Vietnam	2014	2.81	3.11	3.22	3.09	3.19	3.49
5	Indonesia	2014	2.87	2.92	2.87	3.21	3.11	3.53
6	Philippines	2014	3	2.6	3.33	2.93	3	3.07
7	Cambodia	2014	2.67	2.58	2.83	2.67	2.92	2.75
8	Lao PDR	2014	2.45	2.21	2.5	2.31	2.2	2.65
9	Myanmar	2014	1.97	2.14	2.14	2.07	2.36	2.83

Source: World Bank

The table shows that, despite the fact that Indonesia is the largest economy in South East Asia (GDP USD 880 Billion), Indonesia is still ranked behind Singapore, Malaysia and Thailand in terms of logistics performance, especially in infrastructure and international shipments. The country is lagging behind its closest neighbours in

logistics capabilities and seriously needs intensive improvement in infrastructure, policy, coordination as well as education prior to the AEC full implementation.

In most ports in Indonesia there are low drafts, which limit the size of vessels operating there or even make it impossible for relatively small seagoing ships to enter.

Government regulations allow private sector participation as port operators

Port management is regulated in the Indonesian Shipping Law No: 17/2008, supported by Government Regulation No: 61/2009. This law introduced a change in port management, and separated the functionality of port operator and regulator.

Since its enactment, the shipping law opened the door for other players (apart from Pelindos) to be involved in the port operating activities which include managing pilotage, tariff setting, cargo handling, stevedoring, etc. This is because the law eliminated Pelindos former role as landlord to instead focus solely on the port operator role.

The law also stipulates the possibility for port operators to be given concession from the port authorities to operate ports. This model has been implemented in several ports in Indonesia where the government has granted concessions:

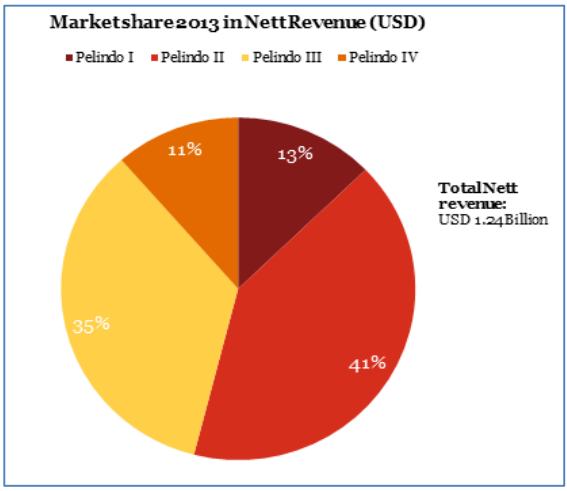
- Kalibaru projects in Jakarta – concession given to Pelindo II for 70 years
- Teluk Lamong project in Gresik, West Java and – concession given to Pelindo III for 72 years
- Makassar Terminal port in Sulawesi – concession given to Pelindo IV for 70 years

The concession model is expected to trigger Foreign Direct Investment (FDI) or financing to promote port development plans and implementation, as the government expected this law to entice foreign investors to become port operators through joint ventures/concession with the local port operator.

Pelindos as the main port operators

Most of the busiest ports in Indonesia are operated by the Pelindos – whether independently or through joint ventures with a private operator. The total net revenue of the four Pelindos in 2013 represented approximately 0.14% of Indonesian GDP with total combined revenue of USD 1.24 billion. This means that the Pelindos are a necessary link in the realisation of the 2008 Shipping Law, as well as the Maritime Fulcrum objective.

Figure 11: Market share of Pelindo I-IV



Source: Pelindo I, II, III, and IV Annual Report

Pelindo I

Pelindo I, operating in the Sumatra Island, is accountable for 15 ports across the middle to the northern areas. Pelindo I covers the north half of Sumatera, the Provinces within Pelindo I territorial area being Nangroe Aceh Darussalam/Aceh, North Sumatera, Riau and Riau Islands with the Special Economic Zone status of Batam of particular importance.

The area served by Pelindo I has a hinterland that is well developed with production of CPO, rubber, oil and gas, agricultural output, mining, and some tourism. Overall, there remain many areas of mining and tourism potential still to be developed by Pelindo I.

The total port traffic for Pelindo I shows a significant trend between 2009 and 2013. For container traffic, it shows a positive CAGR with 7.95% between 2009 and 2013 with 983,085 to 1,335,139 TEUs (this was predominantly contributed by its International container terminal located in Belawan).

Table 5: Pelindo I's Traffic in 2009 - 2013

Pelindo I	2009	2010	2011	2012	2013	CAGR
Ship traffic (call)	69.332	61,679	61,552	70,311	65,016	-1.59%
Container traffic (TEU)	983,085	1,111,398	1,277,709	1,304,237	1,335,139	7.95%
Passenger traffic (pax)	4,712,393	5,019,908	5,460,493	5,307,949	5,345,594	3.20%

Source: Pelindo I

The Belawan port is the leading port under the jurisdiction of Pelindo I. It operates terminal services for dry bulk, liquid bulk, stevedoring for container and cargo, and shipping services. The port also operates a subsidiary under Pelindo that currently functions as the main International and Domestic container terminal in Surabaya called the Belawan International Container Terminal (BICT). BICT has accounted a CAGR of 11.6% of its container throughput between 2009 and 2013 (581,210 to 900,395 TEUs).

Table 6: BICT's container traffic in 2009 – 2014

BICT	2009	2010	2011	2012	2013	CAGR
Container traffic (TEU)	581,210	690,059	739,292	835,388	900,395	11.6%

Source: Pelindo I

Pelindo I also operates Dumai port, which is predominantly the serving port for Crude Palm Oil (CPO) commodity as well as Palm Kernel Ekspeller, Palm Kernel Shell and fertiliser.

Figure 12: Jurisdiction of Pelindo I

Source: EU-Indonesia Business Dialogue

Pelindo II

Pelindo II (also known as IPC) is the biggest among the Pelindos. Their operational jurisdiction spans between West Sumatra, Jambi, Bengkulu, South Sumatra, Bangka Belitung, Lampung, Banten, DKI Jakarta, West Java and West Kalimantan. In total there are 12 branches across these provinces.

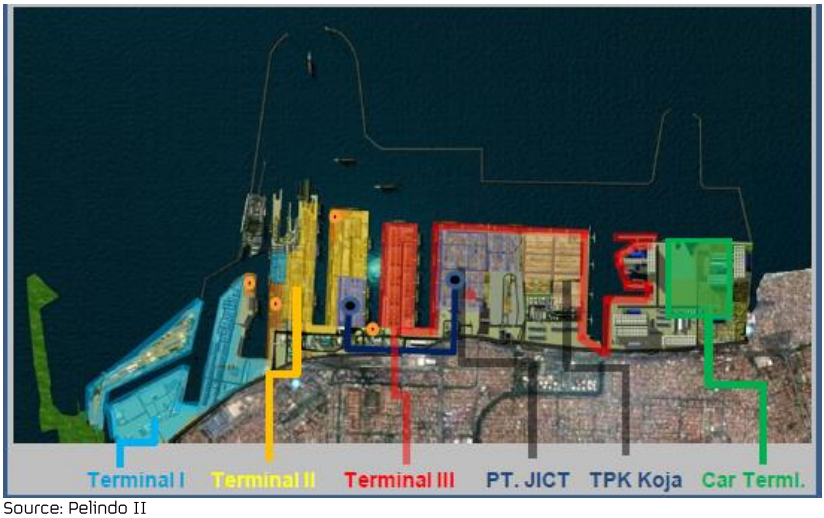
Pelindo II operates the biggest and the busiest port in Indonesia, the Tanjung Priok port. This port is located in the capital city of Jakarta with stevedoring traffic that continues to rise.

Container traffic was recorded at 5.83 million TEUs in 2012 and 5.89 million TEUs in 2013[15]. The international trading flow in 2013 was realised at the amount of 22.329.631 tonnes, while domestic trading was 36.098.670 tonnes. In November 2014, a new subsidiary called PT Pelabuhan Tanjung Priok (99% ownership by Pelindo II) started the first day of operations as an entity that operates the Tanjung Priok port (Terminal I, II and II). This is a role that was previously held by Pelindo II through its Tanjung Priok branch. Thus, this change signifies the shifting role of Pelindo II from port operator to port holding entity.

Their International container terminal, the Jakarta International Container Terminal (JICT), is the biggest and the busiest container port in Indonesia. JICT is a subsidiary of Pelindo II (ownership of 49%) in a joint venture with Hutchison Port Holdings (51%). It provides stevedoring services for export and import in the Tanjung Priok port. Terminal Petikemas Koja (TPK Koja) is another subsidiary of Pelindo II that provides a container terminal service within the Tanjung Priok port area.

Tanjung Priok port also operates a terminal specialising in handling car and vehicles called the Indonesian Kendaraan Terminal. Its main purpose is to provide Roll on and Roll off (RORO) services for vehicles/parts for exports and imports and has been a reliable partner for transporting car units of global car manufacturers from Asia and Europe.

Figure 13:: Port of Tanjung Priok



Source: Pelindo II

Apart from Tanjung Priok port, the following ports are also under the jurisdiction of Pelindo II: Teluk Bayur in West Sumatra, Panjang in Lampung City Sumatra, Cirebon in West Java, and Pontianak in West Kalimantan.

[15] Pelindo II 2013 Annual Report

Figure 14: Pelindo II Operational Areas

Source: Pelindo II 2013 Annual Report

The total port traffic for Pelindo II shows a significant trend between 2009 and 2013. For container traffic, it shows a positive CAGR with 11.47% between 2009 and 2013 with 4,269,000 to 6,590,000 TEUs (this is predominantly contributed by its International container terminal located in Tanjung Priok).

Table 7: Pelindo II's traffic in 2009 – 2013

Pelindo II	2009	2010	2011	2012	2013	CAGR
Ship traffic last 5 years (call)	49,629	50,147	54,757	55,725	53,366	1.83%
Container traffic last 5 years (TEU)	4,269,000	5,109,009	5,930,000	64,450,000	6,590,000	11.47%
Passenger traffic last 5 years (pax)	1,400,100	1,428,654	1,630,000	1,460,000	1,450,000	0.88%

Source: Pelindo II

For cargo traffic in 2013, however, the trends showed a decrease of 3.9% from 149.51 million tonnes in 2012 to 145.13 million tonnes in 2013. This is derived by the decrease of domestic cargo traffic by 5.39% between 2012 (89.4 million tonnes) and 2013 (84.6 million tonnes).

Table 8: Pelindo II's cargo traffic

Pelindo II	2010	2011	2012	2013	CAGR
Cargo Traffic for Int'l Trade (Tonnes)	46,750,000	56,930,000	60,090,000	60,530,000	8.99%
Cargo Traffic for Domestic Trade (Tonnes)	70,970,000	81,270,000	89,420,000	84,600,000	6.03%

Source: Pelindo II

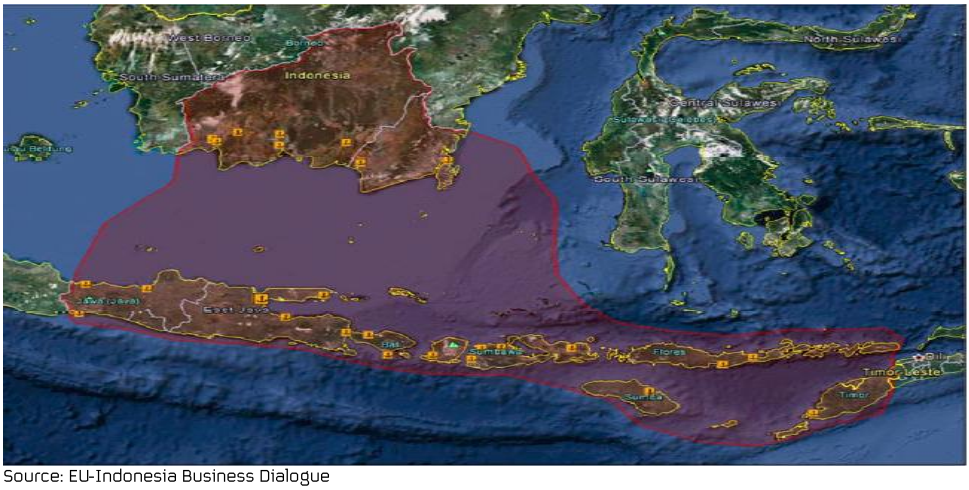
The traffic for international cargo has shown a positive CAGR of 8.99% between 2010 (46.7 million tonnes) and 2014 (60.5 million tonnes). However, the growth between 2012 and 2013 only saw an increase of less than 1%.

Pelindo III

The main port in the jurisdiction of Pelindo III is Tanjung Perak, serving Surabaya, the city of East Java and locations dependent on Surabaya. It is the second busiest port in Indonesia.

Pelindo III covers some of Kalimantan, central and eastern Java and Nusa Tenggara. Provinces within the Pelindo III jurisdictional area are: Central Kalimantan, South Kalimantan, Central Java, Yogyakarta, East Java, Bali, West Nusa Tenggara and East Nusa Tenggara.

Figure 15: Jurisdiction of Pelindo III



Source: EU-Indonesia Business Dialogue

Pelindo III (51%) and Dubai Port Intenational (49%), one of the world's largest port operators, own PT Terminal Petikemas Surabaya.

The total port traffic for Pelindo III shows a significant trend between 2009 and 2013. For container traffic, it shows a positive CAGR with 8.42% between 2009 and 2013 with 2,989,711 to 4,130,874 TEUs. For cargo traffic, on the other hand, the trend revealed a decline between 2011 and 2013 with CAGR of -15.74%. The biggest hit was in 2013 where the total cargo traffic decreased by 22% from 85.7 million tonnes in 2012 to 67.2 million tonnes in 2013.

Table 9: Pelindo III's traffic in 2011 – 2013

Ship traffic (int'l & domestic) last 5 years	**Call**	**72,480**	**68,963**	**74,412**	**74,915**	**78,189**	**1.91%**
Container traffic (int'l & domestic) last 5 years	TEU	2,989,711	3,244,829	3,585,640	3,940,146	4,130,874	8.42%
Passenger traffic last 5 years	Pax	2,930,935	3,145,773	3,606,898	3,452,152	3,365,271	3.52%
Cargo traffic	Tons			94,691,708	85,712,064	67,223,617	-15.74%
Cargo traffic for int'l traffic – last 4 years	Tons			42,280,628	38,085,855	25,890,224	-21.75%
Cargo traffic for domestic trade – last 4 years	Tons			52,411,080	47,626,209	41,333,393	-11.19%
Container traffic for int'l trade – last 4 years	TEU			1,681,203	1,718,876	1,734,070	1.56%
Container traffic for domestic trade – last 4 years	TEU			1,904,437	2,221,270	2,396,804	12.18%

Source: Pelindo III

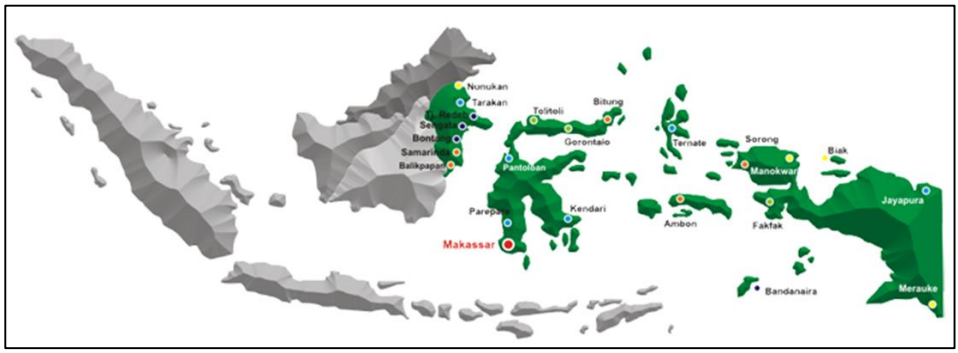
Pelindo III is seeking to embark on an upgrading and expansion plan for the Main Port of Tanjung Perak, which is the largest port in East Java, and serves as a centre for the other ports under its jurisdiction. Upgrading will also allow for large container vessels. Funding support is required.

Pelindo IV

The main port in the jurisdiction of Pelindo IV is Makassar, serving Makassar, the capital city of South Sulawesi and locations dependent on the city of Makassar, especially in East Indonesia.

Pelindo IV covers East Kalimantan, all of Sulawesi, Maluku and Papua. Provinces within Pelindo IV territorial water are: East Kalimantan, North Sulawesi, Gorontalo, Central Sulawesi, South Sulawesi, South East Sulawesi, North Maluku, Maluku, West Papua and Papua.

Figure 16:: Jurisdiction of Pelindo IV



Source: Pelindo IV

The total port traffic for Pelindo IV shows a significant trend between 2009 and 2013. For container traffic, it shows a positive CAGR with 11.41% between 2009 and 2013 with 1,108,873 to 1,708,192 TEUs (the second highest CAGR for container traffic after Pelindo II).

For cargo traffic, the trend also revealed a positive remark between 2011 and 2013 with CAGR 5.83% where a significant increase happened between 2012 and 2013 with 9.03% increase from 134 million to 146 million tonnes.

More ports are being built, opening the need for private funding and technical assistance

As part of Jokowi's plan to implement the sea highway, focus is shifting towards the development of deep water highways and ports as a hub for connectivity between islands as well as with international trading.

The government is working with, or looking for partners to work with in building these ports. International private port operators like Hutchison (Jakarta) and Dubai Ports (Surabaya) are already investing in Indonesian ports. The Danish giant APMT is also actively looking for possibilities to enter the Indonesian market. There definitively is an appetite for the investments so urgently needed by the country.

Currently there are five ports that have been promoted to become this main hub port and to increase the capacity of the ports in that region:

1. Kuala Tanjung Port
2. Kalibaru Port
3. Teluk Lamong Port
4. Makassar Port
5. Sorong Port

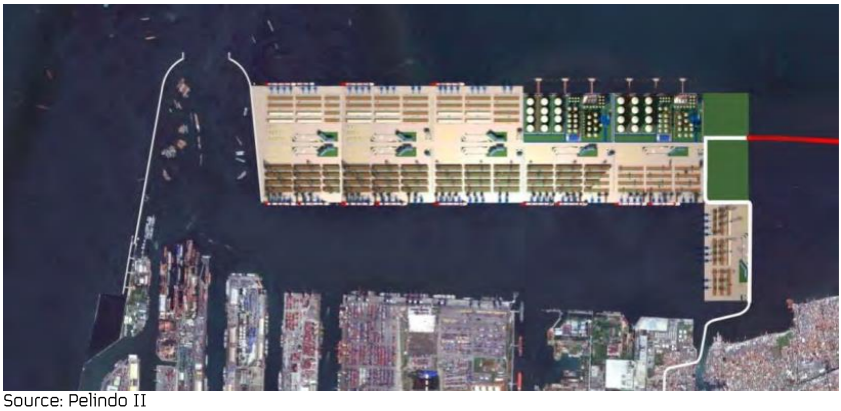
Kuala Tanjung

Further development is being carried out by Pelindo I management to develop Kuala Tanjung port to become a hub port in the region. Recent development shows that, with the investment of USD 1.2 billion, this port will become the largest port in the region. It targets the transit hub for shipments in Europe as a key challenger to the Singapore port. Pelindo I has agreed on a partnership with the Port of Rotterdam to become their advisor in the Port of Kuala Tanjung development and management. Through this engagement, Port of Rotterdam is also looking to be a trusted advisor for the country in its ports sector as a whole.

Kalibaru

Pelindo II is making headlines in terms of investment for port development. Its signature project, the Kalibaru port or the "New Priok", is entering the development of its first phase. The project is funded through Pelindo II's own resources, and national and international loans. Funding from the Indonesian State Budget (APBN) is not allowed in any form. It is projected that the port will be finished by 2023 and will be comprised of six container terminals and two product terminals (mostly used for petroleum products). Each terminal will have a total depth of 20 meters and all will add a total of 8 km of length into the Tanjung Priok port area.

Figure 17: Kalibaru Port



Source: Pelindo II

With increasing container traffic in other islands, Pelindo II is also in the phase of developing a deep water port in Kijing, West Kalimantan, supported by an inland waterway terminal. In Sumatra and Eastern Indonesia, Pelindo II is developing the new port of Tanjung Carat in South Sumatra and the New West Papua Port in Sorong.

Teluk Lamong

Pelindo II has also made headlines recently by introducing the first green port in Indonesia in the Teluk Lamong deep sea port. The port will have stevedoring terminals that utilise semiautomatic equipment and will use gas fuel, hence reducing carbon gas emissions. This port is an extension of the current Tanjung Perak port that is already operating.

Figure 18: Teluk Lamong Port

Source: Antara East Java

Pelindo III through its subsidiary PT Berlian Jasa Terminal Indonesia (BJTI)* and PT Usaha Era Pratama Nusantara (UEPN), a subsidiary of PT AKR Corporindo Tbk establish a project called the Java Integrated Industrial and Ports Estate (JIIPE) located in Gresik East Java 24 km from Surabaya and 55 km from Juanda Airport. JIIPE is divided into two sub entities that manage the industrial estate and the port estate separately:

1. Industrial Estate: BJTI injects 40% and UEPN injects 60% for the JV Company PT Berkah Kawasan Manyar Sejahtera. This company manages the development of the industrial estate part of JIIPE.
2. Port Estate: BJTI injects 60% and UEPN injects 40% for the JV Company PT Berlian Manyar Sejahtera. This company manages the development of the port estate part of JIIPE.

* BJTI is a subsidiary of Pelindo III that provides the following terminal services:

- Unloading terminal services (liquid bulk, dry bulk and general cargo) and containers
- Accumulation of goods and services container and container depot
- Consolidation, distribution and transport of goods (trucking), as well as multi-modal transport
- Sea Cargo (EMKL) or Freight forwarding
- Ship terminal services "roll on-roll off"
- Fuel terminal services and supplies of fuel aboard the ship

Makassar and Sorong
Despite the positive figures, Pelindo IV remains the least busy port in Indonesia, although encouragement has been initiated by the Government of Indonesia to develop deep sea ports in Makassar and also in Sorong. Even though Sorong is still under the jurisdiction of Pelindo IV, Pelindo II will be the entity that develops the New Sorong.

Challenges

Pelindos strongly dominate port industry
Currently, the Pelindos operate most of the biggest and busiest ports in Indonesia. The companies are also in charge of planning a notable number of port developments and expansions. Forming a joint venture with the four Pelindo companies give foreign port operators more advantage when looking to invest and establish port businesses in Indonesia. In relation to this, the investment regulation limiting foreign ownership in port operations might decrease the management freedom of foreign investors.

Lack of connectivity between ports
Presently, many of Indonesia's smaller islands remain hardly interconnected, keeping them from synergies. The lack of infrastructure, which causes a lack of connectivity, contributes to unbalanced economic development especially in the outer islands of eastern Indonesia. As a result, many of these islands are "isolated" from national economic production and distribution processes.
Across the commercial ports in Indonesia, there is a clear imbalance in port utilisation in terms of port capacity (in TEU). There are less than ten ports across Indonesia with above 80% utilisation. Moreover, there is a big gap between ports on the western and eastern archipelago. For example, the port capacity in Palaran, Ambon, Sorong and Jayapura have less than 40% of port utilisation. A better flow of goods between the western and eastern part of Indonesia is needed in order to stimulate the economy in eastern Indonesia.

Unclear regulation
Implementation of the Shipping Laws still faces many challenges, such as unclear transition dispositions, overlap of roles for several activities and poor coordination which leads to confusion and lack of focus on key responsibilities. This calls for initiatives between different stakeholders. They should agree on objectives of the shipping law and their contribution, including removing overlapping roles and devising a transition plan to bring about the changes.

Poor port performance and coordination between port stakeholders
Challenges faced by the country mostly lay in the weak port turnaround time which impacts the service to customers (mostly shipping companies). Port operation involves not only Pelindo but also private terminal operators, shipping agents, stevedoring companies, and shipping services companies. The poor performance caused by a lack of coordination between each of these stakeholders will contribute to the overall dwelling time in the terminal operations.

Supporting infrastructure and hinterland layout that connects major ports to industrial estates will also lead to inefficiencies in the whole logistics supply chain. For example, in Jakarta there is no easy access between industrial estates and Tanjung Priok. Most industrial estates are located in Bekasi area and also in Cikarang, therefore long haul land transport of goods is required between warehouses into Tanjung Priok, leading to further road congestion in toll roads.

Insufficient port capacity

Since Indonesia is also preparing for ASEAN Economic Community (AEC) in 2015, significant improvement in the port capacity will need to be addressed. Many local ports are incapable of handling bigger vessels and/or cargo, causing vessels to go to bigger Singaporean ports. Increased port capacity will be needed to attract foreign vessels to call in Indonesian ports instead of Singaporean ports.

Table 10: Port Capacity in Indonesia

Island	Port name	Capacity (TEU)	Volumes (TEU)	Utilization
Sumatra	Belawan	1,100,000	847,000	77%
	Jambi	75,000	67,505	90%
	Palembang	150,000	113,761	76%
Java	Panjang	250,000	106,644	43%
	Tanjung Priok	6,450,000	5,775,601	90%
	Tanjung Emas	450,000	427,749	95%
	Tanjung Perak	3,000,000	2,623,166	87%
Kalimantan	Pontianak	360,000	173,166	48%
	Banjarmasin	480,000	332,204	69%
	Balikpapan	200,000	104,660	52%
	Samarinda	150,000	117,920	79%
	Palaran	250,000	81,944	33%
Sulawesi	Makassar	750,000	455,964	61%
	Kendari	150,000	45,797	31%
	Bitung	500,000	187,403	37%
Eastern Indonesia	Ambon	150,000	55,546	37%
	Sorong	100,000	30,049	30%
	Jayapura	100,000	50,799	51%

Source: Business review on Domestic Container Main Sea Corridor, Drewry Report

Opportunities

The development of ports in Indonesia has opened the opportunity for foreign investors to invest in:

Port hinterland and connectivity with other transport modes
Improved inland transportation and handling facilities need to be created. This will enable multimodal solutions, which in turn will lead to higher efficiencies in the overall transport chain. This, however, will require participation from government and potentially private sectors to develop the required infrastructure and also face the challenge of land acquisitions.

Port constructors and engineering
With the planned development of numerous new ports across the country, as well as expansion of current ports, Indonesia will need construction services to execute the construction work, such as land reclamation, port infrastructure development (yard area/berth infrastructure/berth depth) and port layout and zoning.

Port operators
The Shipping Law 2008 opened the door for the private sector to take part in Indonesian port operations. Japanese conglomerate Mitsui Co., for example, has signed a joint venture agreement with Pelindo II to jointly operate the first container terminal at Kalibaru Port. For the next steps, Pelindo II is also planning to open a tender for a joint operation opportunity for the other two terminals in the new port.

Education in port management
With grand plans and simultaneous numerous port developments, Indonesia would benefit from assistance in setting up an effective organisation and port management capacity. The Dutch port management model, in particular, would benefit the country, as Dutch players can show a best practice model, with a clear distinction in responsibilities between public roles and private operations. This way, Indonesian ports can increase efficiency, reduce lag time, and provide stronger support to Indonesia's island connectivity objective.

Equipment lease
With the high cargo traffic that Indonesian ports hold, which is forecast to rise due to the AEC implementation, Indonesian ports will need to be armed with more sufficient and technologically updated equipment. This is also important to achieve higher port efficiency and reduce waiting time.

Port maintenance
Idle, unmanaged and out-of-date facilities compromise productivity levels of Indonesian ports. Good port maintenance, such as routine dredging and facility repair as well as routine maintenance play an important part in reaching and sustaining Indonesia's connectivity objective.

Supply of spare parts
Insufficient equipment and obsolete technology are one of the obstacles towards achieving full port capacity in Indonesia. With the higher budget the government has allocated for ports development and revamp, Indonesian ports will benefit from a better supply of spare parts to replace obsolete ones.

Financing of new ports
To realise such an immense initiative, financing is required, and this is not something that the government has the capacity to fully accommodate. Hence, it will require private or foreign financing.

Conclusion

As the largest island nation, Indonesia requires professional ports that facilitate its sea transportation, and link the sea to inland transportation logistics. Most of these ports are operated by Pelindos I – IV, independently or through joint ventures with the private sector. Most of these ports are in poor condition due to neglect and financial constraints, causing the country to lag behind its neighbours in terms of logistic and marine connectivity.

The current government's Maritime Fulcrum focuses on increasing the efficiency of sea infrastructure, and it has allocated a high government budget to support multiple port projects. To fund the rest of the capital not covered by the government budget, the country has openly invited foreign investors to participate in various infrastructure projects.

This opens investment opportunities for foreign companies to participate in Indonesia's port construction, operation, and maintenance. Indonesia will also require suppliers of port machineries and their spare parts, as well as lease of equipment. On top of this, there is a need for foreign financing to help ease the financial burden when building and expanding these ports.

The challenges in port investment, however, lay in unclear regulations, poor port performance, lack of coordination between port stakeholders that often cause inefficiency, as well as the domination of Pelindo I-IV as port operators in Indonesia. In this regard, building good connections with local players, especially Pelindo companies, will bring advantages for foreign investors.

A clear cut distinction in the ownership of the port (landlord role), the management of the port and private or semi-private terminal operations might boost port efficiency. The Netherlands could leverage their experience with public private co-operation and advanced synchro-modal solutions. Port and logistics consultants could benefit from this, as well as Dutch private operators.

2.2. Shipping

As an export country, the shipping industry is directly related to the nation's performance in domestic and international trade. The government has laid out its plans to further drive the growth of the industry, as well as the types of vessels likely to be required in the future. However, there are certain regulations that, while they would help competitiveness of local players, could also act as a deterrent to foreign investors. This section will provide a look into the above matters.

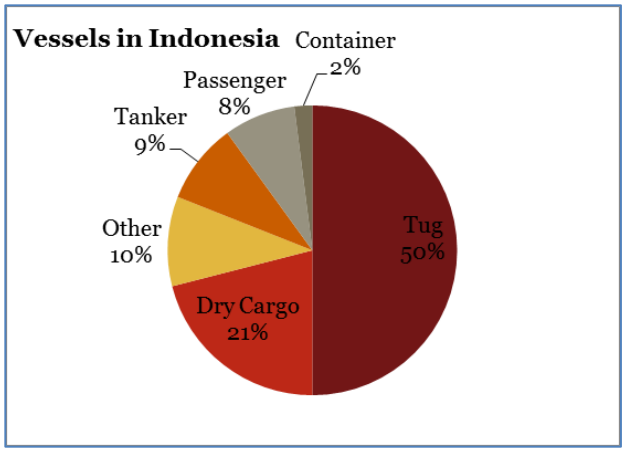
Overview

Size and Growth

Indonesia relies heavily on the shipping industry to facilitate domestic and foreign commodity trades, especially because 90% of Indonesian export goods are carried by water transportation.

Indonesian shipping lines, Both foreign and local, cater to numerous types of shipments such as general cargo, container, live cattle or special purposed shipments such as oil tankers.

Figure 19: Vessels in Indonesia



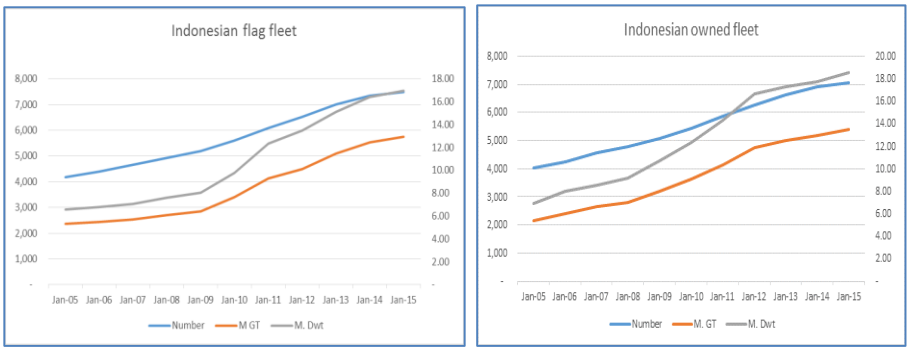
Source: Clark Research Services Limited, 2015

Clarkson Research Services reports that Indonesia has approximately 7,500 commercial seagoing vessels with above 100 GT capacities, the second largest flag in the world in terms of number of ships[16]. Half of these vessels are tugs, followed by dry cargo. These tugs are used in smaller ports where regular sized vessels cannot access. The cargo ships are also designed towards operations in small ports.

[16] Clark Research Services Limited, 2015

The activity at Indonesia's main ports is predicted to remain positive this year given the growth of cargo handled ranging roughly between 3% and 8%[17].

Figure 20: The growth of cargo handled in Indonesian flag fleet and Indonesian owned fleet



Source: Clark Research Services Limited, 2015

Geographical Location

Indonesia's strategic position between the Indian Ocean and the Pacific Ocean allows it to become the centre of some of the world's major shipping routes. This enables Indonesia to reach not only the markets in Asia, but also those in the western hemisphere such as the United States. In addition, Indonesian's ports are ports of call on major international shipping line services including Maersk Line, CMA CGM, Hamburg Sud and Evergreen.

Ship owners – local players

The Indonesian container shipping market consists of six key players controlling 80% of the market as listed in the below table:

Table 11: Key players of the Indonesian shipping market

Shipping Line	Capacity of domestic container shipping lines (%)
Pelayaran Meratus	19%
Tanto Intim Line	17%
Temas	14%
SPIL	13%
Samudera Indonesia	11%
Alken	7%
Others	19%

Source: McKinsey & Company Report. Indonesia Maritime Strategy Reform, December 2013

[17] Business Monitor International Limited, Q2 2015

PT Meratus Line ("Meratus")
Meratus, the biggest national shipping company,was established in 1957 and is engaged in ship owning and ship management, operating services, logistic solutions and freight forwarding services, coal transport, tugs and barges, regional multipurpose liner services, box operators and agency services. Meratus provides inter island container services for 26 different routes to Indonesia's major ports including a direct service from Surabaya to Dili, East Timor. The most popular routes are Jakarta-Belawan-Jakarta and Jakarta-Surabaya-Gorontalo-Bitung-Jakarta with four ships each representing the largest number of vessels deployed among the other routes. Meratus has over 56 vessels ranging from 120 to 2,113 TEU.

Samudera Indonesia
Samudera an international operating Shipping Line, a subsidiary of PT Samudera Indonesia Tbk., operates in the box, dry bulk and liquid bulk shipping sectors. It focuses on the Asian market offering services between domestic ports and on intra-Asia routes. The carrier operates in a total of 10 ports namely Jakarta, Bandung, Surabaya, Jambi, Semarang, Palembang, Pekan Baru, Panjung, Batam and Belawan while its intra-Asia coverage includes ports in Malaysia, Thailand, Vietnam, Myanmar, the Philippines, Hong Kong, China and Taiwan, using the port of Singapore as a hub port. Outside of Asia, Samudera Shipping Line also provides services which call at the Middle Eastern ports of the UAE, Bahrain, Kuwait, Oman, Saudi Arabia, Qatar, Iran and Yemen.

The total container fleet comprises 31 vessels with a total of 25,974 TEU. While the company operates an owned fleet of 16 vessels compared with the 15 that are chartered in, the chartered in tonnage is made up of larger vessels with total charter capacity of 16,382 TEUs versus the carrier's owned capacity of 9,592 TEUs.

Ship owners – Dutch players
Dutch ship owners operating in Indonesia are companies like Anthony Veder, Vroon Shipping, Wagenborg and smaller players like Moerman and De Bock Maritiem. Vroon calls on Indonesian ports two to three times a week, with their cattle carriers bringing livestock from Australia. Hundreds of Indonesian seafarers are active on the Dutch fleet, often in ranks, but in some instances also as officers. Local offices of the Dutch companies in practice act as crewing agents.

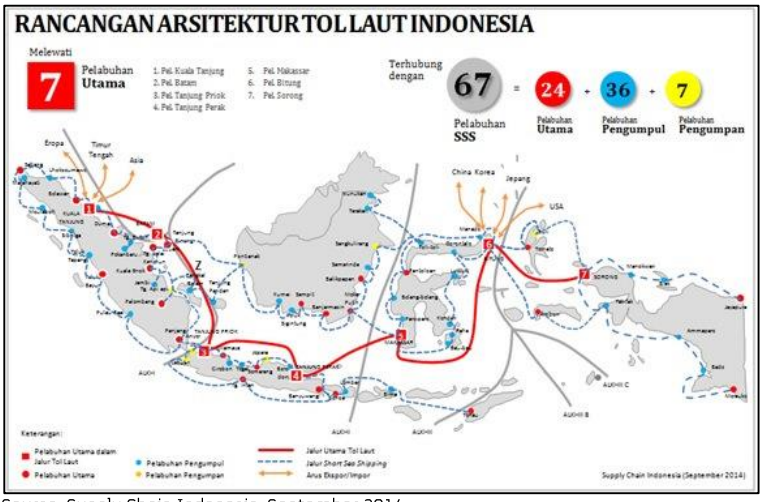
Shipping industry as a vital element to spur trading activities

The maritime highway plan
The Medium-term National Development Plan 2014-2019 laid out a multi-billion dollar plan for the maritime sector with the goal of 24 new port developments and purchase of around 600 ships. The objective is to reduce delays in shipping and to enhance trading activity. Should this plan come to fruition, it will greatly alleviate the issue of congestion and hence further accelerate the sector's growth.

According to BKPM, the shipping industry remains a vital industry to spur the nation's economy. It is perceived that growth in the industry will have a multiplier effect to spur

growth in other sectors of the economy and create employment. The demand lies not solely for cargo but also for passenger ships, ferries and fishing boats among others. To accommodate such demand, participation from foreign investment is needed.

Figure 21: Indonesia's sea highway architecture design



Source: Supply Chain Indonesia, September 2014

Cabotage Principles

Referring to Maritime Law No. 17/2008, Indonesia has fully implemented the Cabotage rule since 7 May 2011 which requires shipping routes to be undertaken by Indonesian flagged vessels or by foreign vessels with a fully Indonesian crew on board.

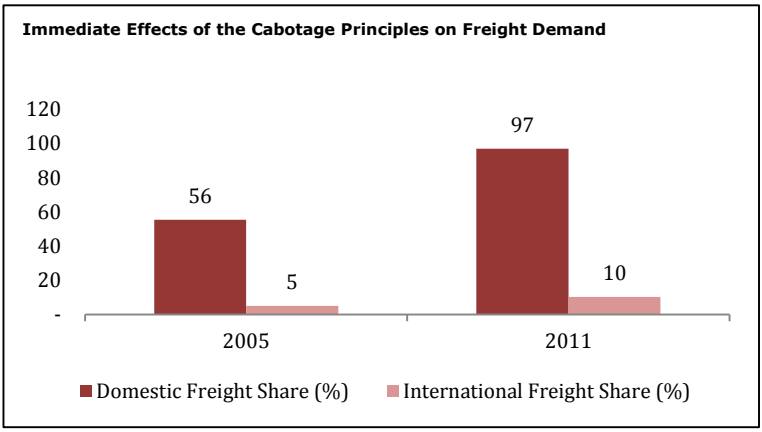
Since the implementation of Cabotage, the number of all national flagship carriers has increased by 120% in 2014 over the course of six years with a total of 13,244 carriers[18].

The Indonesian Government was initially concerned that the regulation would affect the country's production target of barrels of oil per day (bpd) as the country heavily relies on oil imports shipped from foreign nations. Because of the pressure from energy companies, the Cabotage regulations have recently been revised to exempt vessels which perform the following functions: *"(i) oil and gas survey, which includes, for instance, a 3D seismic survey vessel; (ii) drilling; (iii) offshore production; (iv) offshore support, which includes, for instance, an anchor handling tug supply vessel larger than 5000 BHP with Dynamic Position (DP2/DP3), a platform supply vessel, and a drilling support vessel; (v) dredging; or (vi) salvage and underwater works[19]."*

[18] Albert W. Nonto. Hopes for Shipbuilding Sail on the Horizon. Jakarta Globe, retrieved May 2015, http://thejakartaglobe.beritasatu.com/business/hopes-for-shipbuilding-sail-on-the-horizon/

[19] Kohe Hasan. Shipping in Indonesia: Opportunities and Challenges. Norton Rose (Asia) LLP, retrieved May 2015, https://www.marinemoneyoffshore.com/node/6944

Figure 22: Immediate effects of the Cabotage Principles on Freight Demand



Source:Jakarta Globe, 2015

Ban on export of unprocessed mineral ore might decrease future shipping activities

The Mineral and Coal Mining law 4/2009 implies that the Indonesian Government has put a restriction, starting in January 2014, on export of raw minerals/unprocessed mineral ore including bauxite, nickel, tin, chromium, gold and silver. The main objective is to encourage investment in processing facilities or smelters, which will also create more jobs for local people.

Table 12: The forecasted growth of Ores and Metal

	2012	2013	2014	2015F	2016F	2017F	2018F	2019F
Ores and metals Exports (USD million)	11,924.9	15,600.1	15,321.1	15,800.8	16,639.1	17,713.1	18,868.0	20,106.8
Ores and metals Exports Growth (%)	(24.50)%	30.82%	(1.79)%	3.13%	5.31%	6.45%	6.52%	6.57%

Source: Business Monitor International Limited, Q2 2015

Despite being granted five years to build the smelters/processing facilities, miners were reluctant to build costly processing facilities, expecting the government to change its mind or loosen the rule. As a result, miners found their hands tied in January 2014 when the ban was implemented. No ability to export meant that there were saturated stockpiles of raw materials.

As ores and metal exports growth surged in 2013 by approximately 30.82%, they fell to -1.79% in 2014. Consequently, ores and metal exports growth is forecast to drop to between 3.13% and 6.57% from 2015 to 2019 from the previous hike of 30.82% in 2013[20].

To negotiate, the government allowed certain miners, two of which being Freeport Indonesia and Newmont Nusa Tenggara, to resume export until January 2017, but under the following conditions:

1. Higher export taxes
2. The miners would build domestic processing facility/smelter

In January, government data showed that currently there are 20 smelters (out of the planned 63) being built domestically. Furthermore, in February 2015, the Director General for Coal and Mineral Resources at the Indonesian Ministry of Energy and Mineral Resources announced that the government is considering relaxing the regulations due to the lack of progress of domestic smelting facilities. Nevertheless, as of the time this report is completed, no further government explanation has been provided[21].

Challenges

Ban on Unprocessed Mineral Ore Exports

Due to the ban on unprocessed mineral ore exports, it is estimated that export from 2015 to 2019 will grow at a slower rate between the range of 3% and 7%, representing a dramatic year-on-year growth decrease relative to the 2013 increase[18].

As a consequence, this regulation could reduce the nation's overall bulk freight demand, although it is reported that the government might loosen the extent of this regulation. The ESDM has stated this year that there is discussion with mining firms to negotiate the wide ranging export ban of unprocessed mineral ores. Nevertheless, there has been no further discussion and explanation of this neither from the ESDM, nor from other related government institutions.

Imbalance infrastructure

The World Economic Forum ranks Indonesia's maritime infrastructure at 12th out of the 14 Asian peers in its Comparison Index, a clear indication of how poor infrastructure has prevented the country from gaining benefits from its waters. Congestion has become the biggest contributor to Indonesia's poor liner connectivity. Spending a longer time at port including anchorage and berth prevents liners from performing more trips to spread fixed costs.

Adding to the high shipping cost is the infrastructure and economic development imbalance between the eastern and western seaboards of Indonesia. Since there is not

[20] Business Monitor International Limited, Q2 2015

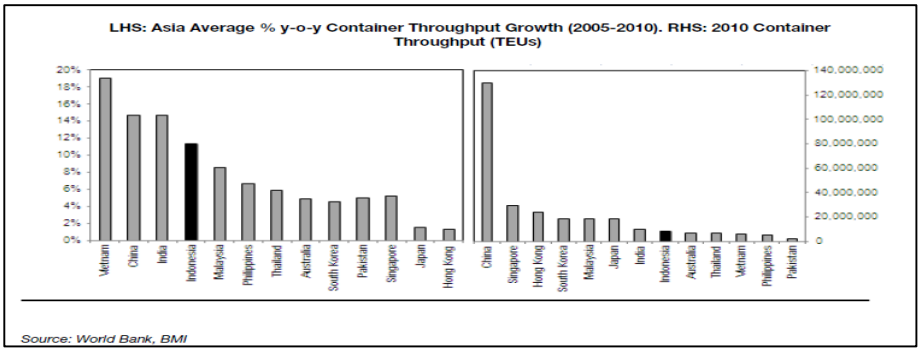
[21] Albert W Nonto. "Hopes for Shipbuilding Sail on the Horizon". Jakarta Globe, retrieved May 2015, http://thejakartaglobe.beritasatu.com/business/hopes-for-shipbuilding-sail-on-the-horizon

much container traffic coming from the eastern to western region, a container vessel going from east to west will likely be empty. As a result, the cost of the return trip will be charged to the shipping cost of a container shipment going west to east, in order to subsidise the return trip.

Secondly, Indonesian ports are unable to handle larger vessels making them less competitive compared to the neighbouring regions. While this might be adequate for intra-Asia trade which is predominated by smaller vessels, it prevents Indonesia from being competitive when it comes to entering more distant markets.

While Indonesia's container shipping market throughput increased by 11% between 2005 and 2010, the country's actual throughput was much lower than the rest of the ASEAN countries including China, Singapore, Hong Kong, South Korea, Malaysia, Japan and India with Indonesia's ports handling 8.37 million TEUs in 2010[22].

Figure 23: LHS Asia Average % y-o-y Container throughput growth (2005-2010). RHS: 2010 Container Throughput (TEUs)



Source: World Bank, BMI

Increased premium due to labour dispute and piracy risk

It is expected that the insurance premium will increase as insurers tend to offset a number of specific risk factors such as labour dispute and piracy. Labour disputes can cause serious distractions at ports and shipyards. For instance, the industrial centre of Batam has experienced consistent strikes and violent protests despite the higher wage level relative to national standards.

Likewise, the International Maritime Bureau reports that Indonesia is one of the worst affected countries for piracy. As a matter of fact, it recorded the largest number of incidents in 2012 although they were not as violent as those in the Gulf of Guinea and off Somalia. A Dutch player also depicted problems in shipping operations such as armed robberies and theft of bunkers. Between January and September of 2014, Indonesia faced 72 attempted incidents of piracy and armed robbery according to the

[22] Rohe Hasan. "Shipping in Indonesia: Opportunities and Challenges". Norton Rose (Asia) LLP, 2014

International Chamber of Commerce's International Maritime Bureau. The number represents the highest in the world, accounting for around 40% of such incidents[23].

Opportunities

Gain from China's Dirty Coal Ban

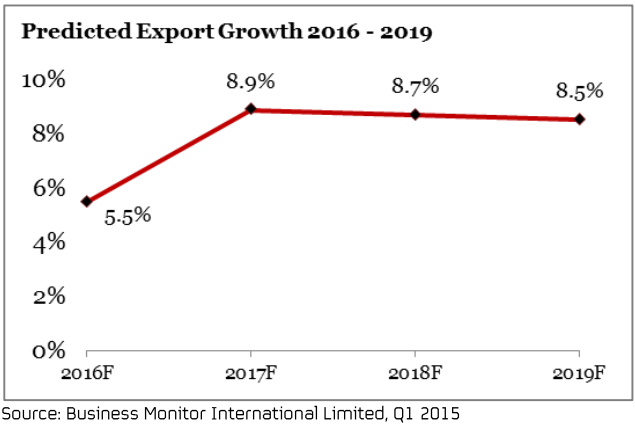
China has imposed a restriction on coal import with ash and sulphur content of more than 16% and 1%, respectively, to improve air quality starting January 2015. As a consequence, there will be a change in China's import partnerships from dirty coal producing countries like Australia and South Africa to producers of cleaner coal including Indonesia and Colombia.

Indonesia is currently the second largest coal import partner for China accounting for 26% of total imports[24]. The figure is forecast to jump as Indonesia will fill the import gap left by Australia, China's largest coal import partner for the time being. As a result, outbound trading activity for the shipping industry will surge.

Increased Trading Activity

Thanks to the Association of Southeast Asian Nations (ASEAN) – China Free Trade Agreement which has come into effect since January 2010, tariff and non-tariff trade barriers for activities between Indonesia's neighbouring countries have been lowered. In the near future, it is predicted that export growth will reach between 5.5% and 8.5% from 2016 to 2019[25], which boosts freight demand.

Figure 24: Predicted export growth in 2016-2019



Source: Business Monitor International Limited, Q1 2015

Investment in bigger vessels

The majority of Indonesian vessels are within the range of 350–800 TEUs, which are smaller than other countries where most of the vessels deployed are bigger than 1,000

[23] Christopher Papas. "It's the Economy: Exploring Indonesia's Piracy Problem". CIMSEC, 24 December 2014
[24] Business Monitor International Limited, Q1 2015
[25] Business Monitor International Limited, Q2 2015

TEUs. The smaller vessels, as a result, lead to inefficiency and increased operational cost. To illustrate, with the largest 800 TEU vessel, the total round trip expense consisting of bunker cost while steaming, bunker cost while at port, depreciation cost, and manning cost amounts up to USD 180.4 per TEU[26]. On the other hand, using a larger 1900 TEU vessel can reduce depreciation and manning costs significantly and lower the overall round trip expense by up to 18% per TEU. For this reason, it is likely that the local government will give support for investment in larger vessels to leverage both capacity and efficiency at the national level.

Conclusion

The shipping industry plays a significant part in Indonesia's export and domestic trade, since 90% of Indonesia's trade is delivered via water transportation. Since the implementation of the Cabotage legislation, the national flag fleet has seen a significant increase. Furthermore, the medium term National Development Plan 2014-2019 laid out the goal of purchasing hundreds of ships.

The shipping industry is in need of vessels with greater capacity, and foreign investors can benefit by supplying the industry with such ships. Ships that have a better cost efficiency will slowly take over the old fleet of low standard cargo vessels, and investment needs will further rationalise or scale up the sector. Furthermore, the local shipping sector is likely to grow even more through the development of new ports (which will increase trade traffic and hence shipping activities) and Indonesia's increased export of coal.

There is, however, a challenging concern where the government ban on unprocessed mineral ore exports might lead to a slower growth rate for the shipping sector. There is also imbalanced infrastructure between the western and eastern part of Indonesia, which can lead to inefficiency issues within the shipping activities. On top of that, shipping companies can face higher insurance premiums since insurers often see larger risks of labour disputes and piracy in Indonesia.

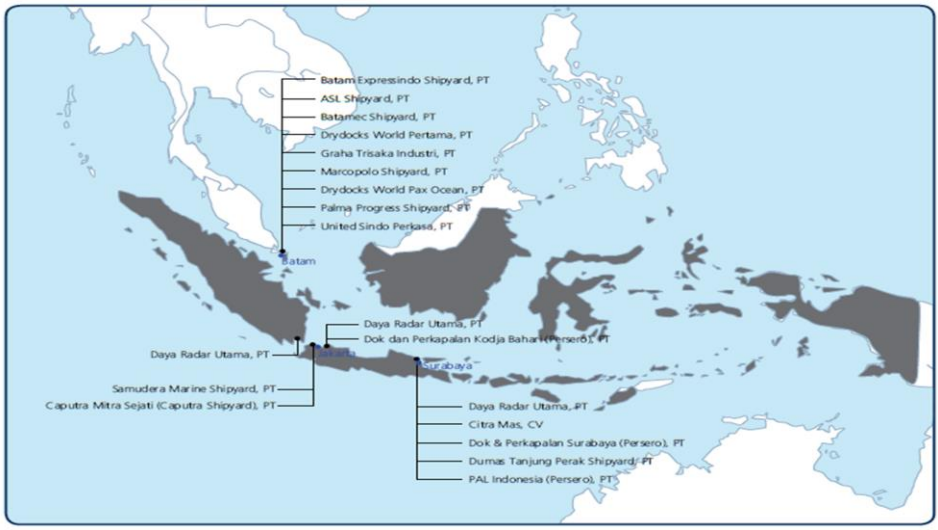
2.3. Shipbuilding

The shipbuilding industry plays an important part in supporting the achievement of Indonesia's maritime objectives. The government has issued regulations that successfully encouraged the growth of the industry, while at the same time hindering shipbuilders from achieving maximum growth by imposing high tariffs and tax. The Maritime Fulcrum, however, has put the government into planning for reducing, or even abolishing, these tariffs to encourage further growth of local players, as well as to entice foreign investors. This section will describe in greater specifics the Indonesian shipbuilding industry from the above points.

[26] "Indonesia Maritime Strategy Reform". McKinsey & Company Report, December 2013

Overview

Figure 25: Indonesia's new shipyards in 2013



Source: Domestic Shipbuilder Able to Produce Warship. Indonesian Commercial Newsletter, October 2011

Size and growth

Indonesia has approximately 250 shipyards, of which roughly half are operational, with another 40 companies operating in the supply industries. Most of these shipbuilders are small and medium in size, with old age production machineries. Currently, local shipyards are able to produce 19 types of vessels.

They are located across various islands such as:

- Sumatera (81 companies with total docking repair capacity of 3.7 million GT)
- Java (70 companies with total capacity of 2.2 million GT)
- Kalimantan (56 companies with total capacity of 253,000 GT)
- Sulawesi (18 companies with total capacity of 327,000 GT)
- Papua (12 companies with total capacity of 58,000 GT and
- Maluku (4 companies with total capacity of 22,000 GT)[27].

As of 2013, Indonesia was capable of producing ships of up to 50,000 DWT and repairing ships of up to 150,000 DWT, with the government planning to develop vessels of up to 70,000 DWT. The country's annual capacity is 900,000 DWT for ship production and 12 million DWT for ship repairs.

Batam has been the centre of shipyards because the region is free of import taxes imposed on other domestic areas. As a matter of fact, as many as nine shipyards alone were established in the region during 2013[28]. While Batam has a maximum capacity of 50,000 DWT, Jakarta and Surabaya have a ceiling of only up to 17,000 DWT and

[27] "Domestic Shipbuilder Able To Produce Warship". Indonesian Commercial Newsletter, October 2011
[28] "New Construction in Southeast Asia". Lloyd's Register, June 2013

30,000 DWT, respectively. Most of the ships in Indonesia are tug boats, cargos, and bulk carriers. Through the Maritime Fulcrum, the government is encouraging the development of more shipyards outside Batam.

Indonesia's shipyards produce around 100 ships for different purposes annually. For instance, Steadfast Marine and Dumas Tanjung Perak specialise in building ships for offshore Oil and Gas operations. In the interest of maximising the capacity for ship production, the Indonesian government has set a goal to develop larger vessels of up to 70,000 DWT, particularly tankers, by 2015 requiring upfront investment of approximately US$ 34 million to US$49 million[29].

Key Players – Indonesian

Two of the most well recognised shipbuilders in Indonesia are PT Dok Perkapalan Kodha Bahari and PT PAL Indonesia, both of which are capable of producing ships for military and commercial purposes.

PT Dok & Perkapalan Kodja Bahari (Persero) ("DKB")

Founded in 1990, DKB was formed from a horizontal merger between four state-owned companies, namely PT Dok & Perkapalan Tanjung Priok (Persero), PT Kodja (Persero), PT Pelita Bahari (Persero) and PT Dok & Galangan Kapal Nusantara (Persero).

The company offers marine engineering and manufacturing, marine infrastructure and support as well as marine services. The marine engineering and manufacturing services are capable of building and repairing ships of up to 30,000 DWT. Furthermore, its Infrastructure and Support division offers international freight forwarding, container storage, chemical processing, chemical treatment, chemical cleaning and wood treatment. DKB also has expertise in providing consultancy services.

PT PAL Indonesia (Persero) ("PAL Indonesia")

PAL Indonesia is a state-owned company established by the government of the Netherlands in 1939 under its original name of Marine Establishment. The four core activities of PAL Indonesia include Merchant Ships Development, Naval/Special Ships Development, Repair and Maintenance, and General Engineering. PAL Indonesia can construct a bulk carrier ship of up to 50,000 DWT, representing the largest vessel in terms of capacity in the nation. In addition to this, the company also has the ability to build various types of ships including, but not limited to:

1. Container vessels of up to 1,600 TEUs
2. Tankers of up to 30,000 DWT
3. LPG carriers of up to 5,500 DWT
4. Container ships of up to 2,600 TEUs
5. Passenger vessels of up to 500 PAX

[29] "Indonesian Shipbuilders Struggle to Meet Production Targets". Jakarta Post, retrieved May 2015, http://www.thejakartapost.com/news/2013/08/14/shipbuilders-struggle-meet-production-targets.html

In its Repair and Maintenance division, PAL Indonesia can accommodate ships with a docking capacity of up to 600,000 DWT annually.

Key Players – Dutch
Two Dutch shipyards are currently actively involved in Indonesia: Royal IHC and Damen Shipyards. Royal IHC has been active for 37 years in the offshore tin mining business, hydro power works with beaver dredgers, and port maintenance operations. Damen Shipyards has delivered four Offshore Patrol Vessels to Indonesia, and is currently building two frigates under license in Indonesia.

Several Dutch equipment suppliers are active in Indonesia. A successful company is Carlsen. They produce special systems for the cement and offshore industry. Their market is momentarily driven by an unprecedented growth in the construction sector. Damen Shipyards is another example. The presence and future ambitions, and their ships being introduced to the local market, trigger possibilities for Dutch suppliers to make headway in Indonesia.

Other examples are Oliveira, HMSA, CSI systems, V-Step and several others. These companies actively use the trade promotion network of NMT, and participate in trade fairs like Indonesia Maritime Expo. Their unique selling points are high quality products with low maintenance concepts. Competition mainly comes from China, local competitors being absent.

The Cabotage Law pushed the growth and needs for more shipbuilders in Indonesia
The introduction of the Cabotage regulation through INPRES 05/2005 has radically given more business opportunities for local shipyards with more vessels operating in Indonesia (see chapter 1 section on Cabotage Law for more information). This regulation has resulted in doubling the number of Indonesian vessels in 2014 (13,244 vessels) from the previous figure in 2007 (6,041 vessels)[30].

Government tariffs create higher cost of production for local shipyards and hinder higher growth

Despite the encouragement by the Cabotage Law, government import duties and VAT imposed on certain imported products might limit the growth of the shipbuilding industry in Indonesia. The government places tariffs on imported ship components of 10% and VAT of 5% to 12%. The tariffs apply to all regions in Indonesia excluding Batam. Meanwhile, 70-80% of ship components in Indonesian shipyards are still imported, because no local suppliers are capable of producing the required components. Hence, the investment for constructing a vessel may cost 15% to 22.5% more than importing a similar ship from China[31].

[30] Albert Nonto. "Hopes for Shipbuilding Sail on the Horizon". Jakarta Globe, retrieved May 2015, http://thejakartaglobe.beritasatu.com/business/hopes-for-shipbuilding-sail-on-the-horizon
[31] Bisnis Indonesia, 8 September 2014.

From 250 registered shipyards, only 40% are currently actively operating. Research conducted by the Ministry of Industry in 2014 found that domestic shipyards currently only have the capacity to fulfil 10% of domestic needs for new vessels.

Figure 26: Supply and demand gap for ship repair (GT)

Source: McKinsey & Company Report. Indonesia Maritime Strategy Reform, December 2013

This supply and demand gap hinders local shipyards in two respects: efficiency maximisation and loss of business opportunity. Tanjung Priok, for example, accommodates around 8,040 vessels yearly with only 34 yards present[32]. The imbalance in Tanjung Priok results in two months queuing time for repairs and maintenance and loss of sales as potential customers sail to neighbouring yards instead, such as those in Singapore and Vietnam.

Furthermore, although the industry is currently worth $18 billion, Indonesian built ships only represent 10% of the total with imported vessels dominating the rest. In light of this, used vessels are popular with Indonesian shipping companies due to their cheap price, and arguably lower import duty (5%).

The government is supporting shipbuilders' competitiveness through removal of tariffs

In 2014, it was announced that the government has agreed to reduce, or even remove, VAT and import duties to spur the growth and competitiveness of local shipbuilders. While the VAT relief initiative is nearing its final approval stage, import duty reliefs will require a longer stage, since it involves numerous items, thus requiring approvals from various government agencies in charge of each component. Currently, a list of ship components that are proposed to be relieved of import duties are being prepared. The government is expecting that these initiatives will encourage local players to start building or purchasing local ships from local vendors, instead of importing them. Industry players believe that, by removing the tariffs, the government will still be able to collect more taxes due to the predicted increase in the number of shipyards as the industry grows. Furthermore, it is believed that this removal will contribute to greater industry growth by 20% to 30% per year[31].

[32] "Indonesia Maritime Strategy Reform". McKinsey & Company Report, December 2013

The Ministry of Industry also believes that, should the fiscal incentives be granted, it would encourage the spread of shipbuilding centres to other locations outside Batam.

Challenges

High Financial Cost

According to Indonesian Ship Owners Association (INSA) chairwoman Carmelita Hartoto, shipbuilders need to spend between US$ 34 million and US$ 49 million to construct a shipyard for a 70,000 DWT vessel[33]. In the past, Indonesia's state-owned financing company, PAN Pembiayaan Multifinance, supported the industry by lowering the interest rates for investors. With this incentive being eliminated, the industry sees a challenge to attract investors to invest in shipbuilding in Indonesia.

Labour intensive industry prone to strikes

Shipbuilding is a highly labour intensive business. Indonesia is prone to labour disputes. The industrial centres in Batam, for example, which also harbour a lot of foreign-owned shipbuilding operations, have experienced tenacious strikes and some violent protests in recent years. These disputes had previously caused disruptions to the work of shipyards.

Lack of skilled labour

The availability of skilled labour is one of the main challenges in any labour intensive businesses in Indonesia, especially those requiring advanced skills and technology. While Dutch shipbuilders find Indonesian labours loyal, they also find it very hard to find the right people locally, especially when it comes down to more complex planning exercises.

Unclear regulations and incentives

Indonesian regulations are often unclear and leave grey areas for interpretation. Investors would need deep analysis and extensive research to equip themselves with regulatory responsibilities and incentives presented for shipbuilding investors in order to fully prepare themselves and to gain maximum benefit from the planned tariff incentives.

Opportunities

Shipyards with higher capacity

Investors can take advantage of the insufficient capacity of shipyards to handle the greater GT need by building a shipyard with more capacity. Orders for new ships such as Army LST, LSU, RAS, Pertamina VLCC, and purpose built ferries are for larger vessels which few shipyards in Indonesia currently have the capacity to facilitate[32].

[33] "Indonesian Shipbuilders Struggle to Meet Production Targets". Jakarta Post, retrieved May 2015, http://www.thejakartapost.com/news/2013/08/14/shipbuilders-struggle-meet-production-targets.html

Shipyards with more advanced technology
While the capability of local shipbuilders has increased due to the Cabotage Law, they are far from fulfilling the needs of local companies. As of the time of this report, very limited local shipbuilders, if any, have the ability to produce vessels for:

1. Oil and gas surveying
2. Offshore construction and support for offshore operations
3. Dredging and salvage
4. Underwater work

Ship repair and conversions
In 2011, the capacity of local ship repair was only 6 million GT compared to the approximately 12 million GT demand. Ship repair services can also benefit from the compositions of client base and fleet characteristics. For instance, 90% of clients handled by shipyards in Indonesia are domestic, and 80% of domestic vessels are second hand, which may need extra repair and maintenance in addition to the yearly requirement for certification purposes[34]. The drop in oil prices has led offshore contractors to order lifetime extensions or refits instead of buying new ships. This market of ship conversions and maintenance can be very attractive to Dutch technology combinations (e.g. power, automation, HVAC, electrical and mechanical engineering and deck equipment).

Government incentives will further encourage the growth and sustainability of Indonesian made vessels

The Cabotage law has tripled the number of ships and value of investment in the local shipping industry. On top of this, total capacity has also increased to 19 million GT from 5.6 million GT seven years ago, representing a growth of 238%. With the Law planned to be fully implemented next year, and the planned tariff incentives for shipyard investors, shipbuilding companies can expect to steadily expand their client base going forward.

Supply of ship components
As discussed above, more than 80% of ship components in Indonesian shipyards are still imported, because no local suppliers are capable of producing the required components. The local content of vessels built in Indonesia is the plates and paint, the rest is imported. Investors, as well as local shipbuilders, can greatly benefit from a local ship components supplier previously not available domestically.

Conclusions

While the Cabotage Law has spurred growth of the local shipbuilding industry, the tariffs imposed on shipyards have been holding them from achieving even higher growth rates. There are planned changes to these tariffs that the government has

[34] "Indonesia Maritime Strategy Reform". McKinsey & Company Report, December 2013

confirmed and expected would further push shipbuilding sector growth, as well as entice foreign investors into backing up the sector.

Local maritime industries would also benefit from more shipyards that are able to make and maintain bigger vessels, especially certain types which local shipyards currently are not able to produce. Furthermore, investors can also gain benefit in maritime equipment maintenance and services supply, especially ship components since as of now, 80% of ship components are imported.

The shipbuilding industry, however, can be prone to labour strikes, since it is a labour intensive sector. This raises the risks for operational disruptions which lead to loss of money. Investors would also need to navigate the Indonesian regulations which at times can be unclear and complicated. Smaller equipment companies will face tougher challenges when looking to invest in local infrastructure. In such case, they would benefit from a collective Dutch approach. That could mean a collective presentation at a tradeshow, a central sales representation, or building up consortia for special purposes like offshore refits.

2.4. Offshore oil and gas

As mentioned earlier, Indonesia has abundant offshore unrenewable resources. While oil production has been slowly decreasing to the point of leaving the OPEC, the nation is looking to re-join the organisation. It is also predicted that the increasing popularity of gas as an energy source would encourage the production volume of offshore gas. This sub sector also presents various regulations, most of which are dedicated to protecting national interests. This section will provide a look into the above matters in greater details.

Overview

The oil and gas sector plays an important role in maintaining the development of Indonesia. This sector does not only fuel growth of the economy, but also contributes to total domestic revenue. The oil and gas sector accounted of 6.97% of the 2014 country GDP[35], and contributed 18% to the total domestic revenue for the past five years[36].

Indonesia has ten oil refineries which are located in Java, Sumatra, Kalimantan and Papua. Almost 80% of domestic refining capacity comes from Java and Sumatra. The two largest refineries are Cilacap in Central Java and Balikpapan in East Kalimantan[37]. There are plans to build new refineries in Java and South Sumatra. Indonesia also has

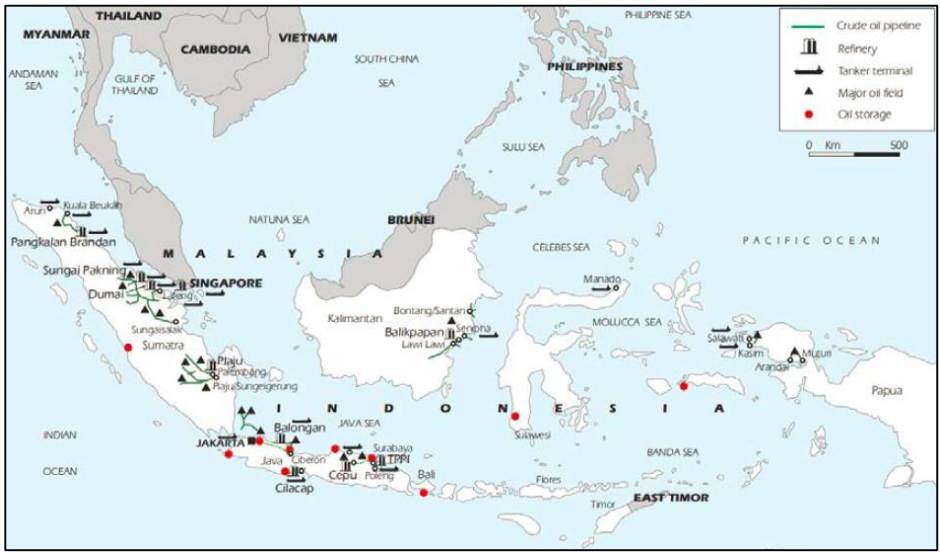
[35] Indonesian Statistics Bureau (BPS)

[36] Husen Miftahudin. "Ini Tiga Arahan Jokowi soal Industri Migas". MetroTV News, retrieved May 2015, http://ekonomi.metrotvnews.com/read/2015/05/20/127916/ini-tiga-arahan-jokowi-soal-industri-migas

[37] Energy Supply Security, International Energy Agency, 2014

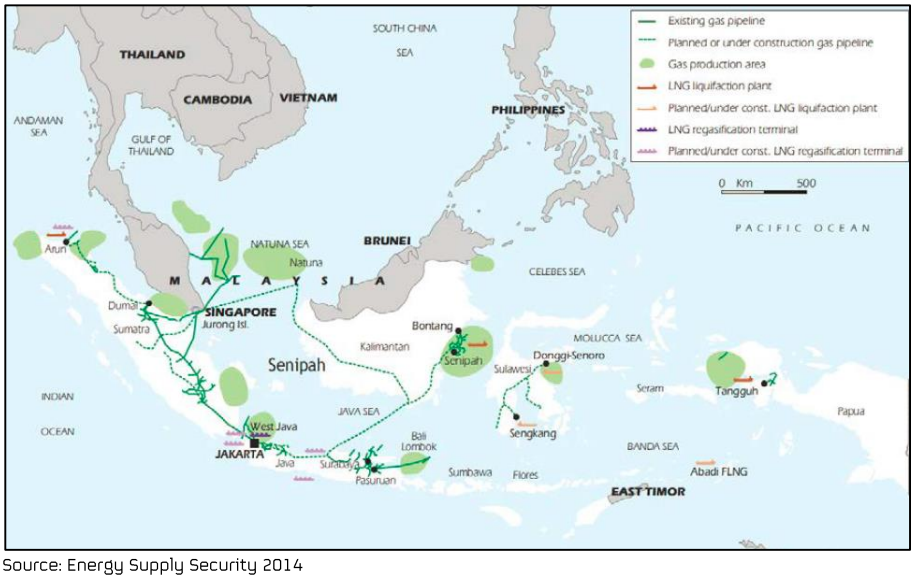
14 operating LPG plants and three operating LNG liquefaction plants. In order to meet the fast rising demand of gas, the country plans to construct several floating storage and regasification unit (FSRU) facilities in Java (Banten and Central Java).

Figure 27: Indonesia Oil Infrastructure Map



Source: Energy Supply Security 2014

Figure 28: Indonesia gas infrastructure map



Source: Energy Supply Security 2014

Indonesia is facing challenges in the oil and gas industry. Indonesia's oil production has been steadily declining whereas consumption has been continuously rising. The country is forecast to have a more favourable condition in the gas industry through sufficient production to meet the demand.

There is an undiscovered potential for both oil and gas reserves from its unexplored underwater areas and its unconventional resources such as coal bed methane and shale gas. The majority of the existing oil and gas fields are located in central and western Indonesia. Eastern Indonesia possesses long-term oil production potential. According to official estimates, the country's offshore reserves hold more than 60% of its oil and gas reserves[38]. Further deep water exploration and production could be done to find new oil and gas deposits. The government also offers conventional and non-conventional oil and gas blocks for exploration, of which 60% of the conventional blocks are located offshore[39]. In addition, the government is working on having greater rules and regulations to attract more investment into this sector. By having new wells to replace ageing wells and increments in investment for exploration, the country is expected to boost its declining oil production and also increase the possibility to re-join OPEC.

Key players

Table 13 Key players in Indonesia upstream and downstream business activities

Key Upstream Players	Key Downstream Players
Pertamina	Pertamina
PT Caltex Pacific Indonesia	Petronas
Exxon Indonesia	
BP Indonesia	
Vico	
Total Indonesia	
CNOOC Indonesia	
Conoco Phillips Gas	
PetroChina	

Source: Indonesia Oil & Gas Report Q3 2014

Pertamina

Pertamina is the Indonesian state-owned Oil company who is currently positioned as the largest gas producer in the country as well as the second largest oil producer after Caltex (Chevron). Pertamina conducts major crude oil exploration and production, either independently or through production sharing contracts (PSC) with various international and local oil companies. For the downstream business activities,

[38] Indonesia Oil & Gas Report, Q3 2014
[39] Indonesia's Special Task Force for Upstream Oil and Gas Business

Pertamina covers the distribution of oil and petrochemical products to domestic and overseas markets, supported by distribution and transportation facilities by land and sea.

Offshore Landscape

The largest Indonesian offshore project at present is East Natuna Field, located in the Greater Sarawak Basin in the South China Sea. Key players showing interest in the project are Pertamina (35%), ExxonMobil (35%), Total (15%), and PTTEP (15%). Other offshore projects identified are:

- The Muara Bakau offshore block in the Makassar Strait that comprises two fields, Jangkrik and Jangkrik Northeast. It is operated by ENI and is expected to produce gas which is estimated to reach its peak in Q1 2017.
- ConocoPhillips is currently operating three offshore blocks which are the South Natuna Sea Block B, the Kuma block in the eastern Makassar Strait, and the Arafura Sea Block.

More conventional offshore blocks are going to be offered by the government, either through tender or direct appointment.
Blocks offered through tender are:

- West Asri (offshore Lampung)
- Oti (offshore East Kalimantan)
- Manakarra Mamuju (offshore West Sulawesi)

Blocks offered through direct appointment are:

- Rupat Labuhan (offshore Riau and North Sumatra) and
- West Berau (offshore West Papua)[40]

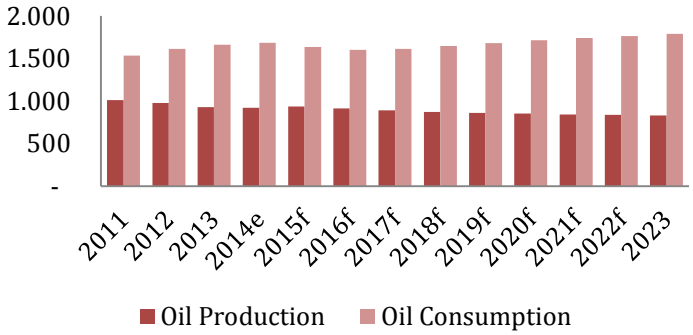
Dutch companies present in Indonesia are Vroon Offshore, Shell and Dutch branches of foreign companies like Lundin Petroleum.

Indonesia is focusing on gas production

Indonesia was once one of the key players in the global oil and gas industry. The decline of oil production and the rise of oil consumption resulted in Indonesia becoming a net oil importer in 2004. In 2008, the Indonesian government decided to withdraw from OPEC after its inability to meet the production quota. It is estimated that oil production will be on the downtrend whilst demand will continuously rise. The government recently indicated its intention to re-join OPEC so that the country may have a better monitoring system towards the global oil and gas industry. It will be a challenge to boost oil production in Indonesia. In order to be able to re-join OPEC, large investments in the upstream sector will be necessary. Clearer rules and regulations are also essential to regain investor confidence in Indonesia's gas production. The gas production is forecast to decline in 2015, but the number is expected to turn around in the coming years. Gas consumption is also estimated to be continuously rising as there is a government target to switch the power sector from diesel to gas.

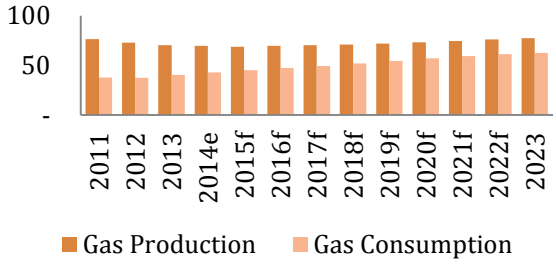
[40] Indonesia's Special Task Force for Upstream Oil and Gas Business

Figure 29: Indonesia Oil Production and Consumption, 2011-2023 ('000b/d)



Source: Indonesia Oil & Gas Report Q2 2015

Figure 30:: Indonesia Gas Production and Consumption, 2011-2023 (bcm)



***Note: 2011 to 2013 reflects historical data; e= estimation; f = forecast**

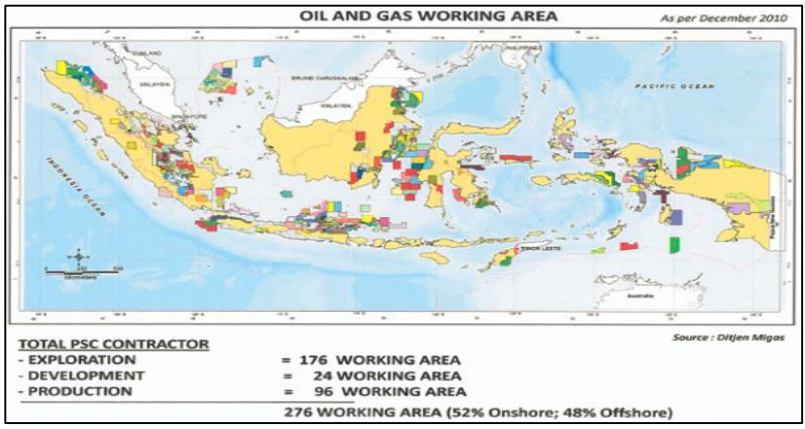
Source: Indonesia Oil & Gas Report Q2 2015

There is a surge in oil and gas exploration activities

The needs of construction and ships for offshore rigs are predicted to increase by 15-20% per year driven by the surge of oil and gas exploration activities in Indonesia. This can be directly related to the decline in production volume, driving industry players to look for other oil and gas fields in order to sustain their activities. The increase in exploration activities is also caused by the need for oil and gas not only in Indonesia but all over the world which continues to increase. Although we know that the current oil and gas resources are declining, due to research and developments new oil and gas sources are found and open new potential for quite a number of explorations.

Currently Indonesia has around 270 working areas for exploration as per 2010. 48% of this is offshore exploration. The map for the exploration distributions can be seen below.

Figure 31: Map of exploration distributions in Indonesia

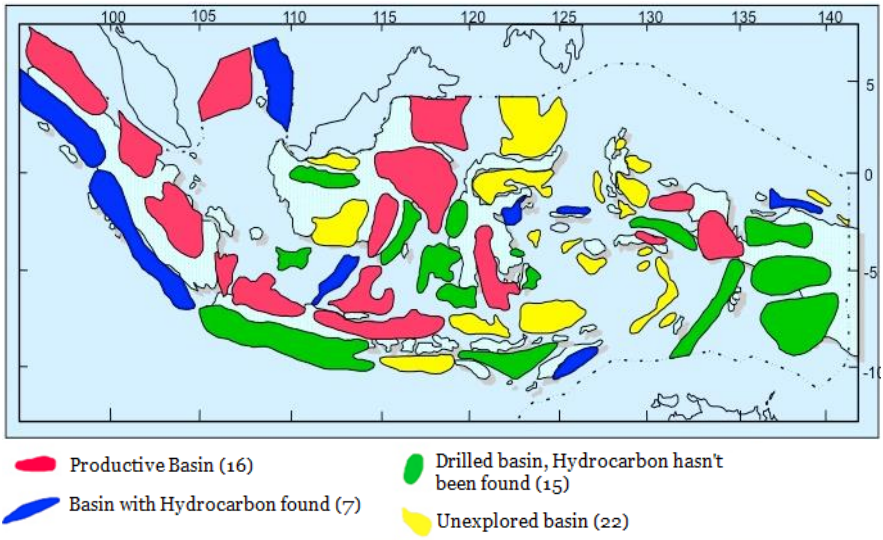


Source: Ministry of Energy and Mineral Resources Directorate General of Oil and Gas

This figure shows that there is still a lot of potential in sea exploration given the spread of explorations is mainly dominated by the land base as of 2010, but we can see that research, development, and technologies are now better capable of offshore exploration than was previously possible.

One of the energy sources that contain lots of potential is hydrocarbon. According to the latest research most of it is drilled offshore, which also means further potential for offshore construction projects in the future. Below is the potential mapping for hydrocarbon sources. Sources which have started to produce are highlighted with red.

Figure 32: Hydrocarbon basin sources in Indonesia



Source: Ministry of Energy and Mineral Resources, 2012

Protectionist nature of Indonesian offshore regulations

The Indonesian oil and gas industry is under the supervision of the Ministry of Energy and Mineral Resources, in which there are special working units assigned to focus on upstream and downstream oil and gas business activities. Supervision of upstream activities is under the Special Task Force for Upstream Oil and Gas Business Activities (SKK Migas), whereas supervision of downstream oil and gas business activities is under Oil and Gas Downstream Regulatory Agency (BPH Migas).

Control of Upstream and Downstream Business Activities

The Indonesian government, as the holder of the relevant concessions, controls the upstream and downstream activities through Production Sharing Contracts (PSC). Control on upstream activities is done through joint cooperation contracts (mostly PSCs) between permanent establishments (PE) or business entities and the government executive agency for upstream activities (SKK Migas), whilst control on downstream activities is done through issuance of business licenses by the regulatory agency (BPH Migas).

Under the Oil and Gas Law No.22/2001 there is a prohibition for upstream entities to engage in downstream activities, unless an upstream entity must do any downstream activity that is integral to support upstream activities.

Mode of Business

Under the Oil and Gas Law, foreign investors are allowed to invest in the upstream oil and gas sector by way of a branch of an overseas company (Permanent Establishment or PE). For downstream business activities, foreign companies can operate only via local subsidiaries. Also, the Law governs that one PSC can only be granted for each PE or PT and thus each work area is entitled to a separate body. This is also known as the "ring fencing" principle.

Restriction to Foreign Workers

On 24 October 2013, ESDM issued ESDM Decree No. 31/2013 on Expatriate Utilisation and Development of National Employees in Oil and Gas Business (Decree 31), which introduced more stringent requirements and restrictions on the employment of expatriates for certain roles in the oil and gas sector. The employment of expatriates for non-prohibited roles must be approved by the Directorate of Oil and Gas (under ESDM). These restrictions are aimed to encourage more local workers in the industry. There will be impositions of sanctions for any non-compliance towards these restrictions.

Government Regulation GR79

The GR79 regulation deals with operating costs that can be recovered and the income tax treatment of the upstream oil and natural gas sector. This regulation was expected to encourage investment in the upstream oil and gas sector in Indonesia, but in practice some provisions of GR79 created uncertainties for existing PSC and significantly reduced cost recovery.

PTK 007 Procurement regulation
Purchases by Joint Cooperation Contracts are effectively Government expenditure and generally must be provided from a local limited liability company. Foreign companies wishing to sell upstream equipment or services therefore must comply with strict procurement rules set out under BP Migas Guidance No.007/PTK as revised in 2011.

Tender awards are based on price, Indonesian content (local content), technical advantage and reputation. Wholly foreign-owned Indonesian entities are allowed to participate and are considered to be local Indonesian companies.

Challenges

Difficult to make profit at the early stage of market presence
In Indonesia, gas prices vary for different buyers. Gas prices for the domestic industry could be twice as low as those for export. As a result, high development costs incurred cannot be offset by gains from high export prices in order to raise profit. Therefore, less well funded players may find it difficult to profit at their early stage of market presence.

Restriction on foreign investment[41]
A new negative investment list was issued in April 2014. The new regulations restrict foreign investment in offshore and onshore drilling, maintenance and construction services. Foreign shareholding of offshore oil and gas drilling services is now limited to a maximum of 75%. Under previous regulations a wholly owned foreign company could do an engagement in offshore drilling in eastern Indonesia. All other offshore drilling foreign shareholding was limited to a maximum of 95%.

The maximum foreign shareholding for offshore pipeline projects is limited to 49%, and for oil and gas platform construction shareholding is limited to 75% (previously it was 95%).
Onshore activities, such as engagement in drilling, pipe installations, production installations for upstream, tanks and storage installations, are now restricted to domestic companies only. These rules will not impact projects already underway unless the terms are more favourable to those particular investors.

Opportunities

Large untapped offshore opportunity
The country has an undiscovered potential for both oil and gas reserves from greater drilling of the country's unexplored underwater areas and its unconventional resources such as coal bed methane and shale gas. Most of the areas are in eastern Indonesia[42]. To be able to explore these areas, high technological investments to support the

[41] Asmarini and Fabi. "Indonesia restricts foreign investment in oil services industry". Reuters, retrieved May 2015, http://www.reuters.com/article/2014/05/05/indonesia-oil-idUSL3N0NR1MW20140505
[42] "Investment Opportunities in 22 Indonesian Sediment Basin". Ministry of Energy and Mineral Resources, 2014

activities[43] and sufficient transportation access as well as logistics capabilities will be needed. The government intends to build gas pipeline infrastructure connecting Sumatra and Java in the next five years[44]. Successful discovery of potential oil and gas reserves supported by better infrastructure will boost the country's production, which will be the key enabler for Indonesia to re-join OPEC.

Supportive business environment
The government is working on regulations to regain investors' confidence into the sector by:

- Changing the licensing system. The licensing process is managed under a one stop service, by the BKPM. There used to be 341 licenses required but that has been cut to 42 permits.
- Recommending additional incentives. Recommendations on the exemption of capital goods from import duty, removal of VAT on catalysts and spare parts for refining projects, and the providence of governmental loan guarantee.

These recommendations are expected to support investors to do business in Indonesia in a more stable regulatory environment.

Conclusion

Indonesia aims to be part of OPEC again. In order to achieve this, a large increase in production will have to take place. There are large oil reserves, mainly in the eastern part of Indonesia, which can contribute to achieving that ambition. These offshore reserves can mainly be found in the deeper parts of the various seas. The exploration of these reserves will be technically challenging, costly and therefore have a higher risk profile.

Gas production is predicted to increase as demand rises. To meet the fast rising demand of gas, the country plans to construct several floating storage and regasification unit (FSRU) facilities in Java. The abovementioned trends will lead to a high demand for capital, knowledge and materials and potentially generate many business opportunities.

The protectionist nature of Indonesia and the complicated regulations, which are not always clear and are subject to change, make it challenging to set up and run a business effectively, protect investments and make a fiscally predictable business possible.

[43] "Cadangan CBM Lebih Besar Dibandingkan Cadangan Gas Alam". Indopetro News, Retrieved May 2015, http://www.indopetronews.com/2015/05/cadangan-cbm-lebih-besar-dibandingkan.html
[44] Ministry of Energy and Mineral Resources

2.5. Fishery

Indonesia has access to abundant fishery resources in both marine fishery and freshwater fishery, where 76% of Indonesia's surface area is sea waters, in addition to the 5,500 rivers and lakes found throughout Indonesia. The fisheries industry can be categorised into two main activities: capture fisheries, and aquaculture or "fish farming". This section will discuss both activities in more detail.

Overview

In Indonesia's gross domestic product (GDP), fishery is included in the agricultural, forestry and fishery sector group. The fisheries sector is a USD 20 billion industry in 2014, making Indonesia the largest fisheries producer in Southeast Asia, and one of the biggest exporters of tuna in the world[45]. The fisheries sector's contribution to Indonesia's total GDP is still relatively small at 2.3% in 2014, especially compared to the Agriculture sector. However, the fisheries sector's growth has reached around 7% per year since 2011 to 2014, which is higher relatively to Indonesia's GDP growth as well as the agriculture sector.

Table 14: Fisheries sector contribution to Indonesian Gross Domestic Product at current prices, 2013 – 2014

Industry	2013**	2014***
Gross Domestic Product (GDP)	$793,728,041,667	$878,557,791,667
Fishery sub sector	$17,555,900,000	$20,591,183,333
Fishery/GDP Ratio	2.21%	2.34%
Agriculture/GDP Ratio	10.44%	10.33%
Forestry and logging/GDP Ratio	0.20%	0.19%

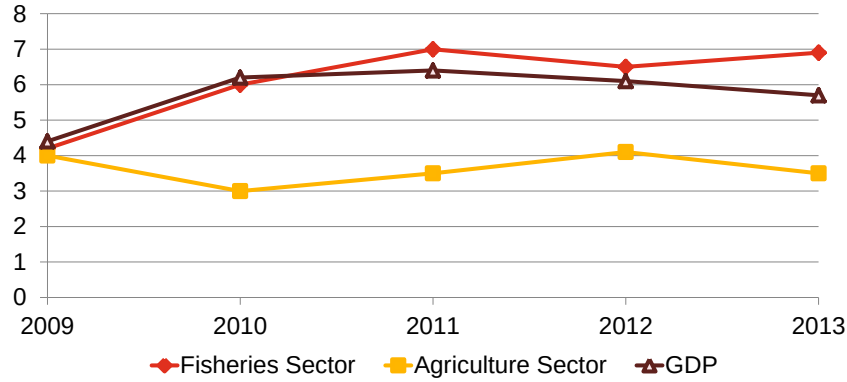
** Tentative number

*** Very tentative number

Source: Indonesian Statistics Bureau

[45] Elisa Valenta Sari. "Rusia Protes Tuna Indonesia Banyak Mengandung Merkuri". CNN Indonesia, retrieved June 2015, http://www.cnnindonesia.com/ekonomi/20150604144707-92-57696/rusia-protes-tuna-indonesia-banyak-mengandung-merkuri/

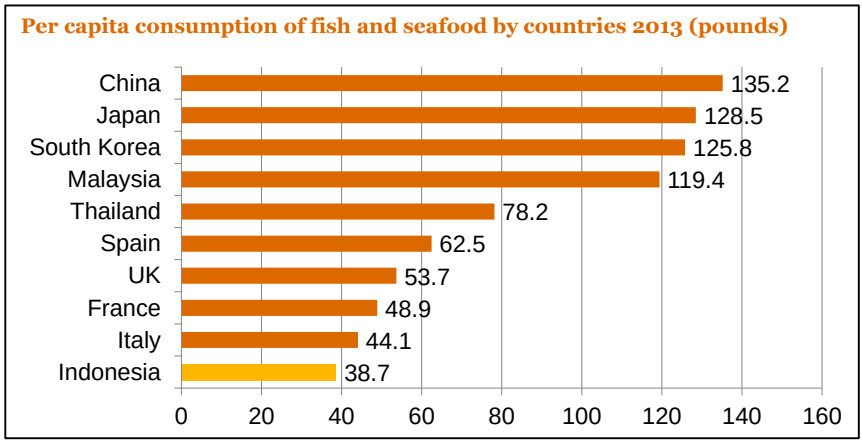
Figure 33: GDP growth (%) of fisheries sub sector, agriculture sub sector, and national GDP



Source: buku-data-pokok-2014.pdf, p. 11

In terms of future prospects, the fisheries sector's growth rate of the past five years indicates that there is a steady growth of fish production in Indonesia of about 6%. At the moment Indonesians are not considered to be big consumers of fish (In 2010, Indonesia's per capita consumption of fish reached 30.47 kg per year, compared to Malaysia's 55 kg and Singapore's 37 kg per year). However, the trend in the past five years shows an increase in fish consumption per capita, suggesting that there is a growing domestic demand for fish products.

Figure 34: Per capita consumption of fish and seafood by countries 2013



Source: TechNavio, Global Fish and Seafood Market 2014-2018

Table 15: Performance of Fisheries sub sector, 2009 – 2014

No	KPI Details	Performance					
1	Fisheries GDP growth (%/yr)*	4.20	6.00	7.00	6.50	6.90	6.97
2	Production growth (million tons)	9.82	11.66	13.64	15.5	19.42	14.73**
3	Domestic consumption per capita (kg/kap/yr)	29.08	30.48	32.25	33.89	35.21**	37.89**
4	Export value of fisheries commodities (USD Billions)	2.46	2.86	3.52	3.85	4.18	4.64**

*Based on year 2000 constant price

** Very temporary number

Source: Indonesian Statistics Bureau

In terms of geographical production, the provinces with the largest fishery production in 2013 were the following:

- South Sulawesi (2.8 million tonnes)
- East Nusa Tenggara (1.9 million tonnes)
- Central Sulawesi (1.6 million tonnes)
- East Java (1.4 million tonnes)
- West Java (1.2 million tonnes)
- The Moluccas (1.1 million tonnes)
- Southeast Sulawesi (1.1 million tonnes)

Indonesia has a promising demand for the fishing industry as fish products are increasingly in demand, particularly due to the increasing disposable income of the Indonesian middle class and the increasing awareness on the benefits of healthy diets. The government of Indonesia also views the fisheries industry, particularly aquaculture, as a strategically important sector for job creation. The government has expressed their interest in providing incentives for investors in the value adding fisheries processing sector. Seaweed and tuna are two aquaculture commodities with large potential.

At the same time, the government has effectively banned capture fishery activities by foreign fishing boats within Indonesian territorial waters and EEZ (exclusive economic zone), providing fishing opportunities for local fishermen especially in offshore areas. However, the capacities of Indonesian fishing boats are currently very low. This poses as an opportunity for the future shipbuilding market, particularly those between 10 to 20 GT and 30 to 50 GT capacities. Challenges such as destructive fishing methods and overfishing in certain areas remain a problem, along with the recently widely publicised human rights issues.

Key Players

PT. Bumi Menara Internusa

It is an integrated Indonesian fish processing and aquaculture company. The company operates a shrimp farm in Malang, East Java as well as processing shrimp, crab and fish across a number of different factories across Indonesia.

PT. Central Proteinaprima Tbk

The company is an aquaculture company that offers feed, food products, shrimp, pet foods, probiotics, and aquaculture chemicals. It is a subsidiary of the Charoen Pokphand Group with operations in Indonesia and Singapore. The company recorded revenues of US$ 736 million in the fiscal year ending December 2013, an increase of 12.3% compared to fiscal year 2012. Its net income was US$ 115 million in fiscal year 2013, compared to a net loss of $42 million in the preceding year.

PT. Japfa Comfeed Indonesia Tbk

It is an Indonesian agri food company and a subsidiary of the Singaporean Japfa Holdings. The company's aquaculture division provides fish and shrimp feed production, shrimp hatchery and shrimp farming. The company recorded revenues of US$ 2,054 million in the fiscal year ending December 2013, an increase of 20.01% compared to fiscal year 2012. Its net income was US$ 57 million in fiscal year 2013, compared to a net income of US$ 95 million in the preceding year.

PT. Mega Marine Pride

PT Mega Marine Pride vertically integrates Indonesian shrimp farming, fishing and processing company that is one of the largest exporters in East Java. The company's products include froze pre-packaged shrimp, and a range of pre-prepared fresh shrimp, as well as dim sum and breaded shrimp products.

PT. Dharma Samudera Fishing Industries Tbk. (DSFI)

The company operates in the fishing industry with export oriented sales, including the catching, storing, packaging, marketing and distributing fish products. DSFI's production facilities include constructing vessels, dockyards, export prier, ice factory, fish processing, cold storage, skipjack catching fleets, and transport vessels. DSFI exports products to Japan, Hong Kong, Malaysia, USA, Australia and Europe. DSFI was listed on the Indonesia Stock Exchange in 2000 under the Development Board. The company recorded revenues of US$ 450 million in the fiscal year ending December 2014, an increase of 30% compared to fiscal year 2013. Its net income was US$ 11 million in fiscal year 2014, which is roughly the same amount as the preceding year.

The Indonesian captured fisheries provides abundant sea products

In 2014, the Sea Fishing Industry generated an estimated turnover of Rp.26 billion with an increase of 1.85% from the previous year. In terms of production, skipjack tuna was the largest commodity in 2014, followed by eastern small tunas (tongkol), tuna, and shrimp. In terms of average production growth between 2009 and 2014, tuna had the largest production growth (15%), followed by skipjack tuna (7 %) and Shrimp (2%).

Table 16: Marine capture fisheries production by major commodities, 2009 – 2014

Species	2014 production in tonnes (until 3rd Quarter)	Average production growth 2009 - 2014
Skipjack tuna	484,610	6.58%
Eastern small tunas (tongkol)	454,180	1.52%
Tuna	310,560	14.66%
Shrimp	255,410	1.74%
Other fish species	3,900,980	2.92%
Other hard shell species	87,000	6.29%
Other species	287,250	10.85%

Source: Ministry of Marine Affairs and Fisheries

The major market segments for capture fisheries products in 2014 are for domestic wholesale, (65% share), seafood processing (20% share), and household direct (13%) and for export (2% share). In terms of geographic spread, most sea fishing establishments in Indonesia are currently in the Moluccas and Papua provinces (27%), followed by North Sulawesi (19%), Bali (17%) and Java (10%).

The Indonesian aquaculture holds big potential for growth and investment

In comparison with the Asia-Pacific aquaculture industry, Indonesia accounts for 7.9% of the Asia-Pacific aquaculture industry value[46]. The Indonesian aquaculture industry had total revenues of $7,497.1 million in 2013, representing a compound annual growth rate (CAGR) of 23.7% between 2009 and 2013. In comparison, the Thai and Chinese industries grew with CAGRs of 7.2% and 5.7% respectively, over the same period, to reach respective values of $3,439.4 million and $65,325.3 million in 2013[47].

In terms of production amount, seaweed was the largest commodity produced in 2014, consisting of 70% of total production, followed by nile tilapia (7%), milkfish (5%), catfish (5%), and shrimp (5%). However, in terms of the average production growth between 2009 and 2013, five commodities with the largest growth of production were groupers (44.38%), catfish (40.18%), shark catfish or ikan patin (39.90%), seaweed (33.23%) and nila tilapia (29.97%). The growth rates show that both salt water and freshwater fisheries commodities have a healthy market demand.

Raw seaweed supply is currently very high and is expected to continue to grow. The government has targeted for 21 million tonnes of seaweed production in 2019, which consists of more than 60% of the total aquaculture production target in 2019 (31 million tonnes). Seaweed is viewed as an ideal commodity particularly for underdeveloped regions due to its labour intensive production that requires low cost and low technology.

[46] "Aquaculture in Indonesia_ Market Segmentation". PricewaterhouseCoopers, 2014.
[47] "Aquaculture in Indonesia_ Market Overview". PricewaterhouseCoopers, 2014.

Aquaculture commodities production in 2014 (until 3rd quarter) and growth between 2009 and 2013 was as follows:

Table 17: Aquaculture commodities production in 2014 (until 3rd quarter) and growth between 2009 and 2013

Species	Type of water	2014 production in tonnes (until 3rd Quarter)	Average production growth 2009 - 2013
Seaweed	Salt water	10,234,357	33.23%
Nile Tilapia	Fresh water	912,613	29.97%
Milk fish	Salt water	621,393	17.80%
Catfish	Fresh water	613,120	40.18%
Shrimp	Salt water	592,219	19.25%
Common carp	Fresh water	484,110	13.46%
Shark catfish (patin)	Fresh water	403,133	39.90%
Giant gourami	Fresh water	108,180	19.86%
Groupers	Salt water	12,430	44.38%
Giant seaperch	Salt water	4,439	19.90%
Others	N/A	535,355	19.76%

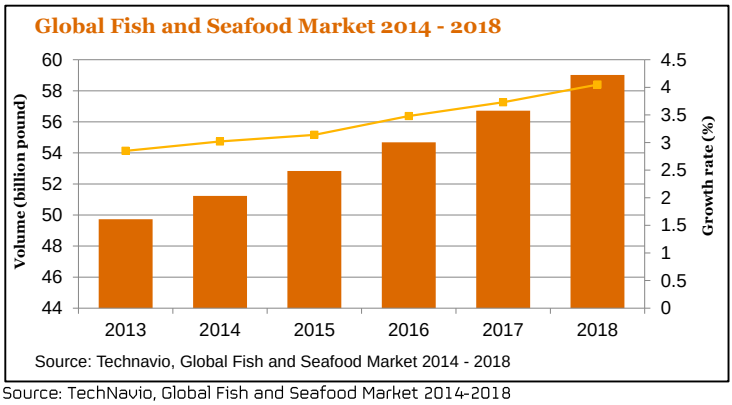
Source: Ministry of Marine Affairs and Fisheries

Buyers range from relatively small food brokers (who may act as both wholesale dealers and retailers) to food processing buyers and large supermarket chains. For buyers, switching costs are relatively low as most locally produced fish and shellfish is marketed at auctions, both physical and electronic, and there is a need to clear the market by the end of the day before the goods perish.

Aquaculture as the preferred focus of fishery due to sustainability and competitiveness

The global consumption of fish is also predicted to increase, with the average of more than 3 percent annual growth. In terms of market trends, the potential for future demand of fish in Indonesia is promising, based on a few determinants worth mentioning in this industry. First of all, fish products, particularly salt water fish, are considered a relatively expensive source of protein. Hence, relative price and real disposable income are important determinants of demand. Secondly, there is an increasing concern about health and nutrition, in which fish is generally perceived to be a more satisfactory source of protein than red meat. If this trend continues to grow then the demand for fish products is expected to increase along with it. Furthermore, now there is greater accessibility of fish products to the growing middle class in Indonesia with the growing number of supermarkets and other retail agents. This is reflected in the increased fresh fish sales through supermarkets, which shows that growth in demand has increased.

Figure 35: Global fish and seafood market 2014-2018



Source: TechNavio, Global Fish and Seafood Market 2014-2018

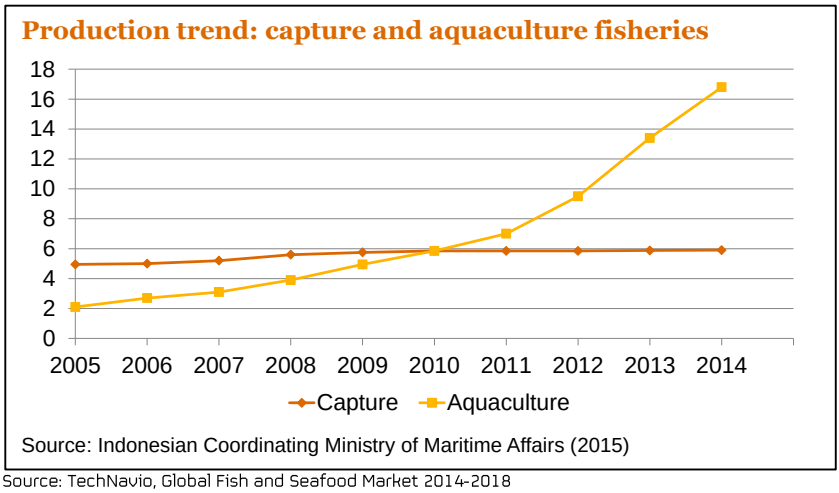
In terms of competition in this industry, price competition is important as fish products compete fairly directly with red meat and chicken on the basis of price. Indonesian consumers are also particularly concerned with quality in relation to fish, making quality as a basis for competition between alternative suppliers. Advertising expenditure is also very low in comparison to other food products.

Potential in the Indonesian fisheries industry lies especially in (1) Reef fisheries sector, on which research has earmarked a potential revenue of USD 1.7 billion per year; (2) Seaweed industry, with potential revenue of USD 13.8 billion per year; and (3) Marine biotechnology sector, with potential revenue of USD 35 billion per year.

Based on production trends, aquaculture is growing significantly more than the capture fisheries industry. The government also views aquaculture as the preferred method of fishery industry due to its potential solution for food security, decrease in overfishing, job creation, and rural development. For the period of 2015 to 2019, the Department of Maritime and Fisheries has targeted aquaculture production to 31 million tonnes by 2019, 60% of which is seaweed production (21 million tonnes). The Indonesian aquaculture industry is forecast to have a value of $13,907 million in 2018, an increase of 85.5% since 2013. The compound annual growth rate of the industry in the period 2013–18 is predicted to be 13.2%.[48]

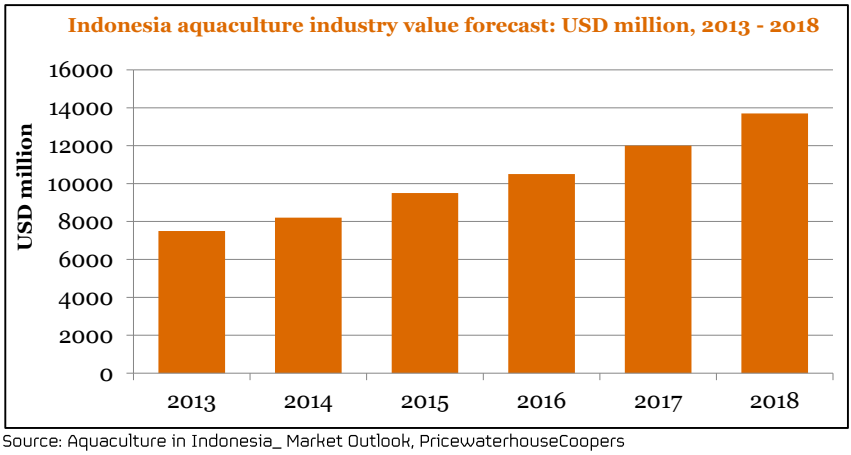
[48] "Aquaculture in Indonesia_ Market Outlook". PricewaterhouseCoopers, 2014.

Figure 36: Fisheries production trends



Source: TechNavio, Global Fish and Seafood Market 2014-2018

Figure 37: Indonesia aquaculture industry value forecast: USD million, 2013 - 2018



Source: Aquaculture in Indonesia_ Market Outlook, PricewaterhouseCoopers

Furthermore, the potential production growth of aquaculture in Indonesia is predicted to be very high. At the moment the most common aquaculture method is through marine fishponds (tambak), followed by sea aquaculture, freshwater fish ponds, and mina padi method (aquaculture in rice fields). Based on a study by the Indonesian Ministry of Marine Affairs and Fisheries, the area availability suggests that both salt water and fresh water aquaculture still have a large potential for development, including more than 80% of predicted available potential water areas for aquaculture use.

Potential Aquaculture Area and Usage Level in Indonesia, 2013

Figure 38: Potential Aquaculture Area and Usage Level in Indonesia, 2013

	Saltwater fishpond	Freshwater fishpond	Public water area	*Mina padi*	Ocean
Potential area (Ha)	2,900,000	41,000	158,000	1,536,000	12,123,000
Current use (Ha)	650,000	76,000	1,564	124,000	325,000
Potential use area (%)	80%	67%	99%	91%	91%

Source: Ministry of Marine and Fisheries

With regards to the capture fisheries industry, the modernisation trend in the use of fishing boats in Indonesia is ongoing, albeit on a very low key level. This is shown by the growing number of motorised fishing boats that have surpassed the number of non-motorised fishing boats since 2010. However, over 86% of total motorised boats' size in Indonesia is still below 10 GT. The largest increase of motor boat size between 2010 and 2014 are those between 10–20 GT and 30–50 GT, which indicates there is a potential market for both types.

Table 18: Number and average increase of motorised fishing boats in Indonesia 2010 – 2014

Size of Motorised Boats	2014 Number of Motorised Boats	2014 motorised boats ratio	Average number increase 2010 -2014
<5 GT	153,960	66.7%	8%
5 - 10 GT	48,150	20.9%	9%
10 - 20 GT	15,810	6.8%	13%
20 - 30 GT	8,650	3.7%	3%
30 - 50 GT	1,070	0.5%	10%
50 - 100 GT	1,700	0.7%	3%
100 - 200 GT	1,210	0.5%	2%
> 200 GT	350	0.2%	3%

Source: Ministry of Marine Affairs and Fisheries

Government is implementing programs to support growth of the fishery industry

The implication of the recent government policy toward investment in the fishery sector is that they would like to strengthen the domestic value adding fishery industry and would welcome investment in those activities, as well as in investments in the aquaculture industry.

The Indonesian government has viewed aquaculture as the preferable method for the fishery industry and has actively promoted aquaculture. The Indonesian government aims to increase marine production by 300% between 2010 and 2015. Part of the government's strategy was to establish fish production centres in a number of areas where maritime and fishery based industries are the main economic activities to boost fishery production. Fish Production Centres (Minapolitan) are centres to develop specific marine commodities in a specific area, supported by all the required facilities. There are 178 fish production centres in Indonesia, 145 for aquaculture and 33 for capture fisheries. They are a part of the government strategy to increase marine production since 2010. The government aims to achieve aquaculture production of 31 million tonnes by 2019.

From late 2014 onwards the capture fisheries industry has caught media attention due to the new government's tough stance on combatting illegal fishing. The new president publicly stated that there are 5,000 foreign fishing boats operating illegally in Indonesian waters, costing the local fishing industry US$24bn (£16bn). The cabinet's new Minister of Marine and Fisheries Susi Pudjiastuti has demonstrated the government's tough stance on the issue, most notably represented by her decision to sink a number of foreign-owned fishing boats which had been used for illegal, unreported, and unregulated (IUU) fishing activities.

In January 2015 the Ministry of Marine Affairs and Fisheries issued a moratorium for capture fisheries permits to be effective until 31st October 2015. Finally, in April 2015 they effectively banned foreign fishermen from capture fishing in Indonesian waters, and limited foreign investment in fisheries to downstream activities such as seaweed processing, seafood processing, fish and shrimp feed industry, as well as the shipyard industry. Furthermore, the government also encouraged local fish exporters to add more value to their products by investing in fish processing, and promised that there will be a number of incentives to support the investment.

Challenges

Poor transport facilities and infrastructure

There are poor transport facilities and infrastructure to connect the outer islands to the major islands (Java and Sumatra), particularly in outer islands such as Maluku, North Maluku, and Papua. Indonesia's port infrastructure has suffered from neglect, largely due to financial constraints over the years. Many of the ports are in bad shape and impede the country's internal and external maritime commerce, causing revenue losses, procedural delays, and high shipping costs. In fact, the shipping cost for a container from Sumatera to Jakarta is more than three times as much as the same container costs from Jakarta to Singapore. As a consequence, Indonesia's maritime trade and commerce has failed to realise its potential.

Environmentally destructive fishing methods

The practise of environmentally destructive fishing methods such as blast fishing, trawling and the use of fish poison are still in common use in Indonesia. These practices cause further environmental damage, and in the case of poisoning,

compromise the quality of fish products and the image of fish products from Indonesia in general.

Overfishing in certain areas
Most Indonesian fishing vessels are small and medium sizes that could not compete well against foreign fishing vessels, which are larger and more modern. This results in the unequal geographic distribution of fishermen and fishing boats in Indonesia. More than 90% of the Indonesian fishing armada is concentrated on the coasts and shallow waters such as the Malacca Strait, the northern Javanese coast (Pantura), Bali Strait, and the southern coast of Sulawesi. As a consequence, these areas suffer from overfishing. If this trend continues, the amount of fishes caught per boat will decrease, fishermen will have less income, and marine resources will deplete severely, such as what happened to the flying fish population on Sulawesi's southern coast and the toil shad fish (Chinese herring) population on the Malacca Strait[49].

Cases of contaminated exported fish
On early June this year, Russia raised its concern that Indonesia's tuna export to the country contained mercury levels above the safe consumption level. In previous years, there are similar cases where such concerns were raised by Indonesian tuna consumer countries. The Ministry of Fisheries has stated that in the most recent case, contamination was not exclusive to Indonesia, but also to other fishes captured in nearby countries. Contamination risks rise up with the use of environmentally unfriendly fishing methods and dropping tuna population[50].

Lack of spare parts and maintenance
The average age of the fishing boats is high. In addition there is a lack of spare parts and a limited capability in maintenance. As a result the fishing fleet is limited in its effectiveness

Opportunities
Many business opportunities in the fishery sectors lie in the relatively low maturity of the industry, which pose challenges to most players and hamper fish production from its optimal capacity.

Demand for medium sized fishing boats for capture fishing activities in offshore areas
Fishermen are in high need of medium sized fishing boats, both within Indonesian territory and in Indonesian EEZ. The Government has taken strong measures to prevent foreign IUU (illegal, unreported, unregulated) boats, resulting in the increase of fish supply in all 11 fishing zones.

[49] "Prospek Perikanan Indonesia". Ministry of Marine Affairs and Fisheries, retrieved May 2015, http://prospekperikananindonesiasma4.weebly.com/

[50] Estu Suryowati. "Kandungan Merkuri di Ikan Tuna Lampaui Batas, Indonesia Ditegur Eropa". Kompas.com, retrievedJune2015,http://bisniskeuangan.kompas.com/read/2015/06/04/172422026/Kandungan.Merkuri.di.Ikan.Tuna.Lampaui.Batas.Indonesia.Ditegur.Eropa

These zones are available for Indonesian fishermen to operate, but there are not enough Indonesian fishermen who have the right boat capacities (between 30 GT to 50 GT). This includes investment opportunities in medium sized shipbuilding and end-to-end services.

Investment opportunities in medium sized fishing boat building, spare parts and after-sales services

Currently, the government has procured fishing boats with 30 GT-above capacities mainly through imports. This is comparatively cheaper than producing boats with such capacity, as machinery needs to be imported and subjected to customs. Many boats procured are either second hand or bought without after-sales services, with only 1 year spare parts guarantee. Many fishermen are also not immediately knowledgeable to utilise 30 GT-above fishing boats. This causes potential operational issues for users in the future. Related investment opportunities include:

- Knowledge transfer on medium sized boat machinery
- Education on operating medium sized fishing boats

Seaweed is a major potential commodity

As explained above, seaweed has major potential as a commodity, particularly for investment in processing infrastructure to produce value added products (such as dried seaweed) and derivative products such as seaweed fiber cloth (high water absorption) and alginate (used in pharmaceuticals, cosmetic products, organic fertiliser, halal food production to replace pork based gelatine, etc.).

Tuna aquaculture is a potential sub sector for commercial investment

The government's fisheries research and development centre has ongoing research on tuna aquaculture (tuna growing and farming), which is offshore aquaculture that is more sophisticated and achieves higher returns compared to coastal aquaculture. The research shows that Indonesia has the capacity for tuna aquaculture, but this has not gained the business communities' attention for commercial purposes.

Cold storage technology is in high demand

Investors can find attractive opportunities particularly in small areas' fishing ports. Two fundamental issues are clean water and electricity availability. Solar powered cold storage can be an alternative investment to tackle the electricity issue.

Fishery inspection vessels will be needed

In order to monitor the fish population and to avoid damage to the vulnerable underwater world, an effective control on the fisheries is to be expected. These complex vessels can be produced with the help of Dutch shipbuilding and marine equipment industries.

Conclusion

The fisheries industry in Indonesia offers many potential opportunities for investment. With its abundant marine resources, the fisheries sector should have been an obvious comparative advantage for the Indonesian economy. Yet the industry is still relatively underdeveloped and hence provides significant room for growth to reach its optimal production capacity.
Investment in fishing boat building and fisheries processing, particularly seaweed, are two highly potential investment prospects. Investments in technology such as cold storage and commercialising Indonesia's ability in tuna aquaculture, or any other types of offshore aquaculture products, are also promising. Investors, however, might face obstacles in the form of poor transportation facilities and infrastructure, overfishing in certain areas, and socio-environmental issues such as certain concerns about human rights and/or environmentally destructive fishing methods.

2.6. Maritime education

Maritime education is the backbone of the Indonesian maritime industry. All sub sectors elaborated in this project require capable human resources with strong skills and know how. While there is a shortage of local maritime workers, the government is looking to increase local skills through development of new maritime programs and institutions, as well as cooperation with foreign education institutes.

Overview

With the country's focus on the maritime sector and its sub sectors, there will be a higher importance and priority to strengthen the capacity and capability of human resources in this arena. Maritime education consists of vast subjects to cover and, although there are overlaps, it can generally be divided into three categories:

- Fishery and aquaculture studies
- Seamanship and nautical studies
- Marine science and oceanology

Already many ties between Dutch schools and Indonesia exist. Students from Indonesia easily find their way to Delft Technical University, STC, or Erasmus University Rotterdam. STC actively uses NUFFIC funds for education and research, is setting up a training centre with the Pelindos, works with the ministries, private partners and universities and sees potential in ports, ship owners, shipyards, dredging, fisheries, navy and inland shipping. Supported by the Dutch government, the school is able to establish permanent footholds in Indonesia. Other schools, like ROC Kop van Noord Holland, also scout for new possibilities. Education is probably one of the strong linking pins between the Netherlands and Indonesia.

Fishery and aquaculture studies

Fishery is an organised effort to catch fish and other aquatic species, which includes both salt water and fresh water species. Aquaculture is the aquatic equivalent of agriculture where aquatic species are "farmed" and grown. In both types of fish production, some of the main subjects that students learn are on fisheries and aquaculture resource management, fisheries biology, marine and freshwater species, production technology, methods and impact of fishing, fish processing, and fish markets[51]. The public higher education and vocational schools in fishery and aquaculture are largely managed by the Ministry of Marine Affairs and Fisheries. There are a total of 17 schools, with nine vocational schools named Sekolah Usaha Perikanan Menengah (SUPM) or Fishery Business High School, five polytechnics, and five colleges[52].

On top of the educational institutions specialising in fishery and aquaculture listed above, there are some universities in Indonesia that offer a fishery and aquaculture major. Some of the more prominent ones are Gadjah Mada University (Jogja), Airlangga University (Surabaya), Brawijaya University (Malang), Diponegoro University (Semarang), Padjajaran University (Bandung), Hasanuddin Univerity (Makassar), and Satya Negara Indonesia University (Jakarta).

Other than the higher education and vocational schools, the Indonesian government has set up six training centres on marine and fisheries located in Sukamandi, Medan, Tegal, Banyuwangi, Aertembaga, and Ambon. These training centres bear the mission of producing competent human resources to sustainably manage and use marine and fishery resources with increased value added and industry competitiveness. The centres provide public training on various topics such as fishery management, seafood products processing, aquaculture, and maritime engineering[53].

Seamanship and nautical studies

This pertains to knowledge and skills in the operation, navigation, management, safety, and maintenance of a ship. Students study several main subjects including nautical knowledge, basic ship theory, marine safety, engineering mathematics and physics, cargo operations, etc. Other than being a sailor, graduates may also be equipped in skills to work in on-shore/off-shore drill sites. The public higher education and vocational schools in fishery and aquaculture are largely managed by the Ministry of Transportation. The international standard for seamanship and nautical studies is set by the International Maritime Organisation (IMO) and is referred to as Standards of Training, Certification, and Watchkeeping for Seafarers (STCW).

Many education institutions in Indonesia provide classes on seamanship and nautical studies. There are vocational schools and maritime academies for diploma or associate degree, and polytechnic and colleges for Bachelor's degree.

[51] University of Otago, retrieved May 2015, http://www.otago.ac.nz/courses/subjects/aqfi.html
[52] Ministry of Marine Affairs and Fisheries Training Centre
[53] Ministry of Marine Affairs and Fisheries Training Centre

Marine science and oceanology
This is a branch of Earth sciences that studies the oceans. Subjects under this study may include marine ecology (interaction of aquatic organisms and their environment), marine biology, ecosystem dynamics, ocean currents, waves, and geophysical dynamics, plate tectonics, geology of the sea floor, fluxes of various chemical substances, and physical properties within the ocean and across its boundaries[54].

In May 2015, Banyuwangi regency in East Java was established as the centre of excellence for marine and fisheries. The regency has massive potential for the maritime sector with it having the longest coastline in East Java and one of Indonesia's biggest fishing ports in Muncar, Banyuwangi. The regency was chosen because it already has established education institutions, high potential in the maritime sector, and strong commitment from the local government to develop and strengthen the sector further. Currently, there are already two vocational schools in fishery, two vocational schools in seamanship, and an aquaculture major in Airlangga University in Banyuwangi. The Banyuwangi training centre has excellent facilities with international standard trainings and research on fish processing, seaweed products, and development of fishing business[55].

There is an unmet demand for seafarers in Indonesia

Indonesia is the third largest supplier of seafarers after India and the Philippines. Currently Indonesia has around 250,000 internationally certified seafarers, compared to 400,000 Filipino seafarers. It is calculated that 250,000 seafarers in national and international workplaces would be able to contribute around US$ 1.3 billion of annual national revenue.

In terms of the market for maritime education and training, it is predicted that there is a global demand of 90,000 seafarers between 2013 and 2017. For domestic demand, in 2013 the Head of BPSEDM, the Ministry of Transportation, predicted that between 2010 and 2015 the need for seafarers reached around 44,000 people consisting of around 18,000 officers and 23,000 ratings. On the other hand, the national supply from the state maritime education and training only provide around 1,500 people plus 2,000 people from private institutions per year. This shows that Indonesia is in deficit of seafarers.

Public perception on seafaring as a profession also hampers growth in maritime education. MET is considered less attractive in terms of future prospects in the job market and work force.

[54] National Ocean Service, US Departmen of Commerce National Oceanic and Atmospheric Administration
[55] Mohammad Saifulloh. "Banyuwangi Ditetapkan Jadi Pusat Pendidikan Maritim Nasional". Okezone News, retrieved May 2015, http://news.okezone.com/read/2015/03/06/340/1114867/banyuwangi-ditetapkan-jadi-pusat-pendidikan-maritim-nasional

The government is looking to increase local maritime skills

Strengthening maritime education has become a key priority of the government moving forward. A representative of the Ministry of Marine Affairs and Fisheries has expressed that, to develop the current state of Indonesian human resources for fisheries, a vocational training system in the form of a "teaching factory" is the most suitable educational method. This is in line with Indonesian Law No. 20/2003 regarding the education system, which stipulates that the aim of vocational education or schools is to support and realise the national interest agenda.

Starting in 2015, new education institutions and training centres will be built and existing ones further developed. This plan includes development of:

- Ten new polytechnics on fishery and aquaculture
- Development of 24 units techno parks on fishery
- 2015 target of training 27,200 people

Furthermore, in compliance with the 2010 Standards of Training Certification and Watchkeeping (STCW) Amendment of the International Maritime organisation (IMO)'s, in 2015 the Indonesian government imposed a deadline of 31 December 2016 for Indonesian sailors to update their competency as defined in the standards. This means that, by 1 January 2017, those who have not updated their certificate of competency (COC) or their certificate of proficiency (COP) will not able to sail. To anticipate this, the Ministry of Transportation's Human Resources Development Unit (BPSDM Perhubungan) unit has facilitated training and education programs and short courses for sailors in public campuses managed by BPSDM Perhubungan.

In January 2015 the Ministry of Marine Affairs and Fisheries is establishing cooperation with the government of the United States of America (AS) to develop a formidable human resource in the field of fisheries and maritime affairs. Through the Human Resource Development Agency of Maritime Affairs and Fisheries (BPSDM KP), both countries hold an activity named Indonesia-America Network (IA-Net) in the fisheries college (STP) Jakarta.

Challenges

Indonesia faces several challenges in meeting the demand for human resources for the maritime industry, both in terms of quality and quantity[56].

Attractiveness of maritime profession

There is a need to enhance the attractiveness of domestic seafaring employment. Graduates are more interested in working for international companies. The current trend shows that eight out of ten graduates from the national seamanship colleges opt to gain working experience outside of Indonesia for reasons such as higher

[56] Ch Ahmad. "Indonesia Kekurangan SDM Maritim Andal". Varia, retrieved May 2015, http://www.varia.id/2014/12/12/indonesia-kekurangan-sdm-maritim-andal/; http://www.sindoweekly-magz.com/indonesia/magz/no-2-tahun-iv/belajar-berlayar-dan-berburu-dolar

remuneration and better working conditions. Currently, Indonesia has about 262,000 sailors working in country, and about 78,000 sailors working overseas.

Lack of education facility
The investment needed in many of the schools is very high. For example, most vocational schools do not have simulators that would be used as a practice tool and have to refer their students to the nearest university or college equipped with the simulator. Not all schools in Indonesia are able to meet IMO standards. Currently, only about 20 seamanship schools meet IMO standards, while the others fall below.

Language barrier
Many Indonesian graduates lack English language skills that enable them to communicate well and be competitive with sailors from other countries.

Various skills requirements
Indonesia has developed skills in three main areas: navy (TNI Angkatan Laut), seamanship, and fishery. There are various other skills that would be needed for a strong maritime country such as areas in maritime law, maritime tourism, and medicine from aquatic species, sociology and anthropology for coastal communities, etc[57].

Opportunities

Unmet demand for seafarers
The large gap between the supply and demand of seafarers provides an opportunity to close the gap. According to Masyarakat Transportasi Indonesia (MTI) or the Indonesia Transportation Society, the national maritime industry is in need of 7,000 sailors a year, where the yearly supply is only 21% of that at 1,500 graduates. The Ministry of Transportation estimated that Indonesia lacks about 18,000 sailors.

Cooperation with institutions
Create cooperation with existing Maritime Training and Education institutions, particularly private ones. This is because the maritime education sector is still fairly less developed, and therefore local institutions are eager to engage in partnerships with those who can provide higher quality education funding, expertise, and networking. The latter point is particularly seen as important by both graduates and the institutions, especially to the international job market.

Investment in maritime education and training facilities
There is a huge gap in those areas between international maritime education and training facilities with those in Indonesia. This makes it difficult for domestic institutions to compete with international institutions in producing quality graduates

[57] Anwar Iqbal. Maritim Miskin SDM, Indonesia Hanya Memiliki Tiga Keahlian di Laut. Indonesia Maritime Cognition, retrieved May 2015, http://jurnalmaritim.com/2014/12/maritim-miskin-sdm-indonesia-hanya-memiliki-tiga-keahlian-di-laut/

according to the current market needs. The export or manufacturing of modern maritime facilities and equipment clearly has the potential to grow in Indonesia.

Further expand and upgrade the use of Indonesian professionals
Already many hundreds of Indonesian seafarers are employed on board Dutch ships. The cost of East European seafarers is rising, and Indonesian seafarers could be a good alternative. Within the maritime sector, so far the Indonesian staff is over represented in the lower functions, but some companies have already discovered the possibilities of upgrading the Indonesian personnel by offering them trainings and permanent education. Indonesian management and or officers on board should become a reality, even though cultural differences remain an issue.

Conclusion

Across the entire maritime sector within all the investigated sub sectors there is a lack on skills and knowledge on various levels, from blue collar to management level.

There is an expected growth in local maritime education, driven by the higher importance and priority placed on the capacity and capability of Indonesian maritime human resources. The education sub sector is probably one of the strongest links between the Netherlands and Indonesia.

The challenges one needs to consider lay in the unattractiveness of the local maritime profession (as perceived by local graduates), lack of education facilities and language barriers. Once overcome, however, Dutch companies can benefit from investing in the often overlooked education sector since there is an unmet demand for local seafarers. Companies can achieve this through cooperation with local institutions and investment in education and training facilities.

2.7. Delta technology

Delta technology consists of three categories which are: dredging, port construction, and beach and island reclamations. These three categories are technically support actions and would be highly affected by the national maritime focus objectives.

Overview

Dredging
Dredging usually relates to either on sea/beach, which is meant for port maintenance, or river for environmental use. Most dredging works are done for port maintenance to remove sedimentation from the port.

Figure 39: Map of Indonesian dredging channel and harbour basin

Source: PT Rukindo 2011 Annual Report

As can be seen on the dredging channel map, the fast sedimentation of Indonesia's beaches renders the necessity of routine dredging, up to three times a year. We can conclude that the Indonesian dredging market could be categorised as high frequency and possesses high demand potential. Most local players in the industry are privately owned, with a limited number of state-owned companies taking active part in the sector.

Beach and island reclamation

Beach and island reclamation relates to adding sand to coastlines which have been degraded by erosion. Some beach reclamation occurs in Indonesia, including at the following locations:

Table 19: Beach reclamation in Indonesia

No	Locations	Island/Beach
1	Kawasan Teluk Jakarta	Beach
2	Jakarta Utara	Island
3	Mamuju, Sulawesi Barat	Beach
4	Denpasar, Bali	Island
5	Manado	Beach
6	Semarang	Beach
7	Makassar	Beach
8	Alor	Beach

There is a higher frequency of beach reclamations compared to those for artificial islands. There are, however, a number of planned large island reclamation projects. One of the largest projects is the reclamation for 17 artificial islands to be built on the coast of North Jakarta. As at the writing of this report, the project developers are still handling the regulatory issues related to the project. The Ministry of Marine Affairs and Fisheries claimed that, as the authority in maritime affairs, it has not yet granted the developers the licenses and permits required for the projects. Meanwhile, the developers claimed that they have acquired all the licenses and permits they need for the project, issued by the Jakarta state government as the authority holder in the city[58]. This is an example of where unclear regulations and lines of authority can create confusion and lengthened legal issues.

Other reclamation projects include the government plan to build a giant sea wall on the north side of Jakarta[59]. Most reclamation projects are done by property developers or their subsidiary, either independently or through a joint venture.

Marine construction is dominated by Dutch companies

In the local delta technology sector, local competitors have an advantage from a regulation viewpoint, as well as local preferences for government procurements. Foreign companies, however, have the advantages of more developed technology and know-how, since they are likely to have more advanced skills and tools to support delta technology activities. In addition, several foreign companies have leveraged their positions by having joint ventures with local contractors.

[58] Wiji Nurhayat. "Ini aruran yang jadi dasar KKP keberatas soal izin 17 pulau buatan Jakarta". Detik Finance, retrieved June 2015, http://finance.detik.com/read/2015/02/12/192128/2831672/4/ini-aturan-yang-jadi-dasar-kkp-keberatan-soal-izin-17-pulau-buatan-jakarta; Fakhrizal Fakhri. "Ahok siap berdebat reklamasi 17 pulau di teluk Jakarta". Okezone, retrieved June 2015, http://news.okezone.com/read/2015/06/05/338/1160911/ahok-siap-berdebat-reklamasi-17-pulau-di-teluk-jakarta

59 Anggara Pernando. "Reklamasi 17 Pulau Ini Dimulai 2015 Pasir Timbun dari Lampung", Bisnis Indonesia, retrieved June 2015 http://jakarta.bisnis.com/read/20141121/384/274507/reklamasi-17-pulau-ini-dimulai-2015-pasir-timbun-dari-lampung

For the Jakarta Coastal Defense project, for example, Dutch companies strive for a favourable Dutch consortium, although some critics suggest that an event more encompassing co-operation could further strengthen the Dutch business case.

Furthermore, in January 2015, Boskalis and Van Oord announced a new order for the design and construction of an artificial island off the coast of Jakarta. This multi-purpose plan has a contract value of € 350 m. It does not only cover land reclamation, but also soil improvement and coastal protection works.

Dutch companies active in Indonesian delta technology:

Table 20: Dutch companies active in Indonesia delta technology

No	Company	Sector
1	Royal Boskalis	Dredging
2	BAM International	Port, Dredging, Reclamation
3	BAM Infraconsult	Port, Dredging, Reclamation
4	Van Oord	Port, Dredging, Reclamation
5	Port of Rotterdam	Port
6	Arcadis	Marine Engineering Consulting
7	Deltares	Research and Development
8	Royal IHC	Shipbuilding
10	Royal Haskoning DHV	Marine Engineering Consulting
11	Witteveen & Bos	Marine Engineering Consulting

Recent projects with Dutch involvement:

Table 21: Recent projects

Project	Scope	Execution
Kapuk Niaga Indah Project	Sand supply for the reclamation of a polder island	2012 - 2014
Tanjung Priok	Port deepening, reclaiming land for a new terminal area and expanding and deepening the access channel	2013 - 2015
Surabaya Western Access Channel	Deepening and widening of channel to Port of Surabaya	2014 - 2015

There is an increased activity for marine constructions in the country

Focus on island connectivity
As discussed before in previous sections, this brings up a positive trend for growth in port construction and maintenance which includes dredging and beach reclamation. There are also many potential projects to develop sea channels and bridges as supporting marine infrastructure.

Many artificial island and beach reclamation projects
Indonesia is now developing numerous projects in building artificial islands. One of the most iconic beach and island reclamation projects is located in North Jakarta and started to be executed in early 2015. This mega project will also be done along with the giant sea wall project which requires an extensive amount of beach reclamation activity within the project. One of the main reasons for building an artificial island is to increase residential area, since the number of residences in several areas is increasing significantly while the land capacity remains unchanged. The tourism sector also needs beach reclamations for tourist attractions to flourish. It is likely that the reclamation trend will still be improving for years to come.

Challenges

Lag in research and technology development
Currently, Indonesia doesn't have an adequate research and technology development facility for the maritime industry. Indonesia will face tough competition to cope with the global level of technology and research.

Bureaucracy can be an obstacle for construction activities
Although there is high demand for artificial islands and the branding a company can gain from such projects, developers face bureaucracy issues where there are two conflicting regulatory bodies in permit and licensing issuance.

Unclear regulations
The government has established several regulations related to the maritime sector in order to protect the sustainability of the maritime environment and to nourish local contractors. These regulations are often unclear and might leave room for differing interpretations, causing confusion in their implementation. This issue is often seen as a difficulty for foreign contractors which need to comply with these unclear regulations.

Increasing competition
Although the Dutch companies have a solid reputation and a proven track record in this industry, the competition from other countries, primarily Asian countries is growing. China and Korea are entering the market by offering their services for very competitive rates. For Dutch and Belgian companies the offered rates are often too challenging to match.

Opportunities

Port construction and developments
The Indonesian vision to be a maritime fulcrum drives the port construction for sea channel integrations; new ports will be built to support this vision. This will need an extensive amount of contractors referring to the government plan in opening 24 new ports in future years.

Government is now open to foreign contractors
In the past years, the Indonesian government has been more reluctant to have foreign contractors in their projects. However, more foreign companies than ever before are invited and welcome to join the bidding for governmental projects.

Knowledge transfer to local players
In general, local construction companies have less advanced knowledge compared to foreign contractors. This opens up the opportunity to transfer the research and development knowledge for dredging and reclamation to Indonesia, as a channel to contribute to the local maritime development, as well as to build connections and good rapport.

Conclusion

Currently, the delta technologies sector in Indonesia is a market with high potential and it is going to develop for years to come especially in the dredging and beach and island reclamation sectors as one of the effects of government maritime objectives in shaping Indonesia to be a Maritime Fulcrum.

Major Dutch engineering, construction and dredging firms are active in Indonesia. Their contracts represent values of hundreds of millions of Euros. Their presence is a showcase of Dutch technology. An even stronger co-operation, with the involvement of Dutch export credit guarantees (Atradius DSB), could further strengthen the position. Very big projects should be brought back to tangible works, thus positioning the Netherlands as niche technology players instead of competitors to China, Japan and South Korea.

Investors can benefit by providing more advanced research and development for the technology in doing dredging and reclamations, especially because there is still a high demand for projects. In addition, knowledge transfer to local stakeholders would also likely be welcomed. In doing so, however, smaller companies can face tougher competition as the local dredging industry is mostly dominated by major global construction companies with extensive experience. The Netherlands has an excellent name in delta technology and coastal engineering, but will have to make a combined effort. This applies not only as an industry, but with government export guarantees as well.

3. Conclusion and recommendations

This report provides initial insights for those considering doing business in the maritime sector in Indonesia. The report is provided as a stimulant to further investigation, and is not intended to be the final word on these issues. It is meant to stimulate debate, and to encourage all Dutch stakeholders to work together more prominently, and to define concrete and practical steps forward. We have defined five categories of recommendations and next steps:

1. Pilot projects that generate and expand a sustainable foot print and bridge head for the Dutch maritime industry in Indonesia
2. Further in depth studies to gain further insight into sectors or stakeholders structures
3. Practical solutions to help companies to take their first successful steps into Indonesia
4. Bundling initiatives and ideas
5. Endorsing initiatives with a bilateral MoU between the GOI and the Dutch Government

To this end we believe the following steps would further benefit the Dutch maritime sector in its Indonesian investment efforts:

1. Develop pilot projects to enlarge and realise a sustainable Dutch maritime footprint.

- **Case 1. Spark off a maritime community**: in Indonesia there is a shortage of ship building and repair capacity, as well as a shortage of skilled labour and locally produced (affordable) and quality spare parts. Given the expected growth in Indonesia there is potential for a maritime community next to Batam that will provide the capacity, skills, training, financing, parts suppliers and refit capability. In addition, it has been reported that the GOI wants to develop/increase ship building capacity in Sumatra and Java, which makes sense from a geographical as wells as from a local community perspective. Such a development would increase and improve jobs, education and infrastructure, which will contribute to sustainable economic growth.

  It could be an option to explore an initiative in which local and Dutch companies join forces and start or expand contemporary repair or capacity on Sumatra or Java. This would automatically present the need for education and training, as well as the need for suppliers, technology, and (in a later stage) financing, lawyers and research and development (R&D). An initiative like this will create momentum, lower the entry barriers for smaller companies, and might grow into a bigger development which will leaves a sustainable legacy for the local and regional economy; it will also contribute to developing an efficient national shipping industry. Consequently the buy in from local, regional and central governments, as well as private local parties, unions, port operators and education institutes,

seems evident. The advantage for the Dutch maritime industry would be a concentration of effort, which can be leveraged over time to all sub sector industries. Although there will be a lot of regulations and possible unclear procedures to deal with, with the right mix of private parties and both the Dutch and GOI involved these hurdles should be able to be surmounted. A first step could be to identify potential partners as well as to execute an economic impact study, in parallel, to quantify the benefits, in order to create/strengthen buy in from the stakeholders.

- **Case 2. Develop a fishing boat building and maintenance concept which can be regionally rolled out in Indonesia.** In Indonesia there is a shortage of fishing capacity, as well as maintenance, ship building and repair capacity, labour and locally produced (affordable) and quality spare parts. This is all very similar to the issues discussed under Case 1. There is an immediate need for new ships, training, and spare parts. Given that fishery is a local industry, centres of construction, maintenance and supply need to be located across the country. There are already initiatives by the Dutch industry and government which could help to realise large parts of the concept, but to increase the impact and sustainability of the initiative it could be considered to include the elements of education, maintenance, finance and scalability. An additional positive point compared to Case 1, on the buy in from central government stakeholders, is the positive impact Case 2 would have as regards Indonesia's aim to be self-sufficient in terms of its food supply.

  Note: Indonesia is a country with a complex governance model (local, regional and central governments) which is not only dynamic but also might mean there are conflicting regulations as well as less obvious conflicts of interests of stakeholders involved in decision making and developments. Both elements slow down decision making as decisions present unknown risk. Hence, solving all regulatory issues prior to starting an initiative is often complex and time consuming (even if it is possible). A practical way to achieve goals, which is often applied, is to start by executing a pilot project and solving regulatory issues as the project progresses. An additional advantage of this approach is that the stakeholders involved are being educated in the process.

2. **Perform further investigative studies of fishery, ship building and supply investment opportunities.**
   We have carried out a comparison of the seven Indonesian maritime sub sectors, based on their presence, political framework, competition, urgency and momentum. While each of the seven sub sectors offers abundant investment potential, fisheries and ship building are particularly attractive. A further in depth study of these two sub sectors is likely to be beneficial for Dutch organisations looking to invest in the Indonesian maritime industry. Compared to the other sub sectors Dutch representation in the fisheries and ship building sub sectors is not yet very strong. The political and economic need is urgent, while at the same time the protective regulations seem to offer a positive incentive.

In general, maintenance and (spare) parts supply seems to offer an interesting opportunity because the maturity of the executing maintenance is low, as well as the focus on efficiency. However, regulations governing the distribution business are tough and it is a widespread sector. Our recommendation is to zoom in on this sector specifically, to identify the main opportunities and carry out a detailed overview of the competition, partners and regulatory constraints and requirements.

The study should present an investigative look at, and a detailed market analysis of, each of the sub sectors, covering deep and comprehensive analysis of, amongst other things:

- The current industry/market characteristics and developments, and the competitive position, in detail
- The related regulatory frameworks (e.g. incentives, taxes, ownership restrictions, licences), in detail
- Detailed stakeholder analysis in order to identify the process for obtaining licences, and the authorities in charge
- Concrete investment opportunities, potential partners
- Action plan

3. **Establish practical initiatives which facilitate Dutch organisations in need of market entry assistance, such as carrying out preliminary studies, undertaking market inquiries, and assisting with business establishment.** Such initiatives can have a big impact, especially in Indonesian markets where a single reliable official source of information can at times be challenging to find, and relationships and good rapport are proven to help smooth the process of organising market entry. Examples of initiatives which would facilitate market entry are:
    - Establishing a (virtual) Dutch desk. This service would have the objective of assisting Dutch organisations with any inquiries and information needs, and would help provide an understanding of investment opportunities, challenges, processes and legal requirements in Indonesia. It would also facilitate a platform for companies with an interest in Indonesia, where informal relations can grow and ideas can be elaborated.
    - Create awareness of the Dutch maritime brand. Strong branding and industry awareness will give Dutch organisations a head start and increase their competitiveness, as well as open opportunities. Initiatives that aid and help create a stronger brand include, for example, trade shows, industry forums or roundtables, conferences, Dutch Indonesia maritime associations and bid books.

- Create business partnering services for Dutch companies to help them to enter into relations with local players. Finding a suitable business partner to meet both organisations' specific requirements is a challenging task, especially for smaller companies that are new to the Indonesian market. As explained previously in the report, regulations often limit foreign investors' ownership of Indonesian maritime businesses. Furthermore, teaming up with a good local partner will help smooth and speed up issues related to the local community and regional stakeholders. Matching potential business partnering will encourage the transfer of knowledge, ideas and capabilities between the organisations involved, thus will benefit both local and foreign players.

- Leverage and institutionalise the networks of major (Dutch) companies already established in Indonesia (e.g. Van Oord, Shell, Boskalis, Haskoning, but also non-maritime related companies like Unilever and Heineken). This applies specifically to smaller companies who are (potential) suppliers to these companies.

4. Centralise all initiatives and ideas, and bundle efforts and knowledge.
When discussing the suggestions above it became apparent that some ideas have been partly elaborated and potential partners are already identified. However, these were not widely known, which could cause sub optimal solutions or duplication of work. This confirms remarks that the weakness of the Dutch maritime industry lies in its fragmented approach to the Indonesian market. We recommend collecting and bundling ideas and making them available through a central platform (e.g. combined with recommendation 3). Possibly, link this effort with the already existing country platform organized by NWP, and as such create an encompassing Topsector Water approach to Indonesia.

5. Realise a MoU.
Give a formal endorsement to initiatives by signing a maritime MoU between the Dutch and Indonesian governments. This would help in realising initiatives. It might help bring about the maritime fulcrum idea by offering Dutch expertise, facilitating Dutch trade with Indonesia and lowering barriers where possible.

"Dimana bumi dipijak disana langit dijunjung"

This Indonesian saying means 'where the land is stepped on, the sky is upheld'. In other words, every community has its own unique traditions which work well in that community. By adjusting and adapting to the rich culture of Indonesia in a right way, one can reap the benefits of a good and respectful co-operation in its maritime economy which has a bright future ahead. Doing business in Indonesia takes time to building formal and informal relations, local presence, local partners and showing long term commitment. Although not always easy, doing business in Indonesia can be very rewarding as is shown by so many examples of Dutch or other foreign companies who operate in Indonesia.

4. Appendices

4.1. List of Dutch Companies currently operating in Indonesia's maritime industry

No	Name of Company	Sub sector
1	Arcadis	Marine Engineering Consulting
2	Anthony Veder	Shipping
3	Baminternational Baminfraconsult	Marine Engineering Consulting and Contractors
4	Carlsen	Marine equipment
5	CSI systems	Marine contractor
6	Damen Shipyards Group	Shipbuilding
7	Deltares	Research and Development
8	De Bock Maritiem	Shipping
9	HMSA	Marine contractor
10	Moerman	Shipping
11	Royal Boskalis	Dredging
12	Royal Haskoning DHV	Marine Engineering Consulting
13	Royal IHC	Shipbuilding
14	Shell	Offshore oil and gas
15	STC Group	Education
16	Oliveira	Marine contractor
17	Port of Rotterdam	Ports operator
18	Van Oord	Marine contractor specialising in dredging, marine engineering and offshore projects
19	V-Step	Marine contractor
20	Vopak	Tank storage provider for oil and chemical industry
21	Vroon	Offshore oil and gas; shipping
22	Wagenborg	Shipping
23	Witteveen & Bos	Marine Engineering Consulting

4.2. List of Interviewee

No	Interviewee	Institutions
1	Antoinette Willemsen	CSI Systems
2	Bani M. Mulia	Samudera Indonesia
3	Charles Menaro	Meratus Line
4	Eddy K. Logam	Indonesian Association of Shipbuilders (IPERINDO)
5	Elmar Bouma	Indonesian Netherlands Association
6	Filip Olde Bijvank	Vroon Offshore
7	Fotigui Camara	ROC Kop van Noord Holland
8	Gilbert de Bock	De Bock Maritime
9	Gysbert Boersma	Damen Shipyards
10	Harry Strikwerda	Oliveira Hydraulics
11	Hendrikus Postma	PT Asia Shipyard
12	Henk Gennissen	Carlsen
13	Henry Sandee	The World Bank
14	Jakob Friis Sorensen	Maersk Line Indonesia
15	Joost Dijkhuizen	Ministry Infrastructure & Environment of the Kingdom of the Netherlands – Directorate Maritime Affairs
16	Joost van Ree	V-Step
17	Marjan Lacet	NMT
18	Dr. Maskur	Indonesian Ministry of Maritime & Fishery - Directorate General of Aquaculture
19	Michiel de Lijster	Ministry Infrastructure & Environment of the Kingdom of the Netherlands – Directorate Water
20	Peter Halm	Embassy of the Kingdom of the Netherlands
21	Peter van der Hulst	Van Oord
22	Philip de Bats	Royal IHC
23	Sander Riemersma	APMT
24	Siebe Schuur	Embassy of the Kingdom of the Netherlands
25	Dr. Sonny Koeshendrajana	Indonesian Research Centre for Marine and Fisheries Socioeconomics
26	Rudy Salahuddin	Indonesia Investment Coordinating Board - Directorate of Infrastructure Investment Planning
27	Robbin Mulder	Ministry of Foreign Affairs of the Kingdom of the Netherlands
28	Rob Nijman	Pon/Bakker
29	Rutger Pol	Ministry Infrastructure & Environment of the Kingdom of the Netherlands – Directorate Maritime Affairs
29	Ruud Liem	IRO
30	Ton Wouterse	Rabobank

4.3. List of tables

List of local maritime education institutes in naval and nautical studies

Type of Educational Institution	Name / Location	
Sekolah Menengah Kejuruan (SMK) Pelayaran / Maritime Vocational High School	Padang (West Sumatra) Mengkopot Tasik Putri Puyu (Riau) SMK Satria Bahari (Lampung) SMK Negeri 1 (Belitung) SMK Negeri 1 (Cirebon)	
Maritime Academy	Akademi Maritim Aceh Darussalam (Aceh) Akademi Maritim Nusantara Malahayati (Aceh) Akademi Maritim Indonesia (Medan) Akademi Maritim Belawan (Medan) Akademi Maritim Sapta Samudra (Padang) Akademi Maritim Mengkopot Tasik Putri Puyu (Riau) Akademi Maritim Bina Bahari (Palembang) Akademi Maritim Guna Nusantara (Cilegon) Akademi Maritim National (Jakarta) Akademi Maritim Djadajat (Jakarta) Akademi Maritim Pembangunan (Jakarta) Akademi Maritim Suka Bahari (Cirebon) Akademi Maritim Nusantara (Cilacap)	Akademi Maritim Jogjakarta (Jogja) Akademi Maritim Ganesha Jogjakarta (Jogja) Akademi Ketatalaksanaan Pelayaran Niaga Bahtera (Jogja) Akademi Maritim Nusantara (Banjarmasin) Akademi Maritim Indonesia (Samarinda) Akademi Maritim Indonesia (Bitung) Akademi Maritim Indonesia Aipi (Makassar) Akademi Maritim Indonesia Veteran (Makassar) Akademi Maritim Maluku (Ambon) Akademi Pelayaran Nasional Surakarta (Solo) Akademi Pelayaran Niaga Indonesia (Semarang)
Polytechnic	Politeknik Ilmu Pelayaran (Semarang) Politeknik Ilmu Pelayaran (Makassar) Politeknik Ilmu Maritim Indonesia (Semarang)	
Sekolah Tinggi Ilmu Pelayaran (STIP) / College of Maritime	Sekolah Tinggi Ilmu Maritim Mutiara Jaya (Lampung) STIP Jakarta (DKI Jakarta) Sekolah Tinggi Ilmu Maritim AMI (Jakarta) Sekolah Tinggi Maritim dan Transport AMNI (Semarang)	

Type of Educational Institution	Name / Location
Balai Pendidikan dan Pelatihan Ilmu Pelayaran (BP2IP)/ Maritime Education and Training Centres	Aceh Tangerang Jakarta Surabaya Makassar Sorong

Source: Ministry of Marine Affairs and Fisheries Training Centre

List of local maritime education institutes in fishery studies

Type of Educational Institution	Location	Education Programs
Sekolah Usaha Perikanan Menengah / Fishery Business Vocational High School	Ladong (Aceh) Pariaman (West Sumatra) Kota Agung (Lampung) Tegal (Central Java) Bone (South Sulawesi) Pontianak (West Kalimantan) Waiheru (Maluku) Sorong (West Papua) Kupang (Nusa Tenggara Timur)	Nautical Seawater Fishery Maritime Engineering Aquaculture Technology Seafood Product Processing Technology
Polytechnic	Sidoarjo (Eash Java) Bitung (North Sulawesi) Sorong (West Papua)	Fish Catch Technology Fishery Machinery and Equipment Aquaculture Technology Seafood Product Processing Technology
Sekolah Tinggi Perikanan (STP) / College of Fishery	Jakarta (DKI Jakarta) Serang (Banten) Bogor (West Java) Karawang (West Java) Wakatobi (Southeast Sulawesi)	Fish Catch Technology Seafood Product Processing Technology Maritime Engineering Aquaculture Technology Marine Resource Management Technology Fishery Capacity Building

Source: Ministry of Marine Affairs and Fisheries Training Centre

Major local players in shipping and shipbuilding

Selected Company	Shipbuilding (GT/year)	Ship repair (GT/year)
PT Dok & Perkapalan Kodja Bahari (Persero)	60,000	2,200,000
PT PAL Indonesia (Persero)	150,000	360,000
PT Dok & Perkapalan Surabaya (Persero)	10,000	300,000
PT Jasa Marina Shipyard	12,000	130,000
PT Industri Kapal Indonesia (Persero)	7,000	112,500
PT Intan Sengkunyit	6,000	30,000
PT Samudera Marine Indonesia	25,000	600,000
PT Waruna Nusa Sentana	10,000	200,000
PT Bandar Victory Shipyard	21,000	90,000
PT Dok Perkapalan Air Katung	7,000	70,000

Major local players in delta technology

No	Company	Sector
1	PT Alas Watu Utama	Dredging
2	PT Indo Straits	Dredging
3	PT Jakarta Propertindo	Reclamation
4	PT Jaladri Eka Paksi	Reclamation
5	PT Kapuk Naga Indah	Reclamation
6	PT Manggala Krida Yuda	Reclamation
7	PT Muara Wisesa Samudra	Reclamation
8	PT Pelindo	Port, Dredging, Reclamation
9	PT Pembangunan Jaya Ancol	Reclamation
10	PT Pengerukan Indonesia	Dredging
11	PT Radian Utama Interinsco	Dredging
12	PT Srana Bahari Cemerlang	Dredging
13	PT Taman Harapan Indah	Reclamation

Forecast of Container Traffic at Indonesia Ports (in million TEUs)

Year	International	Domestic
2015	10.6	6.5
2016	11.6	7.2
2018	12.6	7.8
2019	13.6	8.5
2020	14.6	9.2
2021	15.7	10
2022	16.7	10.6
2023	19.1	11.4
2024	20.3	12.2
2025	21.6	13
2026	23	14.6
2027	24.5	15.4
2028	26	16.3
2029	27.6	17.3
2030	29.4	18.3
The ports included this data set are Tanjung Priok (excluding JICT), Panjang, Palaembang, Teluk Bayer, Pontianak, Banten, Jambi, Sunda Kelapa, Bengalu, Balam, and Panadan.		

Source: Nathan Associates, Inc.

Indonesian ports draft

Port	Company	Draft (m)
Belawan	Pelindo I	10
Pontianak	Pelindo II	5.5
Panjang	Pelindo II	13
Tanjung Priok	Pelindo II	14
Balikpapan	Pelindo III	13
Banjarmasin	Pelindo III	7
Tanjung Perak	Pelindo III	12
Tanjung Emas	Pelindo III	9
Makassar	Pelindo IV	12
Bitung	Pelindo IV	12
Sorong	Pelindo II	20
Singapore	Foreign port	16
Rotterdam	Foreign port	24

Source: Business review on Domestic Container Main Sea Corridor, Drewry Report

Ports administered under Pelindo I-IV

Port Corporations	Coverage (Provinces)	Ports administered
Pelindo I	Aceh, Sumatra Utara, Riau	Belawan Dumai Tanjung Pinang Lhokseumawe Pekanbaru Tanjung Balai Karimun Sibolga Tembilahan Malahayati Tanjung Balai Asahan Kuala Tanjung Sungai Pakning Batam
Pelindo II (IPC)	Sumatra Barat, Jambi, Bangka Belitung, Sumatra Selatan, Bengkulu, Lampung, Jakarta, Banten, Kalimantan Barat, Jawa Barat	Tanjung Priok Sunda Kelapa Panjang Palembang Teluk Bayur Pontianak Cirebon Jambi Bengkulu Banten Pangkal Balam Tanjung Pandan
Pelindo III	Kalimantan Tengah, Kalimantan Selatan, Nusa Tenggara Barat, Nusa Tenggara Timur	Tanjung Perak Tanjung Intan, Tanjung Wangi Sampit Tanjung Tembaga Bima Tanjung Emas, Trisakti Benoa Kotabaru Kumai, Maumere Gresik Tenau Kupang Lembar Celukan Bawang TPK Semarang

Source: IPC 2013 Annual Report

Indonesia Maritime Hotspot

The "Indonesian Maritime Hotspot" initiative is one of a series of programs introduced by the Stichting Nederland Maritiem Land, or NML. This program is executed with the objective to present a view on Indonesia's maritime sector. In particular, it should help maritime stakeholders and key players to answer the challenges and investigate improvement opportunities the Dutch maritime industry can contribute to Indonesia's development.

Indonesia offers many investment opportunities for foreign investors in numerous maritime sub sectors because of the following:

- Indonesia has favourable geographic characteristics. It possesses an abundance of both renewable and unrenewable resources such as fisheries and offshore oil and gas. Moreover, Indonesia's strategic geographic location between two oceans and two continents creates high trading potential. As an archipelago consisting of more than 17,000 islands, a well-functioning shipping industry is a basic requirement.
- The Global Maritime Fulcrum program of the new government has motivated the central government to directly implore and invite foreign companies to invest in various Indonesian maritime sub sectors.
- Increased trade likely to be brought by the ASEAN Economic Community will accelerate the need for investment in maritime infrastructure, as well as bring an influx of goods to and from Indonesian ports.
- Nevertheless, there are certain challenges towards investing in Indonesia's maritime sector. They are:
- Regulations and governance imposed challenges prohibit or limit foreign investments in certain sub sectors.
- Rules and regulations are frequently subject to change.
- Local bureaucracies, with numerous government institutions handling the same issues, are often complicated and tough to navigate, especially for foreign companies with limited experience and/or local connections.

While rich in natural resources and investment potential as well as focused in its maritime ambitions, Indonesia can be a challenging market due to its malleable regulations that at times can be unclear and prone to changes. Connections and good relations with local players, related government institutions, and other stakeholders are likely to bring advantages and ease both the set up and daily operation of foreign businesses. Internally, Dutch maritime organisations have to bundle their forces and create a collective effort in establishing and promoting their ventures in Indonesia.