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Methodology

This report provides general information regarding the Indonesian fisheries sector particularly on capture fish and aquaculture. Additionally, the aim of this report is to highlight the potential of the sector for European companies interested in both trading and investment in Indonesia.

In the preparation of this report, EIBN used various methods and sources that are briefly described here. General information about the fisheries sector was gathered from publicly available sources, such as news articles, the official websites of the Ministry of Marine Affairs and Fisheries, as well as the Food Agriculture Organization of The United Nations (FAO), and the Indonesia Statistic Center. Further publications (Spire Research and Consulting), and information from events (EIBN Cold Chain Info Session and Joint Session Investment Negative List by TCF, BKPM, and Eurocham) relevant to the sector have been used. In addition, EIBN also conducted direct interviews with representatives from the Ministry of Marine Affairs and Fisheries (Directorate of Product Competitiveness of Marine Affairs and Fisheries and Directorate of Fish Health and Environment).

Where the latest official data was not yet publicly available, data from previous years has been used. For example, where data and figures for 2015 and 2016 were not yet available, data and figures from 2014 and 2015 were used. Any data included has been referenced in the report.
Executive Summary

The predominant purpose of this report is to provide an overview of Indonesia's fisheries sector and highlight potential business opportunities for European companies interested in this market. With its abundance of natural resources, Indonesia is one of the largest fish producers in the world with total production reaching approximately 20 million tons. Indonesia is also known as one of the biggest shrimp exporters and the largest seaweed producer in the world.

Recently, Indonesian fisheries entered a new paradigm particularly since the new Indonesia President Mr. Joko Widodo appointed Mrs. Susi Pudjiastuti as Minister of Marine Affairs and Fisheries (MMAF). Under her administration, the fisheries sector grew rapidly throughout 2015, which can be seen clearly from the sector’s GDP growth increasing from 7.33 % in 2014 to 8.3% in 2015. These numbers even exceed the national GDP growth of 4.7% in 2015. A total production increase of Indonesia’s fishery is also reported from 20.44 million tons in 2014 to 23.99 million tons in 2015.

The potential of the fisheries sector in Indonesia is also accompanied by the need to improve the management of fish production, as further challenges remain. For instance; 98% of Indonesia’s fishermen still work in a traditional way and there is a lack of infrastructure especially outside of Java island where there is a limited cold chain system. To improve the fisheries sector, the government, through the Ministry of Marine Affairs and Fisheries, has taken firm action to eradicate Illegal, unreported, and unregulated (IUU) fishing in Indonesia’s territory by sinking 174 illegal boats (by April 2016), it has started projects such as improving the quality of national fishery products, and it has begun building integrated fisheries and marine resources development centers on outer islands across Indonesia.

In addition, the Indonesian government has various opportunities for foreign companies interested in the country’s aquaculture and fish processing industry. To enhance the management of the fisheries sector, as well as to boost investment, MMAF has improved some policies in 2016 and a new investment negative list has been released. In this list, capture fisheries belongs to the business fields closed for foreign investors. On the other hand the list opens opportunities for foreign investors in the aquaculture and fish processing industry. In the cold chain system sector, cold storage is opened for 100% foreign ownership, while the processing industry is opened for foreign investors under the condition of collaboration with Indonesia SMEs.
I. Introduction

Nowadays, people live in an era of globalization where there is only one single market. It means countries have to compete with others for the attention and trust of the world’s consumers, tourists, and investors.\(^1\) Acknowledging the challenge, Indonesia’s President, Joko Widodo, plans to make Indonesia a global maritime axis. In order to be ready for the start of the ASEAN Economic Community (AEC) in early 2016, the Indonesian government decided to strengthen the country’s maritime and fisheries sector. Indonesia has great potential in maritime and fisheries as it is the world’s largest archipelago and has abundant natural resources.

The main objective of this market study is to provide an overview of the fisheries industry in Indonesia, particularly on the sectors of wild-capture fisheries and aquaculture, while also highlighting existing opportunities and challenges for European companies wanting to enter the Indonesian market. For the latter, this report provides information on initiatives by the Indonesian government to support and strengthen national fisheries, as well as information on other relevant national policies and regulations.

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II. General Overview of Indonesia Fisheries Sector

Indonesia is the largest archipelago in the world comprising of more than 17,500 islands and a sea area of 5.8 million square kilometers, covering 0.3 million square kilometers of territorial seas, 2.95 million square kilometers of archipelagic waters, and 2.55 million square kilometers of Exclusive Economic Zones (ZEEI). Indonesia’s coastline is the fourth longest in the world. Furthermore, Indonesia has a geopolitically important position as it is located between Asia and Australia, as well as the Pacific and Indian Oceans. Indonesia thus has the potential to become a global maritime axis for a trade and supply chain system that connects the Asia Pacific region with Australia.

Figure 1: Map of Indonesia’s Fisheries Management Area (11 FMA)

Source: Indonesian Fishing Ports 2009, Directorate General of Capture Fish, Ministry of Marine and Fisheries, 2009

Indonesian waters are divided into 11 Fisheries Management Areas (FMA) by the Ministry of Marine Affairs and Fisheries’ decree No. PER. 01/MEN/2009. These areas are:

1. FMA 571: Strait of Malaka, Strait of Hindia (West of Sumatera)
2. FMA 572: Indian Ocean (West of Sumatera) – Sunda Strait
3. FMA 573: Indian Ocean (South of Java) – South of Nusa Tenggara - Sawu Sea - West of Timor Sea
4. FMA 711: Karimata Strait - Natuna Island – South China Sea
5. FMA 712: Java Sea
6. FMA 713: Makassar Strait – Bone Bay – Flores Sea – Bali Sea
7. FMA 714: Tolo Bay – Banda Sea
8. FMA 715: Tomin Bay – Maluku Sea – Halmahera Sea – Ceram Sea – Berau Bay
9. FMA 716: Sulawesi Sea – North of Halmahera
10. FMA 717: Cendrawasih Bay - Pacific Ocean
11. FMA 718: Aru Sea – Arafuru Sea – East of Timor Sea
Two thirds of Indonesia’s territory is surrounded by sea which makes the country abundant with natural resources and results in a big potential for its fishery industry. According to the decree of the Ministry of Marine Affairs and Fisheries Number KEP.45/MEN/2011, the potential of fish resources in Indonesia’s territorial seas and the ZEEI is estimated to be 6.8 million tons per year. Moreover, Indonesia is one of the most bio-diverse marine areas in the world, having approximately 8,500 fish species, 555 seaweed species, and 950 coral reef species. In addition, Indonesia’s marine sources cover 37% of fish species in the world, of which some, such as tuna, shrimp, lobster, coral fishes, seaweed, and other kinds of ornamental fish, have great economic value. With Indonesia’s wealth of marine resources, it comes as no surprise that this country is currently the largest seaweed provider in the world and one of the largest global suppliers of tuna, and shrimp. Additionally, with its rich fish resources, the country is also able to supply 30% of the world’s fishery product needs.

In Indonesia, 70% of fish production is consumed fresh, while 30% is eaten in preserved or processed form. Skipjack tuna is reported to be the most commonly consumed marine fish, followed by anchovy and Indian mackerel, whereas for inland species, tilapia ranks first followed by catfish and common carp.

Figure 2: Fish Consumption in Indonesia by Province in 2013 (kg/capita/year)

2 Laporan Kinerja Satu Tahun Kementrian Kelautan dan Perikanan, 2015, p.12
4 TCF, TCF Sector Propositions: Investing in Indonesia’s Fisheries sector, 2015,p.4
5 Devy Ernis, Kata Susi: Indonesia Pemasok 30 Persen Ikan Dunia, February 6, 2015. Available at: https://m.tempo.co/read/news/2015/02/06/090640380/kata-susi-indonesia-pemasok-30-persen-ikan-dunia
6 Ibid
7 Ibid
Indonesia is the 4th most populous country in the world with a population of over 250 million, which makes it a major seafood consumer. Figure 2 shows that most of Indonesia’s population consumes fish, especially those in Kalimantan, Sulawesi, Maluku, Papua, and Sumatera islands. The red areas indicate where fish consumption is lowest. Central Java has a consumption of less than 20kg/capita/year. The yellow areas show where fish consumption lies between 20 and 31,4 kg/capita/year, and the green areas present the provinces with the highest levels of fish consumption. Except for Java, Lampung Bengkulu, Bali, West and East Nusa Tenggara, almost all areas in Indonesia consume more than 31,4 kg of fish per capita per year. Additionally, the consumption of fish in Indonesia is increasing every year. From 2010 until 2015, consumption of fish increased by 6,27 % due to the “Gemar Makan Ikan” (“Eating Fish”) campaign conducted by a local organization called Fish Consumption Improvement Forum (Forikan). In 2011, annual fish consumption in Indonesia stood at 12,8 kg/capita, while in 2013, the average of fish consumption in Indonesia increased to 36,12/kg/capita/year. In 2015, fish consumption increased up to 41,11 kg per capita per year.

2.1 The Role of the Fisheries Sector in Indonesia’s Economy

The fisheries sector is one of sectors that has greatly contributed to the national economy. The fishery sector’s contribution to Indonesia GDP has increased each year from 2010 to 2014. During 2010-2012, the fisheries sector contributed 2,90%, 2,91%, and 2,97% respectively. Additionally from 2013-2014 the contribution of fisheries sector to national GDP reached 3,06% and 3,25%. In 2015 the contribution of the fisheries sector to GDP decreased to 2,53%. However, the GDP growth of this sector has increased for the last 2 years from 2014-2015.
Despite the slower growth of Indonesia’s economy in 2015 compared to 2014, the fishery sector’s GDP growth increased from 7.3% in 2014 to 8.3% in 2015, which it almost double the growth of the national GDP of 4.7% in 2015. Figure 3 shows that the country’s fisheries sector is continuing to grow. This is due to the efforts of local fisherman as well as the firm action by Indonesian government to tackle matters of illegal fishing in Indonesian waters. The successful collaboration between Indonesian government bodies, such as the Ministry of Marine Affairs and Fisheries, the Indonesian Navy, the Indonesian National Police, the Indonesian Public Prosecution Service, and the country’s Coast Guard has received appreciation from Indonesia’s President Joko Widodo. Due to the joint institutional efforts to protect Indonesia’s fishery industry from IUU (Illegal, unreported, and unregulated) Fishing practices and further strengthening the sector with various measures, the country was able to increase its fishery production from 20,40 million tons in 2014 to 23,99 million tons in 2015.

Furthermore, the growth of the fishery sector’s GDP has also been followed by an increase of total exports of fishery products from Indonesia to foreign countries. There was an increased of 8.4% to total export in 2014 as it reached USD 3,1 million. In 2015, the total exports rose to USD 4 million. The biggest importers of Indonesian fishery products are the United States (41%), followed by Japan (16%), Europe (12%) and the ASEAN countries (11%). Total exports recorded in the third quarter of 2015 show that shrimp was the biggest export commodity, worth

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14 Ibid.
15 Ibid.
USD 1.39 million, followed by tuna, skipjack, and little tuna with a value of USD 491,000, and crab as with a total value of USD 29.51 million.\textsuperscript{17}

| Table 1: Indonesia’s Exports of Fishery Products to the European Union, 2009-2013 |
|------------------|------------------|------------------|------------------|------------------|------------------|
| **COMMODITIES**  | **2009**          | **2010**          | **2011**          | **2012**          | **2013**          |
|                  | **VOLUME (ton) | **VALUE (USD 000)** | **VOLUME (ton) | **VALUE (USD 000)** | **VOLUME (ton) | **VALUE (USD 000)** | **VOLUME (ton) | **VALUE (USD 000)** | **VOLUME (ton) | **VALUE (USD 000)** |
| Shrimp           | 23.689          | 146.597           | 19.842          | 147.816           | 16.659          | 144.234           | 16.359          | 111.911           | 18.209          | 151.051           |
| Tuna/Skipjack    | 13.370          | 39.844            | 12.763          | 34.366            | 30.134          | 97.481            | 27.803          | 123.505           | 41.594          | 180.258           |
| Fish             | 16081           | 45483             | 27.597          | 81.923            | 36.440          | 147.902           | 28.037          | 136.740           | 15.972          | 78.419            |
| Crab             | 1459            | 8258              | 985             | 6.756             | 1.158           | 11.321            | 1.261           | 12.626            | 1.705           | 17.048            |
| **TOTAL**        | 73.546          | 293.344           | 80.421          | 330.680           | 102.334         | 459.923           | 87.116          | 445.890           | 100.699         | 534.073           |

Source: Artati Widiarti, Exploring Market Opportunities and Challenges in the Fisheries Sector Between Indonesia and EU Countries, EIBD 2014 Presentation, p.22

The European Union is the world’s biggest importer of fish, seafood, and aquaculture products\textsuperscript{18}. Therefore, it comes as no surprise that European Union member countries are the fifth biggest importers of Indonesian fishery products. According to table 1, in 2013 the value of exports of products from Indonesia to the EU reached USD 534 million. The main fish commodities exported to the EU between 2009 and 2013 were shrimp, tuna, and skipjack.

2.2 The Role of the Fisheries Sector in terms of National Food Security and For the Creation of Employment

Indonesia’s fishery sector not only plays an important role in contributing to the National GDP, but also has great value when it comes to national food security and the creation of employment. In Indonesia, food security is an important issue since it determines the availability of food and ensures the prosperity of the population. The increasing production of fish generally supports the country in being able to fulfill the population’s food consumption needs. Therefore, Indonesia’s government conducted the “Eat Fish” or “Gemar Makan Ikan” campaign in all provinces in order to make Indonesians aware of the nutritional benefits of fishery products and thereby fulfilling the country’s consumption and nutritional needs.


Furthermore, the fishery sector provides employment and still is an important motor for the creation of work. As 70% of Indonesia’s land is surrounded by the sea, the sea provides livelihood opportunities, especially for people living along the coastline. Due to the country’s rich fishery resources, many Indonesians in the country’s rural areas earn a living in fishery-related activities. As of 2013, the country’s fishery industry has employed 12.3 million people in both the up and downstream sectors.\(^\text{19}\)

\(^{19}\)Gordon and Betty Moore Foundation, *Menjelajahi Masa Depan Perikanan Budidaya Indonesia*, p.5 2017  
www.eibn.org
III. The Fisheries Sector in Indonesia

The fisheries industry can be divided into two basic subsectors, together covering three main fields of activities:

1. The upstream industry covers the activities of fish capture, aquaculture and fish farming;
2. The downstream industry describes all activities related to the processing of raw materials up to the consumable end product.

![Figure 4: Activities of the Fishery Sector in Indonesia](image)

Source: Spire, Value Chain Analysis of Marine Fish Aquaculture in Indonesia, 2014, p.18

Each of these basic three activities can be divided into sub-sectors, for instance: fish capture consists of the two sub-activities of marine and inland fishery; aquaculture’s sub-activities are further divided into pond, paddy field, cage, and floating cage fish farming; and the field of fishery processing consists of activities such as boiling, smoking, canning, fermentation, freezing and salting.

3.1 Indonesia’s Capture Fish Sector

Fishing activities in Indonesia are divided into the two sub-activities of marine and inland fishing. In Indonesia, marine capture is more popular than inland capture. This is demonstrated through the total production of inland fishing production during 2014, which amounted 420,190 tons, compared to the total production of marine capture production, which reached 6 million tons. Inland fishing normally take places in lakes, reservoirs and rivers. Indonesian fisherman still use traditional tools such as hand lines, cast nets, traps and gillnets. Fisherman in this subsector usually do not work full time in fishing, but are also work part-time in the agriculture industry. The biggest challenge that inland fishing is confronted with is the pollution of rivers and lakes by agricultural pesticides and human waste from large urban areas.

As a tropical country, Indonesian waters provide a multiplicity of fish ranging from demersal to pelagic species, including for example snappers, groupers, tunas (mostly skipjack, yellowfin, bigeye), penaeid shrimp and squids. Demersal, small-pelagic, and shrimps mostly come from fishing on the continental shelf in the Malacca Strait, the southern part of the South China Sea, the Java Sea and the Arafura Sea, whereas most of the large pelagic species such as for example tuna (skipjack, bigeye and yellowfin tuna), are caught in archipelagic waters in the mid and eastern part of the country, the high seas as well as in the Indonesian EEZ.

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21 Ibid
22 Ibid
Table 2: Estimation of Fish Resources Potential in Fisheries Management Areas (thousand ton per year)

<table>
<thead>
<tr>
<th>Type of Fish Species</th>
<th>Strait of Malacca</th>
<th>Indian Ocean</th>
<th>Indian Ocean</th>
<th>South China Sea</th>
<th>Java Sea</th>
<th>Makassar Strait</th>
<th>Banda Sea</th>
<th>Tomini Bay-Ceram Sea</th>
<th>Sulawesi Sea</th>
<th>Pacific Ocean</th>
<th>Arafuru Sea-Timor Sea</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FMA 571</td>
<td>FMA 572</td>
<td>FMA 573</td>
<td>FMA 711</td>
<td>FMA 712</td>
<td>FMA 713</td>
<td>FMA 714</td>
<td>FMA 715</td>
<td>FMA 716</td>
<td>FMA 717</td>
<td>FMA 718</td>
<td></td>
</tr>
<tr>
<td>Large Pelagic</td>
<td>27.7</td>
<td>164.8</td>
<td>201.4</td>
<td>66.1</td>
<td>55.0</td>
<td>193.6</td>
<td>104.1</td>
<td>106.5</td>
<td>70.1</td>
<td>105.2</td>
<td>50.9</td>
<td>1145.4</td>
</tr>
<tr>
<td>Small Pelagic</td>
<td>147.3</td>
<td>315.9</td>
<td>210.6</td>
<td>621.5</td>
<td>380.0</td>
<td>605.4</td>
<td>132.0</td>
<td>379.4</td>
<td>230.9</td>
<td>153.9</td>
<td>468.7</td>
<td>3645.7</td>
</tr>
<tr>
<td>Demersal</td>
<td>82.4</td>
<td>68.9</td>
<td>66.2</td>
<td>334.8</td>
<td>375.2</td>
<td>87.2</td>
<td>9.3</td>
<td>88.8</td>
<td>24.7</td>
<td>30.2</td>
<td>284.7</td>
<td>1452.5</td>
</tr>
<tr>
<td>Penaeid Shrimp</td>
<td>11.4</td>
<td>4.8</td>
<td>5.9</td>
<td>11.9</td>
<td>11.4</td>
<td>4.8</td>
<td>0</td>
<td>0.9</td>
<td>1.1</td>
<td>1.4</td>
<td>44.7</td>
<td>98.3</td>
</tr>
<tr>
<td>Reef Fish Consumption</td>
<td>5.0</td>
<td>8.4</td>
<td>4.5</td>
<td>21.6</td>
<td>9.5</td>
<td>34.1</td>
<td>32.1</td>
<td>12.5</td>
<td>6.5</td>
<td>8.0</td>
<td>3.1</td>
<td>145.3</td>
</tr>
<tr>
<td>Lobster</td>
<td>0.4</td>
<td>0.6</td>
<td>1.0</td>
<td>0.4</td>
<td>0.5</td>
<td>0.7</td>
<td>0.4</td>
<td>0.3</td>
<td>0.2</td>
<td>0.2</td>
<td>0.1</td>
<td>4.8</td>
</tr>
<tr>
<td>Squid</td>
<td>1.9</td>
<td>1.7</td>
<td>2.1</td>
<td>8.7</td>
<td>5.0</td>
<td>3.9</td>
<td>0.1</td>
<td>7.1</td>
<td>0.2</td>
<td>0.3</td>
<td>3.4</td>
<td>28.3</td>
</tr>
<tr>
<td>Total of Fish Resources per FMA</td>
<td>276.0</td>
<td>1565.2</td>
<td>491.7</td>
<td>15059, 0</td>
<td>836.6</td>
<td>929.7</td>
<td>278.0</td>
<td>595.6</td>
<td>333.6</td>
<td>299.1</td>
<td>855.5</td>
<td>6520.1</td>
</tr>
</tbody>
</table>


Indonesia, as previously mentioned, possesses a rich fish resources with an estimated 6.8 million tons per year spread throughout Indonesian waters including the Exclusive Economic Zone (ZEEI). As table 2 shows, the potential fish resources per year is 1.14 million tons of large pelagic, 3.65 million tons of small pelagic, 1.45 million tons of demersal, 98.3 thousand tons of penaeid shrimp, 145.3 thousand tons of reef fish, 4.8 thousand tons of lobster, and 28.3 thousand tons of squid. However, to guarantee sustainable fish stocks in Indonesian waters, the government has implemented a total of 5.12 million tons per year of allowed catches (JTB) in the country’s territory. Based on the Food and Agriculture Organization of the United Nations (FAO), Indonesia ranked second place after China in the total production of marine capture in 2014. The total production of marine capture in China reached 14.18 million tons whereas Indonesia reached 6 million tons in 2014.

Table 3: Fish Production by Fish Subsector (thousand tons/ year), 2010-2014

<table>
<thead>
<tr>
<th>Subsector</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine Fisheries</td>
<td>5039</td>
<td>5346</td>
<td>5436</td>
<td>5707</td>
<td>6038</td>
</tr>
<tr>
<td>Open Water Fisheries</td>
<td>345</td>
<td>369</td>
<td>394</td>
<td>398</td>
<td>447</td>
</tr>
<tr>
<td>Total Fish Capture</td>
<td>5384</td>
<td>5714</td>
<td>5829</td>
<td>6105</td>
<td>6484</td>
</tr>
</tbody>
</table>

Source: Statistics Indonesia, Fish Production by Subsector, February 19, 2016. Available at https://www.bps.go.id/linkTabelStatis/view/id/1711

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24 The State of World Fisheries and Aquaculture, 2016, p.11, Available at http://www.fao.org/3/a-i5555e.pdf
As table 3 shows, most of the capture fish originates from marine fisheries, for example 93% (6 million tons) in 2014, while the rest stems from open water/inland fishing. Moreover, the total amount of capture fish has increased year by year between 2010 and 2014 by an average of 4.71%. In 2014, total production of capture fish reached 6.4 million tons.

Furthermore, the abundance of fish in Indonesian waters makes fish commodities one of the country’s most reliable exports and one of the largest contributors to Indonesia’s foreign exchange. Over 5 years from 2009-2014, primary destinations for Indonesia’s fish exports are China, the United States, Thailand, Japan, and the EU. During 2014, China had the highest total volume of exports, reaching 344,000 tons, followed by Thailand with a total export volume of 198,871 tons. The United States reached 168,017 tons, Japan reached 108,847 tons, and the European Union reached 94,948 tons respectively. Indonesia’s exports of capture fish are dominated by tuna, mackerel tuna and skipjack tuna with total export volume of 206,553 tons in 2014.

Additionally, the Indonesian government has applied an open and closed fish importation system to better manage the national fisheries needs. The main objective of the system is to provide the supply needed by the fish processing industry, as well as to protect local fish producers. The closed fish importation system means that Indonesia will not import specific fish because the country already has that type of fish. Whereas, an open fish importation system means Indonesia will only import fish from abroad if a similar type of fish is not locally provided in the amounts needed by the fish processing and export-oriented industries. Specifically, canned products and products produced by traditional or pemindangan27 methods are protected under this system. The list of import restrictions on fisheries products by the Ministry of Trade’s Regulation No. 87/2015 lists for example Caviar, tuna in airtight packaging, fish paste (see table 4).

<table>
<thead>
<tr>
<th>Table 4: List of Import Restriction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>List of import restriction</strong></td>
</tr>
<tr>
<td>1 Prepared or preserved fish, caviar, caviar substitutes prepared from fish eggs.</td>
</tr>
<tr>
<td>2 Salmon in airtight packaging</td>
</tr>
<tr>
<td>3 Herring in airtight packaging</td>
</tr>
<tr>
<td>4 Sardine in airtight packaging</td>
</tr>
<tr>
<td>5 Tuna, skipjack, bonito in airtight packaging</td>
</tr>
<tr>
<td>6 Fish tuna, skipjack, bonito in airtight packaging</td>
</tr>
</tbody>
</table>

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26 Ibid
27 Pemindangan is a fish processed in a combination of boiling (cooking) and salting, which preserves the product and ensures its low-sodium levels. According to the Dictionary of Indonesian Language, pindang means fish which are salted and seasoned and then smoked or boiled until dry in order to be durable.
From January-April 2016, the MMAF issued Fishery Product Import Permits (IPHP) to 167 import companies providing products to the canning industry (27.25%), for re-export (45.33%), pemindangan (17.66%), fortification (0.41%), hospitality and the modern market (6.46%), and for the bait sector (2.90%). During the same period, Indonesian fish imports consisted of a total of 10 commodities: mackerel (26,625 tons); Sardines (19,823 tons); tuna, mackerel tuna, and skipjack tuna (18,210 tons); crab (4,460 tons); seashell (3,757 tons); salmon (2,900 tons); squid, cuttlefish, and octopus (2,692 tons); prawn (2,675 tons); other types of fish (1,475 tons); and other parts of fish (1,475 tons). 

Recently, Indonesia’s government increasingly focused on quality standards for the fisheries sector, in order to attain the certification needed to export to targeted countries. Mrs. Susi Pudjiastuti, the Minister of Marine Affairs and Fisheries, is taking positive action to support the country’s export activities and national fisheries. For instance, the MMAF now pays more attention to the optimization of the Sertifikat Hasil Tangkap Ikan or Fish Catch Certification (SHTI) which is one of the EU’s prerequisites to export fishery products to its member states. The SHTI requires details from fishermen’s log books on their capture fish activities in Indonesian waters. Through the log book, accusations against the fishermen of IUU practices can be avoided.

## 3.2 Aquaculture Sector in Indonesia

In recent years, wild-capture production has experienced slow growth due to over fishing and IUU practices globally. Therefore, aquaculture can help to replace wild-captured production as the main contributor of fishery products to meet the growing global demand. The FAO reported that “aquaculture will provide close to two thirds of global food fish consumption by 2030 as catches from wild capture fisheries level off and demand from an emerging global middle class, especially in China, substantially increases.”

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28 Tempo.com, 10 Jenis Ikan Yang Paling Banyak Diimpor Indonesia, June 8, 2016, Available at https://m.tempo.co/read/news/2016/06/08/090777714/10-jenis-ikan-yang-paling-diimpor-indonesia
29 Ibid
In the future, aquaculture will provide a sustainable supply of fish for national, regional, and global food systems as well as generate jobs, and maintain fish at affordable prices for all levels of society. As figure 5 shows, in 2012 half of global seafood consumption was still satisfied by wild capture. However in 2030, it is predicted that more than 60% of global seafood consumption will be satisfied by products from aquaculture.

In Indonesia, aquaculture is playing an important role in the country’s fisheries sector. In recent years, the main product has been capture fish. Yet, in order to maintain the availability of fish resources in Indonesia, the MMAF emphasizes the importance of further development of the aquaculture industry as it is the main driver for increased productivity for the whole fisheries sector. The aquaculture industry in Indonesia profits from some beneficial factors that make this country one of the largest aquaculture producers in the world:

1. Indonesia has relatively stable water temperature which allows aquaculture to be carried out throughout the year. Driven by circular winds, the warm currents from western Pacific carry nutrient-rich water into the country’s fishing grounds.

2. The waters within Indonesia’s territory provide stable levels of salinity throughout the whole area.

In Indonesia, aquaculture methods comprise of mariculture, brackish as well as fresh water ponds, cages, floating cage nets, and paddy fields. These common practices include a variety of fish, production facilities and methods. The oldest way to cultivate fish in Indonesia is by using brackish water ponds, which has been practiced for over 400 years, followed by the usage of freshwater ponds, which was introduced to the sector during the Dutch colonisation of Indonesia in the 19th century. Over time further practices such as marine cultures, cages, floating cage nets, and paddy fields started to be added to the country’s common methods of cultivating fish.

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32 Op.cit Gordon and Betty Moore Foundation, p. 4
33 Ibid
34 Ibid
Figure 6 gives a partial overview over the fish species produced by Indonesian aquaculture activities. They include tilapia, shrimps, milkfish, clarias catfish, carp, pangasius catfish, grouper, and sea bass. However, Indonesia’s aquacultural production is not limited to only those species, but also includes fish species such as gourami, snapper and seaweed, of which the former is cultivated in fresh water while the latter two are cultivated via mariculture.

Table 5: Fish Production by Aquaculture (thousand tons), 2010-2014

<table>
<thead>
<tr>
<th>Subsector</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine Culture</td>
<td>3515</td>
<td>4606</td>
<td>5770</td>
<td>8379</td>
<td>9035</td>
</tr>
<tr>
<td>Brackish Water Pond</td>
<td>1416</td>
<td>1603</td>
<td>1757</td>
<td>2345</td>
<td>2422</td>
</tr>
<tr>
<td>Fresh Water Pond</td>
<td>820</td>
<td>1127</td>
<td>1434</td>
<td>1774</td>
<td>1947</td>
</tr>
<tr>
<td>Cage</td>
<td>121</td>
<td>131</td>
<td>178</td>
<td>200</td>
<td>220</td>
</tr>
<tr>
<td>Floating Cage Net</td>
<td>309</td>
<td>375</td>
<td>455</td>
<td>505</td>
<td>500</td>
</tr>
<tr>
<td>Sticking Net</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>66</td>
</tr>
<tr>
<td>Paddy Field</td>
<td>97</td>
<td>86</td>
<td>82</td>
<td>97</td>
<td>143</td>
</tr>
<tr>
<td>Sub Total Aquaculture</td>
<td>6278</td>
<td>7929</td>
<td>9676</td>
<td>13301</td>
<td>14333</td>
</tr>
</tbody>
</table>

Source: Statics Indonesia, 2016, Available at https://www.bps.go.id/linkTabelStatis/view/id/1711

In recent years, aquaculture in Indonesia has seen a significant increase of total aquaculture production. As table 5 shows, total production of aquaculture commodities in 2013 reached over 13 million tons compared to the approximately 6 million tons made up from wild capture, as shown in previous table 3. Whereas the value of aquaculture production in 2013 reached USD
8,779 million. From 2010 to 2014 Indonesia’s aquaculture production increased drastically by an average of 23.38%. Judging by total amount of aquaculture production in 2014, the FAO ranks Indonesia second largest aquaculture producer in the world (with total production 14 million tons) after China (with total production 58 million tons). One factor for Indonesia’s impressive increase in aquacultural products lies in the expansion of areas used for aquaculture. Those areas have expanded, i.e. by 154,421 ha from 2012 to 2013. The total area of aquaculture that has been used in Indonesia amounts to 1,253,773 ha. There are still 11.8 million hectares of seawater, 2.3 million hectares of brackish water, and 2.5 million hectares of freshwater untapped that could be used for fish cultivation. The MMAF has set the optimistic target of 8.72% growth and 19.5 million tons production for the aquaculture industry in 2016.

From 2010-2014, volume and value of production for each of the main aquaculture commodities have experienced a remarkable increase, as follows: (1) Shrimp has increased on average by 14.03% per year; (2) the grouper has increased on average by 9.61% per year; (3) milkfish has increased by 10.45% per year; (4) *Patin Pangasius Sutchi* increased by 30.73%; (5) Tilapia by 19.03%; (6) Goldfish by 14.44%; (7) Catfish by 26.43%; (8) Gourami (*Osphronemus goramy*) by 17.70%; and (9) Seaweed by an average of 27.72% per year. In 2014, the total production of aquaculture reached 14.3 million tons. Whereas in third quarter 2015, the total production of aquaculture was 14.52 million tons, with 70.45% from seaweed, 22% from pangasius catfish, tilapia, catfish, gourami, and milkfish, and 4% from shrimp, snapper, and grouper.

In order to support the development and optimization of aquaculture production, MMAF, through the Directorate General of Aquaculture (DJPB), has implemented research technology in the aquaculture sector, including a broodstock center for aquaculture. The government has established the National Broodstock Centre (NBC) and Regional Broodstock Centres (RBC) for shrimp, grouper, tilapias and seaweed. The main activities of which are the collection of broodstock and pre-broodstock from across the territorial waters of Indonesia, production of pre-broodstock and implementation of the breeding programme. Additionally, DJPB has created a priority program that will be implemented from 2015-2019 to develop seaweed cultivation, freshwater fish farming, and the independent feed movement (in Indonesia *Gerakan Pakan*)

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40 Ibid
The plans also include the provision of fish feeding machinery and the further development of mariculture.

### 3.2.1 Shrimp

In 2013, with its total of shrimp production, Indonesia became the largest shrimp producer in Southeast Asia, with total production reaching 638,955 tons and the second largest supplier of shrimp in the world after China (with total production of 2.7 million tons). It comes as no surprise then, that shrimp is one of the flagship export commodities of Indonesia’s aquaculture sector.

<table>
<thead>
<tr>
<th>Commodities</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014*</th>
<th>Average Production Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Production Volume (tons)</strong></td>
<td>380,972</td>
<td>401,154</td>
<td>415,703</td>
<td>638,955</td>
<td>592,219</td>
<td>13.83</td>
</tr>
<tr>
<td>Giant Tiger Prawn</td>
<td>125,519</td>
<td>126,157</td>
<td>117,888</td>
<td>171,583</td>
<td>126,595</td>
<td>3.32</td>
</tr>
<tr>
<td>White Leg Shrimp</td>
<td>206,578</td>
<td>246,420</td>
<td>251,763</td>
<td>390,278</td>
<td>411,729</td>
<td>20.49</td>
</tr>
<tr>
<td>Other Types of Shrimp</td>
<td>48,875</td>
<td>28,577</td>
<td>46,052</td>
<td>77,094</td>
<td>53,895</td>
<td>14.23</td>
</tr>
<tr>
<td><strong>Export Volume (tons)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Udang</td>
<td>145,092</td>
<td>158,062</td>
<td>162,068</td>
<td>162,410</td>
<td>141,042</td>
<td>-0.37</td>
</tr>
</tbody>
</table>

*The data reflect the production volume until September 2014.

Indonesia’s stable and warm water temperatures provide the best possible conditions for shrimp cultivation throughout the year. There are two main shrimp commodities usually exported by Indonesia; giant tiger prawns and white leg shrimp. Table 6 shows that the production of shrimp consistently increased from 2010 to 2014 by an average of 13.83 % per year.

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2017

www.eibn.org
Table 7: Exports of Shrimp by Main Destination Countries, 2010-2014

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Weight (Ton)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>32669.4</td>
<td>31000.2</td>
<td>32497.6</td>
<td>32943.7</td>
<td>27597.8</td>
</tr>
<tr>
<td>Hongkong</td>
<td>4237.7</td>
<td>3466.5</td>
<td>2777.9</td>
<td>2665.4</td>
<td>2464</td>
</tr>
<tr>
<td>China</td>
<td>5958.8</td>
<td>5843.4</td>
<td>6315.4</td>
<td>5600.1</td>
<td>5531.1</td>
</tr>
<tr>
<td>Singapore</td>
<td>2238.7</td>
<td>2280.6</td>
<td>2979.9</td>
<td>3137.2</td>
<td>3433.8</td>
</tr>
<tr>
<td>Malaysia</td>
<td>2895.6</td>
<td>2801.3</td>
<td>2593.7</td>
<td>2959.1</td>
<td>4071.2</td>
</tr>
<tr>
<td>Australia</td>
<td>220.3</td>
<td>562.7</td>
<td>752.7</td>
<td>895.8</td>
<td>780.7</td>
</tr>
<tr>
<td>United States</td>
<td>43560.9</td>
<td>55007</td>
<td>59137.9</td>
<td>64520.6</td>
<td>85838.7</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>5024.3</td>
<td>3234.2</td>
<td>1783.2</td>
<td>2779</td>
<td>2145</td>
</tr>
<tr>
<td>Netherlands</td>
<td>891.9</td>
<td>593.9</td>
<td>614.6</td>
<td>530.2</td>
<td>1095.2</td>
</tr>
<tr>
<td>France</td>
<td>1841.7</td>
<td>1080.1</td>
<td>995</td>
<td>1097.6</td>
<td>762.4</td>
</tr>
<tr>
<td>Germany</td>
<td>557.8</td>
<td>475.9</td>
<td>277.2</td>
<td>145</td>
<td>380.9</td>
</tr>
<tr>
<td>Belgium</td>
<td>2828.4</td>
<td>2786</td>
<td>1013.7</td>
<td>687</td>
<td>885</td>
</tr>
<tr>
<td>Italy</td>
<td>1336.4</td>
<td>1279.4</td>
<td>947</td>
<td>926.8</td>
<td>1268.6</td>
</tr>
<tr>
<td>Others</td>
<td>9675.1</td>
<td>9417.2</td>
<td>10213</td>
<td>8099.4</td>
<td>12265</td>
</tr>
<tr>
<td>Total</td>
<td>113937</td>
<td>119828.4</td>
<td>122898.8</td>
<td>126986.9</td>
<td>148519.4</td>
</tr>
<tr>
<td>FOB Value (Thousands US$)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>332615.1</td>
<td>368991.3</td>
<td>364968.8</td>
<td>409638.7</td>
<td>370568.9</td>
</tr>
<tr>
<td>Hongkong</td>
<td>21738.6</td>
<td>21207.6</td>
<td>20412.6</td>
<td>23032.1</td>
<td>23324.3</td>
</tr>
<tr>
<td>China</td>
<td>11812.2</td>
<td>25206.7</td>
<td>39711.9</td>
<td>58643.7</td>
<td>52117</td>
</tr>
<tr>
<td>Singapore</td>
<td>5931.8</td>
<td>8345.6</td>
<td>9645.5</td>
<td>11475.7</td>
<td>17408.3</td>
</tr>
<tr>
<td>Malaysia</td>
<td>4829.8</td>
<td>4106.2</td>
<td>6790.1</td>
<td>9460.4</td>
<td>14029.6</td>
</tr>
<tr>
<td>Australia</td>
<td>1993.3</td>
<td>6507</td>
<td>7809.6</td>
<td>11858.1</td>
<td>11727.8</td>
</tr>
<tr>
<td>United States</td>
<td>350614.1</td>
<td>493272.3</td>
<td>482264.1</td>
<td>686703.5</td>
<td>1027223.5</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>40251.8</td>
<td>30860.5</td>
<td>16383.9</td>
<td>34529.1</td>
<td>32224.7</td>
</tr>
<tr>
<td>Netherlands</td>
<td>5477.9</td>
<td>4384.9</td>
<td>5002.9</td>
<td>5346.9</td>
<td>12552.7</td>
</tr>
<tr>
<td>France</td>
<td>13838.3</td>
<td>8749.4</td>
<td>8744.4</td>
<td>11204.7</td>
<td>9204.4</td>
</tr>
<tr>
<td>Germany</td>
<td>4687.1</td>
<td>4219.3</td>
<td>3162.1</td>
<td>1806.1</td>
<td>5503.2</td>
</tr>
<tr>
<td>Belgium</td>
<td>21867.3</td>
<td>26975.8</td>
<td>9372.6</td>
<td>6300.8</td>
<td>9492.5</td>
</tr>
<tr>
<td>Italy</td>
<td>3989</td>
<td>4277.5</td>
<td>3060.2</td>
<td>3431.7</td>
<td>5780.9</td>
</tr>
<tr>
<td>Others</td>
<td>42156.5</td>
<td>58901.1</td>
<td>87931.5</td>
<td>72920.2</td>
<td>115626.6</td>
</tr>
<tr>
<td>Total</td>
<td>861802.8</td>
<td>1066005.2</td>
<td>1065260.2</td>
<td>1346351.7</td>
<td>1706784.4</td>
</tr>
</tbody>
</table>

Source: Statistic Indonesia, 2015, Available at: https://www.bps.go.id/linkTabelStatis/view/id/1015
Moreover, shrimp is among Indonesia’s top ten export commodities. According to table 7, in 2014, the total export volume of shrimp was 148,519 tons with total a value of USD 1.7 billion. Japan, China, Singapore, Malaysia, Australia, the United States, and members of the European Union are among the main target destinations for Indonesia’s shrimp exports.

The government is aware of the great potential and contribution of shrimp to the country’s trade balance. Thus, optimistic targets have been included in the Directorate General of Aquaculture’s Strategic Plan 2015-2019, in which the government has targeted a total production of 934 thousand tons of shrimp in 2016. To achieve this goal, the available 1.2 million hectares of manufacturing areas could potentially be used for breeding prawns.

3.2.2 Seaweed

By volume, Indonesia is not only the largest shrimp producer in South East Asia but also the second largest producer of seaweed in the world. Indonesia’s seaweed is famous for its high quality, which is important as seaweed contains gelatin and high concentrations of alginate typically used as raw materials by the food industry for the crystallization of ice cream and in medicinal products. Indonesia has a tropical climate which is highly beneficial for seaweed cultivation, resulting in the existence of about 555 seaweed species across the country. With this variety and production conditions it is easy for Indonesia to account for more than 50% of the world’s seaweed production. Typically *Eucheuma cottonii*, *Eucheuma spinosum* and *Glacillaria sp* are the types of seaweed produced in the archipelago. Indonesia is the largest producer of *Eucheuma cottonii* in the world, providing 98.5% of the world's total production. In 2013, Indonesia produced *Eucheuma cottonii* by 8.3 million tons of the total world production of 8.4 million tons. Furthermore, the country is the second largest producer of *Glacillaria sp* after China (with total production 3,538,655). Indonesia contributed 27.56% of the 3.5 million tons of global production of this seaweed type in 2013.

The government not only has ambitions to establish Indonesia as the largest fish producer in the world, but also to make Indonesia the biggest seaweed producer in the world. Seaweed contributes the largest amount to Indonesia’s total aquaculture production. In 2010 the total production of seaweed in Indonesia amounted 3.9 million tons and in 2014, it reached 10 million tons.

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49 Op. cit, Direktorat Jendral Perikanan Budidaya
50 Ibid
51 Ibid
tons, increasing the production by 27.29%. Therefore, Ms. Susi Pudjiastuti, Minister of Maritime Affairs and Fisheries, increased the budget allocation for seaweed by eight times, to a total of IDR 330 billion in 2016. To increase production, Indonesia’s government intends to use the budget for building storage and factories, as well as for improving seed quality.

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IV. The Government’s Initiative for the Fisheries Sector and an Overview Over the Industry’s Regulation

4.1 The Government’s Initiative for the Fisheries Sector

Realizing the potential of its fisheries sector, the government aims to make Indonesia the largest fish exporter in the ASEAN region. Through the MMAF the government has placed a restriction on fish imports into Indonesia’s territory to strengthen and protect Indonesia’s fisheries. This means that foreign countries can import their fish into Indonesia’s territory, but import activities are still strictly monitored to ensure a balancing of imports with the needs of Indonesia’s population and local production. However, Indonesia is still open to imports of numerous types of fish from foreign countries to fulfill the needs of the domestic fish processing industry. MMAF strictly supervises fish imports. If imports come from countries that have an official warning or so-called “yellow card”, the fish products are prohibited from entering Indonesia’s territory.

Global markets for fishery and seafood products are still open, but competitive. Particularly, as the ASEAN Economic Community (AEC) is being implemented, Indonesia has to be prepared to compete with other ASEAN countries on the market for fisheries products. Therefore, MMAF has initiated plans to strengthen and support Indonesia’s fisheries industry. The plan includes the improvement of policies to enhance living standards of fisherman and the sustainability of the fish sector, as well as to boost investment.

Until now, these policies have been seen to sustain the fishery sector. Amongst others these policies include; firm action against IUU Fishing in Indonesia waters, improving the quality of national fisheries products, accelerating the development of 15 integrated marine and fisheries development center (SKPT) in outer islands, opening six subsectors of the fishing industry to foreign investment, the provision of fishing equipment and storage processing facilities (e.g. modern ships and cold storage), and facilitating access to financing for fisherman.

4.1.1 Firm Action Against IUU Fishing in Indonesian Territorial Waters

Indonesia has become a victim of illegal fishing. According to data released by the FAO, every year Indonesia loses USD 3 million. Mrs. Susi Pudjiastuti, the Minister of Marine Affairs and Fisheries, reported that Indonesia has lost USD 20 million every year. However, she has taken firm action against IUU Fishing in Indonesia waters through several activities. One of these

activities, considered a drastic measure, was the sinking of foreign vessels caught fishing illegally in Indonesian waters. Additionally, the government is also aware that IUU practice is not solely a domestic issue, as there are many concerns from other countries. Thus, the government has encouraged cooperation among other countries of ASEAN and Australia to diminish IUU Fishing practices.

By April 2016, Indonesia had sunk 174 illegal fishing boats.\(^5\) This firm action against illegal fish capture will definitely reduce the numbers of IUU practice in Indonesia and in the long run, the fish production in Indonesia will benefit from this. For instance, in third quarter of 2015 the total production of fish in Indonesia has increased 14.43\% compared to last year in the same period. The growth of fisheries GDP increased 8.64\% as well.\(^5\)

4.1.2 Improve the Quality of National Fisheries Products

The government of Indonesia intends to establish the country as the leading fish producer in the ASEAN region. Therefore, Indonesia’s Directorate General of Product Competitiveness of Marine and Fisheries (PDSPKP) has developed nine priority programs with the main objective being to improve the quality of national fisheries products for safe consumption.

The nine priority programs are as follows:\(^5\)
1. Construction of 32 single cold storage units
2. Construction of 29 small and large scale Integrated cold storage units
3. Provision of 354 ice flake machines
4. Establishment of 1 integrated fish market
5. Provision of 2 fish transport boats
6. Construction of 4 culinary centers
7. Construction of 3 fish flour mills
8. Construction of 7 seaweed warehouses

These nine programs offer opportunities for European companies that intend to expand into the Indonesian market. In addition, the government plans to increase the role of foreign investors in the marine industry by allowing foreign investment in the downstream fisheries sector. Since Indonesia is rich in fish resources but lacks a downstream industry and is troubled with illegal fishing, the Indonesia government has opened the downstream fisheries sector for up to 100\% of foreign ownership. Previously, the government only opened some subsectors for limited foreign investment. Previously, maximum foreign investment in cold storage was 33 \% in Sumatera, Java, and Bali and 67\% in Kalimantan, Sulawesi, Nusa Tenggara, Maluku, and Papua. However, now that President Jokowi introduced new regulations regarding the investment negative list, cold storage has been deleted from the list and is now open for up to


100% foreign ownership. Mrs. Susi Pudjiastuti, Minister of Marine and Fisheries stated that fully opening the sector to foreign investors could generate job opportunities for Indonesians as well as foster growth of the fisheries industry and the national economy. It could further encourage Indonesian investors to invest their capital in the downstream industry.\(^6\)

### 4.1.3 15 Integrated Fisheries and Marine Resources Development Centers (SKPT)

In order to develop Indonesia as a global maritime axis and fulfill his *Nawacita* Program, President Jokowi has instructed the Ministry of Marine Affairs and Fisheries to build 15 Integrated Fisheries and Marine Resources Development Centers (SKPT) in several regions of the country.

*Figure 7: Location of Integrated Marine and Fisheries Development Center (SKPT)*


*Red bullet* : Location of SKPT  
*Green bullet* : Export Destination  
*Blue Line* : Flight route

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\(^6\) Eka, “*Menteri Kelautan dan Perikanan Buka Bisnis Cold Storage 100% Asing, Ini Alasannya*”, April 1, 2016. Available at http://politikindonesia.co/rubrik/1510/Menteri-Kelautan-dan-Perikanan-Buka-Bisnis-Cold-Storage-100-Asing.html
In 2015, there were 5 SKPTs being built in Simeuleu, Natuna (Riau Islands), Tahuna (Sangihe, North Sulawesi), Saumlaki (Maluku), and Merauke (Papua). In 2016, the remaining 10 SKPTs were to follow in Mentawai Islands (West Sumatera), Nunukan (North Kalimantan), Talaud (North Sulawesi), Morotai (North Maluku), Biak-Numfor (West Papua), Sarmi (Papua), Mimika (Papua), Tual (Maluku), Rote Ndao (East Nusa Tenggara/NTT), and Maluku Barat Daya (Maluku).

Those 15 locations have been chosen due to the fact that they are located on outer islands and have abundant fish resources. The main objective of establishing the SKPTs is to boost export activities directly from these regions. Once the SKPTs are in place, the fisherman can directly export their catch without having to transport them first to big ports such as Jakarta, Surabaya, or Medan. Additionally, the SKPTs are meant to maintain food resilience, increase people’s fish consumption, increase foreign exchange earnings through exports and raise the people’s income. Furthermore, MMAF has allocated funds of USD 22.7 billion to boost investment in those 15 SKPTs. The funds will be utilized to provide cold storage facilities, fishing boats with a size of 3 - 10 GT, patrol speedboats, processing equipment and infrastructure for fisheries facilities to conserve fish resources, such as water supply fuel tanks, electricity, small ice plants, and single cold storages.

4.2 An Overview of Regulations Concerning Fisheries

The Indonesian Fisheries Law No.31/2004 concerning fish and the amendment to Law No.45/2009, states that the Ministry of Marine Affairs and Fisheries is responsible for developing and regulating fisheries products throughout the value chain. The quality assurance for fisheries products is taken care of by MMAF via the Fish Quarantine and Quality Control of Fishery Products Body (BKIPM). Technical guidance units are within the Directorates General of

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62 Ibid
65 Ibid
68 Ministry of Trade, EQI Institutions, Available at: http://inatrims.kemendag.go.id/en/read/eqi-institutions_10/?market=ko
Aquaculture and Capture Fisheries for primary production, and the Directorate General of Processing and Marketing for processed fish products.\textsuperscript{69}

To support the quality of fish products that will be distributed both inside and outside the country, the Indonesian government has implemented numerous regulations. Based on law No.31/2004 chapter 21, all fish export products must be accompanied by a Health Certificate. The Laboratory for the Development and Testing of Fisheries Products (LPPMHP) issues certificates for consumer products and fish quarantine for live products (fish) or non-consumer fish products.\textsuperscript{70}

Furthermore, Decree No.52A-/KEPMEN-KP/2013 deals with the requirements of quality assurance and safety of fishery products in production, processing and distribution. The decree elaborates on the general structure and hygiene requirements of the whole chain including vessels, cold chain, equipment, landing, storage, fish markets, as well as the food security and health standards.

Additionally, to support the quality of fishery products that are distributed within the country as well as those that are exported, quality inspections are conducted both to the end products and during the production process. Quality assurance covers the whole value chain, requiring good aquaculture practices, good handling practices for fishing vessels, good distribution practices for transportation and sales, and good manufacturing practices for fish processing.\textsuperscript{71} Furthermore, in order to monitor the quality and safety of Indonesia’s aquaculture products, the MMAF through the Directorate General of Aquaculture (DJPB) has implemented a system to control residues, namely the National Residue Monitoring Plan (NRMP). Residue is the result of using fish drugs and chemicals in the process of fish farming and the contamination of the environment. In 2013, Indonesia cooperated with the Directorate General for Consumer and Health, the European Commission through the Commission Decision 2011/163 / EU. As the result of the cooperation, Indonesian aquaculture products are free of residue and this country has been included in the list of countries that are allowed to export aquaculture products to the EU.\textsuperscript{72}

Additionally, there are numerous supporting regulations which have to be followed, especially for export and import of fisheries product from and into Indonesia. To import fisheries products from other countries, the exporter needs to find an importer equipped with importing/distributing license. Requirements of the imports of fisheries products into Indonesia are stated in:

1. Ministerial Regulation No.46/2014 concerning quality control and product safety of fishery products imported into Indonesian territory.

To prevent violations regarding imported fish products and to control the entry of fisheries products into Indonesian territory, the Ministry of Maritime Affairs and Fisheries issued

\textsuperscript{69}Ibid
\textsuperscript{70}Ibid
\textsuperscript{71}Ibid

www.eibn.org
Ministerial Regulation no.46/2014 on Quality Control and Safety of Fishery Products entering the territory of the Republic of Indonesia.

Provisions of the ministerial regulation are as follows:

a. The import of fishery products into Indonesia is required to be performed by importers that have a Producer Importer Identification Number (API-P) or General Importer Identification Number (API-U). Additionally, the importer must have a Fishery Product Import Permit from the Directorate General of Fisheries Product Processing and Marketing.

b. To export to the EU, one of the requirements is that the product has to have a Catch Certificate from the authorities of the country of origin, to prove that it does not come from Illegal, unreported, and unregulated (IUU) Fishing.

c. Fisheries products which enter Indonesia territory must have numerous documents such as:
   - Importation Permit of Fisheries Product
   - Photocopy of Fish Quarantine Installation Certificate, that can be used as a place for implementing fish quarantine measures
   - Fish and Fishery Product Health Certificate and Certificate of Origin (CoO) from an authorized agency of the country of origin
   - Catch Certificate from an authorized authority of the country of origin for fishery products that are re-exported to the European Union.

d. Fishery products entering the territory of Republic of Indonesia are inspected for documents by the Quarantine Officer. The requirements of quarantine are stated in Law No.16/1992 concerning animal, fish, and plant quarantine.

e. Every fishery product that enters the territory of the Republic of Indonesia must do so through one of the following entry points:
   - Seaports, including:
     - Belawan in Medan;
     - Tanjung Priok in Jakarta
     - Tanjung Emas in Semarang;
     - Tanjung Perak in Surabaya;
     - Port of Batu Ampar in Batam;
     - Soekarno Hatta in Makassar; and
     - Tanjung Wangi in Banyuwangi
   - All international airports; and / or
   - Border controls, include Entikong and Merauke.

2. **Decree Number 31/ 2015 of the Directorate General of Fishery Product Processing and Marketing establishes the types of fishery products that can be imported into Indonesian territory.**

The main objective of this decree is to protect the growth of fish, fish cultivation, and fish processing in Indonesia, as well as to satisfy the demand from consumption and raw materials of domestic fish processing. This measure lists eligible marine species for import into Indonesia, as well as Indonesia’s criteria for determining import eligibility, which are:

- Species for import must not be available in Indonesian waters or be produced in Indonesia;
• Imports will be permitted based on local supplies, as influenced by season;
• Imports will be permitted if domestic supplies are limited or unavailable.

The types of fish that can be imported into Indonesia are:

a. Raw material for the fish canning industry

<table>
<thead>
<tr>
<th>No</th>
<th>Name of Types of Fisheries Product in Indonesia/English and Latin</th>
<th>HS Code</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Sardine (Sardinella spp.)</td>
<td>0303.53.00.00</td>
<td>Frozen</td>
</tr>
<tr>
<td>2.</td>
<td>Jack Mackerel and Horse Mackerel (Trachurus spp.)</td>
<td>0303.55.00.00</td>
<td>Frozen</td>
</tr>
<tr>
<td>3.</td>
<td>Atlantic Mackerel (Scomber Scombrus)</td>
<td>0303.54.00.10</td>
<td>Frozen</td>
</tr>
<tr>
<td>4.</td>
<td>Pacific Chub Mackerel (Scomber japonicus)</td>
<td>0303.54.00.20</td>
<td>Frozen</td>
</tr>
</tbody>
</table>

b. All types of raw material for fish processing and re-export that are not for trade are allowed to enter Indonesia, except the type of fishery product prohibited under Ministerial Regulation No.41/Permen-KP/2014 concerning the prohibited entry of dangerous fish from foreign countries to Indonesia

c. Traditional processing raw material in preserved form

<table>
<thead>
<tr>
<th>No</th>
<th>Name of Types of Fisheries Product in Indonesia/English and Latin</th>
<th>HS Code</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Pacific Chub Mackerel (Scomber japonicus)</td>
<td>0303.54.00.20</td>
<td>Frozen</td>
</tr>
<tr>
<td>2.</td>
<td>Indian Mackerel (Rastrelliger kanagurta)</td>
<td>0303.89.15.10</td>
<td>Frozen</td>
</tr>
<tr>
<td>3.</td>
<td>Short Mackerel (Rastrelliger brachysoma)</td>
<td>0303.89.15.10</td>
<td>Frozen</td>
</tr>
</tbody>
</table>

d. Specific food fortification/enrichment raw materials

<table>
<thead>
<tr>
<th>No</th>
<th>Name of Types of Fisheries Product in Indonesia/English and Latin</th>
<th>HS Code</th>
<th>Form</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Fish Oil</td>
<td>1504.20.10.00 1504.20.90.00</td>
<td>Food Grade</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Fish Protein concentrate/</td>
<td>0305.59.20.00 0305.59.90.00</td>
<td>Food Grade</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Refined Carrageenan/ Kappa, iota and Lamda</td>
<td>1302.39.10.10</td>
<td>In powder form</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Alginate and its derivatives</td>
<td>1302.30.90.00</td>
<td>In powder form</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Shrimp flour</td>
<td>0306.29.30.00</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Flour from aquatic invertebrates other than crustaceans</td>
<td>0307.99.90.00</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Fortification material made</td>
<td>-</td>
<td>-</td>
<td>Equipped with</td>
</tr>
</tbody>
</table>
from fish not produce in Indonesia

<table>
<thead>
<tr>
<th>No</th>
<th>Name of Types of Fisheries Product in Indonesia/English and Latin</th>
<th>HS Code</th>
<th>Form</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Trout (<em>Salmo trutta, Oncorhunchus spp.</em>)</td>
<td>0302.11.00.00</td>
<td>Fresh</td>
<td>Fresh whole</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0303.14.00.00</td>
<td>Frozen</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Pacific Salmon (<em>Oncorhynchus spp.</em>)</td>
<td>0302.13.00.00</td>
<td>Fresh</td>
<td>Fresh whole</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0303.12.00.00</td>
<td>Frozen</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Atlantic Salmon (<em>Salmon Salar</em>)</td>
<td>0303.14.00.10</td>
<td>Fresh</td>
<td>Fresh whole</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0303.13.00.10</td>
<td>Frozen</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Halibut (<em>Reinhardtius spp.</em>)</td>
<td>0302.21.00.00</td>
<td>Fresh</td>
<td>Fresh whole</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0303.31.00.00</td>
<td>Frozen</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Cod (<em>Anoplopoma Fimbria/Gadus spp.</em>)</td>
<td>0302.51.00.00</td>
<td>Fresh</td>
<td>Fresh whole</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0303.63.00.00</td>
<td>Frozen</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Lobster (<em>Homarus spp.</em>)</td>
<td>0306.17.30.00</td>
<td>Frozen</td>
<td>Fresh whole</td>
</tr>
<tr>
<td>7.</td>
<td>Giant Fresh Water Shrimp/ Udang Galah (<em>Macrobrachium rosenbergii</em>)</td>
<td>1212.21.10.00</td>
<td>Dried</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Nori/Kelp/Rosasted Laver</td>
<td>0307.41.20.00</td>
<td>Fresh</td>
<td>Fresh Whole</td>
</tr>
<tr>
<td>9.</td>
<td>Squid/ Cumi-cumi (<em>Loligo spp, Nototodarus spp, Todorodespacificius</em>)</td>
<td>0307.49.10.00</td>
<td>Froze</td>
<td>Frozen Whole</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Equipped with photo, trade name, scientific name, and HS code according to the fish type</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No</th>
<th>Name of Types of Fisheries Product in Indonesia/English and Latin</th>
<th>HS Code</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sardine (<em>Sardinella spp.</em>)</td>
<td>0303.53.00.00</td>
<td>Frozen</td>
</tr>
<tr>
<td>2</td>
<td>Illex squid/Cumi karet (<em>Illex spp.</em>)</td>
<td>0303.89.15.10</td>
<td>Frozen</td>
</tr>
</tbody>
</table>
V. Opportunities and Challenges for EU Companies in Indonesia’s Fisheries Market

In order to support the fishermen and enhance the fishery sector, the Indonesian government has improved its policies, creating opportunities for domestic and foreign investors. Incentives for domestic and foreign investors are determined by several government regulations. The provisions include various support for investors to invest in businesses in Indonesia’s Special Economic Zones (SEZ) and certain regions. Additionally, the government provides services for foreign investors interested in investing in Indonesia, such as a one-stop licensing services of the Investment Coordinating Board (BKPM).

However, not all business sectors in the fisheries industry are open for foreign investor, as the government is planning to make Indonesia’s fisheries sector more independent and is trying to enable the industry to produce fishery products inside the country. For instance, two policy improvements were the changes to the new negative investment list that was issued in May 2016 by President Joko Widodo and the policy stipulated by Presidential Regulation Number 44/2016. According to presidential regulation, investment and trading in the fishery sector is now open to foreigners, especially in aquaculture and the processing of fish, as well as in transportation and cold storage. However, capture fish is still listed as a business field closed to foreign investors. Thus, the capture fish sector is executed by domestic players only.

5.1 Opportunities

Opportunities for business development in the Indonesian fisheries industry have high prospects. The economic potential of marine resources and fisheries that can be used to stimulate economic growth is expected to reach USD 82 billion per year.\(^{73}\)

5.1.1 Investment Opportunities

The opening of some areas of the fisheries sector through the new negative investment list 2016 has created great opportunities for both domestic and foreign investors.\(^{74}\) In the fisheries sector, various opportunities for investment are open within fish processing, cold chain systems and logistics.

5.1.1.1 Fish Processing

In the sector of fish processing there are six business opportunities for both domestic and foreign investors offered by MMAF. If their investment meets one of the conditions below, they can benefit from incentives and support such as tax relief (Income Tax), incentives concerning Value Added Tax (VAT), customs support in the fishery industry.\(^{75}\) Business opportunities and conditions are as follow:

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\(^{73}\) Op.cit David Setia Maradong

\(^{74}\) Joint Briefing Session TCF, BKPM, and Eurocham, Negative Investment List, 2016

\(^{75}\) Anang Noegroho, Cold Chain Industry Business in Indonesia, EIBN Cold Chain Info Session, 2016
1. Frozen fish industry with a minimal investment of 25 billion IDR, export proportion 50%, and at least 50 employees.
2. Minced fish and surimi with a minimal investment of 25 billion IDR, export proportion 50%, and at least 50 employees.
3. Canned fish with a minimal investment of 30 billion IDR, export proportion 50%, and at least 100 employees.
4. Preserved shrimp with a minimal investment of 30 billion IDR, export proportion 50%, and at least 100 employees.
5. Other frozen aquatic biota with a minimal investment of 20 billion IDR, export proportion 50%, and at least 50 employees.
6. Other preserved aquatic biota with a minimal investment of 15 billion IDR, export proportion 30%, and at least 50 employees.

Additionally, the government provides incentives and support, especially in the special economic zones, as follows:

1. Income tax incentive (PPH)
   The government provides several incentives such as the provision of tax holidays or a reduction of corporate income tax for a period of 10-25 years for investments over USD 1 trillion, as well as PPH reduction of up to 30% (reduction in applicable tax by 5% per year for six years). For foreign shareholders or foreign taxpayers, income tax on dividends is 10%.
2. Value Added Tax (VAT)
   Tax relief of VAT on taxable goods in Special Economic Zones.
3. Customs
   Investors are exempt from paying import duties for machinery and capital goods that will be used in Special Economic Zones, or business in certain regions.
4. Reduction of red tape through the streamlining of processes by BKPM

5.1.1.2 Cold Chain Business in Indonesia

One of the biggest opportunities for both domestic and foreign investors in Indonesia’s fishery sector is in the area of cold chain. Indonesia still needs a reliable cold chain system to ensure the distribution of fresh fish products in the country. In 2014, national cold storage capacities were mainly used for seafood products in total occupying more than 5 million square meters. Thus, seafood was the commodity needing the largest storage capacity, ahead of other products such as red meat, poultry and chicken, dairy food, horticultural, rental, and retail. Indonesian companies have the ability to build cold storage. However, machinery, equipment, and other support facilities for cold storage still needs to be imported.

With the new negative list allowing foreign investors to invest in the cold chain industry, particularly cold storage, the Indonesia government has provided new business opportunities for foreign investors. Previously, investment in cold storage was limited for foreigners. In West Indonesia (Sumatera, Java, Bali) the maximum limit of foreign investment was 37% whereas in East Indonesia (Maluku, Papua, and Sulawesi) it was 67%. Starting from 2016, this limitation

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has been removed from the negative investment list. Now, the government grants foreign investors the opportunity to invest in and set up cold storage with 100% foreign ownership all over the country.

5.1.1.3 Logistic System

As an archipelago comprising more than 17,000 islands, Indonesia is confronted with the high cost of logistics. For instance, the logistical costs of moving goods from Papua to Jakarta are more expensive than moving the same goods from Papua to Japan. The main burden on the costs of logistics is empty runs. Vessels transporting fish products are only loaded for one way and usually return empty. Hence, to cover the transportation costs, the delivery cost of fish products is double the normal price.

Therefore, Indonesia still needs investment from other countries in the logistics sector, such as infrastructure and transportation. One of the government’s initiatives aims to open the transport sector to foreign investment. Business areas that relate to land and sea transportation, such as terminals supporting business, air cargo services, and transportation handling services are opened to 67% foreign ownership.

These three opportunities have been included in the government’s plans to build 15 SKPT in 2015 and 2016. For 2017, the government also plans to establish cold chain and transportation systems on the outer islands of five more regions, to enhance export activities, as well as the production and management of the fisheries sector. Currently there are 13 SKPT that have potential for investment across Indonesia.

Table 8: Potential Outer Island in Indonesia and Border Area for Investment

<table>
<thead>
<tr>
<th>No</th>
<th>Location/area</th>
<th>Potential Commodities</th>
<th>Opportunity</th>
<th>Infrastructure need</th>
<th>Potential Market</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Annual Potential Catch</td>
<td>Commodities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Simeuleu Regency, Aceh</td>
<td>36 kilo tons</td>
<td>Tuna, Lobster, Grouper</td>
<td>Capture fish aquaculture processing, marketing, and cold chain</td>
<td>Airport, Ferry wharf, cargo road network</td>
</tr>
<tr>
<td>2</td>
<td>Mentawai Regency, West Sumatra</td>
<td>270 kilo tons</td>
<td>Grouper, Seaweed, Pearl</td>
<td>Capture Fish, aquaculture, tourism</td>
<td>Port in 4 major islands, electricity, fishermen gas station, and fresh water</td>
</tr>
</tbody>
</table>

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79 Ibid
80 Op.cit Anang Noegroho
<table>
<thead>
<tr>
<th></th>
<th>Location</th>
<th>Total Weight</th>
<th>Fish Types</th>
<th>Fish Capture, Aquaculture, Processing, Marketing, and Cold Chain</th>
<th>Transport Infrastructure and Marketing Destinations</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Natuna Regency, Riau Islands</td>
<td>542 tons</td>
<td>Snapper, Mackerel, Grouper</td>
<td>Capture fish, aquaculture, processing, marketing, and cold chain</td>
<td>Airport, cargo port, 6 ice factories, cold storage</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bintan, Batam, Pontianak, Jakarta, Hong Kong, Malaysia, Singapore</td>
</tr>
<tr>
<td>4</td>
<td>Nunukan Regency, North Kalimantan</td>
<td>338 tons</td>
<td>Tuna, Grouper, Mackerel, Seaweed</td>
<td>Capture fish, aquaculture, processing, marketing, and cold chain</td>
<td>Airport, Ferry wharf, cold storage, ice factory, canny, frozen plant, and canned</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Tarakan, Balikpapan, Pontianak, Serawak</td>
</tr>
<tr>
<td>5</td>
<td>Sangihe Regency, North Sulawesi</td>
<td>30 tons</td>
<td>Mackerel, Grouper, Pompano, Sea cucumber</td>
<td>Capture fish, aquaculture, processing, marketing, and cold chain</td>
<td>Small airport, fish port, pertamina storehouse, fish processing unit, solar packed dealer for fisherman</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bitung, Manado, Minahasa, Asia, Europe, America</td>
</tr>
<tr>
<td>6</td>
<td>Morotai Island Regency, North Maluku</td>
<td>1,228 tons</td>
<td>Tuna, Mackerel, Grouper, Yellow Fin, Lolosi, Trevally</td>
<td>Capture fish, aquaculture, processing, marketing, and cold chain</td>
<td>Airport, fish port equipped with ice factory, cold storages, sufficient electricity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Manado, Makassar, Manila, Darwin</td>
</tr>
<tr>
<td>7</td>
<td>Rote Ndao, East Nusa Tenggara</td>
<td>17 tons</td>
<td>Tuna, Mackerel, Grouper, Seaweed</td>
<td>Capture fish, aquaculture, tourism</td>
<td>Small airport, port, fish market, electricity, gas station, fresh water</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-,-</td>
</tr>
<tr>
<td>8</td>
<td>Kisar, South West Maluku</td>
<td>200 tons</td>
<td>Tuna, Grouper, Napoleon, Seaweed</td>
<td>Capture fish, aquaculture, processing, marketing, and cold chain</td>
<td>Small airport, ferry wharf, electricity, fresh water</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ambon, Timor Leste, Darwin</td>
</tr>
<tr>
<td>9</td>
<td>Saumlaki, Southwest Maluku</td>
<td>36 tons</td>
<td>Grouper, Lobster, Seaweed</td>
<td>Capture fish, aquaculture, processing, marketing, and cold chain, warehousing, tourism (especially for cruise)</td>
<td>Small airport, fish market, electricity, fresh water, seaweed processing plant</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ambon, Surabaya, Bali, Australia, China, Hong Kong, Singapore, Taiwan, Japan</td>
</tr>
</tbody>
</table>
5.1.2 Trade Opportunities

The fisheries sector does not only provide opportunities for investment, but for trade as well. Despite, the Indonesian government’s desire to make the fisheries sector more independent and reduce necessary imports, technology for fish feed, fish oils, and others as well as raw materials or products for fish medicine are still imported.

5.1.2.1 Technologies For Fish Feed, Fish Oils, and Others

Indonesia still depends on imported raw materials for fish feed with 90% of raw material for fish feed being imported from other countries.\(^1\) As a result, production costs for the producers of fish feed are very high. Consequently, production costs in the aquaculture business are significantly higher as well. Currently, Indonesia is still importing fish flour and fish oil from European countries, due its lack of technology to process fish flour and fish oil to meet domestic demand.\(^2\) Thus, Indonesia is still relying on importing fish feed and fish oil from European countries that possess the technology for semi-finished fish products and also have refineries for fish oil.\(^3\) Therefore, there are great opportunities for European companies to enter the

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\(^1\)Ibid


\(^3\) Ibid
Indonesian market in this area, as Indonesia needs new high technology to become more independent in producing fish feed and fish oil.

5.1.2.2 Fish Medicine

The increase in aquaculture production has to go hand in hand with maintaining or even increasing the quality of production. To ensure good quality, management of fish health needs to be maintained and improved. One of the important aspects of maintaining aquaculture quality is by giving fish medicine to prevent, reduce, and remove fish diseases, help calming and numbing fish, increase fish reproduction and maintain and and/or enhance product quality.

a. MMAF regulation PER no.4/MEN/2012 divides registered fish medicine in Indonesia into five categories; biological, pharmaceutical, premix, probiotics, and natural medicines. Biological procedures for animal or animal tissues to create immunity, diagnose diseases, or cure disease with immunologic process such as vaccine, sera (anti-sera), antigen, and biologic diagnostic material.

b. Pharmaceutical fish medicine from non-organic as well as organic material, and/or chemical synthesis reaction based on pharmacologic processes involving hormones, antibiotics, antibacterial, chemotherapeutic, anti-parasite, anti-fungus, anthelmintics, and anesthetics.

c. Premix preparation are feed additives and supplements that are given by mixing it with fish feed.

Feed additive is additional material that is naturally not contained in the feed. It is used to beautify fish colors and to aromatize and preserve feed. Feed supplement is a substance that naturally exists in the feed, but the amount needs to be increased by adding amino acid, vitamin, and mineral into the feed.

Of all fish medicine particularly premix products are still imported.84 Normally, the importers will engage in cooperation with fish feed companies to produce premixes.85

d. Fish medicine from probiotics consists of non-pathogenic microbes that naturally exist in the water and bodies of fish. It activates the processes of bioremediation, and biocontrol of the digestive tract and acts as competitor to pathogenic bacteria such as Bacillus Subtillis, Lactobacillus, Nitrosomonas, and Nitrobacteria.

e. Natural fish medicine consist of natural ingredients such as natural material from plants, animals, minerals, galenic preparations, or mixtures of those ingredients without the addition of chemical substances such as hormones or antibiotics.

Utilizing vaccine for fish is one of the most effective ways to prevent fish disease. Vaccines can improve the durability of fish, increase the growth of fish and improve the feed conversion rate

\[84\] Direct Interview with Mr. Rudi, Staff of Directorate of Fish Health and Environment, Ministry of Marine Affairs and Fisheries, May 2016.

\[85\] Ibid
(FCR).\textsuperscript{86} Equally important, vaccines could also replace antibiotics.\textsuperscript{87} In Indonesia, 50\% of vaccines are is still imported while the other half are produced locally.\textsuperscript{88}

The requirements for importing fish medicine to Indonesia are governed by Ministry of Marine and Fisheries Regulation No. Per.19/MEN/2007. To import and distribute fish medicine, there are several requirements that need to be followed:\textsuperscript{89}

1. Producers, importers and exporters need to have a permit as fish medicine providers.
2. The company has to provide a sample of the respective fish medicine for quality tests in a laboratory recommended by the Ministry of Marine and Fisheries, or in another laboratory in Indonesia that is accredited “A”.
3. After receiving a positive result (approval) of the test, the company has to fill-in documents for the registration of fish medicine. Producers have to fill the forms A to I and have them signed by the technical authority, a veterinarian and a pharmacist. Importers have to fill out forms A to J and have them signed by the technical authority, a veterinarian and a pharmacist.
4. These documents have to be sent to the Ministry of Marine and Fisheries for them to verify the documents. Once they have been approved, the products will receive a registration number.
5. After the products have the registration number, they are ready to enter the Indonesian market.

5.2 Challenges

Indonesia, as a country located in fish-rich waters, has not yet been able to maximize its full potential due to the challenges faced in the development of the fishery sector. Major challenges for Indonesia’s fisheries lay in the many artisanal fisherman using traditional means (limited knowledge, technologies, and equipment), the lack of infrastructure particularly in rural areas where there is limited electricity and water, as well as lack of the cold chain system, and logistic services to transport fish products from one area to another.

5.2.1 Traditional Fisherman

In Indonesia, 95\% of the 2.2 million people working in the fishery sector are traditional fishermen with limited knowledge and inadequate technology.\textsuperscript{90} Their use of traditional techniques and resources, as well as lack of capital, prevents them from exploiting the huge potential of Indonesia’s fishery resources. The fishermen only have small boats and still use traditional equipment which prevents them from accessing deep sea waters to catch larger volumes of

\textsuperscript{86} Infoakuakultur, \textit{Vaksinasi Ikan Efisien dan Penting}, Available at http://infoakuakultur.com/blog/vaksinasi-ikan-efisien-dan-penting/
\textsuperscript{87} Ibid
\textsuperscript{88} Direct Interview with Mr. Rudi, Staff of Directorate of Fish Health and Environment, Ministry of Marine Affairs and Fisheries, 2016.
\textsuperscript{89} Ibid
\textsuperscript{90} Op.cit GBG Indonesia, \textit{Indonesia’s fisheries Under A New Paradigm} 2017
www.elbn.org
The fishermen are also having problems accessing financial assistance, as the banks are more willing to give loans to the fish processing than to the capture fish or aquaculture industry.\textsuperscript{92}

Therefore, the government has started an initiative to provide the fishermen with more than 3000 vessels of different sizes.\textsuperscript{93} The initiative includes building 1510 units smaller than 5GT, 1020 units of 5GT, 690 units of 10GT, 200 units of 20 GT, and 25 units of 30 GT.\textsuperscript{94} Additionally, the government will provide five transportation ships with freezers with a size 30 GT, as well as 14.178 fishing gear packages. MMAF already signed an agreement with PT. PAL Indonesia, a state-owned Indonesian shipbuilding company, making PT.PAL Indonesia lead coordinator of the project. The predominant objective of this initiative is to increase the productivity of capture fishery activities.\textsuperscript{95} By increasing catch activities, the government also expects that the volume of fish production can increase, more raw materials for fish processing companies is provided and imports of fish are reduced.

Additionally, it is also important to provide Indonesian fishermen with expertise and knowledge through capacity building. Capacity building for fishermen is expected to increase their know-how and to develop the fishery sector, thus positively affecting welfare of fishermen and increasing the amount of fish production throughout the country. This would, as a consequence, provide larger stocks for processing fish companies, as well as greatly contribute to Indonesia’s GDP.

### 5.2.2 Infrastructure, Cold Chain System, and Transportation

Other challenges that Indonesia has to address are the lack of infrastructure, cold chain systems, and transportation. The lack of infrastructure is a major issue in Indonesia, particularly in some rural areas outside Java island, which also affects the cold chain system. Indonesia urgently needs to have a proper cold chain system, especially cold storage to keep the fish fresh for distribution to export destinations, local markets or the local fish processing industry.\textsuperscript{96} The cold chain system in Indonesia is still not well equipped, for instance there are several limits to the supply of ice and the availability of refrigerated storage and transport. There are several cold storages which have already been built, but due to lack of infrastructure, cold storages do not function properly.\textsuperscript{97}

Eastern Indonesia is rich in natural resources, including fish. However, preconditions for the management of fish production, such as infrastructure are a constraint. In rural areas there is limited access to electricity and water, as well as roads, so, fishermen and other players in the fisheries industry, have difficulties accessing the market for their fresh product. The cold chain

\textsuperscript{91} Ibid
\textsuperscript{92} Ibid
\textsuperscript{94} Ibid
\textsuperscript{95} Ibid
\textsuperscript{97} Interview directly to Mr. Eko, Staff from Directorate General of Product Competitiveness Marine Affairs and Fisheries, May 2016
system and high price of logistics are the main constraints in eastern Indonesia. The region has a great potential to directly export abroad. However, the integrated fish centers in those regions do not have enough cold storage capacity. Additionally, the costs of logistics to distribute fish products are also high. Therefore, the Indonesian government has a strategic plan to build integrated marine and fisheries development centers in eastern Indonesia, which will address the problems facing Indonesia’s fisheries industry, for instance the infrastructure, transportation and cold chain system.

Relevant Contacts

- **Ministry of Marine Affairs and Fisheries/ Kementrian Kelautan dan Perikanan**
The Ministry of Marine Affairs and Fisheries, hereinafter abbreviated as MMAF is the main fisheries authority to organize marine and fisheries affairs in Indonesia.

  Address: Jl. Medan Merdeka Timur No. 16, Jakarta  
  Telephone: +6221- 3519070  
  Email: birokeramas@kkp.go.id  
  Homepage: www.kkp.go.id

- **Indonesia Fisheries Public Company/ Perusahaan Umum Perikanan Indonesia**
  It was established under Government Regulation No. 9 of 2013 a state-owned company (BUMN) specializing in sea transportation of fisheries products. The company partners with fishermen and small and micro businesses in Indonesia.

  Address: Jl.Muara Baru, Jakarta Utara, 14440  
  Telephone: +6221- 6694822  
  Email: info@perumperindo.co.id  
  Homepage: www.perumperindo.co.id

- **Fish Quarantine and Quality Control of Fishery Products Body/ Badan Karantina Ikan, Pengendalian Mutu dan Keamanan Hasil Perikanan**
  Fish Quarantine and Quality Control of Fishery Products Body (in Bahasa Indonesia BKIPM) is responsible for the control and safety of fisheries products for export.

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  Homepage: www.bkipm.kkp.go.id

- **Directorate of Product Competitiveness Marine Affairs and Fisheries/ Direktorat Jenderal Penguatan Daya Saing Produk Kelautan dan Perikanan**

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  Email: birokeramas@kkp.go.id  
  Homepage: www.kkp.go.id

- **Indonesia Tuna Association/ Asosiasi Tuna Indonesia (ASTUIN)**

  Address: Wisma Panutan,  
  Jalan Muara Baru Ujung Blok B25, Jakarta Utara  
  Telephone: (021) 5250629, 5207990 or (021) 4700409, 4892282

- **Asosiasi Pengusaha Pengalengan Ikan Indonesia (APIKI)**

  2017  
  www.elbn.org
Address : Jl. Malaka II No. 17 EGF, Jakarta 11230
Telephone: +62216902336
Email : dys@indo.net.id

- Asosiasi Pengusaha Pengolahan & Pemasaran Produk Perikanan Indonesia (AP5I)
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  Telephone: +6231328 1122
  Email : ap5i@cbn.net.id

- Indonesia Investment Coordinating Board/ Badan Koordinasi Penanaman Modal (BKPM)
  Address : Jl. Jend. Gatot Subroto No. 44, Jakarta 12190
  Telephone: +62 21 5252 008 (Hunting) / + 62 (0) 807 100 2576 (Contact Center)
  E-Mail : info@bkpm.go.id
  Website : www.bkpm.go.id
Exhibition and Trade Fairs

1. International Indonesia Seafood & Meat (IISM) 2017
   19-22 April 2017
   Grand City Convex, Surabaya - Indonesia

   IISM is focused on cold chain technology, which includes: cold storage infrastructure, temperature controlling, IT and handling solutions for cold storages, as well as cold chain and cold supply chain. The event features technology providers set to showcase their latest solutions related to cold chain technology applied in seafood and meat industries. It is a perfect platform tailored specifically as a bridge that connects potential buyers and qualified sellers in the industries.

2. Indo Livestock 2017
   17-19 May 2017
   Grand City Convex, Surabaya - Indonesia

   This event is hosted by the Directorate General of Livestock and Animal Health, Ministry of Agriculture of the Republic of Indonesia, INDO LIVESTOCK Expo & Forum is today a 'must attend' event for decision makers and buyers across Asia. More than 12,000 trade visitors and delegates, are expected to attend the Expo, Seminar and Technical Presentation in 2017. More importantly, over 370 exhibitors from 42 countries are expected to once again participate in Indo Livestock Expo & Forum. INDO LIVESTOCK 2017 is proven to be the preferred venue for buyers to source for new technology and equipment and where industry professionals get update on the latest technological advances and industry trends.
### Abbreviations

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<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>AEC</td>
<td>ASEAN Economic Community</td>
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<tr>
<td>ASEAN</td>
<td>Association of South East Asian Nations</td>
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<tr>
<td>BKIPM</td>
<td>Fish Quarantine and Quality Control of Fishery Products Body (Badan Karantina Ikan, Pengendalian Mutu dan Keamanan Hasil Perikanan)</td>
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<tr>
<td>BKPM</td>
<td>Indonesian Investment Coordinating Board (Badan Koordinasi Penanaman Modal)</td>
</tr>
<tr>
<td>API-U</td>
<td>General Importer Identification Number (Angka Pengenal Importir Umum)</td>
</tr>
<tr>
<td>API-P</td>
<td>Producer Importer Identification Number (Angka Pengenal Importir Produsen)</td>
</tr>
<tr>
<td>CoO</td>
<td>Certificate of Origin</td>
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<tr>
<td>DJPB</td>
<td>Directorate General of Aquaculture (Direktorat Jendral Perikanan Budidaya)</td>
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<tr>
<td>FCR</td>
<td>Feed Conversion Rate</td>
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<tr>
<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
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<tr>
<td>FMA</td>
<td>Fisheries Management Area</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>IUU</td>
<td>Illegal, unreported, and unregulated</td>
</tr>
<tr>
<td>JTB</td>
<td>Total Allowable Catches (Jumlah Tangkapan yang Diperbolehkan)</td>
</tr>
<tr>
<td>MMAF</td>
<td>Ministry of Marine Affairs and Fisheries</td>
</tr>
<tr>
<td>LPPMHP</td>
<td>Laboratory for the Development and Testing of Fisheries Products (Laboratorium Pembinaan dan Penguji Mutu Hasil Perikanan)</td>
</tr>
<tr>
<td>PDSPKP</td>
<td>Directorate General of Product Competitiveness of Marine Affairs and Fisheries</td>
</tr>
<tr>
<td>PPH</td>
<td>Income Tax Intensive</td>
</tr>
<tr>
<td>SEZ</td>
<td>Special Economic Zone</td>
</tr>
<tr>
<td>SHTI</td>
<td>Fish Catch Certification (Sertifikat Hasil Tangkapan Ikan)</td>
</tr>
<tr>
<td>SKPT</td>
<td>Integrated Fisheries and Marine Resources Development Center (Sentra Kelautan dan Perikanan Terpadu)</td>
</tr>
<tr>
<td>SME</td>
<td>Small and Medium Enterprise</td>
</tr>
<tr>
<td>VAT</td>
<td>Value Added Tax</td>
</tr>
<tr>
<td>ZEEI</td>
<td>Indonesia Exclusive Economic Zone (Zona Ekonomi Eksklusif Indonesia)</td>
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Joint Briefing Session TCF, BKPM, and Eurocham, *Negative Investment List*, June 2016

**Interview**

Mr. Rudi, Staff of Directorate of Fish Health and Environment, Ministry of Marine Affairs and Fisheries, May 2016.

Mr. Eko, Staff from Directorate General of Product Competitiveness Marine Affairs and Fisheries, May 2016
About EIBN

The EIBN is a partnership project between five European bilateral chambers of commerce in Indonesia (BritCham, EKONID, EuroCham, IFCCI, INA) and two counterparts in Europe (EUROCHAMBRES, CCI Barcelona). EIBN’s aim is to promote Indonesia and ASEAN as high potential trade and investment destinations among companies from all EU 28 member states – especially SMEs – and support them in their endeavor to explore the full market potential in Indonesia. The project was initiated and co-founded by the EU.

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