FISHERIES & AQUACULTURE
PRODUCT FROM UPSTREAM TO DOWNSTREAM, NATIONAL, REGIONAL & GLOBAL MARKET

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Chairman of Committee on Food & Beverages Industries
KADIN Indonesia.

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Hotel Sahid Mandarin, Pekalongan, 26 - 27 November 2014
From 7 billion world population, 1.1 billion, income less than US$1/day, malnutrition, hunger. Consume only fiber, carbohydrate & dried fish. (27 mil in Indo)

2.7 billion <US$2/day. Consume fiber, carbohydrate, plant protein, canned fish/salted/dried. (117mil Indo)

If their income more than US$2/day, malnutrition & hunger can be improved. Consume: carbohydrate, fiber, plant protein, eggs, fresh fish/canned/dried.

If the income >US$ 5–10/day, consumption more on meat, milk, fresh fish, processed/shrimp, fruit/veg. Food requirement’s more variety & increased

Income more >US$ 10/day, more food with animal protein & fishery product that already processed, packed with more value added such: sushi, sashimi, fillet, steak, tempura, nugget & eat at resto/hotel.

Industry should & ready to fulfill the food necessity for low & medium class with safe & affordable food.
POPULATION & FOOD SECURITY IN ASEAN+6 (RCEP)

ASEAN = 600 million; ASEAN+6 = 3.400 million
McKinsey Global Institute predict Indonesia will be the 7th largest economy in the World by 2030.

Indonesia today ...

16th-largest economy in the world
45 million members of the consuming class
53% of the population in cities producing 74% of GDP
55 million skilled workers in the Indonesian economy
$0.5 trillion market opportunity in consumer services, agriculture and fisheries, resources, and education

... and in 2030

7th-largest economy in the world
135 million members of the consuming class
71% of the population in cities producing 86% of GDP
113 million skilled workers needed
$1.8 trillion market opportunity in consumer services, agriculture and fisheries, resources, and education

Source: McKinsey Global Institute, 2012

Indonesia population by 2030: 300 million >> 165 million low & medium class
Indonesia Fisheries

- More than 17,500 islands along the equator (12 months growing season), 5.8 million km² of sea, National seawater: 3.1 mil km², ZEE:3 mil km²
- Coastline: 95,181 km, brackish water/tambak: 1.2 mil ha, freshwater/kolam: 627,000 ha.
- Tremendous biodiversity: 16,500 aquatic species
- Potential Fisheries production: 65 mil tons/year: 7.4 mil.t. capture & 47.6 mil.t. aqua/marine culture.
- Local Consumer: 245 million --> 300 million (2030)
- Fish Consumption: 33.89 kg (2012) --> 38 kg (2015)
### Potential of Sustainable Fisheries Production

<table>
<thead>
<tr>
<th>Jenis Kegiatan Perikanan/Activities</th>
<th>Total Area (million km²)</th>
<th>MSY (million ton/year)</th>
<th>Production 2012 (million ton)</th>
<th>Utility level/Utilization (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Perikanan Tangkap/Capture Fisheries</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Laut / Sea</td>
<td>5,8</td>
<td>6,5</td>
<td>5,34</td>
<td>82,15</td>
</tr>
<tr>
<td>2. Perairan Umum/Inland</td>
<td>0,54</td>
<td>0,9</td>
<td>0,36</td>
<td>40</td>
</tr>
<tr>
<td><strong>B. Perikanan Budidaya/ Aqua &amp; Marine culture</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Laut / Sea</td>
<td>0.24</td>
<td>42,0</td>
<td>4,6</td>
<td>10,95</td>
</tr>
<tr>
<td>2. Tambak / Brackish water</td>
<td>0,012</td>
<td>10,0</td>
<td>1,6</td>
<td>16</td>
</tr>
<tr>
<td>3. Perairan Umum / Inland fresh water</td>
<td>0,137</td>
<td>5,7</td>
<td>1,72</td>
<td>30,17</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>6,729</td>
<td>65,0</td>
<td>13,62</td>
<td>20,95</td>
</tr>
</tbody>
</table>

Source: Statistik Kelautan & Perikanan 2012
### POTENTIAL OF AQUACULTURE AREA & UTILITY LEVEL IN INDONESIA, 2012

<table>
<thead>
<tr>
<th>No</th>
<th>Jenis Budidaya/ aquaculture activity</th>
<th>Potential (ha)$^1)</th>
<th>Area Utilized (ha)$^2)</th>
<th>Utility Level (%)</th>
<th>Potential for Development (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tambak/Brackish</td>
<td>2,963.717</td>
<td>657.346</td>
<td>22.2</td>
<td>2,306.371</td>
</tr>
<tr>
<td>2</td>
<td>Kolam/Ponds</td>
<td>541.100</td>
<td>131.776</td>
<td>24.4</td>
<td>409.324</td>
</tr>
<tr>
<td>3</td>
<td>Perairan Umum/inland</td>
<td>158.125</td>
<td>1.798</td>
<td>1.13</td>
<td>156.327</td>
</tr>
<tr>
<td>4</td>
<td>Mina Padi/Rice-field</td>
<td>1,536.289</td>
<td>156.193</td>
<td>10.2</td>
<td>1,380.096</td>
</tr>
<tr>
<td>5</td>
<td>Laut/Marine culture</td>
<td>24,000.000</td>
<td>178.435</td>
<td>0.74</td>
<td>23,821.565</td>
</tr>
</tbody>
</table>

**Note:**
1) Data from statistik perikanan budidaya, 2009
2) Data from statistik perikanan budidaya Indonesia, 2012
INDONESIAN FISHERY PRODUCTION PERFORMANCE 2010 – 2013 (milion ton)
PRODUCTION COMPARATION BETWEEN AQUACULTURE & CAPTURE FISHERIES (2005-2014)
# Potential Fish Species for Marine-culture

<table>
<thead>
<tr>
<th>Picture</th>
<th>Type</th>
<th>Picture</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Eucheuma sp." /></td>
<td><em>Eucheuma sp.</em></td>
<td><img src="image" alt="Abalone" /></td>
<td>Abalone</td>
</tr>
<tr>
<td><img src="image" alt="Padina sp." /></td>
<td><em>Padina sp.</em></td>
<td><img src="image" alt="South Sea Pearl" /></td>
<td>South Sea Pearl</td>
</tr>
<tr>
<td><img src="image" alt="Red Snapper Fish" /></td>
<td>Red Snapper Fish</td>
<td><img src="image" alt="“Cantang” Grouper" /></td>
<td>“Cantang” Grouper</td>
</tr>
<tr>
<td><img src="image" alt="Rabbitfish" /></td>
<td>Rabbitfish</td>
<td><img src="image" alt="Sea Cucumber" /></td>
<td>Sea Cucumber</td>
</tr>
<tr>
<td><img src="image" alt="Silver pompano" /></td>
<td>Silver pompano</td>
<td><img src="image" alt="Green mussels" /></td>
<td>Green mussels</td>
</tr>
<tr>
<td><img src="image" alt="Lobster" /></td>
<td>Lobster</td>
<td><img src="image" alt="Gonggong" /></td>
<td>Gonggong</td>
</tr>
</tbody>
</table>
Potential Fish Species on Brackish Water

- *Gracilaria sp.*
- Tiger Shrimp
- *Penaeus vannamei*
- Milkfish
- *Plectropomus leopardus*
- Tilapia (Nila Saline)
<table>
<thead>
<tr>
<th>Picture</th>
<th>Type</th>
<th>Picture</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tilapia</td>
<td></td>
<td>Anguilla sp,</td>
</tr>
<tr>
<td></td>
<td>Carp</td>
<td></td>
<td>Chitala sp,</td>
</tr>
<tr>
<td></td>
<td>Goramy</td>
<td></td>
<td>Pomfret</td>
</tr>
<tr>
<td></td>
<td>Catfish</td>
<td></td>
<td>Macrobanchium</td>
</tr>
<tr>
<td></td>
<td>(Pangasius sp,)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Catfish</td>
<td></td>
<td>Crayfish</td>
</tr>
<tr>
<td></td>
<td>(Clarias sp,)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FISH GROWING AT FLOATING CAGES / MARINE CULTURE
PERFORMANCE 2010-2012 & TARGET 2013-2014

Value of Fisheries Export

Fish Consumption per Capita
## INDONESIA FISH EXPORT
### 2008 - 2012 (value – in US $ million)

<table>
<thead>
<tr>
<th>Year (THN)</th>
<th>Total US $ mil</th>
<th>Shrimp US $ mil</th>
<th>Fish US $ mil</th>
<th>Tuna US $ mil</th>
<th>Crab US $ mil</th>
<th>Others US $ mil</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>2.699</td>
<td>1.165</td>
<td>734</td>
<td>347</td>
<td>214</td>
<td>238</td>
</tr>
<tr>
<td>2009</td>
<td>2.466</td>
<td>1.007</td>
<td>723</td>
<td>352</td>
<td>156</td>
<td>225</td>
</tr>
<tr>
<td>2010</td>
<td>2.863</td>
<td>1.056</td>
<td>898</td>
<td>383</td>
<td>208</td>
<td>317</td>
</tr>
<tr>
<td>2011</td>
<td>3.521</td>
<td>1.309</td>
<td>1.100</td>
<td>498</td>
<td>262</td>
<td>349</td>
</tr>
<tr>
<td>2012</td>
<td>3.854</td>
<td>1.304</td>
<td>965</td>
<td>749</td>
<td>329</td>
<td>505</td>
</tr>
<tr>
<td>2013</td>
<td>4.181</td>
<td>1.614</td>
<td>857</td>
<td>764</td>
<td>359</td>
<td>587</td>
</tr>
</tbody>
</table>

Sources: DJ P2HP - 2014 & BPS
FISH PRODUCTS & MARKET DESTINATION

- Live Fish: Grouper, Lobster ➔ Hongkong, Singapore & China
- Fresh Product:
  - Important Economic Fish ➔ Singapore, Malaysia
  - Tuna (loin) ➔ Japan, EU, USA
- Frozen Product ➔ All Importing Countries
  - Shrimp/Prawn
  - Tuna
  - Cephalopode: sotong, gurita & squid
  - Fish: Tilapia, Snapper, Baramundi, Milkfish, Patin
  - Kekerangan; Soft shell crab
- Canned Product (tuna, mackarel, sardine, shrimp, cephalopode, pasteurized crabmeat, baby clam)
- Dried Product: Anchovy, salted fish & ell ➔ Japan
- Value-added products ➔ USA, Japan, EU
  - Breaded (tempura, fish ball, etc)
  - Fillet: tilapia, snapper, patin / pangasius,
  - Tuna loin, steak, sashimi, sushi.
- Saeweed & Carragenan ➔ China, EU, Philipina
# Target of Fish for Consumption & Export

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>Estimate</th>
<th>Target</th>
<th>Target</th>
<th>Target</th>
<th>Target</th>
<th>Target</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption (Kg/Cap)</td>
<td>35.62</td>
<td>38.00</td>
<td>40.01</td>
<td>42.12</td>
<td>44.35</td>
<td>46.69</td>
<td>49.16</td>
</tr>
<tr>
<td>Total population (million people)</td>
<td>248.4</td>
<td>252.1</td>
<td>255.9</td>
<td>259.7</td>
<td>263.6</td>
<td>267.5</td>
<td>271.5</td>
</tr>
<tr>
<td>Total fish demand for consumption (million ton)</td>
<td>8.9</td>
<td>9.6</td>
<td>10.2</td>
<td>10.9</td>
<td>11.7</td>
<td>12.5</td>
<td>13.3</td>
</tr>
<tr>
<td>Total raw material req’t for industry &amp; export (million ton)</td>
<td>2.1</td>
<td>3.0</td>
<td>3.3</td>
<td>3.7</td>
<td>4.1</td>
<td>4.6</td>
<td>5.1</td>
</tr>
<tr>
<td>Value of fisheries export (USD billion)</td>
<td>4.16</td>
<td>5.65</td>
<td>6.19</td>
<td>6.82</td>
<td>7.55</td>
<td>8.41</td>
<td>9.43</td>
</tr>
<tr>
<td>Volume of Fisheries Processed product (million ton)</td>
<td>5.20</td>
<td>5.60</td>
<td>6.00</td>
<td>6.50</td>
<td>7.00</td>
<td>7.50</td>
<td></td>
</tr>
</tbody>
</table>
Marine, Aquaculture & Seafood Chain

- Canned Seafood
- Frozen Seafood
- Fresh Seafood
- Dried seafood

Sea Caught
- Fishing Vessel
- Fishing Gear
- Collecting & Handling
- Fishing Port

Aquaculture
- Breeding
- Hatchery
- Pond culture
- Harvesting

Processing
- Seaweed
- Carrageenan
- by products

Retail & Wholesale
- Fishmeal
- Fish Oil
- Food Supplements

Feed Mills
Developing Integrated Seafood Industry

Motto “From Sea/Farm to your Kitchen”

- Seafood & Fish/Shrimp From Aquaculture
- Capture, Aquaculture
- Whole Frozen Fish Dried Fish
- Primary Processing
- Marketing and distribution
- Domestic Export
- Secondary Processing
  - Fillet, canned, Surimi, Downstream product of surimi, Fish Snack

Integrated seafood Industry
CAPTURE FISHERIES PRODUCTION in JAWA only 19.4%, but the PROCESSING Unit Concentrated in Jawa

Sumber: Ditjen P2HP, 2012
### DEVELOPMENT OF FISH PROCESSING UNIT (UPI)

<table>
<thead>
<tr>
<th>No</th>
<th>UPI</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Shrimp</td>
<td>161</td>
<td>150</td>
<td>145</td>
<td>150</td>
<td>(- 6.80)</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>432</td>
<td>423</td>
<td>501</td>
<td>570</td>
<td>13.6</td>
</tr>
</tbody>
</table>

- **SME’S Fish Processing Unit**: +/- 103.973 unit

### REGISTERED EXPORTERS TO MAIN DESTINATION COUNTRIES

<table>
<thead>
<tr>
<th>NO</th>
<th>COUNTRY</th>
<th>TOTAL Exporter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>USA</td>
<td>235 UNIT</td>
</tr>
<tr>
<td>2</td>
<td>UNI EROPA</td>
<td>190 UNIT</td>
</tr>
<tr>
<td>3</td>
<td>CANADA</td>
<td>150 UNIT</td>
</tr>
<tr>
<td>4</td>
<td>CHINA</td>
<td>335 UNIT</td>
</tr>
</tbody>
</table>

Sumber: DJ P2HP - 2012
Supply chain for fish products is long & complicated important to have product standard, certification & traceable.

Fish/shrimp processing industry create employment (1,000 people to process 2,000 ton fish/shrimp). Not including the employment on farm, traders, feed mill, hatchery also the fisherman.
BUILDING THE “FUTURE” FOR TRACEABILITY

Key International Standards:
➢ Codex Standards (CAC)
➢ ISO Standards (9000, 9001, 14000, 22000, 26000), SNI
➢ HACCP, GMP, GAP, GRASS, etc.

Key Legal Requirements:
➢ EU Food Law
➢ FDA Regulations
➢ JAPAN FOOD SANITATION LAW
➢ AUSTRALIA BIOSECURITY ACT

Key Commercial Standards:
➢ Global Food Safety Initiative (GFSI), BAP
➢ EUREP GAP, BRC, IFS
➢ SQF (FMI)
➢ NGO (MSC, ASC, Dolphin free)
World largest shrimp farm:

**Lampung.** Area: 40,000 Ha,

3,600 ponds@5000m²; 13,700 ponds@2,500 m²

Produksi: 95,000 ton (2008) -> 150,000 ton (2015)
SHRIMP PROCESSING PLANT
OVER 14,000 TON CAPACITY PROCESSING FACILITIES, FREEZING, STORAGE & PACKAGING. With 6,000 workers /3 shift daily
FUTURE PRODUCTS

- New innovation: design & products
- Ready to cook/to eat & “convenience” (cooked shrimps, value added seafood, frozen meals, pizza)
- Value added product & packaging -> standarditation
- Trained people/HRD & Competency based certified
- Sushi, tempura, breaded, surimi → Future product
- Cold chain & fresh / frozen food become popular
Export Awards for Shrimp & Seafood Exporter

PRIMANIYARTA AWARD :
From Ministry of Trade Repuplik Indonesia
As Global exporter :

2012 – PT. INDOMOKOM SAMUDRA PERKASA

2013 – PT. SEKAR BUMI Tbk.

2014 – PT. SEKAR BUMI Tbk.
Business Development Timeline

1973-1984

Block frozen shrimp export for reprocess

1985-1992

Value-added

- Peeled
- Deveined
- Cooked
- Tail-Off

1992-present

Processed

Dim Sum, Tempura, Prawn Balls, etc

Block Frozen Shrimps

Value-added

Processed

Dim Sum, Tempura, Prawn Balls, etc
Frozen Value-Added Seafood Products:

- Frozen Shrimp
- Frozen Fish
- Other Frozen Seafood

Frozen Processed Food Products:

- Dim Sum
- Fish Ball & Other Seafood Balls
- Mini Wonton, Spring Roll, Crispy Seafood
- Martabak, Samosa, Puff
- Sausages
- Nuggets
- Cashew Nuts
• Retail Packaged Products
PEMANFAATAN LAHAN YG TERBATAS DG PRODUKSI PERTANIAN & PERIKANAN
Kita Bisa
YES, WE CAN

BECOME MAIN
PLAYER OF
FISHERIES IN
THE WORLD

THANK YOU