Good Aquaculture Practices (GAP): Lesson Learned and Challenges

Purpose: Information
Submitted by: Indonesia
Small-scale Enterprises Predominate:

- 89% Brackish-water farms < 10 Ha
- 86% Fresh-water pond farms < 0.5 Ha

Key Characteristics:

- Under capitalized → cannot fulfill market quotas (demand)
- Low technical skills/knowledge → low productivity/quality
- Poorly managed → weak bargaining position

Challenge for implementing Good aquaculture practices
Key Strengths:

- Resilient to economic fluctuations;
- High capacity to provide employment;
- No use/limited use of chemical and biological substances and pharmaceuticals.

**TREND OF PRODUCTION COMPARING CAPTURE FISHERIES AND AQUACULTURE 2005-2014**

In millions ton

- **Aquaculture**
- **Capture**

Realization  Target
### AQUACULTURE STATISTICS

<table>
<thead>
<tr>
<th>Aquaculture Zone</th>
<th>Total Used Areas (Ha)</th>
<th>Ratio (%)</th>
<th>Production (Tones)</th>
<th>Ratio (%)</th>
<th>Fish Farmers (persons)</th>
<th>Ratio (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FRESHWATER AQUACULTURE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Ponds</td>
<td>270,354</td>
<td>36</td>
<td>554,067</td>
<td>21</td>
<td>1,332,782</td>
<td>70</td>
</tr>
<tr>
<td>b. Openwater (cages)</td>
<td>1,606</td>
<td>1,606</td>
<td>340,377</td>
<td>127,724</td>
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<td></td>
</tr>
<tr>
<td>c. Rice Fish Cum</td>
<td>127,679</td>
<td>127,679</td>
<td>86,913</td>
<td>283,246</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>399,639</td>
<td>981,357</td>
<td>1,743,752</td>
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<tr>
<td><strong>BRACKISHWATER AQUACULTURE</strong></td>
<td></td>
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</tr>
<tr>
<td>Ponds</td>
<td>682,725</td>
<td>61</td>
<td>907,123</td>
<td>19</td>
<td>470,828</td>
<td>19</td>
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<tr>
<td><strong>MARINE AQUACULTURE</strong></td>
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<td></td>
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<tr>
<td>Open water (Cages)</td>
<td>42,676</td>
<td>4</td>
<td>2,820,083</td>
<td>60</td>
<td>278,613</td>
<td>11</td>
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<tr>
<td>TOTAL</td>
<td>1,125,041</td>
<td>4,708,565</td>
<td>2,493,193</td>
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### INDONESIAN AQUACULTURE

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<thead>
<tr>
<th></th>
<th>1990</th>
<th>2000</th>
<th>2008</th>
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<tbody>
<tr>
<td>China</td>
<td>6,482</td>
<td>21,522</td>
<td>32,736</td>
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<tr>
<td>India</td>
<td>1,017</td>
<td>1,943</td>
<td>3,479</td>
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<tr>
<td>Viet Nam</td>
<td>160</td>
<td>499</td>
<td>2,462</td>
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<tr>
<td><strong>Indonesia</strong></td>
<td>500</td>
<td>789</td>
<td>1,690</td>
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<tr>
<td>Thailand</td>
<td>292</td>
<td>738</td>
<td>1,374</td>
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<tr>
<td>Bangladesh</td>
<td>193</td>
<td>657</td>
<td>1,006</td>
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<tr>
<td>Norway</td>
<td>151</td>
<td>491</td>
<td>844</td>
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<tr>
<td>Chile</td>
<td>32</td>
<td>392</td>
<td>843</td>
</tr>
<tr>
<td>Philippines</td>
<td>380</td>
<td>384</td>
<td>741</td>
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<tr>
<td>Japan</td>
<td>804</td>
<td>763</td>
<td>732</td>
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<td>Egypt</td>
<td>62</td>
<td>340</td>
<td>694</td>
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<tr>
<td>Myanmar</td>
<td>7</td>
<td>99</td>
<td>675</td>
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<tr>
<td>United States of America</td>
<td>315</td>
<td>456</td>
<td>500</td>
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<td>Republic of Korea</td>
<td>377</td>
<td>293</td>
<td>474</td>
</tr>
<tr>
<td>Taiwan Province of China</td>
<td>333</td>
<td>244</td>
<td>324</td>
</tr>
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</table>

Source: FAO (2010)
INDONESIAN AQUACULTURE

VISION

REALIZING INDONESIA AS THE BIGGEST MARINE AND FISHERIES PRODUCT PRODUCER 2015 THROUGH ADVANCE, COMPETITIVE, SUSTAINABLE, AND EQUITABLE AQUACULTURE

INDONESIAN AQUACULTURE

MISSION

PROSPERING MARINE AND FISHERIES COMMUNITY THROUGH:

- PROVIDING ANIMAL-BASED FOOD FOR COMMUNITIES IN ORDER TO SUPPORT NATIONAL FOOD SAFETY

- DEVELOPING MULTI-BUSSINESS SCALE AQUACULTURE THAT PROFITABLE, EFFICIENT AND ENVIRONMENT-FRIENDLY

- CREATING AQUACULTURE THAT OPEN BUSSINESS OPPORTUNITY, ABSORBING WORK FORCE, AND PRODUCING FISH WHICH APPROPRIATE WITH MARKET DEMAND, FOOD AND INDUSTRY NECESSITY
1. INCREASING COMMUNITY NUTRITION THROUGH CONSUMING FISH

2. PROTECTING, REHABILITATING, AND CONSERVATING AQUACULTURE RESOURCE

3. INCREASING DEVISA, INCOME, AND CREATING WORKING FIELD AS WELL AS BUSINESS OPPORTUNITY

1. Increase the fish farmers awareness on quality assurance and food safety through:
   - Socialization on the important of quality assurance and food safety as well as the government program on that matters
   - Demonstration farms

2. Capacity Building for officials (TOT) and fish farmers

3. Enforcement of regulations on quality control and safety assurance towards all stakeholders throughout Indonesia
4. **Aquaculture Certification Program**
   - Establish a Competent Authority (CA) for certification in fisheries and a Quality System Certification Institution for certification in aquaculture
   - Good Hatchery Practices Certification: 74 Certified Hatcheries
   - Good Aquaculture Practices Certification on Farms: 673 Certified Fish Farms

5. **Enforcement to use the registered fish drugs and feed**
   - Registration of veterinary drugs: 153 registered drugs
   - Registration of feed: 406 registered brands

6. **Optimizing DGA’s laboratories capability**
   - Laboratory accreditation based on ISO 17025: 5 laboratories
   - Laboratory accreditation based on ISO 17021: 2 laboratories

7. **Optimizing the Residue Monitoring Program (RMP), particularly on heavy metal and antibiotic residue**
   - Surprise Inspections (no prior notification)
The Indonesian Certification system has been fulfilled the minimum requirement from the FAO guidelines for aquaculture certification, comprising:

- Food safety & trace ability
- Quality assurance
- Traceability
- Environment integrity
- Social-economic aspect
- Animal health and welfare

The Indonesian certification assessment including:

- Risk prevention in every production steps, including location selection, farm preparation, source of seed stock, water management, feed and feeding, fish health management, drugs and chemical usage, harvesting;
- Sanitation fulfillment
- Data availability and updating
- Capacity building for fish farmers
1. Minister MAF Regulation No: PER.01/MEN/2007 regarding Quality Control and Food Safety Systems for Fishery Products

2. Minister MAF Regulation No: PER.02/MEN/2007 regarding the Monitoring of Drug, Chemicals, Biological Residues on Aquaculture Practices

3. Minister MAF Regulation No: KEP.01/MEN/2007 regarding Regulations for Quality Control and Food Safety of Fishery Products during Production, Processing and Distribution


7. Minister MAF No. PER.02/MEN/2010 regarding regulation on Feed Procurement and Distribution
IMPLEMENTATION OF THE RESIDUE MONITORING PROGRAM

1. Mapping and Plotting of aquaculture areas
2. Field Observations and sampling
3. Surprise Inspections (no prior notification)
4. Laboratory testing of samples
5. Reporting of monitoring results
6. Evaluation, Surveillance and Follow-up Measures
SUPPORTING RESIDU MONITORING PROGRAM

a. Increasing the facilities available in central technical implementation unit (TIU) laboratories

b. Increasing the facilities available in provincial/district environmental laboratories

c. Improving co-operation with other laboratories

FLOW CHART OF THE PROCESS FOR MONITORING (SAMPLING) RESIDUES AND CONTAMINANTS
THANK YOU
Terima Kasih