• Global
• National
• Regional
• State

Presentation excerpts from: Chris Weeks, Patrick Soorgelous, Max Holtzman and the FAO.
Worlds Economic Center of Gravity

Source: McKinsey Global Institute
“Aquaculture is probably the fastest growing food-producing sector, and currently accounts for almost 50% of the world’s food fish and is perceived as having the greatest potential to meet the growing demand for aquatic food.”

“Given the projected population growth over the next two decades, it is estimated that by 2030 at least an additional 40 million tons/year of aquatic food will be required to maintain the current per caput consumption.”
Asia Rules!

- 89 % of world production in Asia
- 61.4 % in China
- 2.2% Africa
- 2% Norway
- 1% US
- 97 % of fish farmers in Asia

Top 10 producers 2010:

<table>
<thead>
<tr>
<th>World</th>
<th>Tonnes</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>36 734 215</td>
<td>61.35</td>
</tr>
<tr>
<td>India</td>
<td>4 648 851</td>
<td>7.76</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>2 671 800</td>
<td>4.46</td>
</tr>
<tr>
<td>Indonesia</td>
<td>2 304 828</td>
<td>3.85</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>1 308 515</td>
<td>2.19</td>
</tr>
<tr>
<td>Thailand</td>
<td>1 286 122</td>
<td>2.15</td>
</tr>
<tr>
<td>Norway</td>
<td>1 008 010</td>
<td>1.68</td>
</tr>
<tr>
<td>Egypt</td>
<td>919 585</td>
<td>1.54</td>
</tr>
<tr>
<td>Myanmar</td>
<td>850 697</td>
<td>1.42</td>
</tr>
<tr>
<td>Philippines</td>
<td>744 695</td>
<td>1.24</td>
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<tr>
<td>Other</td>
<td>7 395 281</td>
<td>12.35</td>
</tr>
<tr>
<td>Total</td>
<td>59 872 600</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: FAO – SOFIA 2012
Top 13 Aquaculture Producers Worldwide

Total aquaculture production in relation to land and water resources

**Legend**
- Total aquaculture production (metric tonnes)
- Total land area
- Total water area (inland + exclusive economic zone)

**Sources of all seafood consumed in U.S.**
- Domestic
- Imported

**Countries and Production in Metric Tonnes Aquaculture**
- Bangladesh: 1,308,515
- Vietnam: 2,671,800
- Thailand: 1,286,122
- Myanmar: 850,697
- Egypt: 919,585
- Philippines: 744,695
- Norway: 1,008,010
- Chile: 701,062
- Japan: 718,284
- India: 4,648,851
- Indonesia: 2,304,828
- China: 36,734,215
- USA: 495,499

2010 US Seafood Deficit

- The US imports nearly **90%** of the seafood we consume
- **50%** of this comes from aquaculture
- We export **$32 billion** (FY 2012) in terrestrial agriculture products
- We import **$11 billion** of seafood products (FY 2011)
- As population and income increases in Asia, more seafood necessary for domestic demand
- We provide the safest highest quality products in the world

The current US trade deficit in fisheries products is **$10.8 Billion.**
Per Capita Consumption

- Beef
- Pork
- Chicken
- Turkey
- Seafood

Years: 1996 to 2011
Pounds: 0 to 80
Aquaculture - Status

✓ US Consumers eat an average of 15 lbs. of fishery products per capita.

✓ 2010 USDA Dietary Guidelines for Americans recommends 26 lbs seafood annually per capita.

✓ Global per capita consumption of seafood is 17kg (34 lbs)

✓ Americans consumed 4.7 billion pounds of seafood in 2011, 91% of which was imported (86% in 2010).
Reported aquaculture production in United States of America (from 1950)

(FAO Fishery Statistic)
(Source: FAO Fishery Statistics, Aquaculture production)
Total Aquaculture Production

Source: FAO 2013 database
U.S. Economic Impact

- Farm-gate value: $0.94 Billion
- Total value: $5.6 Billion
- 181,000 full-time jobs
- One of the fastest growing sectors of U.S. agriculture since 1980’s

Source: FAO Fishstat Plus Version 2.30 & Economic-wide impacts of U.S. aquaculture
Aquaculture is growing in Ohio

- 173 farms with aquaculture permits in 2010
- 80% in business less than 10 years
- 87% plan to maintain or expand production
- 66 farms reported
  - 75 full time employees
  - 81 part time employees
Complex Aquaculture Industry

Aquaculture Producer
- Banking, Finance & Insurance
- University Research & Extension
- Suppliers (feed, fingerlings, equipment)
- Services (veterinary, construction, transportation)

Institutional Support
- Government Agencies (ODA, OEPA, ODNR)
- Legislation, Farm Associations, Animal Welfare

Aquaculture Product
- Media
- Consumers
- Markets
Challenges

✓ Production cannot keep up with demand

✓ Major producers tend to be older in age and highly productive new facilities are rare

✓ Increased burden due to restrictive regulations

✓ Financing through lenders extremely difficult to obtain
Barriers to Aquaculture

- **Lack of advocacy**
  - Lack of industry advocacy and leadership in Washington has been deterrent to the development of commercial aquaculture in the US

- **Public awareness/Aquaculture has a bad image**
  - NGO anti-aquaculture claims go unchallenged
  - Arby’s fish commercial

- **Lack of capital markets**
  - Lack of investment
  - Not on financial institutions radar

- **No interest in congress**
  - No aquaculture caucus
  - 1980’s last National Aquaculture Act
  - Supports the regulatory mess
  - Need a federal aquaculture executive

- **Lack of a competitive advantage**
  - The US is a lousy place to start a business
  - US fiscal and monetary policies must change to be competitive
• Aquaculture plays a role in feeding the growing world population
• Must find economical and environmentally sustainable ways to produce more food.
• So what’s inhibiting growth?
  ➢ Multi-disciplinary research expanded to improve
    ❖ Production efficiency
    ❖ Economic viability
    ❖ Long term sustainability
      ✓ Genetics
      ✓ Nutrition
      ✓ Food safety
      ✓ Human health
  ➢ Disaster assistance programs to reduce risks
  ➢ Streamline regulations
    ❖ USDA
    ❖ Dept of Commerce
    ❖ Department of Interior
    ❖ Army Corp of Engineers
    ❖ EPA

Notes from Max Holtzman - USDA
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