Global Shrimp Aquaculture Industry
Dynamics

Rabobank F&A insights

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# Table of contents

**Sections**

<table>
<thead>
<tr>
<th>I</th>
<th>General outlook: times of supply volatility to persist</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>Developments in key import markets</td>
</tr>
<tr>
<td>III</td>
<td>Analysis of key production regions</td>
</tr>
<tr>
<td>IV</td>
<td>Challenges</td>
</tr>
<tr>
<td>V</td>
<td>Opportunities and concluding remarks</td>
</tr>
</tbody>
</table>
General outlook: times of supply volatility to persist
### Key observations on the shrimp industry

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>High supply volatility expected to remain due to recurring disease issues</td>
</tr>
<tr>
<td>II</td>
<td>Re-ranking of leading exporters</td>
</tr>
<tr>
<td>III</td>
<td>Good global demand which is expected to continue</td>
</tr>
<tr>
<td>IV</td>
<td>Emergence of new business models and a holistic approach to biosecurity</td>
</tr>
<tr>
<td>V</td>
<td>Growing importance of sustainability and certification</td>
</tr>
</tbody>
</table>
2 Developments in key import markets
Main export markets stable in volume terms – i.e. consumption per capita is not increasing

Shrimp imports in volume by EU countries, USA and Japan

Source: Globefish 2015
But there has been considerable growth in value

Shrimp imports in value by EU countries, USA and Japan (includes E8 internal trade)
Analysis of key production regions
Total supply of farmed shrimp: tentative growth expected, but low prices will dampen recovery

Global farmed shrimp supply

Source: Rabobank 2015
Bulk of industry is in SE Asia, but highest supply and export growth rate is likely to be outside of this region.
Thailand: a shrimp empire collapsed, but recovery seems on the way

Thai shrimp aquaculture production

Source: Rabobank, based on FAO and other sources 2015
A perfect storm in the Thai shrimp industry

Sold to the Sea
Human Trafficking in Thailand’s Fishing Industry
China: light supply recovery, will not match demand

China: farmed shrimp production

Source: FAO, Rabobank 2015
Shrimp demand is strong and is being fulfilled by imports that are much higher than stated in official data

China: shrimp imports and exports in volume (official figures)

Source: Rabobank, Uncomtrade 2015
Booming Indian shrimp exports

2008

map shows
85% of volume
86% of value

in order of trade volume

EU (#1)
65,603 tonnes
$352 million

USA (#3)
21,538 tonnes
$141 million

UAE (#4)
6,837 tonnes
$42 million

Japan (#2)
28,815 tonnes
$192 million
Booming Indian shrimp exports

2013

USA (#1)
82,199 tonnes $1,063 million

EU (#2)
52,780 tonnes $495 million

Japan (#4)
39,793 tonnes $244 million

Vietnam (#3)
33,269 tonnes $366 million

in order of trade volume

map shows 80% of volume 83% of value
Exports to US, EU are increasing, but uncertainty remains

Indian shrimp exports by volume and value

Source: Uncomtrade 2015
Prevalence of EHP is expected to result in a 10-20% decline of farmed shrimp production in India

Total production of farmed shrimp in India

Source: Seafood Exporters Association of India
**Summary: how long will Asia be the dominant shrimp exporter of the world?**

<table>
<thead>
<tr>
<th>I</th>
<th>Recovering volumes but just slightly</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>Costs are still high</td>
</tr>
<tr>
<td>III</td>
<td>New business model needed</td>
</tr>
<tr>
<td>IV</td>
<td>Strong domestic demand</td>
</tr>
<tr>
<td>V</td>
<td>Long term net trade position of Asia likely to decline</td>
</tr>
</tbody>
</table>
Rising Ecuadorian shrimp exports

2008

in order of trade volume

map shows

98% of volume

98% of value

USA (#2)
51,565 tonnes $293 million

EU (#1)
72,836 tonnes $390 million

Chile (#4)
1,581 tonnes $9 million

Colombia (#3)
1,914 tonnes $5 million

Japan (#5)
853 tonnes $6 million

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Japan (#5)
Rising Ecuadorian shrimp exports

2013

USA (#2)
73,323 tonnes $631 million

Colombia (#5)
4,609 tonnes $24 million

EU (#1)
83,376 tonnes $622 million

Vietnam (#3)
37,536 tonnes $301 million

China (#4)
8,173 tonnes $72 million

South Korea (#6)
3,976 tonnes $33 million

map shows 94% of volume 93% of value

in order of trade volume
Ecuador is export focused, was the #1 beneficiary of the disease issues in Asia

_Ecuadorean shrimp exports by volume and value_

Source: Uncomtrade 2014
Ecuador’s industry shifts attention to Asia and China and becomes the link between Asian and Western markets

Ecuadorian shrimp exports by volume in May (left) and YTD May (right)

Source: Urner Barry 2014
Although the latest figures show the pressure on the Ecuadorian industry as a result of recovery in Asia.

Source: Central Bank of Ecuador
Brazil: Unfulfilled promise, can this change in the current conditions?

Brazil shrimp aquaculture

Source: Rabobank 2016
Mexico — huge potential but mysteriously stuck by EMS from the other side of the Pacific Ocean

Source: Rabobank, Kontali, Subsecretaría de Pesca
Exchange rates are an important factor for the competitiveness of shrimp producers on global markets.
## LAM summary: potential for further growth

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>I</strong></td>
<td>Well positioned region, with low cost</td>
</tr>
<tr>
<td><strong>II</strong></td>
<td>But many challenges, not living up to the potential so far</td>
</tr>
<tr>
<td><strong>III</strong></td>
<td>Ecuador seems unique</td>
</tr>
<tr>
<td><strong>IV</strong></td>
<td>LAM growth forecasts are difficult due to the unpredictable situation in Brazil and Mexico</td>
</tr>
<tr>
<td><strong>V</strong></td>
<td>Potentially the most profitable shrimp farming region</td>
</tr>
</tbody>
</table>
4 Challenges
With the introduction of Vannamei shrimp there was increased growth, but also increased biological risk.

1. Aquaculture starts initially with wild juveniles
2. Monodon farming drives growth
3. Global prices high
   - Vannamei introduction
   - Industry 400% growth
   - Shrimp Aquaculture 2.0

Source: Rabobank, FAO 2015
Why is shrimp farming a sector with high biological risk especially in Asia?

Typical shrimp farming business model in Asia

Source: Rabobank
This means a large part of the farming is done by peasant or subsistence farmers.

Many shrimp farmers in Asia are subsistence farmers moving into shrimp from other agricultural activities.

Experience and knowledge as well as control at this critical point can be low.

This business model is often successful for poverty alleviation but has a higher risk.
....and there are many other factors that cause supply side volatility

1. *It’s the youngest animal protein industry*

2. *All shrimp farming is done in developing countries*

3. *It’s a tropical species*

4. *There are many different business models and sanitary levels neighboring each other*

5. *Even with the closed system, farming is still open to the environment*

6. *Shrimp is a heavily traded product, even among exporters*
Opportunities and concluding remarks
Opportunities: there is shrimp farming potential also in relatively unexplored regions

- Africa
- Australia
- Middle East
Another opportunity: increased cooperation within the sector to tackle disease issues—like was done in the Chilean salmon industry

Salmon farming in Chile

In 2011, Rabobank and the World Wide Fund for Nature started a partnership to engage in joint projects to make the international food and agri chains more sustainable. One such project is in Chile, where we are working to make the salmon farming chain more sustainable.

The emphasis in this project is on improving Chilean salmon production in terms of increased yield and productivity, using sustainable management methods and at the same time safeguarding biodiversity and marine ecosystems.
GSI: a game-changing industry dynamic, tackling the image of salmon farming with NGOs, governments and customers

Areas of Focus

- **Biosecurity**
  - Lower lice levels
  - Eliminate escapes
  - Reduce environmental impact of farms

- **Standards**

- **Feed and nutrition**
  - Focus on reducing marine ingredients from wild catch fisheries
  - Source only from sustainable marine ingredients

Source: GSI 2015
## Concluding remarks

<table>
<thead>
<tr>
<th>I</th>
<th>A period of high supply (and price) volatility is to persist</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>Asian producers are challenged with biosecurity issues and competitiveness</td>
</tr>
<tr>
<td>III</td>
<td>Future potential growth areas for export are especially in LAM, but also in Australia, Africa and ME</td>
</tr>
<tr>
<td>IV</td>
<td>To ensure sustainability of the industry, cooperation is key</td>
</tr>
</tbody>
</table>
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