Poor rich-country industries: Fish-processing industries out-competed by low-labour-cost countries?

Audun Iversen
Bjørn-Inge Bendiksen
Nofima, Norway

Background

• "Rich-country industries" loose competitiveness compared to producers in low-cost countries
• Most visible in labour-intensive production
• We have studied producers of fresh or frozen fillets of whitefish (cod, haddock, saithe), with production in the Nordic countries, The Baltic and the Far East
• In Norway this industry has been reduced from about 100 firms 20 years ago, to seven today
• Processing has to a large degree been moved to the Baltic countries or the Far East
Research questions

• Is it possible for the remaining fish-processing industry in Norway to survive in the future?
  – What are the locational advantages of the Norwegian fish-processing industry?
  – How can locational advantages be exploited?
  – What strategies might the firms pursue?
  – How can the government strengthen the possibilities of successful strategies?

• To answer this, we discuss the relative advantages of doing processing in these countries

Methodology

• Desk-top studies for some issues, field studies for others
  – Case studies
  – Interviews

• Levels of analysis
  – Country/region level
  – Firm level
Empirical setting

- Fish-processing industry in Norway, Iceland, Poland, Lithuania, China and Vietnam
- Case study of five firms with different and/or multiple locations
## Competitive advantage through location?

<table>
<thead>
<tr>
<th>Country</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>Proximity to raw material, Time to market, Price of raw material, Price for bi-products, Able to supply genuinely fresh fish</td>
<td>High level of costs, Seasonal profile of landings, Scale/structure, Quality challenges, Trade barriers</td>
</tr>
<tr>
<td>Iceland</td>
<td>Proximity to raw material, Control of raw material, Seasonal profile of landings, Price of raw material, Quality, Price for bi-products, Able to supply genuinely fresh fish</td>
<td>Transportation costs, Limited supply of raw material</td>
</tr>
<tr>
<td>Poland/Lithuania</td>
<td>Time to market, Cost level, Yield (in % of raw material), Scale</td>
<td>Price of raw material, Price of technology, Capital costs, Price risk</td>
</tr>
<tr>
<td>China/Vietnam</td>
<td>Cost level, Yield (in % of raw material), Scale, Varieties, abilities to produce tailored products</td>
<td>Time to market, Double-frozen products, Price of raw material, Capital costs, Price risk, Traceability difficult</td>
</tr>
</tbody>
</table>

### Case firms

- Espersen, Denmark
- HG (Hradfrystihuusid Gunnvor), Iceland
- Tøbø-fisk, Norway
- Domstein, Norway
- Aker Seafoods/Norway Seafoods, Norway
Espersen, Denmark

Exploits the possibilities of globalisation

- Production in Poland, Lithuania, China and Vietnam
- Frozen blocks, lightly salted fillet
- Value Added-products still produced in Denmark
- Take over production of refreshed fillet from Domstein

HG (Hradfrystihusid Gunnvor), Iceland

- Owns trawlers and quotas
- Value-chain coordination give
  - Predictable supply
  - Control of fish quality

- Export of fresh fillets with longer shelf-life (on-board gutting, ice-slurry cooling and pre-rigor filleting)
• Strong focus on quality, no landings from trawl, net or large "snurrevad"
• Close cooperation with boats give
  – good predictability
  – Good quality
• Simple/few products with minimum labour keep costs low

Domstein
• No 1 in the Nordic market for Private Label
• Also sell under the Domstein brand
• Strong focus on sustainability
• Produced refreshed fillet ("fresh" fish based on frozen raw material)
Aker Seafood/Norway Seafoods

- Norway’s largest producer of fresh whitefish fillet
- Integration into important markets (Denmark, France)
- Has their own fleet of trawlers
- Still rely on coastal fleet for supply of fresh fish

Norwegian firms: Competitive advantage through strategy?

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>High level of costs</td>
</tr>
<tr>
<td>Proximity to raw material</td>
<td>Seasonal profile of landings</td>
</tr>
<tr>
<td>Time to market</td>
<td>Scale/structure</td>
</tr>
<tr>
<td>Price of raw material</td>
<td>Quality challenges</td>
</tr>
<tr>
<td>Price for bi-products</td>
<td>Trade barriers</td>
</tr>
<tr>
<td>Able to supply genuinely fresh fish</td>
<td></td>
</tr>
</tbody>
</table>

The search for competitive advantage:

- Technology development, rationalisation, automation
- From block-freezing to IQFs
- Production of fresh filet
- Boat cooperation/ownership
- Production of refreshed fish
Generic Strategies and Cost/Value position

<table>
<thead>
<tr>
<th>Cost position</th>
<th>Value position</th>
<th>Low</th>
<th>Normal</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Even competition</td>
<td>Disadvantage</td>
<td>Even competition</td>
<td>Disadvantage</td>
</tr>
<tr>
<td>Normal</td>
<td>Even competition</td>
<td>Even competition</td>
<td>Even competition</td>
<td>Disadvantage</td>
</tr>
<tr>
<td>High</td>
<td>Disadvantage</td>
<td>Disadvantage</td>
<td>Even competition</td>
<td>Even competition</td>
</tr>
</tbody>
</table>

(Hunt & Morgan, 1995)

Strategic developments for our cases

<table>
<thead>
<tr>
<th>Cost position</th>
<th>Value position</th>
<th>Low</th>
<th>Normal</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Even competition</td>
<td>Disadvantage</td>
<td>Even competition</td>
<td>Disadvantage</td>
</tr>
<tr>
<td>Normal</td>
<td>Even competition</td>
<td>Even competition</td>
<td>Even competition</td>
<td>Disadvantage</td>
</tr>
<tr>
<td>High</td>
<td>Disadvantage</td>
<td>Disadvantage</td>
<td>Even competition</td>
<td>Even competition</td>
</tr>
</tbody>
</table>

Espersen
HG
Tobe-fisk
Domstein
Findings

• There are still some locational advantages for the Norwegian fish-processing industry
  – But they are hard to exploit
    • Differentiation/premium necessary
    • Logistics are difficult
    • Raw material supply must be optimised
  – Competitive advantage a result of both location and strategy
    • Institutional arrangements limit strategic options and value propositions for customers

• Fresh-fish opportunities
  – Fresh fish available at prices below world market prices
  – Gains premium prices in the market
    • if you can supply high/predictable volumes of even quality

Findings, cont.

• Technological innovations work when they support other advantages
  – Technology in itself does not lead to competitive advantage
    • Easily transferred to other locations
    • Technology the same in the Baltic as in Norway and Iceland (Marel)
  – Simple technological innovations that are not easily transferred:
    • Chilling with ice-slrurry and direct gutting
    • Filleting based on thawed fish requires optimised thawing facilities
Implications

• Policy implications
  – If government wants more value creation based on Norwegian stocks, the **input issue** for the processing industry must be solved (through for instance industry quotas, boat-land cooperation models et.c)

• Implications for theory
  – The search for competitiveness must be understood from a
    • Country/region level
    • Firm level
    • Institutional level

Thank you for your attention!