IMPACT OF GLOBALISATION
CHALLENGES AND OPPORTUNITIES
FOR INDIAN AQUACULTURE

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OECD Workshop on Globalization,
Capture production stagnating at 95 M tons, Culture crossed 45 M tons, Current share of culture in total is 32%
Aquaculture and fish trade

- Increasing Importance of Aquaculture in trade.
  - Very important for 26 % of international fish trade
  - For another 21 % aquaculture is starting to gain important.
- Share of Shrimps in Int. trade-16.5 %
- Contribution of Farmed Shrimps-40 %
### Cultured shrimp production of selected Asian countries 2004 to 2006

<table>
<thead>
<tr>
<th>Country</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>375 000</td>
<td>408 000</td>
<td>405 000</td>
</tr>
<tr>
<td>Thailand</td>
<td>325 000</td>
<td>374 159</td>
<td>386 742</td>
</tr>
<tr>
<td>Vietnam</td>
<td>290 000</td>
<td>310 420</td>
<td>346 528</td>
</tr>
<tr>
<td>Indonesia</td>
<td>190 000</td>
<td>197 000</td>
<td>206 000</td>
</tr>
<tr>
<td>India</td>
<td>126 000</td>
<td>143 000</td>
<td>152 000</td>
</tr>
<tr>
<td>Others</td>
<td>90 838</td>
<td>101 204</td>
<td>111 000</td>
</tr>
<tr>
<td>Total</td>
<td>1396838</td>
<td>1533783</td>
<td>1607270</td>
</tr>
</tbody>
</table>

(Source: GSOL 2006)
THE INDIAN SCENARIO

- India is positioned 19th among Sea food exporting countries (FAO, 2004).
- During 2005-06, the country exported over 0.51 million metric tonnes, worth US $ 1.64 billion.
- Shrimp contributes the main share with 58% value and 28% quantity.
Major Markets & Their Share
2005-06

**Quantity**
- China: 27%
- S.E. Asia: 12%
- Middle East: 4%
- EU: 26%
- Others: 8%
- Japan: 12%

**Value**
- China: 16%
- USA: 23%
- EU: 29%
- Japan: 16%
- S.E. Asia: 8%
- Middle East: 4%
- Others: 8%
Share of shrimp in India’s total exports

Quantity

<table>
<thead>
<tr>
<th>Fish Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fr. Fish</td>
<td>36%</td>
</tr>
<tr>
<td>Fr. Shrimp</td>
<td>28%</td>
</tr>
<tr>
<td>Fr. Squid</td>
<td>10%</td>
</tr>
<tr>
<td>Fr. Cuttlefish</td>
<td>10%</td>
</tr>
<tr>
<td>Others</td>
<td>16%</td>
</tr>
</tbody>
</table>

Value

<table>
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<tr>
<th>Fish Type</th>
<th>Percentage</th>
</tr>
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<tr>
<td>Fr. Fish</td>
<td>14%</td>
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<tr>
<td>Fr. Shrimp</td>
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</tr>
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<td>Fr. Squid</td>
<td>8%</td>
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<td>Fr. Cuttlefish</td>
<td>8%</td>
</tr>
<tr>
<td>Others</td>
<td>12%</td>
</tr>
</tbody>
</table>
Market-wise export of Fr. Shrimp

- Japan: 20.26%
- USA: 31.94%
- EU: 27.93%
- S.E. Asia: 4.64%
- Middle East: 4.12%
- Australia: 1.93%
- China: 1.62%
- Others: 7.56%
Export of Frozen shrimp to OECD Countries

- Quantity (MT)
- Value (USD Million)


- Quantity: 104000, 106000, 108000, 110000, 112000, 114000, 116000, 118000, 120000
- Value: 720, 740, 760, 780, 800, 820, 840, 860

Graph showing trends in quantity and value from 2001-02 to 2005-06.
INDIA - Culture Fisheries

- India - 5th top most shrimp producer and 2nd largest aquaculture producer in the world
- Total production from culture – 2.47 m. tonnes
- 1.2 million ha. of brackish water area spread over 10 maritime States/Union Territories (Only 15% is presently under farming)
- 8.5 million ha. available for sea farming
- 5.4 million ha. available for fresh water aquaculture
INDIA - CULTURED SHRIMP & SCAMPI PRODUCTION (MT)
Production Pattern

- India produced 143000 tonnes of shrimp and 43000 MT of scampi in 2005-06 from about 190000 hectares.
- The average productivity per hectare is nearly one tonne.
- This shows that the aquaculture practices are mostly extensive with limited stocking density.
Composition of Shrimp Farmers  
(based on farm holdings)

Shrimp culture is basically an enterprise of Small and marginal farmers
Globalization Effects

- Increased popularity of fish as health food
  - Greater demand for ready-to-eat & ready to cook products
  - Emergence of the super-market as a major outlet for convenience products
  - Increasing awareness of consumers. Food safety and quality requirements. Non-tariff barrier
  - Growing concern for environmental sustainability
  - Choice of species trade driven
  - Anti-dumping measures
Coping with the challenges of Globalization

- Increasing demand vs. disease problems in the shrimp aquaculture
- Introduction of L. vannamei in major Asian countries as an alternative species
- Unprecedented increase in shrimp aquaculture production
- Price fall in international markets
- Imports into USA crossed 500,000 MT (2004)
Global cultured shrimp production 1995-2004

Quantity MT

Cultured shrimp production pattern in selected Asian countries

![Bar chart showing cultured shrimp production in China, Thailand, Vietnam, Indonesia, and India from 2004 to 2006.](chart.png)
Black Tiger Price In World Shrimp Market

[Graph showing price variation over years for different sizes of black tiger shrimp.]
TREND IN UNIT VALUE OF INDIAN SHRIMP EXPORTS (US $)

- 2001: 7.19
- 2002: 6.88
- 2003: 6.83
- 2004: 6.75
- 2005: 6.76
Anti-Dumping Action by USA

- In 2003 anti-dumping cases started against India and five other countries
- AD duties ranging from 4% to 10.17% imposed on India
- Bonding requirements imposed by US CBP
- The retrospective system of USA necessitates continuous bonds for three years
- Increases transaction cost of exporters.
- Many exporters find it difficult to continue in business
Impact of US anti-dumping measures

- Anti-dumping duty & the bonding requirement imposed unbearable burden on exporters
- Number of exporters to US declined 169→77
- Exports to US has dropped
- Fall in farm gate prices

![Export of frozen shrimp to US](chart.png)
Farm gate prices offered to shrimp farmers
Concerns of Shrimp Farmers

- Recurring disease problems & Repeated crop losses.
- Price fall – International markets & farm gate
- Increasing cost of production – High feed cost (fish meal issue) & other inputs
- Rising quality requirements
- Lack of insurance and financial support
- Exploitation by middlemen, moneylenders
Major Issues In International Trade In Fish And Fishery Products

1. Market access issues
2. Food safety issues
3. Environmental issues
Market Access Issues

Tariff escalation:

1. Value added products attract higher tariff levels.

This perpetuates the dominance of Developed countries in the production and marketing of value-added products.
Supermarkets

1. Increased dominance of supermarkets in retail trade in fish and value-added products
2. Entry barriers create difficulty in accessing supermarkets
   a) Supply logistics difficult for a new entrant.
   b) Shelf space expensive
   c) High costs of market promotion
   d) Brand barrier. Acquisition of brands prohibitively expensive
3. The above constraints force exporters to pack in the name of private labels and forego margins heavily.
Non-Tariff Barriers

- Sanitary and Phyto-sanitary Standards
  - EU directives pertaining to the residue levels - the most challenging
  - The detection levels for chloramphenicol and Nitrofurans necessitate heavy investment in analytical equipment.
  - Japanese market also becoming more sensitive to residues
  - Rejection of shrimp consignments lead to financial crisis for the export industry
Measures to Meet the Challenges

Short term measures:

- Notification banning the use of anti-biotics in hatcheries, farms etc
- Village level campaigns against use of anti-biotics and other pharmacologically active substances in shrimp farms
National Residue control programme

- National Residue Control Programme (NRCP) put in place.
- Establishment of state-of-the-art laboratories for residue analyses
- Training and recruitment of staff for residue analysis
Medium and long term measures

- Legislation and Regulation of Aquaculture through Coastal Aquaculture Authority Act (2005)
- Probiotic mode of operation of shrimp hatcheries
- Code of practices for shrimp hatcheries and farms and their registration
- Domestication and selection for SPF shrimp
- Regulation on import of exotics
Traceability:

- Since farming is highly fragmented, traceability becomes difficult.
- Certification becomes unaffordable
- Comprehensive database on shrimp farms in the country under preparation
- Assigning identification code to individual farms
- GIS mapping of farms in association with National Remote Sensing Agency
Environmental sustainability and economic viability

- Adoption of FAO Code of Conduct for sustainable aquaculture practices
- MPEDA-NACA programme for sector-wide adoption of BMPs.
- Introduction of Participatory farming through formation of Aqua Clubs
MPEDA-NACA Experiment

- BMPs based on FAO CCRF
- Emphasis on pond bottom/water quality, screening of seeds, optimisation of feeding, low stocking density and minimisation of water exchange
- Co-ordination of farm activities by group formation (self-help groups)
- Empowerment and self reliance.
Outcomes of MPEDA-NACA Project

- Successful crops and improved profits
- Reduced disease prevalence
- Aquaculture without use of antibiotics
- Group traceability through aqua clubs
- Increased cooperation among farmers
- More interaction of farmers and stakeholders
- Increased awareness on environment
- Better Price for BMPshrimp
The Cluster Concept in India

- Institutionalisation of cluster farming by formation of Aquafarmers’ Societies
- Registration of societies by MPEDA based on adoption of code of practices
- Financial support to the societies.
- Bottom-up approach country-wide
- Financial assistance for societies for promoting sustainability
- New outreach Agency National Centre for Sustainable Aquaculture (NACSA) established for promotion of sustainable aquaculture through capacity building
Regulatory system

- Coastal Aquaculture Authority set up in Dec 2005
- Regulation within 2kms of high tide lines of seas, rivers, creeks and backwaters
- Guidelines for farming and allied activities.
Guideline for Farming

- Ecologically sensitive areas not to be used
- No farming within 200 metres of the HTL
- Maintain 100 m distance from the nearest drinking water source. Farms not to be located across natural drainage canals and flood drains.
- Control on stocking density
- Farms to maintain a distance of 50-100 m from the nearest agricultural land
- Prohibition of use of banned anti-biotics
Diversification Challenges

- Pressure on diversification
- Short term solutions difficult because of lack of hatchery technology.
- MPEDA has embarked on several R&D projects –Indian seabass, mud crab, Grouper, Cobia
- Enormous potential for cage farming
Value Addition

- Value addition key to betterment of farmers
- Investment needed in processing
- Technology up-gradation
- Access to retail chains difficult for small & medium exporters
- Better brand equity needed.
The Way Forward

- Value addition of seafood products
- More FDI inflow in Seafood sector
- Promotion of Brand equity
- Promotion of organic shrimp
- MPEDA-SIPPO technical collaboration
Opportunities

- Increased demand for products
- Diversification opportunities
- Benchmarking practices with the most advanced in the world.
- Capacity building
- Emergence of sustainability as an integral part of Aquaculture practices