The State of Marine Fisheries - 2004
An overview

ICP. June 2005
Outline

1. Selected indicators
2. Selected issues
3. Societal response
4. Outlook
1. Selected indicators

- Reported landings
- Food
- Employment
- State of stocks
- Trade
- Fleet size
Reported marine production

World

World excluding China

Aquaculture

Capture

Million tonnes

Year:
- 1950
- 1955
- 1960
- 1965
- 1970
- 1975
- 1980
- 1985
- 1990
- 1995
- 2000
- 2003
Non-coastal marine landings

In million tonnes

As % of total marine landings

Contribution to food

Per capita supply with China

Per capita supply w/o China
More than 80% of capture fisheries employment is in Asia.
International trade

Trade has been growing at a reducing rate.
Fish trade balance

<table>
<thead>
<tr>
<th>Year</th>
<th>Latin America and the Caribbean</th>
<th>China</th>
<th>Africa</th>
<th>Oceania</th>
<th>Canada and United States</th>
<th>Europe</th>
<th>Asia excluding China</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
</tr>
<tr>
<td>1980</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
</tr>
<tr>
<td>1985</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
</tr>
<tr>
<td>1990</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
</tr>
<tr>
<td>1995</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
</tr>
<tr>
<td>2000</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
</tr>
<tr>
<td>2003</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
<td>Deficit</td>
<td>Surplus</td>
</tr>
</tbody>
</table>

Billion US $
Decked vessels > 100 tons

Close to 85% of the large vessels are in Asia

Source FAO
Age of vessels > 100 tons (2003)

Age profile of global fleet above 100 GT in 2003

Source: FAO / Lloyds
## 2. Selected issues

<table>
<thead>
<tr>
<th><strong>“Classical”</strong></th>
<th><strong>“New”</strong></th>
<th><strong>“Emerging”</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Overfishing</td>
<td>Extinction and FAO-CITES</td>
<td></td>
</tr>
<tr>
<td>Overcapacity / fleet size</td>
<td>Capture-based aquaculture</td>
<td></td>
</tr>
<tr>
<td>Economic viability</td>
<td>Labor standards</td>
<td></td>
</tr>
<tr>
<td>Subsidies</td>
<td>Catch certification</td>
<td></td>
</tr>
<tr>
<td>Bycatch and discards</td>
<td>Ecolabelling</td>
<td></td>
</tr>
<tr>
<td>Monitoring (MCS)</td>
<td>Deep sea fisheries</td>
<td></td>
</tr>
<tr>
<td>Right-based systems</td>
<td>Stock recovery</td>
<td></td>
</tr>
<tr>
<td>Natural oscillations</td>
<td>Biodiversity, ecosystem</td>
<td></td>
</tr>
<tr>
<td>Fishmeal</td>
<td>Risk management</td>
<td></td>
</tr>
<tr>
<td>Statistics</td>
<td>Fishery ethics</td>
<td></td>
</tr>
<tr>
<td>Capacity-building</td>
<td>Animal welfare</td>
<td></td>
</tr>
<tr>
<td>RFMOs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-tariff barriers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Precautionary approach</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
State of stocks: 2004

- Recovering: 1%
- Depleted: 7%
- Overexploited: 17%
- Fully exploited: 52%
- Moderately exploited: 21%
- Underexploited: 3%

RISK:
- Moderately exploited
- Fully exploited
Stocks trends: 1974-2003

- Fully exploited
- “Under” exploited
- Overexploited
Overfishing

Source: FAO (Garcia, Grainger et De leiva, 2004)
State of selected resources

Top Predators

Other Predators

Epipelagic-Deepwater

- Recovering
- Senescent
- Mature
- Developing
- Undeveloped
Figure A2.2 - Percentage of stocks exploited beyond MSY levels (O+D+R), at MSY levels (F), and below MSY levels (U+M) by FAO statistical areas in 2004

- Southeast Atlantic (47)
- Southeast Pacific (87)
- Southern Oceans (48, 58 & 88)
- Northeast Atlantic (27)
- Tuna and Tuna-like Species Total
- Mediterranean and Black Sea (37)
- South West Atlantic (41)
- Western Central Atlantic (31)
- Northeast Pacific (67)
- Eastern Central Atlantic (34)
- Western Indian Ocean (51)
- Eastern Indian Ocean (57)
- Southwest Pacific (81)
- Northwest Atlantic (21)
- Northwest Pacific (61)
- Western Central Pacific (71)
- Eastern Central Pacific (77)

Legend:
- Underexploited + Moderately exploited
- Fully exploited
- Overexploited + Depleted + Recovering
State of world tuna stocks

FISHING PRESSURE RELATIVE TO MSY

<table>
<thead>
<tr>
<th>5</th>
<th>3</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

STOCK BIOMASS RELATIVE TO MSY

OVERALL

59%

23%

18%
North Sea “recovery”

Garcia and De leiva, in press
Fleet size: From past to future

- Distant water fisheries landings (% of world)
- Yearly registrations

New registrations vs. Distant water fishing landings

Yearly registrations:
- 1945: 1000
- 1955: 500
- 1965: 2500
- 1975: 1500
- 1985: 1000
- 1995: 750
- 2005: 500

Distant water fisheries landings (% of world):
- 1945: 0.00
- 1955: 2.00
- 1965: 4.00
- 1975: 6.00
- 1985: 8.00
- 1995: 10.00
- 2005: 12.00
Fleet size: From past to future

The graph shows the fleet size from 1945 to 2045, with new registrations on the y-axis and fleet size on the x-axis. The graph indicates a peak around 1985 followed by a decline, with a question mark indicating uncertainty for the future.
Deep sea: increased pressure!

...and that fish is very old!

Source: National Institute of Water and Atmospheric Research, New Zealand

Patton Seamount: http://oceanexplorer.noaa.gov/
By catch and discards trends

Million tonnes

1980-1990s

1992-2004

Landings

Discards

1995

91

77

19

84

7
Natural oscillations

Climate Zonal ACI
- Pacific salmon
- Japanese pilchard

Climate Meridional ACI
- Atlantic cod
- Pacific herring

Source: redrawn from FAO-Klyashtorin

About 50 years
Natural oscillations

Mediterranean Bluefin tuna

Natural oscillations

California Anchovy

More than 1500 years?

circa 100 years
Climate change

Source: Ifremer
Environmental degradation

Baltic Sea eutrophication

Food security: Dependence on fish

Population in trillions

Contribution of fish to animal protein consumption

Number of countries

Cumulative %
3. Social response

- Media storming
- Consumer mobilisation
- Legal and policy frameworks
Media Storming

Study Says Bad Data by China Inflated Global Fishing Yields

By ERIK ECKHOLM

November 30, 2001

"Dirty Fishing" Emptying Oceans, Experts Say

Sharon Guynup
National Geographic Channel
August 11, 2003
Consumer’s pressure

Choices for Healthy Oceans

**You Have the Power**
Your consumer choices make a difference. Choose seafood from the **Best Choices** list to support those fisheries and fish farms that are healthier for ocean wildlife and the environment.

**How to Use This Guide**
It’s OK to ask questions when shopping or eating out. Ask staff where their seafood is from. Is it farmed or wild-caught? How is it caught? If they’re not sure, choose something else.

We update this pocket guide at least twice a year. Visit our web site to obtain the latest version and learn more about seafood.

www.montereybayaquarium.org

---

**AVOID**

<table>
<thead>
<tr>
<th>Caviar, Beluga/Osetra/Sevruga</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chilean Sea Bass</td>
</tr>
<tr>
<td>Cod, Atlantic/Icelandic</td>
</tr>
<tr>
<td>Crab, King (imported)</td>
</tr>
<tr>
<td>Lingcod</td>
</tr>
<tr>
<td>Monkfish</td>
</tr>
<tr>
<td>Orange Roughy</td>
</tr>
<tr>
<td>Rockfish/Rock Cod/Pacific Snapper (trawl-caught)</td>
</tr>
<tr>
<td>Salmon (farmed/Atlantic)</td>
</tr>
<tr>
<td>Sharks (except U.S. West Coast Thresher)</td>
</tr>
<tr>
<td>Shrimp (imported)</td>
</tr>
<tr>
<td>Sturgeon (wild-caught)</td>
</tr>
<tr>
<td>Swordfish (Atlantic)</td>
</tr>
<tr>
<td>Tuna, Bluefin</td>
</tr>
</tbody>
</table>

AK = Alaska
BC = British Columbia
CA = California
OR = Oregon
U.S. = United States
WA = Washington
* = includes bottom longline
Policy changes

The Code of Conduct: the agreed charter towards more responsible fisheries
4. Outlook

- Action required
- Main obstacles
- Old demons and emerging issues
**Stronger commitment towards:**

- An ecologically sustainable future
- A more responsible governance and industry (High seas)
- Further institutional reform towards more and better participation, anticipation, precaution, integration, monitoring and evaluation, decision-making and longer-term perspective;
- A redirected science: more inter-disciplinary, towards and with stakeholders, ecosystem-conscious, aimed at forecasting, risk assessment and policy-making;
- A more effective implementation of existing instruments.
Changing management policy

- **Progressively eliminate old problems**
  - Reduce / suppress overcapacity and perverse subsidies
  - Improve habitat protection and selectivity

- **Pragmatically promote local democratic institutions**
  - Support local civic education
  - Develop local governance capacity

- **Transfer sufficient and appropriate powers**
  - Allocate secured communal or individual rights
  - Ensure equitable adjudication
  - Support equity and justice

- **Establish minimum environmental standards**
  - Identify societal objectives and natural constraints
  - Develop indicators for monitoring and evaluation

The Fisheries “Tool Box”

- Law
- Research
- Information
- Capacity Building
- Enforcement
- Decentralisation
- Participation
- Devolution
- Co-management
- Fishing rights
- Market incentives
- Subsidies
- Ecolabelling
- MPAs
- Illegal Fishing
- Precautionary approach
- Discards
- Bycatch
- Extinction risk
- Ecosystem approach
- Fishing capacity reduction
Sectoral integration
Main obstacles

- Further broadening of an already large and contradictory set of objectives;
- Misfit between:
  - The expectations of the users and the available resources;
  - The urgency of regulation and the social resilience to it;
  - The ideal and affordable degree of integration and participation
  - The desirable and affordable information.
Emerging issues

- Fisheries ethics and human rights
- Bioethics and animal welfare
- Intrusion of tribunals in decision-making (and governance)
- Globalization by the market.
Old demons

- Excess fishing capacity
- Perverse subsidies
- Poor selectivity and unethical discards
- Critical habitats degradation
- Abuse of the "freedom" in the high seas
- Non-deterrent coercion
- Under-funded research
- Dominance of short-term concerns and market forces
See more....

SOFIA at:

State of World Marine Fishery Resources

Thank you for your attention

THE STATE OF
MARINE FISHERY
RESOURCES

2004