

Use of living marine resources in Iceland

Grímur Valdimarsson

Senior Advisor

Ministry of Industries and Innovation

Pillars of economic activities in 2013: Share of Iceland's export earnings

800.000 tons

Aluminium
21.0%



1,3 million tons

Fisheries
26.5%



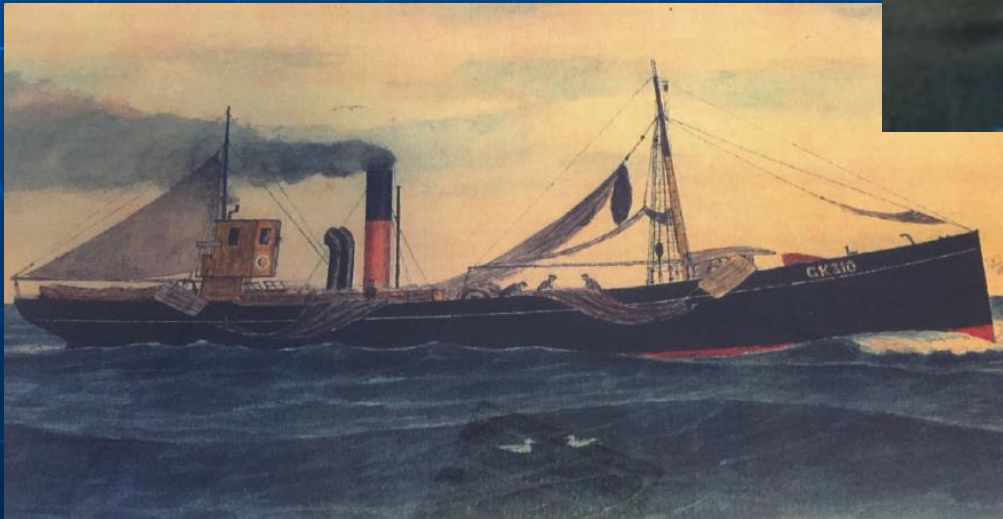
1 million

Tourism
26.8%



Source: Statistics Iceland

What is this: Industrial production or an advanced hunt?



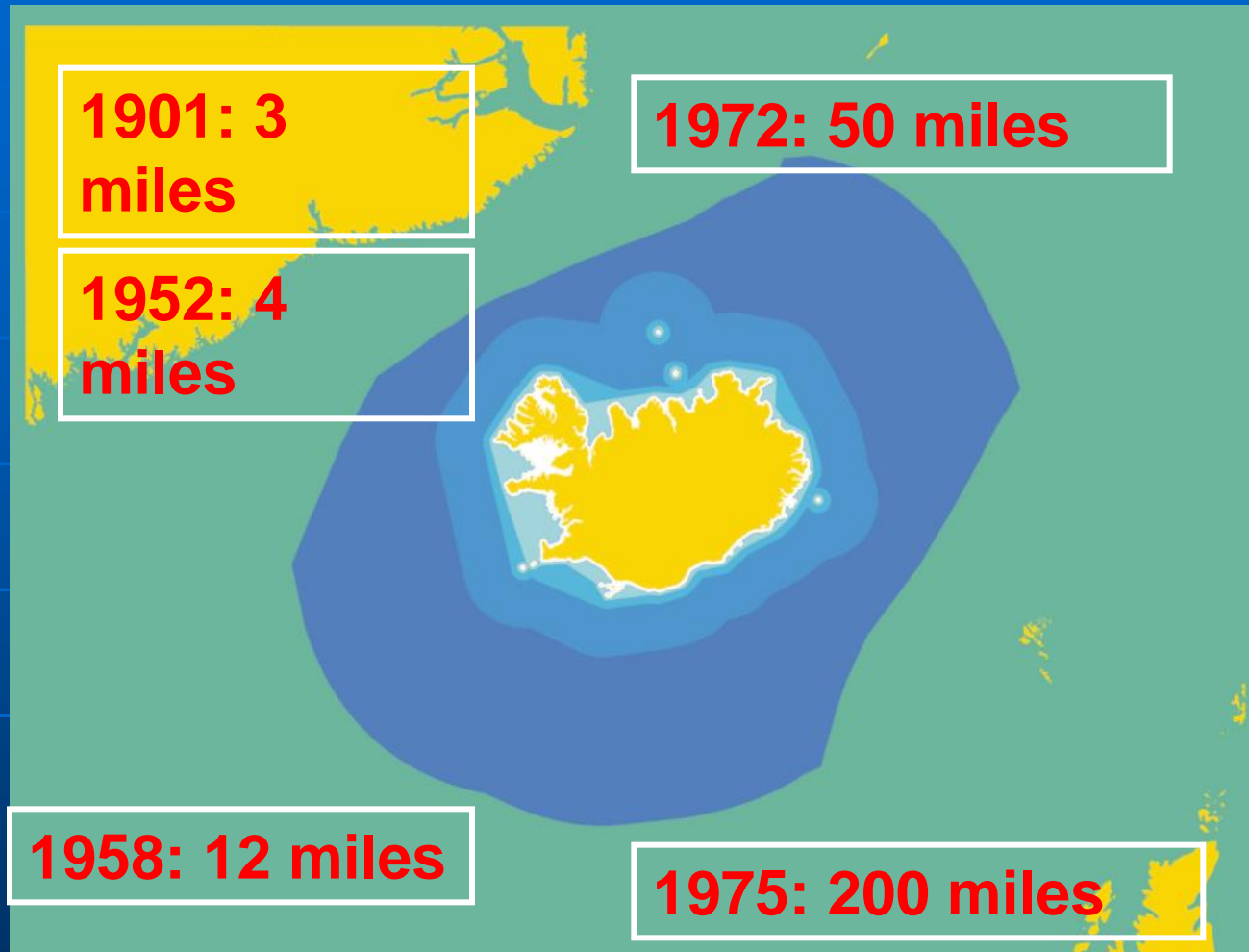


Hildibrandur Bjarnason in Bjarnarhöfn looks into cured shark

Photo: Jón Páll Ásgeirsson



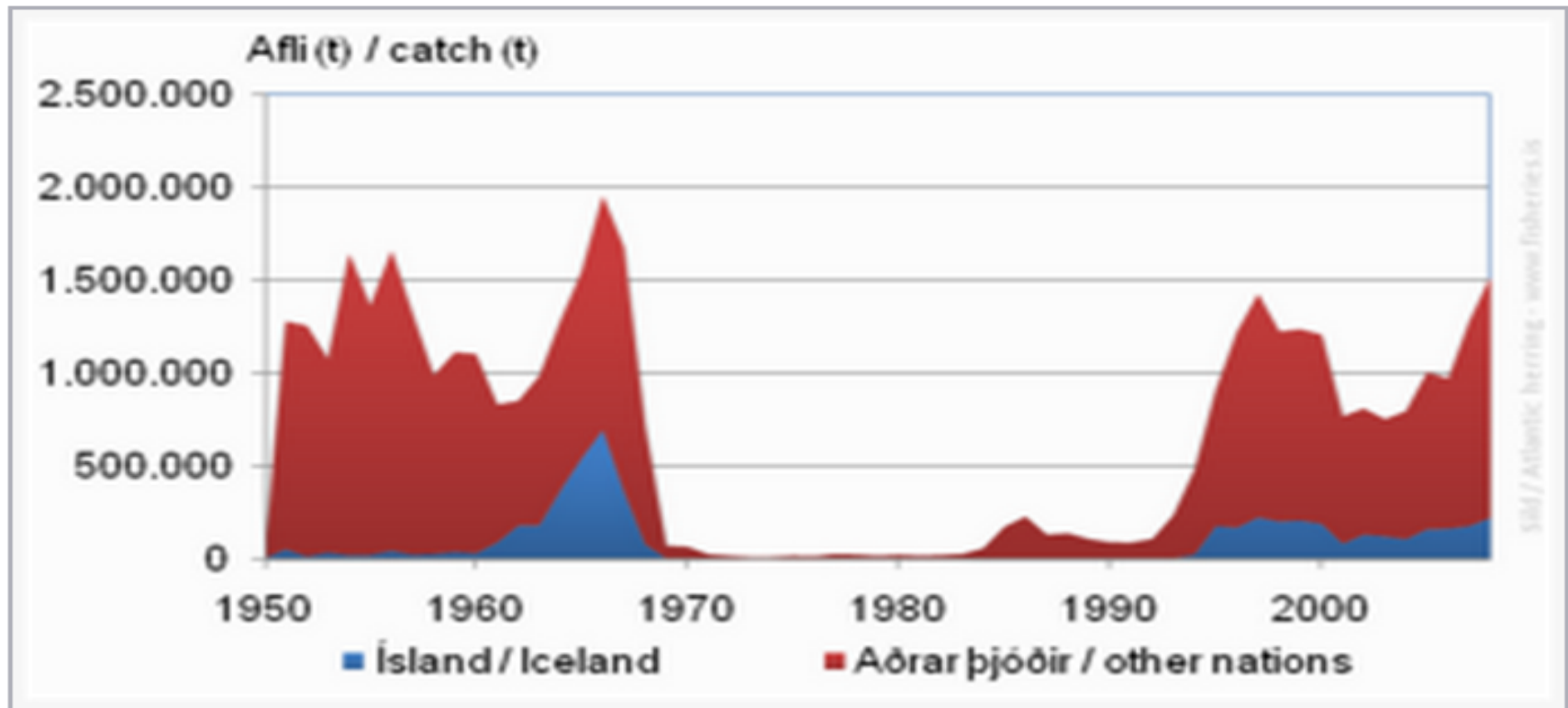
The cod wars: Expansion of the Icelandic EEZ



The glorious days: The more the better...



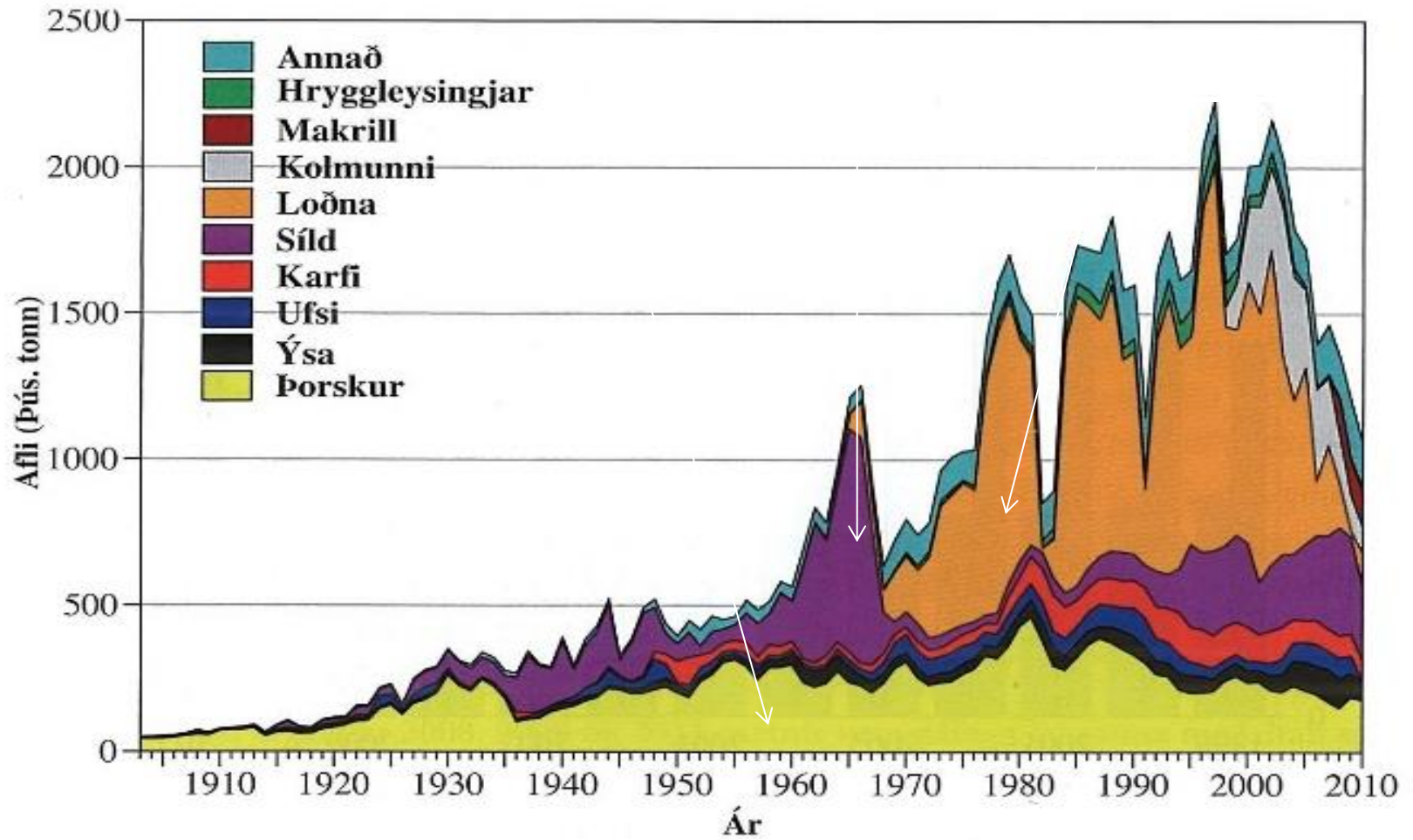
The classic herring crash of 1968...



Total catch (t) of the Atlanto-Scandian herring in the Northern Atlantic Ocean

Source: ICES

The Icelandic fish catch in the 20th century



Mynd 15. Fiskveiðar Íslendinga árin 1905 – 2011 (ICES).
Aflinn á 20. öld

“The Black Report” 1975 and more...

- Max 500 thousand tonnes of demersals
- Limit total fleet effort
- Protect juvenile fish
- Ensure MSY

Þrjár skýrslur árið 1975

vört skýrsla“ Hafrannsóknarstofnunar október 1975

- Of mikil veiði á ungfiski, takmarka botnfiskafla við 500 þúsund tonn

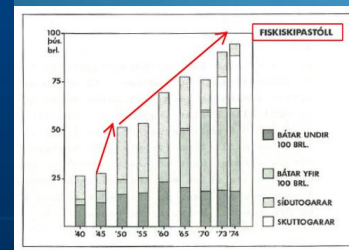
nnsóknarráðs ríkisins nóvember 1975

- Sókn takmörkuð til að ná æskilegri nýtingu stofna og arðbærum rekstri
- Dregið úr sókn í ónýtta stofna tímabundið og vernda ungfisk
- Veiðum verði hagað til að veiðistofnar gefi hámarksafkastur

skíping, haustið 1975

- Vernda stofna til að koma í veg fyrir hrun. Sóknarkostnaður aukist.

Fiskiskipastóllinn



Mynd 1

Þróun sjávarútvegs. Rannsóknarráð Ríkisins 1975

Skýrsla Fiskifélagsins

Fiskifélagið sendi frá sér í marz 1975 mat á afkastagetu flotans miðað við árslok 1974. Samkvæmt því mati gátu íslensk fiskiskip annað þeim afla botnlægra tegunda, sem talið var að Íslandsmið gætu gefið af sér. Meðal-afli undangenginna 15 ára hafði verið 730 þús. lestir. Í skýrslunni var samt bent á, að takmarka bæri heildaraflann við um 650 þús. lestir til að flýta viðreisn stofnanna. Svipaðar skoðanir komu fram í skýrslu Hafrannsóknarstofnunarinnar frá þeim tíma. Svarta skýrslan svonefnda gerir hins vegar ráð fyrir læglega 500 þús. lesta ársafli botnfiska, þannig að um allmikinn mun er að ræða í þessum tveimur skýrslum.

Við Áramót, Egir 1976. 69. árg. 2 tbl. bls. 40

What did they do?

INPUT CONTROLS

- Fixed number of days at sea...
- Effort directed to other species than cod...
- Fishing gear limitations...



How fishing rights came
about...

Later that year... "To hell with the quota system"

Aflamark 1984

- Samdráttur og atvinnuleysi
- Framsal kvóta hefst á fyrsta ári

„Grundvöllur kvótans er brostinn“
— sagði Skúli Alexandersson alþingismaður

„Grundvöllur kvótans er þegar brostinn,“ sagði Skúli Alexandersson alþingismaður.

„Kerfi á borð við þetta, þar sem ákvæði aflamagns er á hvern bát, býður þeirri hættu heim að menn reyni meir en áður að laumast framhjá við. Það hljóta að vera til aðrar leiðir. Aflskerðingin á Vestfjörðum er þegar orðin fimmtíu prósent. Ranglatið á þennan kvóta er hróplegt,“ klykkti Skúli út með.

Dagblaðið Vísir 19. mars 1984

Kvótafundurinn í Sigtúni:

„Til andsk.... með kvótakerfið“

— hiti í mörgum fundarmanna

Dagblaðið Vísir 19. mars 1984

Útgerðarmenn við Eyjafjörð um kvótaskiptingu:

Samdrátturinn veldur minnkandi atvinnuleysi víða

Morgunblaðið 4. mars 1984

Trillukarlar og kvótakerfið

Svo virðist sem fáir séu jafn grátt leiknir af hinu margrædda kvótakerfi og trillukarlarnir. Á þessa sumarhúsamenn íslenska flotans er lagður heildarkvóti, í stað kvóta fyrir hvert byggðarlag eða á hvern bát útaf fyrir sig, einsog hefði þó verið mun betra og réttlátara fyrirkomulag.

Þjóðviljinn 18. apríl 1984

Sjávarútvegsráðuneytið:

Hefur heimilað 169 framsöl af aflakvótum milli skipa

Frá því að kvótafyrirkomulaginu var komið á í sjávarútvegsráðuneytið í fyrra hefur sjávarútvegsráðuneytið heimilað 169 framsöl af aflakvótum á milli skipa. Þetta kom fram í ræðu sjávarútvegsráðherra á fiskiþinginu sem nú stendur yfir.

Þessi framsöl skiptast eins og hér segir: Milli skipa í eigu sömu útgerðar 51 framsal, magn fisks sem framselt hefur verið er 8821 tonn. Milli skipa sem gerð eru út frá sömu verstöð 97 framsöl, magn fisks 8232 tonn. Milli skipa hvoru úr sinni verstöðinni 4 grundvelli jafnra skipta 5 framsöl, magn fisks 497 tonn. Milli skipa hvoru úr sinni verstöðinni að fenginni umáðgn sveitarstjórnar og stjórnar sjómannafélagsins í viðkomandi verstöð 16 framsöl, magn fisks. 1902 tonn. Alls hefur því verið heimilað að framselja 19643 tonn.

-FRL

Dagblaðið Vísir 6. nóvember 1984

So to the outcome and
development of the ITQ
system...

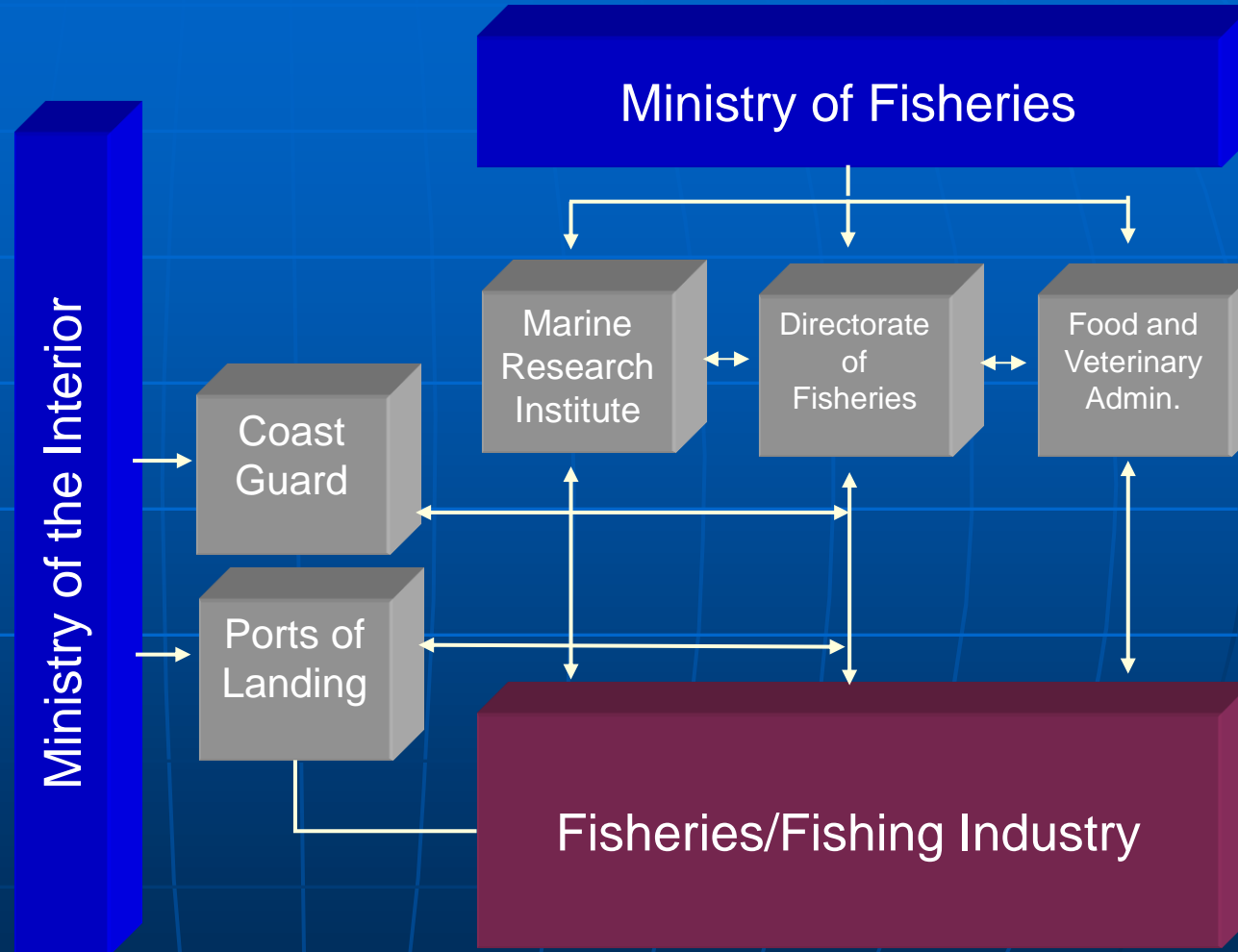
Administration – policy and implementation

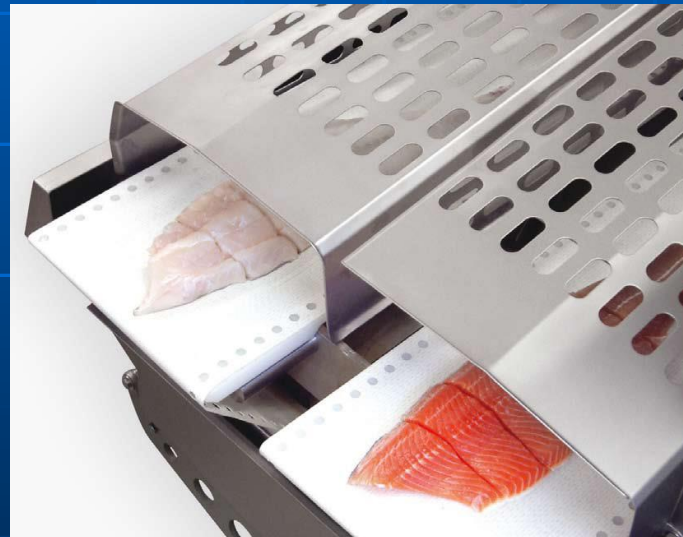
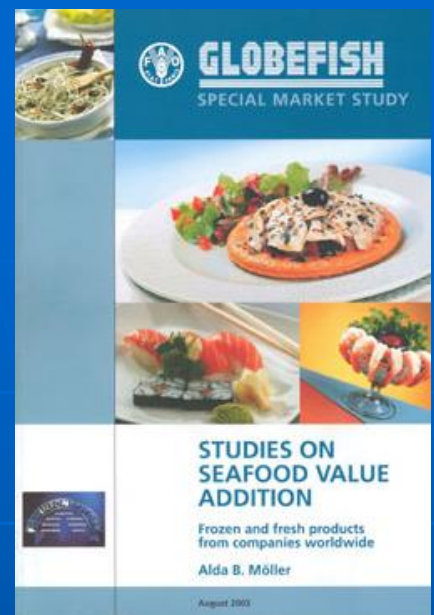
- **The Ministry of Fisheries**

is responsible for the political policy making, issuing of regulations and long-term planning in fisheries, whaling and aquaculture.

- **The Directorate of Fisheries**

is entrusted with the day-to-day administration of fisheries and is responsible for the implementation of the legislation.





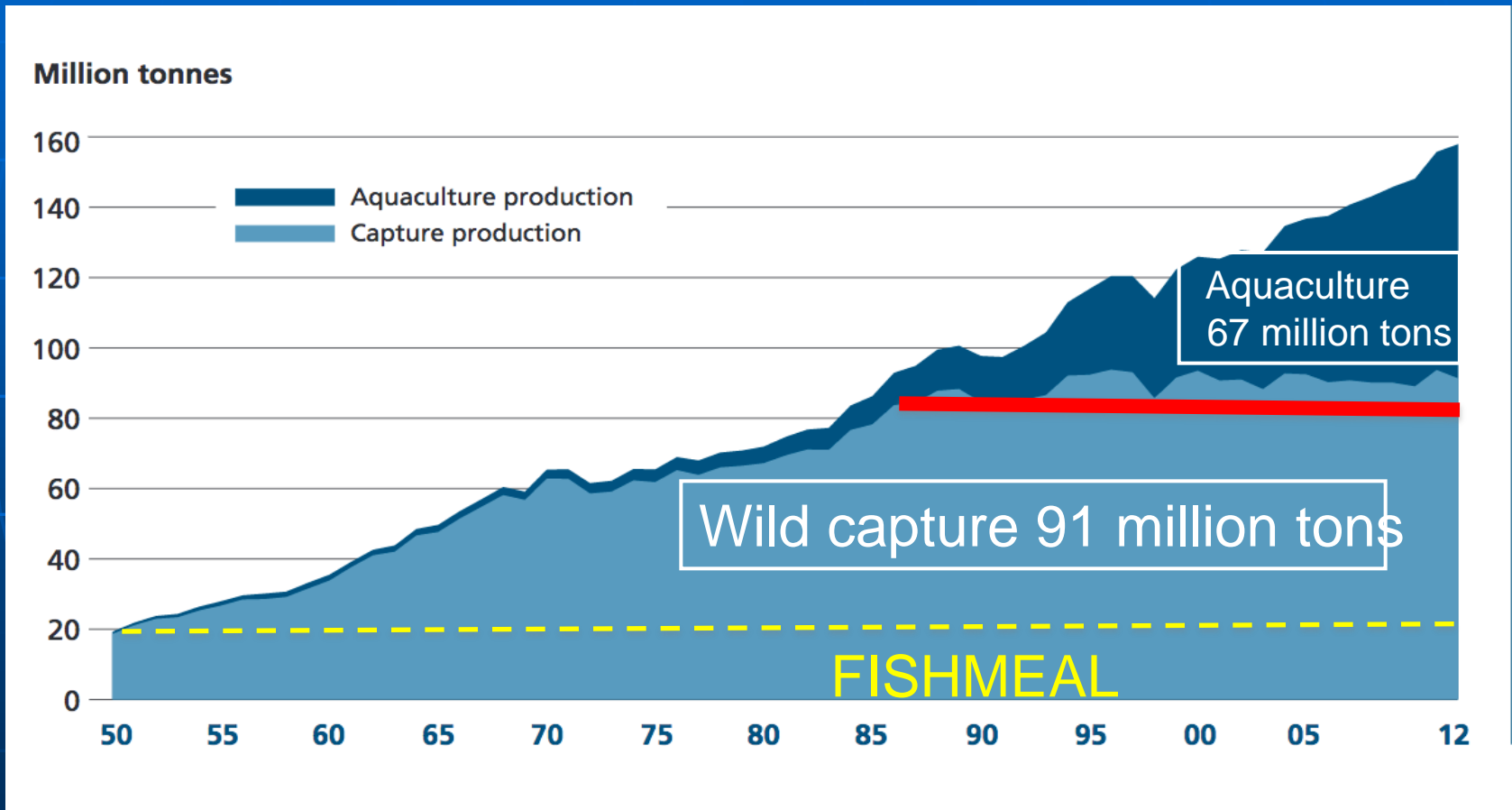


Line caught cod
by a German tourist
May 2017

Risaporskur á sjóstöng

International developments

This is what happened: World capture and aquaculture production



Overfishing

SCIENCE • VOL. 279 • 6 FEBRUARY 1998 • www.sciencemag.org

Fishing Down Marine Food Webs

SCIENCE ONLINE | SCIENCE MAGAZINE HOME | SCIENCE NOW | NEXT WAVE | STKE/AIDS/SAGE | SCIENCE CAREERS | E-MARKETPLACE

Institution: Italy: Science's NextWave | Sign In as Individual | FAQ | Access Rights | Join AAAS

Science magazine | HELP | SUBSCRIPTIONS | FEEDBACK | SIGN IN | AAAS

SEARCH | BROWSE | ORDER THIS ARTICLE

Science, Vol 282, Issue 5393, 1383, 20 November 1998
[DOI: 10.1126/science.282.5393.1383a]

◀ Previous Article • Table of Contents • Next

How Pervasive Is "Fishing Down

In their report (1), and in an earlier paper (2), D. Pauly *et al.* fish stocks with the use of research data fitted to Ecopath with data on global fishery landings collected by the Food and Agriculture Organization (FAO). Although Pauly *et al.* are to be congratulated for giving this situation with their hypothesis that the depletion of fish mean trophic level of marine life is a result of overfishing, explanation is solely a result of overfishing, *et al.*, substantiates such a thesis.

letters to nature

Rapid worldwide depletion of predatory fish communities

Ransom A. Myers & Boris Worm

www.nytimes.com
The New York Times
ON THE WEB

SCRIPTING THE CASE FOR WAR

9 WORLD REPORT
U.S. News
JUNE 9, 2003

EMPTY OCEANS

WHY THE WORLD'S SEAFOOD SUPPLY IS DISAPPEARING

A SPECIAL REPORT

NATIONALGEOGRAPHIC.COM

NATIONAL GEOGRAPHIC
NEWS

Search news.nationalgeographic.com

GO Sign up for our free e-mail newsletter

This Story
National Geographic
Today

- [Related Sites & Stories](#)

- [E-mail this story](#)

"Dirty Fishing" Empty Oceans, Experts Say

Sharon Guymup
[National Geographic Channel](#)
August 11, 2003



The
Economist



The
Manchester
bombing

MAY 27TH - JUNE 2ND 2017

Ocean warning



MAY 27TH 2017

State of fish stocks worldwide...

FISH STOCKS

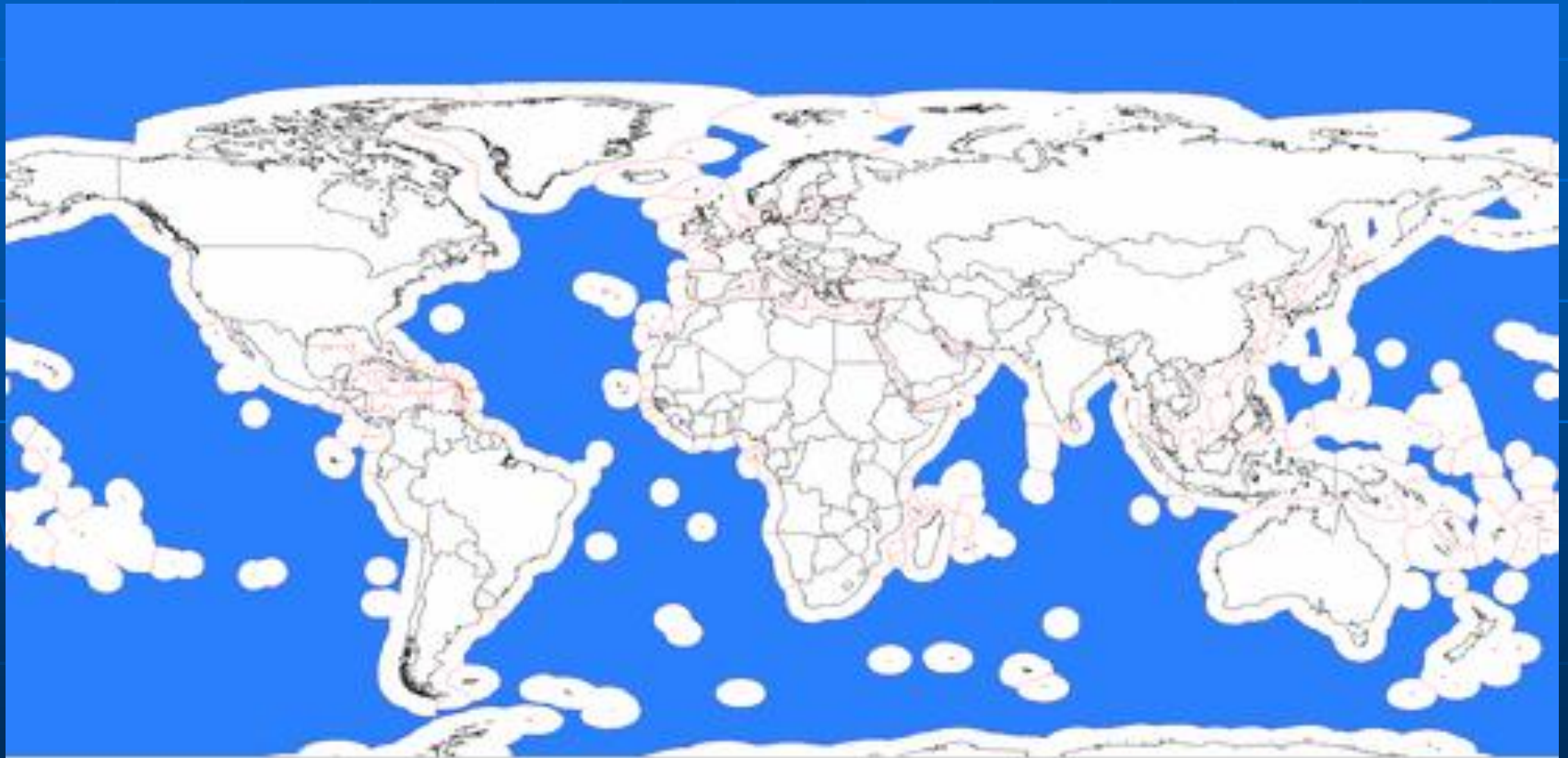
71% of the commercially important marine fish stocks monitored by FAO are fished within biologically sustainable levels (2011)

10%
Under-
fished

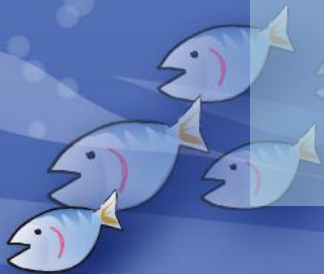
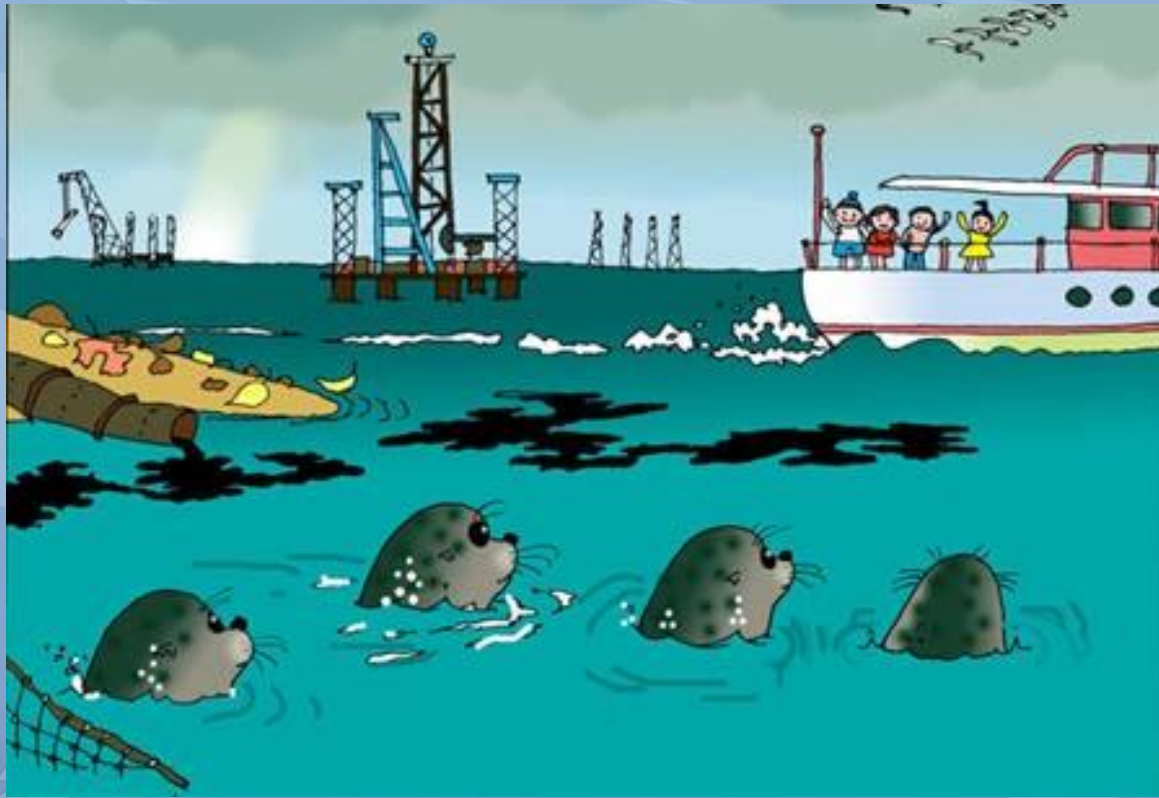
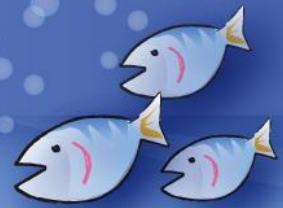
61%
Fully
fished

29%
Over-
fished

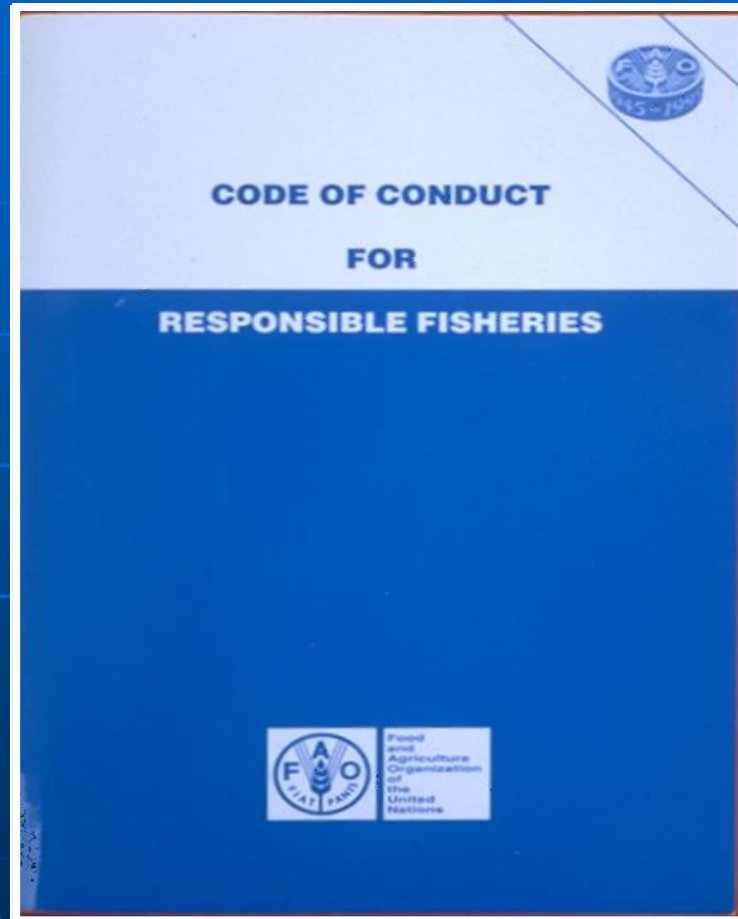
Outside the Exclusive Economic Zones (200 nautical miles)



More than ever there are conflicting interests



FAO Code of Conduct 1995



Environmentalism

Sustainable development enshrined at the UN Earth Summit in 1992 (UN Conference on Environment and Development (UNCED))

- **Convention on Biological Diversity**
- **AGENDA 21, Chapter 17:**



REVISED
EDITION

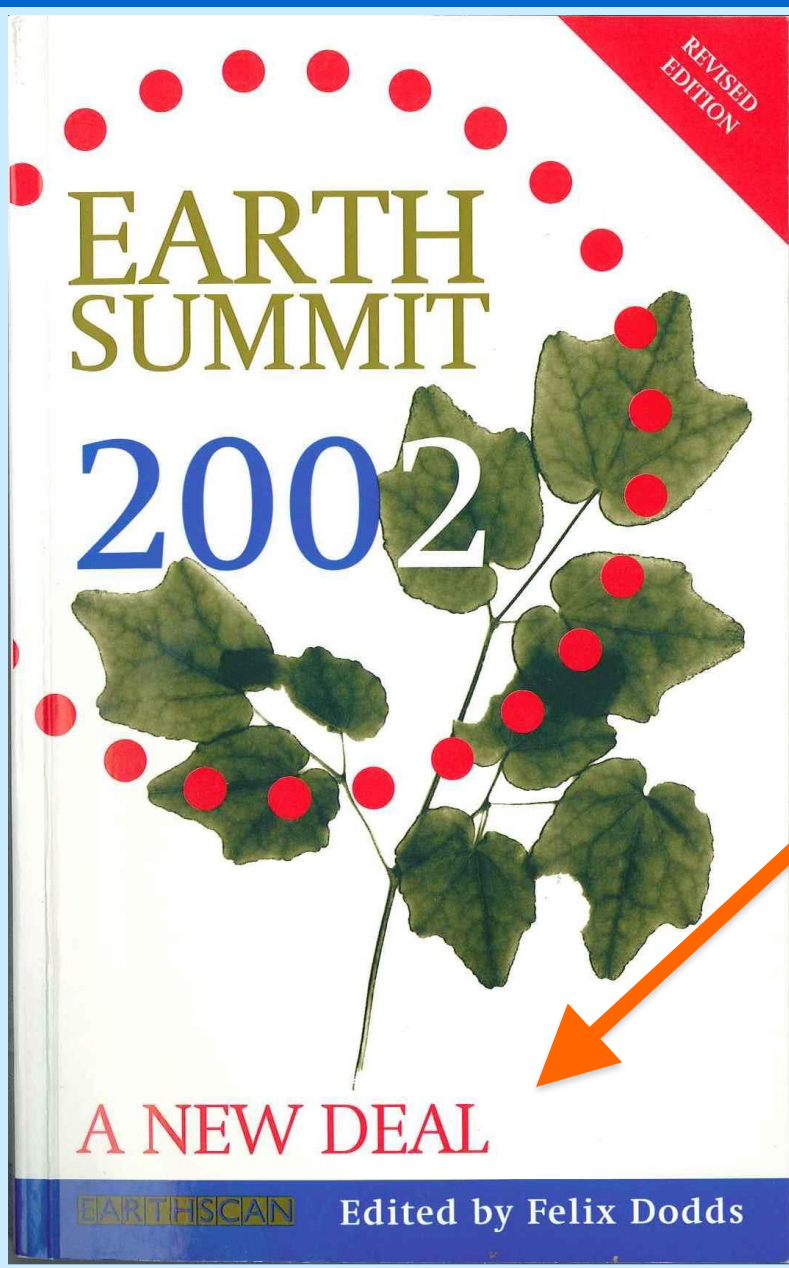
EARTH SUMMIT

2002

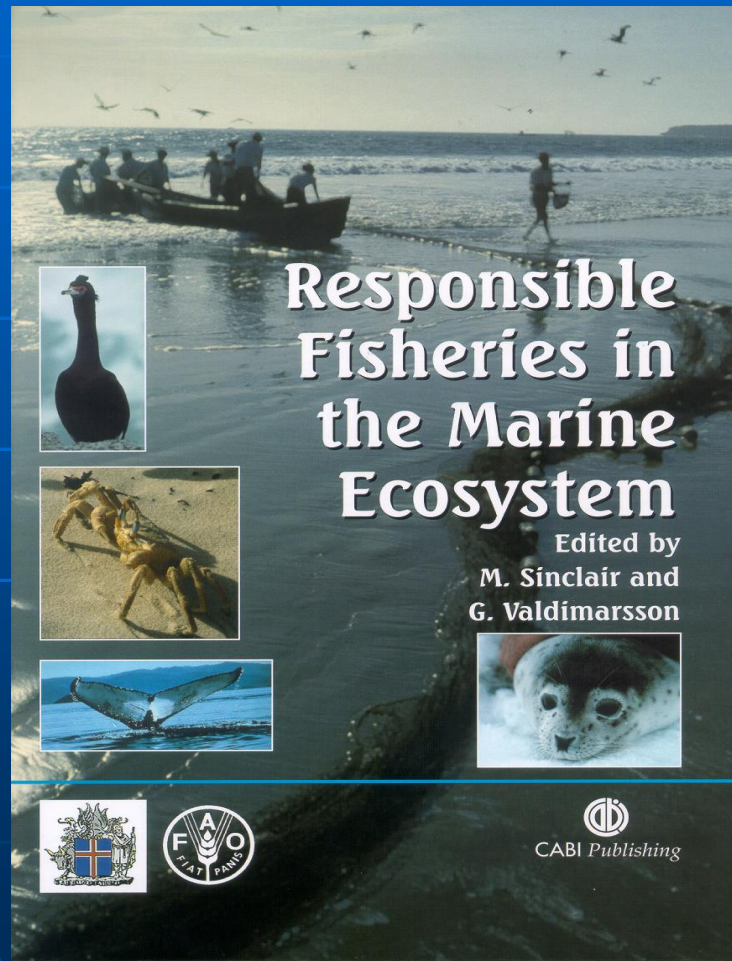
A NEW DEAL

EARTHSCAN

Edited by Felix Dodds



FAO 2001 Reykjavik Conference leading to the Ecosystem Approach to Fisheries Management



Ecolabels

The beginning: Dolphin Safe Standards to provide dolphin safe TUNA !



The 1996 MSC bombshell...

1996

**“....governments
of the world have
failed in managing
fisheries and
therefore...”**



Greenpeace Retail Protests



Marine Stewardship Council



Iceland's Responsible Fisheries...



FAO's headquarters in Rome



11977d2561 ©FAO/Giulio Napolitano



**GUIDELINES FOR THE ECOLABELLING
OF FISH AND FISHERY PRODUCTS
FROM MARINE CAPTURE FISHERIES**

**DIRECTIVES POUR L'ÉTIQUETAGE ÉCOLOGIQUE
DU POISSON ET DES PRODUITS DES PÊCHES
DE CAPTURE MARINES**

**DIRECTRICES PARA EL ECOETIQUETADO
DE PESCADO Y PRODUCTOS PESQUEROS
DE LA PESCA DE CAPTURA MARINA**

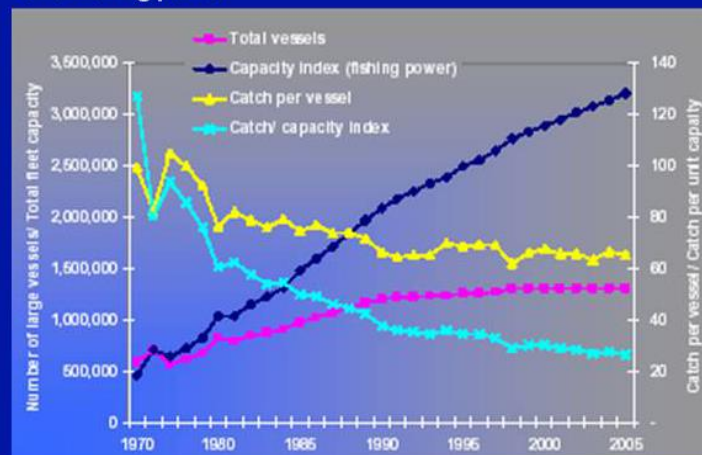


THE SUNKEN BILLIONS

The Economic Justification for Fisheries Reform

Global marine capture fisheries are an underperforming global asset. The Sunken Billions study shows that **the difference between the potential and actual net economic benefits from marine fisheries is in the order of \$50 billion per year** – equivalent to more than half the value of the global seafood trade. The cumulative economic loss to the global economy over the last three decades is estimated to be in the order of two trillion dollars. In many countries the catching operations are buoyed up by subsidies, so that the global fishery economy to the point of landing (the harvest sub-sector), is in deficit.

Figure 2: Declining productivity, but increasing fishing fleets and fishing power



So, introducing Individual
Transferable Quotas (ITQs) to
regulate the fisheries DID HAVE
CONSEQUENCES ...

Modern vessels to meet diverse demands...



Marel Ltd founded in Iceland in 1983

High tech fish handling and processing....



marel Leading global provider of advanced equipment and systems for the food processing industry

CORPORATE ABOUT MAREL INVESTOR RELATIONS JOBS AT MAREL DEMO CENTERS MEDIA

Media Fact Sheet

Fact Sheet

Marel is the leading global provider of advanced equipment, systems and services to the poultry, fish, meat, and further processing industries. Marel's state-of-the-art equipment and systems help food processors of all sizes, in all markets, to operate at peak productivity.

OUR ROADMAP

Marel's mission is to be the Preferred Partner in the Production of Quality Food Sustainability is the core of Marel's strategy and operations.

Marel's primary focus is on increasing yield and reducing waste, and hence promoting sustainability in food processing. Marel will continue to find ways to improving efficiency in the industry. Marel's customers are looking for solutions that use less water and electricity, and that also offer impeccable hygiene and traceability. Marel has these solutions.

Marel has maintained its position as an industry leader in the challenging market environment that has prevailed for the past two years. This can be attributed to Marel building its strategy around two important pillars:

Number 1 globally in advanced equipment and systems for poultry processing	Number 1 globally in advanced equipment and systems for fish processing	Number 1 globally in advanced equipment and systems for segments of further processing	Major global provider of advanced movement and systems for meat processing
--	---	--	--

Marel is the market leader in the food processing industry

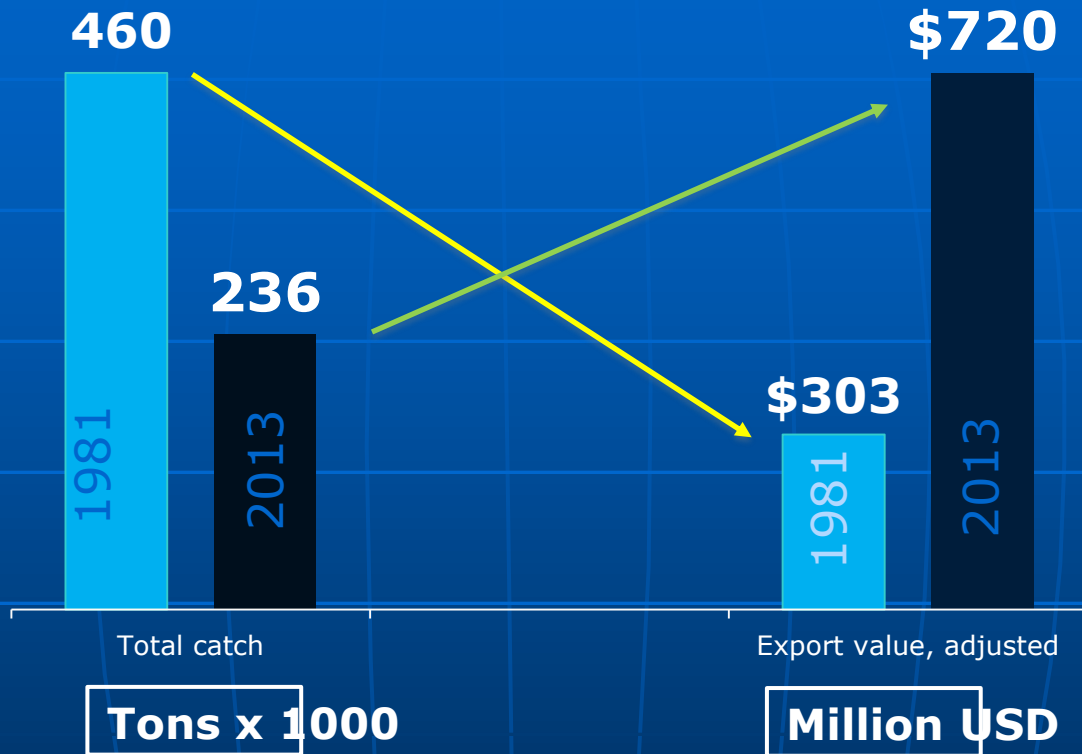
“Weighing before cutting”



Automatic intelligent fish processing...



Cod catch and export value 1981 vs 2013



Source: Statistics Iceland

Employment in fisheries 1991-2013



Source: Statistics Iceland

The goal is:

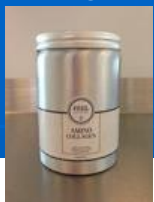
100 %

utilization...

Canned products made from cod liver: Smoked liver and liver paté



Fisk skin transformed to collagen



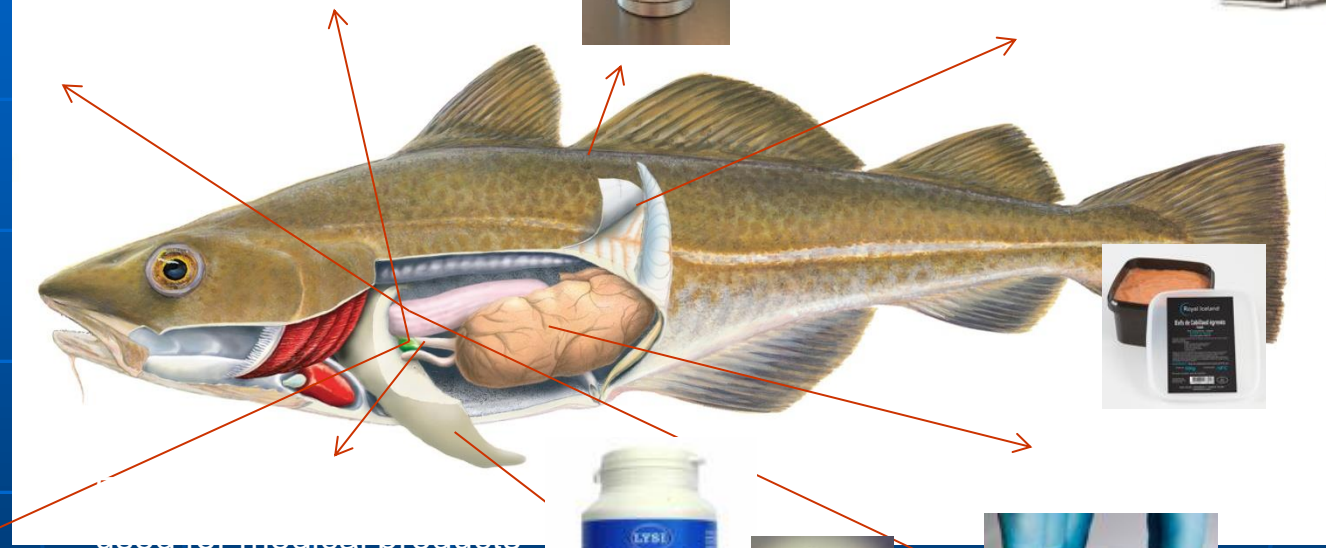
Fish skin transformed to leather



Natural fish stock for food



Heads and bones dried and exported



used for medical products



Cosmetics made from enzymes from inner organs.

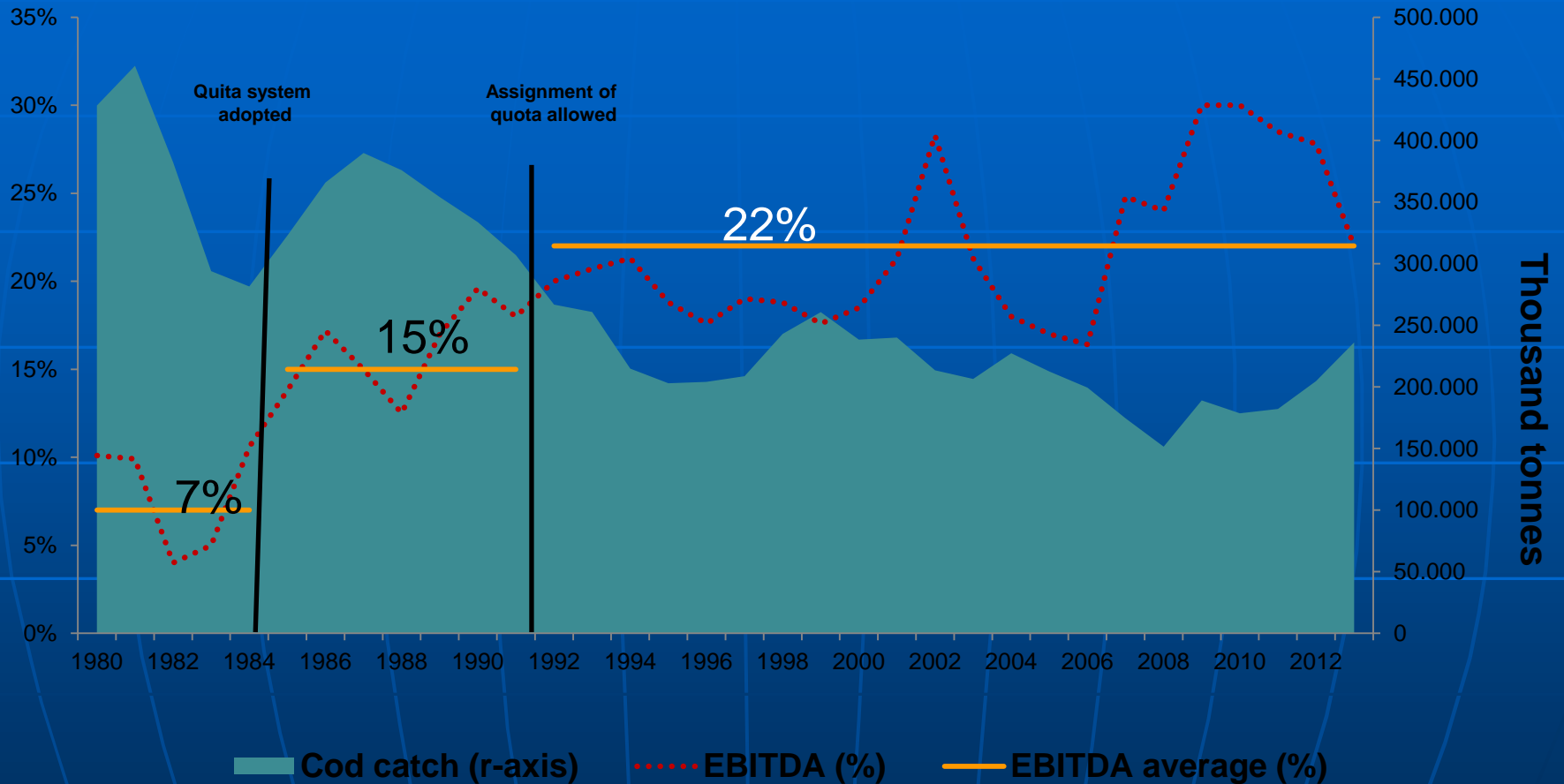


Liver oil used for Omega-3 and capsules



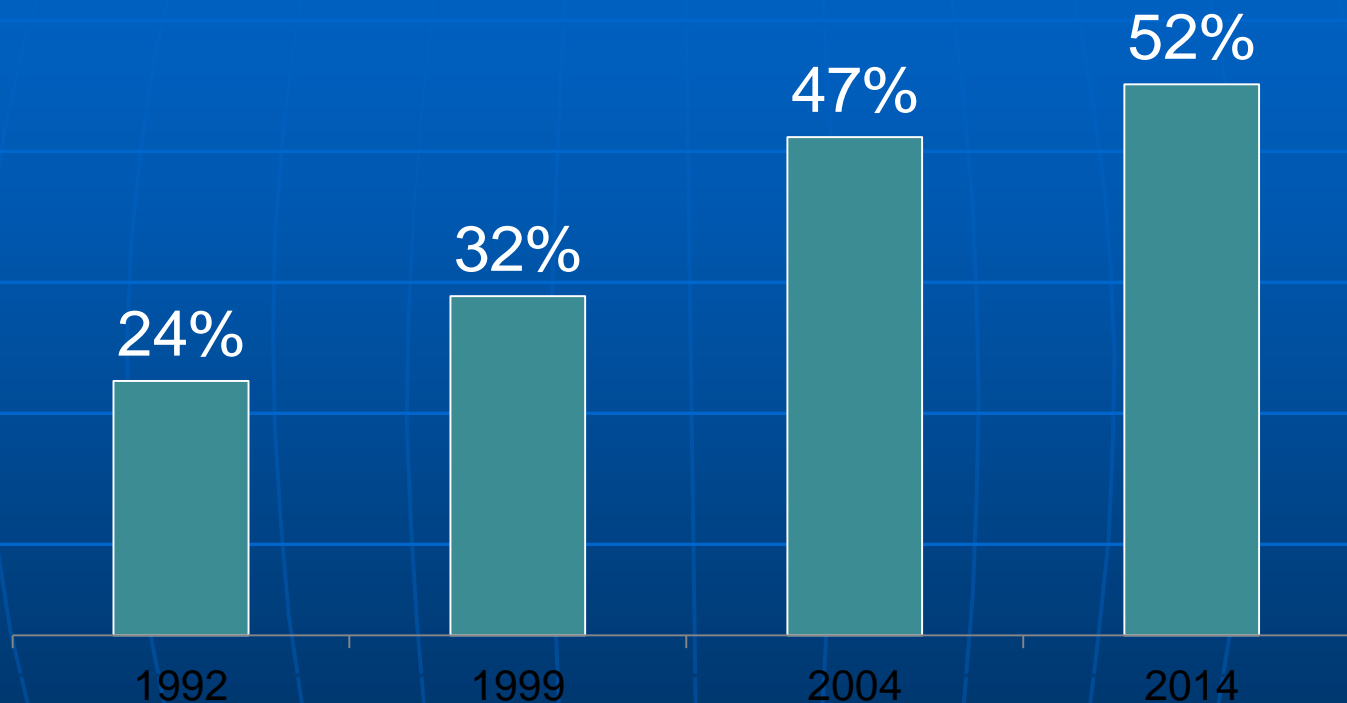
Fish skin as medical device

Earnings of Icelandic fisheries companies, EBITDA



Source: Statistics Iceland

Catch share of the ten largest quota holders



Source: Directorate of Fisheries

Thank you for your kind attention....



grimur.valdimarsson@anr.is
grimur.valdimarsson@me.com