Háskólinn á Akureyri
University of Akureyri

The Icelandic fishmeal industry and its development under an ITQ management system

EU Fishmeal, Vestmannaeyjar 27. August 2015

Hörður Sævaldsson
Adjunct, University of Akureyri
hordurs@unak.is

Overview

Six sections

1. The history
2. Species and catch value
3. Industry structure
4. The fishing fleet
5. The Processing industry
6. The Atlantic mackerel

Háskólinn á Akureyri University of Akureyri

1. The history

Increased catch – Larger vessels and technological changes

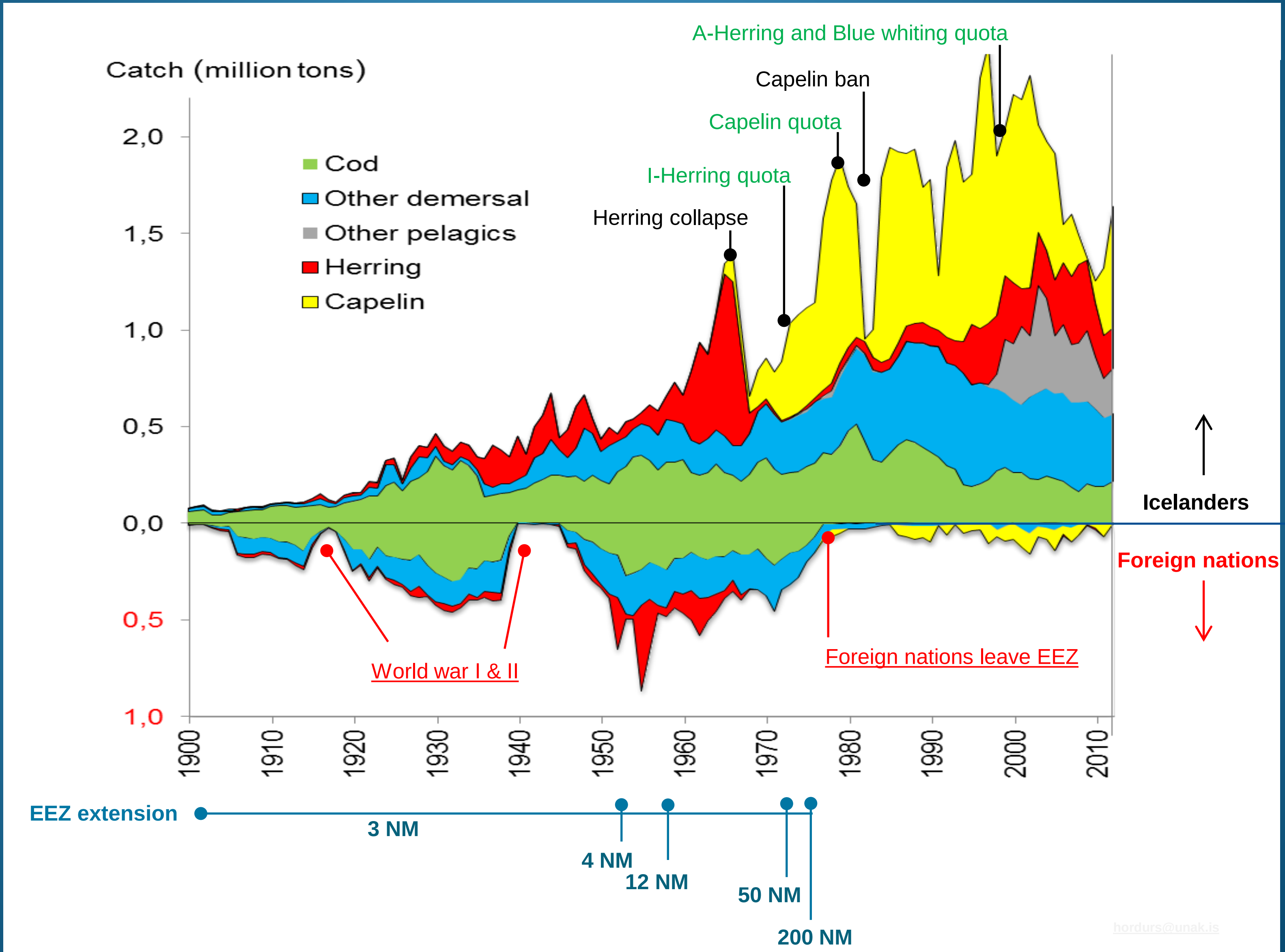
<1945: 18 persons / 100 metric tons

Photo: Ljósmyndasafn Akranes

+2000: 10 persons / 2700 metric tons

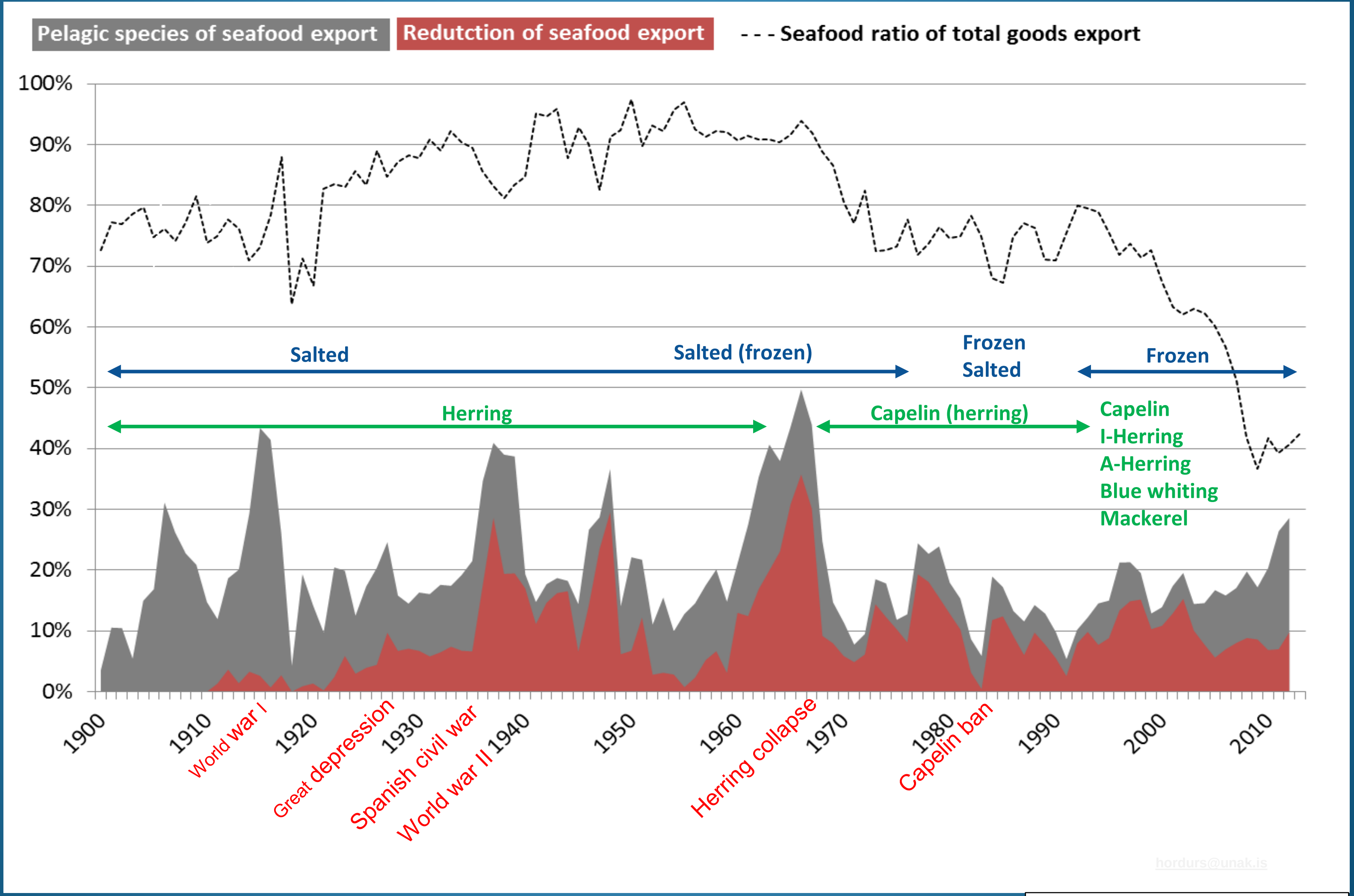
Photo: Þorbjörn Víglundsson

Catch and management



Source: Hagskinna, Statistics Iceland and ICES

Seafood and total goods export value



Source: Hagskinna & Statistics Iceland

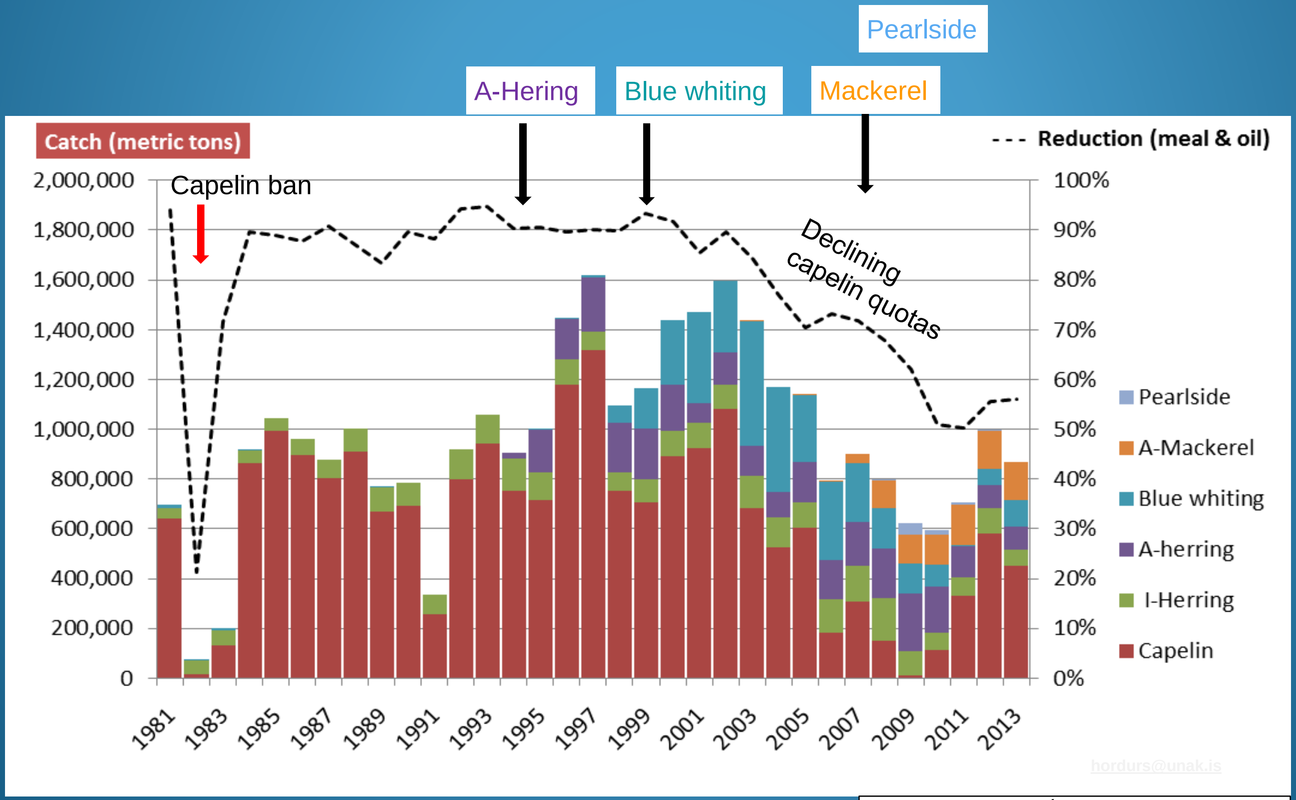
2. Species and catch value past 1981

Valuable species have entered the EEZ while other retreat

Drawings: Jón Baldur Hlíðberg

Pelagic species

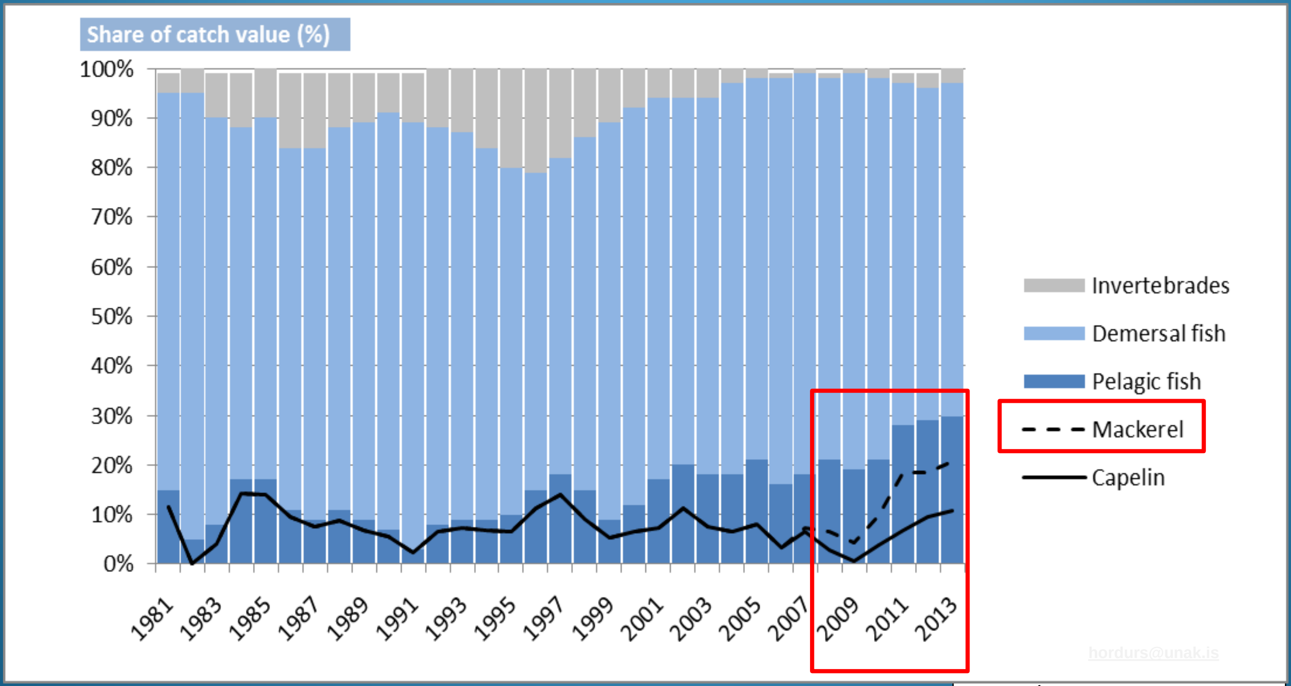
- Until 1994 only two species utilized; capelin and Icelandic summer spawning herring
- Majority of the catch during this period produced as fishmeal and oil
- 4 additional pelagic species have entered the EEZ since 1994



Source: Hagskinna / Útvegur / Statistics Iceland

Catch value of the pelagic sector

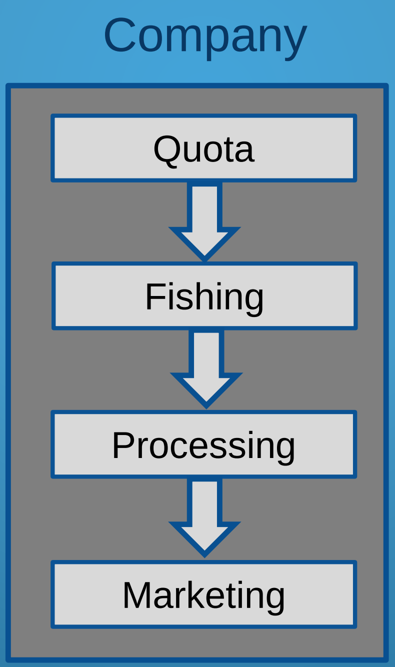
- Fluctuated with the capelin stock until late 1990s
- Share of total catch value has increased sharply the past years (Atlantic mackerel)
- Pelagic export value the past three years on average 28% of seafood export



Source: Útvegur & Statistics Iceland

3. Industry structure

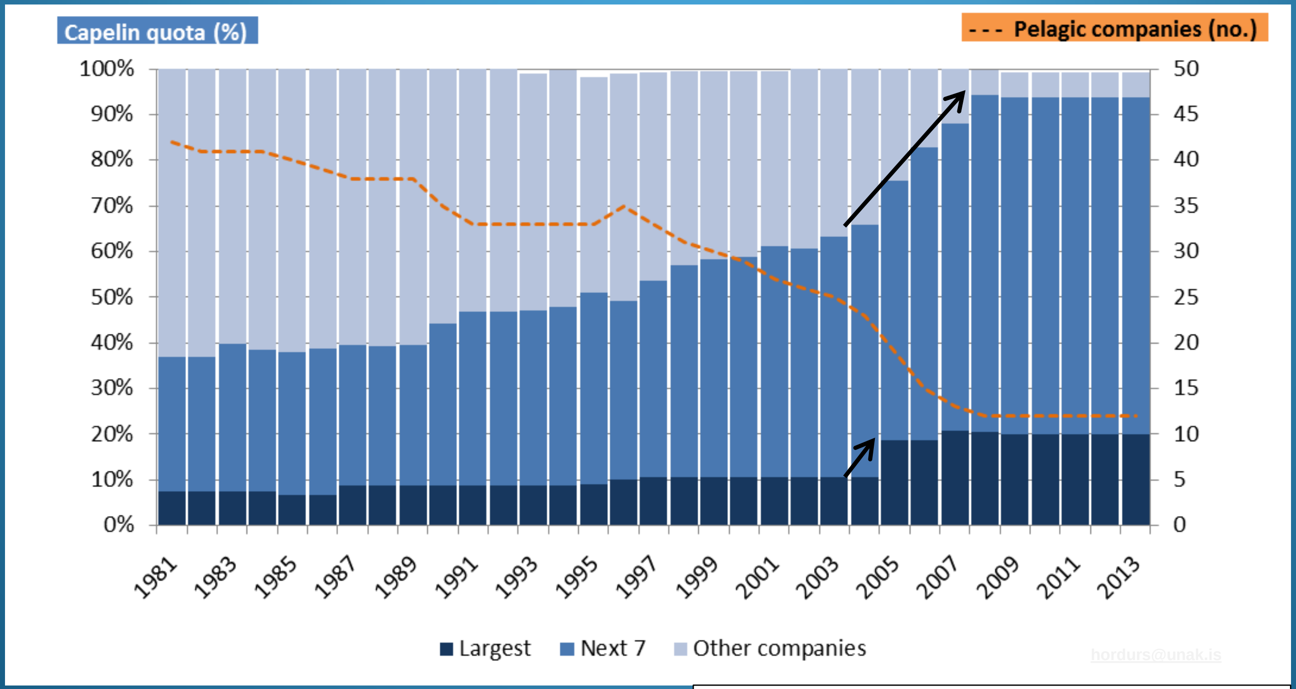
Vertically integrated companies



Háskólinn á Akureyri University of Akureyri

Concentration of pelagic quotas (Capelin)

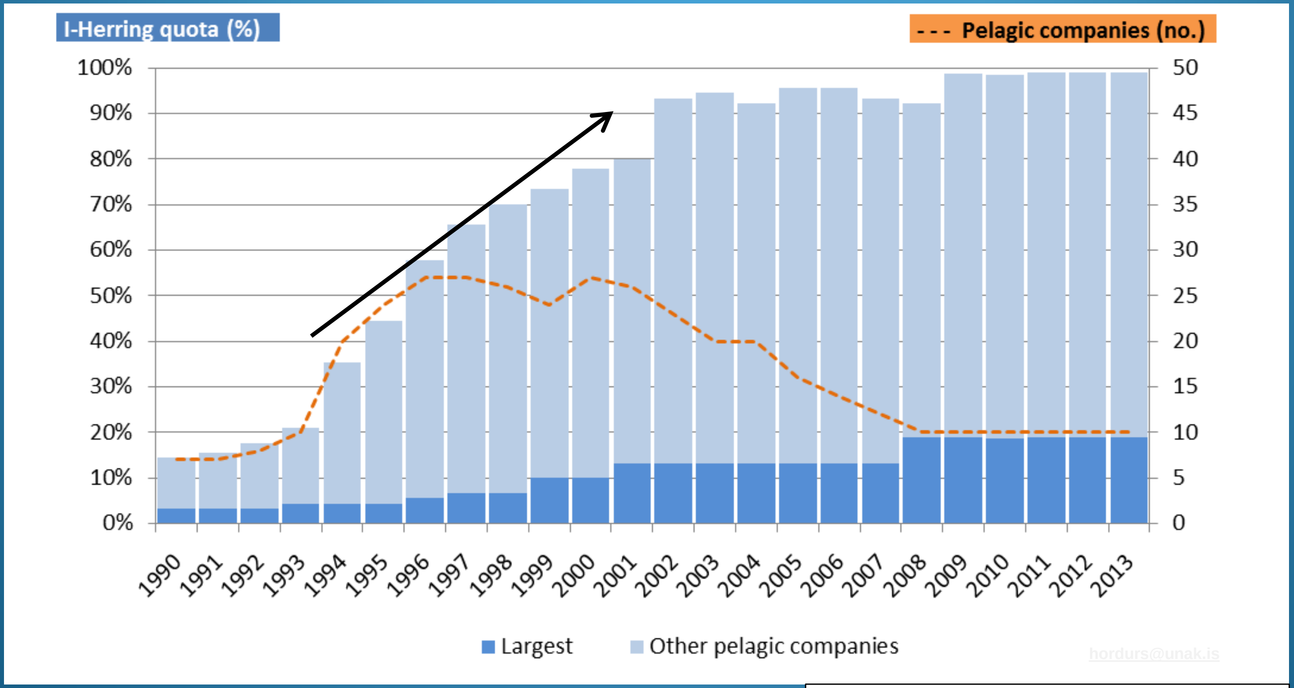
- Largest company 8-11% until 2004 / 20% from 2005 (Reached maximum limit)
- Eight major companies: 35-65% until 2004 / +90% from 2008
- Number of companies decreased 1996-2008 (Private companies bought / mergers)



Source: Loðnunefnd / Directorate of Fisheries / Hörður Sævaldsson

…and the Icelandic summer spawning herring

- Capelin going vessel not allowed to own/harvest Icelandic herring until 1990
- Companies with capelin quota (private companies) bought the herring quotas from 1994
- Later the private companies merged or were sold to the vertically integrated companies.



Source: Directorate of Fisheries / Hörður Sævaldsson

Háskólinn á Akureyri University of Akureyri

Pelagic consolidation

- Highly concentrated industry with only 11 pelagic oriented companies left, as well they manage in excess of 1/3 of all demersal fishing rights
- Eight of these companies manage majority of all pelagic quotas and own share in two of the residual companies. In addition two of the eight major companies own above 75% of equity in one of these eight.
- All except two of these eight are vertically integrated companies; operating vessels, processing facilities and fishmeal plants, the two left out operate processing vessels.

Year	Companies	Capelin	I-herring	A-herring	Blue Whiting	Mackerel	Catch Iceland
1992	33	100%	18%	-	-	-	920.000
2002	26	100%	88%	97%	99,7%	-	1.590.000
2012	11	99%	99%	100%	100%	82%	990.000
2012	8 Major	94%	93%	92%	86%	68%	-
2012	5 Major	74%	71%	63%	62%	53%	-
2012	3 Major	55%	53%	40%	51%	34%	-
2012	Largest	20%	20%	13%	25%	13%	-

Source: Loðnunefnd / Directorate of Fisheries / Hörður Sævaldsson

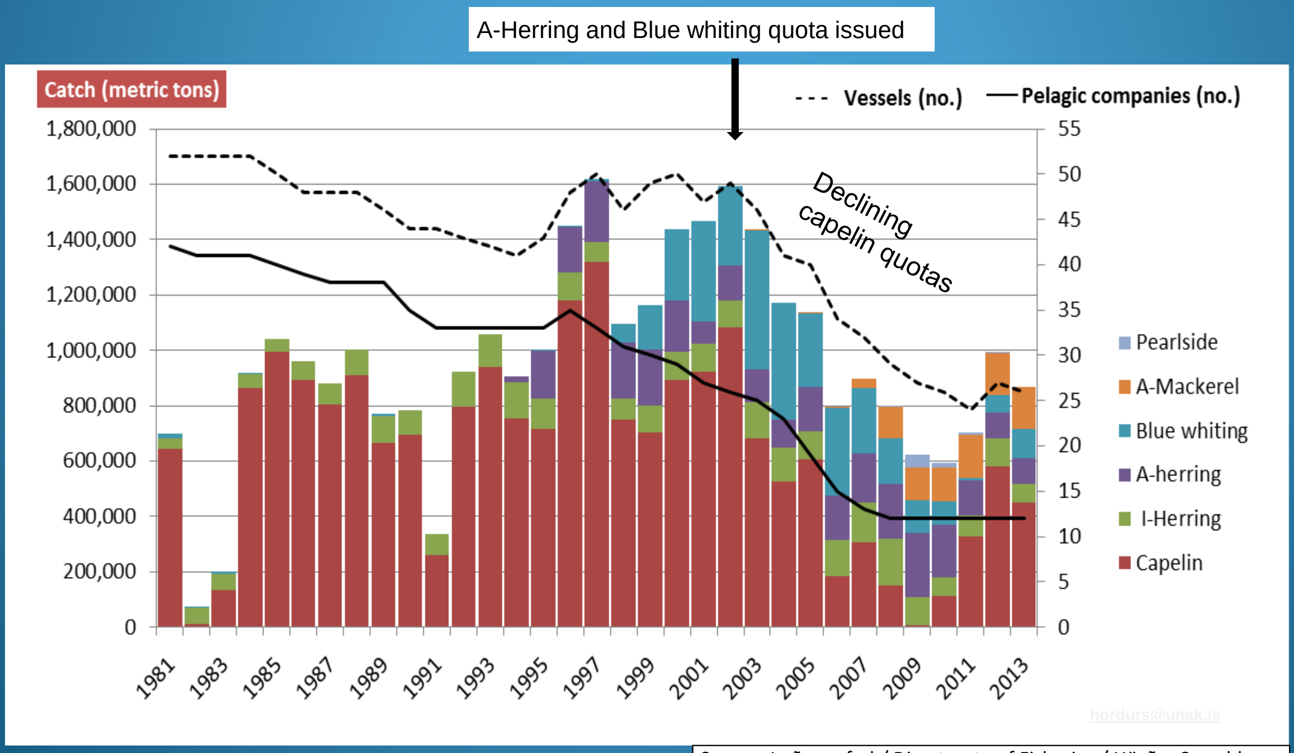
4. The fishing fleet

Large vessels with RSW chilling and powerful engines

Photo: Tryggvi Sigurðsson

The fleet

- Number of vessels and companies declined steadily until 1995 (quota consolidation)
- Record capelin quotas 1996-1997 and two new species in the EEZ → Fleet expanded
- Less capelin and blue whiting quotas 2002-2010 + quotas issued → Fleet contracted sharply
- Number of companies has decreased steadily 1996-2008 (companies sold and mergers)

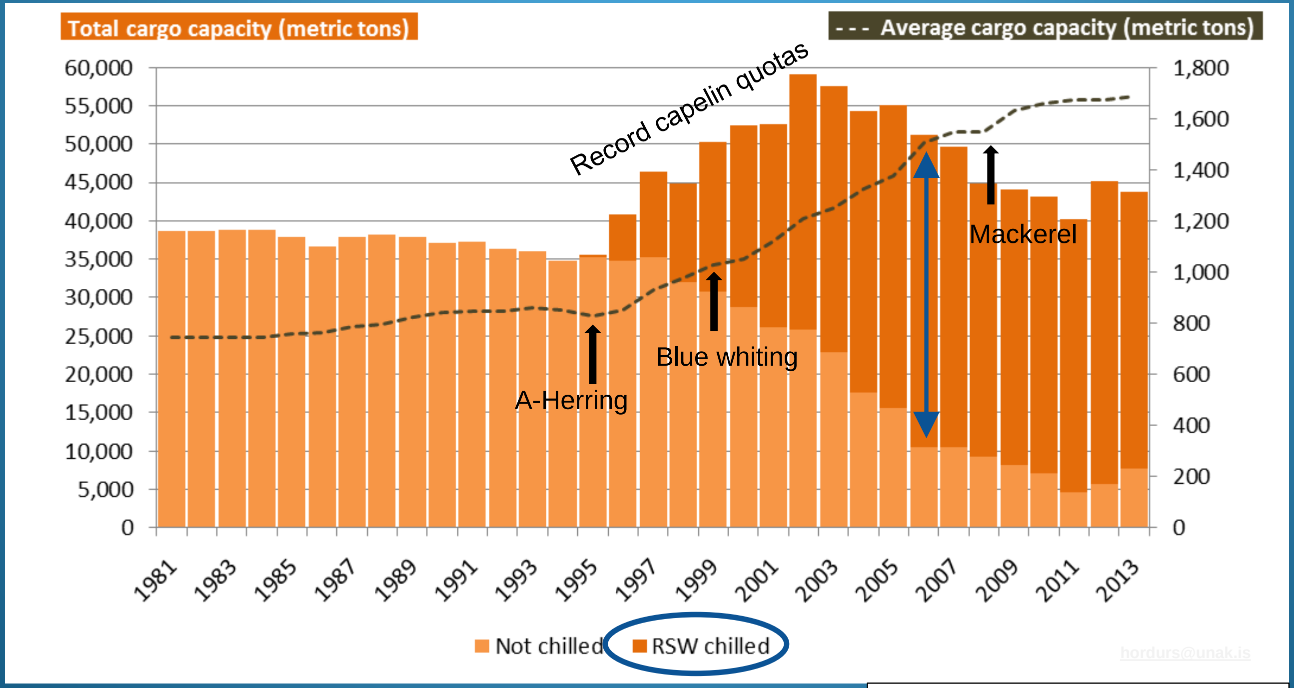


Source: Loðnunefnd / Directorate of Fisheries / Hörður Sævaldsson

Háskólinn á Akureyri
University of Akureyri

Fleets cargo capacity

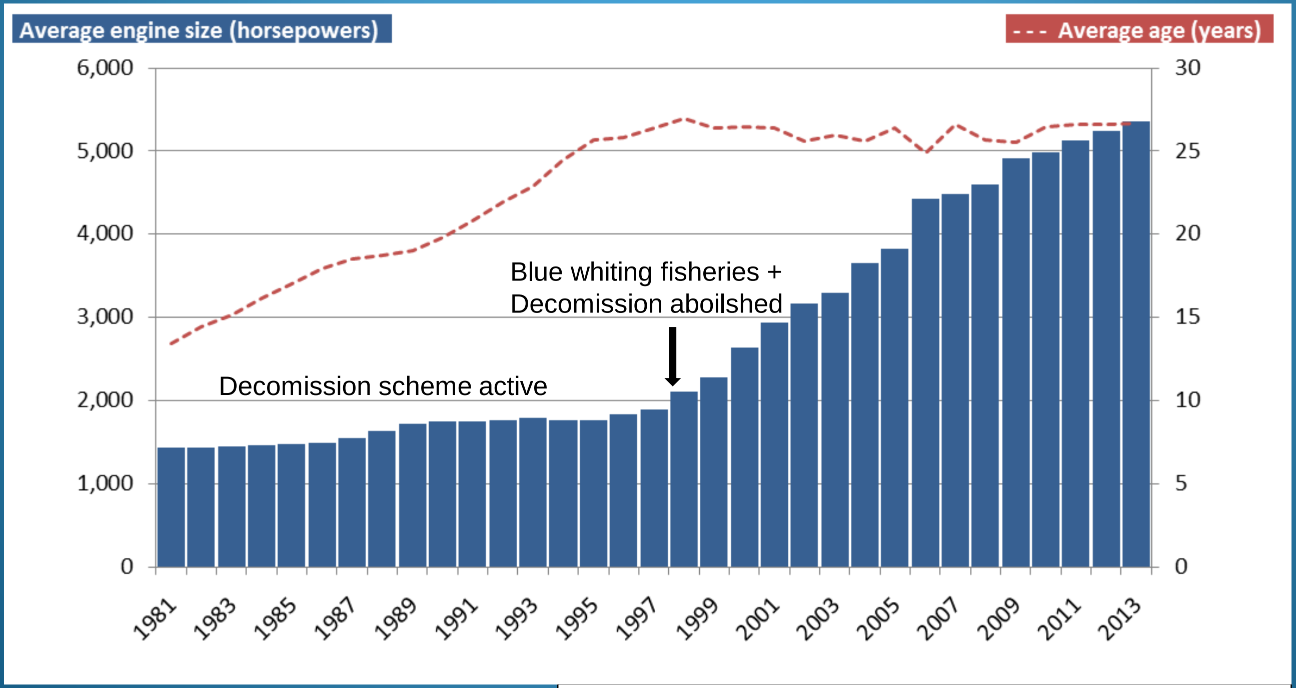
- Total cargo capacity increased along with rising capelin quotas in mid 1990s
- The bulk of the pelagic fleet was reconstructed after 1995; lengthened/rebuild
- Import of vessels with **RSW holds** increased from 1996 and especially past 1999
- Until 1999 decommission scheme was active; possible to extend size with limitations



Source: Emil Ragnarsson / Hörður Sævaldsson

Fleets engine size and fleets age

- Powerful engines followed fleets renovation and import of vessels with RSW chilling
- Larger engines needed for RSW chilling and mid water trawls fisheries (blue whiting)
- Decommission scheme abolished 1999; no additional cost of renovation/new building
- Fleets age increased consecutively until 1999



Source: Icelandic Maritime Administration / Emil Ragnarsson / Hörður Sævaldsson

5. The Processing industry

Increased processing toward human consumption

Photo: Síldarvinnslan

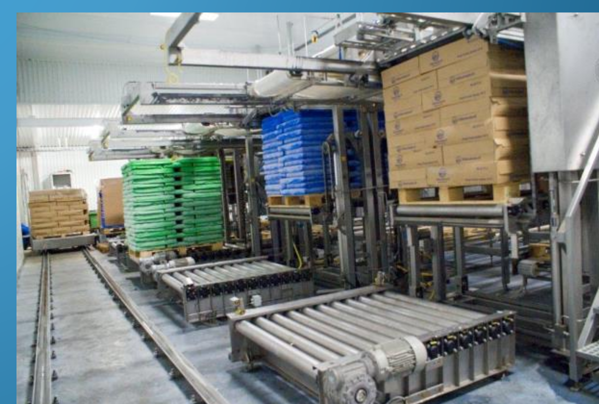
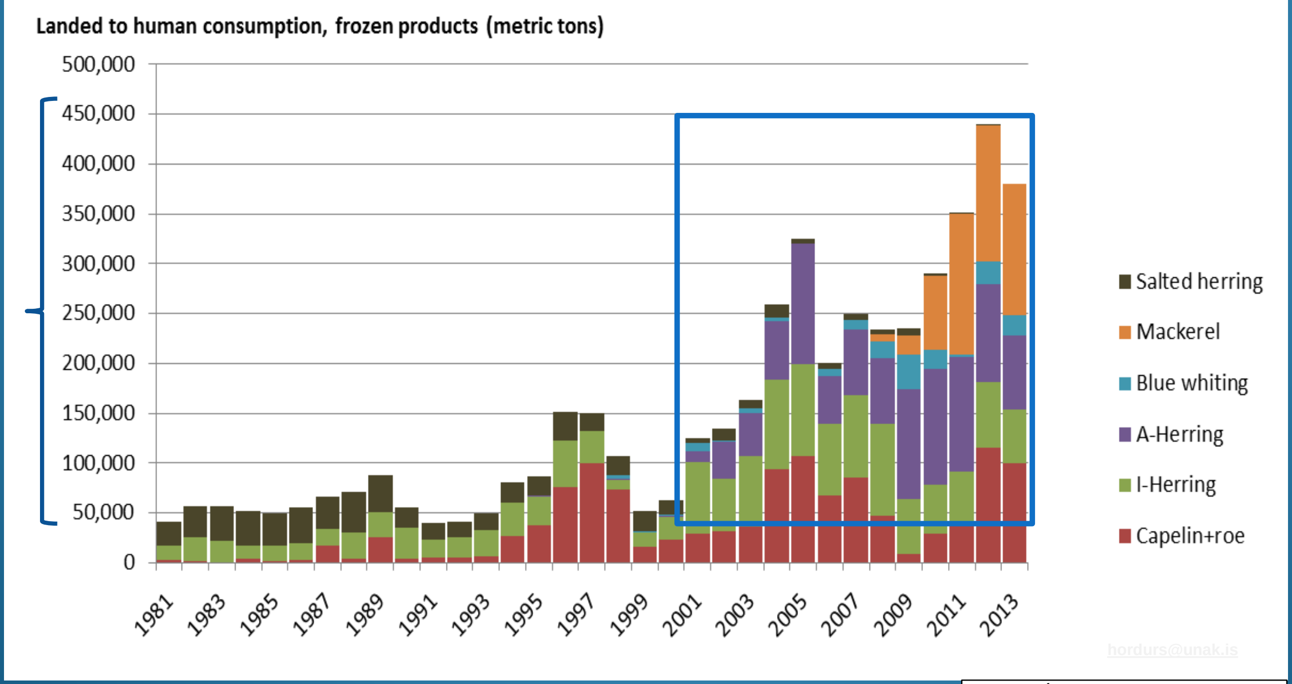


Photo: Síldarvinnslan

Háskólinn á Akureyri
University of Akureyri

Processing toward human consumption

- Automated processing facilities initiate 1997/1998
- Today's factories produce up to 650 metric tons per 24 hours of frozen products
- In 1996 maximum output was 350 metric tons with twice as many employees.
- Freezing capacity of the 8 automated pelagic factories nearly 3,300 metric tons / 24 h

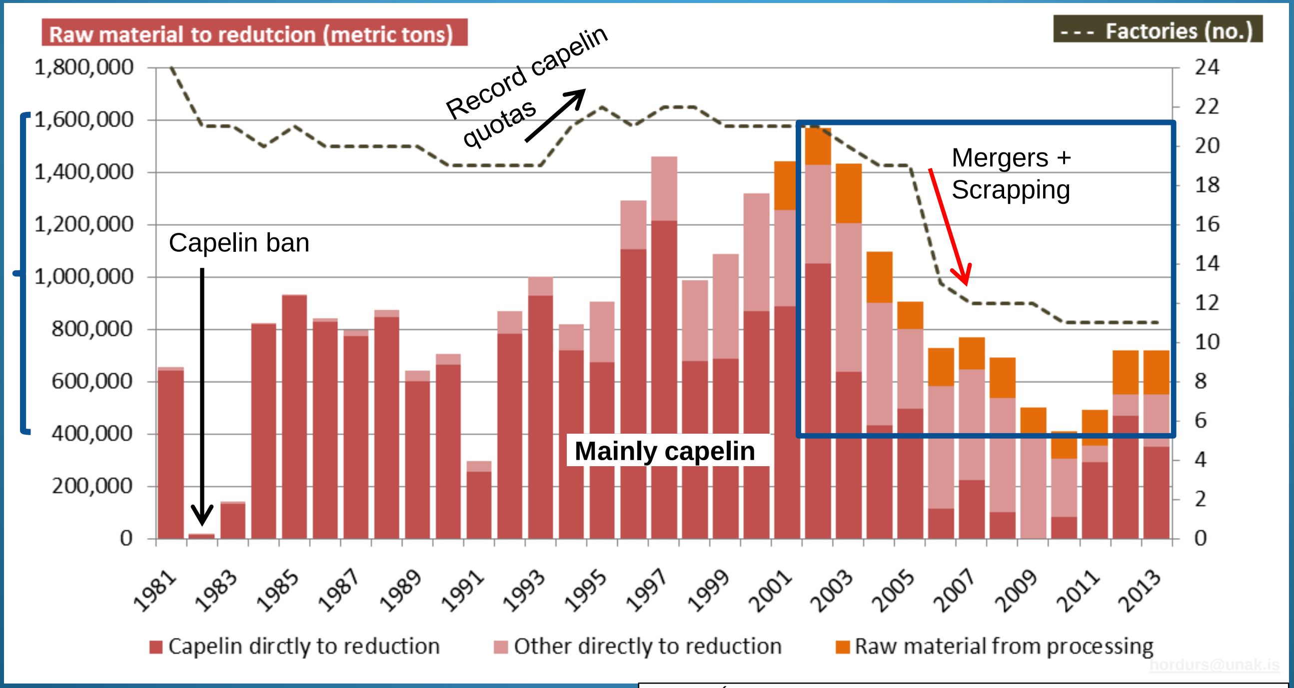


Source: Útvegur / Statistics Iceland

Háskólinn
á Akureyri
University
of Akureyri

Fishmeal factories and raw material

- Number of factories increased 1994-1997 following augmented capelin quotas
- Raw material directly to reduction decreased sharply after 2002
- Less capelin and blue whiting quotas + increased production of frozen products
- Sharp fall in factories number in 2005; reduced capelin quotas and companies mergers
-

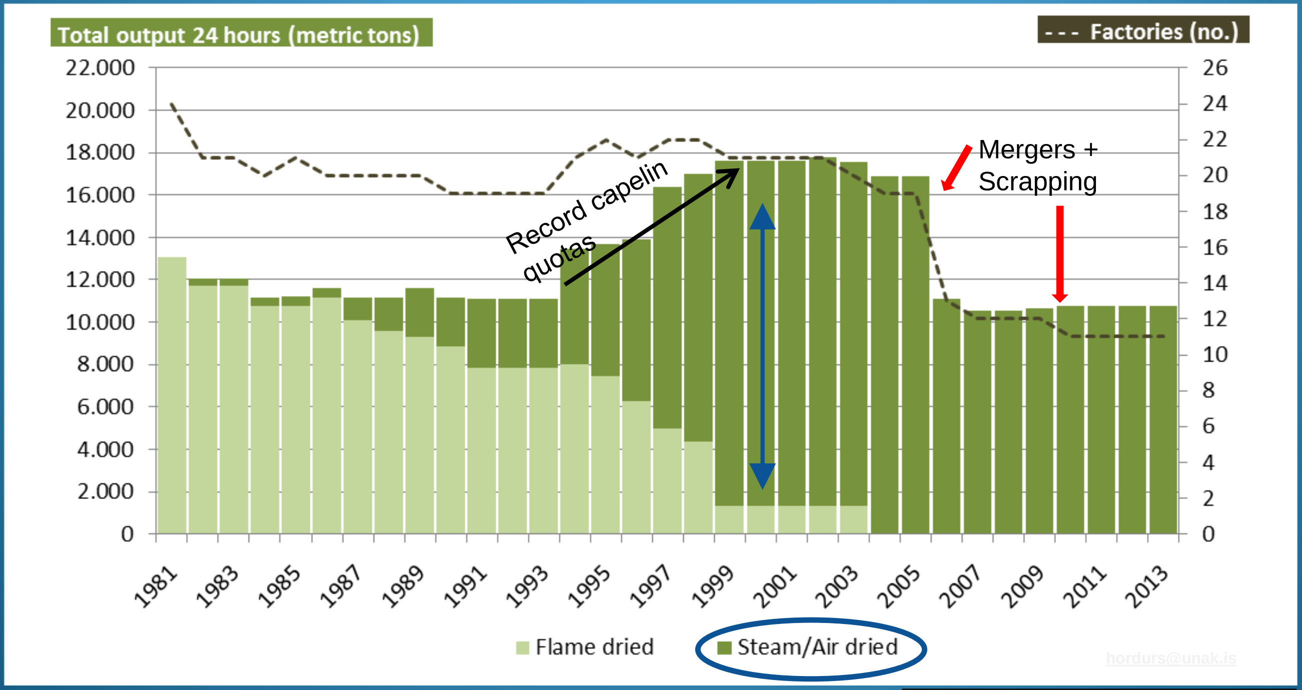


Source: Útvegur / Statistics Iceland / The Icelandic Fishmeal Association

Háskólinn á Akureyri University of Akureyri

Upgraded fishmeal factories

- Total output increased 1994-1997 following record capelin quotas
- Factories have changed dramatically in terms of processing technology
- Steam dried production dominant past 1999 (quality vs. quantity)
- Total output fell sharply in 2005 following mergers and scrapping of factories

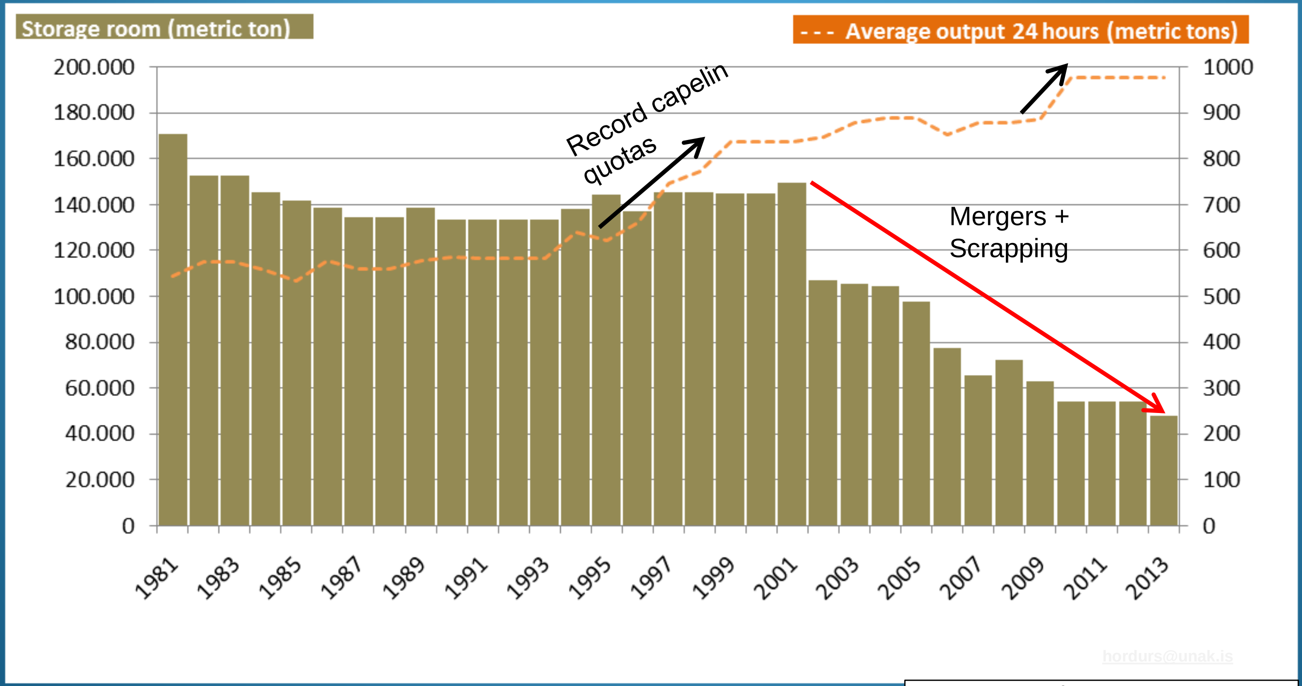


Source: Loðnunefnd & Hörður Sævaldsson

Háskólinn á Akureyri University of Akureyri

Quality instead of quantity

- Parallel with less storage room the daily output has increased
- Thus enabling production of high quality fishmeal and oil.
- The daily output of factories increased 1994-1997 following record capelin quotas
- With declining capelin quotas a substantial proportion of storage space was discontinued

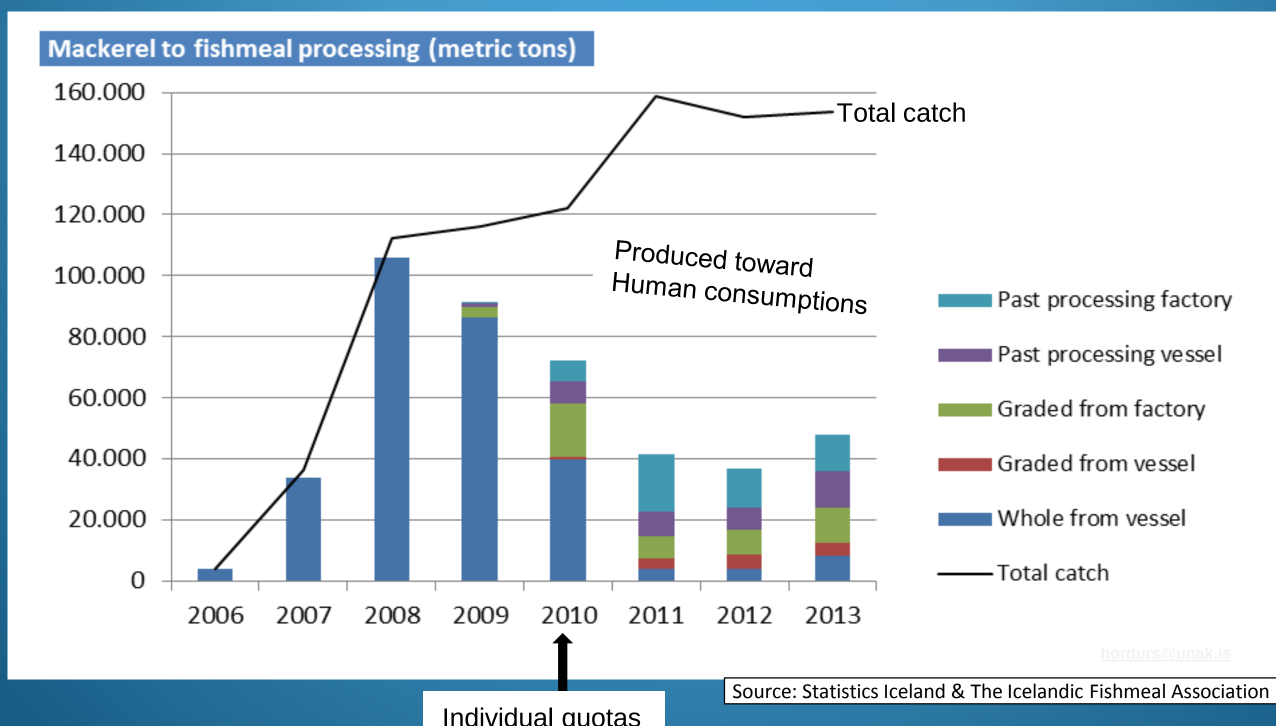


Source: Loðnunefnd & Hörður Sævaldsson

6. The Atlantic mackerel

Mackerel utilization and olympic fisheries

- Fisheries initiated in 2006 and increased sharply the following years
- Olympic fisheries and reduction until 2010 when individual quotas issued to vessels
- Quick cooling of the catch enabled further production toward human consumption
- Produced as frozen whole round and headed/gutted, by-products only to reduction



Háskólinn á Akureyri
University of Akureyri

The end

Questions?