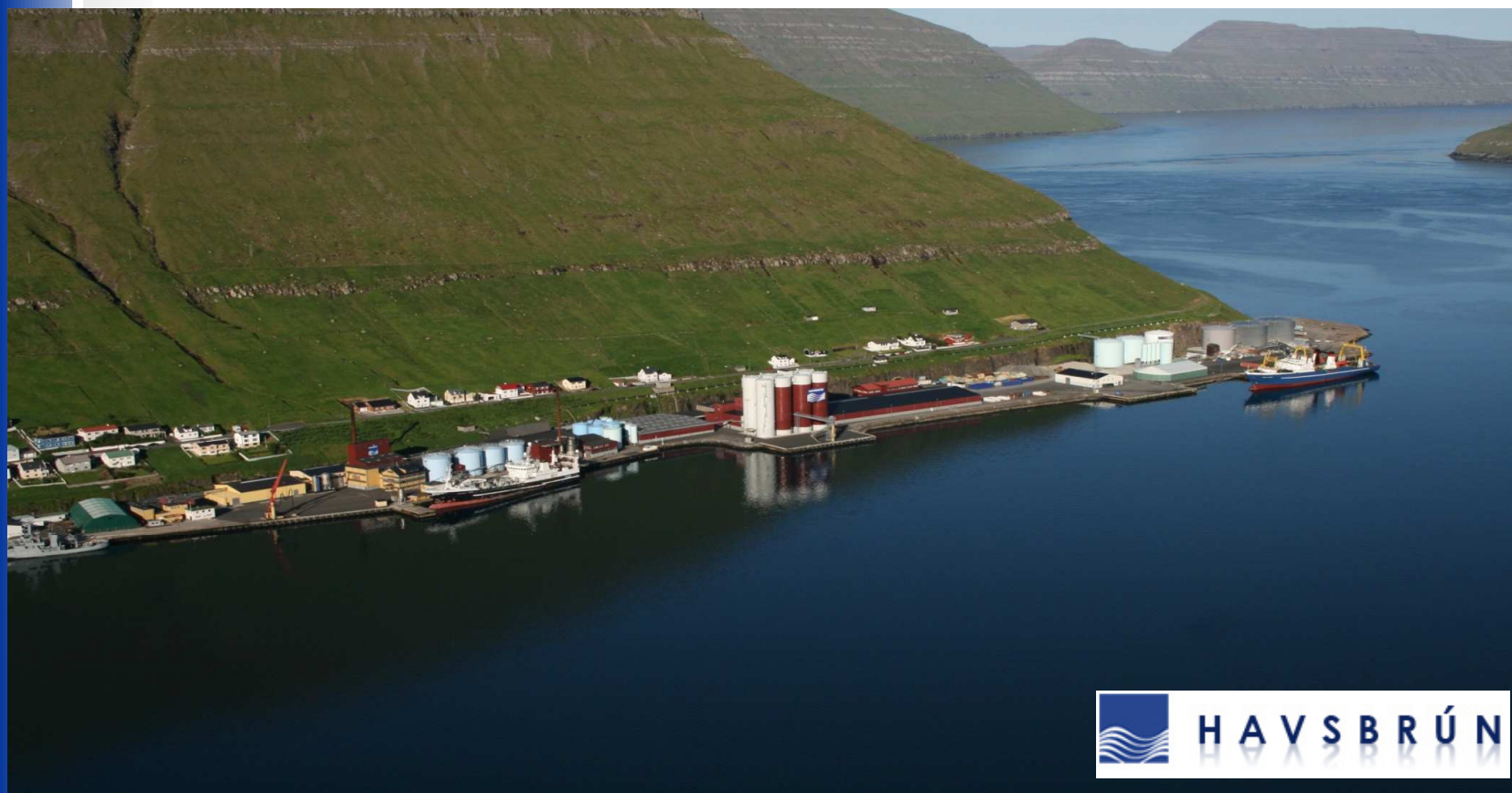




pf Havsbrún



Havsbrún

Fish Meal - Fish Oil - Fish Feed - FOF



- Havsbrún is a part of the Bakkafrost Group
- Bakkafrost is listed at Oslo Børs
- Revenues: 2.491 mill
- Profit 589 mill
- 1/3 % total Faroese fish export
- Havsbrún's revenues 1.083 mill
- Havsbrún's ebidta 126 mill



VISION & MISSION

Bakkafrost aims at being a world class company in the salmon industry. We are committed to provide tasty and healthy quality salmon products to the global marketplace while focusing on a highly sustainable production from feed to salmon products fish welfare and production of top quality food creating value to shareholders, customers, employees and society.



Value Chain

FIG. 28 / VALUE CHAIN



3

We are an **alternative and relief** to *Wild Fish Reserves*



Global seafood supply (1970 - 2008)



Why?

More than 7 billions people to day



In 2050 er vi more than 9 billions people

Need for protein expected to grow by 70% worldwide, and multiple nutrition needs should be covered



Derfor kan opdtættslaks være en af bidragsyderne til:

“meeting the needs for tasty and healthy future food to the global”





BAKKAFROST

ESTABLISHED 1968



HAVSBRÚN

Fish Meal & Fish
Oil

Fish Feed

FF Skagen 17 %

Pelagos 30 %

South Pelagic 33
%

Historical view

- 1966 Havsbrún founded 500 MT/day
- 1981 Testplant producing fishfeed
- 1988 New feedmill built 3,5 MT/hr
- 1990 Expansion of mealplant completed 1000 MT/day
- 1993 Freezing plant built 120 MT/day
- 1995 Investing in fish farming
- 1995 Expansion of feedmill completed 15 MT/hr
- 2001 Storage and mixing silo completed
- 2002 LT-Dryer and expansion 1800 MT/day
- 2003 Storage silo for fishmeal 8000 MT
- 2005 Building up the new Bakkafrost
- 2007 MVR evaporator, steam dryer meal plant 2000 MT/day
- 2008 Expansion of feed mill 25 MT/hr
- 2010 Biggest salmon farmer in Faroe Island

- 2011 Sold to Bakkafrost
- 2014 Invested in Pelagos & FF Skagen


Havsbrún

capacity and storage

- Fish: 2000 tons/24 h
- Feed: 600 tons/24 h

- Raw material tanks: 4 x 1200 tons
- Fish meal storage: 15,000 tons
- Fish oil storage: 13,500 tons

ISO 9001:2000 - GMP 13 - Label Rouge

**DET NORSKE VERITAS
MANAGEMENT SYSTEM CERTIFICATE**

Certificate No. 12576-2007-AQ-DEN-DANAK

This is to certify that

Havsbrún P/F

Fuglafjörður, FO-530, Faroe Islands, Denmark

has been found to conform to the Management System Standard:


DS/EN ISO 9001:2008

This Certificate is valid for the following product or service ranges:


Development, Production and Marketing of Fishmeal, Fishoil and Fishfeed.

This Certificate is valid until:
2013-05-31

Place and date:
Hellerup, 2010-06-03
for Certificeringsordningen i:
DET NORSKE VERITAS,
BUSINESS ASSURANCE, DENMARK A/S




Certification audit has been performed by:
Vibeke Bagger
Lead Auditor



Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.

Det Norske Veritas, Business Assurance, Denmark A/S,
Tilberg Parkvej 6, 3. Sal, 2600 Hillerød, Denmark. Tel: +45 39 45 10 10 www.dnv.com www.dnv.dk



**DET NORSKE VERITAS
GMP⁺ CERTIFICATE**

Certificate No. 21415-2008-AF/SMS-DEN-RvA
PDV Reg. No. FDN103M15

We hereby declare that the animal feed products specified below from

Havsbrún P/F

FO-530 Fuglafjörður, FAROE ISLANDS

DNV Certification B.V. declares that there is a justifiable confidence the feed materials from Havsbrún P/F comply in delivery with the applicable product requirements in appendices 1 and 3 of the GMP+ : 2006 certification scheme for the feed sector of the Product Board Animal Feed in The Hague, the Netherlands (www.pbo.nl). This has been shown by periodic verification of the feed safety system and the process control requirements in standard B2 Quality Control of Feed Materials as determined in the C3 standard, assessment and certification criteria in GMP certification, of the GMP+ : 2006 certification scheme.

Comply to the GMP⁺ Certification Schema Animal Feed Sector 2006

The scope of this certificate relates to:


Production of feed materials

Initial Certification date:
February 9th, 2005

This Certificate is valid until:
February 9th, 2011

The audit has been performed under the supervision of:
Vibeke Bagger
Lead Auditor

Place and date:
Barendrecht, March 18th, 2008
for the issuing date:
DET NORSKE VERITAS CERTIFICEREN B.V.,
THE NETHERLANDS
(PDV Reg. No. CE 30328)



Ren J. Meijer
Management Representative

Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.

DNV CERTIFICATION B.V., Postweg 1, 2690 LP Barendrecht, The Netherlands. TEL: +31 10 9922 080 - www.dnv.com - www.dnv.nl

FOOD CERTIFICATION (SCOTLAND) LIMITED
Certificate of Conformity

This is to certify that having satisfied the Requirements of the Certification Schemes for

**Label Rouge Scottish Farmed Salmon (LR)
Scottish Quality Farmed Salmon (TQM)
Salmon Smolts**




HAVSBRUN LTD
P.O. BOX 81,
FO FUGLAFJÖRDUR, FAROE ISLANDS
FAROE ISLANDS MILL

Has been registered as an Approved Supplier of

**LR compliant Salmon Feed
TQM compliant Salmon Feed**

This Certificate, Number FM002 is the property of Food Certification (Scotland) Limited, and it is issued subject to the Company's Rules Governing Certification.

Date of issue: JANUARY 2005 Expiry Date: JANUARY 2006

Signed on behalf of Food Certification (Scotland) Limited

Chairman: 




973

Quality Systems

FOOD CERTIFICATION INTERNATIONAL LIMITED

Certificate of Conformity

GLOBALG.A.P. (EUREPGAP®)

GlobalGAP Number GGN: 4050373218515
GlobalGAP IAA Registration Number: FCI LTD FCI-IAA-UK-0106

Issued To:
P/F HAVSBRUN
PO BOX 81, FO-530 FUGLAFJORDUR, FAROE ISLANDS
Country of Production FAROE ISLANDS

FCI Ltd declares that the production of the products mentioned on this certificate has been found to be compliant in accordance with the standard:
GlobalGAP Compound Feed Manufacturing Version 2.0

Product	Type of Certification
Animal Feeds	Option One

This Certificate is the property of Food Certification International Limited, and it is issued subject to the Company's Rules Governing Certification.

Date of Issue: 17.03.10 Valid to: 01.06.10
Date of Certification: 19.02.10

Signed on behalf of Food Certification International Limited, Findhorn House, Dochfour Business Centre, Dochgarroch, Inverness, IV3 8GY, Scotland, UK E-mail: info@foodcertint.com




Chairman FCI Certification Board: TOM MASON



The future....



Marine Stewardship Council
Certified sustainable seafood

Unique Traceability

TRACE.NET

Feed batch origins

- BL000009113 Havgrón 9mm 55A
- BL000009112 Havgrón 9mm 33A
- FR2010.0244 FD 324 Svartkjaftur 03.21 (22,01%)
- FR2010.0288 FD 326 Imcosoy 60 (17,02%)
- FR2010.0294 FD 325 Hveiti Bulk (20,61%)
- FR2010.0343 FD 320 Sólblómumjöl (7,99%)
- FR2010.0345 FD 331 Sólblómumjöl (2,26%)
- FR2010.0360 FD 321 Svartkjaftur (20,59%)
- FR2010.0324 FD 321 Svartkjaftur (13,72%)
- FB2010.0030 Svartkjaftur (6,87%)
 - SB2010.0066 B1 (6,87%)
 - SB2010.0064 A2 (6,87%)
 - KS2009.0037 Kassar/Sekkir (1,14%)
 - MB2009.0048 BUF3 (1,14%)
 - T2009.00035 T2 (0,00%)
 - L2009.031 LANDING (0,00%)
 - L2009.032 LANDING (0,00%)
 - T2009.00036 T1 (0,00%)
 - T2009.00038 T2 (0,00%)
- KS2009.0038 Kassar/Sekkir (1,26%)
- KS2009.0131 Kassar/Sekkir (1,02%)
- KS2009.0144 Kassar/Sekkir (0,84%)
- KS2010.0063 Kassar/Sekkir (0,94%)
- SB2010.0042 B4 (1,67%)
- FR2010.0366 FD 620 Astax Pink 10% (0,00%)
- FR2010.0373 FD 608 Vitaminpremix 1,5% (0,69%)

Details for selected batch:

Batch identity: L2009.031
 Batch type: Landing
 Created at: 22-02-2009 20:37
 Closed at: 23-02-2009 12:14
 Size (kg): 0

Skip:	Slaatterøy
Vatn til:	4.43
Veiðuæki:	VIIc
Fiskaslag:	Svartkjaftur
Vatn frá:	21.57

Analysis of selected batch:

Ráværu roynd	Roynd nummar	1	...
Ráværu roynd	Turevni	21.03	... %
	Fiti	4.88	... %
	Fitifrítt turevni	16.15	... %
	Salt	0.96	... %
	TVN	29	... mg/100 g

RnD

- **IFFO** (International Fishmeal & Fishoil Organisation)
 - Fish Meal Action Committee, Fish Oil Action committee, Scientific Committee, Fisheries & Environmental Committee???
- **NOFIMA** - Norway
- **Aquaculture Research Station of the Faroes**
- **Gifas Research Station – Norway**
- **Laboratory**
- **Suppliers**
- **Farmers**
- **Market**
- **Internal knowledge**

Analyses

- Havsbrún Laboratory
 - Protein
 - Kjeldahl-metod
 - Fat
 - Soxlett-metod, extraction with petroliumether
 - Salt (NaCl)
 - Ash
 - Dry matter
 - TVN
- Foreign laboratories
 - Biogene amines
 - Astaxanthin
 - GMO
 - Heavy metals
 - Digestibility
 - POPs
 - Aminoacid profile
 - Microbiology

Havsbrún



Value increase fish biproduct & fish to salmon

- Value increase fish biproduct, fish offcuts
- Fish not suitable for human consumption
- Fish where there is no market for
- Rejected pelagic fish for human consumption



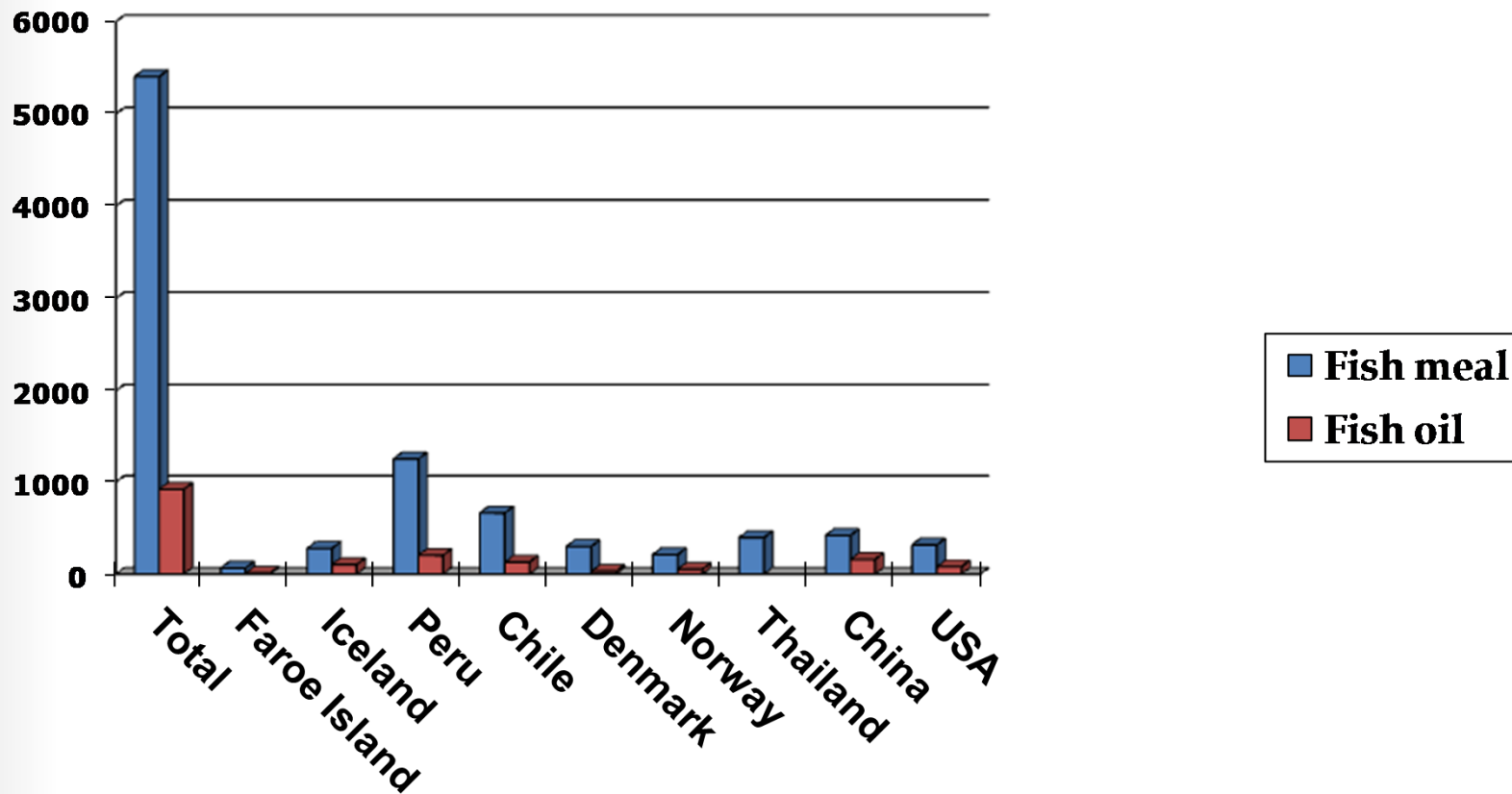
- Valuable fish proteins and vital essential fish oil



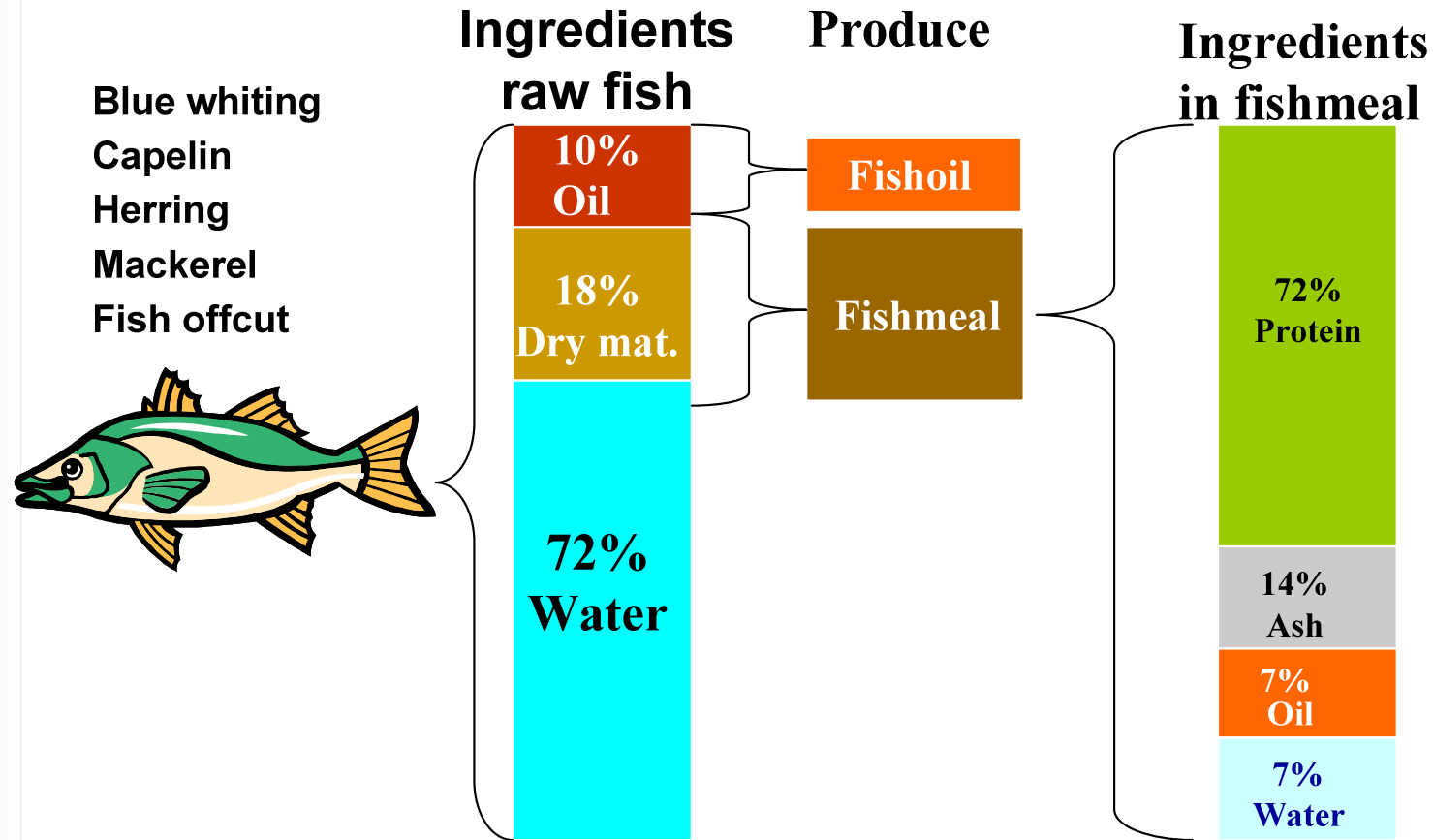
Fish Meal & Fish Oil



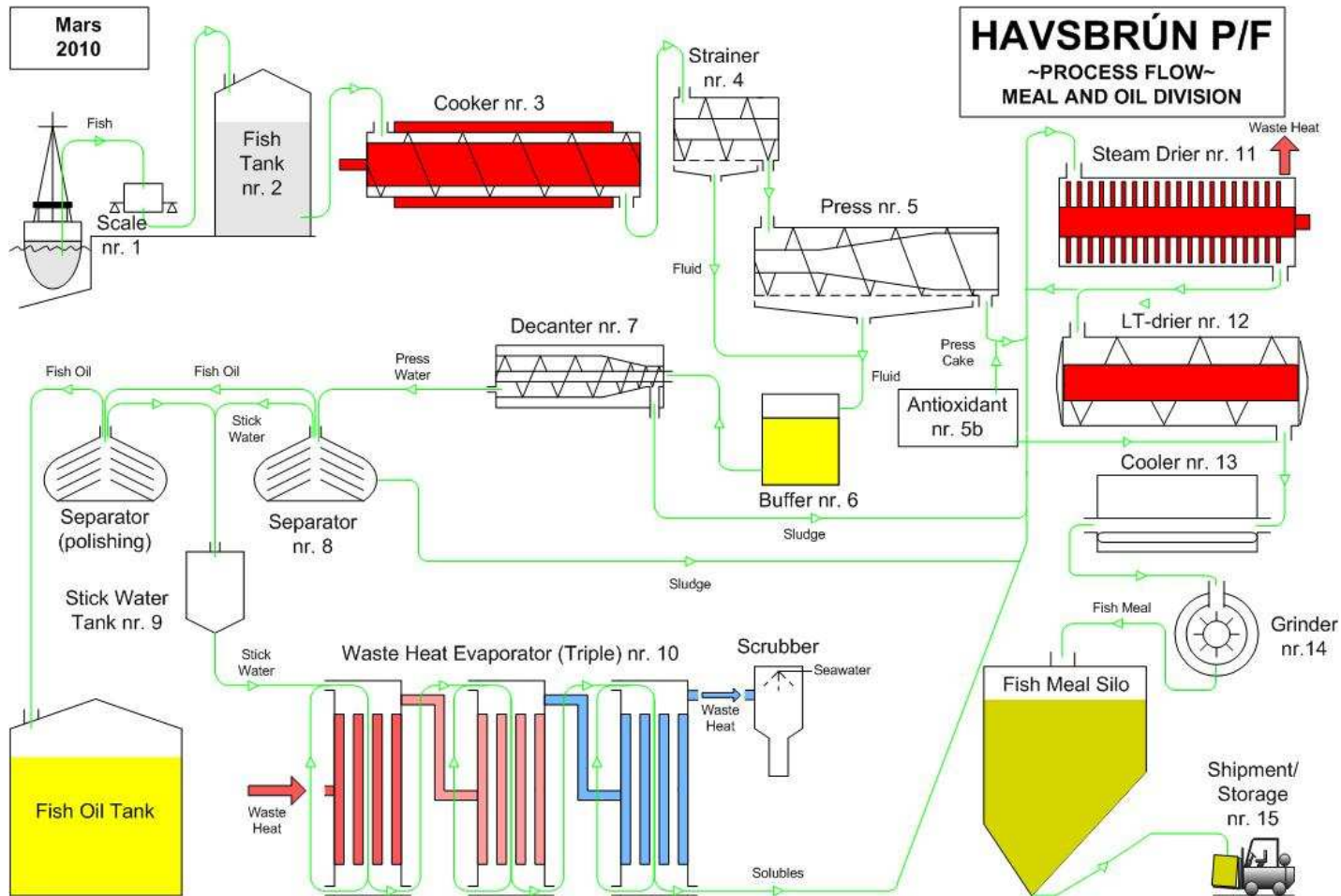
World production of fish meal and -oil



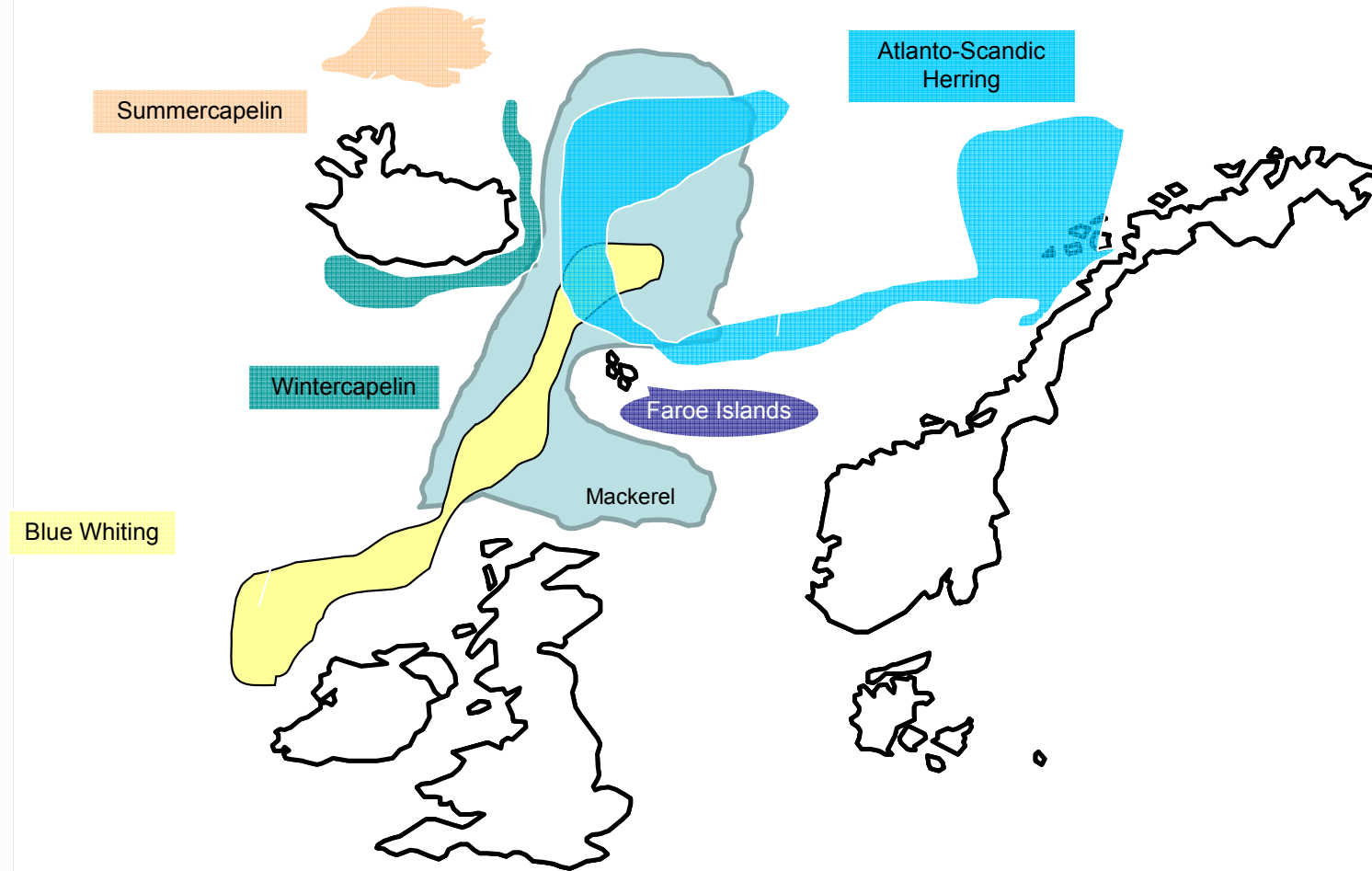
Ingredients of fishmeal



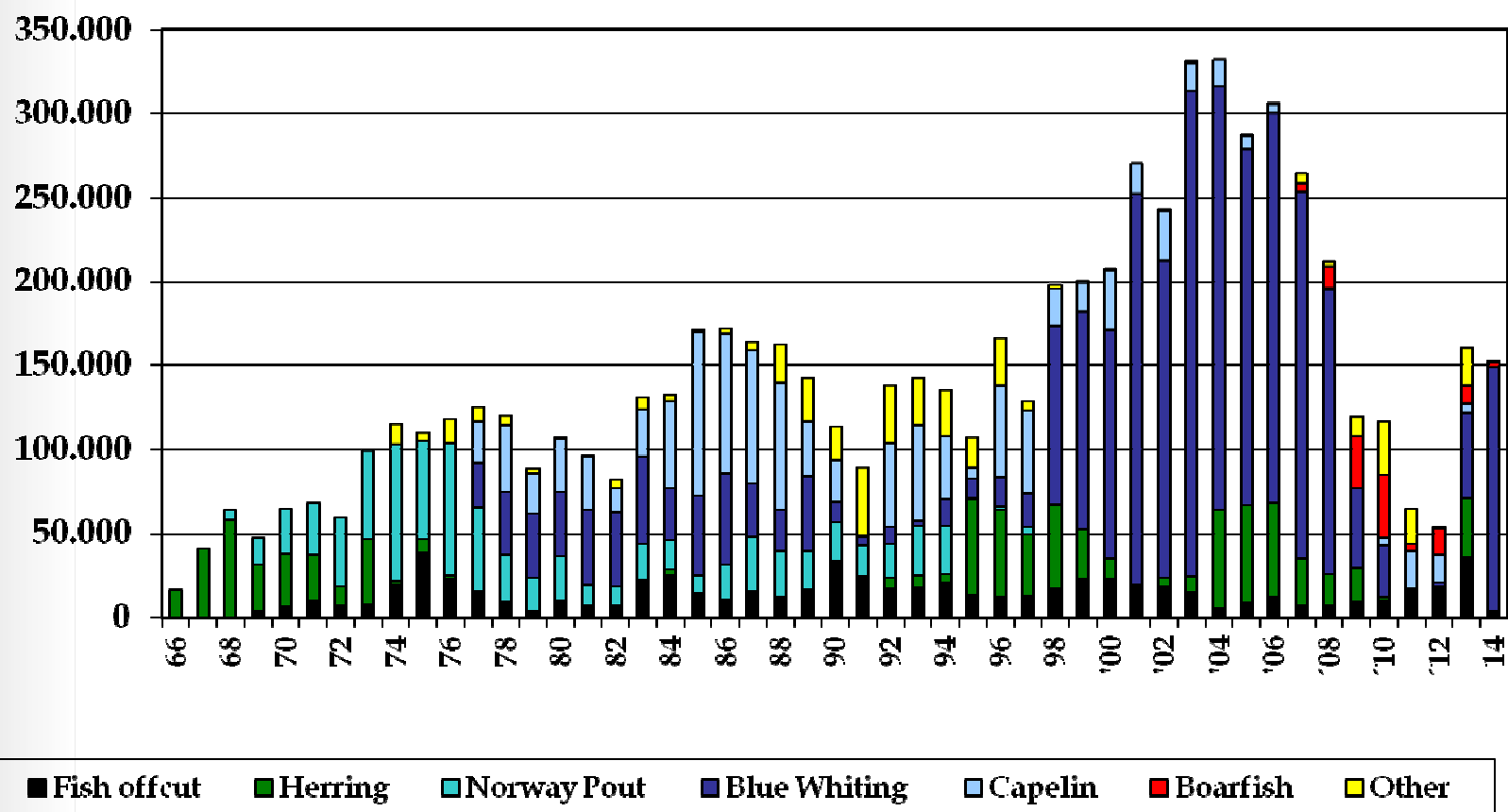
Production



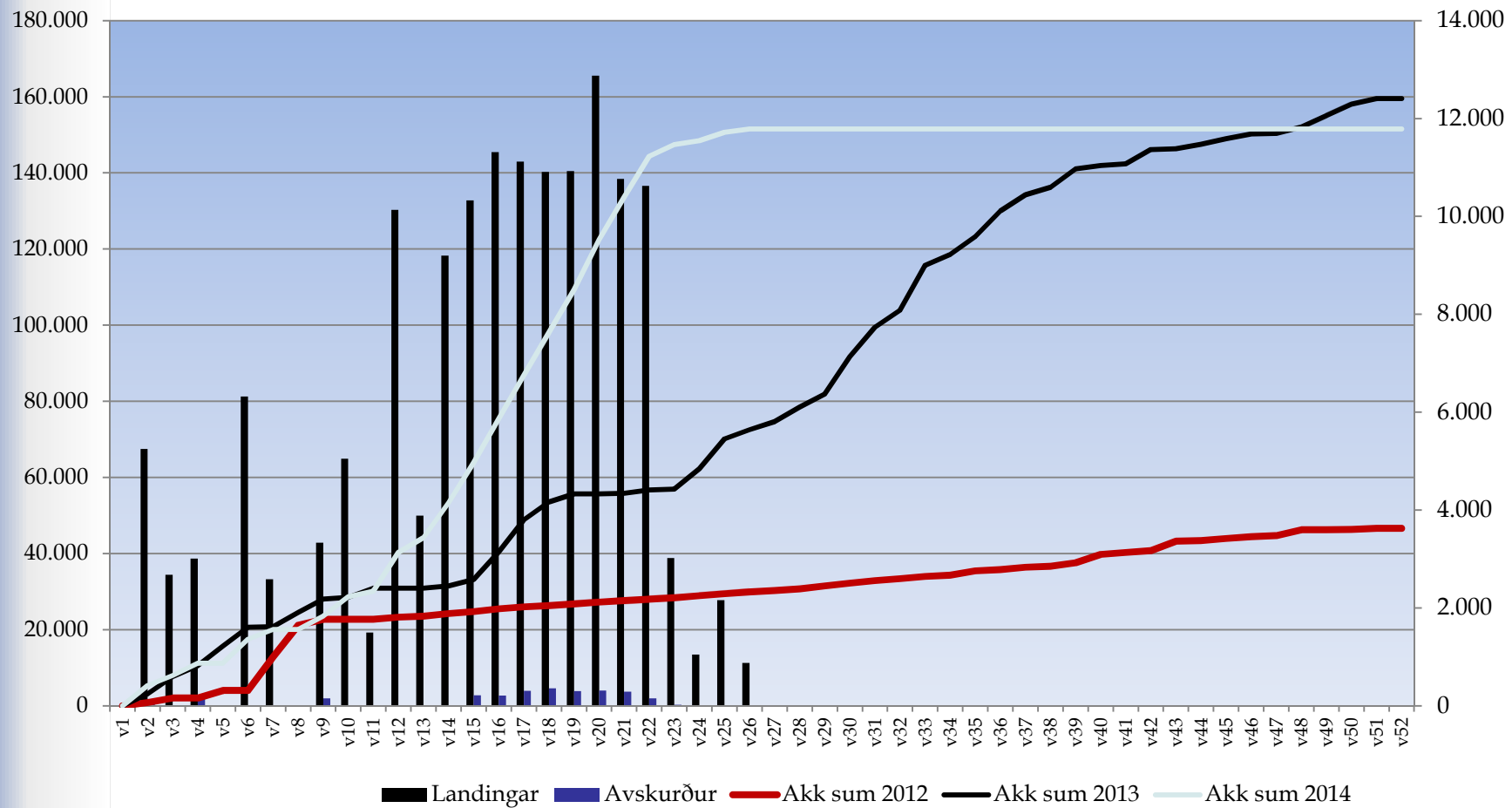
Raw material by fishinggrounds



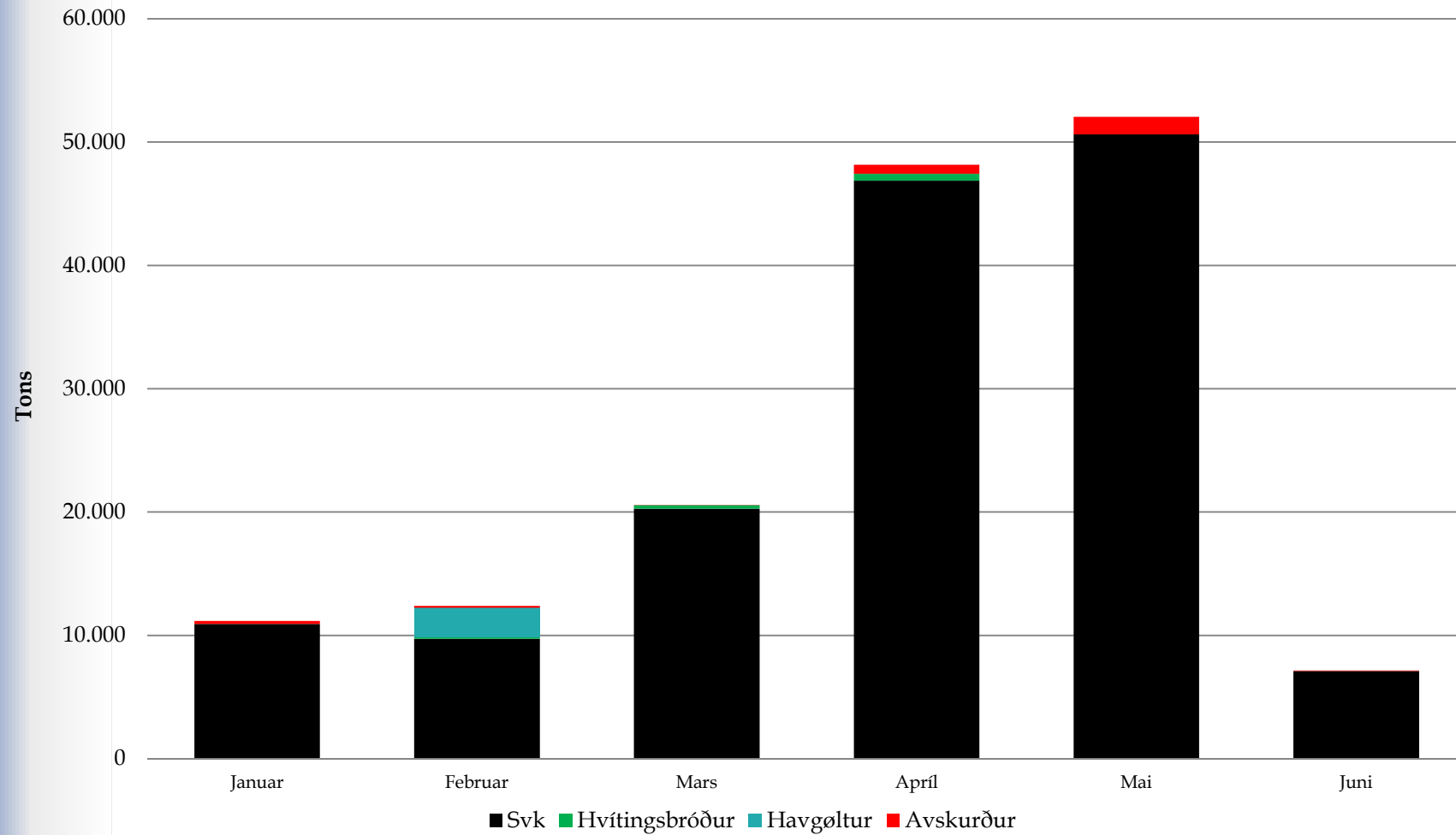
Landings 1966-2014



Raw material 2012-2014

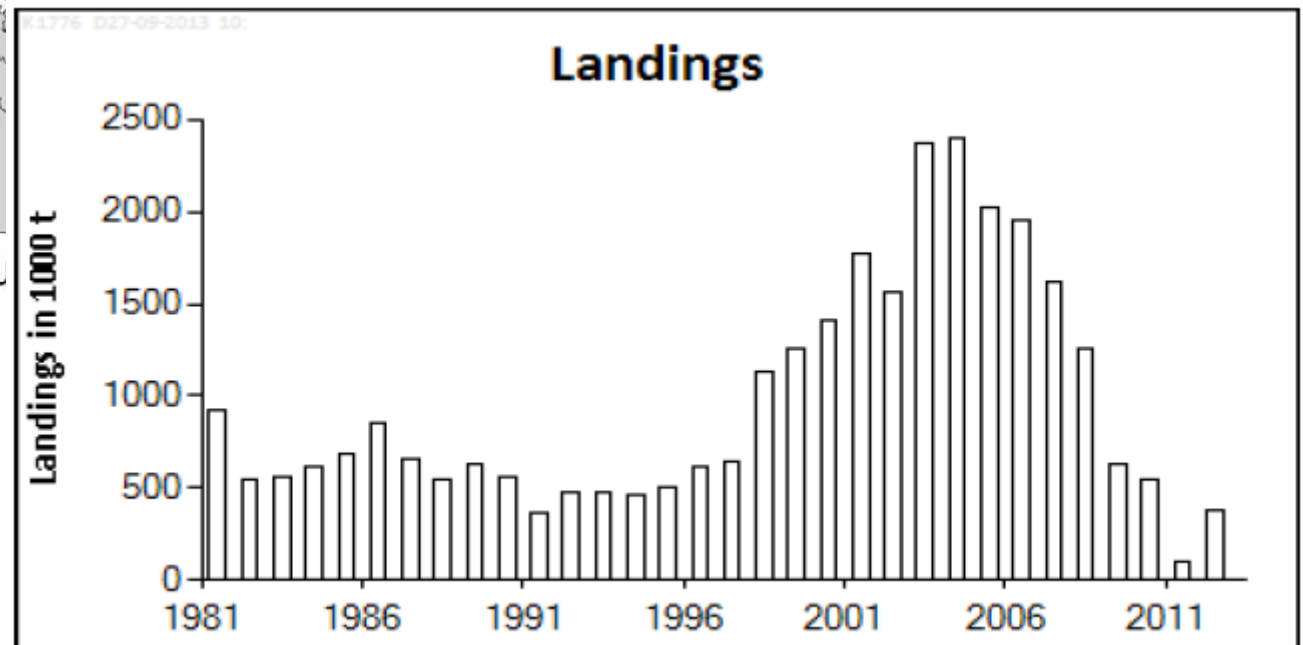
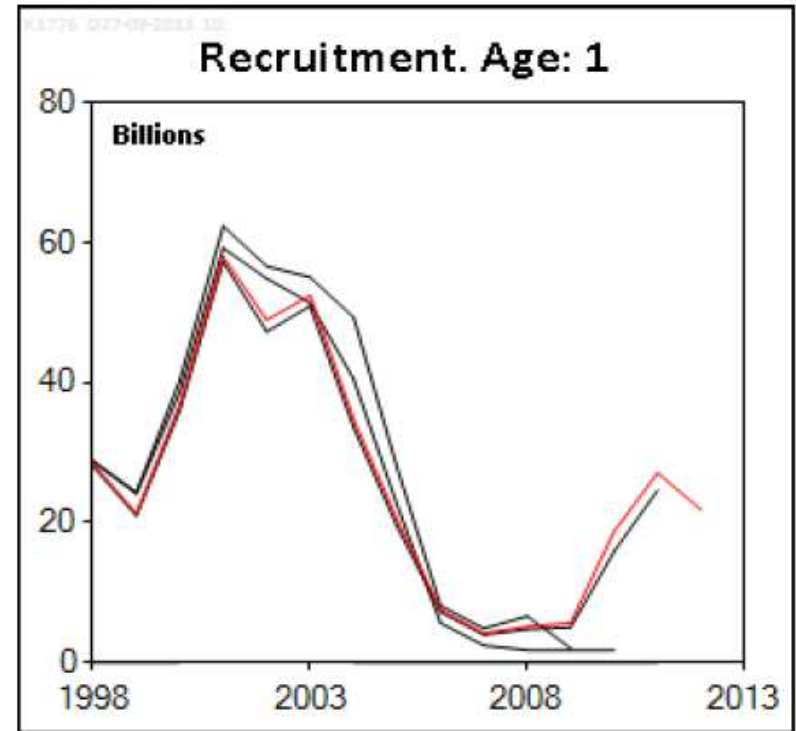
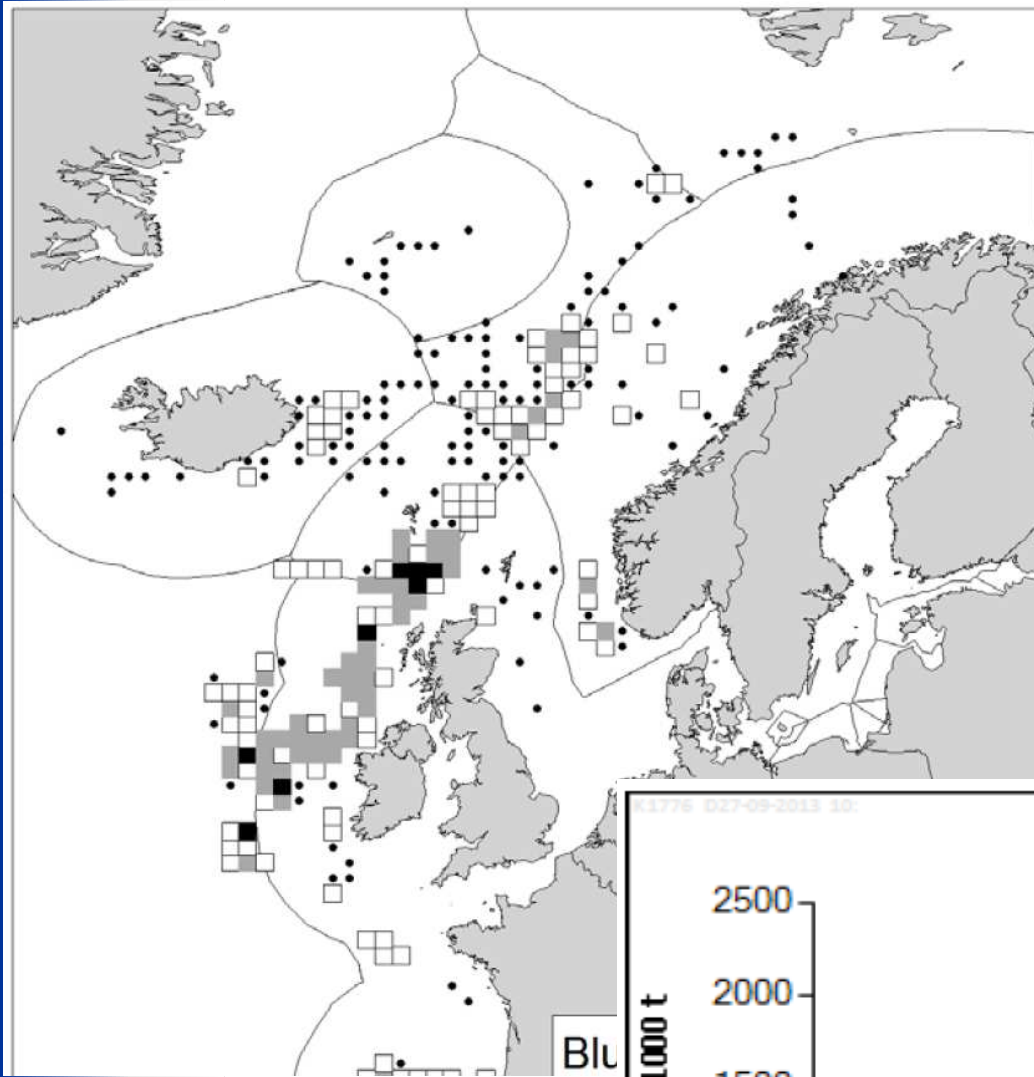


Species of fish 2014

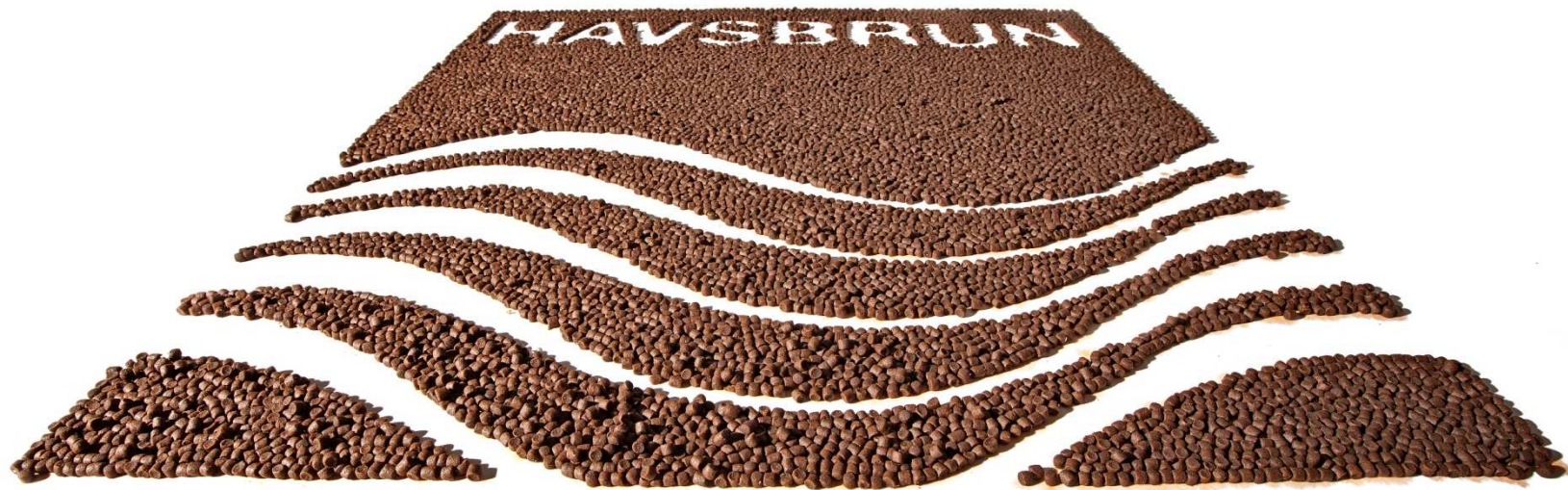


Pelagic quotas

MLV	2008	2009	2010	2011	2012	2013	2014
Herring	1.518.000	1.643.000	1.483.000	988.000	833.000	619.000	418.487
Blue whiting	1.150.514	543.043	497.022	39.000	391.000	643.000	1.200.000
Mackerel	385.366	511.287	484.700	646.000	639.000	542.000	1.240.000
FO quota							
Herring	77.418	83.793	75.633	50.388	42.483	105.730	40.000
Blue Whiting	300.284	141.734	129.723	10.179	102.051	167.984	288.681
Mackerel	20.810	27.609	26.174	150.000	125.000	143.795	156.240



Fish Feed



Raw Material

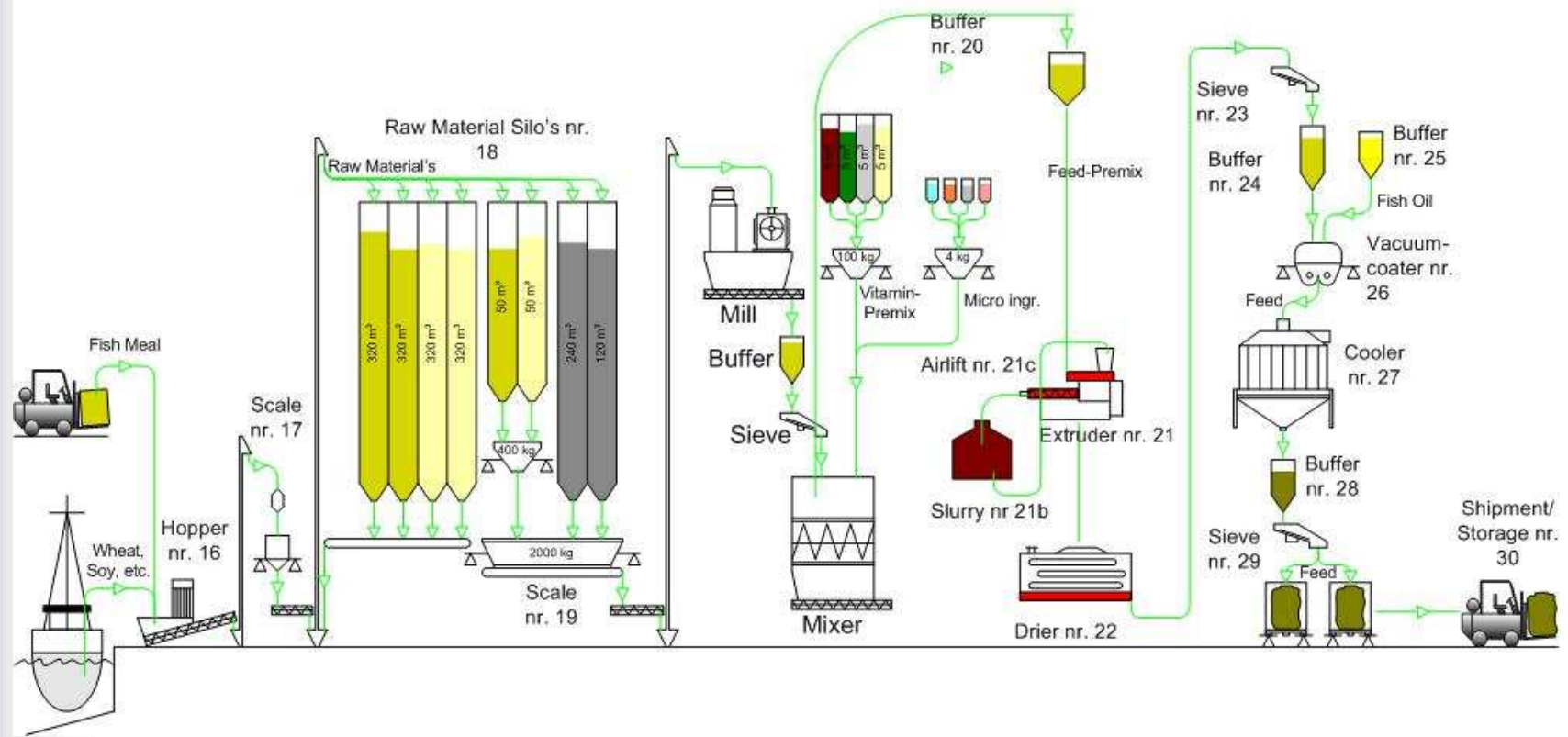
- Havsbrún diets for salmon contains:
 - Fish Meal 25 – 60 %
 - Fish Oil 16 – 37 %
 - Rapeseed oil 0 – 16 %
 - Wheat 10 – 20 %
 - "Non-GM" Soy 0 – 20 %
 - Sunflower meal 0 – 12 %
 - Wheat gluten 0 – 5 %
 - Krill Meal 0 – 8 %
 - Pigment/Vitamins/Minerals/glucan



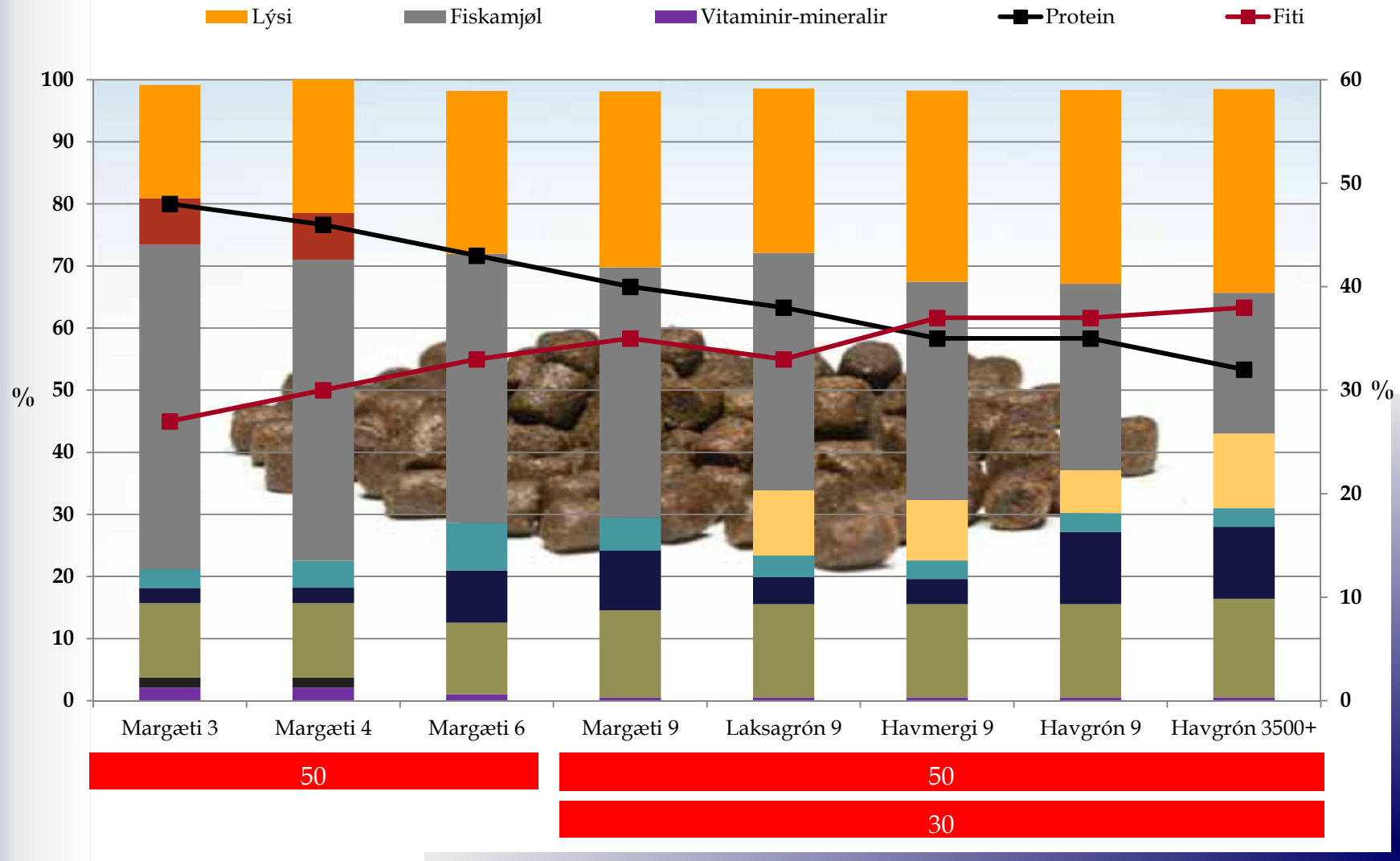
Production

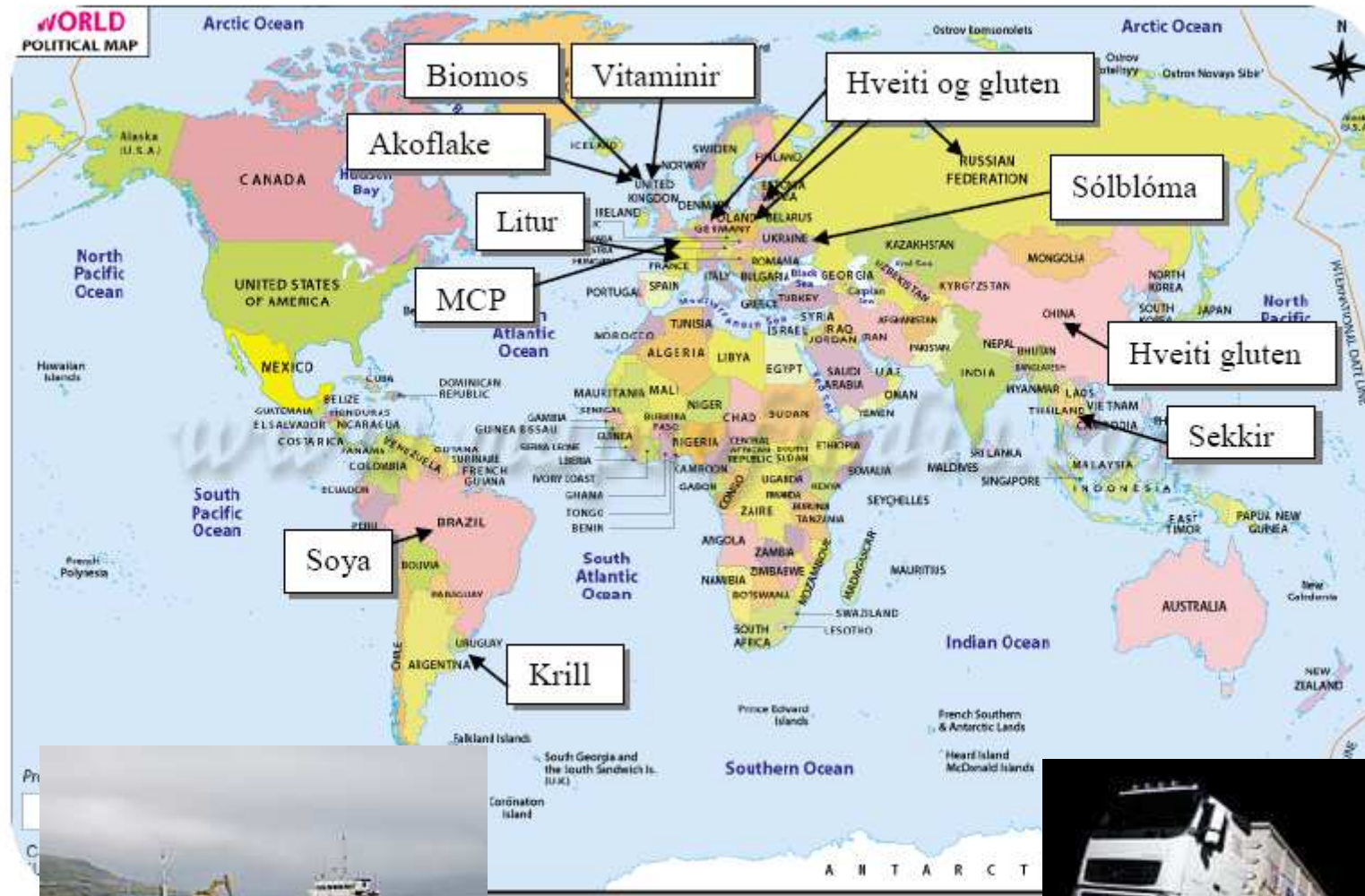
September
2009

HAVSBRÚN P/F
~PROCESS FLOW~
FEED DIVISION

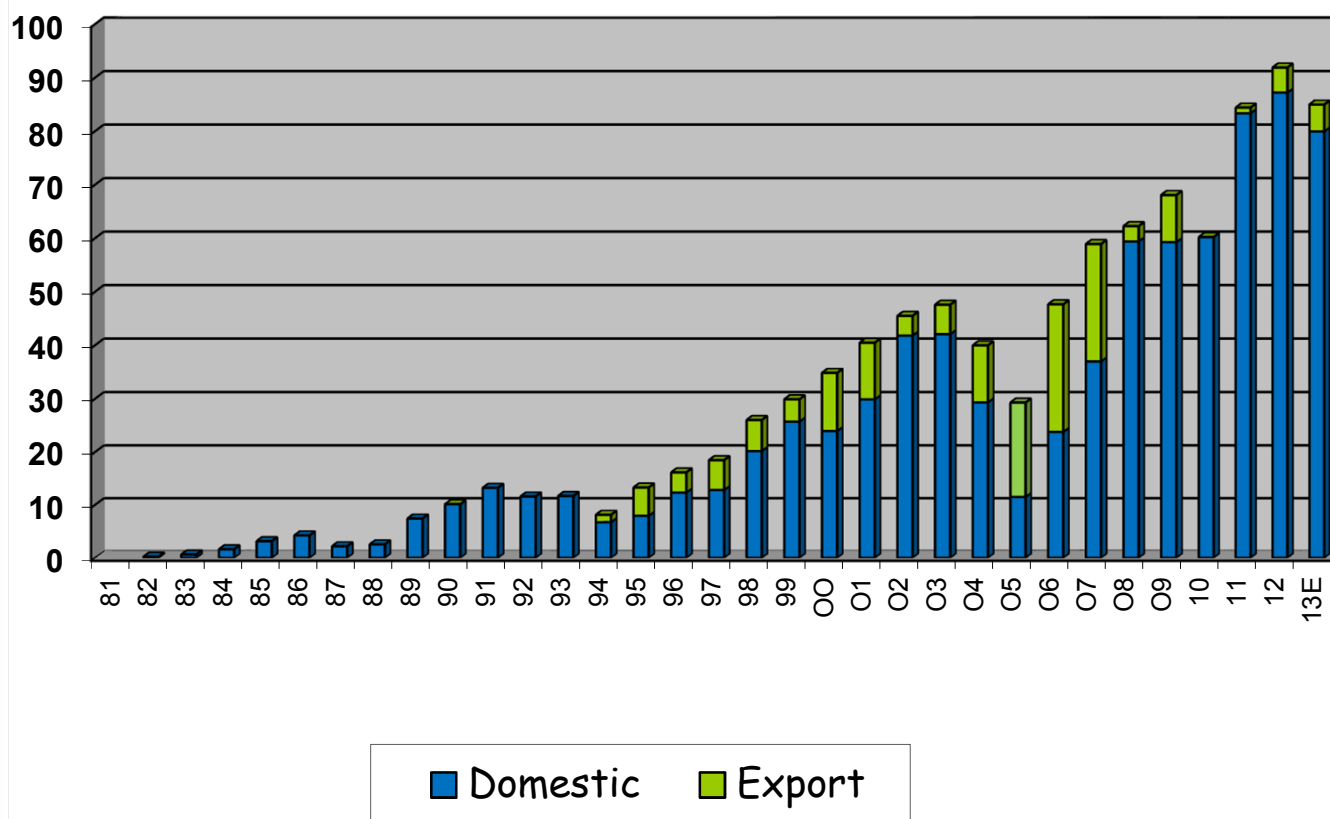


Products and contents





Feed sales from 1981 to 2013



Our unique value chain



Rúni
Fóður- og
menningarleiðari
Havsbrún

Sigríð
Smottalari
Bakkafrost Farming

Ray-Keth og Bjarni
Forkvinnu og formæður
Bakkafrost Farming

Gandy
Skipari
Bakkafrost Harvest

Tordis
Arbeis kvinnu
Bakkafrost Harvest

Tórníður
Formæður
Bakkafrost Packaging

Beinta
Arbeis kvinnu
Bakkafrost Harvest

Anna
Góðskuleiðari
Bakkafrost Holding

Bárður
Lærtingur - maskinamið
Havsbrún

Malbritt
Logstík
Bakkafrost Sales

Annika
Flótnskapar fólk
Bakkafrost Holding

Ámi
Markaðarleiðari
Bakkafrost Sales

← **Bakkafrost samtakið hevur longstu virðisketuna í heiminum innan aling** →

Í Bakkafrost samtakinum starvast yvir 640 dugnalig fólk við alskyns førleikum og útbúgvingum.

Bakkafrost samtakið er einasta alisamtak í heiminum, har virðisketan fevnir heilt frá framleiðslu av fiskamjoli & lýsi (sum verður nýtt til fóður) til lidna vøru, ið verður útflutt til góðskutilvitaðar kundar kring allan heim. Eftir liggur ein stór virðisoking í Føroyum.

Havsbrúns & Bakkafrost Value Chain

3100 tons fish = 650 tons meal = 2500 tons fish feed = 2300 tons salmon



6 mill/kr



9 mill/kr



24 mill/kr

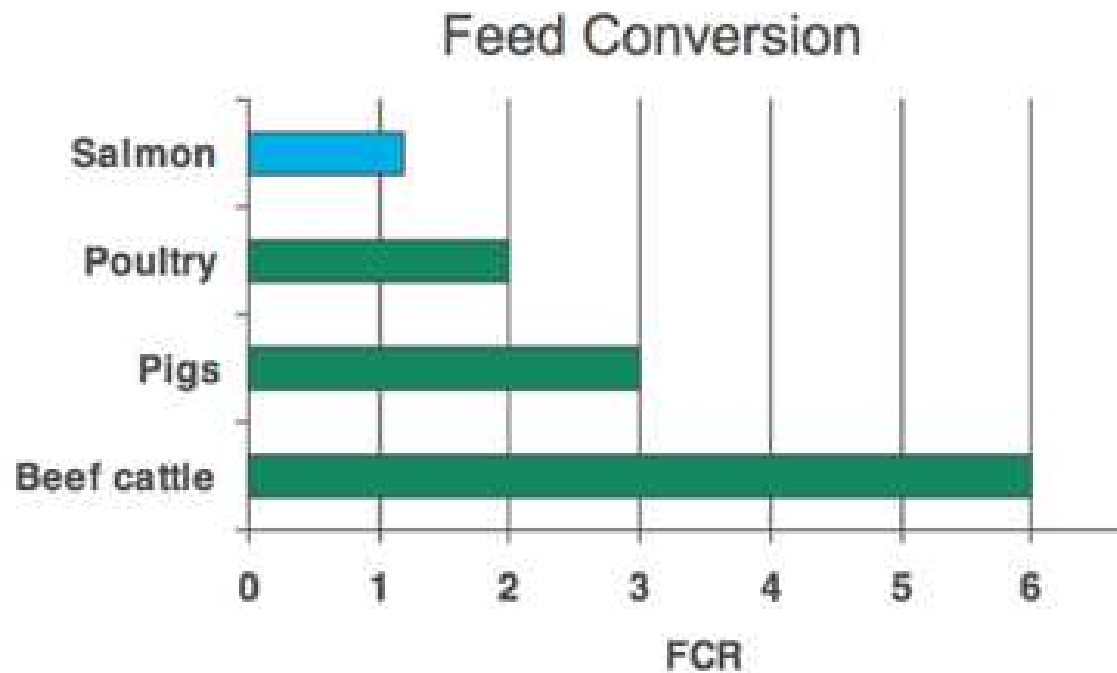


80 mill/kr

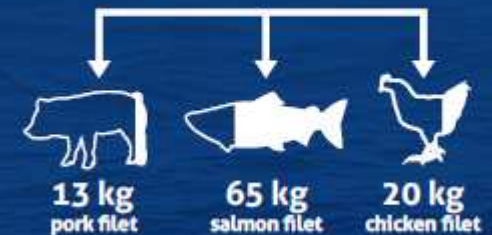


90 mill/kr

Salmon farming is **more efficient** at converting feed to food



100 kg feed is equal to:

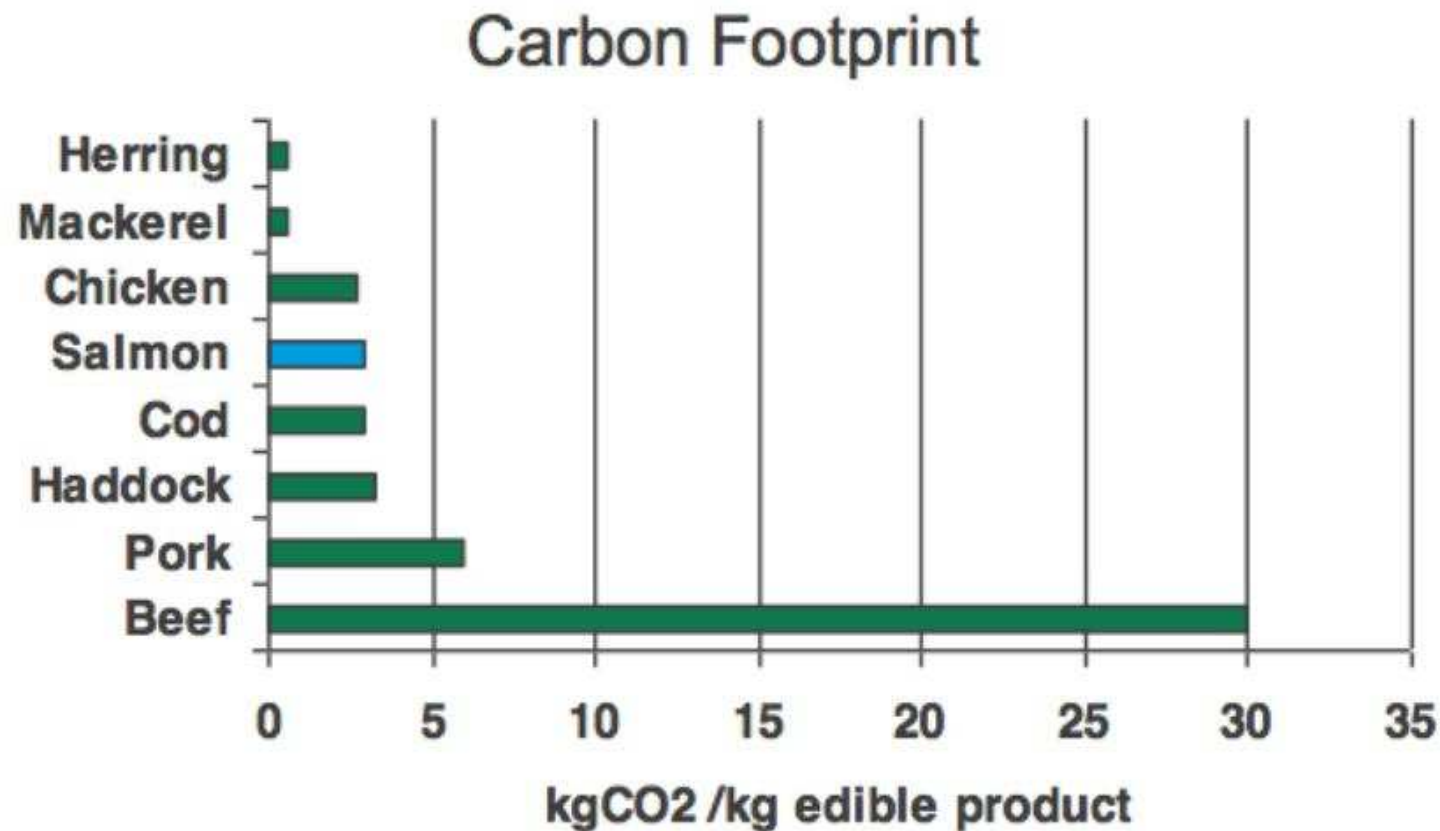


2

Challenge: Carbon Footprint

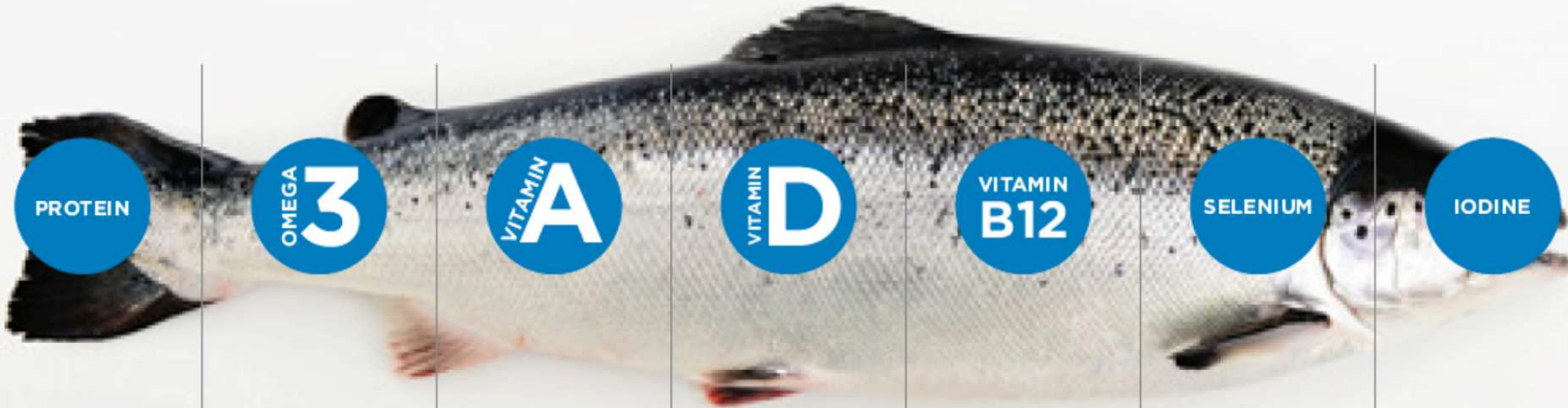


- Salmon farming produces less CO₂ emissions than other source of farmed animal protein



Source: Ewos

Salmon: Protein, Omega 3 ,Vitamins and minerals



<p>PROTEIN</p>	<p>OMEGA 3</p>	<p>VITAMIN A</p>	<p>VITAMIN D</p>	<p>VITAMIN B12</p>	<p>SELENIUM</p>	<p>IODINE</p>
<p>PROTEIN – needed to build and maintain every cell in the body. Proteins consist of various amino acids. Those that the body cannot produce itself, and which therefore must be added through diet, are called essential amino acids.</p>	<p>OMEGA-3 FATTY ACIDS – prevent and slow the development of cardiovascular diseases. These marine fatty acids are also key building blocks of the brain.</p>	<p>VITAMIN A – plays a part in promoting good vision and a healthy immune system. This substance is also important in foetal development and reproductive health.</p>	<p>VITAMIN D – is necessary for achieving the correct calcium balance in the body, and is important for maintaining and strengthening the skeleton. The body only creates vitamin D itself when skin is exposed to sufficient sunlight. Vitamin D is found naturally in the diet in oily fish and fish liver.</p>	<p>VITAMIN B12 – is important for the formation of new cells in the body. As the body creates a large number of red cells, in particular, you may become anaemic if you have too little of this substance.</p>	<p>SELENIUM – this mineral is important for the immune system as it combats harmful chemical processes in the body. Selenium also seems to protect the body against environmental toxins, such as heavy metals.</p>	<p>IODINE – is important for the normal metabolism of cells.</p>

Taken from *Aquaculture in Norway*, FHL & NSC. Nov 2011

FI-FO definition useless !

- 1 kg blue whiting



- fillet



- 30 % = 300 gr

1

- 1 kg salmon



- fillet



- 75 % = 750 gr

2,5

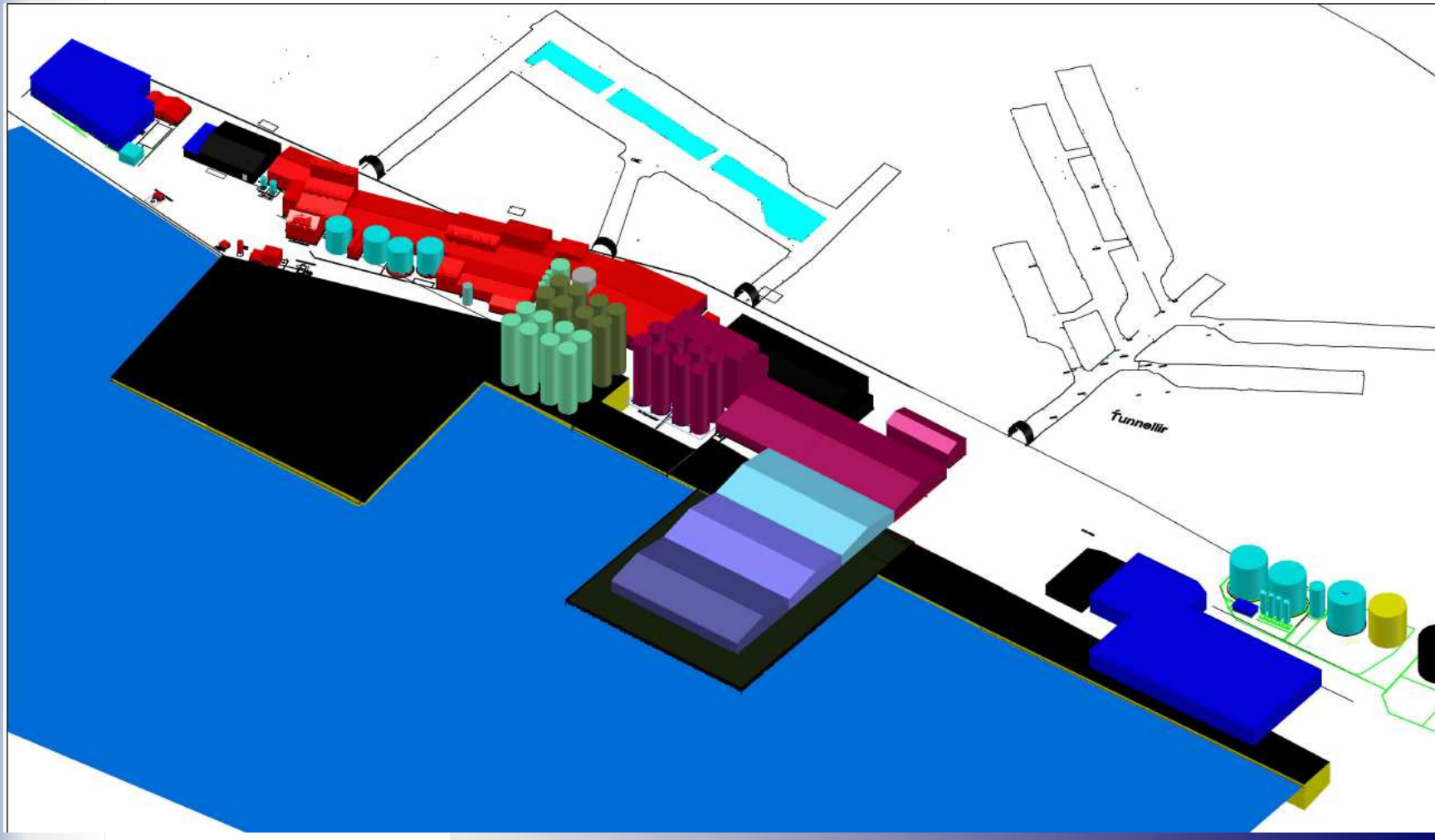


Havsbrún 2000-2013

Betydning for lokalområdet og Færøerne

- Selskabsskatt til Fuglafjarðar kommune 50.469 mill
- Grundleje og kajpenge 48.032 mill
- Selskabsskatt og kapitalanskatt til Færøerne 143.419 mill
- Lønninger 467.772 mill
- Bakkafrost
 - Skatt og licens 138 mill.
 - Udbetaling af lønn 232 mill.
 - Køb af varer og ydelser på Færøerne 1,5 mia.

Havsbrún og framtíðin



OWNERSHIP IN FF SKAGEN

Two step transaction

- Purchased majority of Hanstholm Fiskemelsfabrik
- Sold Hanstholm Fiskemelsfabrik to FF Skagen
- Ownership now 17% in FF Skagen

Why sell Hanstholm to FF Skagen

- Hanstholm Fiskemelsfabrik unprofitable
- Necessary for consolidation in the region
- Access to important raw materials



FF Skagen



OWNERSHIP IN PELAGOS

Pelagos a new processing plant next to Havsbrún

- 30% ownership together with two pelagic fishing companies
- Access to off cuts and downgraded fish
- Reduced transportation costs of raw material

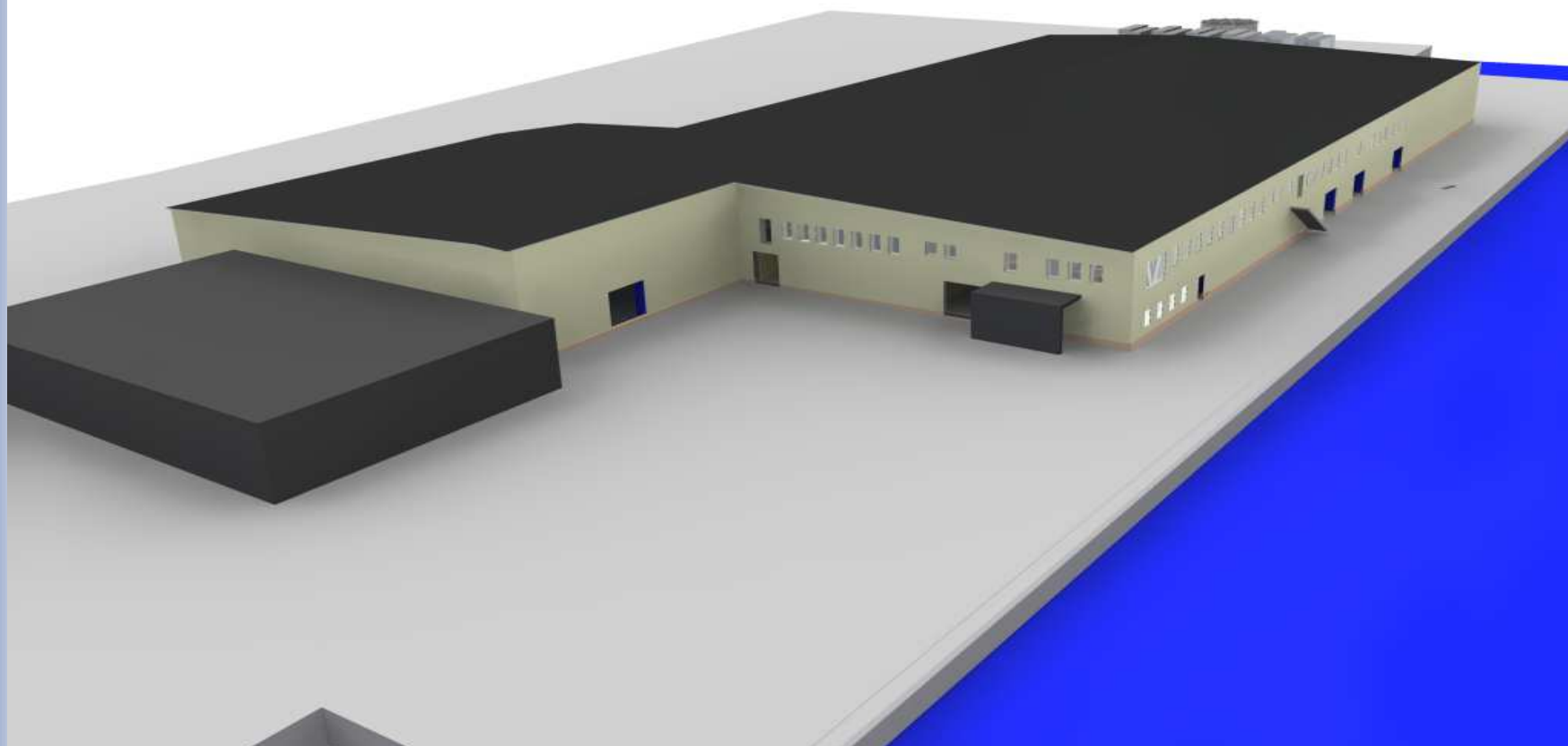
Pelagos

- Commence production in July 2014
- Capacity to process 650 tonnes per day
- A total investment of DKK 220 million for the plant



Pelagos

650 t pr. 24 t



Takk fyri

100 kg feed is equal to:

13 kg pork filet
65 kg salmon filet
20 kg chicken filet

Rich in Omega 3
DHA and EPA

It all begins with
top quality feed

Fish
2,5 kr/kg

> 1000%
value added
in the Faroes

Fish feed

Salmon
> 25 kr/kg

Fish meal/
Fish oil

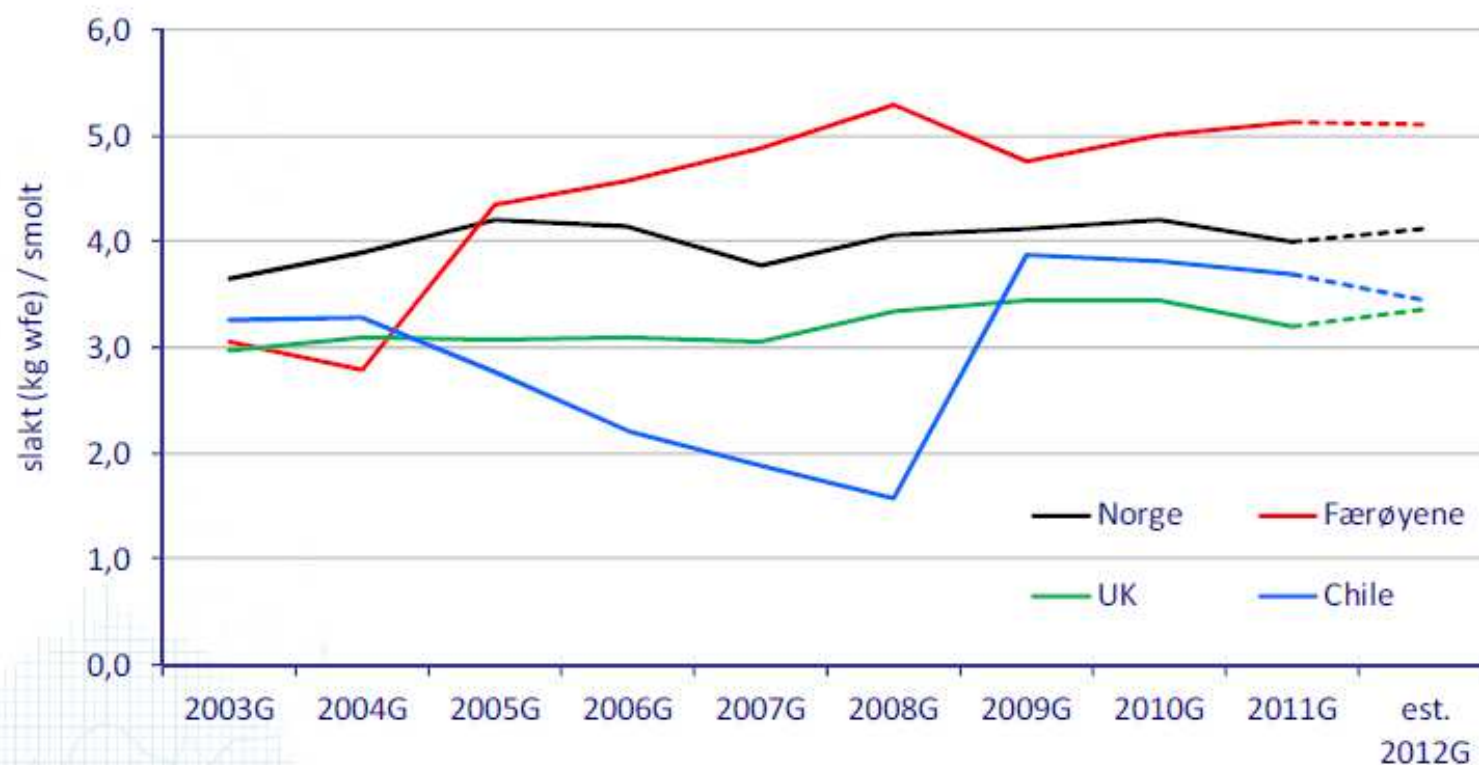
Biological FCR - live weight

Year	Norway	Chile	Faroe Islands
2000	~1.15	~1.05	~1.05
2005	~1.15	~1.05	~1.05
2010	~1.15	~1.05	~1.05
2015	~1.15	~1.05	~1.05
2020	~1.15	~1.05	~1.05

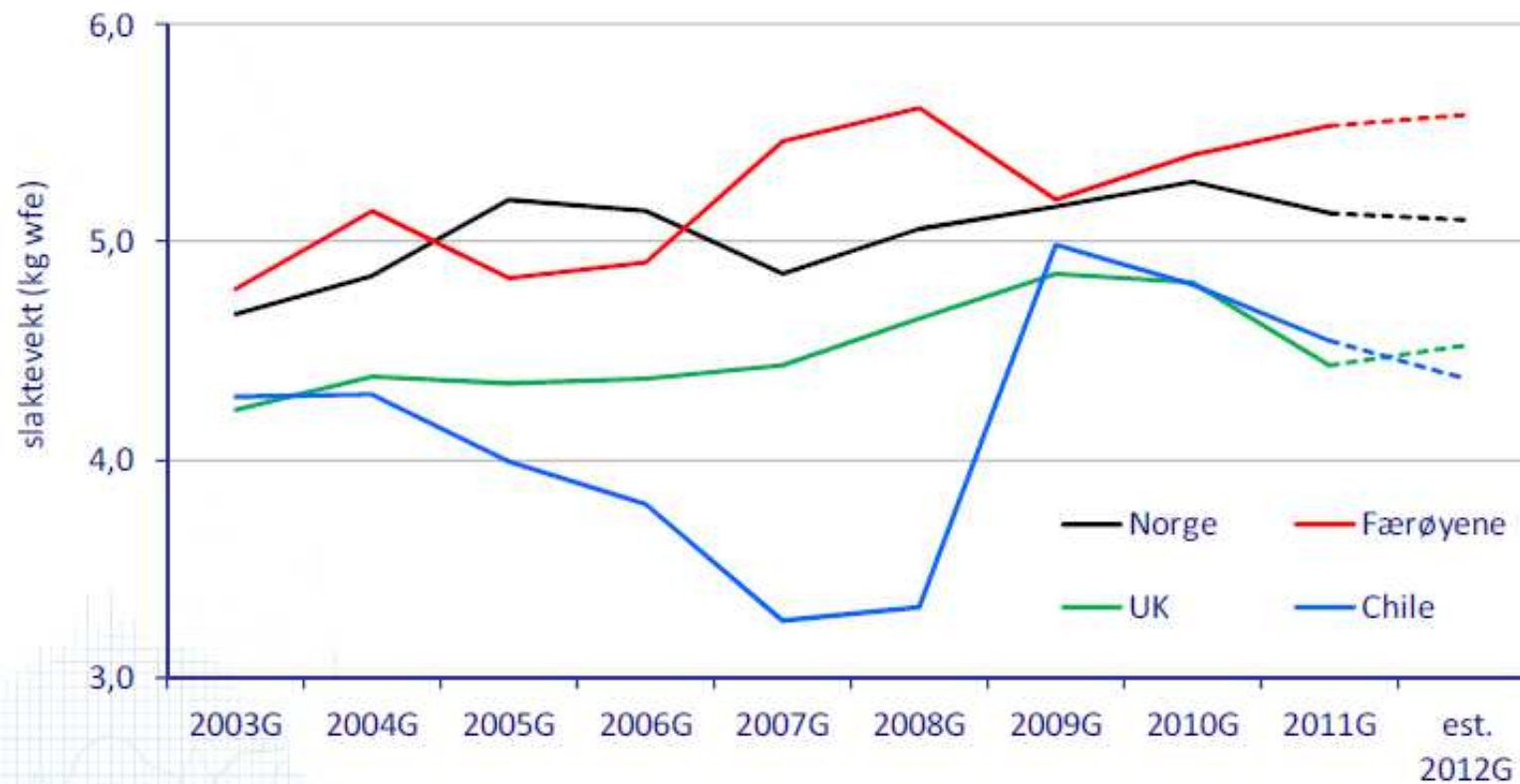
Generation Source: Karstad Rogstad AS

Taste the
difference

Utbytte per smolt



Slaktevekt

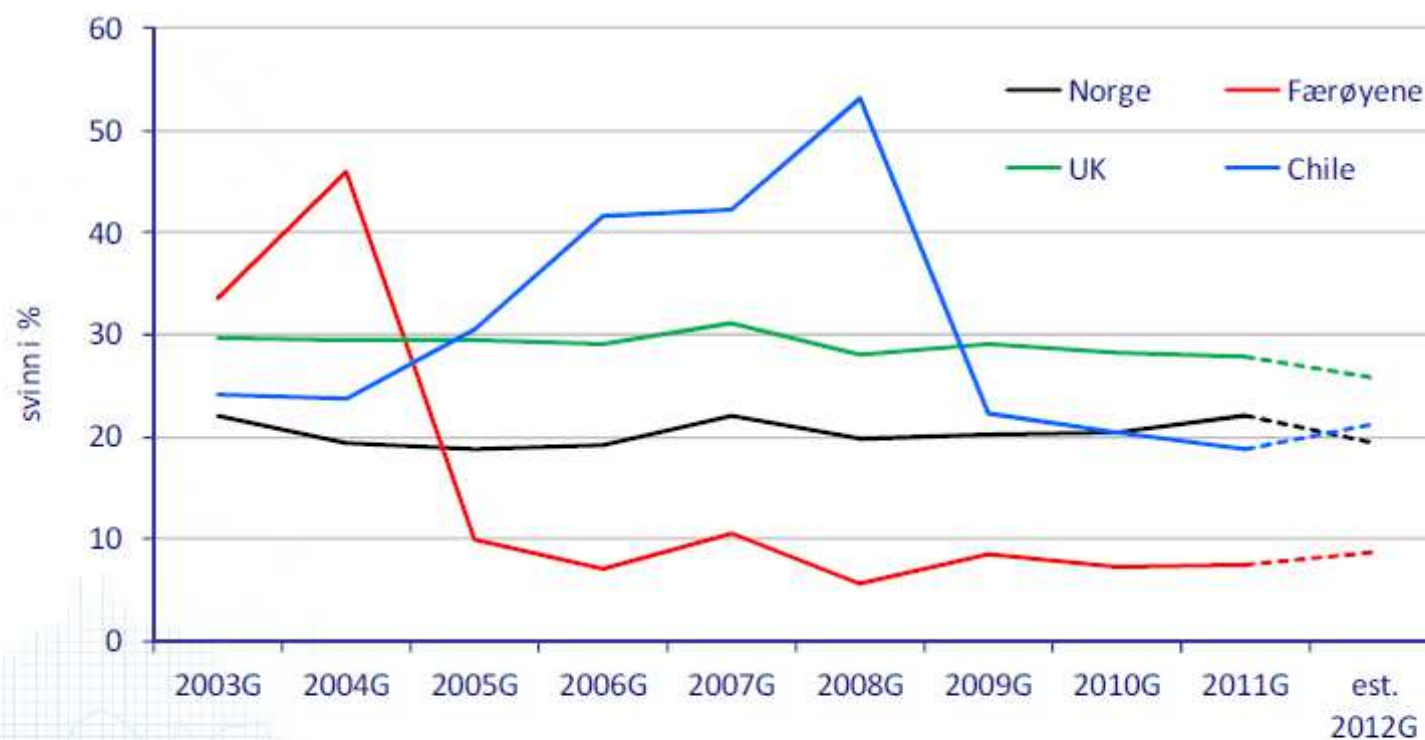


Systemizing the world of Aquaculture and Fisheries

www.kontali.com



Svinn i matfisk-fasen

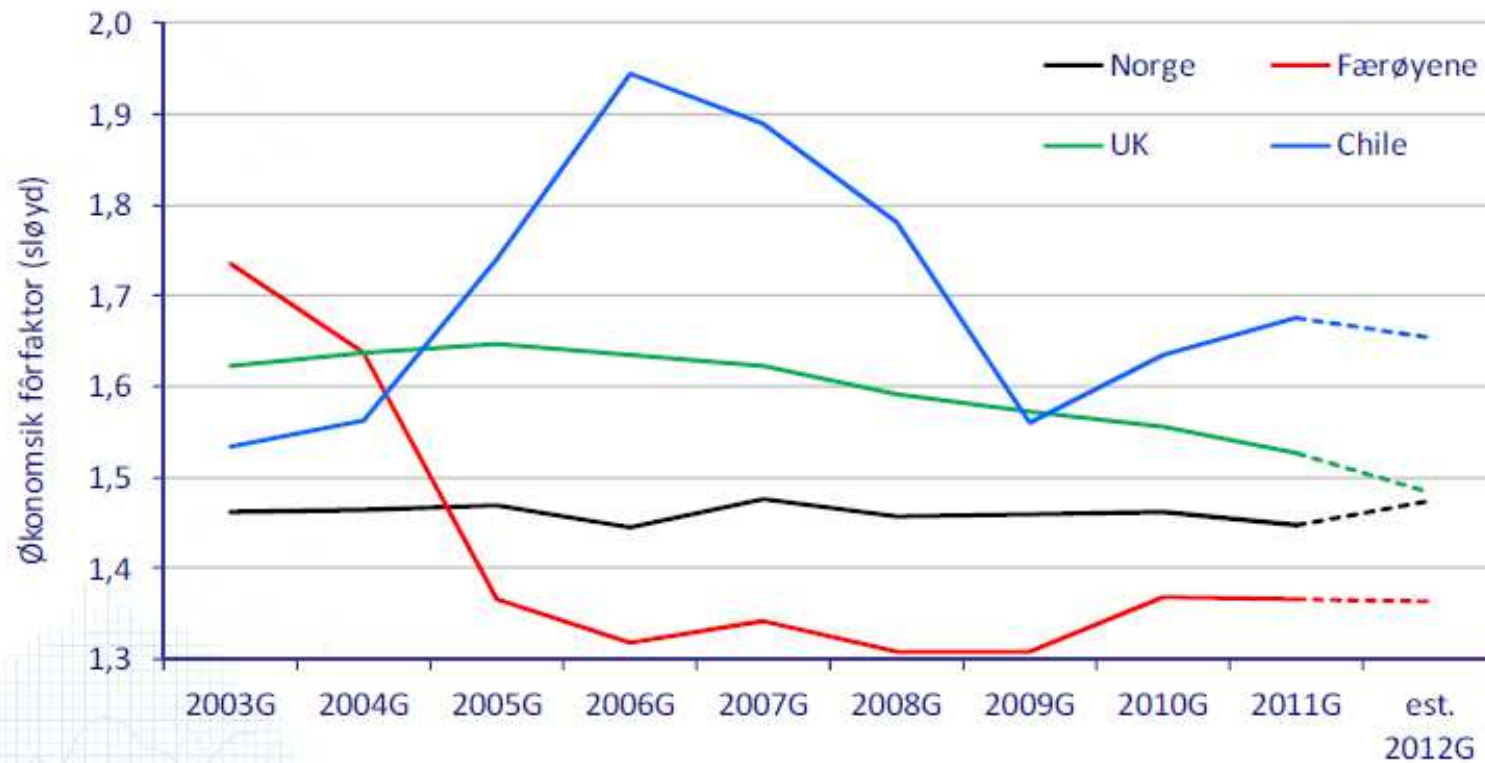


Systemizing the world of Aquaculture and Fisheries

www.kontali.com

Kontali

Fôrfaktor

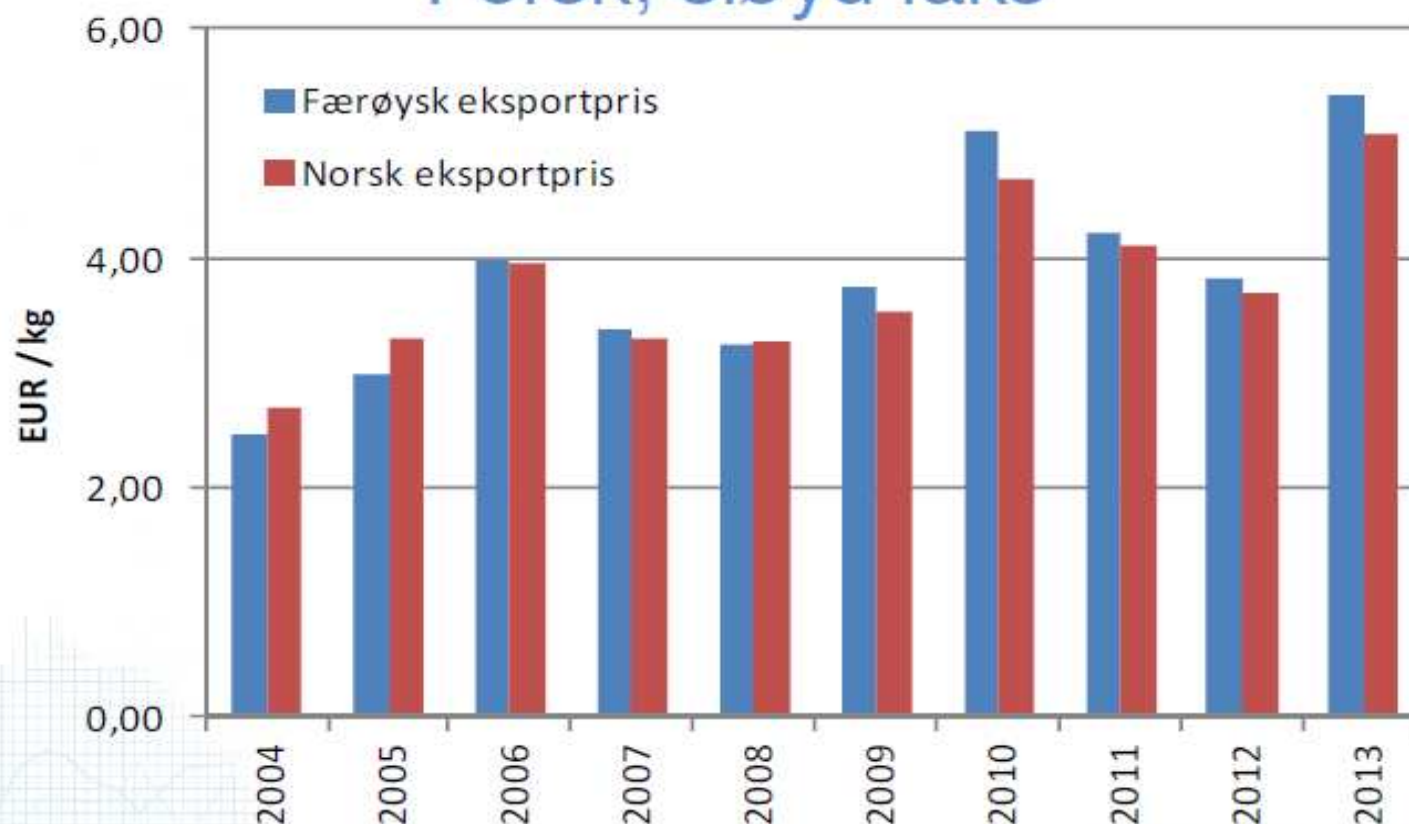


Systemizing the world of Aquaculture and Fisheries

www.kontali.com

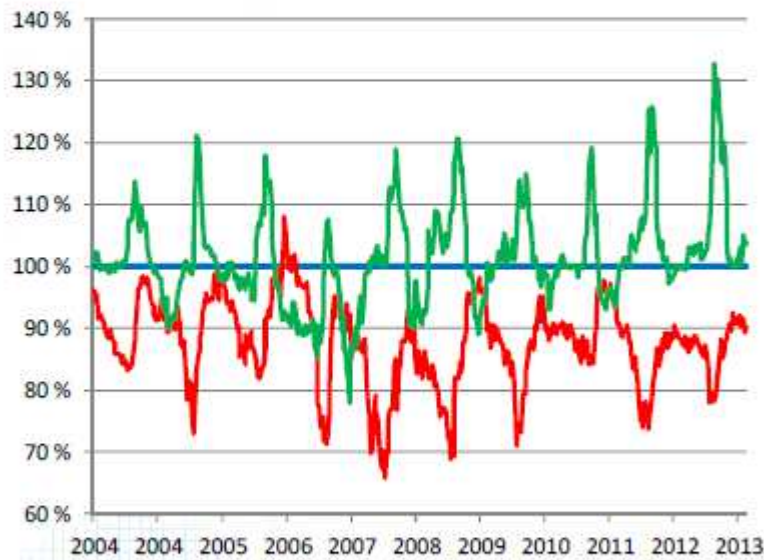


Færøysk mot Norsk – Fob eksportpris Fersk, sløyd laks

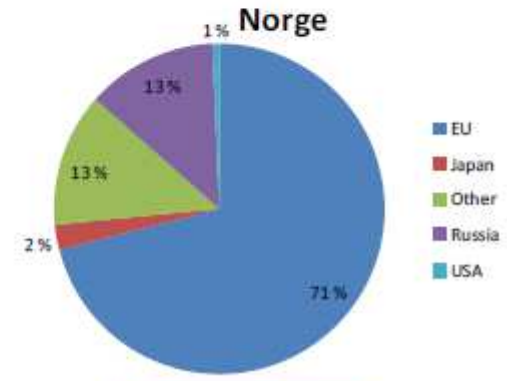
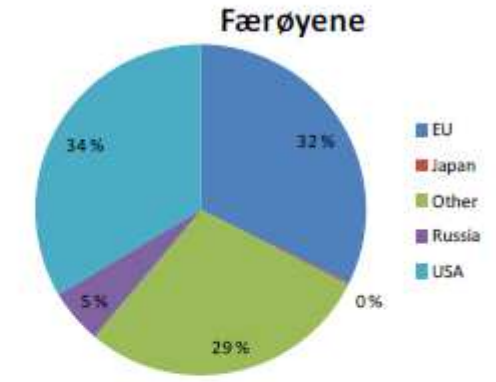


Hvorfor bedre pris?

Systemizing the world of Aquaculture and Fisheries



— 4 / 5 kg
— 2 / 3 kg
— 6 / 7 kg

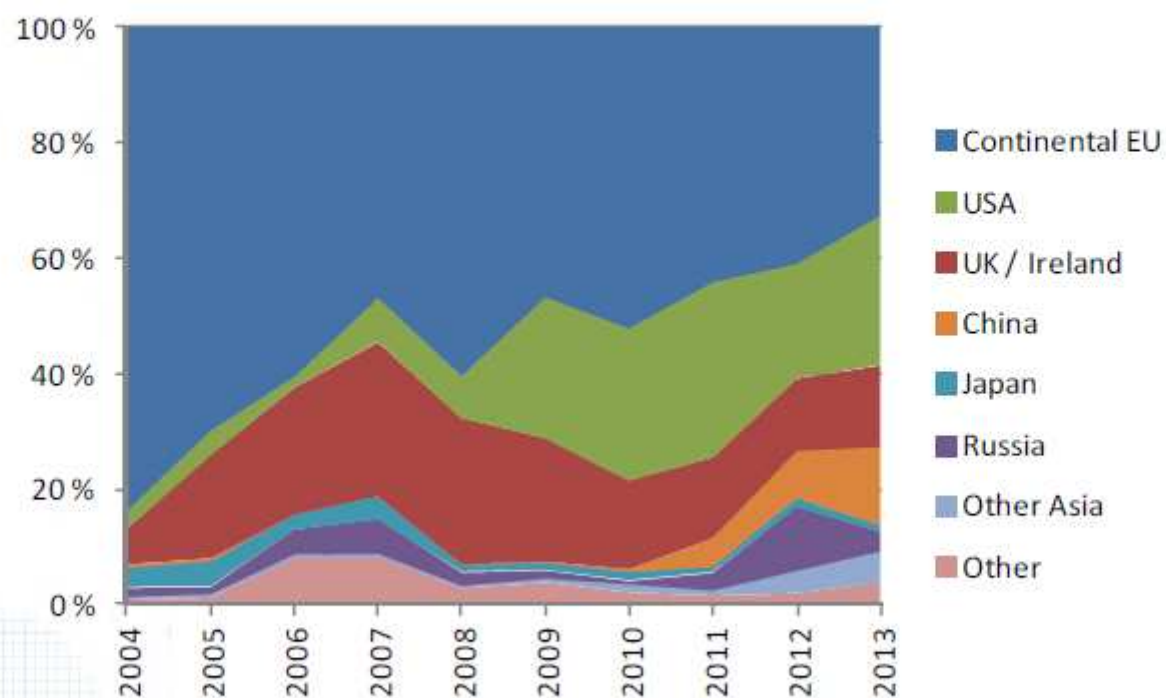


www.kontali.com



Færøysk Eksport av Laks (Verdi)

Fra få marked til geografisk diversifisert

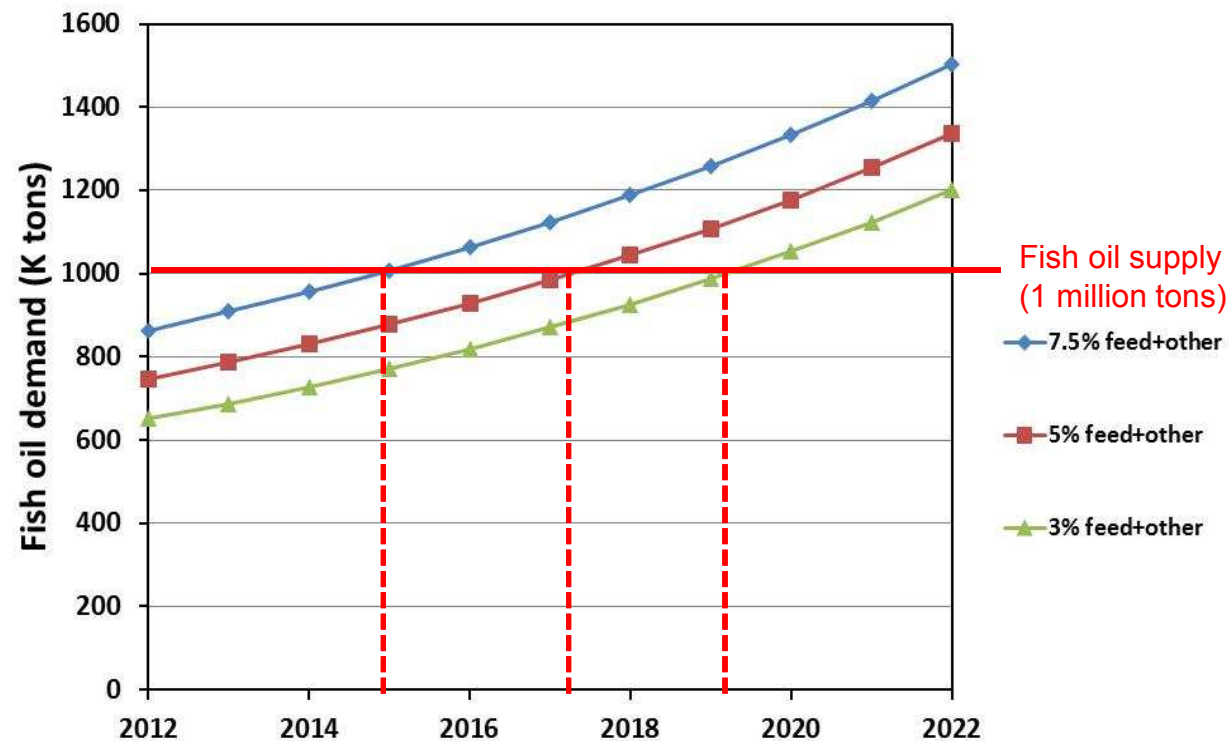


Systemizing the world of Aquaculture and Fisheries

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Fish oil supply and demand next 10 years



- Global fish oil with assumed 20% EPA+DHA of total FA in salmonid feed with 31% added oil containing 7.5, 5 and 3% EPA+DHA of total FA.
- Future demand for fish oil based on 2010 reported fish oil use (IFFO) and projected growth rates in salmonid feed (3.6% per year) and omega-3 industry (10% per year) from previous slides.
- Projected growth of marine fish (5% per year) and marine crustacean (6% per year) aquaculture from FAO data also factored in while freshwater aquaculture and other segments use of fish oil considered static.