

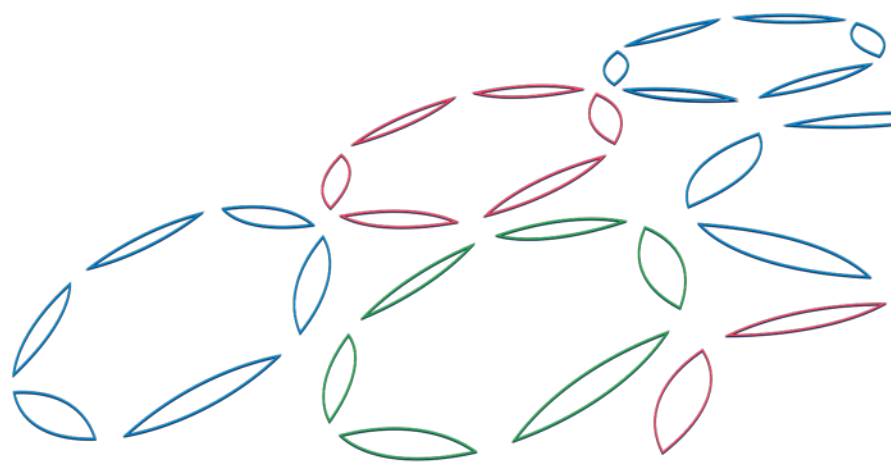


Herring catch and products in Norway and Iceland 2010-2016

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Skýrsla Matís 10-18
Septemeber 2018

ISSN 1670-7192



Report summary

Titill / Title	Herring catch and products in Norway and Iceland 2010-2016 / Síldveiðar og -vörur í Noregi og á Íslandi 2010-2016		
Höfundar / Authors	Páll Gunnar Pálsson, Sveinn Margeirsson		
Skýrsla / Report no.	10-18	Útgáfudagur / Date:	11.09.2018
Verknr. / Project no.			
Styrktaraðilar /Funding:	Vöruþróunarsetur sjávarafurða		
Ágríp á íslensku:	<p>Tilgangur þessarar skýrslu er að meta almenn og opinber gögn í virðis_keðju sjávarfangs með það í huga að greina verðmætasköpun og gera tilraun til að bera saman mismunandi virðis_keðjur. Því var ákveðið að bera saman nýtingu síldar í Noregi og á Íslandi.</p> <p>Meginástæða þess að skoða síldina í þessum löndum er að um líka framsetningu gagna er að ræða í báðum löndunum og að vinnsla fer fram með svipuðum hætti.</p> <p>Upplýsingarnar í löndunum báðum reyndust ekki þess eðlis að hægt væri að draga afgerandi ályktanir byggðar á þeim gögnum sem aðgengileg eru. Það er því nauðsynlegt að gera ýmsar úrbætur í gagnasöfnun og birtingu gagna ef sá kostur á að vera fyrir hendi að bera saman virðis_keðjur með áreiðanlegum hætti.</p>		
Lykilorð á íslensku:	<i>Gögn, upplýsingar, virðis_keðja, síld</i>		
Summary in English:	<p>The purpose of this summary is to evaluate how public data from seafood value chains can be used to understand the dynamics of the seafood industry and benchmark different seafood value chains against each other. To do so, we have chosen to compare how herring catch is utilized in Norway and Iceland. The reason for choosing this species is good access to public data and the likeliness of production in those two countries. We have analysed what types of products are made from the available catch and identified the differences between the two countries regarding herring utilization.</p> <p>Based on the case of Norwegian and Icelandic herring value chains it is clear, that great improvements are needed in order to be able to use public data from seafood value chains to understand the dynamics of the seafood industry and benchmark different seafood value chains against each other.</p>		
English keywords:	<i>Data, benchmark, value chain, herring</i>		

Contents

Background..... 1

Available Data..... 1

 The herring catch or raw material 1

 Other raw material 2

Export categories..... 3

Methodology and shortcomings of the summary 5

Results and Discussion 6

Background

The purpose of this report is to evaluate how public data from seafood value chains can be used to understand the dynamics of the seafood industry and benchmark different seafood value chains against each other. In order to do so, we have chosen to compare how herring catch is utilized in Norway and Iceland. The reason for choosing this species is good access to public data and the likeliness of production in those two countries. We have analysed what types of products are produced from the available catch and identified the differences between the two countries regarding herring utilization.

Information on catches are available from the Iceland Directorate of Fisheries (Fiskistofa; www.fiskistofa.is) and the Norwegian Directorate of Fisheries (Fiskeridirektoratet; www.fiskeridir.no). Each Directorate of Fisheries submits information to Statistics Iceland (www.statice.is) and Statistics Norway (www.ssb.no), respectively.

Information on the import and export of different herring products is provided through customs declarations and reports, which the two countries customs authorities submit to Statistics Iceland on the one hand, and Statistics Norway on the other hand. Therefore, the web-sites and databases of these statistics centers are a basis for this summary.

The summary is based on the information available from 2010 to 2016.

Available Data

The herring catch or raw material

Table 1 shows Norwegian herring catches landed in Norway in 2010-2016. Both Norway and Iceland catch from more than one herring stock. Norway primarily catches the Norwegian Spring Spawning herring (NVG) and, to some extent, the North Sea herring. However, no distinction between these stocks is made in the information provided by the Fisheries Directorate or Statistics Norway. The same applies in Iceland as well. Export information or the customs nomenclature and classification does not identify which stocks the herring and herring products originate from.

Table 1. Norwegian herring catches landed in Norway and the allocation of the raw material into different processing categories (in tons) 2010-2016.

	2010	2011	2012	2013	2014	2015	2016	Total (ton)
Konsum (Human consumption)	837.934	625.945	594.343	495.742	356.422	308.109	348.918	3.567.413
Mjöl og olje (Fish meal & oil)	85.255	6.403	15.611	9.782	50.170	4.464	2.080	173.765
Dyrefor/fiskefor, agn og anna (Feed, bait etc.)	553	754	758	1.941	711	523	712	5.952
Total	923.742	633.102	610.712	507.465	407.303	313.096	351.710	3.747.130

Reference: 01.06.2018; <https://www.ssb.no/statbank/table/06367/tableViewLayout1/?rxid=1413e280-70b2-4037-bd0a-c96a2fede544>

In Iceland, the representation of the data is a little different, as seen in Table 2, where the allocation of the raw material into processing is categorised differently.

Table 2. Caught herring in Iceland (in tons) 2010-2016 and the allocation of the raw material into different processing categories

	2010	2011	2012	2013	2014	2015	2016	Total (ton)
Frysting (Frozen products)	88.987	94.512	101.297	86.558	87.323	53.882	69.732	581.992
Sjófrysting (Frozen at Sea)	76.042	74.739	62.637	41.701	44.386	26.448	26.601	352.554
Söltun (Salted products)	2.468	1.389	878	1.201	2.985	4.707	3.754	17.382
Bræðsla (Fish meal & oil)	86.967	31.824	27.394	27.896	23.140	24.267	17.539	239.028
Total	254.464	202.464	192.206	157.256	157.836	109.304	117.326	1.190.956

Reference: 01.06.2018; http://px.hagstofa.is/pxis/pxweb/is/Atvinnuvegir/Atvinnuvegir_sjavarutvegur_aflatolur_radsofun_afla_vinnsla/SJA09110.px/

Other raw material

Both in Norway and Iceland, herring and herring raw material are also landed/imported by means other than landing from local vessels. This is primarily from landing from foreign vessels, but possibly also as import brought by cargo ships. All imports, whether landings of fishing vessels or other means of import, are included in customs declarations, and therefore those numbers are used in this summary.

The majority of herring products imported to Iceland was in the form of whole herring, fresh or frozen, or about 84% (Table 3). Also, 1.200 tons of fillets were imported, which makes up 13% of the total import. In addition, more than 200 tons of conserves or processed herring products were imported to the country.

Table 3. Import of herring products (tons) to Iceland in 2010-2016.

	2016-2016
Whole fresh herring (0302)	3.938 tons
Whole frozen herring (0303)	3.864 tons
Herring fillets (0304)	1.237 tons
Preparations of herring (1604)	222 tons
Total	9.361 tons

(the numbers 0302, 0303, 0304, and 1604 refers to sections and chapters of the customs classification of goods, published by the World Custom Organization)

References: 04.06.2018;

2010-2011:

http://px.hagstofa.is/pxis/pxweb/is/Efnahagur/Efnahagur_utanrikisverslun_1_voruvidskipti_03_inntollskra/UTA03906.px/table/tableViewLayout1/?rxid=c0cd8f84-c3c2-4828-aba5-fe487b252628

2012-2014:

http://px.hagstofa.is/pxis/pxweb/is/Efnahagur/Efnahagur_utanrikisverslun_1_voruvidskipti_03_inntollskra/UTA03901.px/table/tableViewLayout1/?rxid=2e698963-4dc9-4819-897c-edd140e021

2015:

http://px.hagstofa.is/pxis/pxweb/is/Efnahagur/Efnahagur_utanrikisverslun_1_voruvidskipti_03_inntollskra/UTA03811.px/table/tableViewLayout1/?rxid=2ed01269-ac50-4608-a578-c562bf75ddce

2016:

http://px.hagstofa.is/pxis/pxweb/is/Efnahagur/Efnahagur_utanrikisverslun_1_voruvidskipti_03_inntollskra/UTA03801.px/table/tableViewLayout1/?rxid=632ff70d-0a54-42db-8f1b-55a916a76532

This import has an insignificant effect on the summary of Iceland, as the volume of import is less than 1% of the total raw material used for processing.

Norwegians imported considerably more unprocessed herring than Icelanders in 2010-2016, or almost 7% of the total volume (Table 4).

Table 4. Import of herring products (tons) to Norway in 2010-2016.

	2016-2016
Whole fresh herring (0302)	225.221 tons
Whole frozen herring (0303)	11.672 tons
Preparations of herring (1604)	14.406 tons
Total	251.299 tons

(the numbers 0302, 0303, and 1604 refers to sections and chapters of the customs classification of goods, published by the World Custom Organization)

Reference: 04.06.2018: <https://www.ssb.no/statbank/table/08801/tableViewLayout1/?rxid=cf7a82a4-605b-43e4-81fa-b907e5e98526>

Export categories

Norway and Iceland have similar classification of herring export products, based on the nomenclature and classification of goods called the “Harmonized System” (HS) developed and published by the World Customs Organization (<http://www.wcoomd.org/>).

The Icelandic customs code has more than 40 different tariff numbers for herring products but thereof, one third has not been used in recent years. Norway has less than 30 codes and all have been used in recent years, although to varying degrees. To simplify this summary and not to work with too many products types, the products were divided into the following groups:

Whole chilled herring (0302) is predominantly unprocessed and is landed directly from fishing vessels. This makes it difficult to estimate overweight and processing efficiencies other than 100%.

Whole frozen herring (0304) is blockfrozen, ungutted whole herring, frozen in bags or cartons. This category may also, to a small extent, include Individual Quick Frozen (IQF) herring. According to processing experience, utilization is around 95% as there is some discarding due to small size and deformities. Overweight of around 4% is assumed.

Whole salted herring (0305) is salted whole ungutted herring with around 90% utilization and about 4% overweight.

Single fillets (0304) are blockfrozen fillets either with or without skin. No distinction is made between these products in the customs tariff. Skinless fillets, which are a minor product, are assumed to have 42% utilization¹, while fillets with skin have 46% utilization. Therefore, this category is given an average of 44% utilization and 4% overweight.

Butterfly fillets (0304) are given 49% utilization according to manufacturers and a 4% overweight.

Preparations of herring products (conserves) (1604). This category includes many kinds of herring products, where probably the bulk is marinated herring in sauces with various kinds of vegetables. The tariff figures are the net content of the products i.e. herring + sauce + vegetables and it is assumed that about half of the declared weight is herring fillets. It is also assumed that for these products, overweight is insignificant, as weighing is presumably based on e-weighing rules, i.e. the mean is the nearest marked weight. Utilization is expected to be around 34%.

¹ Based on processing experience (discussions with manufacturers)

It is not possible to include customs tariff information for herring meal and herring oil in this summary. Iceland has a special code for herring meal and herring oil in the customs tariff but in Norway there is only one common code for all fish meal and fish oil.

Therefore, only products intended for human consumption can be used to try and compare how herring and herring raw material in Iceland and Norway are processed and utilized.

Methodology and shortcomings of the summary

The method applied was to use the export quantity of herring products in each category, together with the estimated utilization percentage and overweight, to calculate the amount of raw material needed to produce the total volume of products. Production efficiency numbers are estimates provided by a major herring processor in Iceland. Estimated overweight was also taken into account, which according to the processor is about 4-5%.

Domestic consumption increases the inaccuracy in this assessment as its extent is not available in public databases. Yet, consumer studies have shown that consumption of herring products is not considerable in comparison to the total production, i.e. the total amount of raw material and products is so high that domestic consumption has a relatively low impact on the overall results and is therefore neglected in the analysis.

As listed above, all catch volumes are registered in the databases of the Directorates of Fisheries. There, the information is processed and reviewed before the statistics institutes publish final numbers for the catch of individual species. The numbers from the statistics institutes from Iceland and Norway are therefore the only available source of information.

Landed catch of foreign vessels are also registered through the systems of the Directorates of Fisheries. As with other imports, customs papers on such landings must be submitted. This means that all imports of herring raw material are included in the database based on cross border trade published by the statistics institutes of Norway and Iceland.

Export tariffs can often accommodate different types of products. There is, for example, no differentiation made between frozen herring fillets with and without skin. Product names such as canned herring does not clearly indicate what kind of herring product is exported, that is

whether the product contains whole fish, fillets or fillet pieces and how much of the total content are herring products.

No species classification is available in Norway on exported fishmeal and therefore there is no way to estimate the amount of exported or imported herring meal. Herring meal does have a specific number in the Icelandic tariff.

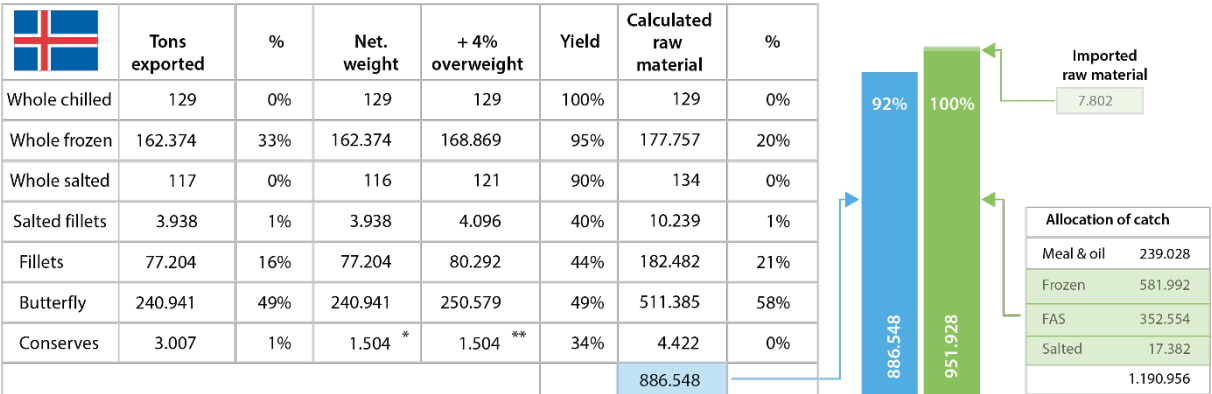
Given the above, accurate information on the utilization of catches or the value of certain species cannot be obtained from public records unless public disclosure requirements are changed.

Seafood companies know how much raw material is needed to produce certain products. However, that information is not made public. The only information available is total catch of each species and some estimated numbers about the allocation of the raw material. Then, a separate database exists on the export and import of goods.

Results and Discussion

The estimated total herring raw material, according to our calculations based on products for human consumption, compared to the official total catch in Iceland is shown in Table 5. Table 6 shows comparable results for Norway.

Table 5. Calculated raw material in Iceland (2010-2016) needed to produce exported quantity (blue column) compared to the raw material allocated for human consumption (green column)



* assumed that half of the product weight are fillets with 34% utilization
 ** assumed that overweight in consumer products is insignificant

According to Table 5, the calculated raw material is 886 thousand tons. According to information regarding allocation of herring catches, 952 thousand tons of herring went into

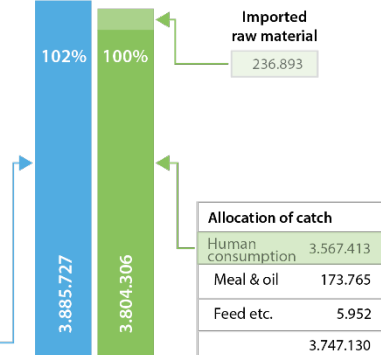
products for human consumption. The difference is about 66 thousand tons during 2010-2016, or about 5.5% of all herring raw material available during this period.

Table 6. Calculated raw material in Norway (2010-2016) needed to produce exported quantity (blue column) compared to the raw material allocated for human consumption (green column)

	Tons exported	%	Net. weight	+ 4% overweight	Yield	Calculated raw material	%
Whole chilled	193.153	7%	193.153	193.153	100%	193.153	5%
Whole frozen	1.470.879	56%	1.470.879	1.529.714	95%	1.610.225	41%
Whole salted	5.877	0%	5.877	6.112	90%	6.791	0%
Salted fillets	43.959	2%	43.959	45.717	40%	114.294	3%
Fillets	263.235	10%	263.235	273.764	44%	622.191	16%
Butterfly	563.773	21%	563.773	586.324	49%	1.196.580	31%
Conserves	96.895	4%	48.448*	48.448**	34%	142.493	4%
						3.885.727	

Imported raw material	236.893
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Allocation of catch	
Human consumption	3.567.413
Meal & oil	173.765
Feed etc.	5.952
	3.747.130



* assumed that half of the product weight are fillets with 34% utilization

** assumed that overweight in consumer products is insignificant

In contrast to Iceland, the official numbers for available herring raw material for export in Norway within the seven-year period are 139 thousand tons lower than our calculated raw material (Table 6). This difference between Norway and Iceland is noteworthy, in particular due to the fact that the herring value chain was specifically chosen for this analysis since the Icelandic and Norwegian production methods are known to be similar.

There are however some differences in product composition between Iceland and Norway. Norwegians produce relatively more whole frozen ungutted herring, which makes up around 41% of the total raw material, while Icelanders freeze around 20% of their herring catch as whole. In Iceland, the largest portion of the herring raw material is used for producing butterfly fillets, or about 58%. Norway processes about 31% of the raw material to butterfly fillets. If we combine all filleting, single fillets and butterfly fillets, about 80% of the raw material in Iceland is filleted, while only 47% of the herring in Norway is processed in this way. It is possible that these differences in processing between Norway and Iceland partly explain the difference shown in Table 5 and Table 6, but we do nevertheless find it unlikely that this is the only explanation, since uncertainty in filleting utilisation is not believed to be greater than in other product categories.

The biggest uncertainty in our estimations involves the way in which the herring catch is registered (landing data) or allocated into product categories. There are only three product

categories in Norway i.e. products for human consumption, meal and oil, and finally other products such feed or bait. In Iceland, the categories are more numerous. Different methods of registering herring catch between the two countries are needed to better understand the value chain.

Information on herring catch and the processing of herring catch/import is collected from numerous sources and this increases the probability of "incorrect" registrations, which can be difficult to verify and monitor. Products are sometimes wrongly categorised in the customs code system, leading to some errors. We believe that these errors are only a small part of the whole, so they should not seriously distort the picture. However, this is worth considering before drawing any major conclusions.

One additional reservation regarding the estimation that needs to be taken into account is the overweight. In Iceland, manufacturers have been generous regarding overweight over the years. Generally, overweight per pound has been 10 g or 2.2% for many years and that is still used as a "standard". According to our available information, it seems that Icelandic processors add even more overweight when processing pelagic species, or up to 4-5%. The necessity of this is questionable, considering the speed, automation and the advanced equipment used in processing today. If Norwegians do not add as much overweight as is usual in Iceland, the difference between the two countries becomes considerably smaller.

As it is quite difficult to access more accurate information on herring catch, processing, utilization, domestic market, import and export from Norway and Iceland, we do not find it relevant to draw further conclusions on the differences between the Norwegian and Icelandic herring value chains by reviewing and comparing the available data. The "ifs" are just too many.

Based on the case of Norwegian and Icelandic herring value chains it is clear, that great improvements are needed in order to be able to use public data from seafood value chains to understand the dynamics of the seafood industry and benchmark different seafood value chains against each other.