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1 Fisheries and aquaculture in Argentina

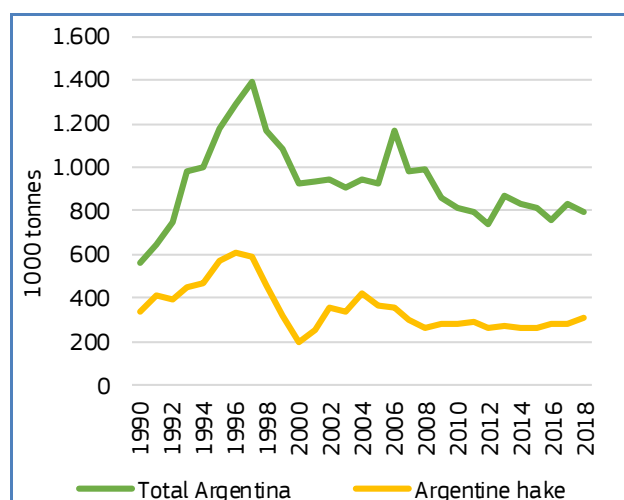
Argentina is the second largest country in South America by area after Brazil. The country has a maritime coastline of more than 5.000 km along the Southwestern Atlantic Ocean. The land area is 2,78 million km² and holds a human population of 44,7 million (2018), 13 million of whom live in the capital Buenos Aires¹.

The extensive coastline provides access to substantial fisheries resources in the southern Atlantic, the 23rd largest fishery in the world in terms of volume, reaching 792.000 tonnes in 2018. Aquaculture production is growing but is still at a low level, reaching 3.568 tonnes in 2017. Almost all fish landed are destined for human consumption, but only 10% of resultant seafood products are consumed domestically². The sector is therefore reliant on the export market³. In 2018, the annual domestic consumption of fish was 7,9 kg per capita⁴.

Most of the fisheries and aquaculture activities take place in the Patagonia region, and the marine and inland fisheries represent 97% of national seafood production⁵. It was estimated that the sector directly employed 20.000 people in 2017⁶. In 2018, exports of seafood amounted to 455.000 tonnes valued at EUR 1,76 billion. Annual export volumes varied between 426.000 to 480.000 tonnes between 2013 and 2018.

1.1 Fisheries

Figure 1. **TOTAL FISHERY LANDINGS IN ARGENTINA IN THE PERIOD 1990-2018**



Source: FAO, <https://www.agroindustria.gob.ar>.

Argentine fishing is based primarily on cold-water demersal species, including hake and shrimp. At the end of the 1990s, Argentine fishing was characterised by the decrease in hake landings. At their highest point (1996), hake landings exceeded 600.000 tonnes and constituted 47% of total volume of landed fish. Total fishery landings fell gradually from their maximum levels of nearly 1,4 million tonnes in 1997 to 792.000 tonnes in 2018.

Commercial Argentine fishing is based on about 50 species of bony fish, five species of crustacean and three species of mollusc⁷. The 11 most significant species in terms of volume account for around 90% of total catch. In 2017, total catch volumes were 835.000 tonnes, a 10% increase from 2016. Three species – Argentine hake, red shrimp and squid – dominate Argentine fishery landings, and account for 75% of total landings in 2017.

Argentine hake landings have been stable over the past 8 years, with annual landings between 250.000–290.000 tonnes. In 2017, hake fisheries landed above 282.000 tonnes, close to the volume recorded the year before. Argentine red shrimp, the second largest catch species, has shown a strong volume growth every year since 2013. From 2013 to 2017, red shrimp catches increased by 140% to above 243.000 tonnes. In 2013, red shrimp catches accounted for 12% of total fisheries and in 2017 29% of total Argentine fisheries. Argentine shortfin squid landings have varied between 59.000 and 191.000 tonnes in the last 7 years. In 2017, squid landing volume was above 99.000 tonnes, a 40% increase from 2016.

¹ www.fn.no

² <https://seafood-tip.com/sourcing-intelligence/countries/argentina/>

³ See footnote 2.

⁴ <https://www.cronista.com/apertura-negocio/empresas/Cayo-un-48-el-consumo-per-capita-de-pescado-en-2018-20190204-0010.html>

⁵ See footnote 2.

⁶ See footnote 2.

⁷ https://www.agroindustria.gob.ar/sitio/areas/pesca_maritima/desembarques/

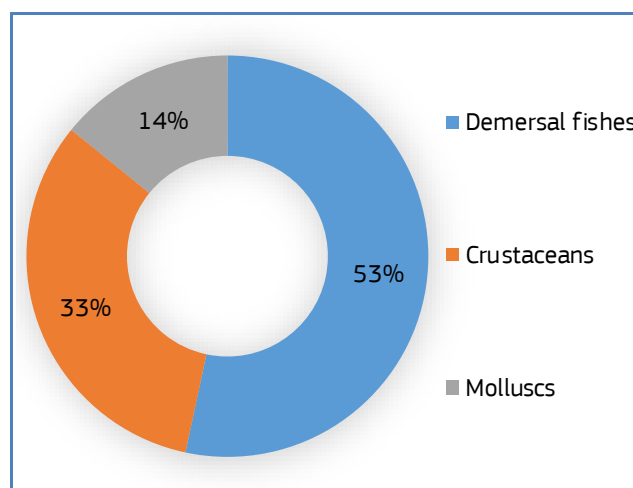
Table 1. **MAIN SPECIES IN ARGENTINE FISHERIES (volume in tonnes)**

Species	2010	2011	2012	2013	2014	2015	2016	2017
Argentine hake	281.757	287.780	257.983	275.059	259.202	266.274	282.874	282.175
Argentine red shrimp	72.085	82.922	79.927	101.105	127.250	143.315	178.444	243.268
Argentine shortfin squid	85.989	76.598	94.984	191.741	168.727	126.671	59.891	99.170
Patagonian scallop	50.870	47.844	36.820	42.202	33.583	31.627	35.536	39.297
Patagonian grenadier	82.665	70.903	59.595	55.973	58.384	50.469	34.946	21.930
Whitemouth croaker	15.843	24.679	37.868	45.637	38.591	31.359	31.965	19.801
Prochilodus nei	13.999	15.164	12.148	11.986	14.181	17.417	17.191	19.008
Rays, stingrays, mantas nei	20.326	20.426	15.168	15.195	15.739	19.010	17.696	17.422
Southern blue whiting	11.636	3.518	8.379	7.887	9.050	13.831	13.236	15.897
Stripped weakfish	12.772	13.710	15.214	16.388	14.399	16.898	9.887	11.898
Argentine anchovy	26.323	21.084	15.434	18.081	13.955	14.411	8.713	10.546
Other	137.484	128.680	104.540	89.451	76.874	83.018	64.847	54.649
Total	811.749	793.308	738.060	870.705	829.935	814.300	755.226	835.061

Source: FAO.

In 2018, Argentine fisheries amounted to about 792.000 tonnes. Of this, 53% was composed of demersal finfish species including hake, 33% was composed of crustaceans including red shrimp and 14% was composed of molluscs.

Figure 2. **ARGENTINE FISHERIES IN 2018 BY COMMODITY GROUP**



Source: <https://www.agroindustria.gob.ar>.

1.2 Aquaculture

Commercial aquaculture activity began in Argentina in the 1990s with rainbow trout, and there has been slight but steady growth in the industry ever since⁸. Rainbow trout (*Oncorhynchus mykiss*) is now the second largest aquaculture species, reaching 1.367 tonnes in volume and valued at USD 11,2 million. In 2017, the country's main aquaculture species was pacu (*Piaractus mesopotamicus*), reaching 1.885 tonnes in volume and EUR 14,1 million in value. This was 53% of total aquaculture volume and 51% of total value. In the period from 2010 till 2017, pacu production increased 200% and was the fastest growing aquaculture species. Together, pacu and rainbow trout constituted 91% of the Argentine aquaculture volume and value in 2017.

In the period from 2010 to 2017, aquaculture production in Argentina increased 34% in terms of volume.

Employment in aquaculture is low, and businesses are generally small single-family or family-run businesses. Recently, Argentina has approved a new aquaculture act, which is expected to allow the industry access to financing and international markets and could also raise the value of Argentine seafood⁹.

Table 2. **AQUACULTURE PRODUCTION IN ARGENTINA (value in EUR 1000)**

Species	2010	2011	2012	2013	2014	2015	2016	2017
Pacu	5.805	8.301	9.526	17.182	15.659	17.334	13.861	14.125
Rainbow trout	12.310	9.232	11.424	15.264	17.553	15.727	9.533	11.177
Sorubims nei	264	11	369	1.437	1.094	891	617	913
Tilapias nei	110	190	191	252	538	440	303	345
Cyprinids nei	535	562	220	589	492	725	336	311
Grass carp	0	225	220	519	350	378	209	228
Other	1.482	2.440	1.172	2.446	1.270	1.774	535	586
Total	20.506	20.961	23.122	37.690	36.957	37.270	25.395	27.685

Source: FAO.

Table 3. **AQUACULTURE PRODUCTION IN ARGENTINA (volume in tonnes)**

Species	2010	2011	2012	2013	2014	2015	2016	2017
Pacu	626	1.227	1.345	2.017	2.119	1.804	1.947	1.885
Rainbow trout	1.651	1.365	1.260	1.255	1.425	1.455	1.413	1.367
Sorubims nei	23	1	54	174	95	62	75	89
Cyprinids nei	90	114	52	76	100	93	69	57
Tilapias nei	19	40	45	35	73	56	62	56
Grass carp	0	46	52	67	71	48	43	42
Other	245	400	150	201	120	145	64	72
Total	2.654	3.193	2.958	3.825	4.003	3.663	3.673	3.568

Source: FAO.

⁸ http://www.fao.org/fishery/countrysector/naso_argentina/en

⁹ <https://seafood-tip.com/sourcing-intelligence/countries/argentina/>

1.3 Processing industry, fleet and employment

The Argentine fish processing sector is a combination of on-board processing and land-based industry.

In the fisheries sector, there are 940 vessels with permits to operate in the Argentine Sea, of which 571 are nationals. The national fishing fleet is composed of two classes: fresqueros, which have 361 actively licenced vessels (working with fresh products), and freezers, which have on-board freezing capacity.

The fresqueros branch comprises 286 companies, while the freezers branch comprises 96 companies. In total, according to data from the Undersecretaries of Fisheries and Aquaculture, there are about 10.000 people employed at sea.

In addition, there is what is called 'labour on land'. Fish processing takes place in 138 plants, which, together, employ 9.838 people. The province of Buenos Aires, with 93 establishments, has the highest concentration of workers with 4.890 employees. Chubut is second, with 2.568 workers in 25 plants, followed by Tierra del Fuego with 1.983 employees in three industries, Santa Cruz with 340 workers in 13 plants and Río Negro with 57 employees in four sites¹⁰.

1.4 Export

Argentina exports a significant amount of its seafood to the EU markets, mainly driven by demand from Spain, Italy and France, in addition to China and the United States. Access to the European market is expected to improve since a South American trade bloc, including Argentina, has signed a trade agreement with the EU (The EU-Mercosur trade agreement)¹¹. An elimination or reduction of tariffs will be positive for shrimp and hake fisheries as the EU market is one of the most important destinations of these two products. In 2018, Argentine exports to EU accounted for 32% in terms of volume and 38% in value.

During the past 5 years, Argentine exports of seafood have varied between 426.000 and 480.000 tonnes a year. In 2018, exports totalled 455.000 tonnes valued at EUR 1,76 billion, a 0,3% increase in volume and a 2% increase in value from 2017.

In the period from 2013 to 2018, export value increased 59%, but much of this is likely due to the current high inflation rate in Argentina.

As international demand for Argentine shrimp continues to grow, shrimp has become the top seafood species, amounting to 178.000 tonnes valued at EUR 1,06 billion in 2018, a 3% decrease in volume and 2% increase in value from 2017. Shrimp accounted for 39% of the total volume and 61% of the total value of seafood exports in 2018. Exports of hake, the second largest export species, totalled 81.000 tonnes in 2018, valued at EUR 189 million – a 16% decrease in volume and a 9% decrease in value from 2017.

In 2018, exports to the largest market, Spain, amounted to 89.700 tonnes valued at EUR 412 million, and remained stable from 2017. China, ranked as the second largest export market, showed a 51% growth in export volume and a 58% growth in value. Exports to Italy, the third largest market, increased by 11% in volume and 30% in value.

Table 4. **EXPORTS FROM ARGENTINA BY MAIN SPECIES (volume in tonnes, value in 1000 EUR)**

Main commercial species	2013		2014		2015		2016		2017		2018	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Shrimp, miscellaneous	91.048	459.436	107.298	579.447	120.787	687.066	159.880	907.395	183.291	1.047.202	178.184	1.063.200
Hake	115.525	210.614	113.358	214.955	95.436	213.522	102.134	213.412	96.122	208.696	81.001	189.057
Molluscs and aquatic invertebrates, other	130.331	176.352	117.415	119.070	94.535	94.546	45.918	84.238	76.788	168.977	88.123	185.749
'Other marine fish'	92.036	115.140	84.519	106.301	74.851	105.563	70.052	107.892	62.492	93.006	49.567	73.958
Other	50.985	143.518	52.224	160.065	54.051	190.786	48.773	206.410	38.326	210.098	58.653	243.652
Total	479.925	1.105.060	474.815	1.179.838	439.660	1.291.483	426.756	1.519.347	457.019	1.727.978	455.528	1.755.615

Source: EUMOFA Bilateral trade.

¹⁰ <https://www.lanacion.com.ar/economia/adios-al-pais-del-asado-la-pesca-se-consolida-como-un-mayor-generador-de-divisas-que-la-carne-nid1988712>

¹¹ <https://www.undercurrentnews.com/2019/07/01/argentinas-seafood-sector-receives-boost-as-eu-approves-mercotur-trade-deal/>

Table 5. **EXPORTS FROM ARGENTINA BY TRADE PARTNER (volume in tonnes, value in 1000 EUR)**

Trade partner	2013		2014		2015		2016		2017		2018	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Spain	99.175	315.785	104.769	345.531	91.487	355.796	99.269	433.721	89.655	412.895	89.707	412.421
China	65.645	101.427	60.194	101.296	74.336	185.103	65.677	242.811	66.550	252.778	100.822	400.625
Italy	26.205	91.520	24.428	95.495	22.165	90.160	26.011	122.611	25.998	119.445	28.926	155.411
United States	22.115	81.211	23.190	99.910	23.534	120.632	21.345	132.769	21.999	152.666	19.488	121.944
Japan	28.446	105.209	22.162	68.364	26.487	94.725	20.978	91.653	28.236	129.749	21.110	89.110
Brazil	37.841	83.528	38.543	87.199	28.518	77.944	27.645	68.783	38.312	93.850	30.734	77.622
Thailand	8.576	15.161	14.918	20.412	8.046	17.612	5.863	30.653	10.883	50.515	11.444	55.099
Peru	941	1.522	2.011	5.219	2.794	12.344	2.337	13.672	6.692	37.875	9.965	52.910
Russia	5.956	15.437	8.803	23.437	7.114	15.987	13.225	25.810	16.911	46.180	15.342	50.565
Korea, South	11.531	18.432	15.823	24.295	17.960	31.300	13.425	31.461	14.807	39.761	14.402	42.650
France	6.704	26.052	6.773	30.038	6.144	27.867	4.047	17.189	6.496	51.321	6.560	42.001
Vietnam	6.646	14.039	7.509	38.242	6.438	32.038	14.740	52.371	12.688	77.027	9.243	41.302
Other	160.144	235.736	145.691	240.400	124.637	229.975	112.193	255.843	117.793	263.916	97.750	213.892
Total	479.925	1.105.060	474.815	1.179.838	439.660	1.291.483	426.756	1.519.347	457.019	1.727.978	455.495	1.755.552

Source: EUMOFA Bilateral trade.

1.5 EU imports from Argentina

The volume of EU imports of main commercial species from Argentina has decreased in the past five years. In 2018, import volume was 134.185 tonnes, a 5% decrease from 2017 and a 15% decrease from 2013. In terms of value, imports decreased 3% from 2017 and increased 18% from 2013.

The three main species imported into the EU from Argentina are shrimp, hake and squid. Together they constituted 93% of the volumes and values in 2018. Imports of shrimp increased 42% in terms of volume and 57% in terms of value from 2013 to 2018. Hake imports decreased 28% in volume and 25% in value during the same period, and squid decreased 56% in volume and 26% in value from 2013 to 2018.

In 2018, 98% of seafood imports from Argentina were frozen products.

Table 6. **EU IMPORTS OF MAIN COMMERCIAL SPECIES FROM ARGENTINA (volume in tonnes, value in EUR 1000)**

Main commercial species	2013		2014		2015		2016		2017		2018	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Shrimp, miscellaneous	56.974	320.582	64.432	380.832	70.959	433.189	78.311	463.755	80.503	482.362	81.169	503.344
Hake	36.569	90.090	33.971	81.174	30.142	86.309	33.454	90.856	28.862	75.318	26.177	67.926
Squid	39.325	78.195	32.282	48.153	26.372	38.818	18.397	45.267	19.793	63.809	17.243	57.673
Scallop	3.274	22.755	3.042	24.344	3.056	32.833	3.486	37.432	3.083	41.958	1.938	22.554
Other groundfish	5.945	13.678	4.658	10.309	4.251	10.553	4.063	8.743	3.817	9.408	2.443	6.854
Anchovy	4.286	9.494	3.201	7.448	3.956	13.061	2.705	8.650	1.998	6.496	2.442	6.757
Other marine fish	4.654	12.988	2.562	6.861	1.805	4.677	1.980	5.095	2.041	5.603	1.901	4.557
Cusk-eel	575	2.131	459	1.709	550	2.151	351	1.305	376	1.333	222	824
Other	5.966	19.906	2.630	12.324	874	3.229	907	2.895	1.249	4.577	650	2.379
Total	157.568	569.820	147.236	573.154	141.965	624.819	143.655	663.999	141.720	690.863	134.185	672.867

Source: EUMOFA.

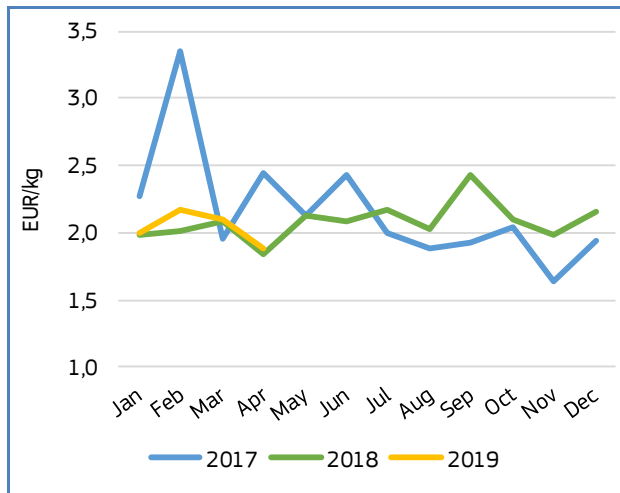
Table 7. **IMPORTS BY PRESERVATION STATE (volume in tonnes, value in EUR 1000)**

Preservation	2013		2014		2015		2016		2017		2018	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Frozen	147.390	531.292	140.714	539.197	808.308	3.466.004	137.215	616.703	139.072	680.429	131.443	664.336
Salted	3.370	7.297	3.062	7.192	21.734	70.670	2.700	8.639	1.906	5.841	2.223	5.651
Prepared	475	1.828	117	422	1.307	6.452	38	294	122	911	286	1.779
Unspecified	6.038	27.532	3.246	25.864	19.170	200.714	3.655	38.165	517	3.129	211	997
Other	296	1.871	97	479	179	641	47	199	104	552	23	104
Total	157.568	569.820	147.236	573.154	850.698	3.744.481	143.655	663.999	141.720	690.863	134.185	672.867

Source: EUMOFA.

1.6 Import prices

Figure 3. **EU IMPORT PRICE OF FROZEN HAKE FROM ARGENTINA**

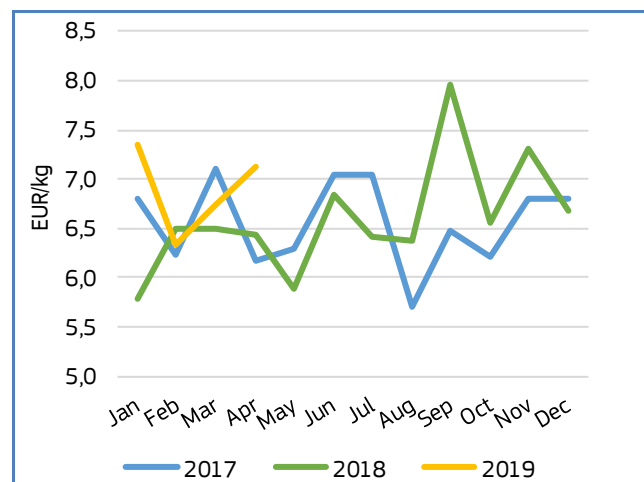


Source: EUMOFA.

The average price of frozen shrimp imported into the EU from Argentina in 2018 was 6,61 EUR/kg. This was a 1% increase from 2017. During January–April 2019 average import price was 9% greater, at 6,88 EUR/kg, than the same period of the previous year.

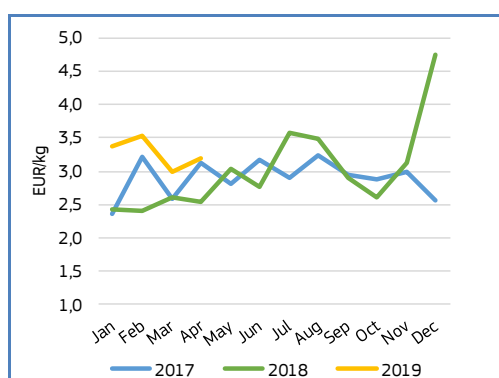
The average price of frozen hake imported into the EU from Argentina in 2018 was 2,07 EUR/kg. This was a slight decrease from 2017 (-1%). During January–April 2019 average import price was 3% greater than the same period of the previous year.

Figure 4. **EU IMPORT PRICE OF FROZEN SHRIMP FROM ARGENTINA**



Source: EUMOFA.

Figure 5. **EU IMPORT PRICE OF FROZEN SQUID FROM ARGENTINA**



Source: EUMOFA

The price of frozen squid imported into the EU from Argentina in 2018 was 2,91 EUR/kg, the same as the year before. During January–April 2019, the average import price was 31% greater, reaching 3,27 EUR/kg, than the same period of the previous year.

On June 28, 2019, the EU and Mercosur (a trade bloc comprising Argentina, Brazil, Paraguay and Uruguay) reached a free trade agreement (FTA). The agreement has not yet entered into force and consequently, details involving seafood have not yet been revealed. Even though Argentine hake and Argentine shrimp are species implemented in the EU Autonomous Tariff Quotas (ATQ), the FTA most probably will have short-term impact on Argentine exports to the EU, as exports to the EU exceed by far the tariff free quotes in the ATQ set for 2019 and 2020.

1.7 Consumption

In 2018, the per capita consumption of seafood in Argentina was 7,9 kg, down from 8,4 kg in 2017¹². The fisheries sector in Argentina is reliant on international trade, as only 10% of their seafood is consumed domestically¹³. The Argentinian government started a campaign in 2018 to increase domestic consumption of seafood. The campaign aims to increase awareness of both the importance of the fisheries industry and the health benefits of eating seafood¹⁴. The most popular species for consumption are hake and squid, and the consumption of trout from aquaculture is increasing¹⁵. From 2013 to 2018, Argentine seafood imports varied from 27.000 to nearly 48.000 tonnes a year. In 2018, imports amounted to 47.495 tonnes valued at EUR 184 million. Tuna is the most significant import species, amounting to 18.155 tonnes valued at EUR 78 million in 2018. This mainly comprised canned tuna products from Ecuador and Thailand. Salmon is the second most imported species in terms of value, amounting to 7.883 tonnes valued at EUR 48 million in 2018. This is mainly fresh salmon from Chile. 'Other marine fish' consists of different prepared and preserved fish products, mainly from Thailand and Ecuador

Table 8. **ARGENTINE IMPORTS OF FISHERY AND AQUACULTURE PRODUCTS (volume in tonnes, value in EUR 1000)**

Main commercial species	2013		2014		2015		2016		2017		2018	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Tuna, miscellaneous	13.091	58.301	11.009	42.128	15.279	57.173	15.447	58.634	16.536	70.141	18.155	78.207
Salmon	6.726	34.887	6.636	35.270	8.413	44.327	7.528	49.535	8.265	58.021	7.883	48.510
Other marine fish	13.191	29.520	10.511	20.589	141	744	14.465	25.408	14.473	28.986	13.453	29.298
Shrimp, miscellaneous	654	4.056	533	3.515	228	1.522	864	5.990	816	5.761	1.151	7.413
Other cephalopods	554	832	341	705	358	806	518	1.475	765	2.629	1.166	4.076
Octopus	458	2.494	408	2.109	476	2.781	581	3.433	469	3.669	391	3.531
Other	4.705	12.409	4.314	10.742	2.507	6.727	6.379	18.159	6.370	19.039	5.296	13.811
Total	39.380	142.499	33.752	115.057	27.403	114.079	45.781	162.633	47.693	188.245	47.495	184.845

Source: EUMOFA Bilateral trade.

¹² <https://www.cronista.com/apertura-negocio/empresas/Cayo-un-48-el-consumo-per-capita-de-pescado-en-2018-20190204-0010.html>

¹³ <https://seafood-tip.com/sourcing-intelligence/countries/argentina>

¹⁴ <https://www.infobae.com/campo/2018/08/01/al-menos-una-vez-al-mes-la-iniciativa-para-que-los-argentinos-coman-mas-pescado>

¹⁵ <https://www.cronista.com/negocios/Como-los-noquis-el-pescado-tendra-su-dia-pero-sera-el-19-de-cada-mes-20180719-0103.html>

2 EU consumer habits regarding fishery and aquaculture products

The latest Eurobarometer survey on EU consumer choices regarding fishery and aquaculture products¹⁶ (FAPs) shows that more than four out of ten Europeans eat seafood at least once a week at home. Price is the main barrier to increased consumption. Regional, national and EU products in general benefit from a very strong consumer preference.

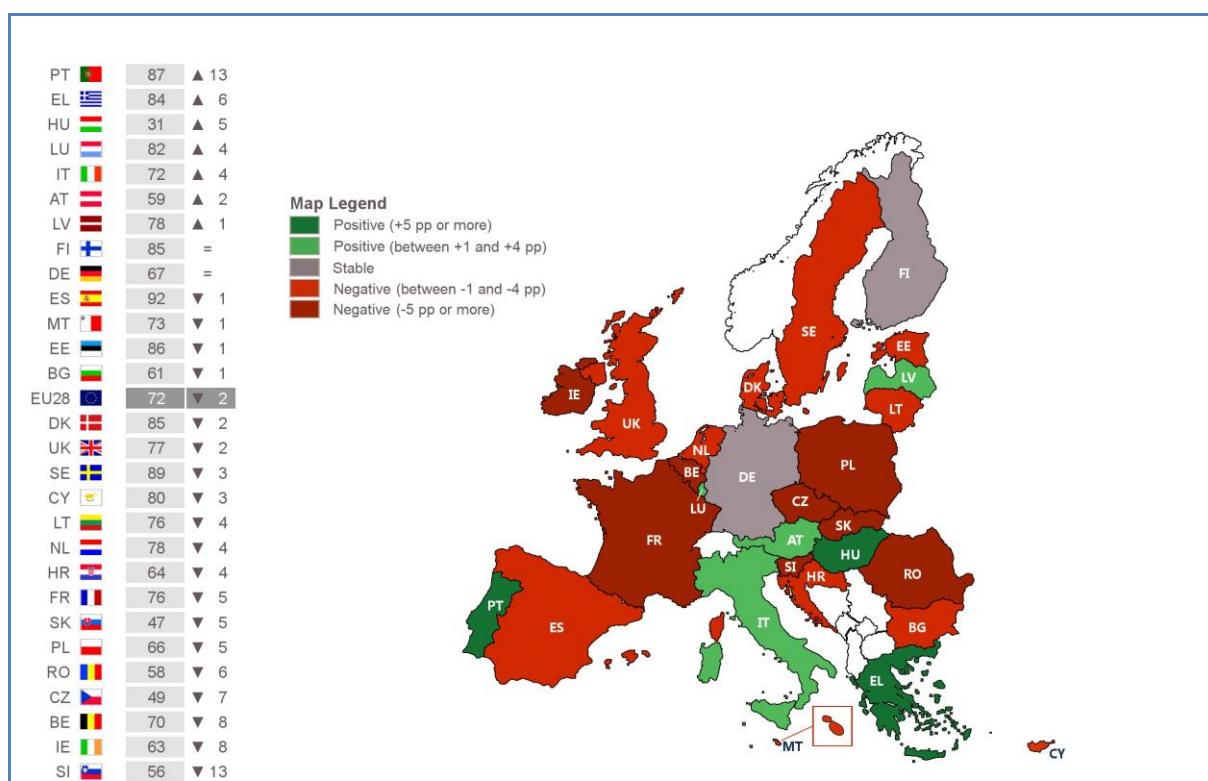
This survey was carried out for the European Commission between 23rd of June and 6th of July 2018. A total of 27.734 EU citizens from the 28 Member States, from different social and demographic backgrounds, were interviewed face-to-face at home and in their native language. This special Eurobarometer survey is the second on this topic, repeating questions first asked in a survey conducted in June 2016. It aims to improve understanding of the EU internal market for FAPs.

2.1 Frequency of consumption

One of the main findings of the Eurobarometer survey is that the majority of Europeans eat FAPs at least once a month: the majority at home (70%) and fewer in restaurants (32%).

Moreover, the comparison to the 2016 survey, shows only minor changes in the proportion of respondents in the majority of countries who say they eat FAPs at least once a month (-2 percentage points in total).

Figure 1. **HOW FREQUENTLY RESPONDENTS EAT FISHERIES OR AQUACULTURE PRODUCTS AT LEAST ONCE A MONTH (%) – EVOLUTION COMPARED TO THE 2016 SURVEY**

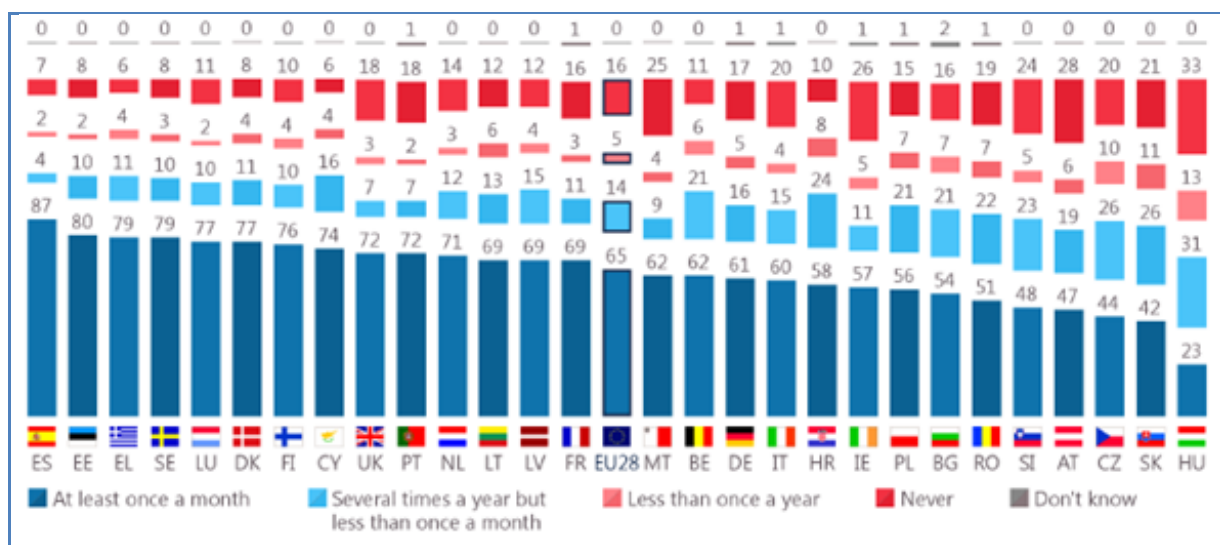


Source: Eurobarometer.

Analysis at country level shows that in 23 out of 28 Member States, an absolute majority of respondents buy FAPs at least once a month. Overall, respondents from countries surrounded by water and by more numerous and diversified places of sale, are more likely to eat FAPs at least once a month, compared with those from land-locked countries. For example, respondents in Hungary (28%) are much less likely than those in Spain (92%) to eat these products at least once a month.

¹⁶<http://ec.europa.eu/commfrontoffice/publicopinion/index.cfm/survey/getsurveydetail/instruments/special/surveyky/2206>

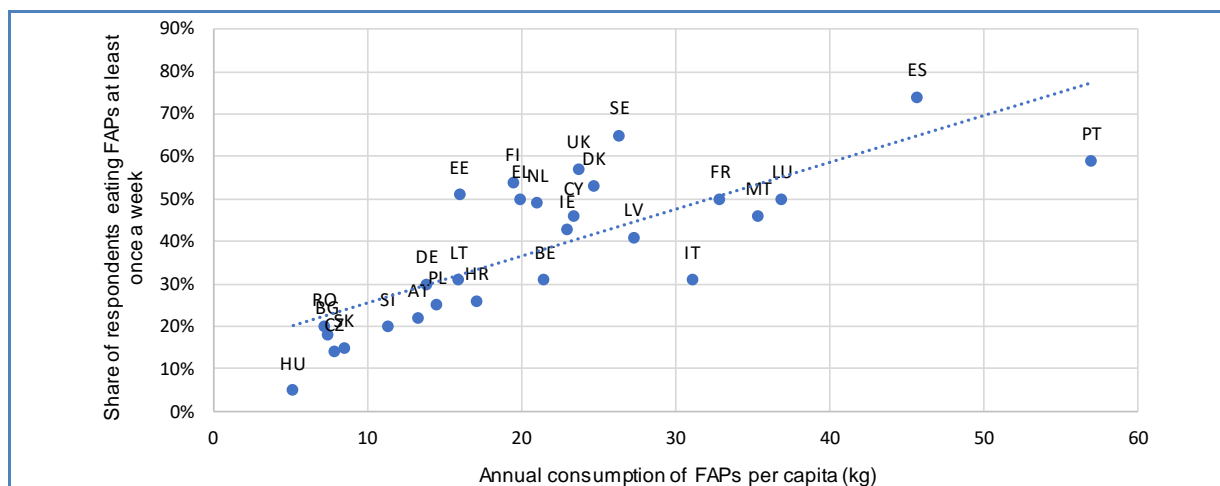
Figure 2. **HOW FREQUENTLY RESPONDENTS BUY FISHERIES AND AQUACULTURE PRODUCTS (%)**



Source: Eurobarometer.

At country level, the correlation between the share of respondents eating FAPs at least **once a week** and the **annual consumption per capita** is relatively obvious. We can see that very few differences exist between the yearly average consumption per capita ranking (top five including Portugal, Spain, Luxembourg, Malta, and France) and the share of respondents eating FAPs at least once a week.

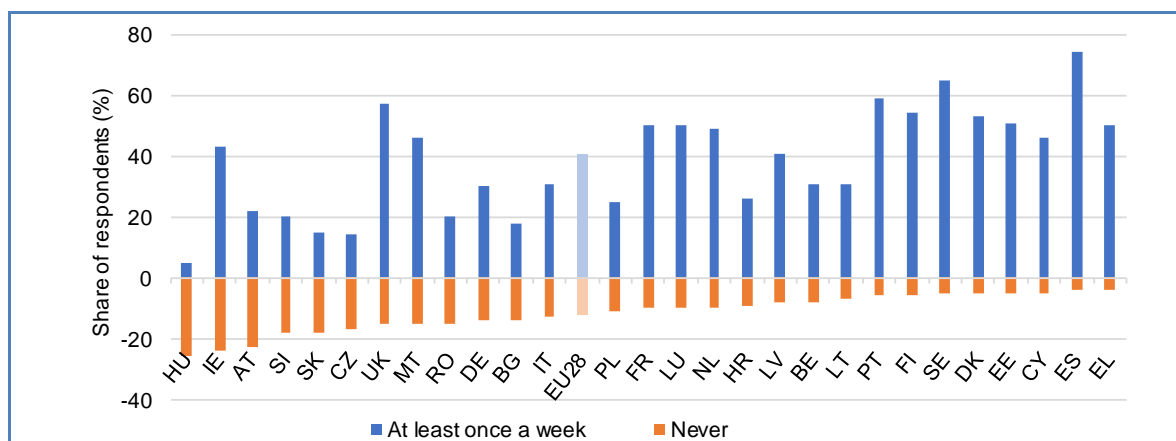
Figure 3. **RELATIONSHIP BETWEEN ANNUAL PER CAPITA CONSUMPTION (2016) AND SHARE OF REGULAR BUYERS (AT LEAST ONCE A WEEK)**



Source: EUMOFA elaboration from Eurobarometer data.

However, the share of non-consumer is not clearly related with the level of consumption per capita. Specifically, in the UK, Ireland and Malta, the share of respondents declaring they never eat FAPs is very high compared to the average level and frequency of consumption. This highlights significant heterogeneity in consumption of FAPs among consumers in these countries.

Figure 4. **SHARES OF REGULAR CONSUMERS AND SHARE OF NON-CONSUMERS BY MEMBER STATE**



Source: EUMOFA elaboration from Eurobarometer data. Countries are ranked in descending order according to the share of respondents saying they never eat FAPs.

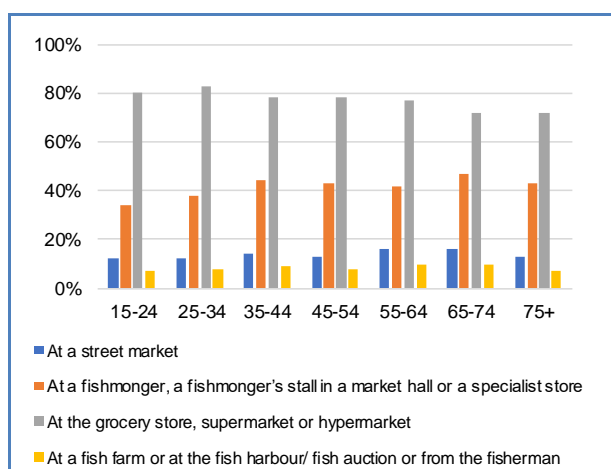
Moreover, the Eurobarometer study highlights several findings in terms of **socio-demographic trends among respondents**

- **Women** are slightly more likely than men to buy FAPs at least once a month (67% vs. 63%).
- **People aged 15–24** are less likely than older people to buy FAPs at least once a month (43% vs. 64%–70%).
- **Respondents with higher levels of education** are more likely to buy FAPs on a regular basis than those who finished their education at an earlier age.
- **Households** of two members are more likely to buy FAPs at least once a month compared to larger or smaller households (69% vs. 64%).

2.2 Place of purchase and types of products

According to the Eurobarometer survey, **grocery store, supermarket or hypermarket** are the most common place for buying FAPs (77% of respondents). Then comes **fishmonger or specialist shop (42%)**, and **to a lesser extent street markets (14%)**, and **directly from the producer (8%)**.

Figure 5. **RELATIONSHIP BETWEEN PLACE OF PURCHASE (MULTIPLE CHOICE QUESTION) AND AGE OF CONSUMERS**



Source: EUMOFA elaboration from Eurobarometer data.

In addition, the analysis of the relationship between age of the consumers and their place of purchase for fish products shows that:

- Respondents aged 55-74 are more likely to buy their fish products at a **street market** or **directly from the producer** than younger respondents.
- Respondents aged 35-44 and those aged 65-74 are more likely to go to the **fishmonger** to buy fish products than other age groups, especially younger age groups.
- The youngest consumers (aged 15-34) are more likely to buy their fish products at **supermarkets** or **grocery stores** than older consumers.

Preferences in terms of type of product and presentation are stable compared to the 2016 survey.

Concerning preferences in terms of **preservation state**, more than two thirds of respondents buy frozen (68%) or fresh products (67%), and over six in ten buy canned products (64%) 'at least from time to time', whilst a smaller proportion say they buy smoked, salted, dried or in brine products (51%) 'at least from time to time'. The majority of respondents (58%) say they rarely or never buy breaded products or ready-to-eat meals based on FAPs.

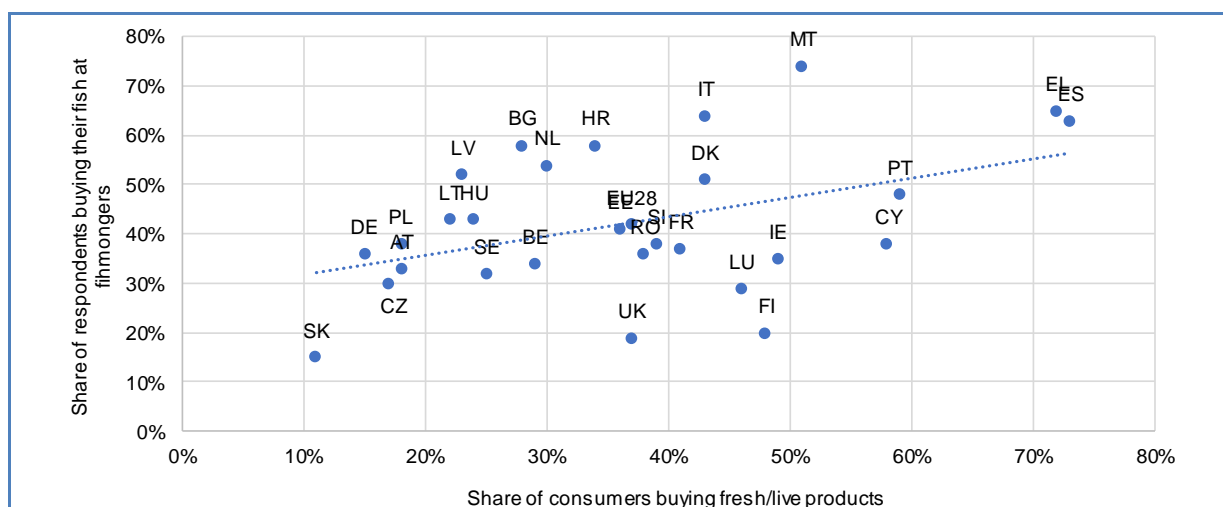
In terms of relationship between place of purchase and preservation state of products, respondents who buy **frozen products** are more likely to do so at a grocery store, supermarket or hypermarket (73%), or an online shop (72%), while those who buy **fresh products** are more likely to do so at a fish farm or at the fish harbour/ fish auction or from a fisherman (83%), at a fishmonger or a specialist store (81%) or at a street market (79%).

Concerning **presentation state**, more than two thirds of respondents say they buy loose products (68%) and pre-packed products (66%) 'at least from time to time'. Half of respondents prefer filleted products (50%) and four in ten prefer products that have been cleaned (40%), while more than a quarter prefer whole products (27%).

In terms of relationship between place of purchase and presentation state, respondents who buy **whole products** are more likely than those who buy cleaned products or fillets to buy at the fishmonger or specialist store (55% vs. 47% and 39%, respectively), and less likely to buy at the grocery store, supermarket or hypermarket (68% vs. 78% and 83%). In four countries – Greece, Romania, Croatia, and Cyprus – 'whole products' is the most popular response.

It is interesting to analyse this relationship by country, looking at the correlation between the share of respondents buying their fish at fishmongers and the share of consumers buying fresh/live fish products. The correlation is relatively obvious, with "Mediterranean/Southern" countries with a high preference for fresh products and fishmongers (Greece, Spain, Malta, Portugal, Cyprus) and landlocked/Central and Eastern countries (except RO) with low share of consumers going to the fishmonger and buying fresh products (Slovakia, Czech Republic, Austria, Poland, Germany).

Figure 6. **RELATIONSHIP BETWEEN SHARE OF RESPONDENTS BUYING THEIR FISH AT FISHMONGERS AND SHARE OF CONSUMERS BUYING FRESH/LIVE PRODUCTS**



Source: EUMOFA elaboration from Eurobarometer data.

2.3 Consumption drivers and non-consumption factors

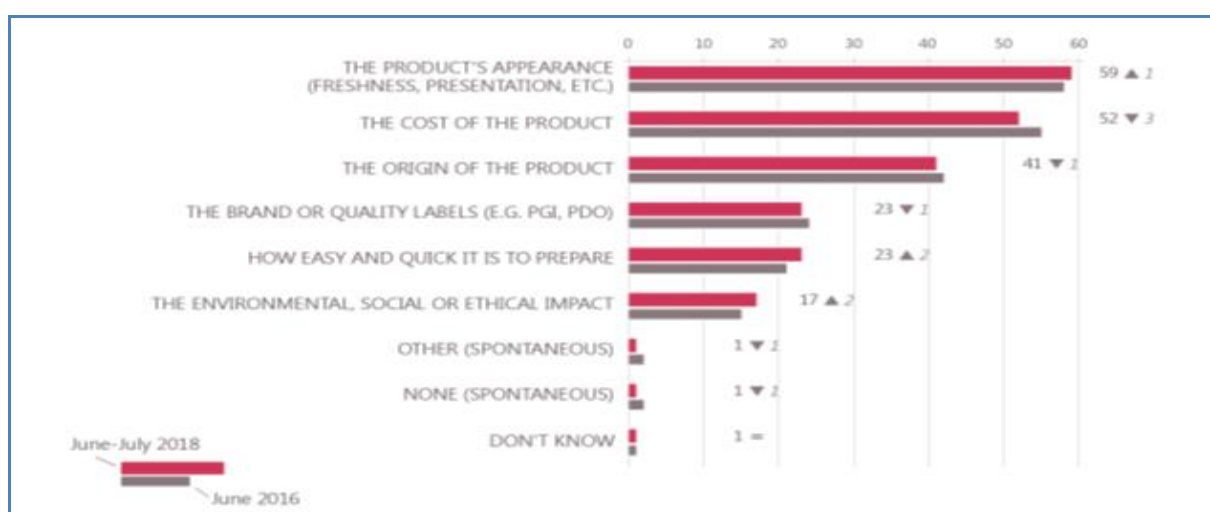
According to the Eurobarometer survey, the reason EU consumers buy or eat FAPs is because they are healthy and taste good.

- A majority of respondents who buy or eat FAPs say they buy these products because 'they are healthy' (74%) and 'they taste good' (59%). These are the two most important reasons in all EU countries.
- The main reason given for not eating FAPs by those who never eat them is that they do not like their taste, smell or appearance (49%). This is the reason most frequently mentioned in most EU countries.

When purchasing FAPs, products' appearance and price are the most important criteria.

- The two main aspects mentioned by the majority of respondents as the most important when buying FAPs are the product's appearance (59%) and the cost of the product (52%). The origin of the product is the third most frequently mentioned aspect (41%).

Figure 7. **MOST IMPORTANT ASPECTS WHEN RESPONDENTS BUY FISHERIES AND AQUACULTURE PRODUCTS (MAX. 3 ANSWERS) (% - EU)**



Source: Eurobarometer.

The main barrier for EU consumers to increase their consumption of FAPs is the price.

- 70% respondents who buy or eat FAPs agree they would buy or eat more seafood if the price was not so high.
- Over half of these respondents (53%) say they would buy or eat more seafood if the choice and points of sale were more diversified.

A relative majority of Europeans prefer wild to farmed products, and sea to freshwater products.

- More than a third of the respondents who buy or eat FAPs prefer wild products (35%) while less than one in ten (9%) say they prefer farmed products. Nearly a third (32%) say they have no preference.
- Products coming from the sea are preferred by just over four in ten (42%), compared with less than one in ten who prefer freshwater products (8%). Again, there is a large proportion of respondents who do not have a preference for either sea or freshwater products (33%).

Most EU consumers prefer products from their own country or region.

- Over a third of respondents who buy or eat FAPs prefer products from their own country (37%), followed by products from their own region (28%), and products from the EU (16%).
- Only a quarter of respondents (24%) say they don't really have a preference as to where the products are from.

3 The EU fish processing industry

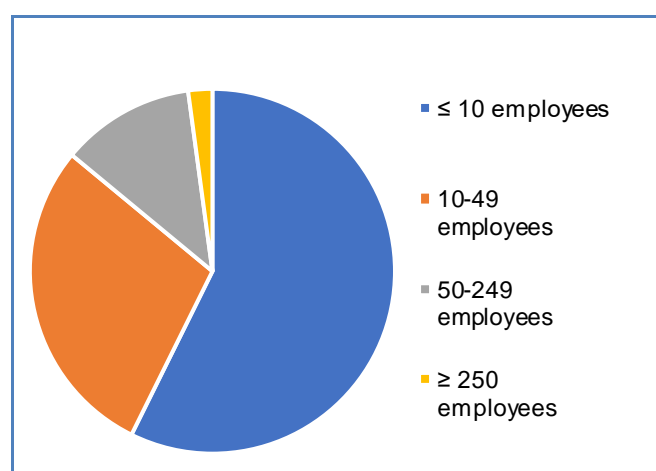
This case study focuses on the importance of micro and small companies in the EU fish processing industry and is based on the Joint Research Centre's (JRC) report on "The Economic Performance of the EU fish processing sector 2017"¹⁷.

For the purpose of this case study, micro enterprises are enterprises with less than 10 persons employed, small enterprises with 10 to 49 persons employed, medium-sized enterprises with 50 to 249 persons employed, large enterprises with 250 or more persons employed. Small and medium-sized enterprises (SMEs) are enterprises having less than 250 persons employed.

Micro and small enterprises represent 86% of the total number of fish and seafood processing companies in the EU. They provide 28% of the total number of jobs and of the total income generated by the sector.

3.1 Number of companies

Figure 1. **NUMBER OF ENTERPRISES IN THE EU FISH PROCESSING SECTOR IN 2015**



Source: JRC.

The total number of enterprises in the EU fish processing industry was 3,601 in 2015 (3,827 including landlocked countries¹⁸), of which 86% are micro companies and small companies. Over the period 2008–2015, the number of micro-enterprises has increased by 13%, being the only size category showing a growth.

Table 1. **EVOLUTION OF THE NUMBER OF ENTERPRISES BETWEEN 2008–2015**

Size category	2008	2009	2010	2011	2012	2013	2014	2015	Trend 2008–2015
Micro ≤ 10 employees	1,829	1,807	1,854	1,858	1,891	2,102	1,970	2,064	+ 13%
Small 11-49 employees	1,146	1,186	1,162	1,087	1,114	1,124	1,106	1,033	- 10%
Medium 50-249 employees	475	435	432	440	451	438	443	427	- 10%
Large ≥ 250 employees	80	75	76	76	78	77	81	77	- 4%
Total enterprises	3,530	3,503	3,524	3,461	3,534	3,741	3,600	3,601	+ 2%

Source: JRC.

¹⁷ https://stecf.jrc.ec.europa.eu/reports/economic/-/asset_publisher/d71e/document/id/2108729?inheritRedirect=false&redirect=https%3A%2F%2Fstecf.jrc.ec.europa.eu%3A443%2Freport%2Feconomic%3Fp_id%3D101_INSTANCE_d71e%26p_lifecycle%3D0%26p_state%3Dnormal%26p_mode%3Dview%26p_col_id%3Dcolumn-2%26p_col_pos%3D1%26p_col_count%3D2

¹⁸ Landlocked countries are Austria, Czechia, Hungary and Slovakia.

Large companies exist in only nine Member States, with four of them (France, the UK, Poland and Spain) accounting for 69% of the total number of large enterprises. In three Member States (Cyprus, Finland, and Malta) only micro and small companies are present.

Table 2. NUMBER OF ENTERPRISES BY MEMBER STATE IN 2015

Country/Size category	Micro companies ≤ 10 employees	Small companies 11-49 employees	Medium companies 50-249 employees	Large companies ≥ 250 employees	Total enterprises
Belgium	37	26	3	0	66
Bulgaria	11	24	10	0	45
Croatia	18	3	13	1	35
Cyprus	2	0	0	0	2
Denmark	54	31	23	0	108
Estonia	31	23	10	0	64
Finland	113	23	0	0	136
France	111	127	36	17	291
Germany	164	54	22	8	248
Greece	112	29	4	0	145
Ireland	92	47	22	0	161
Italy	447	112	18	0	577
Latvia	59	36	15	4	114
Lithuania	20	12	12	7	51
Malta	3	2	0	0	5
Netherlands	0	66	15	0	81
Poland	52	68	53	12	185
Portugal	63	51	39	4	157
Romania	1	4	3	0	8
Slovenia	7	3	2	0	12
Spain	320	196	71	11	598
Sweden	183	33	8	0	224
UK	166	129	63	13	371
Total enterprises	2.066	1.099	442	77	3.684

Source: JRC.

3.2 Employment

The total number of employees in the EU fish processing sector was 126.413 or 20% fewer than direct employment created by the EU fleet in the same year. This includes the number of employees in countries for which data by size category is not available (i.e. Estonia, France, Germany, and the Netherlands)¹⁹.

Employment was relatively stable between 2008 and 2015, while the average wage increased by 22%. Over the same period, labour productivity, measured as gross value added (GVA) per FTE²⁰, decreased by 8%, in relation with the decrease of the GVA, which can be partly explained by the significant increase (+28%) of the cost for purchase of fish and other raw materials.

Micro and small companies provide 28% of the total number of jobs, while medium and large enterprises provide 41% and 31% of jobs, respectively. The countries, for which data by size category are not available, are not included in this calculation (table below).

¹⁹ The JRC report is based on data collected under the Data Collection Framework (DCF) of the EU.

The Member States were requested to provide economic data by size category. They delivered these data for the period 2008-2015, with the following exceptions: Cyprus, Estonia, Germany did not provide data segmented by size category. France delivered data by size category from 2008 to 2013, but not for 2014 and 2015. The Netherlands did not deliver data for 2015.

²⁰ Full time equivalent.

Table 3. NUMBER OF EMPLOYEES BY MEMBER STATES IN 2015

Country/Size category	Micro companies ≤ 10 employees	Small companies 11-49 employees	Medium companies 50-249 employees	Large companies ≥ 250 employees	Total employees
Belgium	160	744	625	0	1.529
Bulgaria	75	722	1.110	0	1.907
Croatia	73	49	1.358	320	1.800
Cyprus	14	0	0	0	14
Denmark	173	822	2.619	0	3.614
Finland	229	775	0	0	1.004
Greece	561	749	752	0	2.062
Ireland	483	1.352	1.962	0	3.797
Italy	1.769	2.240	1.917	0	5.926
Latvia	138	934	1.847	1.250	4.169
Lithuania	48	337	1.557	3.431	5.373
Malta	30	52	0	0	82
Poland	254	1.468	6.846	9.175	17.743
Portugal	182	1.776	2.868	2.322	7.148
Romania	4	87	392	0	483
Slovenia	24	37	148	0	209
Spain	886	4.931	7.542	5.674	19.033
Sweden	346	685	1.140	0	2.171
UK	931	3.013	7.589	8.579	20.112
Total number of employees	6.380	20.773	40.272	30.751	98.176

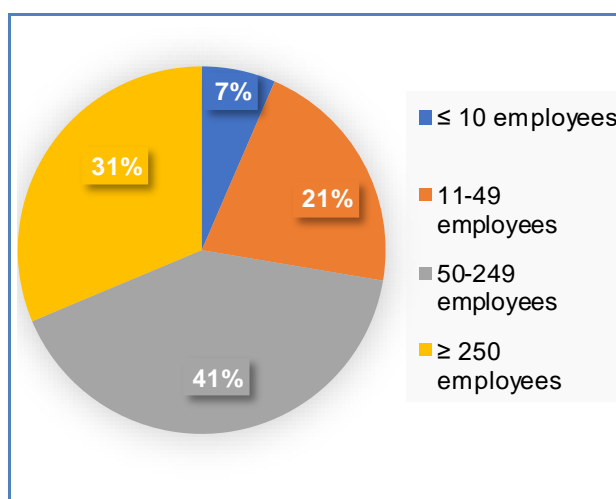
Source: JRC.

*Data are for Member States which provided data by size category.

The Member States where the percentage of employees working in micro and small companies is clearly below the EU average (27,7%) are Croatia, Latvia, Lithuania, Poland, Romania and the UK.

Three Member States have employees only in the two smallest size categories (Cyprus, Finland, Malta). Concerning the Member States with higher level of activity, Italy and Greece have the highest ratio of employees in micro and small enterprises (68% and 64% of the total number of employees in the country, respectively).

Figure 2. NUMBER OF EMPLOYEES IN 2015



Source: JRC.

The average annual wage was equal to EUR 30.133 per FTE²¹ in 2015, i.e. significantly more than the average wage in the manufacture of food products (25.455 EUR/FTE according to Eurostat/SBS²²) and markedly less than the average wage in the manufacturing sector in general (33.828 EUR/FTE).

In the countries for which data on size categories are available (covering 97.841 employees), the annual average wage amounts to EUR 26.995 per employee and EUR 29.784 per FTE. The highest wages are paid in the intermediate size categories, i.e. small and medium companies (27.040 and 26.571 EUR/FTE respectively), while the lowest wages are paid at each end of the size category spectrum, in the micro (EUR 19.317) and large (EUR 21.835) companies.

Wages vary considerably from one MS to the other; the maximum wage, paid in Denmark (65.306 EUR/FTE), is 16 times higher than the lowest one (3.974 EUR/FTE), paid in Romania. These divergences are not specific to the sector, they reflect the general trend at EU level. Geographic situation influences much more wage disparity than companies' sizes.

3.3 Income

The income generated by the EU fish processing industry amounted to EUR 30,3 billion in 2015, of which EUR 22,2 billion in the Member States for which detailed data are available (table below).

The highest incomes are generated by the UK and Spanish industries.

Table 4. **INCOME BY MEMBER STATE IN 2015 (value in EUR million)**

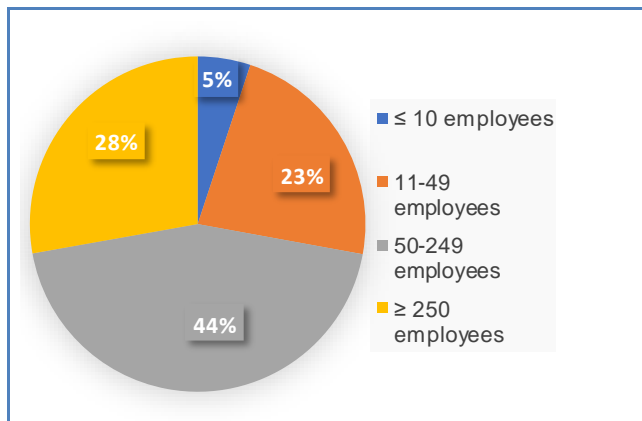
Country/Size category	Micro companies ≤ 10 employees	Small companies 11-49 employees	Medium companies 50-249 employees	Large companies ≥ 250 employees	All employees
UK	86,7	886,5	2.384,0	1.978,7	5.335,9
Spain	171,5	1.052,9	1.917,6	1.842,9	4.984,9
Denmark	99,4	533,4	1.934,3	0,0	2.567,1
Poland	26,8	199,7	728,9	1.578,0	2.533,4
Italy	371,0	873,2	1.021,1	0,0	2.265,3
Portugal	30,5	297,4	480,4	388,9	1.197,2
Ireland	34,1	281,4	445,3	0,0	760,8
Belgium	128,7	271,1	323,8	0,0	723,6
Lithuania	1,9	14,7	134,9	370,6	522,1
Sweden	84,4	194,8	238,2	0,0	517,4
Finland	28,7	273,1	0,0	0,0	301,8
Greece	39,3	94,6	107,0	0,0	240,9
Latvia	3,9	49,9	86,2	39,8	179,8
Bulgaria	16,6	38,0	37,2	0,0	91,8
Slovenia	2,2	4,1	19,7	0,0	26,0
Romania	0,1	1,8	22,3	0,0	24,2
Malta	8,8	13,9	0,0	0,0	22,7
Cyprus	0,4	0,0	0,0	0,0	0,4
Total Income	1.135,0	5.080,5	9.880,9	6.198,9	22.295,3

Source: JRC.

²¹ Full time equivalent.

²² Structural Business Statistics.

Figure 3. **EU FISH PROCESSING SECTOR INCOME IN 2015**



Source: JRC

Micro and small companies generate 28% of the total income.

Among the countries whose fish processing industry generates more than EUR 500 million of income, three draw more than half of their fish processing income from micro and small companies: Sweden (53,9%), Italy (54,9%) and Belgium (55,3%).

3.4 Production costs

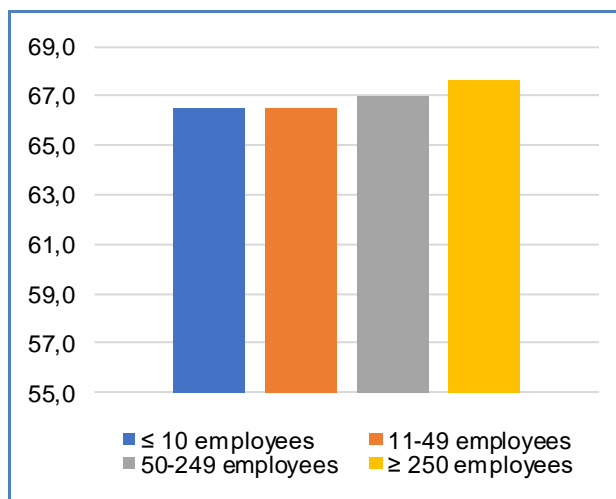
The major cost item in fish processing is “the purchase of fish and other raw materials”, which represented 67,1% of the total costs in 2015. Wages and salaries represent 12,1% and other operational costs and energy 17,6% and 2,7% respectively.

An analysis made on the Member States, for which detailed data by size category are available, shows that the share of the raw materials cost in the total income is slightly increasing when the size of the company increases: it is 66,5% in the micro and small enterprises, and rises to 67,0% in the medium-sized companies and 67,6% in the large companies. Due to the high variations in wages between MS, it is difficult to draw conclusions from the slight differences observed. Two elements may anyhow partly explain these differences:

- it is likely that large companies make use of more efficient processing equipment and that processing is more automatized reducing the share of labour costs;
- as indicated above, the level of salaries is substantially lower in large companies.

Micro and small companies accounted for 28% of all purchases of fish and other raw materials made by the EU fish processing industry in 2015, while medium and large-sized companies accounted for 44% and 28%, respectively.

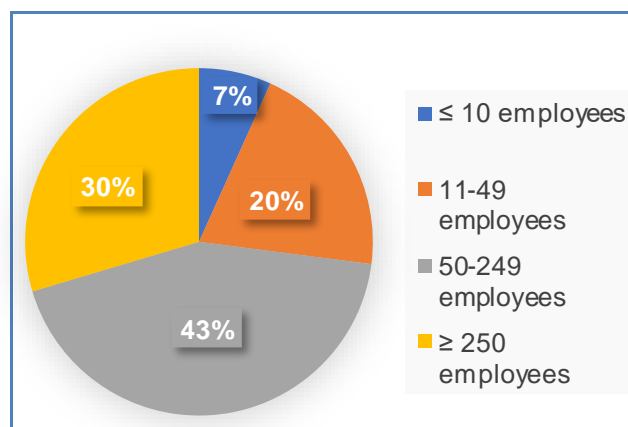
Figure 4. **VALUE SHARE OF THE COST FOR PURCHASING FISH AND RAW MATERIALS OF THE TOTAL INCOME IN 2015**



Source: JRC

3.5 Economic performance and productivity

Figure 5. **EU FISH PROCESSING SECTOR TOTAL GROSS VALUE ADDED (GVA) IN 2015**



Source: JRC.

The UK fish processing industry generated the highest gross added value (GVA) in absolute terms in 2015, followed by France (not shown in the table below, as no detailed data by size category are available) and Spain.

The UK is also at the first rank for large companies (preceding Spain and Portugal) and for medium companies (preceding Spain and Denmark), but only at the second rank behind Spain for small companies and at the fourth rank for micro companies (behind Belgium, Italy and Spain). Among the countries for which data could be calculated, the UK industry generated the highest net profit in absolute terms in 2015 (36,3% of the estimated total), followed by the French (19,4%) and Belgian (9,5%). The productivity (value added per employee) is the highest in the medium-sized category (EUR 47.903 in 2015), followed by micro enterprises (EUR 45.965), small enterprises (EUR 42.144) and large companies (EUR 41.845).

Table 5. **GROSS VALUE ADDED BY MEMBER STATE AND BY SIZE CATEGORY in 2015 (value in EUR million)**

Country/Size category	Micro companies ≤ 10 employees	Small companies 11-49 employees	Medium companies 50-249 employees	Large companies ≥ 250 employees	All employees
UK	27,3	159,2	468,5	628,3	1.283,3
Spain	27,7	197,0	418,7	233,9	877,3
Portugal	10,6	102,9	166,3	134,6	414,4
Poland	5,0	30,3	114,5	215,3	365,1
Denmark	11,1	65,2	280,4	0,0	356,7
Italy	52,6	101,7	145,0	0,0	299,3
Belgium	114,0	52,6	40,6	0,0	207,2
Ireland	2,5	47,8	70,3	0,0	120,6
Lithuania	0,4	3,8	32,8	50,3	87,3
Sweden	17,0	31,9	34,9	0,0	83,8
Greece	7,3	12,4	31,6	0,0	51,3
Finland	6,3	38,1	0,0	0,0	44,4
Bulgaria	5,9	17,3	19,3	0,0	42,5
Latvia	0,8	11,4	18,7	11,0	41,9
Romania	0,0	0,6	21,0	0,0	21,6
Slovenia	0,6	0,4	1,5	0,0	2,5
Malta	0,4	0,8	0,0	0,0	1,2
Cyprus	0,4	0,0	0,0	0,0	0,4
Total GVA	289,9	873,4	1.864,1	1.273,4	4.300,8

Source: JRC.

3.6 Outlook

SMEs are often referred to as the backbone of the European economy, providing a potential source for jobs and economic growth.

This is also the case in the EU fish processing industry, where micro and small companies (enterprises with less than 50 people employed) generated an income of EUR 8,5 billion and a gross value added of EUR 1,65 billion, providing 35.000 jobs in 2015²³.

The incompleteness of the collection of data disaggregated by size categories under the EU Data Collection Framework precludes the drawing of robust and targeted conclusions. However, geographical distribution and size of the country appear to be influencing factors, more important than size of the companies.

In addition to some of the less populated Member States (Cyprus, Finland, Malta), which have only micro and small companies in the fish processing sector, a few other Member States draw the biggest part of their income through micro and small companies, e.g. Belgium, Bulgaria, Greece, Italy, and Sweden.

Micro and small companies' share in the income and GVA generated by the sector has decreased over the period 2008–2015, but the number of micro enterprises has increased by 13%, being the only size category showing growth. Micro and small enterprises retain a crucial role in the fish processing economy in most Member States.

²³ To achieve these results, we applied the ratios to the entire EU fish processing sector calculated for the Member States for which data by size category were available (and representing 78% of the sector in terms of jobs).

4 The Irish seafood sector

4.1 Introduction

Ireland is part of an island in the North Atlantic which belongs geographically to Western Europe. The island's governance is divided between Ireland and Northern Ireland (the United Kingdom). Ireland accounts for roughly five-sixths of the island or 70.280 km² with a coastline of 1.448 km²⁴ and territorial seas of 12 nm and EEZ 200 nm. Approximately 4,85 million people live in Ireland today²⁵.

The country's long coastline close to some of the most productive fishing grounds in the EU gives Ireland a natural advantage in the development of the seafood industry. Consequently, the seafood industry plays a vital role in the economy and has shown growth over the past few years.

In 2017, the seafood industry contributed EUR 1,15 billion to the Irish economy, a 6,4% increase from 2016²⁶. The growth has mainly been driven by increased export values and increased aquaculture production²⁷.

In 2017, the total value of landings and aquaculture production increased by 12% to EUR 609 million relative to 2016. Volume size increased by a similar margin, growing by 11% to 361.000 tonnes²⁸ compared to 2016. The growth was linked to a 14% volume and a 35% value increase in aquaculture production. On the other hand, fisheries landing volume and value decreased by 1% and 27% respectively. Wild-caught fish constituted 66% in value (EUR 401 million) and 87% in volume (314.000 tonnes) of total fisheries and aquaculture production²⁹. Killybegs port recorded the highest value of landings, with 192.000 tonnes valued at EUR 125 million, with Castletownbere as number two with 30.500 tonnes, valued at EUR 108 million³⁰.

Of the 4,8 million citizens in Ireland, around 9.300 are directly employed in the seafood sector. Of these, 3.360 are employed in fisheries, 1.900 in aquaculture and close to 4.000 people in the processing industry³¹.

²⁴ https://webgate.ec.europa.eu/fpfis/cms/farnet2/on-the-ground/country-factsheets/irish-clld-programme_en#group-factsheet-content

²⁵ <https://www.worldometers.info/world-population/ireland-population/>

²⁶ BIM-Business-of-Seafood-2017.

²⁷ BIM-Business-of-Seafood-2017.

²⁸ BIM-Business-of-Seafood-2017.

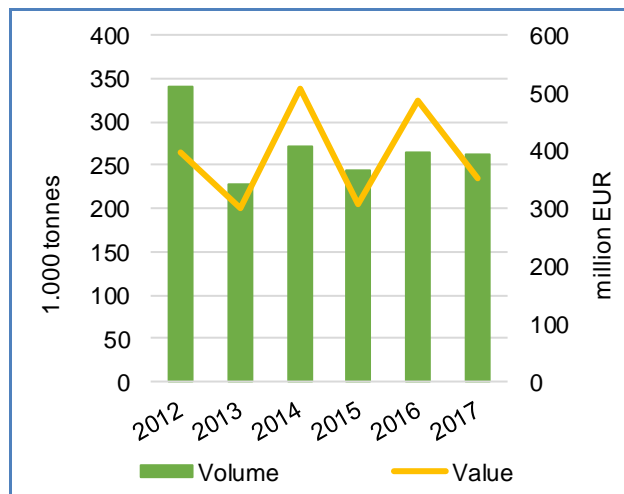
²⁹ BIM-Business-of-Seafood-2017.

³⁰ BIM-Business-of-Seafood-2017.

³¹ BIM-Business-of-Seafood-2017.

4.2 Fisheries

Figure 1. **FISHERIES LANDINGS IN IRELAND (volume in 1000 tonnes, value in million EUR)**



Source: The Sea-Fisheries Protection Authority (SFPA).

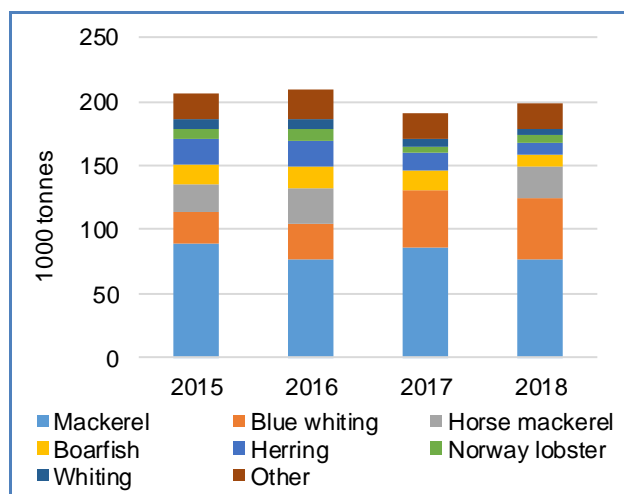
Since 2012, fisheries landings in Ireland has varied between 229.000 tonnes (2013) and 341.000 tonnes (2012). The values of fisheries landings have fluctuated from EUR 299 million (2013) to EUR 508 million (2014). In 2013, Ireland's share of landed volumes was 96%. Since then the Irish share has decreased due to higher landings from UK and French vessels. In 2016, the Irish share of EU landings constituted 6% of total volumes and 7% of overall values³².

In 2017, landings in Ireland decreased compared with 2016, totalling to 264.000 tonnes (-1%) worth EUR 353 million (-27%).

The main reason behind the fall in landing value was overall fall unit values. The fall in unit values was caused by both higher landing volumes and landing share of low value species (blue whiting and boarfish) and drop in unit values for top landed species like blue whiting, horse mackerel and Atlantic herring.

Of all fish landed in Ireland, 68% or 179.000 tonnes were caught by Irish vessels, contributing to 52% of total value. The value of fisheries products landed by the national fleet halved compared with 2016, totalling EUR 184 million. The top-three landed species in terms of value by the Irish fleet were Atlantic mackerel, prawn and brown crab. Of the non-Irish landings, 29% of the value originated from the UK fleet and 8% from the French fleet.

Figure 2. **MAIN SPECIES CAUGHT BY IRISH VESSELS (volume in 1000 tonnes)**



Source: <https://www.gov.uk/government>.

Atlantic mackerel is the most important fish species for the Irish fleet both in terms of volume and value. Over the past four years catches have varied between 76.000 tonnes to nearly 90.000 tonnes annually. Blue whiting catches increased every year since 2015 and reached nearly 48.000 tonnes in 2018.

In 2018, the top three species in terms of volume Atlantic mackerel, blue whiting and horse mackerel constituted 75% of the total volumes landed by the Irish fleet³³.

³² EUROSTAT, <http://appsso.eurostat.ec.europa.eu/nui/show.do>

³³ <https://www.gov.uk/government>.

Table 1. **LANDINGS OF FISHERIES PRODUCTS IN IRELAND BY VESSEL STATE (volume in 1000 tonnes, value in EUR million)**

Landing nation	2012		2013		2014		2015		2016		2017e ³⁴	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Ireland	234	299	221	283	242	444	205	214	196	370	179	184
United Kingdom	20	23	4	10	7	12	13	16	21	27	51	102
France	11	27	1	1	8	27	14	47	19	50	14	28
Spain	6	14	1	2	7	21	8	28	12	31	11	21
Denmark	0	0	0	0	0	0	0	0	11	6	9	17
Germany	0	0	0	0	0	0	0	0	0	1	0	0
Other	69	33	3	2	7	4	4	3	7	2	0	0
Total	341	397	229	299	271	508	244	309	265	486	264	353

Source: EUROSTAT.

4.3 Aquaculture

Finfish (salmon and trout) and shellfish (mussels and oysters) dominate Irish aquaculture production. Ireland is the largest producer of organic farmed salmon in the EU and the sector provides around 1.900 full and part-time jobs and consists of 284 production units (2017)³⁵.

In 2010, Irish aquaculture production reached nearly 46.200 tonnes mainly due to the production volumes of salmon and mussels. Production volumes decreased in the following years and ended at their lowest in 2014 (29 327 tonnes). Volumes and values have showed a growth every year since 2014.

In 2016, Irish aquaculture production increased by 10% in terms of volume to 41.279 tonnes and 13% in terms of value to EUR 154 million. The main driver was volume and value growth in the salmon and oyster industry. Production of salmon increased by 24% to 16.300 tonnes constituting 39% of total volume and value increased by 16% to EUR 104 million constituting 68% of total aquaculture value. Oyster production ended right above 8 000 tonnes in 2016 at a value of EUR 35 million. This represents increases volume and value of 7% and 15%, respectively, from 2015.

Table 2. **AQUACULTURE PRODUCTION IN IRELAND (volume in tonnes, value in EUR million)**

Main commercial species	2010		2011		2012		2013		2014		2015		2016	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Salmon	15.691	71	12.196	73	12.440	76	9.125	56	9.368	58	13.116	90	16.300	104
Oyster	7.162	21	7.937	30	7.560	37	8.640	40	7.569	35	7.478	31	8.016	35
Mussel	21.934	16	0	0	15.228	11	15.361	15	11.374	10	16.015	13	16.156	12
Trout	1.102	4	1.201	4	781	2	908	3	808	3	803	2	705	2
Scallop	59	0	50	0	43	0	37	0	26	0	50	0	33	0
Other freshwater fish	24	0	16	0	10	0	80	1	78	1	45	0	15	0
Other molluscs and aquatic invertebrates	0	0	0	0	0	0	3	0	4	0	4	0	4	0
Other	217	1	22.890	18	80	1	83	0	100	0	70	0	50	0
Total	46.189	113	44.290	125	36.142	127	34.237	114	29.327	106	37.581	136	41.279	154

Source: EUMOFA.

In 2017, the aquaculture industry produced approximately 47.000 tonnes of seafood (a 14% increase from 2016). Value reached EUR 208 million, a 35% increase from 2016³⁶. Like 2016, the fastest growing elements of the sector, both in terms of volume and value, were the oyster and salmon farms. Low prices on the global market negatively affected the farmed rope mussel industry, resulting in a 13% loss in harvest volume and a 18% decrease in value³⁷.

³⁴ EUROSTAT, national estimates.

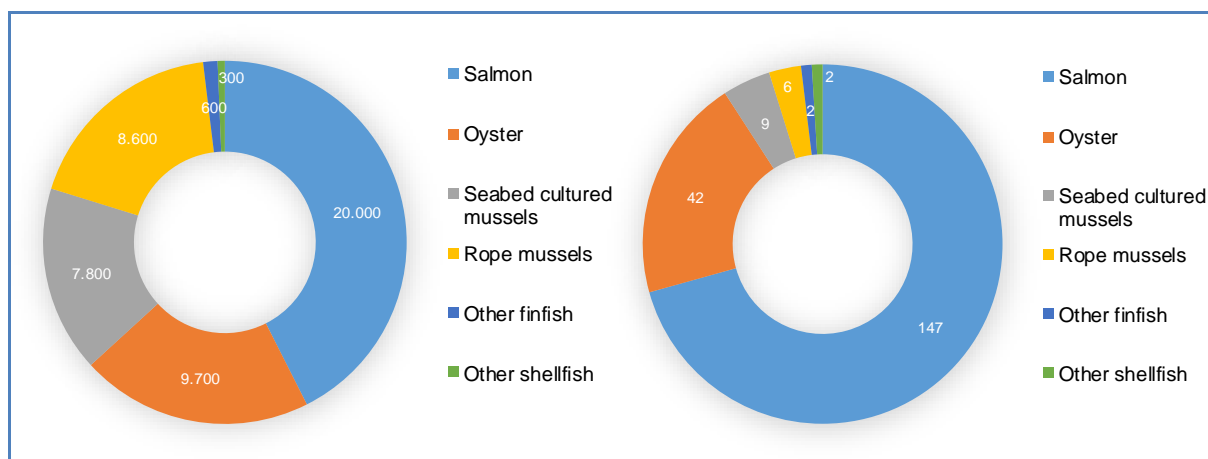
³⁵ BIM-Business-of-Seafood-2017.

³⁶ Ireland's Seafood Development Agency.

³⁷ <http://www.bim.ie/media/bim/content/7097-BIM-Business-of-Seafood-2017.pdf>

In 2017, the volume of farmed salmon increased by 23% and the value climbed by 41% relative to 2016. The increase in value was driven by strong demand for organic and non-organic salmon, and stability of volumes produced in Europe since 2015. In Ireland, the volumes of farmed salmon constituted 42% of total aquaculture production in 2017 while the value accounted for 71%. When it comes to oyster, volumes increased by 21% and values by 19% over 2016; this species' production constituted 21% of total volumes and 20% of the value of the aquaculture sector.

Figure 3. **AQUACULTURE PRODUCTION IN 2017 BY VOLUME (LEFT) AND VALUE (RIGHT) (volume in tonnes and value in EUR million)**



Source: Ireland's Seafood Development Agency.

4.4 Processing industry

There were close to 4,000 people employed in the Irish seafood processing industry in 2017. The number of companies grew to 163, 4% higher than in 2016. About 32% of these companies generated a turnover between EUR 1 million and EUR 10 million per year, while 15% generated a turnover larger than EUR 10 million per year and 53% has a turnover less than EUR 1 million per year. Of the 163 companies registered there were 72 in the whitefish industry, 42 in the shellfish industry, 34 in the salmon industry and 15 pelagic companies³⁸.

4.5 Import

From 2013 to 2018 Irish imports of seafood increased by 98% in volume and 43% in terms of value. Both import volumes and values increased every year except for 2016 when volumes and values fell by 8% and 2%, respectively, compared with 2015. In 2018, total imports of fisheries and aquaculture products to Ireland amounted to 196,000 tonnes with a value of EUR 352 million. The size of total exports in 2018 represents a 20% increase in volume and a 1% increase in value over 2017. The largest supplier is the UK, whose exports to Ireland amounted to 73,000 tonnes (+12% over 2017) with a value of EUR 227 million (-3%). This constituted 38% of the total import volumes and 68% of the total values in 2018.

The most valued species imported was salmon which was worth EUR 71 million and constituted 20% of total value, but only 5% of the volumes. Imports of salmon decreased by 6% in volume and increased by 7% in value from 2017. A large share of the salmon imports is purchased by the processing industry and refined into fillets and smoked products. In 2018, close to 60% of the volumes of salmon imported to Ireland was from the UK. This mostly comprised fresh whole salmon, totalling 6,400 tonnes and accounting for 69% of all salmon imported from the UK. Its price in 2018 was 6,50 EUR/kg, declining by 3% from 2017.

Non-food use products (other than fishmeal and fish oil) constituted 53% of total imports in terms of volume, which is an increase of 50% compared to 2017. These products values increased by 62% but constituted only 6% of the total market. Products of this nature mainly includes fish waste and algae unfit for human consumption. These raw materials were mainly imported from Norway and Iceland.

³⁸ BIM-Business-of-Seafood-2017.

Table 3. **IMPORT OF FISHERIES AND AQUACULTURE PRODUCTS TO IRELAND BY MAIN COMMERCIAL SPECIES (volume in 1000 tonnes, value in EUR million)**

Main commercial species	2013		2014		2015		2016		2017		2018	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Salmon	6	44	7	51	9	65	9	63	10	67	9	71
Other products ³⁹	12	32	14	35	12	35	10	30	11	36	10	37
Cod	3	16	4	20	4	22	5	25	8	39	5	29
Other marine fish ⁴⁰	5	22	5	24	6	25	5	22	4	20	8	26
Other non-food use ⁴¹	29	6	45	9	57	12	52	11	69	12	104	20
Shrimp, miscellaneous	2	12	2	16	2	18	2	19	2	19	2	18
Tuna, skipjack	0	0	0	0	4	22	7	21	5	21	3	16
Herring	2	5	2	11	2	11	3	12	8	13	4	15
Shrimp, warmwater	1	5	1	6	1	6	1	7	1	8	1	9
Other	39	103	33	112	33	98	28	100	45	112	49	112
Total	99	246	114	283	131	314	121	308	163	347	196	352

Source: EUMOFA.

Table 4. **IMPORT OF FISHERIES AND AQUACULTURE PRODUCTS TO IRELAND BY COUNTRY OF ORIGIN (volume in 1000 tonnes, value in EUR million)**

Supplier	2013		2014		2015		2016		2017		2018	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
United Kingdom	40	156	45	184	46	203	48	200	66	235	73	227
Denmark	3	7	7	11	10	18	5	12	14	18	11	23
Germany	3	16	3	17	2	16	3	18	3	19	3	19
France	2	15	2	14	3	16	3	18	3	16	2	17
Iceland	31	6	31	7	46	8	45	9	52	10	57	10
Belgium	0	2	0	2	0	2	0	2	0	2	1	10
Norway	7	2	11	2	11	5	5	2	16	3	40	9
Netherlands	2	12	2	14	2	11	2	11	2	9	1	9
Spain	0	2	0	2	2	5	1	5	1	6	1	4
Other	11	28	12	29	8	31	9	33	6	29	6	25
Total	99	246	114	283	131	314	121	308	163	347	196	352

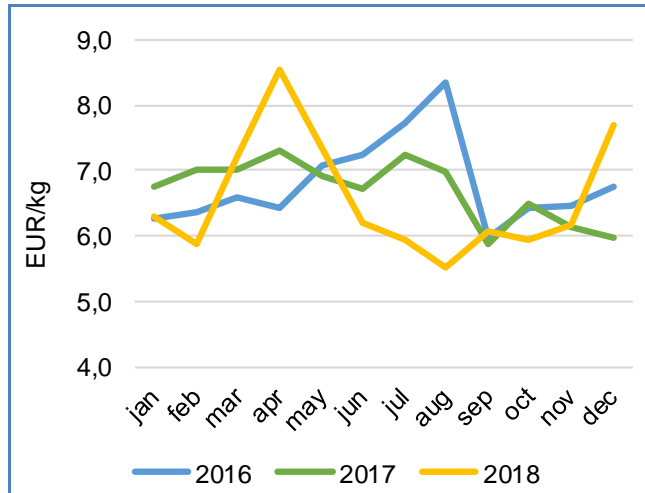
Source: EUMOFA.

³⁹ Soups, broths and other food preparations.

⁴⁰ Other fish and fish fillets, prepared, preserved, coated with batter or breadcrumbs, whether or not pre-fried in oil.

⁴¹ Mainly fish waste seaweeds and other algae unfit for human consumption.

Figure 4. IRISH IMPORT PRICE OF FRESH WHOLE SALMON



Source: EUMOFA.

4.6 Export

Ireland is a net exporter of fisheries and aquaculture products. From 2013 to 2018 Irish seafood exports increased by 7% in volume and 25% in value. Exports of the highest valued species, salmon, rose by 65% in volume and 99% in value during this period. The second largest species in terms of value, the Atlantic mackerel, increased 18% in both volume and value from 2013. Exports to the three main destination markets France, the UK and Spain, increased 23%, 8% and 38%, respectively, in terms of value during this period.

France is the main country of destination in value terms for exports, accounting for 22% of the value of all exports in 2018. Exports to France decreased by 17% in volume and 16% in value from 2017. The UK and Spain are the other top export partners both accounting for more than 10% each of total export value in 2018.

In 2018, exports amounted to 325.000 tonnes which were valued at EUR 658 million. This was a decrease in both volume (-1%) and value (-5%) compared to 2017. The top-three species in terms of value exported by Ireland were salmon, mackerel and crab. Combined, these products composed 34% of total export value in 2018, which is a 4% decrease of share of total export value from 2017. For salmon specifically, Irish exports decreased in both volume and value terms by 34% and 30%, respectively.

Table 5. EXPORT OF FISHERIES AND AQUACULTURE PRODUCTS FROM IRELAND BY DESTINATION COUNTRY (volume in 1000 tonnes, value in EUR million)

Country of destination	2013		2014		2015		2016		2017		2018	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
France	29	119	34	127	33	135	37	150	45	175	38	147
United Kingdom	45	83	45	81	47	87	50	95	50	92	55	89
Spain	13	54	16	62	17	72	18	80	18	78	18	75
Italy	5	28	4	30	5	35	6	46	7	46	8	59
China	7	13	10	18	8	19	9	25	10	28	13	46
Nigeria	52	40	57	53	66	71	26	33	46	32	44	28
Netherlands	14	19	11	14	14	16	16	17	20	26	20	23
Germany	10	24	10	24	9	24	8	25	7	25	7	20
Japan	3	5	5	6	6	7	8	11	12	16	12	16
Other	124	142	119	148	112	148	90	128	114	172	111	153
Total	303	527	312	562	317	614	269	609	327	689	325	658

Source: EUMOFA.

Table 6. **EXPORT OF FISHERIES AND AQUACULTURE PRODUCTS FROM IRELAND BY MAIN COMMERCIAL SPECIES (volume in 1000 tonnes, value in EUR million)**

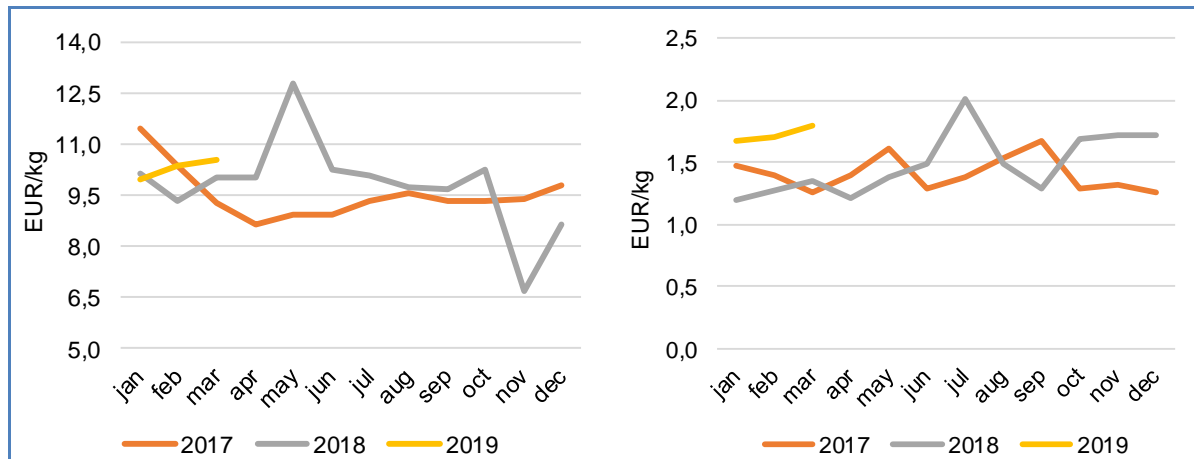
Main commercial species	2013		2014		2015		2016		2017		2018	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Salmon	5	42	6	47	9	75	8	71	12	118	8	83
Mackerel	48	70	77	111	69	90	65	87	67	93	57	82
Crab	8	34	9	36	9	39	10	43	9	47	9	61
Norway lobster	4	32	5	41	5	48	6	61	5	45	5	56
Oyster	5	27	6	26	6	26	7	34	8	38	7	42
Horse mackerel	46	54	41	45	40	50	29	32	34	35	36	40
Other non-food use ⁴²	38	16	42	17	50	21	48	23	66	40	78	37
Other molluscs and aquatic invertebrates	3	17	2	18	2	25	3	30	3	24	4	29
Fishmeal	13	17	12	15	14	20	14	21	15	19	20	28
Other	133	218	112	205	113	220	78	207	108	228	101	199
Total	303	527	312	562	317	614	269	609	327	689	325	658

Source: EUMOFA.

Salmon and mackerel are the two most valued species exported by Ireland, however, they differ strongly in terms of volume, which is reflected in their export price. For fresh salmon, the export price reached 9,75 EUR/kg in 2018, increasing by 5% from 2017. Irish salmon is produced and exported under the brand “organic salmon” which achieves a higher price than non-organic salmon. This explains the price discrepancy between salmon imported from the UK (Scotland) to Ireland and salmon exported from Ireland.

Export price of mackerel averaged at 1,41 EUR/kg in 2018, increasing by 4% over 2017. During the first three months of 2019, there was a 22% increase in the export price compared to its 2018 average.

Figure 5. **EXPORT PRICE OF FRESH SALMON (LEFT) AND MACKEREL (RIGHT) FROM IRELAND**



Source: EUMOFA.

⁴² Seaweeds and other algae fresh, chilled, frozen or dried, whether or not ground, other.

4.7 Consumption

Apparent consumption of fisheries and aquaculture products in Ireland amounted to 23 kg per capita in 2016, 5 % higher than in 2015⁴³. The main consumed species are salmon, cod, shrimp, haddock and hake⁴⁴.

From 2012 to 2018, Irish fresh seafood consumption increased by 25% in volume and 42% in terms of value. This was mainly driven by an increase in salmon and cod consumption. In 2018, Irish consumption and retail sales of fresh fish were around 42.000 tonnes valued at EUR 644 million, a 4% increase in volume and a 6% increase in value over 2017. Salmon and cod were the main species accounting for 76% of the value and 71% of the volume.

Table 7. **IRISH FRESH SEAFOOD CONSUMPTION (volume in 1000 tonnes, value in EUR million)**

Specie	2012		2013		2014		2015		2016		2017		2018	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Salmon	17	257	15	253	17	293	22	350	22	391	20	360	23	403
Cod	5	58	6	69	7	77	7	82	7	87	7	86	7	90
Shrimp, miscellaneous	2	29	2	43	2	43	2	40	2	41	3	48	2	45
Hake	1	16	2	22	3	28	3	28	3	39	4	44	4	41
Haddock	2	24	3	28	2	22	2	20	2	24	2	25	2	24
Saithe	4	45	2	20	2	21	2	24	2	22	2	24	2	22
Mackerel	2	26	3	26	3	26	3	28	3	24	2	22	2	21
Totals	34	453	33	460	36	510	40	571	42	629	41	608	42	644

Source: EUMOFA.

⁴³ The EU fish market, 2018 Edition, EUMOFA.

⁴⁴ <http://www.eumofa.eu/en/ireland>

5 Fisheries and aquaculture in Morocco

With two seaboard, on the Mediterranean and on the Atlantic, a 3.500 km long coastline (500 km on the Mediterranean coast and 3.000 on the Atlantic) and a maritime area of 1,2 million square meters, Morocco has strong fisheries assets. Fisheries play a vital role in the Kingdom's economy: they contribute more than 2% to GDP, they offer more than 200.000 direct jobs (108.000 at sea and 94.000 on land), and they represent 45% of agri-food exports and 9% of total exports. With catches exceeding 1,45 million tonnes in 2016, Morocco ranks first among fishing countries in Africa and 17th worldwide⁴⁵.

5.1 Production

Fisheries

Morocco's fishing fleet is composed of two segments:

- the coastal fleet, which has 2.522 registered vessels (54 GT⁴⁶ on average), out of which 1.790 were operational in 2017 (653 trawlers, 691 seiners, 439 longliners and 7 coral-fishing vessels),
- the deep-sea fleet, which has 454 registered vessels (339 GT on average), of which 325 were active in 2017 (237 cephalopod-trawlers, 61 shrimp freezer-trawlers, 25 pelagic trawlers and 2 tuna seiners).

The coastal fleet provided 94,6% of the total fisheries production in volume and 61% in value in 2017. In 2018, landings of Morocco's coastal fisheries reached 1,3 million tonnes for a first sale value of 7,35 billion Moroccan dirhams (MAD) or EUR 663 million. Most fishery resources are concentrated in the Central and Southern Atlantic. With landings of 26.000 tonnes in 2018 the Mediterranean contributes little to Morocco's total landings (2% of volume and 8,6% of value).

Table 1. **LANDINGS BY COMMODITY GROUP IN MOROCCO IN 2018 – COASTAL FISHERIES**

Commodity group	Thousand tonnes	Million MAD	Million EUR
Pelagic species	1.189	3.033	274
Cephalopods	38	2.665	240
White fish	64	1.328	120
Crustaceans	5	258	23
Algae	15	55	5
Shellfish	1	7	1
Total	1.311	7.346	663

Source: Office National des Pêches (ONP).

In 2018, the top-five ports are Dakhla (608.000 tonnes), Laâyoune (372.000 tonnes), Agadir (70.000 tonnes), Tan-Tan (60.000 tonnes) and Boujdour (49.000 tonnes). Small pelagics account for 91% of total landings in volume and 41% in value. Morocco is the first producer and exporter of *Sardina pilchardus* worldwide. About 50 canning companies are involved in this activity. With less than 3% of landings in volume, cephalopods represent 36% of the total value.

Aquaculture

Aquaculture remains a sector of minor importance: farmed production amounted to 537 tonnes in 2017 (+124 tonnes compared to 2012). It is currently limited to two species: oyster (farmed in the Dakhla Bay and in the Oualidia lagoon, both on the Atlantic coast) and seabass (farmed in the North, on the Mediterranean coast, close to Tetuan).

Table 2. **AQUACULTURE PRODUCTION IN MOROCCO BY SPECIES (volume in tonnes)**

Activity	2012	2013	2014	2015	2016	2017
Oyster	244	278	302	289	376	411
Seabass	157	155	167	181	134	113
Algae	0	0	0	0	0	13
Meagre	12	0	0	0	0	0
Total	413	433	468	470	510	537

Source: Agence Nationale pour le Développement de l'Aquaculture (ANDA).

⁴⁵ FAO.

⁴⁶ Gross tonnage.

Processing

Table 3. **STRUCTURE OF THE FISH PROCESSING INDUSTRY IN MOROCCO IN 2017**

Activity	Production (1000 tonnes)	Turnover Million MAD	Turnover Million EUR
Freezing	263	6.381	583
Canning	193	6.280	574
Fishmeal	164	1.751	160
Packaging – fresh	16	1.641	150
Semi-preserves	21	1.431	131
Fish oil	41	839	77
Other	6	526	48
Total	704	18.849	1.722

Source: Ministry of Agriculture and Fisheries.

In 2017, the processing industry achieved sales of MAD 18,8 billion (EUR 1,7 billion). It focuses on two major activities – freezing and canning. Freezing units are located in the south (mainly Dakhla), Agadir and Casablanca, and process mostly small pelagics and cephalopods. Canning factories focus on sardine are located in Agadir, Safi and in the south (mainly Laâyoune).

5.2 Fisheries partnership agreements

The EU

On 12 February 2019, the European Parliament agreed to a Sustainable Fisheries Partnership Agreement (SFPA) between the EU and Morocco. This agreement, valid for four years, allocates fishing opportunities to the EU in exchange for an overall financial contribution of EUR 208 million. A substantial part of this contribution will be used to promote the sustainable development of the fisheries economy in Morocco and the Western Sahara⁴⁷. The fishing opportunities established pursuant to the implementation protocol of the SFPA are allocated among EU Member states as follows:

- small-scale fishing in the north (pelagic species): 22 licences for seiners (Spain);
- small-scale fishing in the north: 35 licences for bottom longliners (Spain, Portugal);
- small-scale fishing in the south: 10 licences for pole-and-line vessels (Spain);
- demersal fishing: 11 licences for bottom longliners (Spain, Portugal) and 5 licences for trawlers (Spain);
- tuna fishing: 27 licences for pole-and-line vessels (Spain, France);
- industrial fishing for pelagic species:
 - 85.000 tonnes in the first year;
 - 90.000 tonnes in the second year;
 - 100.000 tonnes in the third and fourth year;

Each year the allocation is shared between the following Member states: the Netherlands 30,7%, Lithuania 25,9%, Latvia 14,6%, Germany 8,1%, Poland 5,7%, the UK 5,7%, Ireland 3,6%, France 3,3%, Portugal 1,9%, Spain 0,6%.

Russia

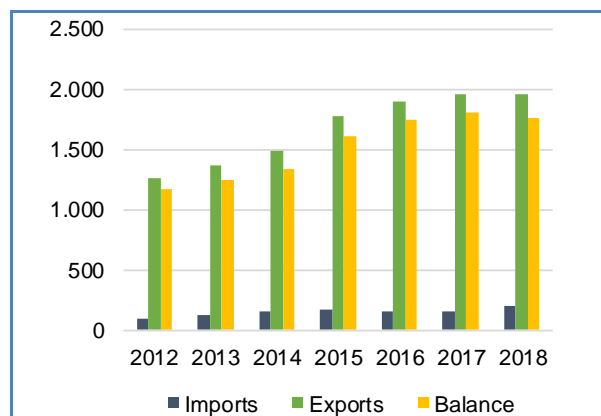
On 15 March 2016, Morocco signed a fisheries partnership agreement with Russia for a 4-year period. According to this agreement, 10 Russian freezer-trawlers are authorized to catch a total quota of 129.500 tonnes⁴⁸ of small pelagics in the South Atlantic zone up to Cap Blanc, more than 15 nautical miles off the coast. Russia's yearly financial contribution is set at about EUR 20 million. In addition, Russia pays EUR 7 million annually for scientific research trips, port taxes and wages of Moroccan seamen employed onboard Russian vessels (around 350).

⁴⁷ https://ec.europa.eu/fisheries/press/european-parliament-votes-favour-eu-morocco-fisheries-partnership_en

⁴⁸ Russia's TAC for 2019 is set at 140.000 tonnes, up 8% compared with the previous year.

5.3 Trade

Figure 1. **MOROCCAN IMPORTS AND EXPORTS OF FISHERIES AND AQUACULTURE PRODUCTS (value in million EUR)**



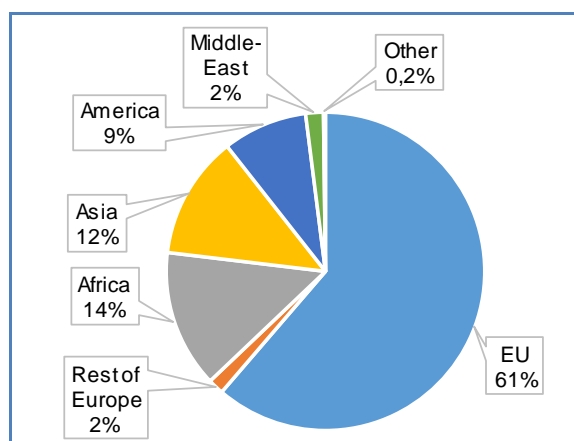
Source: EUMOFA/IHS Markit.

Both Morocco's exports and imports significantly increased in the last years, with a trade surplus rising from EUR 1,17 billion in 2012 to EUR 1,75 billion in 2018. In 2018, small pelagics (37%), cephalopods (35%) and non-food use products (10%) represented 82% of overall exports.

Main products imported are destined for the processing industry (peeling for shrimp, canning for pelagics). The EU provides 70% of Morocco's total imports in value.

The EU is Morocco's main commercial partner and absorbs 61% of Morocco's total fishery and aquaculture exports in value in 2018.

Figure 2. **MOROCCAN EXPORTS OF FISHERIES AND AQUACULTURE PRODUCTS BY DESTINATION IN 2018 (in value)**



Source: EUMOFA/IHS Markit.

EU's weight is particularly heavy for fresh fish (81% of Morocco's total exports of fresh fish in 2017 in value) and semi-preserves (80%). Africa imports mostly canned fish from Morocco, while Asia focuses on frozen products.

Table 4. **MOROCCAN EXPORTS OF FISHERIES PRODUCTS BY DESTINATION IN 2017 (value in MAD million)**

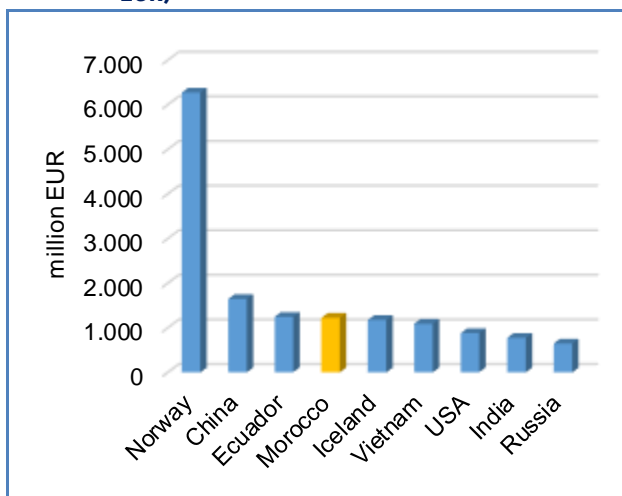
	Fresh	Frozen	Canned	Semi-preserved	Fish meal	Fish oil	Algae*	Other	Total
EU	1.305	7.896	2.327	1.141	397	266	186	130	13.647
Africa	-	659	1.986	48	28	0	4	1	2.726
Asia	297	1.397	141	54	199	34	139	11	2.272
America	1	605	475	113	12	326	54	-	1.587
Rest of Europe	11	313	121	40	835	81	0	0	1.400
Middle East	0	7	261	22	17	-	-	-	308
Other	-	8	27	14	-	6	1	0	56
Total	1.614	10.885	5.338	1.432	1.488	713	384	142	21.996

*Including agar-agar.

Source: Office des Changes du Maroc.

EU imports from Morocco

Figure 3. **EU IMPORTS BY MAIN EXTRA-EU PARTNERS IN JANUARY–NOVEMBER 2018 (value in million EUR)**



Source: EUMOFA/Eurostat.

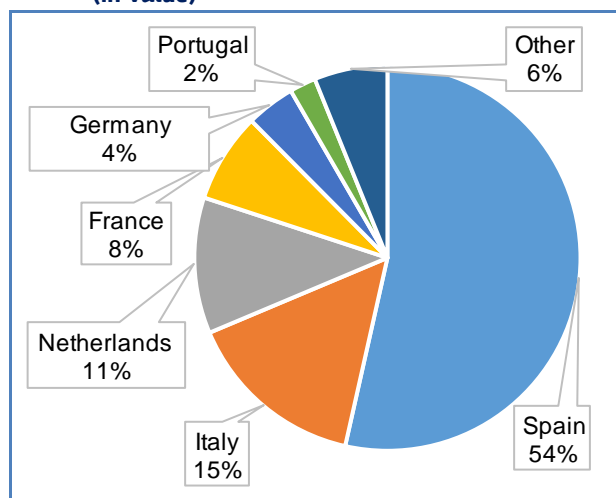
Spain is Morocco's main EU partner, accounting for more than half of total EU imports from Morocco. Italy, the Netherlands, France and Germany are the other major Member states importing from Morocco.

Morocco is EU's fourth-largest supplier. In 2018⁴⁹, the EU imported fishery and aquaculture products from Morocco for a total value of EUR 1,22 billion. Morocco supplies 5% of total extra-EU imports of the EU.

Three commodity groups represent 85% of EU imports from Morocco in value (2018): cephalopods (47%), small pelagics (23%) and crustaceans (15%).

The main commercial species imported are octopus (34%), sardine (13%), shrimps (12%), cuttlefish (8%), anchovy (8%), and squid (4%).

Figure 4. **EU IMPORTS OF FISHERIES PRODUCTS FROM MOROCCO BY MAIN IMPORTING MEMBER STATES IN JANUARY–NOVEMBER 2018 (in value)**



Source: EUMOFA/Eurostat.

EU exports to Morocco

EU exports to Morocco are growing. In 2018⁵⁰ they reached EUR 144 million, and the main product exported was shrimp *Crangon* (62% of total exports). Whole shrimps are shipped to Morocco to be peeled in plants around Tangier and then reexported to the EU (to the Netherlands) for packing and further distribution in the EU. Other significant products exported by the EU to Morocco are anchovy and tuna (both exported mostly by Spain).

⁴⁹ Data for January–November 2018. Data for December 2018 was not available yet during the preparation of this case study.

⁵⁰ Data for January–November 2018. Data for December 2018 was not available yet during the preparation of this case study.

5.4 Consumption

Morocco's yearly average consumption of fishery and aquaculture products rose from 12 kg per capita in the late 2000s to 14 kg per capita in 2017 (source: Ministry of Agriculture) but is still significantly lower than the world average.

The low level of Moroccan consumption can be explained by:

- food consumption habits, especially in the hinterland where the population prefers white and red meat to fish;
- a national fish offer, insufficient and irregular in both quantity and quality;
- high prices, especially for demersal fish.

5.5 Morocco and the future

Halieutis strategy

Since 2009, Morocco has been developing a strategy for the development and the competitiveness of the fisheries sector, called the Halieutis strategy.

Its main objectives⁵¹ were:

- to reach an income of MAD 21,9 billion (EUR 2 billion) in 2020 (baseline 2007: MAD 8,3 million; output 2017: MAD 12,1 billion);
- to develop exports so as to reach USD 3,1 billion in 2020 (baseline 2007: USD 1,2 billion; output 2017: USD 2,3 billion);
- to develop fishing so as to reach catches of 1.660.000 tonnes in 2020 (baseline 2007: 1.035.000 tonnes; output 2017: 1.368.000 tonnes);
- to develop aquaculture to reach a production of 200.000 tonnes in 2020 (baseline 2007: <500 tonnes; output 2017: 537 tonnes);
- to increase the local yearly consumption from 12 kg per capita in 2007 to 16 kg in 2020.

As shown above, some of the interim results achieved at the end of 2017 do not quite reach the objectives, especially for aquaculture, whose development has been undermined by important weaknesses such as low level of involvement of financial actors (bank, insurance), low uptake of cutting-edge farming techniques and difficult access to land.

Blue economy strategy

Until very recently the development of the fisheries and aquaculture economy had been envisaged on a sectoral basis, without any intersectoral strategy.

This is now changing. The strategy of the fisheries and aquaculture sector is now connected to the framework of the "blue" sector. In its session of December 2018, Morocco's Economic, Social and Environmental Council (ECOSOC) pointed out a need to coordinate with the various sectors of the blue economy and adopted the report "The blue economy: pillar of a new model of development of Morocco". It called for a national sustainable and inclusive blue economy strategy, tailored to regional needs and deployed around traditional economic sectors such as fisheries, tourism and port activities, while developing new sectors with high growth potential.

This evolution can be linked to the actions taken forward by the European Commission in the Mediterranean in the last years and especially the IMP-MED project (2010-2014) which has provided opportunities to Morocco to elaborate a cross-sectoral vision and engagement.

This new strategy is in-line with the EU approach towards blue economy, which is increasingly considered as an important source of development of which fisheries and aquaculture are a key component.

⁵¹ Ministry of Agriculture and Fisheries.

6 Fisheries and aquaculture in Russia

6.1 Introduction

Russia is located in eastern Europe and northern Asia. It is the largest country in the world by area and has the 4th largest coastline in the world, the Baltic sea to the west, the Arctic Ocean to the north and the Pacific to the east. This also includes the coastline to the inland Black Sea, Caspian Sea and the Sea of Azov.

Russia is a large fishing nation with a total catch of 4,9 million tonnes in 2017. The country's aquaculture production was 187.000 tonnes in 2017, which was an all-time high⁵².

Russian commercial fisheries target over 170 species of finfish and more than 100 invertebrate species⁵³. Over half of the total wild catch in Russia is harvested in the Far East. This region has a low population and is known for its productive marine and freshwater ecosystems⁵⁴.

There are roughly 700 fishing companies operating in Russia⁵⁵. It is estimated that nearly 314.000 people worked in fisheries and aquaculture in 2017. About 280.000 of those are estimated to be employed in fisheries, both inland and marine⁵⁶.

In 2014, Russia imposed an import ban on perishable foods such as fish, fruits and vegetables from the EU, the USA and Canada. This was a response to economic sanctions against Russia over the Ukrainian conflict⁵⁷.

The Russian population is currently estimated to be 145 million people. The population has not grown significantly in recent decades and has been at about the same level since the early 1990s⁵⁸.

Table 1. **CATCHES IN RUSSIA (volume in 1000 tonnes)**

Species	2000	2005	2010	2015	2016	2017
Fish	3.778	3.060	3.919	4.286	4.536	4.633
Crustaceans	96	45	61	84	98	114
Molluscs	98	88	79	73	111	106
Other	56	14	17	20	29	25
Total	4.027	3.208	4.076	4.464	4.774	4.879

Source: FAO.

6.2 Fisheries

The most important species in Russian fisheries include Alaska pollock, Pacific herring and Atlantic cod. Alaska pollock makes up the largest share of the landings and accounted for 36% of the total catch in Russia in 2017. From 2015 to 2017 the total catch volumes have increased by 9%⁵⁹.

Fisheries in the Northwest Pacific (East of Russia) accounted for 64% of the total catch volumes in 2017, with Alaska pollock, Pacific herring and pink salmon as the most important species by volume. The Northeast Atlantic (west Russia) accounted for 23% of total catch, with Atlantic cod, blue whiting and Atlantic mackerel as the most important species.

Russia had a catch of approximately 90.000 tonnes from the Mediterranean and Black Sea in 2017. In these waters the catch is dominated by European anchovy, European sprat, and Black and Caspian Sea sprat.

According to the Russian Ministry of Agriculture, catches in Russia exceeded 5 million tonnes in 2018, influenced by record high catches of Pacific salmon (676.000 tonnes)⁶⁰. The overall value of the fisheries industry grew by 10% from 2017 to 2018 and exceeded RUB 341 billion (EUR 4,6 billion).

In the first 10 months of 2019, Russian catches amounted to 4,25 million tonnes which is 90.000 tonnes lower than catches for the same period in 2018. The largest increase is seen for Alaska pollock (+84.000 tonnes) and herring (+44.000 tonnes) while catches of Pacific salmon (mainly pink salmon) dropped notably (-177.000 tonnes).

⁵² FAO.

⁵³ <https://www.oceanoutcomes.org/areas-of-focus/russian-fisheries-seafood/>

⁵⁴ See footnote 53.

⁵⁵ See footnote 53.

⁵⁶ <http://www.fao.org/fishery/facp/RUS/en>

⁵⁷ <https://www.intrafish.com/marketplace/russia-extends-seafood-import-ban-on-eu-until-2019/2-1-379620>

⁵⁸ <https://www.worldometers.info/world-population/russia-population/>

⁵⁹ FAO.

⁶⁰ Minister of Agriculture of Russia, Dmitry Patrushev.

Climate change is causing a reduction in ice in the Arctic Ocean, which leads to new areas being open to fisheries and transportation⁶¹. Estimates on when the Arctic ocean may be ice-free varies between 2030 and 2040⁶². While the Russian government believes an ice-free Arctic ocean potentially gives new fishing opportunities, some scientists are concerned it could lead to Arctic species migrating to other areas, leaving the Arctic with less stock than today⁶³.

Table 2. **CATCHES IN RUSSIA, MAIN SPECIES (volume in 1000 tonnes)**

Species	2000	2005	2010	2015	2016	2017
Alaska pollock	1.215	962	1.585	1.624	1.738	1.735
Pacific herring	361	205	222	387	404	426
Atlantic cod	171	204	273	386	399	401
Pink salmon	157	202	200	163	266	205
Blue whiting	242	332	128	186	174	188
Atlantic mackerel	51	41	59	155	151	169
Atlantic herring	174	140	209	67	74	113
Haddock	25	53	112	92	116	107
Pacific cod	68	56	81	79	88	102
Other	1.563	1.013	1.208	1.326	1.365	1.431
Total	4.027	3.208	4.076	4.464	4.774	4.879

Source: FAO.

6.3 Aquaculture

In 2017, Russia's aquaculture production reached 187.000 tonnes, of which 163.000 tonnes was in freshwater (according to FAO data). When the production of smolts and fries are included, this brings the 2017 total to 219.700 tonnes (according to the Russian Federal Agency for Fisheries). Since 2000, the aquaculture production in Russia has doubled in volume and there is larger variety in the species cultivated. The most common species produced are carp and silver carp, which together account for 55% of the total production.

In 2018, the volume of aquaculture production amounted to 239.000 tonnes. 145.000 tonnes of carp (common carp, silver carp and grass carp) and 67.000 tonnes of salmonids (rainbow trout and Atlantic salmon) contribute to this figure. The majority of the rainbow trout produced in Russia is farmed in the Karelia region (27.000 tonnes)⁶⁴. The development strategy for the aquaculture industry aims to increase aquaculture production three-fold, seeking to reach 600.000 tonnes by 2030⁶⁵. It is expected that production of salmonids will reach 185.000 tonnes in the same period.

According to preliminary data, in the first three quarters of 2019, aquaculture production was 203.000 tonnes⁶⁶, of which production of marketable fish amounted to 175.000 tonnes. The main species produced in the first three quarters were carp (75.000 tonnes), salmonids (60.000 tonnes), scallops (11.000 tonnes), oysters (2.600 tonnes) and sturgeons (2.500 tonnes).

The increase in aquaculture production is largely related to government support measures for the industry, investors and new industry players that have attained permission to use new areas for production (through auctions)⁶⁷.

⁶¹ <https://www.seafoodsource.com/features/can-russias-arctic-deliver-on-big-fishing-promises>

⁶² See footnote 60.

⁶³ See footnote 62.

⁶⁴ Federal Agency for Fisheries of Russia.

⁶⁵ <http://www.fish.gov.ru/press-tsentr/novosti/28792-proizvodstvo-produktsii-akvakultury-za-9-mesyatsev-vyroslo-pochti-na-36-do-203-tys-tonn>

⁶⁶ See footnote 65.

⁶⁷ See footnote 65.

Table 3. **AQUACULTURE PRODUCTION IN RUSSIA (volume in 1000 tonnes)**

Species	2000	2005	2010	2015	2016	2017
Common carp	34	54	57	58	62	65
Silver carp	24	29	12	23	39	40
Rainbow trout	4	9	19	24	29	34
Atlantic salmon	0	0	5	11	13	13
Grass carp	0	4	13	18	6	8
Cyprinids	5	10	7	5	6	6
Yesso scallop	0	0	1	2	4	5
Sturgeons	2	2	2	4	3	3
Other	21	6	6	9	13	13
Total	90	115	121	154	174	187

Source: FAO.

6.4 Processing

Large volumes of fish caught are exported to other countries for processing and then re-imported to Russia⁶⁸. Historically, frozen gutted and whole produce has accounted for about 70% of production⁶⁹. Russia now aims to increase the share of products undergoing processing within the country to add value. To achieve this, a change in the structure of domestic production is needed.

Many of the processing plants are located far from the coast, and a lack of adequate infrastructure makes the exploitation of production capacity difficult⁷⁰. Before the embargo on imports, Russian processing enterprises mainly focused on imported raw materials.

The government has introduced financial support for reaching investment goals, especially for constructing new high-tech fishing vessels and processing plants in coastal regions. Due to vessel and processing plant developments, the share of high value products produced in Russia is expected to increase from 30% (today) to 54% by 2025, and 65% by 2030⁷¹.

6.5 Trade

Russian imports of food and aquaculture products (FAP)

In August 2014, the Russian President signed a decree that prohibited the import of certain agricultural products, raw materials and foodstuffs originating from certain countries – among them, the European Union – for one year. This was a response to economic sanctions against Russia over the Ukrainian conflict⁷². Since then, the embargo has been prolonged several times and is set to run until 31st December 2019.

Before the sanctions, the ratio of domestic vs imported fish products in stores in Russia was about 50:50. Now, the share of Russian seafood has increased to 80-85%⁷³. Russia imported 608.000 tonnes of seafood in 2018 with a value of nearly EUR 1,9 billion. Major import products are salmon (from Chile and the Faroe Islands), herring (from the Faroe Islands), mackerel (from the Faroe Islands, Greenland and China), and shrimp (from India, China and Argentina).

In 2013, before the import embargo, Russia imported about 1,07 million tonnes of seafood, of which 56% originated from countries that are now banned. The largest trade partners before the ban, Norway and Iceland, together accounted for 36% of total imports in 2013. To compensate for the decrease in imports after the embargo, Russia has increased its domestic production as well as finding new trade partners. The Faroe Islands and Greenland have especially become more important as trade partners for Russia after the ban. Imports from China and Chile are at the same level as before the ban.

⁶⁸ <http://ii.infofish.org/index.php/industrial-profile-3-2019>

⁶⁹ See footnote 68.

⁷⁰ <http://ii.infofish.org/index.php/industrial-profile-3-2019>

⁷¹ See footnote 70.

⁷² <https://www.intrafish.com/marketplace/russia-extends-seafood-import-ban-on-eu-until-2019/2-1-379620>

⁷³ See footnote 72.

Table 4. **IMPORT INTO RUSSIA, BY SPECIES (volume in 1000 tonnes, value in million EUR)**

Species	2013		2016		2017		2018	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Salmon	156	699	66	391	63	427	82	521
Herring	134	149	52	86	76	111	77	88
Mackerel	103	155	77	103	96	131	61	84
Shrimp, miscellaneous	34	185	25	159	29	179	35	202
Miscellaneous small pelagics	108	70	16	17	23	25	25	26
Other	532	1 211	295	751	338	878	328	961
Total	1.066	2.469	532	1.506	624	1.751	608	1.882

Source: EUMOFA.

Table 5. **IMPORT INTO RUSSIA, BY COUNTRY (volume in 1000 tonnes, value in million EUR)**

Country	2013		2016		2017		2018	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Faroe Islands	66	83	111	254	159	327	140	284
China	96	253	102	258	110	276	98	316
Chile	62	235	60	309	54	309	79	418
Belarus	32	118	62	201	75	257	77	251
Greenland	0	1	31	68	37	84	27	60
Other	809	1.778	167	415	188	498	187	551
Total	1.066	2.469	532	1.506	624	1.751	608	1.882

Source: EUMOFA.

Russian exports of FAP

Russia exported nearly 1,9 million tonnes in 2018 with a value of EUR 3,8 billion. The volume is mainly exported to China and South Korea. Exports to China mostly consist of Alaska pollock, herring and other salmonids. To South Korea, the exports consist mainly of Alaska pollock, crab and cod. The Russian exports to the Netherlands are mainly cod and haddock.

Table 6. **EXPORT FROM RUSSIA, BY SPECIES (volume in 1000 tonnes, value in million EUR)**

Species	2013		2016		2017		2018	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Alaska pollock	822	785	839	830	856	740	783	750
Herring	259	153	102	69	203	111	228	111
Salmon	117	252	140	343	87	240	204	502
Cod	107	239	129	369	175	541	151	487
Crab	28	214	52	530	64	737	70	931
Other	250	605	327	719	344	833	431	1 003
Total	1.583	2.248	1.590	2.860	1.729	3.203	1.868	3.784

Source: EUMOFA.

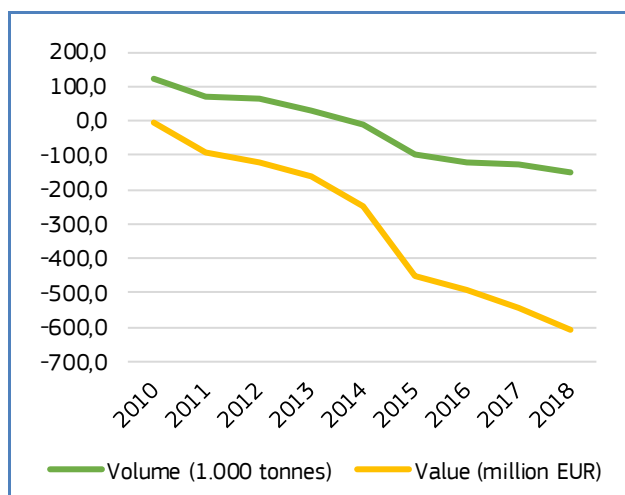
Table 7. **EXPORT FROM RUSSIA, BY COUNTRY (volume in 1.000 tonnes, value in million EUR)**

Country	2013		2016		2017		2018	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value
China	842	799	859	980	959	998	1.056	1.311
South Korea	507	868	428	947	445	1.090	450	1.195
Netherlands	71	210	92	393	133	598	115	592
Japan	48	152	58	250	51	222	59	306
Belarus	37	47	42	55	43	63	41	70
Other	79	172	111	236	98	233	146	310
Total	1.583	2.248	1.590	2.860	1.729	3.203	1.868	3.784

Source: EUMOFA.

Trade balance between the EU and Russia

Figure 1. **BALANCE OF EU TRADE WITH RUSSIA**



Source: EUMOFA.

The Russian import embargo imposed in 2014 caused a strong imbalance in trade between the EU and Russia. The EU trade deficit with Russia rose sharply both in volume and value terms – with value decreasing the most due to embargo on high-value products, such as farmed Atlantic salmon. The EU trade deficit with Russia has continued to increase over the last three years.

EU exports to Russia

After the import embargo in 2014, the EU export volumes to Russia have fluctuated between 34.000 tonnes and 44.000 tonnes, a drop by more than 100.000 tonnes compared with the pre-embargo period. The volumes reportedly being exported from the EU Member States to Russia are either products originating from countries exempted from the import embargo or specific products that are exempted. Greenland is exempted from the Russian import embargo since it is a part of Denmark, but not the EU. It is likely that most of the EU exports to Russia are products originating from Greenland.

The main products recorded as EU exports to Russia in 2018 were mackerel, shrimp and miscellaneous small pelagics. Exports of important products from the EU before 2014 (like sprat, blue whiting, farmed Atlantic salmon and trout) have virtually stopped. The volumes previously exported to Russia are now mainly going to intra-EU markets.

Table 8. **EU EXPORTS TO RUSSIA (volume in 1000 tonnes, value in million EUR)**

Species	2013		2016		2017		2018	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Mackerel	22	35	7	8	16	23	9	13
Shrimp, coldwater	6	21	7	34	9	43	8	32
Miscellaneous small pelagics	31	28	2	2	2	2	3	3
Fishmeal	6	9	1	2	1	1	1	2
Fish oil	0	2	1	4	1	3	1	4
Redfish	0	0	1	2	1	3	1	2
Herring	8	5	5	7	6	7	0	0
Anchovy	0	1	0	1	0	1	0	2
Trout	4	16	0	1	0	1	0	1
Other	83	110	9	21	8	22	12	23
Total	160	228	34	83	44	107	35	83

Source: EUMOFA.

EU imports from Russia

The EU imported 183.000 tonnes of fish and seafood from Russia in 2018. Cod, Alaska pollock and haddock accounted for 88% of total imports and 86% of total value. With very few exceptions, imports from Russia consisted of frozen products.

Most of the fisheries and aquaculture products imported by the EU from Russia enters the EU in the biggest European ports, in the Netherlands and Germany. These countries are the first points of entry, but the products can then be processed or consumed in other Member States.

Table 9. **EU IMPORTS FROM RUSSIA (volume in 1000 tonnes, value in million EUR)**

Species	2013		2016		2017		2018	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Cod	80	234	100	375	111	445	101	434
Alaska pollock	33	71	30	71	34	73	49	108
Haddock	9	34	12	48	13	47	12	52
Other freshwater fish	3	21	6	40	6	39	8	47
Herring	1	0	0	0	2	1	7	4
Salmon	2	13	0	1	2	15	1	8
Plaice, European	0	0	0	0	0	0	1	3
Redfish	0	1	0	1	0	1	1	1
Crab	0	3	0	13	0	13	0	13
Other	3	10	4	25	3	16	3	18
Total	132	387	153	572	173	650	183	689

Source: EUMOFA.

6.6 Consumption

In 2014, Russia's per capita fish consumption reached 22,7 kg, but, since then, consumption has been in gradual decline⁷⁴. The decline is linked to sharp price increases, following changes in trade flows after the import ban, which have made fish and other seafood unaffordable for many people⁷⁵.

The Far Eastern part of Russia has the highest per capita consumption of seafood, as, historically, fish plays a major role in the local diet. In some areas in this region, the consumption is up to 60 kg per capita, while others it is around 34 kg. In Moscow, the annual fish consumption per capita reaches 30 kg, while in Saint-Petersburg it is approximately 18 kg⁷⁶.

Russians' interest in higher-end products has reduced since the embargo. The consumption of Atlantic salmon, for example, has decreased immensely. Today, the most popular fish among Russians is herring, one of the cheapest seafood products available with nearly 400.000 tonnes consumed in 2018. Following herring, the most popular seafood species are: cod, pollock, pink salmon and chum salmon⁷⁷. The most popular product category is frozen fish, which accounts for 62% of the total fish production. It is followed by fresh or chilled fish, canned fish and preserved products⁷⁸.

⁷⁴ Fishery sector overview 2017- Flanders investment and market study.

⁷⁵ <https://www.seafoodsource.com/features/high-prices-turning-russians-off-seafood>

⁷⁶ See footnote 74.

⁷⁷ See footnote 75.

⁷⁸ See footnote 74.

7 Fisheries and aquaculture in the United States

The United States of America has a long coastline with the Pacific Ocean to the west, the Atlantic Ocean to the east and the Gulf of Mexico to the south. With Alaska, the northernmost state, it also accesses the Bering Sea and Arctic Sea.

The population today is approximately 327 million, an increase of 45 million since 2000⁷⁹. This makes the United States the third most populous country after China and India. The US population is also smaller than for the European Union, which have 508 million inhabitants⁸⁰.

The US is one of the largest fisheries nations with a total catch of 5 million tonnes and aquaculture production at 440.000 tonnes in 2017. In 2016, the seafood industry supported 1,7 million jobs, and contributed USD 212 billion in sales (EUR 190 billion)⁸¹. The most important state for fisheries in the US is Alaska, producing more than half the fish caught in water off the US coast. Other important states are Massachusetts on the east coast, Louisiana in the south and Washington in the west. The US exclusive economic zone (EEZ) is the largest in the world, including eight marine ecosystems which give access to a vast variety of marine species. The EEZ includes waters off US territories such as Puerto Rico in the Caribbean, and Guam in the Pacific.

Recreational fisheries also play a large role in the US economy. According to the National Oceanic Atmospheric Administration (NOAA), over 200 million marine recreational fishing trips were made in 2017, with a catch of over 1 billion fish, about 64% of them released live. The estimated total weight of landed catch (397 million individuals) was 203.000 tonnes. The majority of recreational fishing trips were taken on the Atlantic coast.

The US is the world's 4th largest exporter and the largest importer of seafood by value in 2016. While exports have remained relatively stable, seafood imports have tripled in the last 20 years to reach a total value of USD 20 billion (EUR 18 billion) in 2016⁸². NOAA estimates that the United States imports more than 80% of the seafood consumed in the country⁸³. A growing portion of these imports is seafood caught by American fishermen, which is exported for processing and then reimported to the US⁸⁴.

7.1 Fisheries

In 2017, US fishermen landed 4,5 million tonnes of fish and shellfish, while 2,7 million tonnes were imported into the US. The US fisheries harvest continued a positive trend in 2017, with a 3,6 % increase in volume and a 2,1% increase in value from 2016. The landed value reached USD 5,4 billion (EUR 4,8 billion) in 2017⁸⁵. From 2000 to 2017, catches fluctuated between approximately 4,2 million and 5,1 million tonnes.

Alaska pollock is the most important species with a catch over 1,5 million tonnes in 2016 and 2017.

Table 1. **CATCHES IN THE UNITED STATES (volume in 1.000 tonnes)**

Group	2000	2005	2010	2015	2016	2017
Fish	3.601	3.883	3.246	4.131	4.017	4.153
Molluscs	746	656	694	506	505	542
Crustaceans	346	299	341	373	351	318
Inland-waters	33	23	23	20	24	17
Other	64	81	13	14	13	11
Total	4.789	4.942	4.317	5.044	4.909	5.040

Source: FAO Fishstat

⁷⁹ U.S. census bureau, population division.

⁸⁰ https://europa.eu/european-union/about-eu/figures/living_en

⁸¹ <https://www.fisheries.noaa.gov/content/fisheries-economics-united-states-2016>

⁸² <http://www.fao.org/in-action/globefish/countries/countries/usa/usa-trade/en/>

⁸³ <https://www.fishwatch.gov/sustainable-seafood/the-global-picture>

⁸⁴ <https://www.fishwatch.gov/sustainable-seafood/the-global-picture>

⁸⁵ <https://www.noaa.gov/media-release/american-seafood-industry-steadily-increases-its-footprint>

Table 2. **MAIN SPECIES CAUGHT IN THE UNITED STATES (volume in 1.000 tonnes)**

Specie	2000	2005	2010	2015	2016	2017
Alaska pollock	1.182	1.547	883	1.480	1.522	1.537
Gulf menhaden	591	370	439	539	619	461
North Pacific hake	205	258	161	151	253	351
Pacific cod	241	249	245	317	321	298
Pink salmon	94	224	169	276	59	225
American sea scallop	113	214	215	135	153	194
Atlantic menhaden	207	194	229	201	178	180
Skipjack tuna	97	43	192	226	171	160
Sockeye salmon	94	120	115	132	130	132
Yellowfin sole	70	85	113	123	131	129
Other	1.892	1.636	1.556	1.464	1.371	1.374
Total	4.789	4.942	4.317	5.044	4.909	5.040

Source: FAO Fishstat.

7.2 Aquaculture

The US aquaculture industry produced about USD 1,5 billion (EUR 1,35 billion) of seafood in 2016, around 21% of the value of total seafood production (fisheries and aquaculture). In 2017, aquaculture production in the country amounted to 440.000 tonnes, decreasing by 5.000 tonnes compared to 2016. The FAO reports that the US ranks 16th in the world in terms of aquaculture production in 2016⁸⁶.

Channel catfish is the main cultured species, both in terms of volume and value. Most of the catfish production occurs in the states of Mississippi, Alabama, and Arkansas. The species is raised in earthen ponds filled with well water and fed a floating, grain-based diet⁸⁷. Since the beginning of the century, US catfish producers have faced increased competition from imported catfish/pangasius from Vietnam. Since 2003, the US has imposed several measures limiting imports of low priced pangasius to the US market⁸⁸.

Shellfish are also important. Combined, production of American cupped oyster, pacific cupped oyster and Northern quahog (a species of clam) accounted for 37% of US aquaculture production in 2017 in volume and 21% in value.

The production of Atlantic salmon decreased in recent years, reaching 14.685 tonnes in 2017. To meet domestic demand, the US imports large volumes of salmon from producing countries such as Canada, Chile, Norway and the UK. In recent years, an increasing negative focus on traditional in-sea aquaculture production of salmon has been observed. This has led to the development of new technology for land-based salmon aquaculture and several facilities are either under construction or being planned.

The farmed species with the highest value per kg are oysters, clams and salmon⁸⁹.

⁸⁶ FAO Fishstat, Global aquaculture production.

⁸⁷ <https://articles.extension.org/pages/58766/catfish-farming>

⁸⁸ <https://www.everycrsreport.com/reports/R44177.html#ifn2>

⁸⁹ <https://www.noaa.gov/media-release/american-seafood-industry-steadily-increases-its-footprint>

Table 3. **AQUACULTURE PRODUCTION IN THE US (volume in tonnes, value in EUR)**

Specie	2015		2016		2017	
	Volume	Value	Volume	Value	Volume	Value
Channel catfish	143.992	347.021	145.230	363.075	149.881	355.218
American cupped oyster	93.697	93.697	113.335	126.935	112.408	124.773
Red swamp crawfish	63.690	199.350	67.592	196.693	63.626	189.605
Pacific cupped oyster	29.116	46.294	25.296	56.410	25.845	53.499
Northern quahog(Hard clam)	28.403	63.339	24.776	81.265	23.339	78.186
Rainbow trout	20.799	76.748	21.977	79.557	19.845	83.151
Atlantic salmon	18.719	76.186	16.185	67.653	14.685	61.383
Tilapia	8.618	42.745	8.618	42.745	8.618	42.745
Other	18.968	204.298	21.670	228.684	21.423	223.920
Total	426.002	1.149.678	444.679	1.243.018	439.670	1.212.480

Source: FAO Fishstat

7.3 Processing

Primary processors generally convert whole fish into fillets, steaks or loins. Shellfish are processed by being cooked, or by removing their edible meat from the shell. The products are then packed and distributed as fresh refrigerated products, as frozen products, or destined to canning.

Secondary processors convert fresh or frozen fish and shellfish products and other ingredients into a final product to be sold in retail stores and restaurants. Examples of value-added finished seafood products include smoked seafood, sushi, salads and sandwiches.

The National Marine Fisheries Service estimates the value of the 2017 domestic production of edible and industrial processed fisheries products to be USD 12 billion (EUR 10,7 billion), a 10,8% increase from 2016⁹⁰. Most of this production data refers to edible products (USD 11 billion or EUR 9,8 billion) while the value of industrial products processed from domestic catch and imported products was USD 903 million (EUR 805 million). Production of raw (uncooked) fish fillets and steaks, including blocks, is mainly from Alaska pollock, salmon, cod, hake, flounders, and haddock⁹¹.

Alaska and Washington are the largest states for processing of seafood, including 145 and 85 processing plants, respectively, in 2017. Other important seafood processing states are Louisiana (63 plants), Texas (51 plants) and Massachusetts (50 plants)⁹².

Of the total US catch, 79% is fresh or frozen food for human consumption, 14% goes to fishmeal and oil, 3% is canned human food, 3% is fresh/frozen animal food and 1% is cured human food⁹³.

In terms of value, the top processed species are Alaska pollock, shrimp, sockeye salmon, tuna, and cod. Frozen edible products stand for 62% of the total value of seafood products, fresh products for 18%, canned products for 10%, cured products for 2%, and industrial products for 8%.

7.4 Import – Export

It is estimated that more than 80% of seafood consumption in the US relies on imports. A large portion of the import is seafood caught by US fishermen which is exported for processing and then reimported back to the US⁹⁴.

Exports from the US

In 2018, the US exported fisheries and aquaculture products to 161 different countries, and 22 countries each imported more than 10.000 tonnes of seafood from the US.

Exports totalled 1.576 thousand tonnes in 2018. China was the largest destination, followed by the EU. The US exported 386.000 tonnes of fisheries and aquaculture products to China in 2018, a decrease from 473.000 tonnes exported in 2017. The bilateral

⁹⁰ Fisheries of the united states 2017, infographics - <https://www.fisheries.noaa.gov/resource/document/fisheries-united-states-2017-infographics>

⁹¹ <https://www.seafoodhealthfacts.org/seafood-choices/overview-seafood-industry>

⁹² Fisheries of the United states 2017 - <https://www.fisheries.noaa.gov/resource/document/fisheries-united-states-2017-report>

⁹³ <https://www.fisheries.noaa.gov/resource/document/fisheries-united-states-2017-report>

⁹⁴ <https://www.fishwatch.gov/sustainable-seafood/the-global-picture>

trade tension between the United States and China is believed to be a key factor causing decrease in seafood imports to China from the United States⁹⁵.

In terms of value, Canada is the most important destination for US exports, with a value just above EUR 1 billion in 2018, as it imports large volumes of high-valued species like salmon and lobster. By comparison, the export value to China was EUR 975 million in 2018 while that to the EU was EUR 370 million.

Table 4. **EXPORT OF FISHERIES AND AQUACULTURE PRODUCTS FROM THE US (volume in 1.000 tonnes)**

Country	2014	2015	2016	2017	2018
China	374	337	294	473	386
Japan	195	207	170	229	220
Canada	89	83	94	209	209
Korea	112	141	153	171	173
Netherlands	42	40	47	93	89
Germany	107	96	88	57	66
France	24	27	28	37	35
Denmark	4	5	4	33	32
Other	228	179	166	401	367
Total	1.176	1.115	1.043	1.703	1.576

Source: EUMOFA based on GTA.

Table 5. **MAIN COMMERCIAL SPECIES EXPORTED BY THE US (volume in 1.000 tonnes)**

Species	2014	2015	2016	2017	2018
Salmon	168	214	159	250	175
Alaska pollock	213	186	187	194	207
Hake	63	45	37	93	81
Cod	104	109	104	93	73
Lobster	-	-	-	48	52
Caviar, livers and roes	42	43	28	43	41
Herring	60	41	25	31	25
Crab	-	-	-	21	21
Other	527	477	502	930	901
Total	1.176	1.115	1.043	1.703	1.576

Source: EUMOFA.

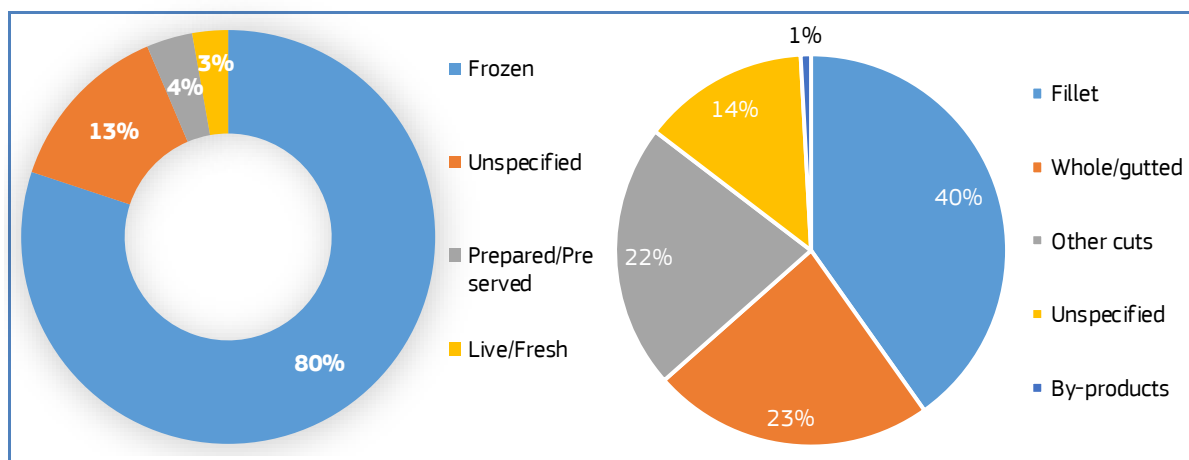
Exports from the US to the EU

In 2018, the US exported 308.000 tonnes of fisheries and aquaculture products to the EU. Approximately 89.000 tonnes entered the EU in the Netherlands, 65.000 tonnes in Germany and 35.000 tonnes in France. The main products exported to the EU are Alaska pollock (111.000 tonnes), salmon (37.000 tonnes) and hake (25.800 tonnes). Fish oil is another main product exported to the EU, amounting to 29.500 tonnes in 2017 and 26.200 tonnes in 2018, more than 90% of the total destined to Denmark.

In 2018, 90% of Alaska pollock originating from the US entered the EU market in the Netherlands and Germany. In terms of preservation states, 80% of the total consist of frozen products. In terms of presentation states, 40% of the total consist of fillets, while 23% are whole/gutted products.

⁹⁵ Record high seafood imports in 2018 - <https://www.fas.usda.gov/data/china-record-high-seafood-imports-2018>

Figure 1. **EXPORT OF FISHERIES AND AQUACULTURE PRODUCTS FROM THE US TO THE EU BY PRESERVATION (LEFT) AND PRESENTATION (RIGHT) STATES (volume in tonnes)**



Source: EUMOFA based on GTA.

US imports from the EU

In 2018, the EU exported 96.000 tonnes of seafood to the US, for a value of EUR 635 million. Spain is the main US supplier, as it accounts for 24% of the volume and 27% of the value exported to the US from the EU. The UK's share was 18% in volume and 21% in value. While farmed Atlantic salmon is the main species imported in the US from the UK, Spain mainly provides the US with octopus, fishmeal and other crustaceans. From Poland, the US mainly imports miscellaneous small pelagic species. From 2016 to 2018, US imports from the EU have increased by 30% in volume and by 27% in value. In particular, those from Spain have risen by 8.000 tonnes and EUR 72 million.

Table 6. **US IMPORTS FROM THE EU BY SPECIES (volume in 1.000 tonnes, value in million EUR)**

Species	2016		2017		2018	
	Volume	Value	Volume	Value	Volume	Value
Salmon	19	221	26	284	25	264
Miscellaneous small pelagics	10	33	12	37	10	42
Fishmeal	5	9	5	8	10	15
Octopus	8	55	9	78	9	101
Seabass, other	4	23	4	24	4	22
Other crustaceans*	2	8	2	8	3	14
Herring	2	8	3	9	3	9
Other	23	145	27	152	32	167
Total	74	502	87	601	96	635

*Main species are freshwater crayfish, shrimps and crabs.

Source: EUMOFA based on data from US Bureau of the Census.

Table 7. **US IMPORTS FROM THE EU BY COUNTRY OF ORIGIN (volume in 1.000 tonnes, value in million EUR)**

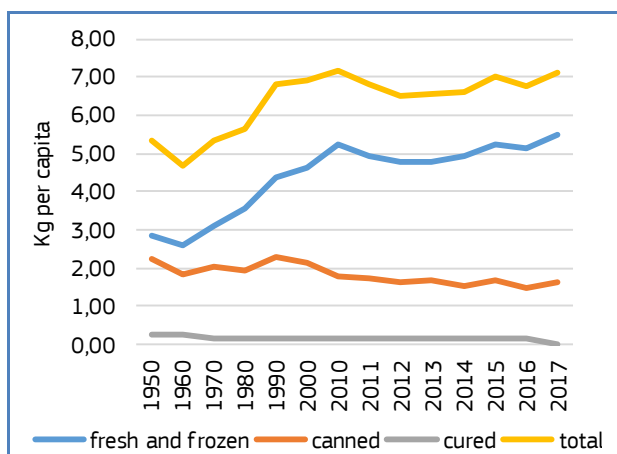
Country	2016		2017		2018	
	Volume	Value	Volume	Value	Volume	Value
Spain	15	100	19	133	23	172
UK	13	102	18	141	17	136
Poland	10	41	11	48	10	49
Germany	8	75	10	93	10	82
Denmark	5	14	7	24	10	27
France	4	20	5	20	6	23
Other	19	151	19	142	19	145
Total	74	502	87	601	96	635

Source: EUMOFA based on data from US Bureau of the Census.

7.5 Consumption

The US is one of the largest consumer markets of seafood in the world and the NOAA estimates that US consumers spent USD 102 billion (EUR 91 billion) for fishery products in 2017⁹⁶. However, 20% of Americans do not eat any seafood and only a small percentage eats enough according to the American health guidelines⁹⁷. The seafood consumption varies between the different regions and preferences are partly driven by local species. Not surprisingly, the seafood consumption is higher where the supply traditionally has been the largest, and seafood consumption decreases the further away from the coast one can get. The country has good conditions and a long tradition for meat production, and its consumption is five times greater than seafood consumption⁹⁸. The estimated consumption of fish and shellfish per capita in the US in 2017 was 7,2 kg of edible meat⁹⁹, which was 0,50 kg more compared with 2016. Consumption of fresh and frozen finfish accounted for 2,80 kg, while consumption of fresh and frozen shellfish was 2,60 kg per capita. Of the top six species consumed in the US, four originate from aquaculture: shrimp (2,00 kg), salmon (1,10 kg), tilapia (0,50 kg) and pangasius (0,30 kg). The two other species in the top six originate from the wild: canned tuna (1,00 kg) and Alaska pollock (0,35 kg)¹⁰⁰.

Figure 2. **CONSUMPTION PER CAPITA OF SEAFOOD IN THE US, EDIBLE MEAT (volume in kg)**



Source: NOAA; Fisheries of the US, 2017.

American consumers have a large selection of seafood to choose from. It is estimated that between 300 and 500 different species are available for consumption in the United States, but only a few make up about 90% of consumption. Shrimp, salmon and tuna account for as much as 56% of consumption. Tilapia, Alaska pollock, pangasius, cod, catfish and mussels follow. Salmon dominates the fresh category; shrimp frozen items and tuna prevails among canned products¹⁰¹.

⁹⁶ Fisheries of the United states 2017 - <https://www.fisheries.noaa.gov/resource/document/fisheries-united-states-2017-report>

⁹⁷ <https://seafood.no/markedsinnsikt/fiskemarked-h2018/usa-h2018/>

⁹⁸ <https://seafood.no/markedsinnsikt/fiskemarked-h2018/usa-h2018/>

⁹⁹ <https://www.fisheries.noaa.gov/resource/document/fisheries-united-states-2017-report>

¹⁰⁰ <https://www.aquaculturealliance.org/blog/2017-us-seafood-consumption/>

¹⁰¹ <https://seafood.no/markedsinnsikt/fiskemarked-h2018/usa-h2018/>

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