



## RAINBOW TROUT (*ONCORHYNCHUS MYKISS*)



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### BIOLOGY AND HABITAT

- **Species description** ([Read more](#))

The rainbow trout, also known as steelhead trout, belongs to the family of Salmonidae and the genus *Oncorhynchus*.

- **Geographical distribution and habitat** ([Read more](#))

The rainbow trout is native to the cold-water rivers and lakes of the Pacific coasts of North America and Asia. It has been introduced to about 82 countries, practically everywhere the conditions are favorable for its culture, because rainbow trout tolerates a wide range of environmental and production conditions better than other trout species.

### RESOURCE, EXPLOITATION AND MANAGEMENT

- **Stock and resource status/conservation measures**

Rainbow trout catches represent negligible share in global catches.

- **Production methods and fishing gears** ([Read more](#))

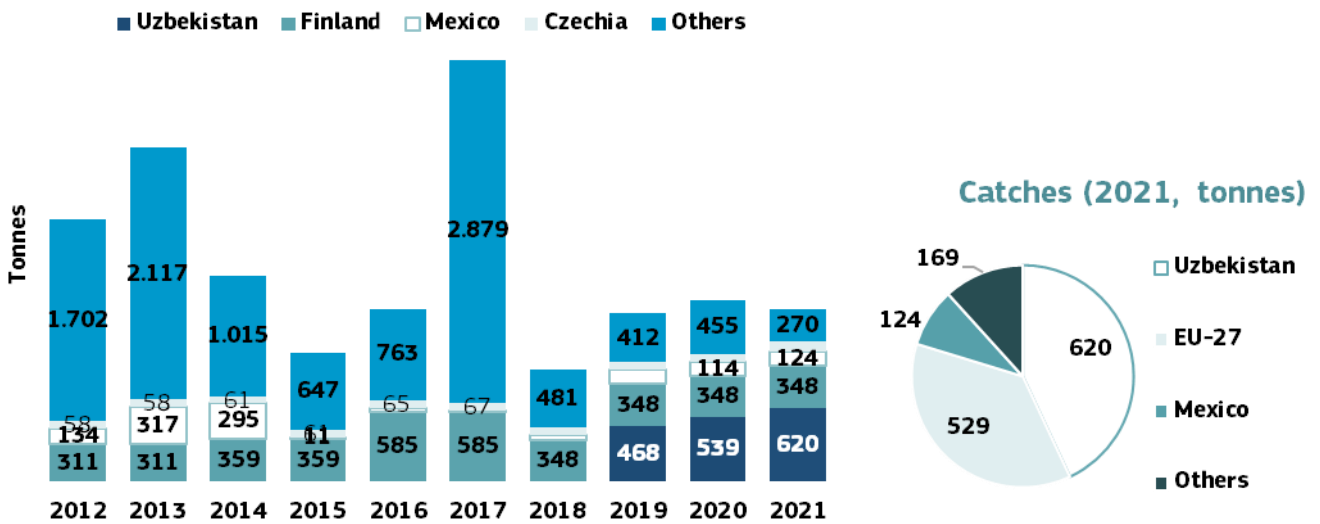
The main fishing gears used are driftnets, gillnets and similar nets, hooks and lines, and pots and traps. The aquaculture production is more important than wild catches.



# CATCHES

## Evolution of world catches

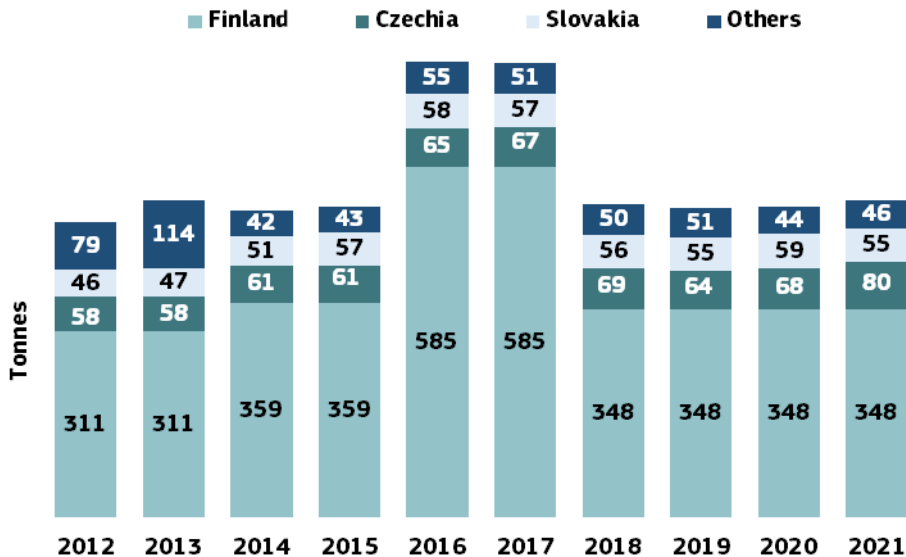
- Rainbow trout catches represent negligible share in the total global catches. They also represent only **0,2%** of the global trout production in 2021, as the species is mainly farmed.
- Catches have fluctuated between 2012 and 2021, with an overall downward trend. In 2021, main producers were Uzbekistan and Finland (67% of global production).



Source: FAO

## Evolution of EU catches

- The EU provided **37%** of the global rainbow trout catches in 2021.
- Finland is the main EU producer. It contributed to 66% of the EU production in 2021.



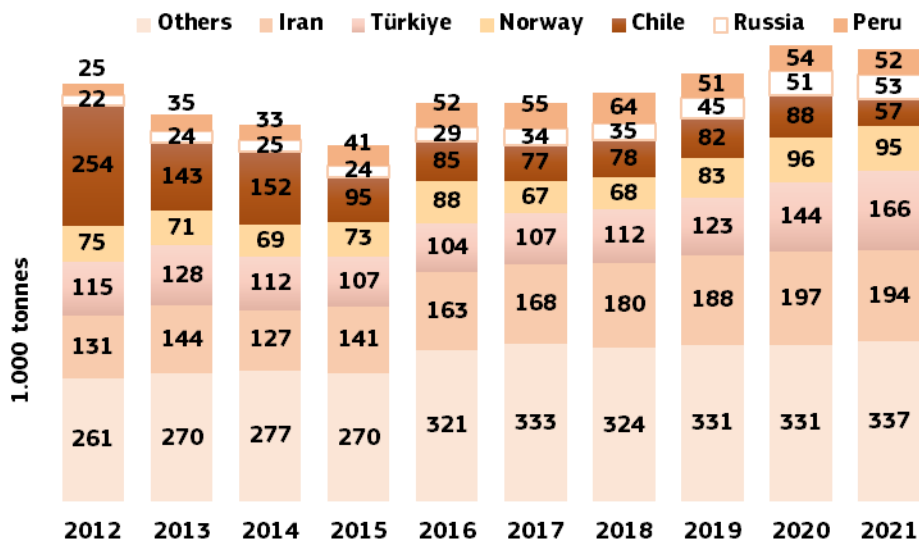
Source: FAO



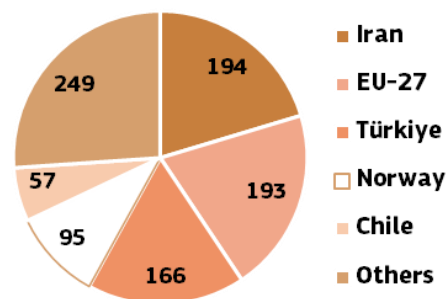
## AQUACULTURE PRODUCTION

### Evolution of world production

- Over the last decade (2012-2021), the world production of farmed rainbow trout has increased by 8%. The main producers are Iran, Turkey and Norway which increased significantly their production in the last ten years (by respectively 48%, 45% and 27%).



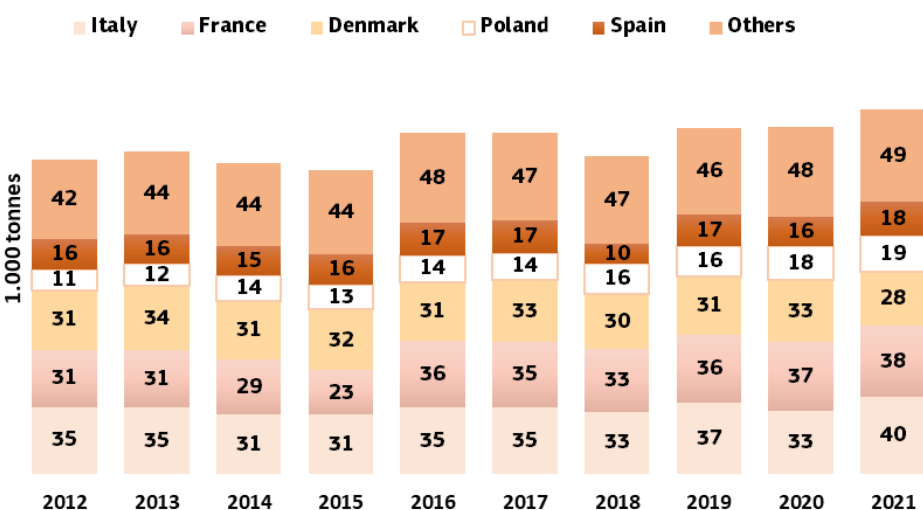
Production (2021, 1.000 tonnes)



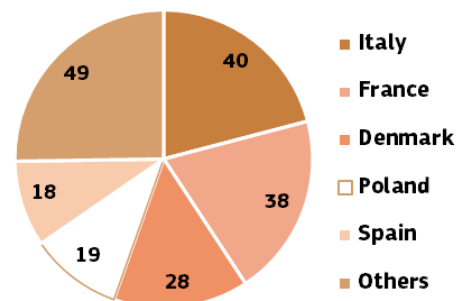
Source: FAO

### Evolution of EU production

- EU provided **20%** of the world production of farmed rainbow trout in 2021 (vs. 19% in 2012). The main producers were Italy (21% of EU production in 2021), France (20%) and Denmark (15%).
- The EU production increased over the period between 2012 and 2021 (by 16%).



Production (2021, 1.000 tonnes)



Source: FAO

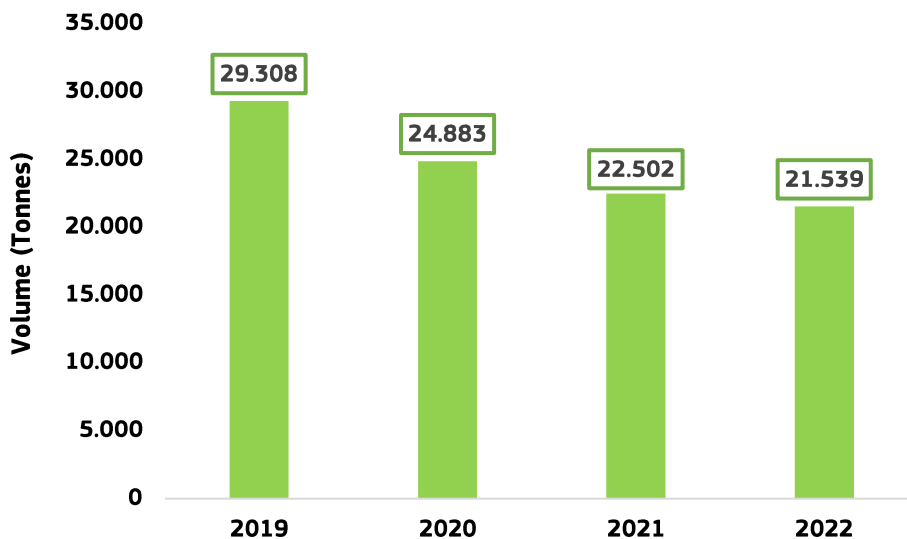


## PROCESSING

- A significant smoking activity exists for rainbow trout in the EU.
- Since 2019, there is a specific [PRODCOM](#) code that refers to smoked rainbow trout:

10202470 - Smoked trout (incl. fillets, excluding heads, tails and maws)

### EU production of smoked trout



- The EU production of smoked trout reached over 21.500 tonnes in 2022, 4% less than 2021 and 27% less than 2019. Germany, France, Poland and Denmark were responsible of almost all EU production (98%).

Source: EUROSTAT-PRODCOM

## Rainbow trout



## TRADE

- Combined nomenclature ([Read more](#))

### EU trade of trout products (tonnes - 2022)

CN code	Product	EU imports	EU exports
03 01 91 10	Live trout "Oncorhynchus apache and Oncorhynchus chrysogaster"	0	31
03 01 91 90	Live trout "Salmo trutta, Oncorhynchus mykiss, Oncorhynchus clarki, Oncorhynchus aguabonita, Oncorhynchus gilae"	14	475
03 02 11 10	Fresh or chilled trout "Oncorhynchus apache and Oncorhynchus chrysogaster"	39	48
03 02 11 20	Fresh or chilled trout of the species "Oncorhynchus mykiss"	10.292	672
03 02 11 80	Fresh or chilled trout "Salmo trutta, Oncorhynchus mykiss, Oncorhynchus clarki, Oncorhynchus aguabonita, Oncorhynchus gilae"	1.850	396
03 03 14 10	Frozen trout "Oncorhynchus apache and Oncorhynchus chrysogaster"	0	52
03 03 14 20	Frozen trout "Oncorhynchus mykiss"	1.558	2.735
03 03 14 90	Frozen trout "Salmo trutta, Oncorhynchus mykiss, Oncorhynchus clarki, Oncorhynchus aguabonita and Oncorhynchus gilae"	5.765	132
03 04 42 10	Fresh or chilled fillets of trout "Oncorhynchus mykiss"	884	117
03 04 42 50	Fresh or chilled fillets of trout "Oncorhynchus apache and Oncorhynchus chrysogaster"	1	0
03 04 42 90	Fresh or chilled fillets of trout "Salmo trutta, Oncorhynchus mykiss, Oncorhynchus clarki, Oncorhynchus aguabonita and Oncorhynchus gilae"	399	360
03 04 82 10	Frozen fillets of trout "Oncorhynchus mykiss"	709	49
03048250	Frozen fillets of trout "Oncorhynchus apache and Oncorhynchus chrysogaster"	0	3
03 04 82 90	Frozen fillets of trout "Salmo trutta, Oncorhynchus mykiss, Oncorhynchus clarki, Oncorhynchus aguabonita and Oncorhynchus gilae"	3.191	324
03 05 43 00	Smoked trout "Salmo trutta, Oncorhynchus mykiss, Oncorhynchus clarki, Oncorhynchus aguabonita, Oncorhynchus gilae, Oncorhynchus apache and Oncorhynchus chrysogaster"	3.850	934
<b>Total</b>		<b>28.552</b>	<b>6.328</b>

Source: EUROSTAT-COMEXT

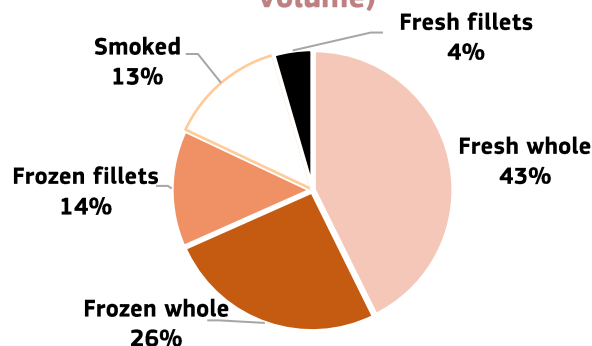


## TRADE

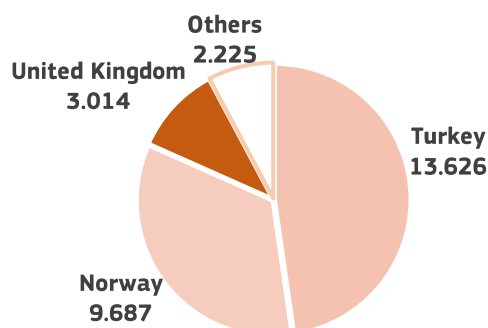
### EU-27 trade of trout products (tonnes - 2022)

- Extra-EU imports** reached 28.552 tonnes in 2022. Fresh and frozen whole trout accounted for 69% of EU imports (in volume terms). Smoked trout accounted for 13% of EU imports. Turkey and Norway supplied 82% of EU imports of trout. Main importers in the EU were Sweden, Austria, and Germany (respectively 27%, 16% and 14% of EU imports in volume terms).

Imports by product type (2022, % in volume)

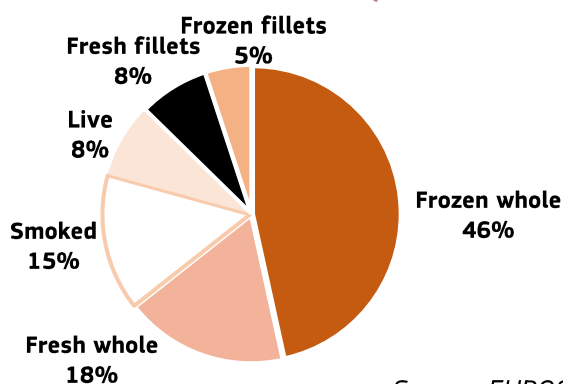


Main EU suppliers (2022, tonnes)

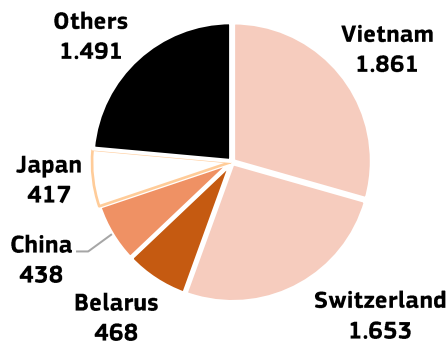


- Extra-EU exports** reached over 6.300 tonnes in 2022. Frozen and fresh whole trout accounted respectively for 46% and 18% of EU exports (in volume terms), while smoked trout accounted for 15% of EU exports. Main destinations of EU exports were Vietnam, Switzerland, and to a lesser extent Belarus, China and Ukraine (together they represented 76% of EU exports). Main exporters were Denmark and to a lesser extent Germany (respectively 53% and 8%).

Exports by product type (2022, % in volume)



Main destinations (2022, tonnes)

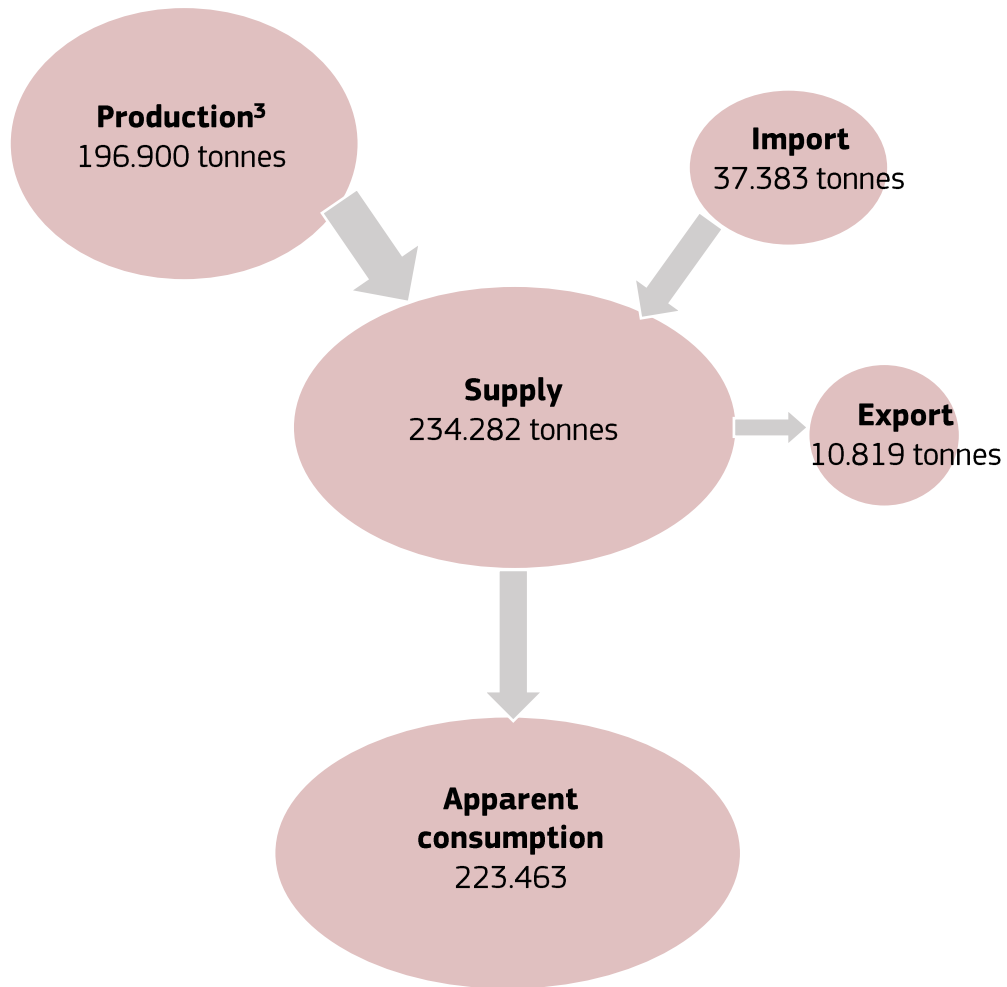


Source: EUROSTAT-COMEXT



## Supply balance

### EU supply balance (2021<sup>1</sup>) – Tonnes of live weight equivalent<sup>2</sup> - Trout:



Source: FAO/ EUROSTAT-COMEXT

<sup>1</sup> Supply balance is provided for the year 2021 (trade data for 2021 were taken into account). Detailed trade data provided in the slides 5 and 6 concern the year 2022.

<sup>2</sup> The [conversion factors](#) were used to convert net weight of imports and exports of fishery and aquaculture products into live weight equivalents.

<sup>3</sup> Production figure used in this supply chain is different from the production figure provided in the slide on catches (i.e. slide 2) as production of other trout species has been considered, even though Rainbow trout remains the most produced species.

## Rainbow trout



# PRICES ALONG THE SUPPLY CHAIN (EUR/kg)

## Ex-farm (farmed)

Ex-farm prices are provided for France, Denmark and Italy, the main producers of rainbow trout in the EU.

	2013	2014	2015	2016	2017	2018	2019	2020	2021*	Source
<b>France</b>	3,25	3,49	3,80	3,65	3,80	3,66	3,69	3,72	4,04	EUMOFA
<b>Italy</b>	2,93	2,84	3,17	2,92	2,98	2,95	3,12	3,06	3,40	EUMOFA
<b>Denmark</b>	2,89	2,91	2,97	3,25	3,29	3,34	3,25	3,27	3,47	EUMOFA

(\*) Last year available

## Wholesale

Wholesale prices refer to prices in France.

Average price	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023*	Source
<b>Trout fresh whole gutted (farmed in France)</b>	4,80	4,85	5,15	5,20	5,52	5,78	6,32	6,20	6,70	7,79	Rungis-RNM
<b>Trout fresh fillets (farmed in France)</b>	6,50	6,50	6,73	6,80	8,05	9,42	8,33	8,20	9,36	11,24	Rungis-RNM
<b>Trout smoked fillets (farmed in France)</b>	17,00	17,00	17,00	17,00	19,70	26,00	26,10	28,00	25,95	20,00	Rungis-RNM

(\*) From January to November 2023

## Retail

Retail prices are provided for the major producers.

Average price	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023*	Source
<b>France, trout fresh (farmed)</b>	11,60	12,40	12,50	13,50	13,80	14,40	14,80	15,20	n.a.	n.a.	FranceAgriMer
<b>France, trout smoked (farmed)</b>	n.a.	28,80	29,00	29,40	29,90	30,70	32,20	32,40	n.a.	n.a.	FranceAgriMer
<b>Rainbow trout, chilled</b>	7,54	7,68	9,19	10,46	8,82	8,86	7,56	8,75	12,12	12,30	EUMOFA
<b>Rainbow trout, fillets and chilled</b>	13,35	12,70	14,00	16,59	15,15	14,27	13,23	14,85	19,89	19,91	EUMOFA
<b>Poland, fresh or chilled trout (on weight or packaged)</b>	n.a.	n.a.	5,23	5,48	5,57	5,76	5,81	5,93	6,50	7,70	EUMOFA
<b>Poland, smoked</b>	7,62	7,74	7,56	7,84	7,90	8,12	8,21	8,21	8,86	10,23	EUMOFA

(\*) From January to November 2023



## Rainbow trout



# PRICES ALONG THE SUPPLY CHAIN (EUR/kg)

## Import (fresh and frozen)

Extra-EU imports concern mainly fresh whole and frozen whole trout. Prices are provided for the main importers and concern imports from third countries in 2022.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023*	Source
<b>Austria frozen whole</b>	3,15	3,31	3,19	3,12	3,10	3,49	3,60	3,62	4,74	6,27	EUMOFA
<b>Germany frozen whole</b>	3,14	3,35	3,46	3,24	3,18	3,40	3,33	3,43	3,85	5,10	EUMOFA
<b>Sweden fresh whole</b>	4,82	4,07	5,65	6,73	5,43	5,14	4,42	5,46	7,37	7,23	EUMOFA
<b>Sweden frozen whole</b>	3,85	3,78	4,15	5,55	5,54	5,16	4,10	4,50	6,42	6,25	EUMOFA

(\*) From January to August 2023

## Export (fresh and frozen)

Extra-EU exports mainly concern fresh whole and frozen whole rainbow trout. Prices are provided for Denmark and Germany, major EU exporters to third countries in 2022.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023*	Source
<b>Denmark fresh whole</b>	3,84	4,08	4,97	5,07	4,28	3,92	4,38	4,85	7,64	12,21	EUMOFA
<b>Denmark frozen whole</b>	3,76	3,60	4,14	5,08	4,90	4,66	4,18	4,27	5,12	5,91	EUMOFA
<b>Germany fresh whole</b>	7,05	6,20	6,44	6,35	6,49	6,21	4,80	4,91	6,24	8,26	EUMOFA
<b>Germany frozen whole</b>	4,81	5,57	4,81	4,14	3,88	5,71	5,35	5,61	4,99	4,15	EUMOFA

(\*) From January to August 2023

## Rainbow trout



## MARKETING

- National lists of commercial designations ([Read more](#))
- Information system on commercial designations and scientific names in all EU languages ([Read more](#))
- In the EU, there are three names protected under **Protected Geographical Indication** (PGI) for trout:
  - PGI “**Schwarzwaldforelle**” in Germany;
  - PGI “**Escavèche de Chimay**” in Belgium;
  - PGI “**Trote del Trentino**” in Italy.

## CONSUMPTION

- In 2021, trout ranked 13<sup>th</sup> among most consumed species in the EU (source: [The EU Fish Market – 2023 edition](#), EUMOFA).
- Apparent consumption per capita in 2020: **0,49 kg** live weight equivalent (source: [The EU Fish Market – 2023 edition](#), EUMOFA).
- Nutritional value (Rainbow trout France, fresh fillet and smoked fillet, values per 100 g – source : NUTRAQUA/AQUIMER).

Nutritional value	Rainbow trout - fresh fillet	Rainbow trout - smoked fillet
kilo calories (kcal)	136	156
Kilojoule (kJ)	569	657
Water (g)	72,3	65,4
Ashes (g)	1,3	4,2
Proteins (g)	19,1	23,1
Carbohydrates (g)	1,4	0,2
Lipids (g)	6	7
Cholesterol (mv)	52,6	47,1
Omega 6 (mg)	1026	846
Omega 3 (mg)	1718	1997
EPA (mg)	369	502
DHA (mg)	776	831