

RAINBOW TROUT (*ONCORHYNCHUS MYKISS*)



© Scandinavian Fishing Year Book

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.

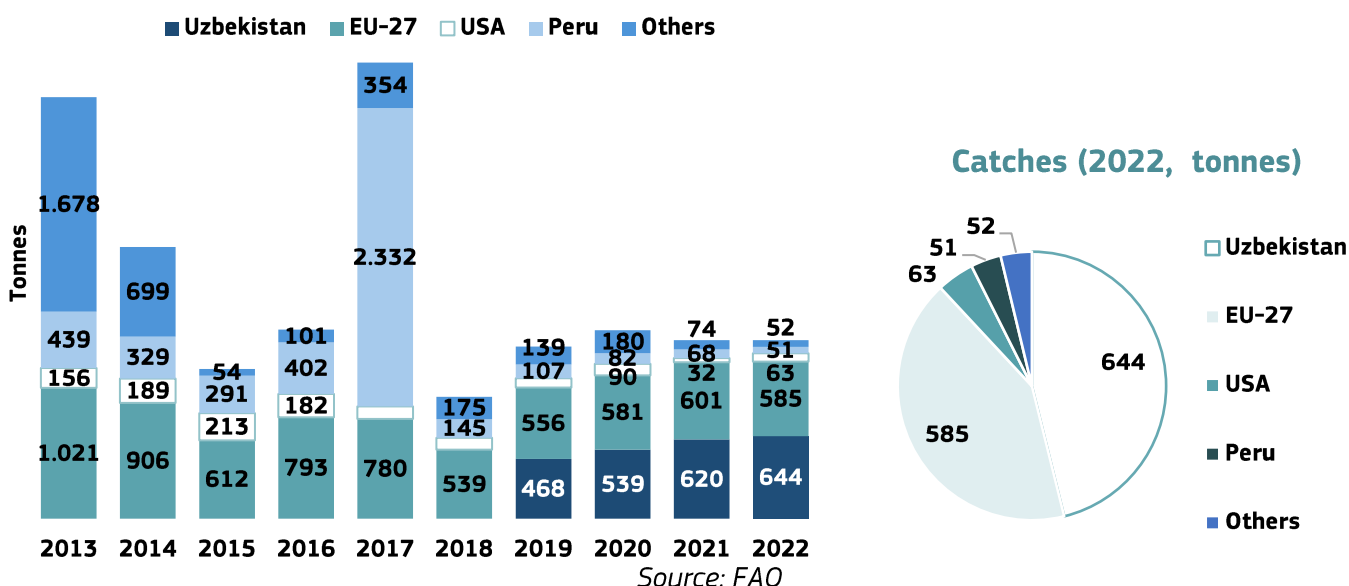
Rainbow trout



CATCHES

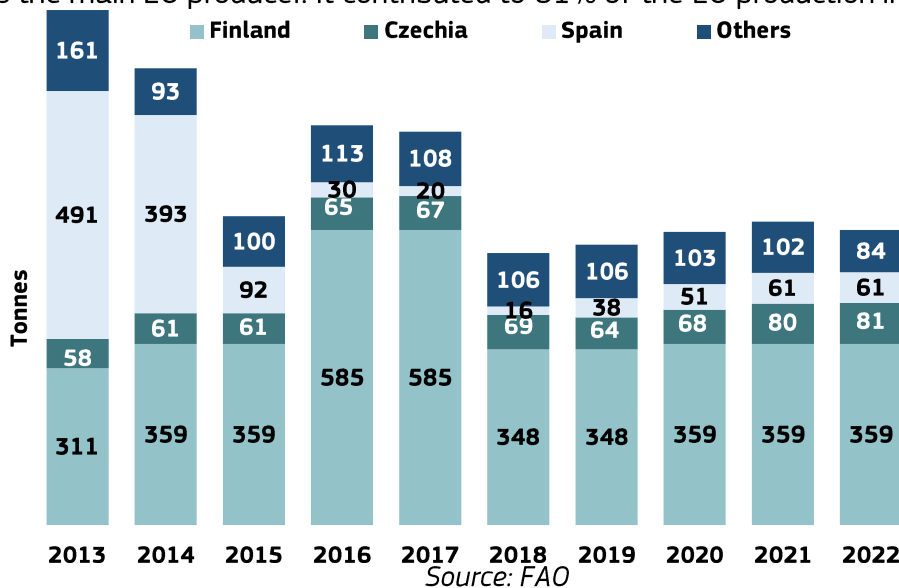
Evolution of world catches

- Rainbow trout catches reach 1.395 tonnes in 2022, they represent a negligible share in the total global catches. They also represent only **0,1%** of the global trout production in 2022, as the species is mainly farmed.
- Catches have fluctuated between 2013 and 2022, with an overall downward trend. In 2022, main producers were Uzbekistan and Finland (72% of global production).



Evolution of EU catches

- The EU provided **42%** of the global rainbow trout catches in 2022.
- Finland is the main EU producer. It contributed to 61% of the EU production in 2022.



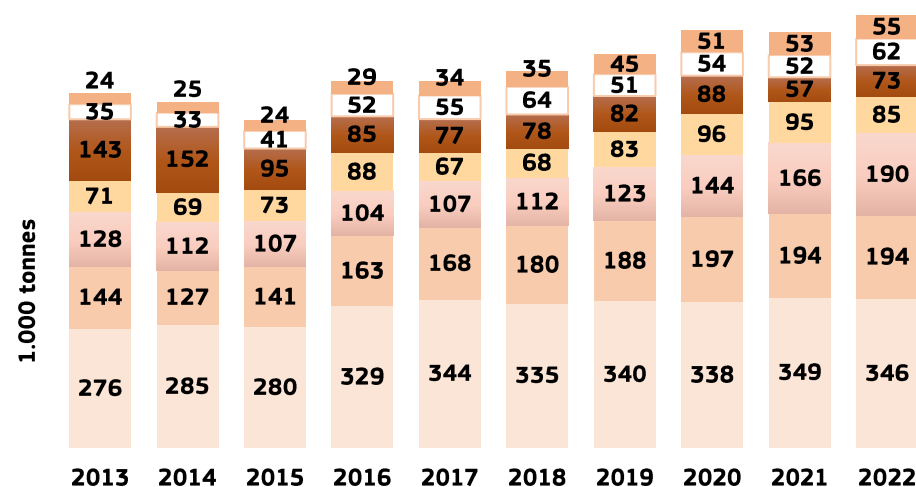


AQUACULTURE PRODUCTION

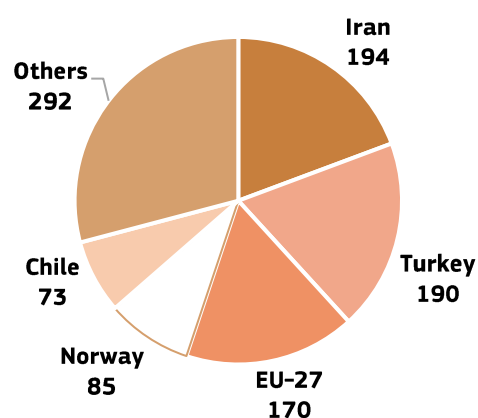
Evolution of world production

- Over the last decade (2013-2022), the world production of farmed rainbow trout has increased by 22%. The main producers are Iran, Turkey and Norway which increased significantly their production in the last ten years (by respectively 35%, 48% and 19%).

Others Iran Turkey Norway Chile Peru Russia



Production (2022, 1,000 tonnes)

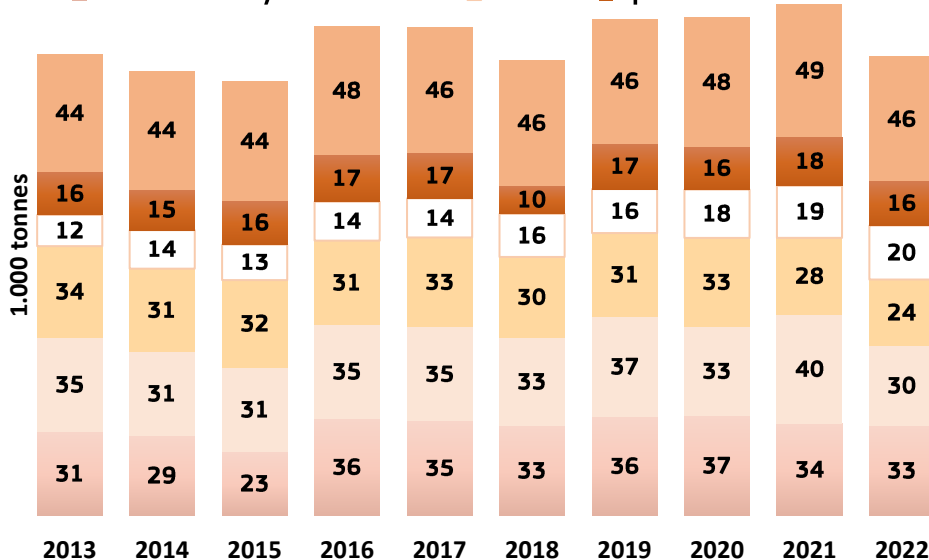


Source: FAO

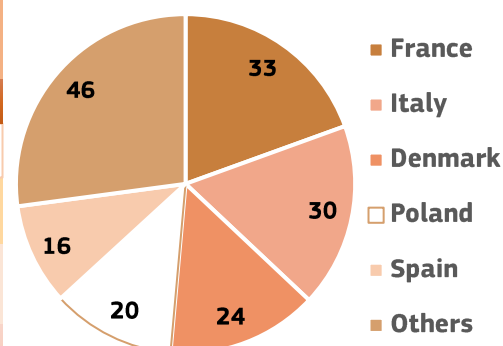
Evolution of EU production

- EU provided **17%** of the world production of farmed rainbow trout in 2022 (vs. 19% in 2012). The main producers were France (19% of EU production in 2022), Italy (18%), Denmark (14%) and Poland (12%).
- The EU production remained stable over the period between 2013 and 2022.

France Italy Denmark Poland Spain Others



Production (2022, 1,000 tonnes)



Source: FAO



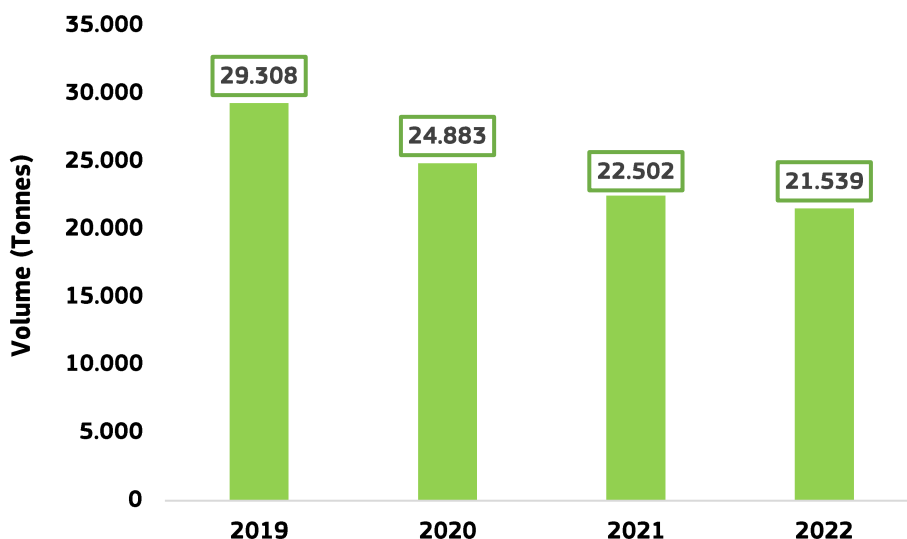
Rainbow trout

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 for almost all EU production (98%).

Source: EUROSTAT-PRODCOM

Rainbow trout



TRADE

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

EU trade of trout products (tonnes - 2023)

Data concern Rainbow trout and other species of trout

| CN code | Product | EU imports | EU exports |
|--------------|---|---------------|--------------|
| 03 01 91 10 | Live trout "Oncorhynchus apache and Oncorhynchus chrysogaster" | 0 | 23 |
| 03 01 91 90 | Live trout "Salmo trutta, Oncorhynchus mykiss, Oncorhynchus clarki, Oncorhynchus aguabonita, Oncorhynchus gilae" | 10 | 397 |
| 03 02 11 10 | Fresh or chilled trout "Oncorhynchus apache and Oncorhynchus chrysogaster" | 46 | 35 |
| 03 02 11 20 | Fresh or chilled trout of the species "Oncorhynchus mykiss" | 12.386 | 910 |
| 03 02 11 80 | Fresh or chilled trout "Salmo trutta, Oncorhynchus mykiss, Oncorhynchus clarki, Oncorhynchus aguabonita, Oncorhynchus gilae" | 1.996 | 658 |
| 03 03 14 10 | Frozen trout "Oncorhynchus apache and Oncorhynchus chrysogaster" | 35 | 0 |
| 03 03 14 20 | Frozen trout "Oncorhynchus mykiss" | 945 | 2.338 |
| 03 03 14 90 | Frozen trout "Salmo trutta, Oncorhynchus mykiss, Oncorhynchus clarki, Oncorhynchus aguabonita and Oncorhynchus gilae" | 6.531 | 146 |
| 03 04 42 10 | Fresh or chilled fillets of trout "Oncorhynchus mykiss" | 633 | 302 |
| 03 04 42 50 | Fresh or chilled fillets of trout "Oncorhynchus apache and Oncorhynchus chrysogaster" | 0 | 14 |
| 03 04 42 90 | Fresh or chilled fillets of trout "Salmo trutta, Oncorhynchus mykiss, Oncorhynchus clarki, Oncorhynchus aguabonita and Oncorhynchus gilae" | 374 | 368 |
| 03 04 82 10 | Frozen fillets of trout "Oncorhynchus mykiss" | 546 | 197 |
| 03048250 | Frozen fillets of trout "Oncorhynchus apache and Oncorhynchus chrysogaster" | 0 | 17 |
| 03 04 82 90 | Frozen fillets of trout "Salmo trutta, Oncorhynchus mykiss, Oncorhynchus clarki, Oncorhynchus aguabonita and Oncorhynchus gilae" | 3.125 | 367 |
| 03 05 43 00 | Smoked trout "Salmo trutta, Oncorhynchus mykiss, Oncorhynchus clarki, Oncorhynchus aguabonita, Oncorhynchus gilae, Oncorhynchus apache and Oncorhynchus chrysogaster" | 3.770 | 855 |
| Total | | 30.398 | 6.627 |

Source: EUROSTAT-COMEXT



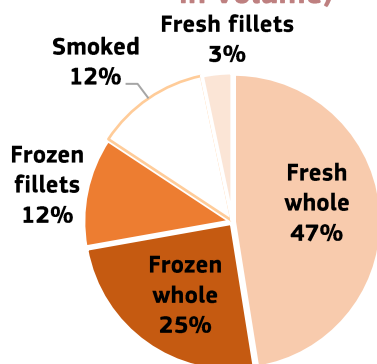
Rainbow trout

TRADE

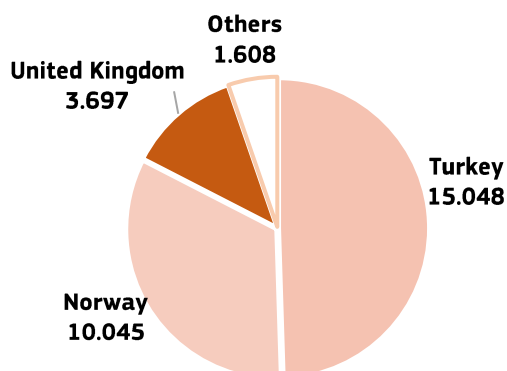
EU-27 trade of trout products (tonnes - 2023)

- Extra-EU imports** reached 30.398 tonnes in 2023. Fresh and frozen whole trout accounted for 72% of EU imports (in volume terms). Smoked trout accounted for 12% of EU imports. Turkey and Norway supplied 83% of EU imports of trout. Main importers in the EU were Sweden, Austria, and Germany (respectively 26%, 14% and 14% of EU imports in volume terms).

Imports by product type (2023, % in volume)

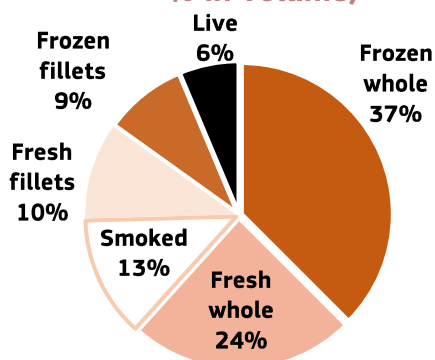


Main EU suppliers (2023, tonnes)

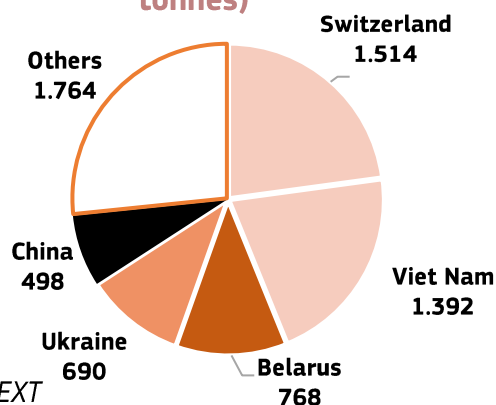


- Extra-EU exports** reached over 6.600 tonnes in 2023. Frozen and fresh whole trout accounted respectively for 37% and 24% of EU exports (in volume terms), while smoked trout accounted for 13% of EU exports. Main destinations of EU exports were Vietnam, Switzerland, and to a lesser extent Belarus and Ukraine (together they represented 66% of EU exports). Main exporters were Denmark and to a lesser extent Estonia and Poland (respectively 39%, 15% and 11%).

Exports by product type (2023, % in volume)



Main destinations (2023, tonnes)



Source: EUROSTAT-COMEXT

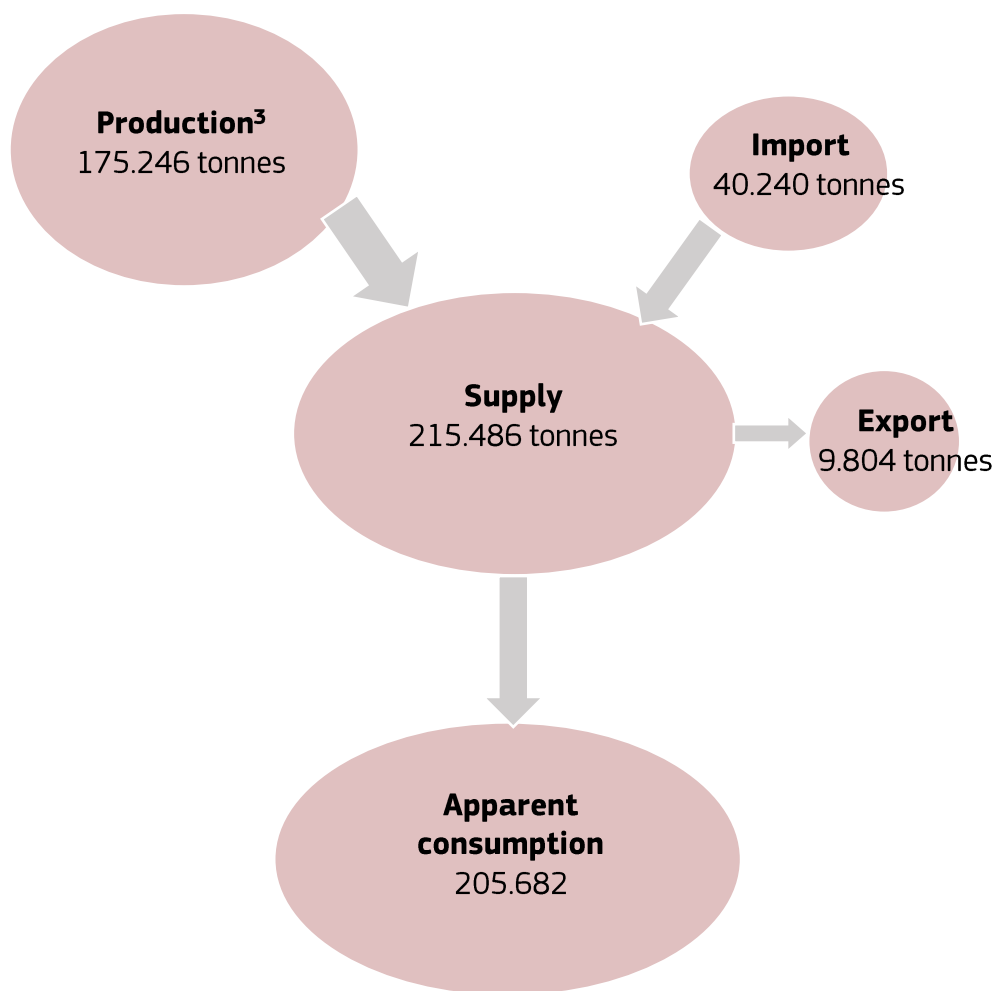


Rainbow trout

Supply balance

EU supply balance (2022¹) – Tonnes of live weight equivalent² – Trout:

Data concern Rainbow trout and other species of trout



Source: FAO/ EUROSTAT-COMEXT

¹ Supply balance is provided for the year 2022 (trade data for 2022 were taken into account). Detailed trade data provided in the slides 5 and 6 concern the year 2023.

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

³ 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.

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022* | Source |
|---------|------|------|------|------|------|------|------|------|-------|--------|
| France | 3,49 | 3,66 | 3,58 | 3,74 | 3,59 | 3,63 | 3,66 | 4,00 | 4,29 | EUMOFA |
| Italy | 2,84 | 3,08 | 2,86 | 2,93 | 2,87 | 3,07 | 2,97 | 3,34 | 3,28 | EUMOFA |
| Denmark | 2,91 | 2,96 | 3,24 | 3,28 | 3,34 | 3,25 | 3,27 | 3,38 | 4,06 | EUMOFA |

(*) Last year available

Wholesale

Wholesale prices refer to prices in France.

| Average price | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024* | Source |
|---|------|------|------|------|------|------|------|-------|-------|-------|------------|
| Trout fresh whole gutted (farmed in France) | 4,85 | 5,15 | 5,2 | 5,52 | 5,78 | 6,32 | 6,2 | 6,7 | 7,80 | 7,90 | Rungis-RNM |
| Trout fresh fillets (farmed in France) | 6,5 | 6,73 | 6,8 | 8,05 | 9,42 | 8,33 | 8,2 | 9,36 | 11,24 | 11,20 | Rungis-RNM |
| Trout smoked fillets (farmed in France) | 17 | 17 | 17 | 19,7 | 26 | 26,1 | 28 | 25,95 | 20,04 | 21,00 | Rungis-RNM |

(*) From January to November 2024

Retail

Retail prices are provided for the major producers.

| Average price | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024* | Source |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------------|
| France, trout fresh (farmed) | 12,4 | 12,5 | 13,5 | 13,8 | 14,5 | 14,8 | 15,2 | 16,1 | 17,9 | n.a. | FranceAgriMer |
| France, trout smoked (farmed) | 28,8 | 29 | 29,4 | 29,7 | 30,5 | 31,8 | 32 | 34,4 | 37,6 | n.a. | FranceAgriMer |
| Denmark | 17,98 | 18,10 | 17,60 | 18,84 | 19,42 | 21,06 | 19,28 | 21,29 | 24,55 | 23,63 | EUMOFA |
| Poland | 5,14 | 5,43 | 5,63 | 5,73 | 6,13 | 5,82 | 6,13 | 6,91 | 9,35 | 10,22 | EUMOFA |
| Poland, retail, smoked | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | 6,32 | 4,74 | 4,76 | EUMOFA |

(*) From January to November 2024



Rainbow trout

PRICES ALONG THE SUPPLY CHAIN (EUR/kg)

Data concern Rainbow trout and other species of trout

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 2023.

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024* | Source |
|----------------------------|------|------|------|------|------|------|------|------|------|-------|--------|
| Austria fresh whole | n.a. | n.a. | n.a. | n.a. | n.a. | 5,46 | 4,12 | 5,22 | 5,95 | 5,46 | EUMOFA |
| Germany fresh whole | n.a. | n.a. | n.a. | n.a. | n.a. | 7,05 | 5,75 | 7,26 | 8,89 | 8,58 | EUMOFA |
| Sweden fresh whole | 4,07 | 5,65 | 6,73 | 5,43 | 5,14 | 4,66 | 5,55 | 7,44 | 7,35 | 7,77 | EUMOFA |
| Sweden frozen whole | 3,78 | 4,15 | 5,55 | 5,54 | 5,16 | 4,1 | 4,5 | 6,42 | 6,25 | n.a. | EUMOFA |

(*) From January to August 2024

Export (fresh and frozen)

Extra-EU exports mainly concern fresh whole and frozen whole rainbow trout. Prices are provided for Denmark, Estonia and Poland, major EU exporters to third countries in 2023.

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024* | Source |
|-----------------------------|------|------|------|------|------|------|------|------|-------|-------|--------|
| Denmark fresh whole | 4,08 | 4,97 | 5,07 | 4,28 | 3,92 | 4,38 | 4,85 | 7,64 | 12,21 | n.a. | EUMOFA |
| Denmark frozen whole | 3,6 | 4,14 | 5,08 | 4,9 | 4,66 | 4,18 | 4,27 | 5,12 | 5,91 | n.a. | EUMOFA |
| Estonia, fresh whole | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | 8,05 | 8,26 | EUMOFA |
| Poland, fresh whole | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | 6,57 | 6,59 | 7,73 | EUMOFA |
| Poland, frozen whole | n.a. | n.a. | n.a. | n.a. | n.a. | 4,22 | 6,20 | 7,00 | n.a. | n.a. | EUMOFA |

(*) From January to August 2024



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 (all species included) ranked 13th among most consumed species in the EU (source: [The EU Fish Market – 2023 edition](#), EUMOFA).
- Apparent consumption per capita of trout (all species) in 2022: **0,46 kg** live weight equivalent (source: [Supply balance - 2022](#), 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 (mg) | 52,6 | 47,1 |
| Omega 6 (mg) | 1026 | 846 |
| Omega 3 (mg) | 1718 | 1997 |
| EPA (mg) | 369 | 502 |
| DHA (mg) | 776 | 831 |