Fish and Ships

Impact of fisheries
In 2020, fisheries produced about 90 million tonnes of fish and other aquatic animals worldwide. Aquaculture produced almost the same amount. On average, each person in the world consumed more than 20 kg of fish and aquatic animals, compared to about 9 kg in 1961.

International trade in fisheries and aquaculture products generated about $150 billion in 2020. About 600 million people worldwide depend on fisheries and aquaculture for their livelihoods. More than 3.3 billion people worldwide get at least 20% of their daily animal protein intake from fish.

But what do these figures mean? What is the impact of fishing and aquaculture on the environment? What can I do in my daily life?
Between 1961 and 2020, global consumption of fish and other aquatic products increased from 28 million tonnes to 160 million tonnes. This increase is related to the increase in human population and to the increase in per capita consumption.

Between 1960 and 2020, the world's population grew from 3 billion to 7.8 billion.

Between 1960 and 2020, the consumption of fish and other aquatic products increased from 9 to 20 kg per person per year on average.
There are striking differences in the consumption of aquatic products between countries and continents. More than half is consumed by just five countries: China, Indonesia, India, the USA and Japan. China alone consumes 36% of global production.
The three most caught fish species are Peruvian anchovy (with almost 5 million tonnes in 2020), Alaskan hake (3.5 million tonnes in 2020) and Skipjack tuna (2.8 million tonnes in 2020).
Cephalopods (octopus and squid) and shrimp are also in high demand, with around 3.5 million tonnes each in 2020.

Bonito, Yellowfin tuna, Albacore tuna, Bluefin tuna... It is tuna that has held all the records, with a total of more than 8 million tonnes in 2020 for all these species.
In 2020, fisheries caught more than 90 million tonnes of fish and other aquatic animals, with an estimated value of over €130 billion. Almost 90% of these catches came from sea fishing.
There are about 4 million fishing boats in operation worldwide, about two-thirds of them in Asia.

About 40% of these boats are small traditional fishing boats. About 97% of these traditional boats are used in Asia and Africa.
According to the UN Food and Agriculture Organisation (FAO), resources are dwindling, with about a third of all fish stocks exploited beyond biologically sustainable levels. This is three times more than in the early 1970s.

Yet, according to these estimates, total production of from both fisheries and aquaculture is still expected to grow in the future and exceed 200 million tonnes in 2030.
And in Europe?
The North-East Atlantic, which borders much of the European coastline, is the third most productive area in the world, with over 8 million tonnes caught in 2019. However, its productivity has been declining since the late 1970s, when a peak of 13 million tonnes was reached.

High fishing pressure in the area at that time led to declining fish stocks, and countries have had to regulate fishing in order for fish populations to recover. The FAO estimates that 70% of the stocks in this area are now harvested sustainably.
What do the pelagic Thresher shark, the Southern bluefin tuna and the Orange roughy have in common? These species have seen their populations decline by more than 80% over the past fifty years due to overfishing.
Cod, Brill, Plaice, Turbot ... In Europe too, many commercial species have seen their stocks collapse over the last century.
Nets and lines often catch unwanted species or animals that are too small. These are then thrown back into the sea, but not all will survive. These by-catches and releases are difficult to measure, but pose a threat to the sustainability of fisheries. In 2019, the FAO estimated these releases at around 10 million tonnes annually, or about 10% of the catch.
The Scalloped hammerhead shark has seen its populations decline by more than 80% in a few decades. However, it is not directly targeted by fishing, but is caught accidentally in fishing gear.
Plastic waste
The fishing industry uses a large amount of plastic equipment because of its strength. Unfortunately, this is regularly lost or even thrown back into the sea, where it contributes to plastic pollution. It is estimated that more than 600,000 tonnes of plastic debris is washed into the sea each year.
**Ghost nets**
This particular type of plastic waste has a significant impact on marine life. Indeed, these 'ghost' nets and lines left at sea can persist for hundreds of years and continue to trap fish, sharks, marine mammals and birds as they drift in ocean currents.
Aquaculture contributes to almost half of the world's supply of fish and other aquatic animals. A few species dominate global aquaculture production: carp in freshwater and Atlantic salmon in marine environments.
Each year, about 20 million tonnes of fish and other aquatic animals from fisheries and aquaculture - just over 10% of global production - are used to produce fish oil and fishmeal. These products are used as feed for some species raised in aquaculture.
Is aquaculture a solution?
Ideally, farmed fish should come from a farm that does not have a negative impact on the environment and that ensures the physical health and well-being of the animals. Working conditions should ensure dignity and a good life for the people employed on the farms. Unfortunately, these conditions are not always respected. Labels exist to help us make choices, but not all are reliable.
Sometimes aquaculture is not sustainable

- Pollution of waters and use of chemicals and antibiotics;
- spread of diseases to wild species;
- escape of animals and introduction of non-native species into the environment;
- destruction of ecosystems to establish farms;
- overfishing for the manufacture of fish meal and oil used for feed;
- degrading working conditions.

Southeast Asia's mangrove forests are under severe threat from deforestation, partly for shrimp farms.
Around 600 million people worldwide depend directly or indirectly on fisheries and aquaculture for their livelihoods. Yet many of these workers - especially women - live in precarious conditions. Improving their living conditions is essential for the sustainable and equitable development of the sector. Although women play key roles in the fisheries and aquaculture industry, they are mainly employed in the least skilled and therefore most precarious and lowest paid positions in product preparation.
For more than three billion people, mainly from low-income countries, fisheries and aquaculture are an essential source of protein, accounting for more than 20% of their animal protein intake.
Increasingly, the dependence of fisheries on aquatic ecosystems is being recognised. In order to increase productivity and sustainability, it is essential to ensure the protection of forests, wetlands, mangroves, seagrass beds and reefs. These ecosystems are refuges or nurseries for many species of commercial interest.
The seas and oceans cover approximately 70% of our planet's surface, three quarters of which are on the high seas. However, these areas of the open seas are outside territorial waters and have not yet been protected by the international community. In February 2023, a new treaty was signed by the United Nations with the aim of creating protected areas (natural reserves) on the high seas.

This treaty is expected to transform 30% of the high seas into marine protected areas by 2030. In these areas, human activities and fishing will be strictly regulated. These protected areas will help keep the rest of the oceans healthy.
We do not depend on fish consumption for our survival. However, in Belgium, each inhabitant consumes on average about 25 kg of aquatic products per year.

Our consumption is not very diversified: cod and salmon together account for almost 70% of it. Our habits lead us to consume a limited number of species, resulting in their overexploitation.
Eat fish once or twice a week, favouring species rich in fatty acids (omega 3, EPA and DHA); this is an often-heard piece of advice. But is it really necessary?

If these fatty acids are essential to our health, other foods like seaweed and oilseeds can provide us with enough of them.

For the environment as well as for our health, it is therefore important to choose the species we eat and to diversify our diet.
A label to help us choose better

The label provides compulsory information to make a better choice:
- the common and scientific name;
- the production method (fishing or aquaculture);
- the fishing gear and area;
- origin of aquaculture animals.

For your health, the label should also inform you if the product has been previously frozen and defrosted.
Choose a selective and non-destructive fishing method

Some fishing gears, such as trawls or dredges, are destructive to the seabed or result in the capture of large numbers of by-catches which are then thrown back into the sea. By choosing not to eat species caught by these methods, you are helping to protect the seabed.

Choose small pelagic species (such as herring, sardines and mackerel) as these live in schools near the surface and are easy to catch and avoid by-catch.
The bottom trawl is a cone-shaped net towed close to the seabed by a ship to catch species living there, such as Sole or shrimp. But the bottom trawl lacks selectivity and can damage the seabed.

Choose a selective and non-destructive fishing method

54% ... This is the proportion of shrimp production destined for Belgium, making it the largest consumer, ahead of the Netherlands (20%) and Germany (15%). These shrimps are caught using bottom trawls.
Choosing according to stock status

For the same species, the state of the stocks can vary depending on the origin. Indeed, while many fish stocks are overexploited, others are in good condition.

The indication of the fishing area is therefore important. You can find this information on the label or by asking your supplier. There are quality labels to help you choose among the species and according to their geographical origin.
If your fish was not caught locally, it must have been transported by boat or plane. The carbon footprint will be particularly high for fresh produce that has to be transported by air.

Choosing a local species will ensure a fresher product while reducing your carbon footprint and supporting the local economy.
Choosing mature fish

For the population to be maintained, the animals must reach adulthood to have a chance to reproduce. For this reason, there are legal rules about the minimum size of fish that can be caught.

Whenever possible, choose the largest individuals.
Choosing a seasonal fish

Some species migrate and are therefore not present in the fishing area all year round. Others are protected during their breeding season. Finally, the quality of the flesh may vary according to the season.

Avoid eating a species outside its fishing season, as you will probably be buying a fish imported from another region, sometimes very far away. Do not hesitate to ask your supplier about its origin and seasonality.
Choosing a seasonal fish

King scallops are best caught outside of their breeding season (in spring). In addition to allowing populations to reproduce, the scallops caught contain only the nut, without the "coral", to the great satisfaction of gourmets.
Choosing a seasonal fish

Sardines live in shoals in the open sea. But in summer they leave the open sea and head for the shallow waters of the coast, where they are easy to catch.
Choose small or herbivorous species

Large predators such as swordfish or tuna are in high demand and are often overfished. In addition, these species are often contaminated with heavy metals, which are harmful to your health. Choose smaller species such as herring, sardines, mackerel or anchovies.

If you prefer farmed fish, choose omnivorous species such as pangasius or tilapia. Carnivorous species, such as salmon, are fed with fish oil and fishmeal made from fish caught at sea.
Redfish, Blue ling, Orange roughy... These deep-sea inhabitants grow very slowly and their reproduction rate does not allow them to repopulate the areas where they are caught. In addition, they are caught using bottom trawls which are very destructive to the seabed.

The Orange roughy does not reach sexual maturity until it is 20 years old and could live for almost 150 years! It therefore takes about 20 years for a generation of emperor angelfish to be renewed, which is far too long compared to the speed at which stocks are exploited.

Say no to deep-sea species
Sources


Fisheries and Resources Monitoring System
https://firms.fao.org/firms/en

Ghost Gear: The Abandoned Fishing Nets Haunting Our Oceans. Published by Greenpeace Germany. November 2019


Pour poursuivre l'activité en classe :