



Seafood and Human Health

From ancient times, fisheries and aquaculture (the farming of fish, shellfish and aquatic plants) have been an important source of food. These activities also provide economic benefits to millions of people engaged in harvesting, culturing, processing and trading along the world's seashores and waterways. Today, we are facing the challenge of growing demand for seafood together with declining catches from the world's marine fisheries. Therefore, well-managed fisheries are essential to continue providing food into the future.

We can help to protect the ocean as a provider of food and health by supporting sustainable fishing practices when we buy seafood.

» AN OCEAN OF FOOD

- Fish contributes about 17% to the world's animal protein intake. In some small developing island states populations rely on fish for up to 40% or more of their protein intake.
- Worldwide demand for seafood in 2010-2012 was 19kg per person. Currently, average seafood consumption in the EU is 23kg per person per year.
- Other types of seafood also serve as important sources of protein and micronutrients. For example, various types of seaweed contain protein, dietary fibre, vitamins, minerals and amino acids.
- Mussels, rainbow trout and Atlantic salmon are the top 3 species farmed in the EU by volume, followed by oysters, sea bream, common carp, clams and sea bass. Aquaculture accounts for about 20% of Europe's fish production.



» THE FUTURE OF FISH

- Well-managed fisheries are very important to future food security. Given that current fisheries and aquaculture production is about 136 million tons and assuming an annual fish consumption of 19kg per person per year, it is estimated that 47.5 million additional tons of fish will be needed for food in 2050 to cope with a global population of 9.6 billion people.
- At the same time, the world's marine fisheries catches are declining and fishing is threatening a number of fish stocks. Recent assessments indicate that approximately 29% of fish stocks are overfished while 61% are sustainably (fully) exploited.
- Adoption of better management practices will contribute to sustainable fishing practices that avoid overfishing and support the recovery of fish stocks. These practices include the establishment of new marine protected areas and the promotion of environmentally friendly fishing techniques that minimize fish discards and avoid degradation of marine habitats.
- Aquaculture production is predicted to substantially exceed capture fisheries production in the next few years.

» SUPPORT SUSTAINABLE FISHERIES

You can help to protect the ocean, the source of your future seafood, as well as the fishermen and communities that rely on it for their food and livelihoods by buying sustainable seafood.

Get to know your seafood: Ask your fishmonger about sustainable choices or alternatively, look up a seafood guide for your country.

Become familiar with EU seafood labelling: Fishery products sold in the EU must contain information such as the type of fishing gear used and where it was caught. This enables consumers to make informed choices.

Try something new: High demand for certain species of fish and seafood can lead to overfishing. Choosing lesser-known fish eases pressure on more vulnerable species and they are often more plentiful. Your fishmonger can advise on preparation.

» THE COMMON FISHERIES POLICY— MANAGING EUROPE'S FISHERIES

The Common Fisheries Policy is a set of rules for managing European fishing fleets and for conserving fish stocks. The policy aims to ensure that fishing and aquaculture are environmentally, economically and socially sustainable and that they provide a source of healthy food for EU citizens.

» SEAFOOD AND HUMAN HEALTH – THE GOOD AND THE BAD

- As well as being an important source of protein, vitamins and minerals, seafood has the highest concentrations of omega-3 fatty acids of any foods. Omega-3 fatty acids improve heart health, benefit brain health and development and protect against the development of certain cancers.
- Fish intake is also associated with health outcomes such as reduced depression symptoms in adults and fewer asthmatic and respiratory allergies in children.
- Environmental factors, such as pollution and poor ecosystem health threaten seafood quality and safety. For example, the contamination of bivalve shellfish such as mussels, clams and oysters with norovirus (a common cause of viral gastroenteritis in humans) from human faecal sources is an important human health risk.
- Long-term exposure to pollutants that accumulate in seafood also pose risks to human health. For example, methylmercury is a neurotoxin that can accumulate to high concentrations in predatory fish such as tunas and swordfish. It is recommended that seafood species with a high content of mercury in the daily diet should be limited.



Find out more about initiatives you can get involved in and the everyday actions you can take by visiting the Sea Change website.

Remember
**OUR OCEAN
OUR HEALTH**

Key Information Sources and Further Reading

European Commission (2014) A pocket guide to the EU's new fish and aquaculture consumer labels. Available at: http://ec.europa.eu/fisheries/documentation/publications/eu-new-fish-and-aquaculture-consumer-labels-pocket-guide_en.pdf

European Commission (2015) Aquaculture. Available at: http://ec.europa.eu/fisheries/cfp/aquaculture/index_en.htm

European Commission (2016) Farmed in the EU. Available at: https://ec.europa.eu/fisheries/inseparable/sites/inseparable/files/AQC_EN.pdf

European Commission, (2015) The Common Fisheries Policy (CFP). Available at: http://ec.europa.eu/fisheries/cfp/index_en.htm

European Food Safety Authority (2015) Statement on the benefits of fish/seafood consumption compared to the risks of methylmercury in fish/seafood. EFSA Journal;13(1):3982. Available at: http://www.efsa.europa.eu/sites/default/files/scientific_output/files/main_documents/3982.pdf

European Union (2016) Maritime affairs & fisheries. Available at: http://europa.eu/pol/fish/index_en.htm

FAO (2014) The state of world fisheries and aquaculture. Rome: FAO, 243 pp. Available at: <http://www.fao.org/3/a-i3720e.pdf>

Gribble, M.O., Karimi, R., Feingold, B.J., Nyland, J.F., O'Hara, T., Gladyshev, M.I. and Chen, C.Y. (2016) Mercury, selenium and fish oils in marine food webs and implications for human health. *Journal of the Marine Biological Association of the United Kingdom* 96(1), 43-59

Jennings, S. et al., (2016) Aquatic food security: insights into challenges and solutions from an analysis of interactions between fisheries, aquaculture, food safety, human health, fish and human welfare, economy and environment. *Fish and Fisheries*. doi: 10.1111/faf.12152

Larsen, R., Eilertsen, K-E., Elvevoll, E.O. (2011) Health benefits of marine foods and ingredients. *Biotechnology Advances* 29, 508-518

Lloret J. (2010) Human health benefits supplied by Mediterranean marine biodiversity. *Marine Pollution Bulletin* 60, 1640-1646.

Lloret, J., Rätz, H.J., Lleonart, J. and Demestre, M. (2016) Challenging the links between seafood and human health in the context of global change. *Journal of the Marine Biological Association of the United Kingdom* 96(1), 29-42

Tacon, A.G.J. and Metian M. (2013) Fish matters: importance of aquatic foods in human nutrition and global food supply. *Reviews in Fisheries Science* 21, 22-38.

United Nations (2014) Report on the role of seafood in global food security. Open-ended consultative process on oceans and the law of the sea. Available at: http://www.un.org/depts/los/consultative_process/documents/adv_uned_mat.pdf



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