Plenty more

FISH IN THE SEA?

Eighty percent of the world's fish stocks are fished beyond sustainable limits – *Forever Fish* aims to reverse the trend.

WIDEN YOUR NET

Did you know that 80% of the fish consumed in the UK are from one of 5 species? They are:

- Cod
- Haddock
- Farmed Salmon
- Prawns
- Tuna

One of the aims of the Marks & Spencer Forever Fish campaign is to encourage customers to diversify from these 'big 5' and try lesser known varieties such as dab, mackerel, squid, Torbay sole, flounder, herring, sardines, brown crab and trout. These are not 'new' species, but are currently unpopular and underutilised, often discarded by fishermen because there is little or no market.

Marks & Spencer have signed up to the Client Earth Sustainable Seafood Coalition, one of the aims of which is to find a use for these species and reduce the current discard rate.

Fish Sustainability

It is vital that all processors, retailers, the food service industry, and restaurateurs (in fact anyone involved with the procurement and sale of fish and seafood) do so responsibly and sustainably. Eighty percent of world fish stocks are fished at or beyond a sustainable limit and only 1% of our oceans are protected. Global fish consumption is increasing year on year and fish provides an essential source of protein in many diets, particularly in the developing world.

What action is being taken?

Marks & Spencer and other major retailers have committed to sourcing wild fish species from fisheries that have been certified as sustainable by the Marine Stewardship Council (MSC) or an equivalent third party. The MSC has a robust, transparent assessment framework so any fishery MSC certified is considered sustainable by Marks & Spencer.

If a species is not certified by the MSC, various factors need to be considered before consent is given to procure; these include:

Fish Species – Marks & Spencer have a banned species list which includes species that are considered as critically endangered on the International Union for Conservation of Nature (IUCN) red list (e.g. Bluefin Tuna)

Fishing method – some catch methods, such as dredging and beam trawling, are very damaging to the environment and are only considered sustainable if they are carried out in a well managed and controlled manner.

Fishing location – certain areas of the seabed are home to rare species, such as cold water corals, and should be avoided. Other sea areas are known as nursery and feeding grounds for juvenile fish; these are often closed to fisheries and these regulations must be adhered to.

Seasonality of species – it is considered irresponsible to fish for a species during its spawning season, e.g. if egg bearing lobsters are caught, these must be returned to the sea so that the young can hatch.

Commercial fisheries are assessed on an annual basis to determine biomass[1] and stock status. In the Atlantic, the International Council for the Exploration of the Seas (ICES) are responsible for carrying out these assessments and providing advice to governments and international regulatory bodies with regard to fish stocks and safe catch limits. There is no legal requirement to adhere to the advice offered by ICES, however governments use this information to set a Total Allowable Catch (TAC) for each of the commercial species, i.e. the total tonnage that can be legally fished.

Fishery assessments vary globally, from comprehensive, scientific investigations to no assessment at all. In some developing nations, the term 'sustainability' has no meaning, so extra care must be taken when considering to source from a fishery.

1 Biomass, in ecology, is the mass of living biological organisms in a given area or ecosystem at a given time. Biomass can refer to species biomass, which is the mass of one or more species, or to community biomass, which is the mass of all species in the community.

How can fish stocks be sustained?

Through robust ecosystems based management plans; this means every species in the ecosystem is considered in the management plan. Fishery management has historically been developed on an individual species basis. However, fisheries impact many more species than their single target catch. It is vitally important that the whole ecosystem is incorporated in management plans.

1. Fishing effort controls are put in place that include limiting the number of days at sea, the size of fishing nets or trawls, agreeing a maximum trawl time and setting a minimum mesh size to enable the small, juvenile fish to escape through the net.
2. Closing areas of sea to fishing at certain times of year, e.g. nursery areas, spawning seasons.
3. Marine Protected Areas (MPAs) – these are networks of protected areas in which fishing is restricted or banned.

www.ukmpas.org/mapper.php

> "The Marine Stewardship Council (MSC) has a robust framework so any MSC-certified fishery is considered sustainable"

Production and Processing

The catching sector consists of either small day boats which focus on inshore fisheries or larger, offshore fishing vessels that can stay at sea for up to 3 weeks at a time. The majority of fish are gutted onboard immediately after capture, then iced or frozen, until the vessel returns to shore.

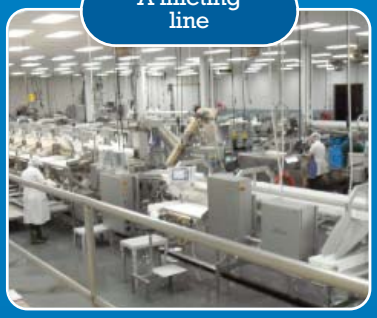
Primary processing can then begin. The fishing vessel lands the catch often directly into the processing plant; the factory conducts a quality assessment, checking aspects such as texture, temperature, and age. The delivery will be scored accordingly and rejected if out of specification.

Fish are then graded and sent to the most appropriate filleting line, depending on their size, for removal of frame, head and skin. This is often an automated process.

Fillets are then transferred to the filleting line for further processing; this is generally a manual process where bones, poor trim, and any additional foreign bodies are discarded. The fillets are cut for utilisation in different products; these include individually quick frozen fillets (IQF), fresh loins and block production. Off cuts are sent to be made into fish meal and animal feed production.

Depending on species and supplier, the fillets may be sent for smoking, marinating or curing, e.g. smoked salmon or smoked haddock. During secondary processing usually at the direct supplier, the fish fillets are further processed into their final product format. This is either plain wet fish fillets or into value added lines, such as ready meals. The products are then packed and despatched.

A filleting line



Fresh fish loins

Wet fish fillets

Fish-based prepared meal

Government advice to UK consumers on fish

(Scientific Advisory Committee on Nutrition/Committee on Toxicology 2004)

Target group	Portions per week	Cautions
Women who are pregnant or lactating, women planning a pregnancy and children under 16 years where possible	One or two 140g portions and at least one portion of oily fish	Avoid shark, swordfish and marlin. Restrict fresh tuna to two portions a week and canned tuna to four portions a week, where possible
All other women, men and boys over 16 years	One or two 140g portions and at least one portion of oily fish	Restrict shark, swordfish and marlin to one portion a week.

Nutrition

Fish is rich in protein, which is important for growth and development. White fish in particular are low in fat and saturated fat. Oily fish are a rich source of the long chain omega-3 fatty acids, such as EPA (eicosahexaenoic acid) and DHA (docosahexaenoic acid). These are associated with many health benefits when eaten as part of a healthy, varied diet, e.g. maintaining a healthy heart and may help to prevent strokes and heart disease, improving immunity and supporting brain development particularly in early years. Our bodies cannot make long chain omega-3 fats very efficiently so it is important to include good sources in our diet such as oily fish.

Fish provide a good range of micronutrients, especially the minerals phosphorus, selenium, potassium, iodine, zinc and magnesium. Fish can also be a source of calcium, if consumed with edible bones, such as sardines. Oily fish are the best source of vitamin D in the diet and can make a significant contribution to vitamin D intake to help strengthen bone health and boost immunity.

We should aim to have at least two portions of fish a week, one of which should be oily. One portion of fish is roughly 140g, which is equivalent to a medium fillet of Haddock or Pollack or one whole fillet of Mackerel.

There is a maximum limit to eating oily fish for women of childbearing age because this type of fish may contain pollutants, such as dioxins and PCBs (polychlorinated biphenyls). They should also avoid deep-sea fish such as shark, swordfish or marlin and limit canned tuna to four portions a week because these may contain a high level of mercury which is harmful to the child's developing nervous system.

Nutrition information

Per 100g cooked weight Nutrient	**White Fish** Haddock	**Oily Fish** Salmon
Energy	372kJ	812kJ
	89kcal	194kcal
Protein	21g	22g
Fat	0.6g	12g
Saturated fat	0.1g	4.7g
Long chain omega-3 fatty acids	200mg	1700mg
Vitamin A	Trace	14Qg
Vitamin D	Trace	8.7µg
Vitamin E	0.41mg	2.07mg
Vitamin B1	0.04mg	0.22mg
Vitamin B2	0.11mg	0.14mg
Vitamin B6	0.41mg	0.81mg
Vitamin B12	2µg	4µg
Iron	0.1mg	0.4mg
Calcium	29mg	23mg
Zinc	0.4mg	0.7mg
Magnesium	30mg	29mg
Potassium	440mg	390mg
Phosphorus	200mg	270mg
Selenium	36µg	28µg
Iodine	340µg	44µg
Sodium	73mg	49mg