

Yellowfin tuna

A global and UK supply chain analysis



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Executive Summary

Globally, the tuna market is worth approximately US\$5.5 billion. In the UK tuna is one of the top five consumed species by volume. The UK market is characterised by a range of tuna products including fresh, frozen and ambient, with materials sourced from international fisheries.

UK processors currently suffer knowledge gaps in the tuna market. There is a lack of understanding around: volume, value and format of imports; the routes of supply into the UK; and competitive pressures on sources of supply. Yellowfin tuna is of particular interest to UK processors as the majority of fresh tuna consumed in the UK is yellowfin.

Following consultation with industry it was apparent that research aimed at filling some of the knowledge gaps relating to tuna would be of value. It was also apparent that individual companies are unable to undertake this type of research alone. This research therefore proposed to characterise: the global tuna market; the key markets for yellowfin tuna; and the UK market and supply routes for tuna with an emphasis on yellowfin tuna. The research also describes the international trade rules for relating to tuna and possible development options for the industry.

The research undertaken included primary research in the form of interviews with key industry stakeholders. Secondary research involved a review of publications regarding tuna markets and analysis of official catch, production and consumption data.

Global Overview

The total volume of tuna caught globally each year is now in the region of 4.3 million tonnes. Japan, the EU, Taiwan, Indonesia, Philippines and Korea are the six main catching nations. The status of tuna stocks, along with catching trends indicate that an increase in the total volume of tuna caught annually is unlikely. Trade in tuna materials has increased greatly with trade in frozen materials more than doubling since 1985, and increased volumes of fresh tuna being traded. The vast majority of tuna is processed into ambient, prepared or preserved tuna products, which Thailand

produces in the greatest volumes. Although trade data on fresh tuna is limited, it is known that these materials are traded as bullets or as fresh loins. The key consumption areas for tuna are: Japan where the greatest volume of fresh tuna is consumed; and the EU and US which both consume large quantities of ambient tuna products and increasing volumes of fresh tuna.

International Trade Rules

The market for tuna products is global and as such is subject to international trade rules. Trade tariffs and barriers affect trade flows of tuna as they can affect the price and availability of tuna in specific regions or nations. The EU operates a tariff system which encourages imports of unprocessed raw materials or materials from specific groups of developing nations. Meanwhile, these EU tariffs act as a barrier to the cheaper imports from the major South East Asian tuna producing nations. Outside the EU there are a number of bilateral agreements between states that impact on the global tuna trade.

Yellowfin Tuna Key Markets and Supply Routes

Yellowfin tuna is second only to skipjack in terms of popularity and volume. Found in equatorial waters in the Atlantic, Indian and Pacific Oceans, yellowfin is caught by many nations but Japan, Indonesia, Mexico and the Philippines are responsible for the majority of the total annual catch. The majority of yellowfin is caught by purse seine method although large volumes are also caught by long-line.

The three main customer groups of yellowfin tuna are Japan, the US and the EU. The Japanese consume yellowfin predominantly as sashimi. By contrast, the EU and the US markets consume the majority of their tuna products in an ambient format. However, in recent years both the EU and the US have experienced significant growth in the fresh tuna market. Fresh yellowfin is the main fresh species in both of these consumption areas.

Overview of UK Tuna Market

Tuna is supplied into the UK as ambient, frozen or fresh/chilled. Ambient tuna is a high volume, low value

segment which contrasts with the low volume, high value fresh tuna segment. Skipjack represents the largest volume of tuna imported into the UK followed by yellowfin and albacore. The majority of UK tuna consumption is of ambient products but in the last 15 years there has been considerable growth in fresh tuna in the retail and food service sectors.

Fresh or chilled tuna imports into the UK are predominantly yellowfin loins. The majority of the volume imported into the UK is through a small number of processors for sale into multiple retailers. The majority of the fresh or chilled tuna air-freighted into the UK is from Indian Ocean countries such as Sri Lanka and the Maldives. UK processors have high sourcing standards across a broad set of criteria which demands that they develop close relationships with their suppliers. Sustainability is a key concern for UK processors driven predominantly by retailer demands.

Developments and Possible Options

On the basis of the evidence gathered in this research there appears to be a number of key developments impacting on UK yellowfin tuna processors.

Sustainability requirements of the UK market may make the UK a less desirable customer for suppliers. Volatile supply may impact on processors' ability to consistently satisfy demand. The increasing strain placed on tuna resources may increase competition for materials and limit the availability of materials for the UK market. Better utilisation of the resource may increase the availability of materials for the fresh and chilled markets. Relaxation of EU trade rules and the emergence of new bilateral trade agreements may encourage tuna imports into the EU. Yellowfin may attract greater attention from non-governmental organisations, affecting public perception and demand.



1. Introduction

Globally, the tuna market is worth approximately US\$5.5 Billion.

In the UK, tuna is one of the top five seafood species consumed by volume. The UK market for tuna is characterised by a range of product formats; fresh, frozen and ambient, with material sourced from international fisheries.

Future growth of the UK market for tuna depends on understanding customer preferences and the ability to secure supply within a very competitive global context. Securing supply could mean sourcing material from a variety of tuna species from a range of fisheries.

UK seafood processors currently have imperfect knowledge of the tuna market, and especially the volume, value and format of imports, the routes of these imports into the UK and the competitive pressures on sources of supply. This restricts their view of key trends or events that might offer opportunities for growth or alternatively pose a threat to their businesses.

Why yellowfin?

Most fresh tuna consumed in the UK is yellowfin tuna, but global stocks of yellowfin are under pressure and demand for products fluctuates across the globe.

From our consultations with the industry, we know that UK processors have a keen interest in understanding the trends and influences upon global yellowfin supply chains – but it is almost impossible for individual companies to undertake this type of research on their own. Trade data is limited or restricted as commodity codes do not always differentiate by species. For example, commodity codes for whole (fresh or frozen) tuna imports differentiate between types of tuna but commodity codes for fresh or frozen fillets do not even differentiate between species. This makes it difficult or impossible to calculate accurately the volumes and values of different formats of raw material imported into the UK.

The purpose of this report is to help the industry to fill the gaps in its knowledge of the yellowfin tuna market

both worldwide and domestically, and so improve long term plans and strategic decision-making.

Research aims

The trade in tuna (and yellowfin tuna in particular) is broad, complex and involves multiple stakeholders. Tuna fisheries exist in a range of national and international waters and the UK must compete for its supply with other national markets.

This report looks at the risks for UK processors that arise from factors affecting the supply chain. For example, the sustainability initiatives of UK retailers and the illegal, unreported and unregulated (IUU) fishing prevention initiatives of the EU generate added compliance responsibilities in the supply chain which may threaten continuity of supplies. There are also information gaps in chain impact, for example energy intensity and CO₂ distributions. Again this research can go some way to filling these and providing industry with a platform for decision-making.

In creating this report we aimed to:

- Characterise the global tuna market
- Characterise the key markets for yellowfin tuna
- Characterise the UK market and supply routes for tuna with a focus on yellowfin tuna
- Identify the economic and related drivers influencing purchasing and supply decisions

Method

This report was produced by Seafish in partnership with the industry. Primary research involved face-to-face and telephone interviews with UK stakeholders. Secondary research involved identifying, reviewing and referencing existing industry data and analysis (statistics and reports) in order to generate new data and fresh insights.

UK processors already have significant existing knowledge of the tuna market, and a great deal of tuna-related research is either available or underway.

Our aim in this study was to avoid duplication, add value to processors' knowledge, and capture and articulate the views of stakeholders.

The results are presented here using a supply chain model, as an effective tool for managing complex subject matter and highlighting market-specific opportunities and risks.

Future growth of the UK market for tuna depends on understanding customer preferences and the ability to secure supply within a very competitive global context.

Limitations

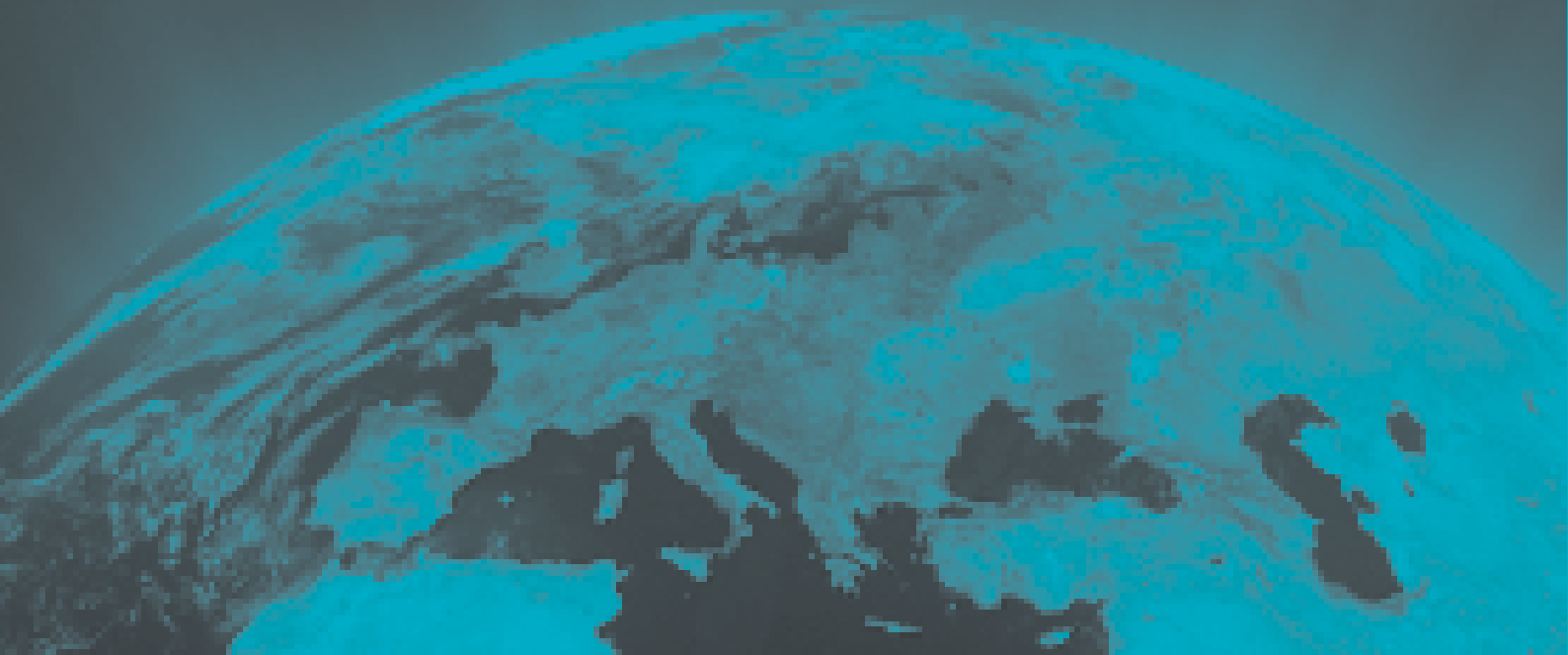
Consultation was limited to stakeholders within the UK seafood industry. Our analysis is therefore by necessity a UK-centric view of the yellowfin trade.

Our ability to track raw material flows in supply chains was restricted by a lack of relevant trade data. Harmonised commodity codes only allow us to identify trade in either chilled (code 03023) or frozen (03034) whole fish or ambient products and material for further processing (1604). Trade in partially-processed tuna is often incorporated into commodity codes that refer to a broader category of material - including other fish species. Commodity codes for fresh or frozen fillets (including vacuum packed chilled loins to be processed into steaks) do not differentiate between species and refer to 'all species of fish including tuna'.

This makes it difficult, if not impossible, to obtain the detail needed to track specific product formats by species, for example trade in fresh yellowfin loins.

2. Global overview

This section provides an overview of the main tuna supply routes, followed by brief descriptions of catching, trading and processing activities and the main consumption patterns.



2.1 Main supply routes

Figure 2.1 shows an outline of the main tuna supply routes from catch to consumption.

The bulk of the material is sourced through purse seine, long-line, hand-line and pole fleets. There are three main routes to market ranging from high value to low value product formats: fresh/chilled, frozen and prepared and preserved. In the main tuna is bought by the consumer as sashimi products, fresh, chilled or frozen products (steaks), preserved products and ambient products. Tuna can suffer from discolouring after normal freezing, which helps to drive the supply chain for fresh or chilled products and has also driven the development of the super-frozen supply chain (see also page 11).

2.2 Catching

Between 1950 and 2006, the total volume of tuna caught globally increased tenfold to 4.3 million tonnes.

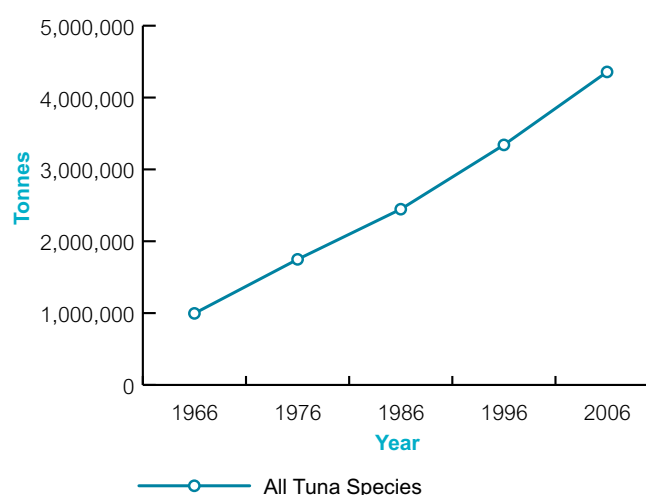


Figure 2.2 Total Tuna Catch Volumes

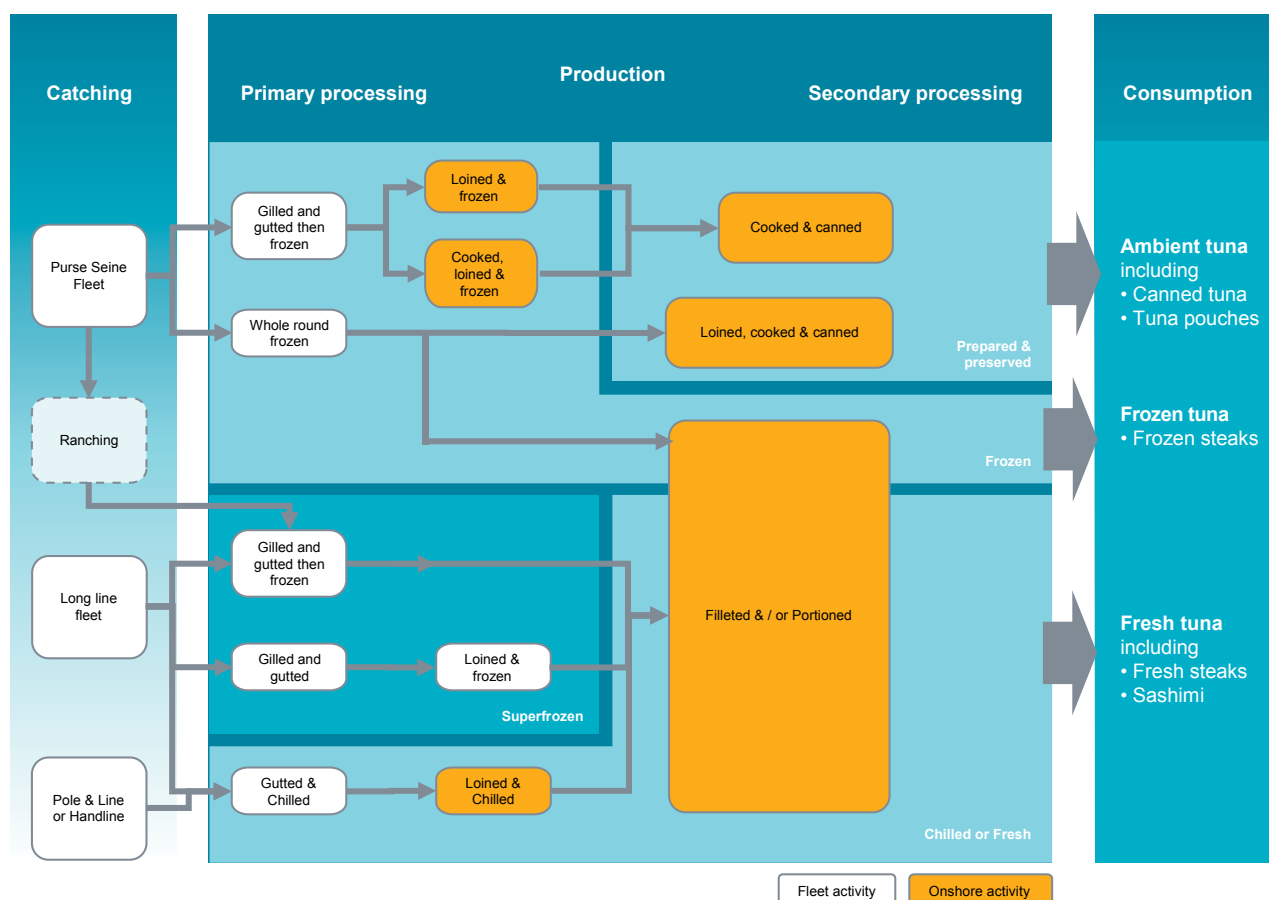


Figure 2.1 Main tuna supply routes from catch to consumption

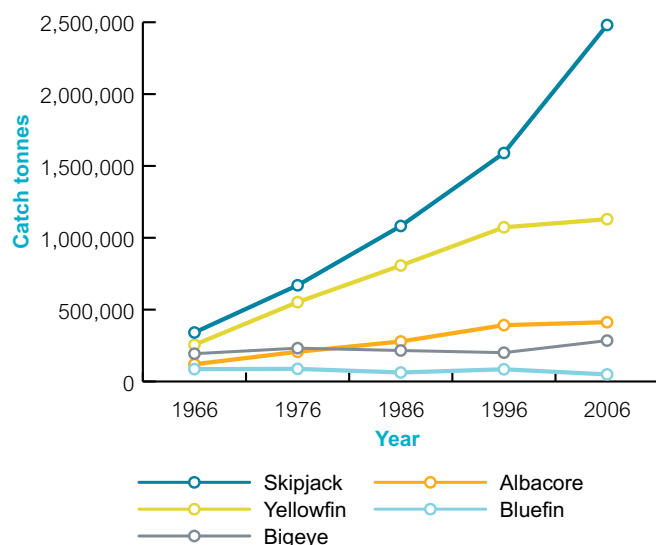


Figure 2.3 Tuna Catch Volumes by Species

The majority of the overall tuna catch is caught in the Pacific Ocean. The Indian Ocean provides the second highest volume of tuna followed by the Atlantic Ocean.

Between them, the six main tuna catching nations - Japan, the EU, Taiwan, Indonesia, Philippines and Korea – harvest over 50% of the total catch.

There are five main species of tuna: skipjack, yellowfin, bigeye, albacore and bluefin. Skipjack tuna is destined for the high volume ambient sector, and in 2006 the volume of skipjack caught was twice that of any other tuna species.

Trends

Catching trends and the status of tuna stocks make it unlikely that greater amounts of any tuna species will enter the supply chain.¹

Aquaculture may be one method of increasing supplies. The growth in tuna ranching and the rising potential of tuna farming are driven by the increasing value of tuna products.

The increase in the industrialised purse seine fleet is a major trend in the global tuna fisheries.²

The industry is exposed to fluctuating costs, and in

particular fuel costs, which can jeopardise profitability.³

Regional fisheries management organisations exist in all tuna catching areas, but the regulations imposed are not always effective.

Managing the Resource

Management of the global tuna resource is complicated as tuna is a highly migratory species often caught in the high seas. Regulating the exploitation of tuna is beyond the jurisdiction of any one nation and is instead entrusted to a number of Regional Fisheries Management Organisations (RFMOs). RFMOs are intergovernmental fisheries organisations or arrangements that have the authority to establish conservation and management measures on the high seas, and members are generally representatives of individual nations which have an interest in the fishery.⁴ The RFMOs responsible for the management of tuna include: the International Commission for the Conservation of Atlantic Tuna (ICCAT); the Inter American Tropical Tuna Commission (IATTC); the Indian Ocean Tuna Commission (IOTC).

2.3 Tuna Trade

Global trade in all tuna materials and products has increased in the last 30 years. In 1976 just over 425,000 tonnes of tuna, with a value of US\$391 million, was imported globally. By 2006 these figures had grown to over 1.8 million tonnes of tuna with a value in excess of US\$3.6 billion.

Fresh tuna

The international trade in fresh tuna has increased considerably since 1976: but while export trade statistics show a consistent increase in the volume traded over this time period, global import trade statistics for fresh tuna indicate a peak in 2002 before a decline.

The key species for fresh tuna imports have remained relatively constant over time with yellowfin traded in the largest volumes followed by bigeye, bluefin and albacore.

The key exporter of fresh tuna in 2006 was Indonesia followed by Thailand, Cape Verde, Spain and Mexico.

There is uncertainty around fresh tuna traded by Cape Verde, which does not catch nor import the tuna volumes that it is recorded as processing and exporting.

Frozen tuna

International trade in frozen tuna materials and products more than doubled between 1985 and 2006 (the time period for which data is available).

The key species of frozen imports have remained constant over the last twenty years as skipjack and yellowfin are consistently traded in far higher volumes than other species.

Taiwan is the biggest exporter of frozen tuna followed by Spain, France, Korea, Maldives and Japan.

The key importers of frozen tuna are Thailand and Japan. While Thailand imports a far greater volume, it is Japan that imports the greater value of frozen tuna.

Trends

The trade of fresh tuna has increased and is driven by an increase in the volume of fresh yellowfin and albacore. Bluefin contributed to the increase, but this has levelled off as stocks diminish.

Increased volumes of fresh tuna are being imported into the US and the European countries of Italy, France and Spain.

Mauritius and Seychelles have increasing volumes of lower value frozen tuna imports.

Super-frozen tuna

Super-freezing of tuna uses ultra low temperatures (ULT) to preserve the fish and avoid the discolouring associated with normal freezing. Tuna is caught (generally by long-line), gilled, gutted and frozen very quickly to temperatures in the region of -60°C. This effectively keeps the tuna 'as fresh'.

The main sources of super-frozen tuna are currently China, Japan and Vietnam.⁵

The infrastructure required for handling super-frozen tuna is not well developed across the globe, and there are issues with the consumption of the product once defrosted. The Japanese market is well suited to super-frozen materials due to its 'buy to consume' nature but in the UK, where shelf life is critical, super-frozen materials present new challenges.

Despite resistance from established distributors, who see the status quo threatened, and from users who have adopted an 'only use fresh' stance,⁶ the market for super-frozen tuna is growing. Japan has been taking advantage of super-frozen tuna materials for a number of years and it is being followed by the US and latterly the EU, although these markets are taking time to develop.

It is clear that super-frozen can provide a more convenient and consistent supply than fresh, allowing seafood suppliers to hold stock and manage it to meet fluctuating supply and demand.⁷ By reducing the need for air freight, it has the potential to reduce shipping costs and the carbon footprint of the raw materials.⁸

Super-frozen tuna is expensive, as both storing and handling require costly expertise and equipment; and although many processors already use super-frozen tuna to satisfy demand in the absence of fresh materials, the infrastructure is not yet in place for it to be the main source of 'fresh' tuna in the UK. Despite these disadvantages, there is generally a positive outlook for super-frozen tuna.⁶

There are five main species of tuna; skipjack, yellowfin, bigeye, albacore and bluefin. In terms of volume caught, skipjack tuna is by far the most significant species.

2.4 Processing

The vast majority of tuna caught each year is processed into ambient, prepared or preserved tuna products (Figure 2.4). In 2005 it was estimated that 82% of all tuna was processed into ambient, prepared or preserved products with the remaining 18% processed, for consumption, as fresh/sashimi.⁹

Species caught for fresh tuna products are bluefin, bigeye and yellowfin. These species are caught by both long-liners and pole-and-line methods and these methods of catch provide raw materials of a higher quality.

Prepared and preserved processing

Most prepared/preserved tuna is ambient tuna, and much of it is prepared using previously-frozen materials. Global production of frozen tuna products is dominated by Asian catching nations and the bulk is frozen onboard.

Thailand is the largest importer of lower value frozen materials, the largest producer of prepared and preserved tuna, and the main exporter of prepared and preserved tuna products.

Spain, USA and Ecuador are the next three largest producing nations with Ecuador increasing the volume produced significantly in the last six years.

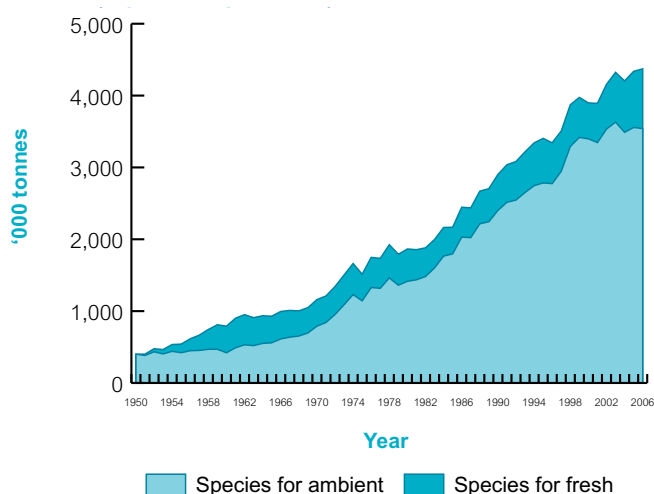


Figure 2.4 Growth in principal market tuna production 1950-2006

Source: FAO, Seafish*)

Fresh Processing

It is difficult to draw trends on fresh tuna production as there is a lack of official data, but it is known that fresh tuna is generally transported by air as bullets or as loins. Transporting fresh tuna as loins is the cheaper option as they are lighter and less bulky than bullets which although gutted still include bones, skin and the cavity. The highest grade of tuna will be transported as bullets destined for the Japanese market or the very highest quality markets in other tuna consuming nations.

Processing Trends

The price of raw materials for tuna processors has increased and has continued to do so.¹⁰

Thailand is now the main producer of tuna products as their increased production moves in tandem with their increased volume of imported frozen product.

There has been an increase in using super-frozen raw materials in the fresh tuna market.

Import patterns into the EU nations of France, Italy and Spain have changed in recent years, as a trend develops for primary processing of tuna to take place in lower labour cost regions closer to the catching area.

The location of the major ambient tuna production centres has shifted since the 1970s. This is likely to continue, not least because of changes in international trade rules (discussed in Section 3).

In the mid 1970s northern hemisphere countries - US, Japan, and the EU - accounted for 89% of production. Since then there has been a general shift in production towards the southern hemisphere, and specifically Africa, Central and South America, and South East Asia. In 2003 it was estimated that southern hemisphere centres accounted for 48% of all canned tuna production.

2.5 Consumption

Japan, the EU and the US are the key customer groups for tuna, both fresh and ambient. Japan consumes around 80% of all fresh tuna. The EU and the US consume a similar share of the ambient

* Estimates based on long-line catch and catch volumes of most important market tuna species: skipjack, albacore, yellowfin, bigeye, pacific, atlantic and southern bluefin.

produce ⁹ (these groups are discussed in detail later). The EU nations of UK, France, Germany, Italy and Spain are all amongst the largest importers of prepared and preserved tuna products. The nation that imports the largest volume of prepared or preserved tuna for consumption is the US.

Consumption trends

An increasing proportion of the total annual catch is consumed as fresh or frozen.

China has the potential to impact greatly on global tuna trade and consumption.¹¹ As a nation, China currently consumes huge volumes of seafood annually. If the Chinese people develop a taste for tuna, this will greatly increase competition for what is a finite resource. Other emerging markets for tuna products include Russia and South America.¹²



3. International trade rules

This section provides a brief introduction to international trade rules, the key agreements that exist for EU trade, and their impact on tuna processors. The section also considers the agreements currently being negotiated, and the likely forward developments.



3.1 International trade rules

The trade in tuna raw materials and products is international and as such it is subject to rules regarding international trade. International trade rules can often affect the price and availability of a traded commodity in a particular nation or region. Through trade tariffs and barriers it is possible to increase the price or availability of a commodity from one nation while decreasing it from another ('trade diversion').

The World Trade Organisation (WTO) is intended to supervise and liberalise international trade. The WTO deals with the rules of trade between nations; negotiating and implementing new trade agreements; and resolving disputes. With more than 153 member states, it represents the vast majority of world trade including the majority of globally-traded tuna.

The WTO's 'Most Favoured Nation' (MFN) principle is concerned with non-discrimination. This principle requires that a WTO member state must apply the same conditions on trade to all member states, i.e. a WTO member state has to grant the most favourable conditions under which it allows a trade to all WTO members.

In practice there are exceptions to the MFN principle. These exceptions are often preferential tariff rates designed to provide favourable trading conditions for under-developed nations until they can trade on equal terms. These preferential tariffs are generally subject to provisions which ensure that the benefits accrue to the intended recipients, and not to third parties.

Using tuna exports to the EU as an example, a nation benefiting from a preferential tariff rate will have to comply with:

- Rules of Origin (RoO): the raw materials must have been caught within a nation's territorial waters (12 mile zone) or caught by a qualifying vessel (this must be 50% owned by the beneficiary state or an EC country and be flagged and registered by one of those states).
- Sufficiently worked or processed fish products rules: if a beneficiary nation manufactures a fish product then they may use fish that does not comply with the

rules of origin up to a maximum of 15% of the ex-works value of the product.

The EU has a number of classifications for states which qualify for MFN exemptions:

- African, Caribbean and Pacific (ACP) nations benefit from signature of Economic Partnership Agreements (EPA) with the EU (which replaced the Cotonou Agreement) allowing preferential access to the EU market. ACP nations include Fiji, Ghana, Ivory Coast, Senegal, Seychelles, Mauritius and Papua New Guinea.
- The Everything But Arms (EBA) initiative supports duty-free trade from the least developed nations for goods other than arms.
- Generalised System of Preferences (GSP) providing preferential treatment to most developing countries.
- Generalised System of Preferences plus (GSP+) under which countries must also be vulnerable countries and meet criteria relating to a range of factors including human rights. Sri Lanka is a GSP+ country.

The tariffs applied to these different classifications of nation, when exporting tuna into the EU, are listed in table 3.1 on the next page.

The benefits enjoyed by ACP countries are clear from the table of tariffs. On ambient tuna for example, beneficiary states enjoy a 24% tariff advantage over MFN tuna exporters. The trade statistics indicate that ACP nations have increased their trade with the EU in ambient products. In recent years production centres have shifted from West Africa to the Indian Ocean but the increase in exported values has continued. Similarly, the value of tuna loins for reprocessing imported into the EU from ACP nations has increased, more than doubling between 1996 and 2006. These statistics indicate that the ACP countries have made significant and growing utilisation of the Cotonou Agreement.

The preferential tariffs enjoyed by GSP+ nations have encouraged significant investment in several Central American and Andean countries by EU

Description	ACP	GSP+	EBA	GSP	MFN
0302 and 0303 Fresh chilled or frozen tuna for production under 1604	0%	0%	0%	0%	0%
0302 and 0303 Fresh chilled or frozen tuna for uses other than production	0%	0%	0%	18.5%	22%
03041 Fresh chilled fillets (all species of fish, including tuna)	0%	0%	0%	11.5%	15%
03042 Frozen Fillets (all species of fish, including tuna)				14.5%	18%
1604 Tuna loins to be processed	0%	0%	0%	20.5%	24%
1604 Ambient tuna products, with oil and others (all species)	0%	0%	0%	20.5%	24%

Table 3.1 Simplified EU Tariff Structure for Tuna and Tuna Products. Source: Campling, L. (2008)¹³

investors. Development of the processing industry in these countries has considerably increased the volumes of processed tuna. GSP+ status, coupled with a trade agreement with the United States means that these South American countries have been able to increase production and generate greater economies of scale while enjoying a competitive advantage through tariff exemptions.

Table 3.1 also demonstrates the EU ‘tariff peaks’ which protect domestic industries from low cost competition. EU tariff peaks are used for the importation of processed material but tariffs are kept low on unprocessed raw materials used for production. Industries within the EU can buy unprocessed materials tariff free while all low cost imported products, other than those from ACP/GSP+ nations, attract a tariff.

The major South East Asian producers of tuna such as Thailand, Philippines and Indonesia do not benefit from preferential treatment and are at a disadvantage due to the EU’s tariff peaks. In order to comply with WTO rules the EU had to reach a compromise (under the WTO Dispute Resolution Understanding) with these disadvantaged countries. Under the terms of the compromise, known as the Cotonou Waiver, the EU agreed to allow specific volumes of ambient tuna (25,000 tonnes) and tuna loins (4,000 tonnes) from these producing countries at a reduced tariff of 12%.

The effect of these tariff quotas for SE Asian countries is that once a year, SE Asian tuna comes to the EU market with low tariffs. It is estimated to take only days to sell this tuna which would indicate that even with a 12% competitive disadvantage, the tuna is still cheaper than ACP or GSP+ tuna. SE Asian countries do not have to comply with any of the rules relating to RoO (as described above for nations with tariff exemptions). This offers them an advantage as they can purchase their raw materials from the cheapest source.

Impact on EU Tuna Processors

Ambient tuna production in the EU is particularly affected by these trade rules. While the rules are designed in part to protect the industry, they can also be restrictive. The importation of whole unprocessed tuna may be tariff free, but the labour intensity of processing this in the EU means that it is too expensive and processors prefer to import loins. Imported loins from ACP or GSP+ nations do not attract a tariff (subject to RoO) but supplies are not sufficient to meet demand¹³ and processors are forced into purchasing high tariff attracting SE Asian loins.

As a result, processors in the EU are now pushing for an increase in the volume of tariff-reduced, non-EU tuna loins.

3.2 Current trade agreements

There are a number of free trade agreements (FTAs) that are relevant to the tuna trade. Table 3.2 (on the previous page) lists those that are most relevant to tuna. Each trade agreement that is signed will have effects on markets beyond the two contracting nations. For example, as Thailand trades more with Australia and Japan other tuna producing nations will lose market share. If the EU signed a free trade agreement with Thailand then, given that they are cheaper with a 12% tariff disadvantage, this would adversely affect the competitiveness of the ACP and GSP+ tuna producing nations.

This list of agreements is evidence that Thailand is seeking to consolidate its position as the dominant producer of preserved tuna. If Thailand successfully negotiates a free trade or reduced tariff deal with the US, it will have a considerable advantage in the US market and put countries such as the Philippines at a disadvantage.

Contracting Parties	Status	Market Access for Ambient Tuna
NAFTA (US, Mexico, Canada)	In force	Mexico: full market access for ambient tuna 2008 onwards
US-Columbia FTA	In force	10 year phase out
US – Ecuador FTA	Stalled	10 year phase out
US-Thailand FTA	Advanced negotiations	10 year phase out
Japan-Thai FTA	In force	Market access for all tuna products, but EU type Rules of Origin
EU – ASEAN	Initial negotiations	Discussions commenced in summer 2007
Thai – Australia/ New Zealand FTAs	In force 2003/2005	Gradual tariff and quota based phase out to 2009

Table 3.2 Key bilateral trade agreements ¹³

3.3 Future Trade Developments

- The EU may relax the RoO and allow ACP and GSP+ countries to source their tuna on the international market ('global sourcing RoO'). This would provide ACP and GSP+ countries with access to cheaper materials and increase their output capacity, and in turn allow EU producers to source sufficient raw materials from them. Global sourcing RoO have already been provided to signatories of the Pacific-EU Economic Partnership Agreement but is unlikely to be extended to other EPA regions. This is because the current system benefits the EU tuna fleet as it, in effect, provides a captive market for their catch.
- The EU may agree treaties with South East Asian nations to reduce tariffs on imported tuna, either on loins or for ambient tuna. Reduction of tariffs on loins would enable EU producers to source cheaper raw materials for ambient tuna. Reduced tariffs on ambient tuna from SE Asia would impact upon the competitiveness of EU producers.
- WTO agreements reduce the maximum tariff on tuna. Talks are currently ongoing to reduce tariffs including those on tuna. As EU tariffs are just below the upper limit of 25% for tuna, any reduction in the maximum tariff would mean a decrease in the EU tariff, which could fall to just 6% in two to five years.¹³ This would make it harder for the EU to protect domestic industries and also reduce the advantages offered to ACP and GSP+ countries.
- The impact of trade liberalisation on ACP and GSP+ countries may result in a downward spiral in competitiveness of their ambient tuna industries and a growing dominance of ambient tuna producers in South East Asia.¹⁴ This may present opportunities for ACP and GSP+ countries to move out of ambient tuna and into fresh or frozen fillet production.²⁰

4. Yellowfin Tuna

Key markets and supply routes

This section provides a short overview of the key markets, trade and supply of yellowfin tuna in three major customer blocs and the key trends in ambient and fresh/chilled supply chains.

With limitations on specific yellowfin trade data, this part of the report relies on trade data and insights from existing research material. Commentary on yellowfin tuna is provided where possible, otherwise conclusions are drawn from general tuna consumption.



4.1 Main tuna fisheries

Yellowfin tuna has a better quality and yield of flesh, and a higher value than skipjack,¹⁴ and is second only to skipjack in terms of popularity and volume.

The species can grow to a large size with meat that is firm with a mild taste. As the fish grows beyond 10-15kg the meat tends to become darker and increasingly dry. Yellowfin reproduces at a later age than skipjack meaning that stocks can be hit harder by unsustainable fishing practices.

Yellowfin tuna can swim at very high speeds and cover enormous distances, and is found in equatorial waters around the world. It is distributed across the Atlantic, Indian and Pacific oceans (see figure 4.1), but with regional concentrations: for example in the Pacific most catch is concentrated in the West and East Pacific areas.

Of the many nations that catch yellowfin tuna, a handful are responsible for a large percentage of the total catch. In 2006, Mexico was the largest catching nation of yellowfin. In 2007, the Philippines was the largest catching nation followed by Japan, Indonesia, Mexico and Taiwan (see Table 4.1).

Fleet/flag	Catching method
Philippines	Purse seine
Japan	Purse seine and long-line
Indonesia	Purse seine
Mexico	Purse seine
Taiwan	Long-line

Table 4.1 Yellowfin catch 2007 principal fleets and their foremost catching methods. Source: RFMO data, 2007

Capture methods for yellowfin include purse seine, long-line, pole-and-line and hand-line. Table 4.2 shows the main fleet activity, and fishing methods in major tuna fisheries.

The majority of the yellowfin catch is taken in the Western Indian Ocean, where the fishery is seasonal, and the Indian and West Central Pacific Ocean, where it is year-round.

The Indian Ocean has seen a decrease in the catch from around 390,000 tonnes in 2006 to 311,000 in 2007. The EU purse seine fleet dominates catching in the Indian Ocean. It targets skipjack, with yellowfin as a by-catch. Of the total Indian ocean yellowfin catch, France and Spain caught almost one third in 2006 and roughly one quarter in 2007.

Catch of yellowfin in the Central and Western Pacific region has increased from around 350,000 tonnes in 2006 to 436,000 in 2007. A large share is by the purse seine fleets, particularly those of the Philippines and Republic of Korea.

The Central and Eastern Pacific region has seen a largely stable catch in yellowfin tuna of around 180,000 tonnes between 2006 and 2007. The Mexican purse seine fleet targets and dominates yellowfin catching in this region. The Atlantic region is dominated by the EU purse seine fleet which has seen decreasing catch volumes, followed by the Ghanaian and then South American fleets.

The main tuna fisheries are overseen by RFMOs: the Indian Ocean Tuna Commission (IOTC); the Western Central Pacific Fisheries Commission (WCPFC); the Inter American Tropical Tuna Commission (IATCC); and the International Commission for the Conservation of Atlantic Tuna (ICCAT) respectively.

RFMO management of the resource is not always effective, with decision-making impeded by conflicting interests. RFMO membership includes coastal and catching 'developing' countries as well as developed countries e.g. EU countries. Developed countries have sophisticated vessels and can afford to buy licenses. Developing countries tend not to have the fishing capability and can benefit greatly from licensing income. The challenge is to protect the natural resource while ensuring that developing nations have the opportunity to thrive economically. Despite the difficulties RFMOs face, it is acknowledged that the situation would be worse without them.²

A further challenge is to ensure RFMO decisions are grounded on scientific advice and the status of tuna stocks, rather than on political trade-offs from

countries that stand to lose money and jobs if their tuna quotas are cut. The ICCAT recently commissioned an independent panel to review its own performance following widespread concern over the management of Atlantic tuna stocks. The panel branded the ICCAT an 'international disgrace' commenting that member states do not adhere to regulations and that quotas do not follow scientific advice.¹⁵

4.2 Trade in yellowfin tuna

Yellowfin tuna is the second most prevalent tuna species in terms of volume caught, and makes up around 25% (1.1 million tonnes in 2006) of the total tuna catch (figure 4.2). The total volume of yellowfin tuna caught each year increased steadily between 1950 and 2004. Since 2004 catch volumes have fallen back to levels similar to the late 1990s.

The rate at which the yellowfin catch has increased is not as fast as that of skipjack but the total volume caught increased tenfold in the time period shown.

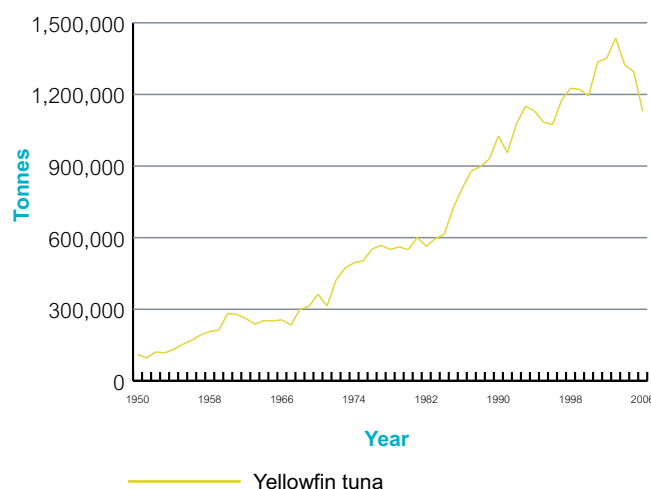


Figure 4.2 Yellowfin tuna catch 1950 - 2006

Yellowfin tuna is traded as either ambient product (solid pack, chunks, flakes, grated), raw material for ambient tuna (fresh, frozen and frozen pre-cooked loins) or as tuna for direct consumption (fresh/chilled and frozen) in the form of tuna steaks or sashimi.

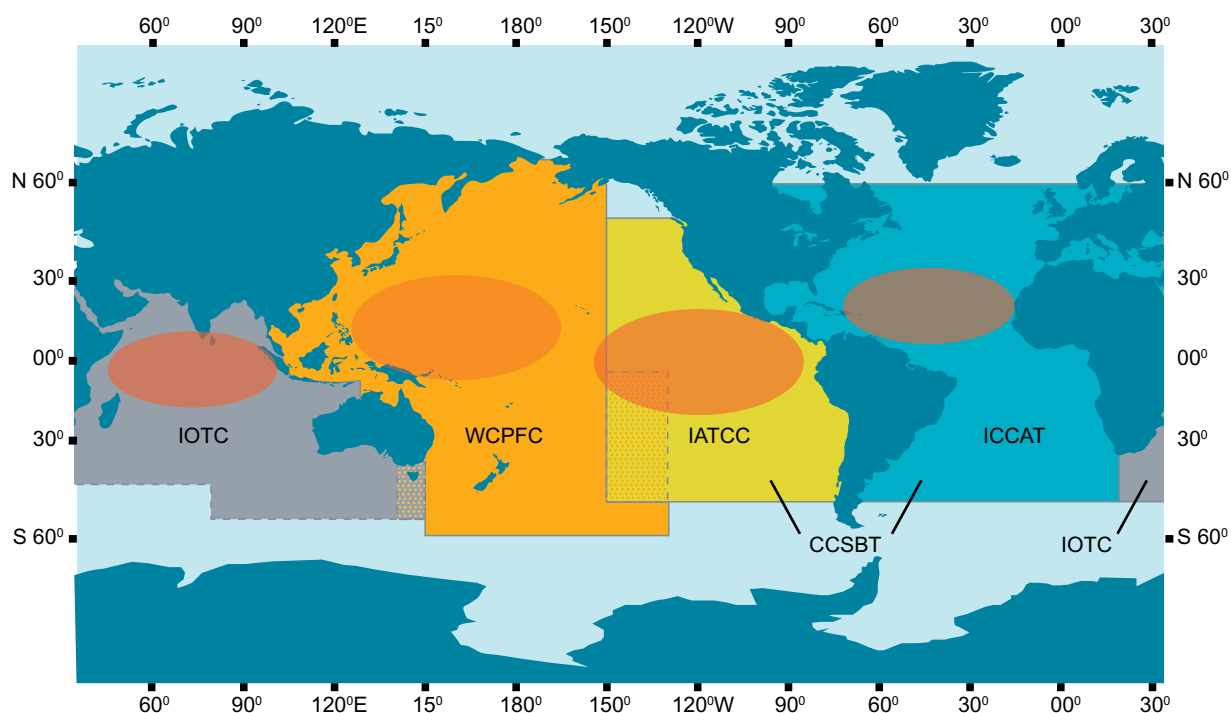


Figure 4.1 Major yellowfin fisheries

Ocean	Tuna fishery region	Catch & species	Method	Fleet
Indian	Western Indian Ocean			
	Total catch	919,549	Most catch is through purse seine, long-line then line caught	
	Yellowfin	226,704	43% by purse seine, 21% long-line, 20% hand-line	Purse seine largely Spanish (43%), & French (26%)
	Skipjack	321,445	43% purse seine	Long-line catch dominated by China/Taiwan (35%) and Japan (26%)
	Bigeye	86,090	73% long-line	Line caught catch comprise Yemen (19%), Oman (17%), Maldives (15%) and Madagascar (14%)
	Albacore	14,689	95% long-line	
	Other	270,621	-	
	Eastern Indian Ocean			
	Total catch	572,126	Most catch is through Gillnet, long-line then purse seine	
	Yellowfin	83,814	42% long-line	Gillnet is largely Sri Lankan (54%) followed by Indonesia (27%) and India (18%)
	Skipjack	117,457	12% line caught, 11% purse seine	Purse seine catch is largely Indonesian (56%)
	Bigeye	31,769	92% long-line	A large share of long-line catch is Chinese/Taiwanese (37%) and Japanese (11%)
	Albacore	17,343	100% long-line	Line caught catch is mostly Indonesian (60%)
	Other	321,743	-	
Pacific	Central & Western Pacific			
	Total catch	2,420,814	The majority of all tuna (70%) caught is through purse seine, 12% being caught by long-line	
	Yellowfin	435,741	52% of total yellowfin catch is through purse seine, 16% by long-line	The largest share of the purse seine catch is the Philippines (23%) then Rep of Korea (18%). Rep of Korea and Japan account for nearly half the long-line catch.
	Skipjack	1,697,856	84% of skipjack catch is through purse seine	The majority of the purse seine catch is accounted for by Rep of Korea (15%), China/Taiwan (15%), Japan (15%) and Papua New Guinea (12%)
	Bigeye	142,558	57% of bigeye is long-line caught, 27% is caught by purse seine	The majority of the long-line catch is through Japanese (33%) and Chinese/Taiwanese (18%) long-liners, whilst most of the purse seine catch is through USA (20%) and Japan (13%)
	Albacore	94,876	80% of albacore is caught by long-line	Most catch is by Japan (32%) and China/Taiwan (14%)
	Other	49,783	All other tuna material is caught by long-line	
	Central & Eastern Pacific			
	Total catch	449,677	The majority of all tuna (88%) caught is through purse seine	
	Yellowfin	181,624	97% of total yellowfin catch is through purse seine	Mexico (38%) largest share of purse seine catch
	Skipjack	194,615	99% of skipjack is through purse seine	Ecuador (43%) largest share of purse seine catch
	Bigeye	50,251	-	
	Albacore	87	-	
	Other	23,100	-	

Table 4.2 continued overleaf

Atlantic	Atlantic			
	Total catch	450,378	Majority of major tuna species caught through purse seine (39%), remainder caught by long-line	
	Yellowfin	97,165	53% of total yellowfin catch is through purse seine, 28% through long-line	The largest purse seine catch is through Spanish (24%) and French (21%) fleets, whilst the largest share of long-line catch is made through Japanese long-liners (35%)
	Skipjack	149,930	Nearly 60% of skipjack catch is through purse seine	The majority caught by purse seine fleets of Ghana (34%), Panama (20%), and Spain (19%)
	Bigeye	71,834	66% of bigeye is long-line caught, the remainder caught by purse seine	The majority of the long-line catch is through Chinese (41%) and Japanese (39%) long-liners
	Albacore	48,461	46% of albacore is caught by long-line	The majority of albacore long-line catch is accounted for by China (65%)
	Other	82,988	56% of other tuna material is caught by long-line	

Table 4.2 Main catch, method and fleet share in major tuna fisheries 2007. Source: RFMO data, 2007

The three largest markets for fresh/chilled yellowfin tuna are Japan, the US and the EU. The largest markets for ambient tuna are the EU and the US.

Sourcing practices and supply chain structure for fresh/chilled product are distinct for each of the customer blocs; shaped by the technical requirements of the material as well as historical fishing practices which reflect the markets for individual product formats.

While the market for tuna, per se, places pressure on tuna stocks, the market for individual product formats places pressure on how the material is caught, processed and sold.

The majority of the catch is used for ambient tuna although increasingly it is being used as fresh/frozen loins, fresh/frozen fillets or smoked. Of course where it is used as fresh/frozen it could still be used for ambient tuna. Yellowfin tuna, to be sold as fresh/chilled to the market, is caught by hand-line, pole-and-line or long-line in order to preserve its red colour and has either to be landed directly to the destination market, air-freighted, or super-frozen. Yellowfin tuna for ambient products is generally caught using purse seine, frozen onboard and processed in canneries before freighting to the customer.

4.3 Major yellowfin supply chains

Given the limitations in available data, the supply chain descriptions in this report are based on a combination

of data sources. Given the lack of data on yellowfin tuna trade and consumption relating to the three major customer groups, overall tuna consumption has been used to gain insights and general impressions. Conclusions on yellowfin tuna are provided where possible.

When the three key customer groups are compared it is clear that, in terms of overall tuna consumption, the EU and the US markets share similar characteristics and tend to contrast with the Japanese market.

- Of the three main customer groups, the 27 EU nations as a trade bloc consume the largest amount of tuna in terms of volume at around 1.2 million tonnes per year.
- Japan consumes more tuna than any other single nation.
- In the USA, tuna is an important part of the diet and consumption volumes of tuna are second only to those in Japan.
- Buyers in each of the three key customer groups have different factors driving their buying decisions.
- The EU and the US are responsible for practically the whole market for loins of all tuna species.¹⁴

The statistics for overall tuna catch in 2006 indicate that, of the three key customer groups:

- Japan is the largest catching nation.
- Japan is also the main importer of tuna.
- The EU is the most significant of the three key customer groups in relation to imports and production of prepared or preserved tuna products.

Major supply chains follow for the major consuming blocs of yellowfin tuna i.e. Japan, US and the EU.

Japan

Japan is the leading market for fresh tuna. In 2006 it had an estimated total tuna consumption of around 900,000 tonnes, with sashimi accounting for an estimated 56%, katsubushi responsible for 27% and ambient for 17%.¹⁶

The major market for tuna in Japan is therefore the market for fresh sashimi, which accounts for the majority of the tuna raw material volume and also for the most value.¹⁶

The sashimi market uses larger species of tuna such as bluefin, bigeye and yellowfin. Bluefin tuna attracts the highest prices but is available in much lower volumes. Bigeye is well priced and because it inhabits deeper, colder water it has a high fat content, which is sought after in Japan. Yellowfin is popular as sashimi but priced lower than Bigeye.^{16 17 18} The consumption of yellowfin tuna is believed to be in the fresh/chilled category rather than ambient material.

Fresh / chilled

Despite the relatively high volumes of sashimi consumed in Japan, the Japanese market has been declining. Japanese direct consumption of all tunas (eaten fresh as sashimi) was estimated to have fallen from around 650,000 tonnes in 2002 to 500,000 tonnes in 2006.¹⁶

The premium sashimi market favours fresh and chilled tuna but accepts frozen material. Around 80% of product sold in Japan is super-frozen using freezing infrastructure developed over the last 30 years.⁶

Sashimi demands high quality handling of the fish, therefore tuna caught by long-line has traditionally been used and more recently ranched tuna has been a source of material. Top grade yellowfin tuna caught by Asian long-liners is sold as sashimi in Japan. Material from long-line operations derives from large distant water freezer fleets and smaller offshore fleets serving fresh markets via air freight.¹⁹

In the Pacific region the freezer fleets focus on sourcing bigeye and yellowfin material for the frozen sashimi market. This fleet involves Japanese, Korean and Taiwanese vessels in the West and Central Pacific with some vessels operating in Central and Eastern Pacific waters. There has been some decline in freezer vessel numbers over recent years.

The smaller offshore fleets in the Pacific region target bigeye and yellowfin, but focus on the fresh sashimi market. Offshore fleets from Japan, China, Indonesia, Taiwan and Pacific Island nations have seen some growth in fishing effort.^{18 19}

Over the last ten years the balance of fishing effort between Asian nations has changed, with declining Japanese catches and an increase in landings from Taiwanese vessels which provide the majority of frozen material supplied to Japan.

Fresh tuna is flown into Japan largely from:

- Mediterranean countries (ranched bluefin) and
- Indonesia (bigeye and yellowfin) - sourced from offshore fleets of Japan, and Taiwan in the Western Pacific and particularly by the Indonesian and Chinese fleets.

The average price paid by Japan for imported tuna has risen since 2002, increasing 30 - 40% in the 2006-07 period alone. The cost of individual consumer purchases has remained level, but only because retailers have adjusted the portion size. With high prices, both fresh/chilled and frozen imported material has also declined, although there has been an increase in imported frozen loins. Imports of yellowfin have followed the decline in overall fresh/chilled tuna.^{14 16}

Ambient tuna

Ambient tuna consumed in the Asian market is predominantly skipjack. Focusing their fishing efforts in the Western Pacific region, Japanese and Taiwanese purse seiners primarily target skipjack but it is estimated that 15-30% of their catch is yellowfin.¹⁴

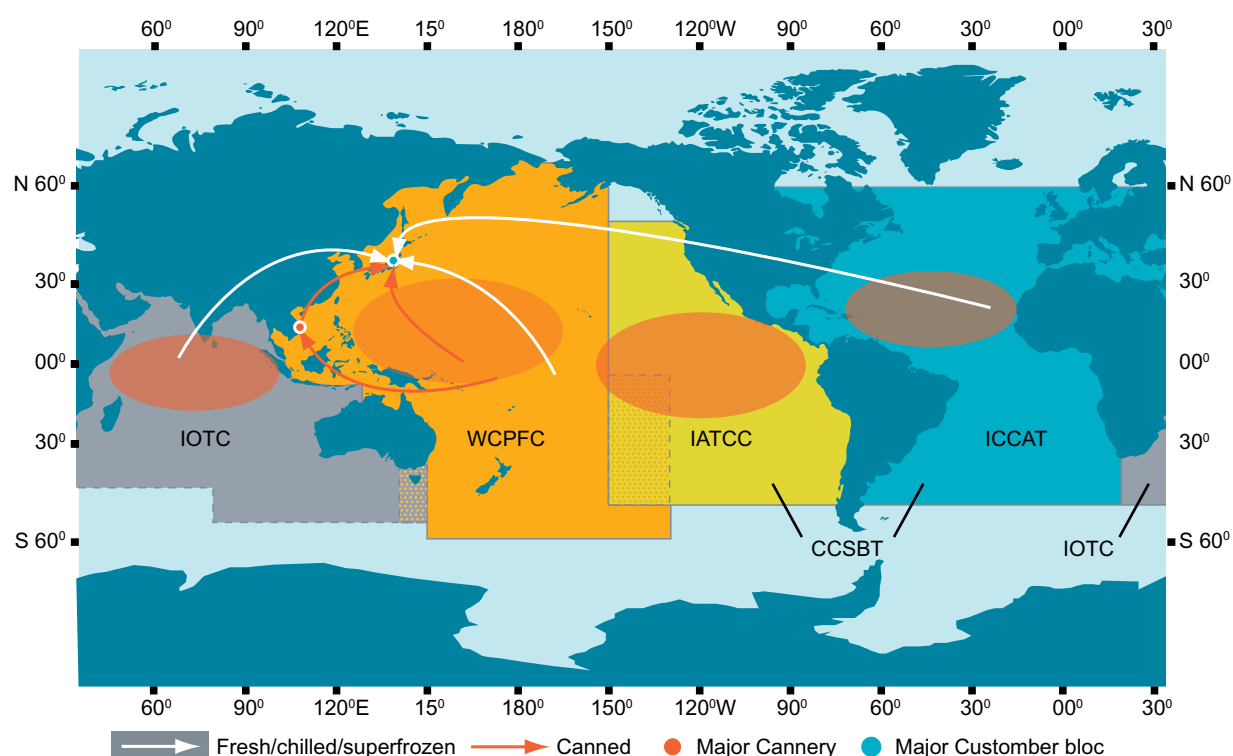


Figure 4.3: Major trade flows for yellowfin tuna sold to Japan

Tuna canneries supplying the Japanese market operate in Japan and increasingly Thailand. Both Japanese and Thai canneries rely on the Japanese and Taiwanese purse seine fleets to supply largely skipjack but also yellowfin tuna.

United States

Tuna is an important part of the US diet and consumption volumes of tuna in the US are only slightly less than the volumes consumed in Japan. As the second most popular seafood species, tuna has a high level of market penetration with an estimated 90% of Americans eating tuna once per month and a 70% household penetration.²⁰

The US market for tuna is dominated by ambient, prepared or preserved tuna, but the US fresh tuna market has grown in recent years and is now the world's second largest, after Japan. Skipjack, sourced from the Pacific, is believed to be a key species for canneries with yellowfin a key species for sashimi sourced from the Atlantic.^{21 14}

Ambient tuna

Ambient tuna sales in the US are in decline, partly as a result of the 2001 methyl mercury scare among North American consumers. In contrast, despite relatively small volumes, tuna pouches are the main growth segment with Ecuador securing an important share of this growth in recent years (resulting from a free trade agreement with the US).^{21 22}

Ambient production in the US is largely undertaken in American Samoa and to a lesser extent in California, while direct imports of ambient tuna are from Thailand, Philippines, Indonesia and Ecuador (US dolphin-safe labelling standards means Mexico is virtually banned from supplying tuna to the US). Tuna canneries in California handle loins only.^{14 21}

Material for canneries in American Samoa and Thailand is sourced from vessels in the Western Pacific, and this is likely to be largely skipjack with yellowfin as by-catch given the target species of purse seiners in that region.

The suppliers of loins to California (Ecuador and Trinidad and Tobago) are sourcing from vessels in the Eastern Pacific, and this material is also likely to be largely skipjack with yellowfin as by-catch given the target species of Ecuadorian purse seiners.¹⁴

Fresh/chilled

Direct consumption in the US has been estimated to be around 35,000 tonnes annually. Originally this was driven by Japanese restaurants, but a wide variety of mainstream restaurants now serve sushi.

The USA is an important outlet for suppliers of non-ambient tuna particularly from Latin America but also Asian countries, especially Vietnam. Fresh yellowfin is the main species for sashimi in the US (70% by volume) and Senegal is an important supplier. The market can absorb locally caught bluefin given the range of Japanese restaurants and an ability to pay higher prices than the Japanese market.^{21 23}

Although in recent years imports of fresh tuna into

the US have increased, the latest statistics show fresh imports declined by 10% in the first half of 2008. This indicates that US consumption of fresh tuna, considered a high-end seafood product, is reducing in the current economic climate.^{21 23}

Europe

Of the three main customer groups, the 27 EU nations as a trade bloc consume the largest amount of tuna in terms of volume at around 1.2 million tonnes per year. The majority of EU tuna consumption is in the ambient, prepared or preserved formats. The EU market for fresh tuna has been growing in recent years and now countries such as the UK are joining traditional tuna-consuming nations such as Spain and Italy in the consumption of fresh tuna.

Yellowfin is sourced mainly from the Indian Ocean but also from the Atlantic and Pacific (figure 4.5).

Ambient tuna market

Although skipjack is the major species for ambient

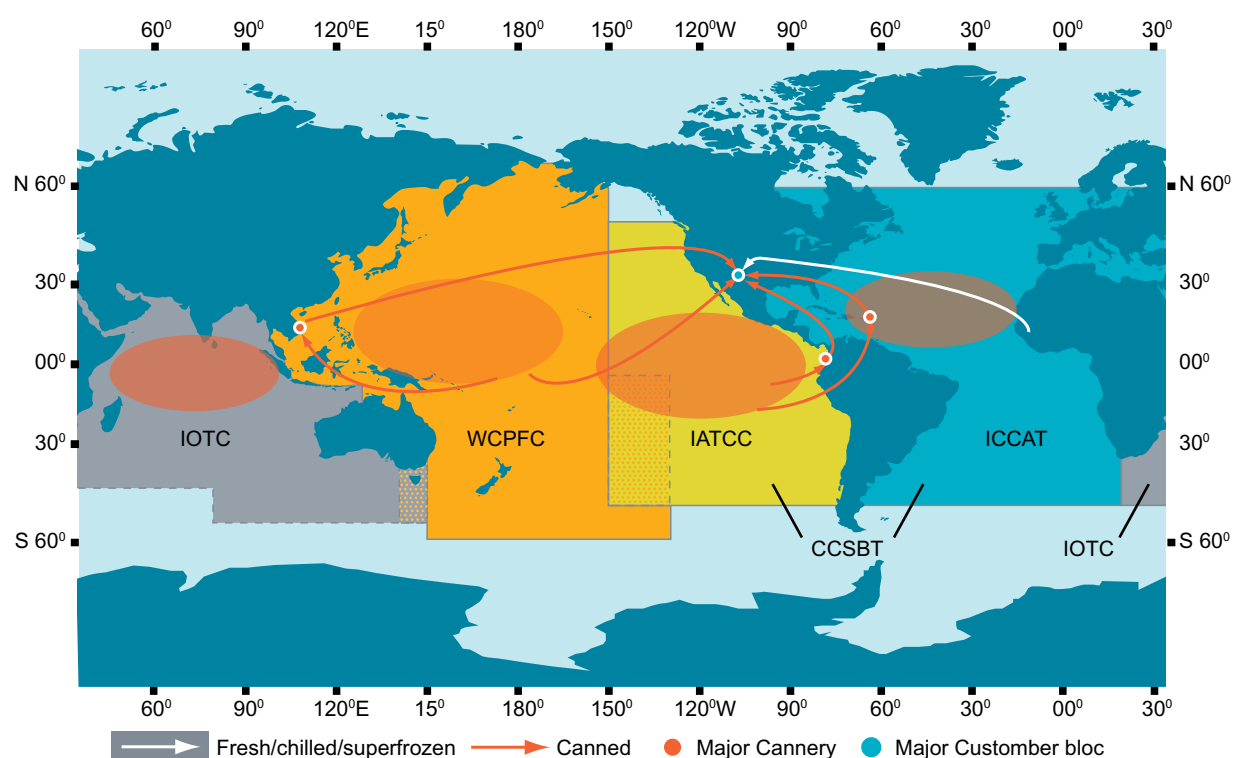


Figure 4.4 Major trade flows for yellowfin tuna sold to the US

tuna in Europe, yellowfin is the preferred material in ambient tuna in Southern European countries. Consumers are used to seeing ambient tuna as a relatively cheap commodity and there may be limits on price increases without loss of customers.

Growth in the ambient market has come through yellowfin tuna as a higher quality material and also through innovative marketing and product innovation. The market for ambient tuna in Western Europe already has high levels of penetration while Eastern Europe is considered an opportunity for growth.²⁴

Ambient tuna processing

Spain, Italy and France are the main ambient tuna producing nations in the EU, with Spain the largest producer.

Spanish canneries rely on both skipjack and yellowfin tuna in the form of frozen whole tuna caught by the EU fleet and imported loins from the likes of Ecuador and

El Salvador. Italy uses imported loins of yellowfin tuna for ambient production, mainly from Indian and Atlantic sources. France, consumers of skipjack and yellowfin, imports loins for domestic canneries which focus on high quality products, while standard ambient products are produced in Africa.

In 2007, some 60% of EU imports of whole round frozen tuna were yellowfin. According to some sources, ambient tuna production in Europe “is now mostly aimed at yellowfin”.²⁵ Ambient products using yellowfin put pressure on the materials available for fresh yellowfin tuna products. There is a trend for outsourcing the primary stages of ambient tuna production i.e. growth in imports of tuna loins rather than whole fish, particularly into Italy and France and more recently Spain.

Ambient tuna supply

The tuna canneries supplying into the EU are largely African, drawing on tuna material caught by the EU

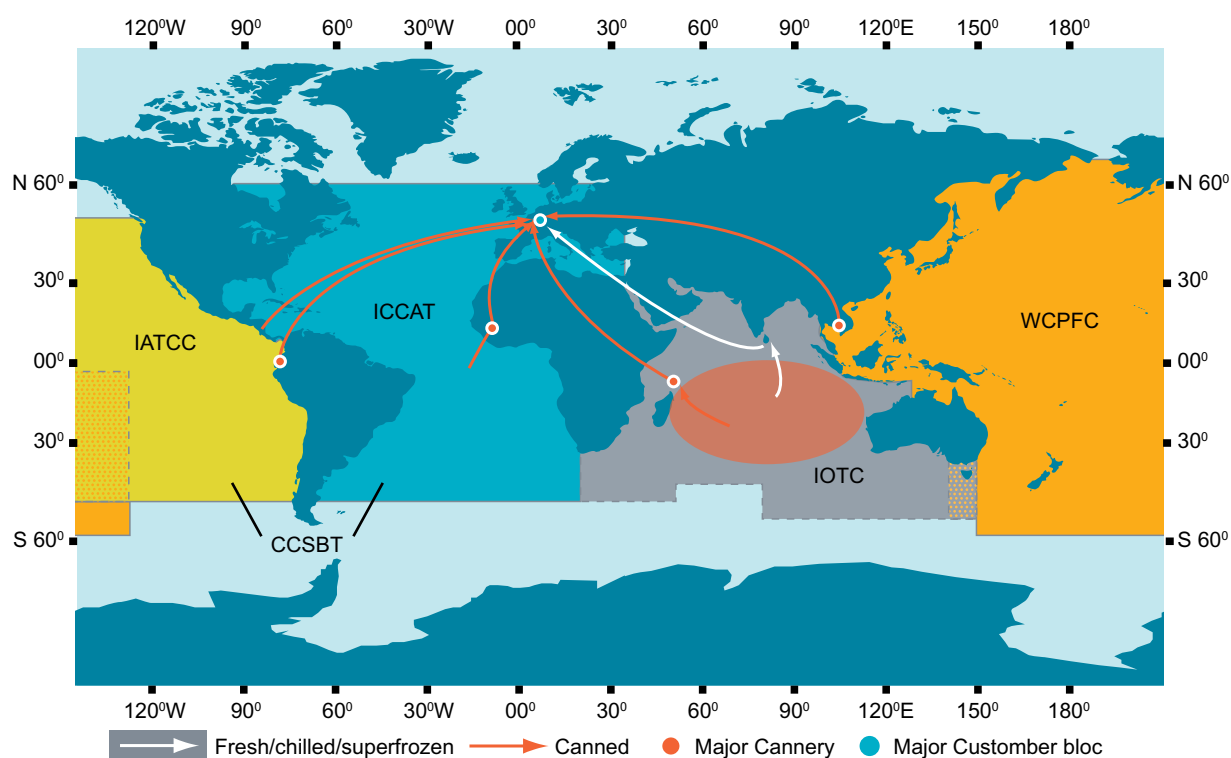


Figure 4.5 Major trade flows for Yellowfin tuna sold to the EU

purse seine fleets operating in the Atlantic and Indian oceans. Thailand is also a source of ambient material for the EU.

The majority of ambient tuna material is skipjack, however yellowfin is the target species for the fleet operating in the Atlantic¹⁸ (a large share of landed volume is from French vessels), and is the by-catch species of the EU fleet in the Indian Ocean.

The major suppliers of tuna loins imported by EU canneries were from Latin America, likely to be largely skipjack tuna, then yellowfin sourced from the Ecuadorian fleet and a much smaller share from the Spanish fleet operating in the Eastern Pacific.

Fresh/frozen market

Mediterranean countries, and urban areas in particular, are the main markets for direct consumption in the EU. This is largely in the form of steaks, estimated to be 40,000 tonnes.

Historically the main species for these markets have been yellowfin, bluefin and albacore, but in recent years this has changed. Bluefin has declined to a very small share of EU direct consumption with retailers and restaurants removing this species from their product range.¹⁴

Fresh and frozen tuna volumes are expected to increase. For some, this suggests material will be drawn away from the ambient industry, but this is by no means certain, as catching of juvenile tuna destined for the ambient industry restricts the volume available for the fresh tuna industry.

In the EU, trade in super-frozen material, which would support the consumption of fresh/chilled product formats, is disadvantaged by the lack of infrastructure to support it.

The influence of RFMOs

Possibly the most important factor impacting on the fresh/chilled tuna trade is the effectiveness (or otherwise) of the RFMOs. For example, although those nations surrounding the Indian Ocean have signed up to fishery reporting, in reality they have real difficulty in carrying through their commitments. Furthermore there is disproportionate

political influence, largely through lobbying by purse seine fleets in the buying of licences from Indian Ocean countries. This has a real impact upon the economic utilisation of yellowfin as a species; since the value of juvenile fish is considerably lower than even a slightly more mature fish.²⁶

Factors	Trends		
	Catching	Processing	Consuming
Political	Undue political influence of purse seine fleet in accessing the fishing rights from developing coastal states		In 2004, US Govt consumer advice on fish consumption and mercury levels specifically mention ambient tuna and tuna steaks for the first time.
Social			<ul style="list-style-type: none"> In US, consumer 'scare' over mercury in ambient tuna Yellowfin regarded as superior in quality to Skipjack
Environmental	<ul style="list-style-type: none"> In the Indian Ocean, yellowfin catch is seasonal, caught as by-catch by purse seine fleet, and catch levelling off. El Nino effect lasting longer In West Pacific, yellowfin catch is year round; El Nino increases purse seine yellowfin catch in West and limits it in the East In Atlantic, El Nino starting to have an effect on West Africa 		
Economic	<ul style="list-style-type: none"> Purse seine targeting of juvenile yellowfin does not maximize the economic value of yellowfin stock Increasing fuel costs Long-line fleet catch declining in Japan, expanding in Taiwan (although only a proportion goes into canning) In Indian Ocean, Iranian purse seine fleet catch increasing In Pacific, Japan and US fleet catch in decline In South Pacific, there is growth in domestic fleets In Pacific, gradual reduction in distant water fleets In Atlantic, EU catches declining, Taiwan and Ghana catches increasing In Atlantic, yellowfin catches declining In Atlantic, yellowfin beginning to be caught by long-line, super-frozen for sashimi market 	<ul style="list-style-type: none"> Yellowfin has a better yield than Skipjack Developed country canneries outsourcing primary processing stage to developing countries Developed countries such as France and Spain importing loins from developing countries Thailand a major ambient tuna 'hub' sourcing from Japanese and Taiwanese fleets Price of imported tuna increasing Iranian canneries are "dynamic" New canneries may emerge in Papua New Guinea and India 	<ul style="list-style-type: none"> Yellowfin generates a better price than Skipjack In EU, yellowfin is an opportunity to increase penetration in existing ambient markets Opportunities for ambient growth in new markets e.g. Eastern Europe In US, ambient tuna in decline, tuna pouches in growth
Technological	In Pacific, use of FADs increasing the catch of juvenile Yellowfin		
Legal	Difficulties of fishery reporting by RFMOs and acting on scientific advice	<ul style="list-style-type: none"> Trade liberalization may result in ACP and GSP+ countries becoming uncompetitive with increasing dominance of South East Asia as production 'hub'. US and Thailand discuss duty free trade 	

Summary influencing factors and trends for ambient Skipjack/Yellowfin tuna supply chains

Factors	Trends		
	Catching	Processing	Consuming
Political			
Social		Indian entrepreneurs attracted to tuna industry	Yellowfin regarded as superior in quality to Skipjack
Environmental	Yellowfin caught as by-catch by purse seine fleet		
Economic	Increasing fuel costs	<ul style="list-style-type: none"> • Yellowfin has a better yield than Skipjack • India developing Andaman and Nicobar Islands as the hub for chilled tuna processing, targeting Asia • In US, fresh tuna imports are increasing • Overall fresh/frozen tuna is expected to take material away from ambient tuna industry 	<ul style="list-style-type: none"> • In Japan, attention turning to Yellowfin • New markets for fresh/chilled tuna (eg. New EU members, and China) • In US, fresh/chilled driven by Japanese restaurants
Technological		India arranging chartered flights from Andaman and Nicobar Islands to the Far East	
		Increased capability for super-frozen transportation, however EU super-frozen infrastructure is still in its infancy	
Legal		ACP and GSP+ countries may move out of ambient tuna and into fresh or frozen fillet production	

Summary influencing factors and trends for fresh/chilled Yellowfin tuna supply chain

5. Yellowfin Tuna – UK markets and supply

As with the previous section, where there are insufficient trade data on yellowfin tuna, observations are drawn from overall tuna trade.



5.1 Overview of UK tuna market

Tuna is supplied into the UK as ambient, frozen or fresh/chilled tuna.

Ambient tuna is a high volume, low value segment dominating the overall price per kilo of tuna sold in the UK, in contrast with the high value low volume sales of fresh tuna. Social groups C2 and D buy the most ambient tuna while fresh tuna is most popular amongst groups A and B. In terms of age, tuna is most popular amongst 25-34s and least popular with over 65s. Ambient tuna is popular with families, with consumption tailing off as children leave home.²⁷

81,000 tonnes of tuna was sold through retail in 2007. The overall retail price per kilo of tuna has increased slightly since 2005: this has been driven by fresh tuna, as the high value segment, with frozen tuna and ambient remaining essentially static. In volume and value terms, tuna imported into the UK is dominated by ambient tuna.²⁷

Skipjack represents the largest volume of tuna imported followed by yellowfin, albacore and a relatively small amount of bluefin tuna (based on volumes of imported whole/headed and gutted tuna).

Sourcing standards for tuna are very high: building on EU regulatory requirements, UK buyers meet a range of private standards including those set by the retail sector (through the BRC). Sustainability is a key concern across all formats with multiple retailers and restaurants specifying catching methods for fresh and frozen, and 'dolphin friendly' labels on all cans sold through the big supermarkets.^{14 20}

5.2 Ambient tuna

Ambient tuna is consumed at home, and out-of-home through the catering sector, in pizza toppings, salads and sandwiches.

Around 70% of ambient tuna is sold through supermarkets and 30% through the catering sector. The dominant species in ambient tuna is skipjack, but yellowfin is also important.

Ambient tuna has to be sourced through imports: unlike other EU countries, such as Spain, the UK has no canneries of its own. The main imports are from canneries in the Seychelles, Mauritius, Thailand, and Ghana.²⁸ Imports of ambient tuna have increased by more than 15% since 2000.²⁹

Princes and John West are the principle brands and distribution routes of ambient tuna in the UK, followed by the multiples' 'own brand' labels, and niche labels. Princes is part of the Mitsubishi group which has a cannery in Mauritius, John West was owned by Heinz, a group with canneries in the Seychelles and Ghana and is now owned by private equity firm M W Brands. Retailer/own label brands are supplied from Thailand. In 2008, Princes accounted for around 31% value and 28% volume of the market for standard ambient tuna while John West was responsible for 27% and 25%.

As with the other fifteen members of the core European Union (with the exception of Germany), the market for standard ambient tuna can be considered "saturated". In recent years there has been evidence to suggest that innovative marketing and product development can increase the size of market. Despite high consumption of skipjack, increasingly yellowfin tuna is being used for ambient products because of its superior quality.^{14 24}

Low catches are expected to drive the prices of ambient tuna upward as canneries use up supplies in cold storage.²⁸

5.3 Frozen tuna

According to a UK buyer "frozen fish products tend to be for older aged customers, usually those with a limited culinary repertoire and the item will be chosen at the end of their shopping trip". As a consequence, for some buyers, frozen tuna steaks are "not particularly sought after".

In comparison with ambient and fresh, frozen material accounts for a small share of tuna volumes sold through retail; 700 tonnes in 2007. Frozen tuna sold through wholesalers is often destined for the volume food service market e.g. canteens in the form of frozen steaks.³¹

5.4 Fresh/chilled tuna

Fresh or chilled tuna is considered to be a far superior product compared to frozen. Fresh or chilled tuna imports into the UK are predominantly yellowfin but also albacore (also known in the USA as 'white tuna').

Fresh albacore is imported into the UK but the volumes are small. A small volume, around 70 tonnes, of albacore is landed in South West England. This UK landed material is processed as loins and steaks and it is thought that half the volume is frozen to smooth supply across the season.

All UK-landed albacore is destined for a very niche market of high-end food service outlets, with the UK consumer palate apparently a key factor. As one UK processor reflected: "it tends to be the educated fish-eaters that go for albacore...in the UK, people aren't used to the pink colouring".

Fresh/chilled Yellowfin tuna supply chain

Chilled products and longer shelf-life are important

considerations for UK consumers, who tend to "buy to store" (unlike Japanese consumers, who buy "fresh to eat").

An important factor for the UK consumer of fresh tuna steaks is colour: red flesh is clearly recognisable and an indicator of freshness.

Retail sales of yellowfin are estimated at around 4,500 tonnes and £54m. Sales through food service are estimated to be around 1,300 tonnes and £125m. Exports of fresh yellowfin material are thought to be negligible.

The sushi market has become firmly established in the UK both in terms of retail and food service; as one respondent reflected "now every other take away is a sushi outlet". According to Seafish, by July 2008, the retail sushi market was worth £38.9m, a 21 percent growth from the previous year.

Around 5,900 tonnes of yellowfin are imported into the UK, with an estimated value of £70m

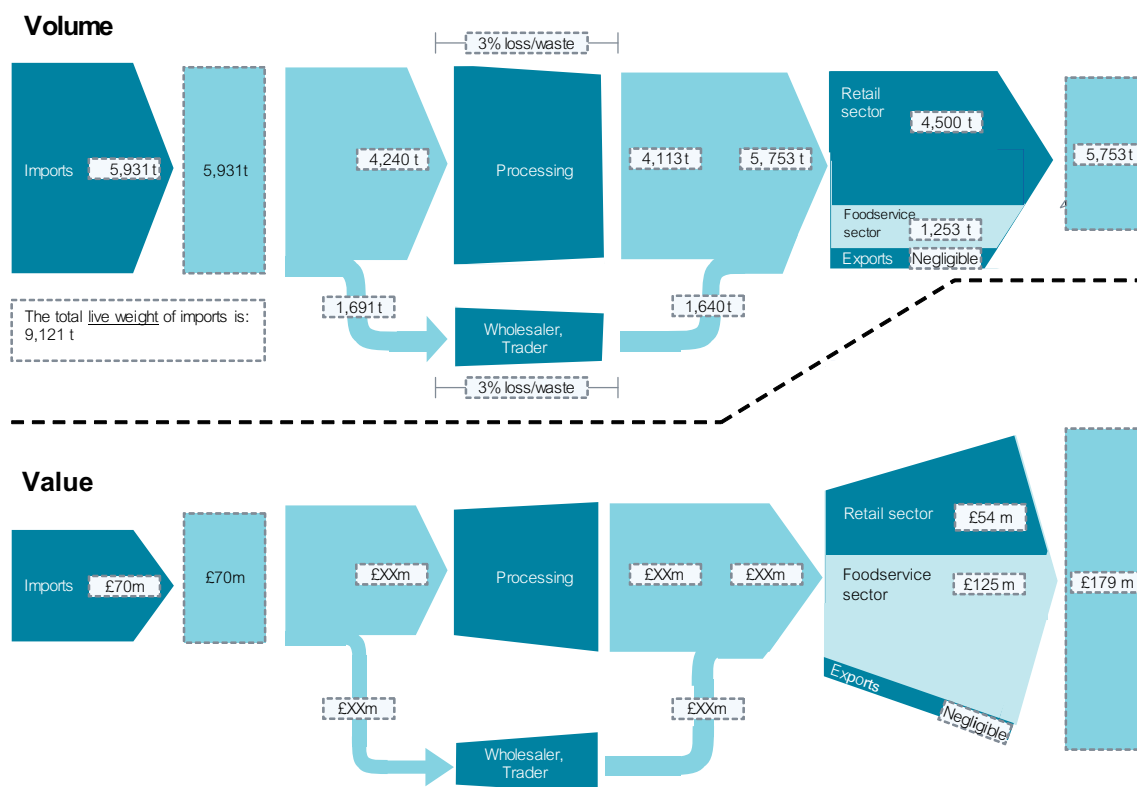


Figure 5.1 Fresh/chilled Yellowfin tuna supply chain to the UK (Seafish estimated volumes and values, 2007)

Buyer decision-making

The high standards of UK buyers across a broad set of criteria demand that suppliers develop close relationships in the supply chain.

Quality factors for fresh tuna include colour, taste, flavour and texture, but in contrast with the Japanese market, fat content is considered less important.

Supermarkets require a shelf life of six days and stipulate requirements in terms of bacteria, oil content, and a stable bright red colour.²⁰ Such conditions clearly influence the availability of fresh/chilled yellowfin; sourcing tuna is influenced by geographical proximity, with capability of air-freight or super-freezing material essential factors.

Routes to market

The majority of volume is imported through a small number of processors for onward sale into multiple retailers. Most UK processors have a narrow supply base for fresh/chilled yellowfin tuna, with a single supplier often having a greater than 50% share.

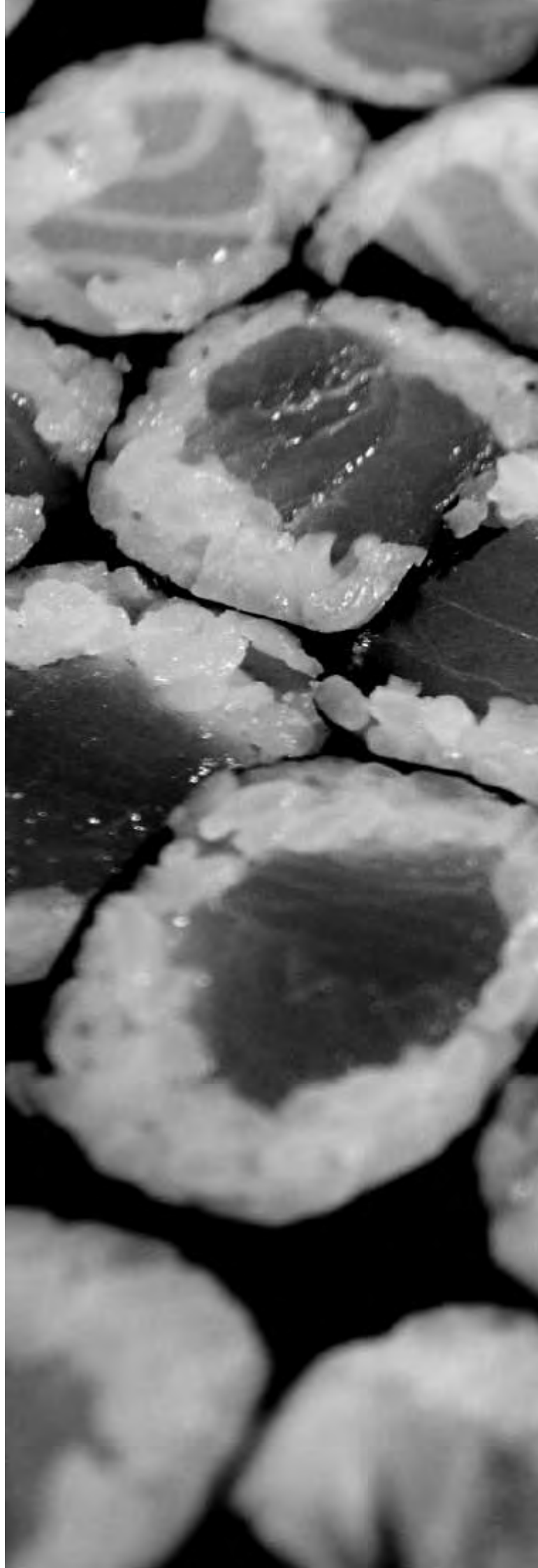
Yellowfin tuna is largely imported as fresh/chilled loins (vacuum packed, skinless and boneless), with smaller volumes of frozen loins and a small amount imported as fresh or frozen bullets (whole fish headed and gutted).

Fresh tuna loins are processed to customer specification for sale to retail outlets as pre-pack, or chilled loins for fish counters. Whole (headed and gutted) is supplied to wholesalers who supply into food service customers, mainly pubs and restaurants.

The majority of fresh/chilled yellowfin tuna is air freighted from Indian Ocean countries such as Sri Lanka and the Maldives. A relatively small quantity is imported as super-frozen tuna - at least 270 tonnes annually – to supplement the main fresh volume.

Super-frozen / Ultra low temperature Tuna

Super-freezing tuna is an important innovation in maintaining tuna quality. An important feature for UK suppliers is that the tuna retains its red colour for a time when defrosted (normal freezing results in material that is brown when defrosted). Super-freezing



also provides processors with the capability to smooth supply during monsoon periods.

The majority of super-frozen material is sold through processors to retail outlets. Some super-frozen material is channelled through wholesale markets where it is thawed and put into modified atmosphere packaging (to maintain colour) for the sushi market.

Supplier decision-making

The selling decision of fresh/chilled yellowfin tuna suppliers will be influenced not just by price but the quality of the material, and specific preferences in their decision-making, particularly:

- regular buyers who provide core business at stable prices
- buyers that add value to the relationship, e.g. production expertise

There are risks that UK market requirements to drive up the quality of the catch could end up driving raw materials away from the UK market. Non-UK competitors sourcing fresh/chilled yellowfin may impose fewer conditions on suppliers when buying, so that suppliers may begin to question the need to clear extra hurdles in order to supply the UK market.

There has been rapid growth in fresh tuna in both retail and food service sectors over the last 15 years

5.5 Trends and influencing factors

There has been rapid growth in fresh tuna in both retail and food service sectors over the last 15 years.

Summer is the high season for UK consumers and is a period of significant price rises. Peak UK consumer demand from May to early October coincides with the low (monsoon) season for fishing in the main sourcing nations around the Indian Ocean.

The cost of yellowfin tuna is also affected by exchange rate movements. The current economic turmoil is demonstrating that when sterling weakens against the Euro, European tuna buyers are able to secure better prices.

It is felt that continued price increases will “limit the attractiveness of tuna to the customer. There is a limit to how much consumers will pay for a specific protein before switching to others.

Fresh tuna is still considered to be the best quality, and despite constraints in supply, there are indications that fresh tuna is becoming a year-round product. So it is unsurprising that, in the words of one supplier, “*everyone* is looking at super-frozen” as it retains product quality and allows continuity of supply.

The driver behind super-freezing technology and logistics infrastructure was the high-value Japanese market, where it was comparatively easy to recover the high investment costs. Super-frozen material can be up to 20% more costly for UK processors, but commitments by UK retailers to environmental priorities may be enough to drive investment in super-frozen technologies.

The supply of yellowfin is jeopardised by the decrease in stocks and exacerbated by the pursuit of juvenile stocks (perceived to be the result of purse seine fishing for the ambient tuna industry).

Maintaining yellowfin tuna as a source of supply is challenged by a lack of information as well as management difficulties. Yellowfin tuna is a highly migratory trans-oceanic species which makes comprehensive data collection and informed decisions difficult.⁸ There is a risk of inadequate management of the yellowfin stock through shortcomings in the RFMO framework.

Fishermen in the Indian Ocean are facing increasingly unpredictable fishing seasons; the result of variations in climate (affecting distributions of fish) and general weather conditions (such as changing monsoon seasons).

With the general pressures on supply, interest in albacore is likely to increase given the more favourable condition of the fish stocks.⁸ Albacore meat is much lighter in colour (UK consumers expect tuna to be red)

and is presented differently in terms of product size and shape. This may prove difficult to introduce to the UK consumer, and calls for innovative thinking in product format and presentation.

Factors	Trends		
	Catching	Processing	Consuming
Political	Inadequate management of the yellowfin stock		
Social			<ul style="list-style-type: none"> • Fresh/chilled considered to be far superior compared to frozen • Important factor for UK consumer is colour – red flesh • Fresh tuna is most popular amongst AB Socio-Economic Group • UK consumers tend to “buy to store”
Environmental	Yellowfin supply jeopardized by the decrease in stocks and exacerbated by pursuit of juvenile stocks (purse seine fishing)		Sustainability is a key concern across all formats
Economic	<ul style="list-style-type: none"> • The majority of fresh/chilled yellowfin tuna is sourced from Indian Ocean countries such as Sri Lanka and the Maldives • UK summer is the low fishing (monsoon) season in the Indian Ocean • Supplier preferences: regular buyers who provide core business at stable prices • Supplier preferences: buyers that add value to the relationship e.g. production expertise • UK requirements for quality could drive raw materials away from UK market 	<ul style="list-style-type: none"> • High standards of UK buyers demand that processors develop close relationships in the supply chain • Competitors may place fewer conditions on suppliers when buying 	<ul style="list-style-type: none"> • Rapid growth in fresh tuna in both retail and food service sectors over last 15 years • UK summer is peak period for consumer demand • The overall retail price per kilo of tuna has increased slightly since 2005 • Fresh Albacore is destined for very niche markets eg high end food service outlets • The Sushi market has become firmly established and has seen 21% growth since 2007
Technological		<ul style="list-style-type: none"> • Sourcing is influenced by geographical proximity – air freight or super freezing essential for long distance fisheries • “Everyone is looking at super-frozen” • EU trade in super-frozen disadvantaged by lack of infrastructure to support it 	
Legal			

Summary influencing factors and trends for the UK fresh/chilled Yellowfin tuna supply chain



6. Developments and possible options

6.1 Developments

The key developments for UK yellowfin tuna processors appear to be:

Growth in consumption

- Growth in existing markets for fresh tuna
- New markets are going to open up in fresh and ambient
- New markets in the emerging economies; Eastern Europe (low grade ambient tuna), South America, China, Russia

Sustainability requirements of the UK market

- The retail multiples need proof of sustainable supplies, and their actions affect the wider fresh tuna trade
- Non-UK competitors may not demand stringent sustainability conditions when buying tuna from suppliers

Volatile supply

- Increased variability in climate
- Changing fishing seasons

Strain placed on tuna resource

- Increased purse seine activity – more vessels with larger holds
- More sophisticated catch techniques e.g. FADs and the associated catch of juveniles
- Shortage of other tuna species e.g. bluefin

Better utilisation of the resource

- Improved management of resource
- Requirements for a collaborative approach

Major competition from ambient industry

- Yellowfin has greater yield
- Perceived by some – especially in Southern Europe – as a superior product

Trade infrastructure offers significant opportunities (i.e. super-frozen) and threats

- Smoothing supply through the year
- Diversifying supply e.g. yellowfin from Pacific in addition to Indian ocean
- Product standardisation

- Emergence of tuna ‘hubs’, e.g. Indian tuna hub targeted at Asian economies (Andaman and Nicobar Islands)

Relaxation of preferential trade agreements, and the emergence of bilateral, trade agreements

- May accelerate the concentration of ambient primary processing into tuna hubs, e.g. Thailand, and an increase in raw material buying power
- Existing ambient facilities may become underutilised, presenting a possible opportunity for fresh processing

Yellowfin has attracted NGO attention and is likely to continue to do so in the future

- Is yellowfin the new bluefin?

Finally, the absence of sufficiently detailed trade data is a serious impediment to monitoring trade developments in particular tuna species.

6.2 Possible options for UK tuna processors

Of the developments outlined in the previous section, there appear to be three key areas of risk for UK processors:

- International trade agreements and trading conditions
- Trade data deficiencies
- Declining stocks

By way of next steps, it is recommended that industry stakeholders:

- review the above developments and identify key risk areas
- identify opportunities to influence and so mitigate risk areas
- agree possible stakeholder actions

It is important to note the scale of the fresh tuna sector in the UK which is relatively small in comparison to the ambient sector. It may therefore be beneficial to collaborate across the different sectors of the UK tuna industry to ensure meaningful action.

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