

Seafood Strategic Outlook

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Trade Developments:
An initial review of developments, implications
and practical responses from industry and Seafish

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SEAFISH
the authority on seafood

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1. Introduction and requirement

This report is an initial review of key export trades for the UK seafood industry. It considers the major industry impacts arising from key trade drivers and sets out major areas where industry and Seafish response may be required.

The Seafish mission is to secure a profitable, sustainable, and socially responsible future for the UK seafood industry. An important underlying function for Seafish in achieving this mission is to help protect the industry in the face of natural and man-made risks and challenges.

Risk developments in the macro trade landscape can present longer-term, strategic challenges for the industry (see Appendix 1). Reflecting on these developments in 2015, the Seafish Board decided *“The Russian import ban greatly impacted on the pelagic sector and required reactive measures. There is a need to map out our main trades in seafood and identify choke points to allow for contingency”*. This review is an important part of responding to this need.

This report aims to support the UK seafood industry in understanding:

- The major export trade routes for the UK seafood industry.
- The new and emerging trade developments expected to impact on this trade.
- Industry impacts (positive and negative) likely to arise from these developments.
- Action industry (and Seafish) can take in response.

This exercise, conducted in 2015, involved desk research and consultation with Seafish staff and industry operators (see Appendix 2).

The review has limitations. The scope of consultation is not exhaustive. In addition, the review does not consider alternative future pathways (scenarios), but is based on ‘business as usual’ projections.

2. UK seafood industry and export trades

This chapter provides a representation of the seafood industry landscape and the major UK export trades. This representation frames the investigation, discussion and agreement on risk developments, impacts and responses.

The UK seafood industry, being reliant on wild capture and aquaculture produced raw material, is diverse, complex and dynamic. The seafood industry is considered here to operate as many subsystems (regional, sectoral), of varying degrees of interdependence, nested within one overarching global system.

In the global context, from a UK perspective, there are at least two major seafood systems with distinct characteristics:

- A domestic system – defined as a system reliant on domestically sourced material (material caught from stocks in North Atlantic/UK waters and landed in the UK, material farmed in the UK). Within the ‘domestic system’, the key UK actors are: producers (farmers/vessels), agents and merchants in the UK handling material landed/farmed in the UK; UK processors of fish; and the downstream supply chain in the UK of all of the former including food service companies, retailers and exporters.

- An international system – defined as a system reliant on internationally sourced material (material caught from stocks in the North Atlantic and elsewhere landed outside the UK, material farmed outside the UK). Within the ‘international system’, the key UK actors are: agents and merchants in the UK importing fish and shellfish that is caught, landed or farmed and possibly processed outside of the UK; UK processors of imported fish; and the downstream supply chain in the UK of all of the former including food service companies, retailers and re-exporters.

It is notable that from a UK perspective, seafood material originating in the UK is generally exported for overseas consumption, whilst material imported is largely for UK consumption. The UK consumer maintains a robust preference for salmonids (farmed salmon), whitefish (cod, haddock and Alaska pollock), pelagics (tunas) and shellfish (cold-water prawn and farmed warm-water prawn). Meanwhile, UK landings volumes are dominated by mackerel and herring (pelagics), Nephrops (shellfish) and cod and haddock (whitefish).

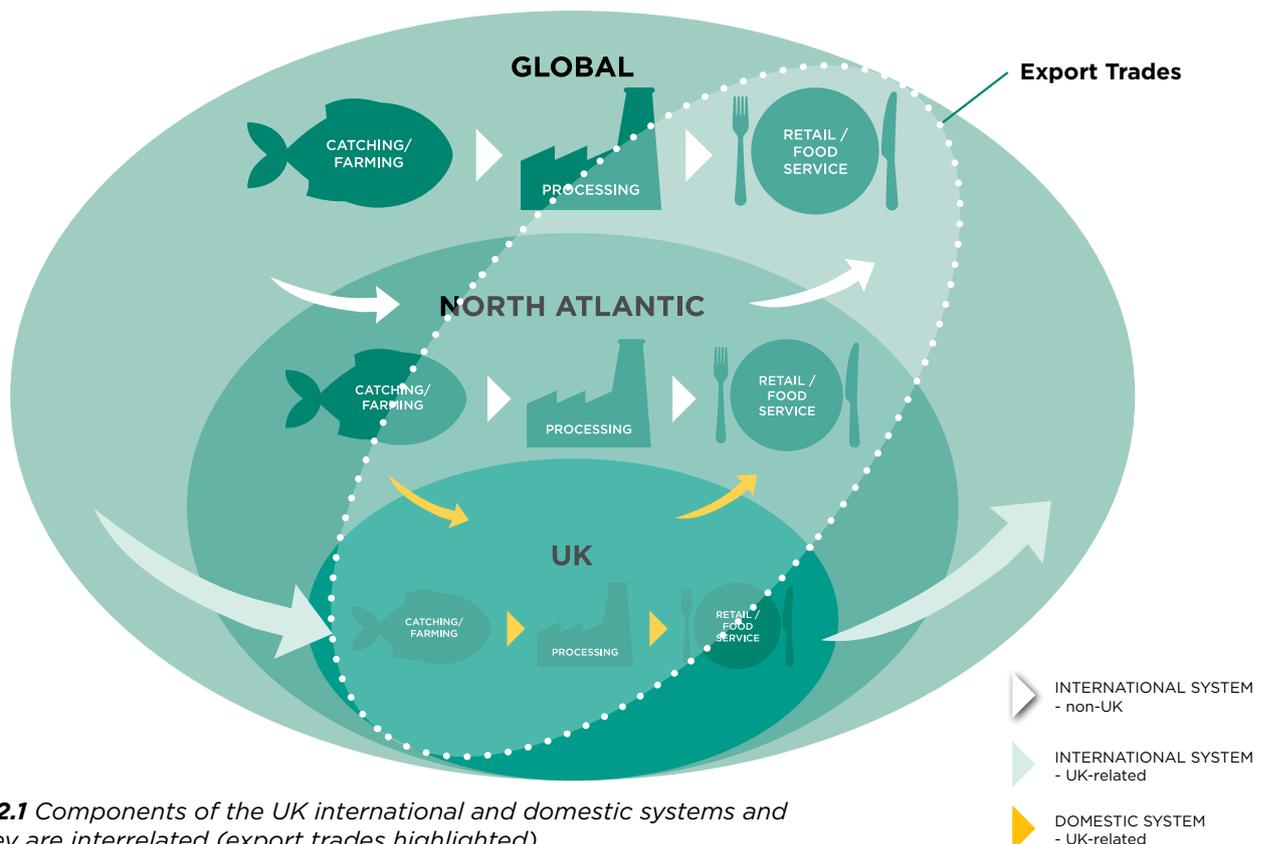


Figure 2.1 Components of the UK international and domestic systems and how they are interrelated (export trades highlighted)

2.1 Export product landscape

Seafood products from the UK are exported in a range of product formats. Products can be categorised as **final product for direct consumption** (primary or secondary processed product sold to consuming markets overseas), **intermediate product for re-export to UK** (whole, or partially processed, fish exported from the UK for further processing, re-imported back into the UK for final processing) or **final product for trans-shipment** (final product imported

into, and then directly exported from, the UK). This review focusses on *final product for direct consumption*.

Primary processed material is in the main considered a *fresh product* (chilled never frozen, including live animal). Secondary processed products are mainly *frozen* (including refreshed product) and *ambient* products (including prepared & preserved). Tertiary products (where seafood is one of a number of ingredients in the final product) are not generally exported.

Table 2.1 Types of seafood products

Product Format		Extent of processing			
		Live	Primary	Secondary	Tertiary
Fresh	Chilled never frozen	x	x		x
Frozen	Refresh - chilled previously frozen			x	x
	Frozen			x	x
Ambient	Prepared and preserved			x	

Table 2.2 Estimated volume and value of UK seafood resource by species group, 2015*

Species group (and main species**)	Volume (tonnes liveweight)	Value (£000)
Total Demersal	149,896	266,420
Haddock	33,486	45,526
Saithe	18,755	16,968
Cod	16,722	31,855
Hake	15,869	37,921
Monks or Anglers	15,805	39,029
Whiting	11,282	11,568
Ling	5,773	7,759
Plaice	4,443	4,514
Total Pelagic	169,321	86,378
Mackerel	103,924	66,490
Herring	42,043	14,571
Total Shellfish (including cultivated)	169,365	299,176
Scallops (incl. Queen scallops)	41,387	65,584
Crabs (C.P.Mixed Sexes)	29,111	39,499
Nephrops (Norway Lobster)	25,799	81,732
Mussels (incl. estimated 26,021 tonnes of cultivated Mussel)	27,000	27,293
Whelks	20,873	18,831

* UK and foreign vessel landings into UK ports 2015/ UK aquaculture 2012.

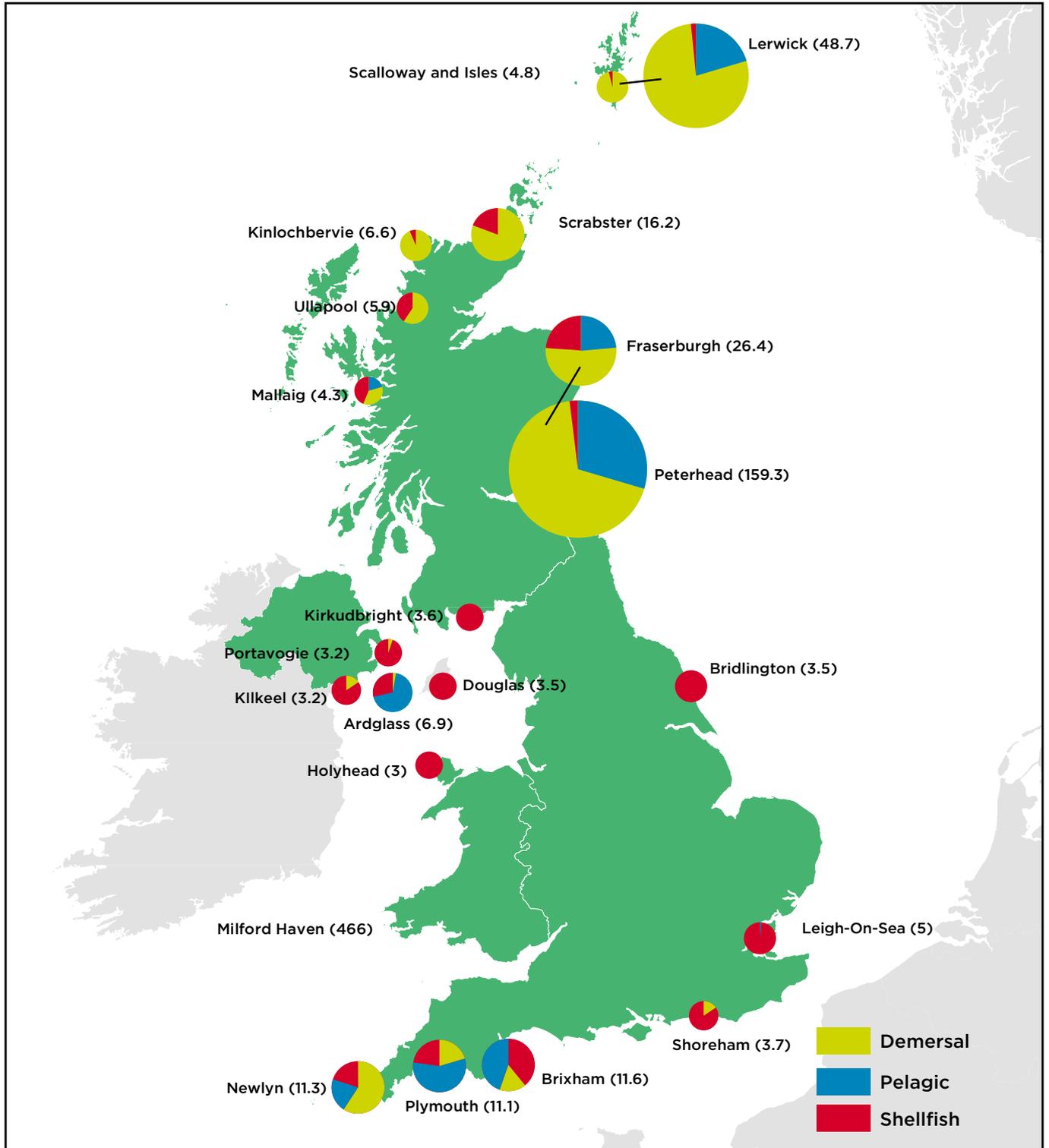
**Main species represent 80% of species group volume landed or harvested.

Source: Marine Management Organisation (IFISH system), 2016

2.2 Seafood resources for export

A large share of exported material is sourced from UK wild capture or cultivation. Seafood resources by main species (landed or cultivated) available for export are shown in table 2.2. In broad terms, the highest volume resource is in shellfish (with a major contribution from cultivated mussels), followed by pelagic and whitefish.

Figure 2.2 illustrates the broad distribution of wild capture landings as of 2014. Large volumes of whitefish and pelagic are landed in North East Scotland and Shetland, whilst shellfish is landed in small volumes around the UK coast. On 2012 volume figures, shellfish cultivation of bivalves is spread across England (25% of UK total), Wales (33%), Scotland (24%) and Northern Ireland (18%)



Source: Marine Management Organisation, 2014 (copyright Collins Bartholomew 2015).

Figure 2.2 Landings into the top 20 UK ports by UK vessels by species type, 2014 ('000 tonnes).

2.3 Seafood product exports and main destinations

For the main species (in table 2.2) the UK export volumes and values are shown in table 2.3. At a broad level, based on this export profile:

- Pelagic products tend to be higher volume, lower value exports
- Shellfish products tend to be lower volume, higher value exports
- Whitefish tend to be lower volume but mid-range value

The majority of seafood exports are frozen (143,688 tonnes, £194m), followed by fresh (55,669 tonnes, £175m). A relatively small proportion of exports are ambient (3,966 tonnes, £13m).

In £/kg terms, ambient product tends to attract a higher price, whilst a lower price is associated with frozen product.

The top export country destinations by individual species are listed in appendix 4.

The main seafood product destinations by major region are shown in figure 2.3. Destinations are shown by product format (fresh, frozen, ambient) for 80% of exported volumes. By far the most significant region in 2015 was Europe and Central Asia (including Russia); this region, requiring relatively short supply chains, is particularly important for fresh products. Other important volume destinations are further afield and, with longer supply chains, are particularly suited to frozen products. These include:

- Sub Saharan Africa.
- China (including Hong Kong).

Much smaller volume destinations include:

- North America (United States and Canada).
- Middle East and North Africa.
- Latin America and Caribbean.

Table 2.3 UK exports of main species by species group and product format 2015

Major species group	Format	Volume (tonnes product weight)	Value (£000)	£/kg
Whitefish	Fresh	12,146	43,252	£3.56
	Frozen	8,008	28,582	£3.57
	Ambient	1,980	6,566	£3.32
Pelagic	Fresh	21,904	15,956	£0.73
	Frozen	121,419	82,062	£0.68
	Ambient	1,856	5,322	£2.87
Shellfish	Fresh	21,620	115,816	£5.36
	Frozen	14,261	83,553	£5.86
	Ambient	130	830	£6.41
TOTAL		203,323	381,938	£1.88

Source: British Trade Statistics, 2015

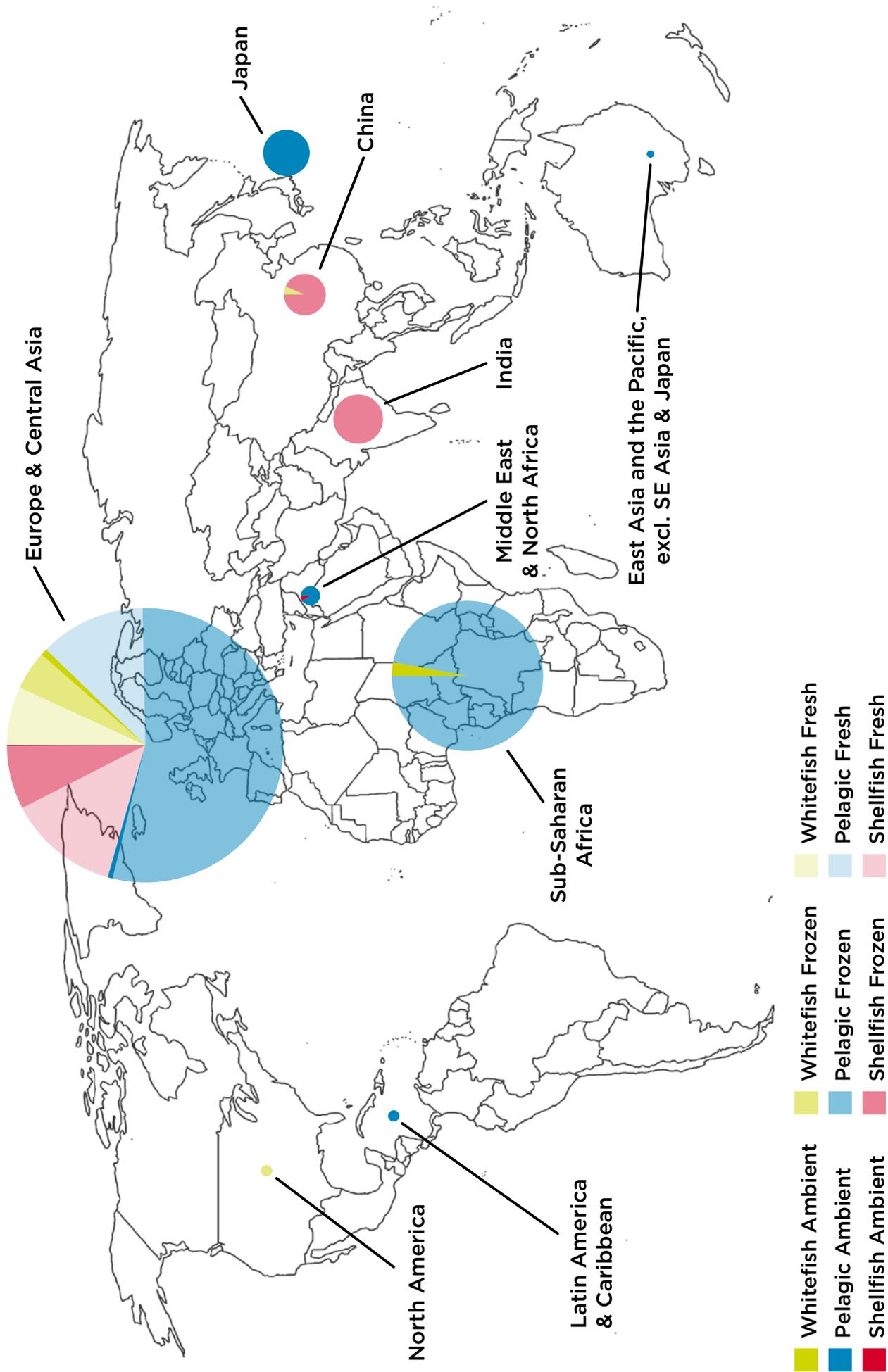


Figure 2.3 UK seafood exports: major regional destinations by volume and format 2015¹

¹ Note there is uncertainty regarding exports to Europe & Central Asia due to the 'Rotterdam effect' by which export destination is registered to the Netherlands even though it is transhipped through the likes of Rotterdam for a final destination elsewhere (European or non-European countries). If the final destination is non-European, then estimated exports to Europe may be slightly inflated.

2.3.1 Whitefish – key characteristics

- Whitefish products for export tend to be fresh, lower volume, and mid-range value (£/kg).
 - **Markets:** Western Europe with smaller volumes to Africa, China, and North America. Markets in Europe and North America are generally higher value and more demanding.
 - **Product and chain:** UK more fragmented than integrated chains of competitors e.g. Iceland.
- Fresh product sent to the European continent by truck via the channel. Frozen product containerised and shipped.
- **Supplies:** Supplies generally not secured but reliant on domestic auction markets, direct contract with vessels, and also imports.
 - **Competitors:** France, Spain, Iceland, Norway.

Table 2.4 Major regional destinations for Whitefish exports 2015

Major Regions	Format	Volume (tonnes*)	Value (£)	Main species	Main countries
Sub-Saharan Africa	Fresh				
	Frozen				
	Ambient	576	1,663,048	cod	Nigeria
China (incl. Hong Kong)	Fresh				
	Frozen	24	109,974	haddock	China
	Ambient				
East Asia & the Pacific	Fresh				
	Frozen				
	Ambient				
Europe & Central Asia	Fresh	10,312	33,280,659	cod, saithe, monkfish	France / Denmark & France / France & Spain
	Frozen	6,851	23,464,566	cod, whiting, monkfish	Rep of Ireland & Germany / Denmark & Netherlands / Spain & France
	Ambient	1,175	3,763,600	cod, saithe	Rep of Ireland
Latin America & Caribbean	Fresh				
	Frozen				
	Ambient				
Middle East & North Africa	Fresh				
	Frozen				
	Ambient				
North America	Fresh				
	Frozen	44	271,814	haddock	Canada
	Ambient				
Japan	Fresh				
	Frozen				
	Ambient				
India	Fresh				
	Frozen				
	Ambient				

*product weight

Source: British Trade Statistics, 2015

2.3.2 Pelagic – key characteristics

- Pelagic products for export tend to be frozen, higher volume, and lower value (£/kg).
- **Markets:** Western Europe, Africa and Far East. Asia markets are generally higher value and more demanding. Higher volume markets elsewhere tend to be lower value.
- **Product and chain:** UK and Norway more fragmented than integrated chains of Iceland and Faroes.
- **Supplies:** Supplies are generally not secured with supply being price sensitive. UK processors are competing with Iceland/Faroes/Norway/Rep of Ireland to secure material.
- **Competitors:** Iceland, Faroes, Norway.

Table 2.5 Major regional destinations for Pelagics exports 2015

Major Regions	Format	Volume (tonnes*)	Value (£)	Main species	Main countries
Sub-Saharan Africa	Fresh				
	Frozen	19,077	11,787,641	herring, mackerel	Nigeria
	Ambient				
China (incl. Hong Kong)	Fresh				
	Frozen				
	Ambient				
East Asia & the Pacific	Fresh				
	Frozen				
	Ambient	69	238,329	mackerel	Australia
Europe & Central Asia	Fresh	18,526	12,393,415	herring, mackerel	Rep of Ireland & Germany / Denmark & Netherlands
	Frozen	80,796	49,625,414	mackerel, herring	Netherlands & Romania & Poland / Netherlands & Germany
	Ambient	870	3,049,909	mackerel, herring	Denmark & Rep of Ireland / Italy
Latin America & Caribbean	Fresh				
	Frozen				
	Ambient	64	253,163	mackerel, herring	St Kitts & Nevis, Antigua & Barbuda, Dominica
Middle East & North Africa	Fresh				
	Frozen				
	Ambient	18	83,535	herring	Kuwait
North America	Fresh				
	Frozen				
	Ambient				
Japan	Fresh				
	Frozen				
	Ambient	587	680,262	mackerel	Japan
India	Fresh				
	Frozen				
	Ambient				

*product weight

Source: British Trade Statistics, 2015

2.3.3 Shellfish – key characteristics

- Shellfish products for export are largely fresh but a sizeable volume of frozen product is also represented. Both fresh and frozen product tend to be low volume and high value (£/kg).
- **Markets:** Western Europe with very small volumes to China and Middle East.
- **Product and chain:** Fresh product sent to the European continent by truck via the channel (live product reliant on vivier transport). Frozen product containerised and shipped.
- **Supplies:** Supplies generally not secured but reliant on domestic auction markets, direct contract with vessels, third parties.
- **Competitors:** Rep. of Ireland, France (brown crab), Rep. of Ireland, Denmark, Iceland and shrimp farmers in Asia and elsewhere (Nephrops).

Table 2.6 Major regional destinations for Shellfish exports 2015

Major Regions	Format	Volume (tonnes*)	Value (£)	Main species	Main countries
Sub-Saharan Africa	Fresh				
	Frozen				
	Ambient				
China (incl. Hong Kong)	Fresh				
	Frozen	343	1,492,611	brown crab	China
	Ambient				
East Asia & the Pacific	Fresh				
	Frozen				
	Ambient				
Europe & Central Asia	Fresh	19,505	102,909,213	brown crab, mussels, scallops, Nephrops	France & Spain / Netherlands / France / France
	Frozen	11,178	65,858,603	Nephrops, brown crab, scallops	Italy & Spain & France / France & Italy / France
	Ambient	116	627,488	mussels, scallops	Netherlands & Rep of Ireland / Germany
Latin America & Caribbean	Fresh				
	Frozen				
	Ambient				
Middle East & North Africa	Fresh				
	Frozen				
	Ambient	2	22,388	scallops	United Arab Emirates
North America	Fresh				
	Frozen				
	Ambient				
Japan	Fresh				
	Frozen				
	Ambient				
India	Fresh				
	Frozen	530	2,949,330	Nephrops	India
	Ambient				

*product weight

Source: British Trade Statistics, 2015

2.4 Framing export trade risks

At present there are various levels of initiative. Risks to export products are summarised in table 2.7. Specific risks vary by seafood sector (whitefish, pelagic, etc) and main exporting region. At earlier stages, when material is within UK jurisdiction, export risks may be relatively lower. Risks are generally elevated once material leaves the UK given responses may be required in foreign jurisdictions.

Table 2.7 Dimensions and example risk to seafood product exports

Dimension	Example areas of specific risk
Fish demand	Market volatility
	Market structure e.g. wholesale versus niche markets
	Consumer preferences
	Product format
	Consumer spend
Marketing	Market dependence
	Premium pricing
	Promotions
	Product mix and differentiation
Trading conditions	Competitor behaviour (integrated chains versus markets)
	Level playing field for trade
	Logistics and dependency on specific transport corridors
	Trade agreements, duties, trade restrictions
	Product regulation
	Political disruptions and shifting political units
Operations and labour	Labour market conditions – availability of labour
Product safety and integrity	Product quality
	Standards and traceability
	Sustainability credentials
	Catch method
Fish supply	Supply availability / security / continuity
	Availability of investment
	Capacity to change production
Resource management	Tightening/loosening of supply
	Management constraints e.g. MPAs
	Overexploitation

3. Risk developments affecting seafood exports

This chapter summarises the main risk developments affecting the seafood industry over the long term, with a focus on export trades in particular. This draws on developments that are both observed and experienced.

Table 3.1 shows the long view of risk developments affecting seafood, experienced or observed in the period 1997-2008 through to those anticipated in 2019-2029.

differences, regions in which per capita fish consumption (Fig 3.1):

- high and predicted to grow strongly (China, South East Asia and North America)
- high and predicted to grow weakly (East Asia and Pacific, Europe and Central Asia, Japan)
- Global fish production expected to increase, based on:
 - wild capture having zero growth with aquaculture expanding at a declining rate.

Table 3.1 The long view: 1997/2007 – 2008/2018 – 2019/2029

Driver	Risk Development	
	From	To
Economic developments	Traditional overseas markets	Expanding overseas markets
	Constrained supply	Increased supply - potentially constrained
Trade developments	Diminishing tariffs	Free trade agreements
	Sporadic trade disruptions (including logistics)	Competitor supplies and trade disruptions weakening UK terms-of-trade
Political developments	Uncertainty in specific markets e.g. Russia	Uncertainty in new (African) & existing (European) markets
Population	Global middle class growing	Middle class growing in developing countries, stagnant in developed countries
	Consumers preparing own food	Move towards ready-to-cook products
Scrutiny/regulation	Introduction/growth in scrutiny	Improved scrutiny & controls with differences in approach driving disruptions
	New regulation	Inconsistent interpretation/implementation
Demographics / labour	Increased labour movement / immigration	Migration crises

Systemic global risk developments, notably food security and climate change, act as multipliers to amplify the above risk developments and their impacts (threats and opportunities).

- concentration in Asia (particularly India, South East Asia and China) driven by species amenable to aquaculture (shrimp, salmon, tilapia, carp and pangasius).

3.1 Food security

The main aspects of food security are: a globalised economy; global population increase; and global availability of raw material. Projected economic growth, growth in population (and middle class income), and changing tastes and diets in regions around the world suggest:

- A world economy rebalancing towards Asia.
- An expanding global middle class (squeezed in developed countries).
- Increased protein consumption with regional

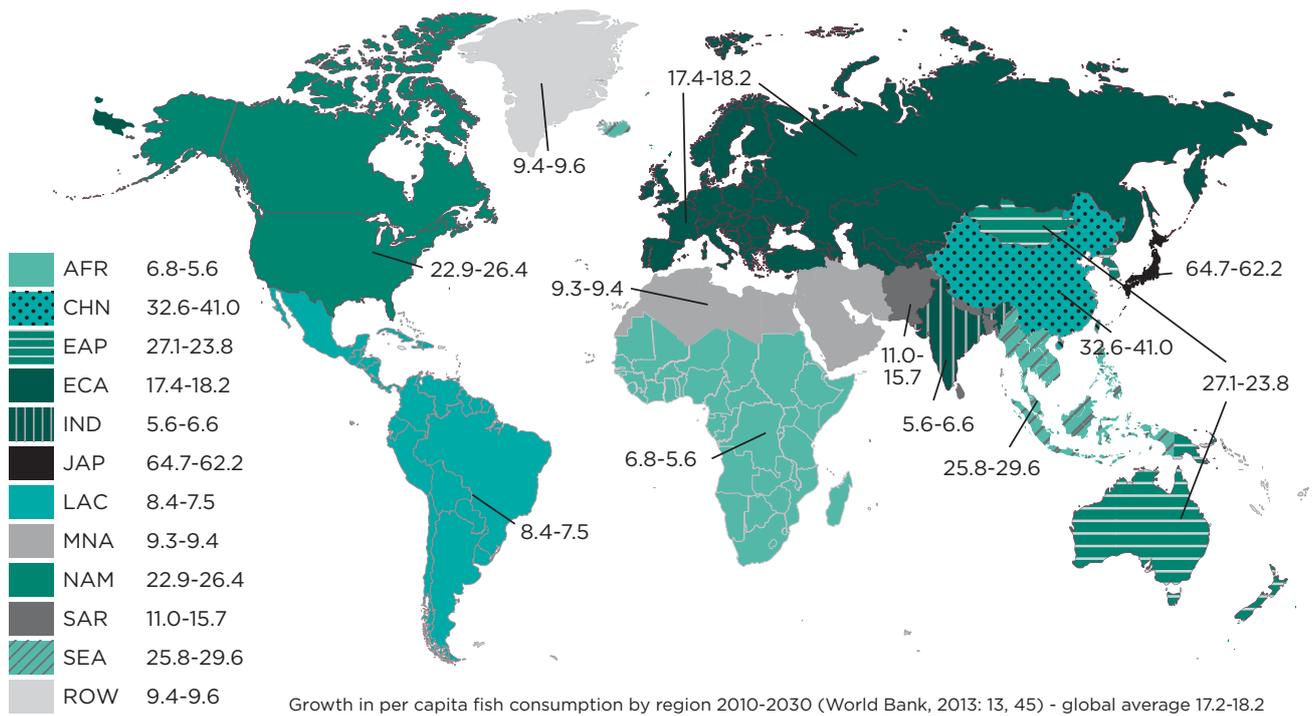


Figure 3.1 Projected growth in per capita fish consumption by region, 2010-2030 (kg/person/year). World Bank (2013:13,45)

3.2 Climate change

The two main climate change drivers that lead to priority risk developments for wild capture seafood are *increased storminess and waves and air or sea temperature change*. In shellfish an additional driver is *changes in rainfall/land run-off*. For whitefish and pelagic fisheries, this has contributed to changing distribution of target species (as some traditional species may move away and warmer water species move in) whilst in shellfish fisheries there are changes in the prevalence of non-native species/jellyfish. In all fisheries, offshore operations will be impacted with challenges to safe working conditions and gear deployment/performance.

Climate change may also have implications for aquaculture supplies, especially those originating in estuarine areas. There may be impacts from *increased storminess and waves, air or sea temperature change, changes in rainfall/land run-off, and acidification*.

Onshore, the above risk developments are compounded by *sea level rise and extreme water levels*. This can give rise to impacts affecting onshore operators:

- Damage to site infrastructure (port & processors).
- Integrity of electricity supplies.
- Transport distribution (including ferries).
- Integrity of housing and reduced employment

4. UK seafood industry – recent and anticipated developments, impacts and response

This chapter provides a description of the main risk developments and impacts as they relate to whitefish, pelagic and shellfish export trades. In each case, a list of action areas are suggested by way of response to anticipated developments.

At a general grocery level, according to IGD the level of grocery retail sales and expected growth rates over the next five years vary markedly across major regions. See table 4.1 and figure 4.1.

As of 2015, Asia, Europe and North America represented the highest value grocery retail markets. In the next few years, of all the major regions, the African and the Middle East region is expected to see the fastest growth, followed by the Asian region. North America and Europe are expected to see the lowest growth (such that retail value in Africa and the Middle East may reach that of North America). In real terms, growth rates are expected to exceed 5% in India (7.1%), the Philippines (6.3%), Pakistan (5.5%), Indonesia (5.3%), and Nigeria (4.9%). In contrast, grocery retail value the USA and Canada are both expected to grow at 1.7%, with much lower growth expect in Italy (0.5%), the UK and Germany (0.6%), France and Spain (0.7%).

	2015	2020
Asia	3,034	4,325
Europe	2,499	3,055
Africa and Middle East	880	1,443
North America	1,186	1,434
Latin America	1,035	1,399
Oceania	130	167

Source: IGD retail analysis, 2015

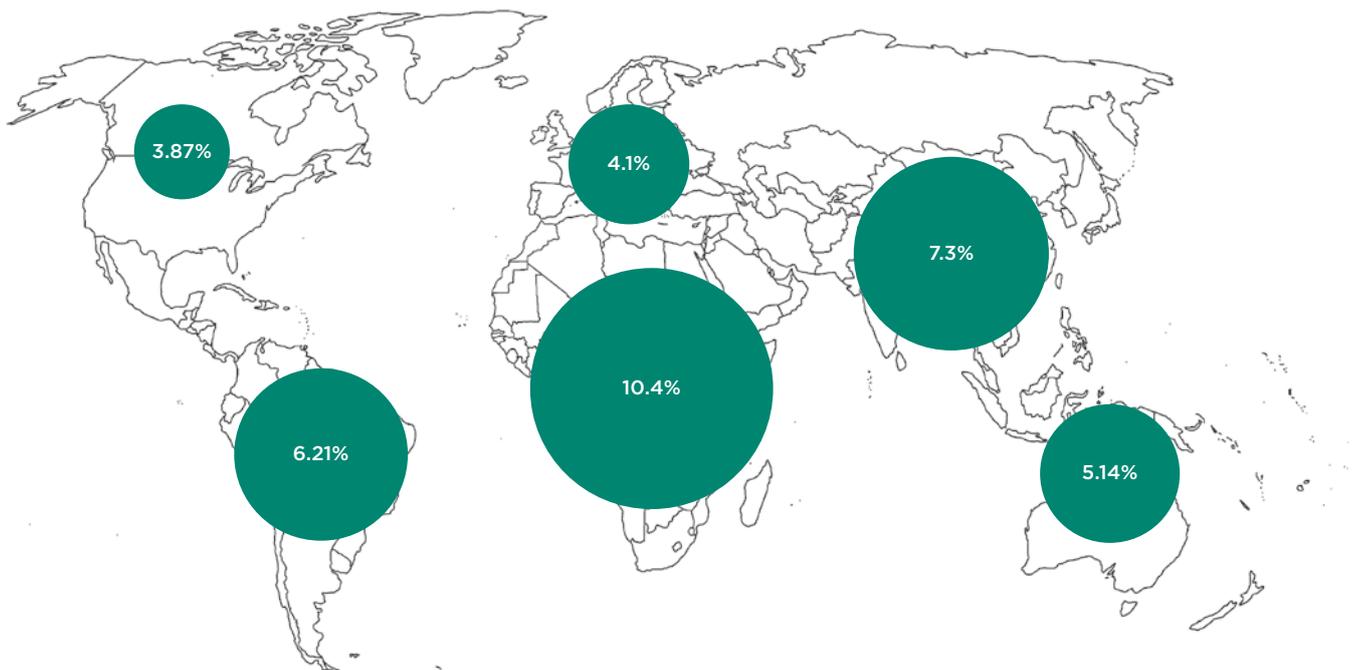


Figure 4.1 Grocery retail sales – Compound Annual Growth Rate 2015-2020 (growth calculated at nominal rates). Source: IGD Retail Analysis.

4.1 Whitefish

4.1.1 Recent developments

- **Markets:** In *whitefish demand*, market structure is changing as wholesale trade in fresh sector getting pushed aside by retail trade. A slow shift away from whole fish towards gutted fish, to fillets, and thereon to boneless fillets. Customers increasingly wanting portion sizes and paying attention to how fish is packed.
- **Product and chain:** *Trading conditions* have seen tightening of regulation on driver hours (adding cost, tightening logistics). The emergence of Boulogne as a European fish hub with the reliance on crossing the English Channel as a key transport step to the continent. Regular channel transport disruption, often cyclical and politically motivated and oriented towards key periods of the year (e.g. UK holiday periods).
- **Supplies:** Resource largely coming from the North Sea and so suffers from reputation stigma undermining provenance and *product integrity*. *Resource management* has seen generally increased volumes of haddock, the total allowable catch (TAC) for saithe fluctuates but is supported by quota swaps, full scientific assessment for monkfish not completed but can be prone to overexploitation.
- **Competitors:** *Trading conditions* has seen increasingly integrated chains and processing outside UK, for example Icelandic companies contracting with, or buying, vessels. These operations supply directly to the European markets.

4.1.2 Anticipated in next five years

- **Markets:** In Europe, beginning to see a shift in *whitefish demand* towards packs (two fillets) and away from products requiring traditional gutting, preparation and cooking. Retailers will make more demands of the industry in terms of *product integrity*, traceability for example, and this will increase costs. May see *whitefish demand* reflect stronger markets in America and China than in Europe. The UK vote to exit the EU adds uncertainty around *trading conditions*, particularly access to EU markets, labour and euro/sterling exchange rates.
- **Product and chain:** *Trading conditions* will be undermined by continued channel disruption with no obvious alternative routes.
- **Supplies:** Improved status in the North Sea could be a 'game changer' for reputation,

enhancing provenance and *product integrity*. *Fish supply* will be challenged as all whitefish will come under the Landings Obligation (particularly hake and saithe as these get a large by-catch) with more fish expected to be landed. Securing continuity of supply for 52 weeks of the year is critical to access markets.

- **Competitors:** *Trading conditions* will see tariff reduction on whitefish supplies coming into Europe i.e. EU/Canada agreement (cod), EU/Vietnam agreement (pangasius – already a formidable low cost competitor), and proposed TTIP agreement (removal of 20% tariff on seafood products).

4.1.3 Example impacts and response

- **Markets:** More demands of the industry by continental retailers will increase costs in the supply chain. The UK vote to exit the EU could mean further costs, a revised UK-EU relationship may introduce tariff barriers to access EU markets or alternatively a zero tariff agreement may be reached. Either way it would seem operators will be impacted by increased paperwork and administration.
- **Product and chain:** Continued disruption of transport across the English Channel is an immediate threat to revenues for suppliers of fresh whitefish but longer term continued disruption will mean customers source from elsewhere. However in some instances this could be an opportunity if this material is directed to markets for frozen fish.
- **Supplies:** Improved status in the North Sea could be a major opportunity to enhance reputation of exported product. Enforcing the Landings Obligation means more fish is expected to be landed with the threat that this all goes to lower priced markets. Failure to secure continuous supply for 52 weeks of the year will mean loss of markets.
- **Competitors:** Reduced tariffs on whitefish coming into Europe could mean low cost competition in continental markets but could also present new market opportunities, particularly in North America.
- **ACTION:** *Prepare Brexit scenarios, for example by considering the merits of Icelandic/Norwegian/EU trade model in relation to a potential UK/EU trade model.*
- **ACTION:** *Review viability of alternative transport routes across English channel, ensure chilled transportation is prioritised in existing transport routes.*

- **ACTION:** Develop the story around the North Sea turnaround, and use to support promotional campaigns.
- **ACTION:** Support continuity of domestic supply with strong arguments to support the opening up of quotas, and days at sea, where appropriate.

4.2 Pelagic

4.2.1 Recent developments

- **Markets:** *Trading conditions* have deteriorated and the opportunities for *marketing* mackerel to traditional outlets have been cut off. Conditions have been affected by a Russian trade ban for EU and Norway suppliers (not Iceland or Faroes), weakening of Ukraine market (conflict) and trade difficulties with Nigeria (oil and gas sector developments and politics). *Fish demand* and *marketing* for herring has showed better prospects in Europe and Africa (due to lower price product and helped by the weak economic climate in Europe) and declining in Asia.
- **Product and chain:** No real transport issues with exports of frozen product. *Fish demand* is showing pressure to innovate in herring products to Europe in order to counter competition from other proteins e.g. chicken, burgers etc.
- **Supplies:** *Resource management* was challenged with Iceland/Faroes taking unilateral quota, and this has increased pressure on mackerel. This has led to more competition in the market and undermined provenance and *product integrity* with mackerel losing MSC accreditation (a strong asset in Asian markets).
- **Competitors:** Shifts in *trading conditions* has meant suppliers to East European markets under pressure from lower cost product from Iceland/Faroes. Iceland has stepped into the void created by the Russian ban. In Asia, Norway benefits from well-funded marketing campaign and being the number one brand image (there is suspicion that the Norwegian government subsidises the industry's minimum cost).

4.2.2 Anticipated in next five years

- **Markets:** Restricted *trading conditions* look set to continue - the Russian ban, initially hoped to be resolved quite quickly, has turned into a long term situation. *Marketing* concerns remain. Even if the Russian ban is lifted re-entering the price-sensitive market would be

challenging given Icelandic competitiveness. Scottish mackerel could be perceived as a premium product and have higher appeal in Japanese market. The EU referendum is considered unlikely to affect herring trade in Europe.

- **Product and chain:** *Fish demand* is expected to rise with higher interest in Europe for skinless herring fillets (no bones, no skin) as customers opt for convenience.
- **Supplies:** *Resource management* shows North sea herring improving, just as Atlanto-Scandia quota levels are decreasing. However *fish supply* is a challenge with industry potentially exposed to insecurity of supply (UK vessels can sell to Rep. of Ireland or Norway) and by fishermen retiring (next generation might sell out).
- **Competitors:** Japanese *fish demand* may show a preference for Norwegian mackerel as this is caught with purse seine (in contrast with trawl caught Scottish mackerel). *Trading conditions* may change with Norway falling out of favour with China (see Nobel peace prize furore) may tighten restrictions on Norwegian material.

4.2.3 Example impacts and response

- **Markets:** Supplying the Russian market, if the ban was lifted, would be threatened by price competition from lower cost Icelandic suppliers. There are potential opportunities for new markets as alternative outlets for material. Turkey is a potential market (but EU duties are high and Norway and Faroes have signed trade agreements with Turkey). In Africa, Nigeria is a big emerging market, North Africa also holds potential but both suffer from a volatile political landscape, lack of trade platforms (that support meeting potential customers), and have potential protein substitutes from freshwater resources. Australia, and the expatriate community, is a potential candidate market. Longer term there should be a consumer market in China.
- **Product and chain:** Opportunity to innovate in product formats, particularly in Europe.
- **Supplies:** Threat of supply loss in the immediate term as UK catch is sold abroad, and in the longer term as fishing rights are sold abroad by next generation.
- **Competitors:** Suppliers reliant on trawl caught Scottish mackerel to Japan may lose out to Norwegian suppliers. UK suppliers may benefit if China tightens restrictions on Norwegian material (as they fall out of favour).

- **ACTION:** A major push would be required to support any return to the Russian market. Prepare contingency resources from UK and/ or Scottish Government and agencies such as UKTI, SDI and Seafish.
- **ACTION:** Industry need to lobby UK Government, and Seafish to provide appropriate support, to ensure:
 - a level playing field for trade with Turkey is created
 - the trading situation in Ukraine is eased e.g. by easing credit insurance.
- **ACTION:** Industry to sell more into existing markets by offering higher quality products and attending relevant seafood shows. In the Far East, secure interest in Japan by changing gear technology used in mackerel capture i.e. consider purse seine over trawl. Attend relevant seafood shows, promoting to operators in key markets (e.g. Chinese companies) but make sure promotions are conducted regularly so ongoing presence is achieved.
- **ACTION:** Advertise UK seafood products using platforms that are recognisable in target markets e.g. Alex Ferguson promoting mackerel in the Far East.
- **ACTION:** Introduce a landing obligation to help address supply insecurity, whereby UK licence holders are required to land at least 50% of catch into the UK.

4.3 Shellfish

4.3.1 Recent developments

- **Markets:** Fish demand in Europe has been affected with Europeans watching their money - continental markets have been impacted by the economic downturn, some customers trading down a size in Nephrops, moribund European markets for brown crab. Fish demand in China has shown growth in live crab exports (until very recently).
- **Product and chain:** Trading conditions have seen disruption in the English Channel undermining fresh product supply e.g. Nephrops. Concerns over product safety and integrity include recent Chinese restrictions on export of live crab (due to cadmium content), whilst the lack of UK standardisation in processing export documents and health certificates is a barrier to seafood exports².

- **Supplies:** Resource management challenges include Nephrops suffering less supply recently (vessels catching less due to restrictions) and weakness in brown crab fishery controls (influx of vessels, min landing size, clawing).
- **Competitors:** Trading conditions has seen consolidation in the scallop sector with backward integration (to secure supply but also to eliminate competition).

4.3.2 Anticipated in next five years

- **Markets:** Fish demand could see a shift to more processed product on the European continent e.g. brown crab. Trading conditions are expected to be affected by tariff reductions anticipated in EU/Canada/USA trade. The result of the EU referendum will create uncertainty around access to EU market and staffing.
- **Product and chain:** Trading conditions will see continued disruption of transport across English channel. Product safety and integrity will be challenged by disparities in the equivalence, and appetite for, hygiene / food safety standards in different countries/regions. This will be exacerbated by continued lack of standardisation within the UK on export documentation and health certification.
- **Supplies:** Greater pressure on fishery and resource from resource management arrangements - specifically the absence of fishery control in some instances and in others overly restrictive measures that limit fishing (in MPAs for example).
- **Competitors:** Trading conditions will see a smaller number of UK processors (consolidation). Canada and Vietnam free trade agreements may result in greater collaboration as well as competition.

4.3.3 Example impacts and response

- **Markets:** Tariff reductions in Canada/USA trade could present new market opportunities e.g. brown crab and other shellfish. A shift to more processed product on European continent could present opportunities for UK operators with advanced processing capabilities e.g. brown crab. The UK vote to leave the EU could be a threat to operators in terms of increased paperwork and staffing difficulties.

² The UK does not provide a central resource for help with export documentation for seafood; for example providing official export health certificates for seafood is, for the most part, handled by local authorities. In contrast, the meat industry is served by a central agency of Defra, the Animal and Plant Health Agency (APHA), which provides certificate templates, and the UK Export Certification Partnership (UKECP), a Defra/industry partnership that helps negotiate export health certificates on behalf of the UK.

- Product and chain:** Continued disruption of transport across the English Channel is an immediate threat to revenues fresh/live shellfish with continued disruption meaning customers source from elsewhere in the longer term. There could be opportunities if this material is directed to markets for frozen fish. Disparities in the equivalence and appetite for hygiene / food safety standards in different countries/regions could undermine access to emerging export markets. Within the UK, identifying and providing the necessary official certificate is a major administrative hurdle for exporters wishing to export new products to a new market; this is a barrier to improving export opportunities.
 - Supplies:** Greater pressure could be placed on the fishery and resource: particularly brown crab in the absence of controls, Nephrops and scallops expected to be impacted by pressure for MPAs.
 - Competitors:** The Canada-EU trade agreement may see cross-border mergers and competition from scallops and shrimp (coldwater prawn) imports. The Vietnam-EU trade agreement may see competition from farmed shrimp (warm water prawns).
- ACTION: Diversify overseas markets.*
 - ACTION: Differentiate shellfish export products and target niche markets overseas.*
 - ACTION: Ensure sustainability credentials to underpin product offer.*
 - ACTION: Provide transparency on migrant labour dependency by the seafood industry, ensure UK Government migration policies are in line with industry requirements, ensure industry practices on migrant workers are responsible.*
 - ACTION: Prioritise fresh (live & chilled) in critical transport routes i.e. English Channel. Ensure action is taken on illegal disruption in France (UK Government action).*
 - ACTION: Ensure high standards in the chain; deploy resource in a smarter fashion to understand hygiene requirements in countries targeted for export.*
 - ACTION: Secure supply by: securing quota; closer catcher/processor collaboration; collaborative promotions; and push-back on MPAs.*
 - ACTION: Produce and maintain a list of seafood trade duties for industry benefit.*

Table 4.1 Dimensions and example risk to seafood product exports

Dimension	Anticipated export risk	Sector	Suggested action	Owner*
Fish Demand	Stagnant market (EU)	Whitefish	None suggested	
	Growth market (America, China)	Whitefish	None suggested	
	Processed product format	All	None suggested	
	Preference for competitor product	Pelagic	Industry to sell more into existing markets by offering higher quality products. In the Far East, secure interest in Japan by changing gear technology	
Marketing	Market dependence	Shellfish	Diversify overseas markets.	
	Product pricing	Pelagic	Industry to sell more into existing markets by offering higher quality products. In the Far East, secure interest in Japan by changing gear technology	
	Weak promotion	Whitefish	Develop the story around the North Sea turnaround, and use to support promotional campaigns.	
		Pelagic	A major push would be required to support any return to the Russian market. Prepare contingency resources from UK and/or Scottish Government and agencies such as UKTI, SDI and Seafish.	

*to be agreed

Table 4.1 Dimensions and example risk to seafood product exports (cont.)

Dimension	Anticipated export risk	Sector	Suggested action	Owner*
Marketing	Weak promotion	Pelagic	Industry to sell more into existing markets attending relevant seafood shows: promoting to operators in key markets (e.g. Chinese companies) but make sure promotions are conducted regularly so ongoing presence is achieved.	
		Pelagic	Advertise UK seafood products using platforms that are recognisable in target markets e.g. Alex Ferguson promoting mackerel in the Far East.	
	Product mix and differentiation	Shellfish	Differentiate shellfish export products and target niche markets overseas.	
Trading conditions	Level playing field for trade	Pelagic	Industry need to lobby UK Government, and Seafish to provide appropriate support, to a level playing field for trade with Turkey is created.	
	Logistics and dependency on specific transport corridors	Whitefish	Review viability of alternative transport routes across English channel, ensure chilled transportation is prioritised in existing transport routes.	
		Shellfish	Prioritise fresh (live & chilled) in critical transport routes i.e. English Channel. Ensure action is taken on illegal disruption in France (UK Government action).	
	Trade agreements, duties, trade embargoes	Shellfish	Produce and maintain a list of seafood trade duties for industry benefit.	
	Political disruptions and shifting political units	Whitefish	Prepare Brexit scenarios, for example by considering the merits of Icelandic/Norwegian/EU trade model in relation to a potential UK/EU trade model.	
				Industry need to lobby UK Government, and Seafish to provide appropriate support, to ensure the trading situation in Ukraine is eased e.g. by easing credit insurance.
Operations and labour	Labour market conditions – availability of labour	Shellfish	Provide transparency on migrant labour dependency by the seafood industry, ensure UK Government migration policies are in line with industry requirements, ensure industry practices on migrant workers are responsible.	
Product safety and integrity	Product quality	Pelagic	Industry to sell more into existing markets by offering higher quality products. In the Far East, secure interest in Japan by changing gear technology used in mackerel capture i.e. consider purse seine over trawl.	
	Standards	Shellfish	Ensure high standards in the chain; deploy resource in a smarter fashion to understand hygiene requirements in countries targeted for export.	
		All	Establish a central point and dedicated resource provided by the relevant organisation(s) to ensure seafood specific advice on UK export documentation and health certificates is provided to Environmental Health Officers etc (similar to the UK meat industry)	
	Sustainability credentials	Whitefish	Develop the story around the North Sea turnaround, and use to support promotional campaigns.	
				Ensure sustainability credentials to underpin product offer.

*to be agreed

Table 4.1 Dimensions and example risk to seafood product exports (cont.)

Dimension	Anticipated export risk	Sector	Suggested action	Owner*
Fish supply	Supply dependence / security of supply	Whitefish	Secure supply by: closer catcher/processor collaboration; collaborative promotions	
		Pelagic	Introduce a landing obligation to help address supply insecurity, whereby UK licence holders are required to land at least 50% of catch into the UK.	
		Shellfish	Secure supply by: closer catcher/processor collaboration; collaborative promotions	
Resource management	Tightening/loosening of supply	Whitefish	Support continuity of domestic supply with strong arguments to support the opening up of quotas, and days at sea, where appropriate.	
	Management constraints e.g. MPAs	Shellfish	Secure supply by securing quota and push-back on MPAs.	

*to be agreed

5. UK seafood exports – impacts and response to longer term developments

The impact of longer term developments on UK exports is multiplied by food security and climate change challenges:

- The challenge of food security, a growing world population and middle class offers opportunities for protein suppliers in an enlarged global market. Seafood – both in terms of well managed wild resources and new aquaculture production - could play an important role in supplying this protein.
- The challenge of climate change brings additional uncertainties to the seafood industry not least in terms of disruptions to the fish resource, but also to the catching/harvesting, onshore handling and distribution.

The industry and Seafish have a choice as to whether or not to respond to this emergent landscape at this stage. Responding could involve a range of defensive or offensive actions, *initiated in advance*. Deciding not to respond at this stage would mean industry and Seafish are subject to events as they unfold, the experience with the Russian ban is illustrative of this, requiring strong capabilities to react quickly.

If there is an appetite to respond at this stage, this review exercise has highlighted the following potential impacts and responses by way of examples:

- **There may be an enlarged global market, but UK seafood exports are heavily directed towards a single major regional destination: Europe (and until recently Russia) essentially. Industry and Seafish should consider rebalancing the ‘export portfolio’, reducing risk by:**
 - diversifying into export markets in other major regions globally.
 - providing alternatives to export e.g. promoting availability of domestic product to the UK consumer as a fall back option to failing overseas markets.
- **A number of markets are suggesting a shift in consumer preferences towards products offering convenience, with UK seafood having a relatively strength in this capability (albeit driven by the UK domestic market). Industry and Seafish should consider the merits of producing products, processed to secondary or even tertiary levels, for export.**
 - Establish overseas operations directly or in joint ventures (especially in co-operation with UK retailers with a presence overseas)
- **Intense price competition is an important feature in global export markets. Industry and Seafish should focus on premium export markets to avoid price competitive volume supply (from the likes of Iceland and Norway).** In some species, the UK lacks advantages in the volume of fish caught (compared to Iceland, Norway etc), however has advantages in capabilities in other parts of the supply chain. Industry and Seafish should consider how capabilities in seafood product innovation, packaging, branding, etc can feature more strongly in export markets.

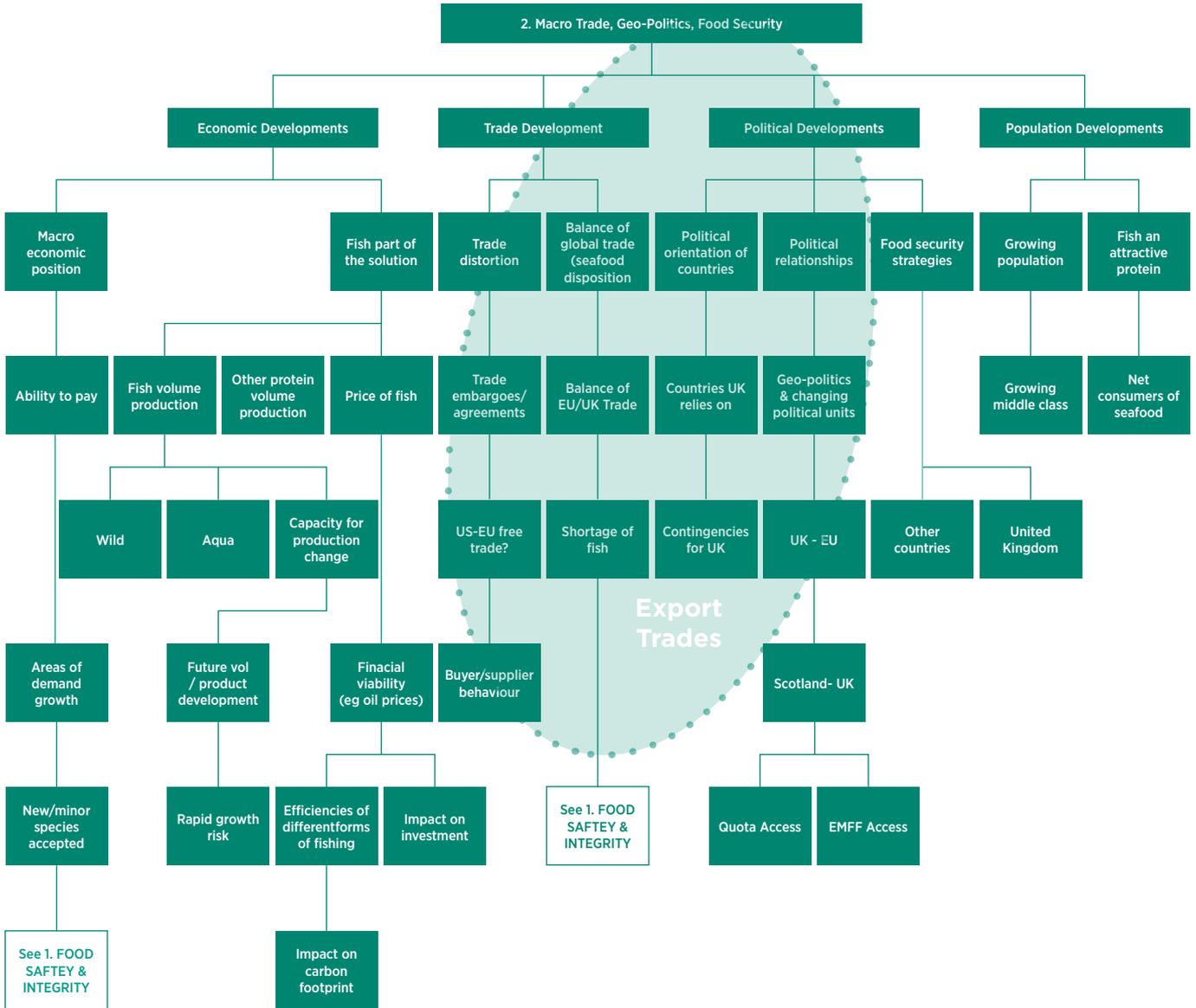
- **The interplay of a number of developments threaten security of supply. Industry and Seafish should consider steps necessary to best secure:**

- domestic supply of wild capture seafood. Ensuring fisheries management is underpinned by a robust scientific and industry knowledge base, and management arrangements that support flexible and responsive industry adaptation to shifting marine conditions.
- domestic supply of cultivated seafood. Promoting the concept of offshore farms, the technical viability of which has been demonstrated off Lyme Bay (in the case of mussel production).
- imported supply for export purposes, where appropriate (developing export markets for secondary or tertiary products, that emphasise manufacture over raw material attributes, may allow for this). This could involve establishing operations in supplier countries either directly or through joint ventures.

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Appendix 1 - Locating UK seafood consumption in seafood risk landscape



Appendix 2 - Consultees

1. **Clare Dean**
Seafood Scotland
2. **Jeremy Sparks**
Seafood Scotland
3. **Malcolm Large**
Seafish
4. **Ivan Bartolo**
Seafish
5. **Orn Jonsson**
Atlantic Fresh
6. **John Angus**
Shetland Catch
7. **James Sutherland**
Whitelink
8. **Stewart Crichton**
Orkney Fishermens' Society
9. **Gary Cadey**
Garfish Exports
10. **Simon Dwyer**
Seafox
11. **David Leiper**
Seafood Ecosse
12. **Sandy MacRobbie**
Laeso Fish
13. **Roy Cunningham**
Macduff Shellfish
14. **James Cook**
D R Collin
15. **Robert Duthie**
Denholm Seafoods
16. **Chris Anderson**
Northbay Pelagic
17. **Jamie Couper**
Couper Seafoods
18. **Sinclair Banks**
Lunar Fishing
19. **James Wilson**
Bangor Mussel Producers Ltd
20. **Nicki Holmyard**
Offshore Shellfish Ltd

Appendix 3 – UK seafood industry – main systems, functions and activities

Source: Seafish, Defra

System	Broad species grouping	Species	Species distribution (and main producing countries)
Domestic	Whitefish	Cod, haddock, whiting, monkfish, sole, plaice	UK waters/NE Atlantic (UK)
Domestic	Whitefish	Cod, haddock, Pollock	UK waters/NE Atlantic (UK)
Domestic	Whitefish	Sole, plaice, rays	UK waters/NE Atlantic (UK)
Domestic	Pelagic	Herring, mackerel, sardine/pilchard, blue whiting	UK waters/NE Atlantic (UK)
Domestic	Pelagic	Mackerel	UK waters/NE Atlantic (UK)
Domestic	Shellfish	Crabs, lobsters, Nephrops, whelks	UK waters/Eastern Atlantic (UK)
Domestic	Shellfish	Nephrops	UK waters/NE Atlantic (UK)
Domestic	Shellfish	Mussels, scallops	UK waters/Eastern Atlantic (UK)
Domestic	Shellfish	Mussels, oysters	UK waters/NE Atlantic (UK)
Domestic	Salmonids	Atlantic salmon, Rainbow trout (NE Atlantic small pelagic, waste and some imported fisheries (anchovy, sardine) input as feed in stage 2)	UK waters/NE Atlantic (UK)
International	Whitefish	Cod, haddock, hake, halibut, plaice	NE Atlantic/Barents sea (Norway, Russia, Iceland)
International	Whitefish	Alaska Pollock	North Pacific/Bering sea (USA)
International	Pelagic	Anchovy, sardine/pilchard	Eastern Atlantic (Spain, Morocco) Eastern Pacific (Peru)
International	Pelagic	Tunas (yellowfin, albacore, skipjack, swordfish)	Indian ocean (Spain/France/Sri Lanka) Pacific ocean (Philippines/ Mexico) Atlantic ocean (Spain/France/ Ghana)
International	Shellfish	Northern/cold-water prawn	North Atlantic (Denmark/ Greenland/ Iceland/ Norway/ Canada)
International	Salmonids	Pacific salmon	Pacific ocean (USA / Canada / Russia)
International	Cephalopods	Squid, octopus, cuttlefish	Mixed (Eastern Pacific, Mediterranean, North & South Atlantic, Indian ocean)
International	Whitefish	Pangasius	South East Asia (Vietnam)
International	Shellfish	Warm-water prawn	South East Asia (Indonesia/ India/ Thailand), Central America (Ecuador/ Honduras)
International	Salmonids	Atlantic salmon	NE Atlantic (Norway/ Faroes), Eastern Pacific (Chile)

Source method	Capture method	Transportation	Format and processed form
Capture	Whitefish & flatfish (bottom trawl)	Road, container	Fresh - Whole, fillets/loins, smoked, prepared
Capture	Whitefish (gillnets) Whitefish (minority line-caught)	Road, container	Fresh - Whole, fillets/loins, smoked, prepared Whole, fillets/loins, smoked, prepared
Capture	Flatfish & rays (beam trawl)	Road, container	Fresh - Whole, fillets/loins, prepared
Capture	Small pelagic (purse seine & mid-water trawl)	Road, container	Fresh/frozen (including frozen at sea) - Whole, fillets/loins, smoked, fishmeal, preserved, aqua feed
Capture	Small pelagic (line caught)	Road, container	Fresh - Whole, fillets/loins, smoked, prepared
Capture	Crustaceans (pots)	Road, Air freight	Live Fresh/frozen - Whole, prepared
Capture	Prawn (trawl)	Road	Live Fresh/frozen - Whole, shelled, preserved
Capture	Molluscs (dredged)	Road, Air freight	Live Fresh/frozen - preserved
Aquaculture	Molluscs (rope grown/longlines) Molluscs (bottom grown)	Road, container, Air freight	Live Fresh - preserved
Aquaculture	Marine cage farming Freshwater ponds/raceways	Road, container, Air freight	Fresh/frozen - Whole, fillets/loins, prepared, smoked Fresh/frozen - Fillets/loins smoked, prepared
Capture	Demersal fish (bottom trawl)	Road, container, Air freight	Fresh/Frozen - fillets/loins, smoked, prepared
Capture	Whitefish (pelagic trawl)	Road, container	Frozen - fillets/loins, smoked, prepared
Capture	Small-pelagics (purse seine)	Road, container	Fishmeal, fish oil, canned, aqua feed
Capture	Tunas (long line) Tunas (purse seine) Tunas (pole & line / handline)	Air freight, Container	Fresh/frozen - Whole, fillets/loins, preserved Preserved Whole, fillets/loins, preserved
Capture	Prawn (trawl)	Road, container	Frozen - Whole, shelled, preserved
Capture	Salmon (nets)	Road, container	Frozen - Whole fillets/loins, smoked, prepared
Aquaculture	Cephalopods (jigging, trawl in North Atlantic)	Road, container	Frozen - prepared, brined
Aquaculture	Freshwater pond culture	Road, container	Frozen - Whole, fillets/loins, prepared
Aquaculture	Shrimp farming (intensive > extensive)	Road, container	Frozen - Whole, shelled, preserved
Aquaculture	Marine cage farming	Road, container	Frozen - Whole, fillets/loins, prepared, smoked Frozen - Fillets/loins smoked, prepared

Appendix 4 - Top UK export country destinations by individual species and format, 2015.

Major Species Group	Format	Volume (kg)	Value (£)	Species	Top export country
Whitefish	Fresh	2,203,420	11,530,547	Cod	France
		106,677	240,028	Haddock	Rep. of Ireland
		357,045	735,047	Hake	Spain
		1,336,933	5,936,925	Monkfish	France
		2,249,538	4,448,956	Saithe	France
		240,201	405,139	Whiting	France
	Frozen	1,050,840	3,971,024	Cod	Rep. of Ireland
		143,914	70,692	Haddock	Germany
		74,828	324,583	Hake	Poland
		334,192	817,367	Monkfish	Spain
		134,995	414,272	Saithe	Germany
		1,435,263	5,983,118	Whiting	France
	Ambient	916,457	2,920,384	Cod	Rep. of Ireland
		9,174	26,240	Hake	Rep. of Ireland
		250,631	826,185	Saithe	Rep. of Ireland
Pelagic	Fresh	7,327,931	2,646,107	Herring	Rep. of Ireland
		5,658,182	3,789,827	Mackerel	Denmark
	Frozen	21,477,295	7,379,932	Herring	Netherlands
		32,854,218	17,400,320	Mackerel	Netherlands
	Ambient	98,124	349,057	Herring	Rep. of Ireland
		587,050	680,262	Mackerel	Japan
Shellfish	Fresh	3,178,577	8,097,218	Brown crab	France
		4,426,759	2,633,792	Mussels	Netherlands
		2,928,316	24,927,713	Nephrops	France
		2,990,387	43,480,284	Scallops	France
	Frozen	930,500	4,824,152	Brown crab	France
		426,727	619,713	Mussels	Netherlands
		3,437,191	22,037,436	Nephrops	Italy
		943,490	8,596,310	Scallops	France
	Ambient	36,571	124,680	Mussels	Netherlands
		36,677	450,042	Scallops	Germany
TOTAL		98,182,103	186,687,352		

Source: British Trade Statistics



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