

Seafood Strategic Outlook

Winter 2014/15



Food security in UK seafood

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

SEAFISH
the authority on seafood



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Executive summary

Global food systems operate against the backdrop of a number of longer-term developments such as climate change, ecological constraints, globalisation and human population changes (growth and tastes). Strategic challenges arise from these developments, including the ability to secure food. With a growing world population, the importance of *food security* is increasing. Limitations and impacts associated with other proteins means seafood could play a large part in the overall food solution.

Competing priorities in governance and policy arenas can mean such strategic challenges are often inadequately addressed. The seafood industry itself, dealing with day-to-day realities, does not tend to think far ahead (often no more than one year ahead). Yet long-term challenges such as *food security*, and our failure to consider and respond to them, can have important near term consequences. If the industry were to look further ahead, it might lead to very different pathways. However we need to consider *food security* and other challenges in appropriate contexts (both domestic and international), as these raise different questions and actions.

Recognising that *food security* is a concern for a range of stakeholders (industry, academia, policymakers etc), this research exercise consulted 30 stakeholders to explore the following questions: i) what do we (Seafish and industry) mean by *food security* in seafood, ii) what are the important longer-term developments, and how can we understand them ongoing, and iii) what action can industry take, and what is the role of Seafish? *This document combines data, opinions and conjecture and is a position paper at the time of press. It is important to bear in mind that evidence today might suggest trends that turn out to be very different in the longer-term.*

The findings from this initial exploratory exercise reveal that:

- The term *food security* in seafood is open to a wide range of interpretations depending on the stakeholder location in the industry landscape. However, there are common aspects to these interpretations and in a general sense *food security* is an issue of concern.
- *Food security* presents a contrasting set of challenges, opportunities, threats and pathways to those in the domestic part of the industry on the one hand, to those in the international part of the industry on the other, and within particular subsystems (whitefish, pelagic, shellfish).
- There are important longer-term developments relating to *food security*, and

these similarly differ between domestic and international stakeholders. The industry landscape beyond 10 years could be markedly different: very populous countries eating more seafood, more sustained availability of fish (if conditions are managed well), a more difficult trading environment, higher (and/or more variable) food prices and possibly less choice.

- Although *food security* is considered an issue, industry action, to an extent, is already underway: future priorities should focus on continuing/enhancing this. It is still 'early days' for *food security* in seafood and further discussion is required on the pathway forward. However, seafood industry concerns need to be incorporated within the overall strategic view of UK *food security*. There is a need to find common ground and build on existing definitions, policy and initiatives. With many industry stakeholders focussed on their part of the industry landscape, an holistic 'whole system' approach should be progressed on an iterative, stepwise basis, connecting across industry.
- The suggested response concerns industry, Seafish and UK Government:
 - o Industry: determine the longer term pathway for addressing *food security* in seafood and invest in actions already underway that are aligned with *food security* concerns.
 - o Seafish: subject to the longer term pathway, engage across industry presenting *food security* and the wider global context to key groups, and identify opportunities, threats, aligned actions and gaps in particular parts of industry arising from *food security*.
 - o UK Government: raise seafood related *food security* concerns within the overall strategic view of UK *food security* and, with devolved administrations, ensure a tailored policy response according to the pressures faced by different parts of the seafood industry.





1. Introduction

1.1 Requirement and purpose

Global food systems operate against the backdrop of a number of longer-term developments including climate change, ecological constraints, globalisation and human population changes (growth and tastes). Strategic challenges arising from these developments include mitigating and adapting to climate change, effective management of scarce resources, and securing food whilst ensuring economic viability. With a growing world population, the importance of *food security* is increasing. With limitations and impacts associated with other forms of protein, seafood could play a large part in the overall food solution.

Such challenges can often be inadequately addressed in governance and policy arenas where there are competing priorities. At a global level, the UN (FAO) approach to *food security* is considered to be highly focussed on helping developing countries. National strategies, where they exist, appear heavily skewed towards emerging economies: the issue appears to be higher on the agenda in Russia and China whilst hardly mentioned in the EU.

The seafood industry itself, dealing with day-to-day realities does not tend to think far ahead (often a forward view is no more than one year ahead). This near term focus naturally arises from competitive pressures but can be further driven by institutional cycles such as annual resource management. When longer-term developments are considered, industry can be alarmed by them. The absence of a large enough view means that longer-term, bigger picture, challenges are often not thought about.

Yet long-term challenges such as food security, and our failure to consider and respond to them, can have important near term consequences:

- Regulatory developments (such as changes in bilateral trade protocols between the EU and third countries) can be burdensome with important unintended consequences, placing pressure on **securing seafood supplies in a global market.**
- Growing world population (specifically the growing middle class) and per capita demand for food - particularly in rapidly developing countries - could have a **significant impact on trade flows.**
- Climate change has the potential to fundamentally **alter existing food production arrangements.**

However we need to consider *food security* and other challenges in appropriate contexts, as these raise different questions and actions. In a domestic context, industry interest in near term fisheries management might eclipse a longer-term question concerning the permanent shift in species and the implications of that. Similarly in an international context, global competition to secure material may obscure potential tipping points arising from global developments (e.g. if a producing country suddenly switches supply from exporters to domestic consumers) dramatically and fundamentally altering trade flows.

Incremental short-term changes may not be the best way to adjust to long-term challenges. Although a long-term view may concern developments over 10, 20, 30 years, industry might find they have drifted into a situation with no alternative position. A decade can pass and suddenly it's harder to trade. If the industry were to look further ahead, and broaden the perspective to consider seafood within the wider protein envelope, it might lead to very different pathways e.g. industry and business diversification.

i Industry requirement

Food security is considered to be an important issue for the seafood industry and one that Seafish and the industry should respond to (Seafish panel feedback, 2013). However, there are diverse views amongst industry stakeholders on what *food security* is, what long-term developments are important, and

what should be done. The nature of the problem and the response is therefore not yet clear.

Lack of clarity prompts a number of questions. We must ask for example: what do we mean by *food security*? What are the likely differences between now and the future? What are the major changes, opportunities and threats? What industry action can be taken? Can forward pathways be identified based on broad trends over 10, 20, 30 years? Furthermore, given the diversity of the seafood industry, we must recognise that responses to these questions will differ in particular parts of the seafood landscape.

Research is required to explore these issues further, confirm the importance of the *food security* issue to industry (or otherwise), and identify potential pathways forward.

ii Research objectives

Recognising that *food security* is the concern of a broader network of stakeholders (industry, academia, policymakers etc), this short exploratory research exercise aims to address the following questions:

- What do we (Seafish and industry) mean by *food security* in seafood?
- What are the important longer-term developments, and how can we understand them ongoing?
- What action can industry take, and what is the role of Seafish?

The research would deliver:

- An engaged group and network of industry/academic stakeholders.
- A shared position on *food security* (definition and framework for action).
- Specific seafood cases illustrating *food security* concerns (developments, potential unintended consequences, and potential responses).
- A forward pathway for *food security*.

It is hoped that this initial work can contribute to the following longer-term outcomes:

- Shared understanding amongst stakeholders on *food security*.
- Common language on practices and priorities.
- Shared narrative, forward direction and priorities on *food security*.

1.2 Approach

This exploratory research was conducted over a period of six months, drawing upon available evidence and the experience of industry and other stakeholders. The research involved the following tasks:

- Brief review of the literature. Literature of interest included academic research and policy papers directly and indirectly related to *food security*.
- Broad consultation with around 30 stakeholders. Stakeholders were drawn from different parts of the industry landscape including supporting organisations such as research organisations, and government. Interviews were semi-structured and conducted either face-to-face or by telephone.
- Two facilitated industry workshops in Aberdeen and Grimsby. Workshops sought to present, validate and synthesise findings.
- Presentation and reporting.
- Limitations: this is an initial exploratory exercise and the review of evidence and opinion is not exhaustive. This document combines data, opinions and conjecture and is a position paper at the time of press. It is important to bear in mind that evidence today might suggest trends that turn out to be very different in the longer-term.





2. The UK seafood industry

2.1 Seafood industry landscape - definitions

- In considering *food security* issues for the UK seafood industry it is important to have a common language on how the industry landscape is represented. The industry representation frames investigation, discussion and agreement on potential risks, impacts, opportunities and threats.
- This section considers the seafood industry landscape, summarising the main risk management arrangements supporting the industry including the role of Seafish.
- The section concludes with an overview of those elements of the industry landscape that are within the scope of this exercise.

i Industry functions and activity

- In representing the industry landscape, we set out what we understand by the term 'seafood product' and thereafter basic industry functions and activities that underpin the delivery and use of such products.
- It is also necessary to appreciate how basic functions interrelate, as seafood systems, in the delivery of seafood products. This supports industry understanding of the direct and indirect risks, opportunities and threats. The seafood industry is diverse, complex and dynamic. However, despite the diversity there are general patterns regardless of product and regional location.
- Finally, it is important to identify seafood systems that may have distinct characteristics. Whilst *food security* impacts may be global, system characteristics may mean that understanding the priority impacts and risks and (being able to respond) present particular challenges.

- By the term 'seafood product' we mean *any aquatic food product (fish, molluscs, crustaceans, echinoderms and other forms of marine and freshwater life) regarded as food for human consumption or feed for animal consumption*.
- The basic functions underpinning seafood production and consumption include: *Stocks* (the geographical location and ecological context for the seafood source e.g. Barents Sea, North Atlantic, or North Sea etc); *Capture/Production* (covering wild capture and aquaculture production); *Transport and distribution* (concerning the movement of seafood products between stages of production, including road, rail, sea, and air transport); *Importing, processing and storage* (concerning the importing, receiving, grading, preparation, preservation and packing of seafood products); *Market/sales outlet* (covering export, retail, food service, wholesale and feed suppliers); *Consumption* (concerning in-home and out-of-home consumption); and *Waste* (concerning underutilised product and the collection / treatment of waste products - including packaging - to landfill, incineration recycling, or composting).
- These functions can be further characterised by major species grouping (e.g. whitefish, pelagic, shellfish, salmonids), specific species (e.g. cod, haddock, herring, mackerel, crab, Nephrops, salmon/trout etc.), and product format/processed form (e.g. whole, fillets/loins, smoked, prepared etc.). See Annex 1.

ii UK seafood systems in a global context

- Seafood systems identify the types of industry actor associated with industry functions and activities that may be impacted (positively or negatively) by *food security* developments. Figure 2.1 and 2.2 illustrate a 'generic' system structure for products derived from wild capture and aquaculture.

Figure 2.1 Capture fisheries

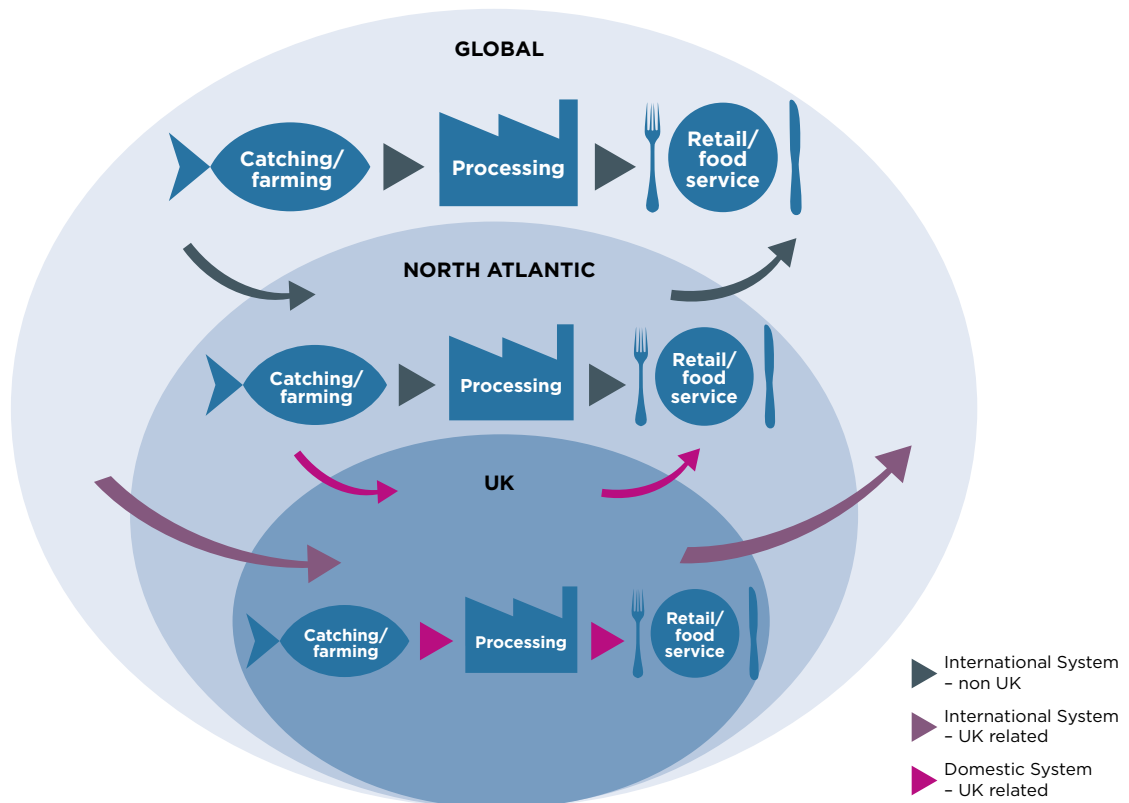
| Stocks | Capture/production | | Transport & Distribution | Importing, processing & storage | Market / sales outlet | Consumption | Waste |
|--------|---------------------------------|----------------------|--------------------------|---------------------------------|--|----------------------|--------------------------------------|
| | Capture & post harvest handling | Landing & Auctioning | | Primary, Secondary | Export Retail Food service Wholesale Feed supplier | In home, Out of home | Under-utilised product at all stages |

Figure 2.2 Aquaculture production

| Stocks | Capture/production | | | Transport & Distribution | Importing, processing & storage | Market / sales outlet | Consumption | Waste |
|--------|---------------------------------------|----------------------|------------------------------------|--------------------------|---------------------------------|---|----------------------|--------------------------------------|
| | Capture & / or broodstock cultivation | Hatching & Nurseries | Farming, harvesting & slaughtering | | Primary, Secondary | Export Retail Food service Wholesale | In home, Out of home | Under-utilised product at all stages |

- The seafood industry can be considered to operate as many subsystems (regional, sectoral), of varying degrees of interdependence, nested within one overarching global system.
- How seafood systems inter-relate within the global context can reveal specific systems with shared characteristics. In the global context, from a UK perspective, there are at least two major seafood systems with distinct characteristics:
 - o A domestic system – defined as a system reliant on domestically sourced material (material caught from North Atlantic stocks and landed in the UK, material farmed in the UK).
 - o 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).
- It is notable that from a UK perspective, seafood material is generally imported for UK consumption whilst material originating in the UK is largely exported for overseas consumption. This highlights a structural segregation between stakeholders in domestic (dominated by producers – fishing and farming) and international systems (dominated by processors/manufacturers).
- Figure 2.3 illustrates the simple relationship between these two major systems, the UK and the global context.

Figure 2.3



2.2 Seafood industry operating conditions: strategic challenges and risk management

- A myriad of developments contribute to the overall operating conditions for seafood industry systems that, in turn, affect the performance of industry functions. Several strategic developments are noteworthy in this respect:
 - o Marine conditions: biological cycles in fish ecology.
 - o Social conditions: population growth and globalisation.
 - o Biosphere conditions - climate change.
- These, in turn, present several strategic challenges to industry performance, such as:
 - o Managing shared resources.
 - o Responding to global economic and financial conditions.

o Ensuring *food security*.

o Mitigating GHG emissions and adapting to climate change.

- The seafood industry sits within a wider network of actors analysing, monitoring and proposing actions. These actors include industry bodies and associations, academia, policymakers, NGOs and media.
- Over and above corporate risk procedures of individual businesses, a number of risk management mechanisms support the UK seafood industry in 'sensing' and 'responding' to risks in the wider environment. A number of selected mechanisms are described in Table 2.1

2.3 Role of Seafish: mission, underlying functions, corporate objectives and limitations

- As the research objectives include a reference to the role of Seafish, it is necessary to briefly review the remit of this organisation.

Table 2.1 Example mechanisms to support risk management

| Level | Key organisations | Risk management process | Cycle/regularity |
|---------------|---|--|-----------------------|
| International | FAO | Committee on Fisheries (COFI) | Two years |
| | Regional Fisheries Management Organisations (RFMOs) | RFMO meetings | At least one per year |
| UK | Seafish | Internal - Board, Audit & Risk committee | Six per year |
| | | External - Industry panels | Three per year |
| Industry | Associations (e.g. SFF, NFFO, FDF, BFFF) | Committees, industry fora | Several per year |

- Within the wider network of actors and existing risk management mechanisms interfacing with the UK seafood industry, Seafish can be considered an important actor and support mechanism for risk management.
- The Sea Fish Industry Authority (Seafish) was established under an Act of Parliament in 1981 as a UK Non-Departmental Public Body funded by industry levy. Seafish incorporated the rights, obligations and property of its two predecessor organisations (the White Fish Authority and the Herring Industry Board).
- As of early 2015, the Seafish organisational mission is to secure a sustainable, profitable future for the UK seafood industry. The organisation has three underlying functions: to protect, promote, and inform the industry. Protecting the industry is an important function directly related to understanding and responding to *food security* developments.
- The forthcoming corporate plan articulates how the organisation will fulfil this mission. These underlying functions underpin three strategic outcomes (Enhancing reputation, Promoting consumption, and Informing decisions) associated with four corporate objectives:

1. Enable the industry to make informed and ethical business decisions.
2. Ensure the industry is better understood by regulators, media and consumers.
3. Create the tools to help industry increase the consumption of seafood.
4. Ensure seafood is well trusted and understood by regulators, media and consumers.

2.4 Boundaries and exclusions

- The focus of this exercise is concerned with selected industry functions, rather than covering the entire industry system (cradle-to-grave).
- The scope is defined as:
 - o Production to consumption (cradle-to-grave) in reviewing *food security* related developments.
 - o Production to outlet (cradle-to-outlet) in reviewing potential actions and planning response.
- Functions beyond the final retail and food service outlets (consumption and waste disposal) are out of scope in this exercise.





3. Food security summary background

This section is a summary of Annex 2 that provides a general context behind the current concern over *food security*, reviewing some of the more important and relevant background developments. Developments of interest here *concern globalisation and the development of the global economy, human population changes and resource depletion*. The section also considers these developments as they relate to seafood.

3.1 General context and expected food security developments

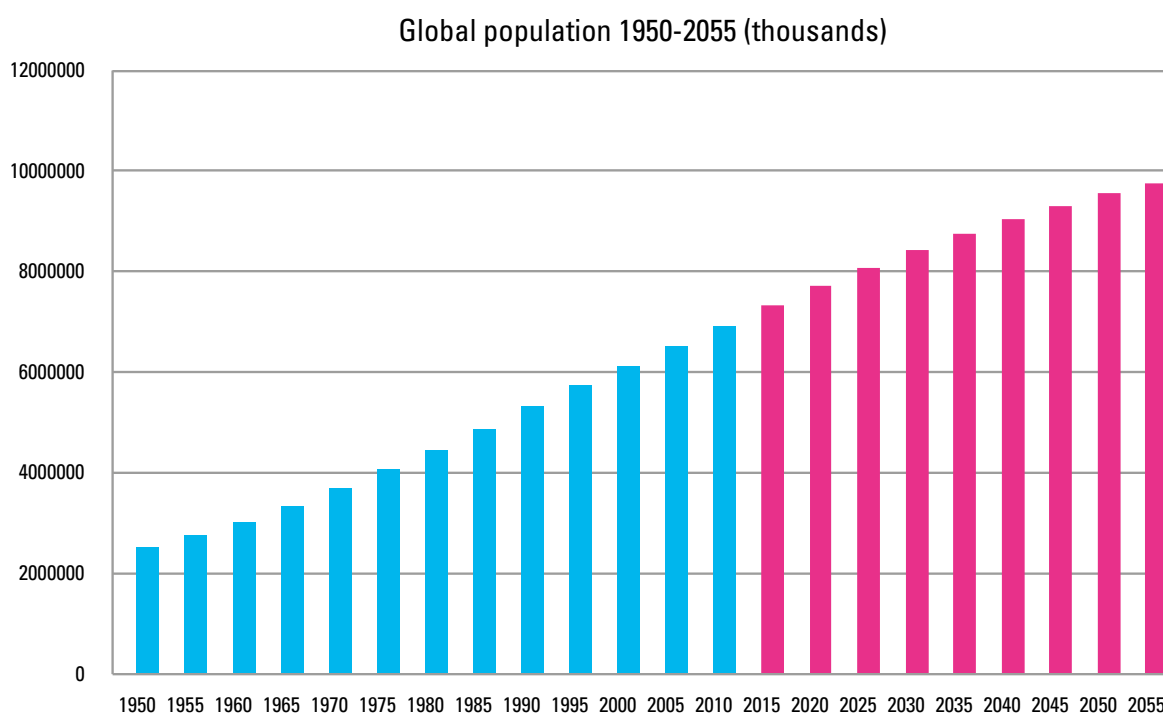
i Globalisation

- Seafood is a globally traded commodity and, as such, global economic conditions provide an important backdrop to seafood trade.
- From the late 1970s to 2008, notwithstanding a series of economic downturns¹, there has been a period of global economic growth with sustained efforts to develop a world economy with reduced trade barriers and open markets.
- Since 2009, and the aftermath of the severe downturn following the credit crunch, the global economy has seen a partial recovery (although importantly this trend is largely absent within the EU).
- It is highly uncertain how markets will develop in the medium term, but there is general acknowledgement that the world economy is rebalancing towards Asia.
- However this rebalancing pathway is by no means certain.

ii Population

- Global population has increased from 2.5bn in 1950 to 6.9bn in 2010, and is expected to stabilise around 9.5bn in 2050 (although reaching a point of 'stabilisation' has recently been challenged²). Within this, Asia exceeds the population of all other regions combined.
- Although population growth is important, from a *food security* perspective both the working-age and the middle class segments are particularly important.
- See Figure 3.1
- The middle class segment refers to those consumers generating an income above the subsistence level, able to buy consumer goods (including food) over and above purchases that cover basic needs.
- Over the last 20 years, from a global perspective, the middle class has been expanding.

Figure 3.1 Global population 1950-2055 (UN, 2012)

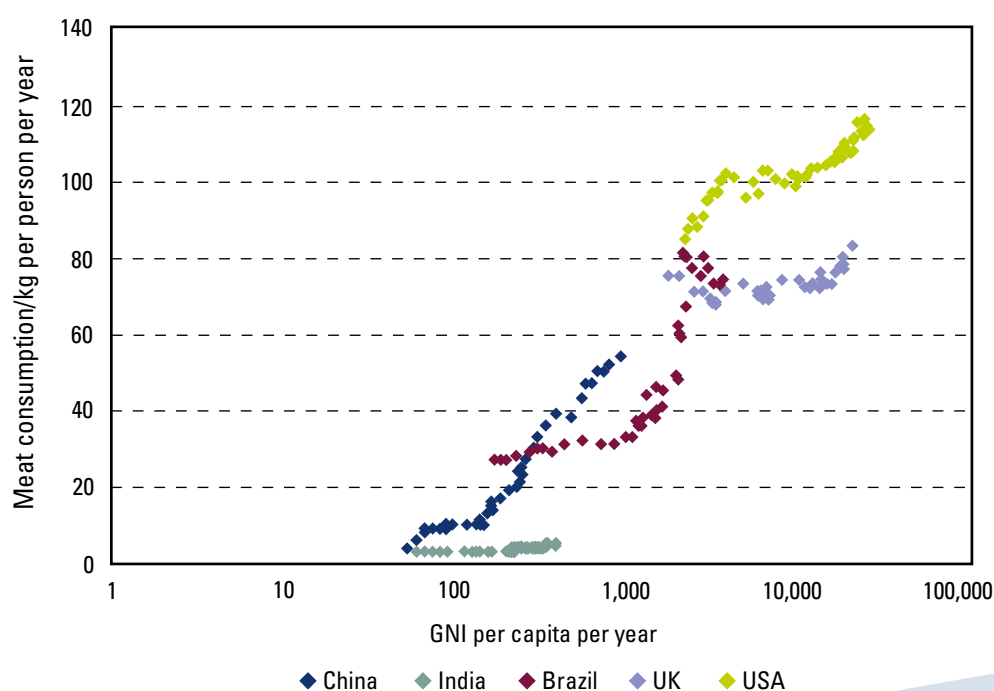


¹Notably, the Latin American debt crises in the 1980s and thereafter (including Argentina's debt default in 2002), the Asian financial crisis (1997), and the Global credit crunch (2008).

²See Gerlan, P. et al (2014) World population stabilization unlikely this century. Science.

- Although the middle classes in developed countries may be squeezed (Leonhardt and Quealy, 2014) the global middle class is not.
 - Continued expansion of a global middle class and increased purchasing power is not a certainty. However if expansion continues by 2030, 'Developing Asia' will become the foremost consumer globally with important consequences for changing tastes and diets (see next section).
- iii Changing tastes and diets - per capita consumption of meat and fish**
- The growth of the middle class and purchasing power represents, in dietary terms, a potential increase in per capita protein consumption.
 - For nearly 50 years, per capita consumption of meat (kg/person/per year) has been increasing in major developed and developing countries (especially in South East Asia).
 - Between 2011-2050, per capita consumption of meat is predicted to increase from 37 to 52kg overall and almost double from 26 to 44kg in low-income countries (Foresight, 2011: 51-52)
- See Figure 3.2
 - In the last 50 years, according to the FAO (FAO, 2014: 62):
 - per capita consumption of fish increased from 9.9kg to 18.9kg in 2010 (ca. 19.2kg in 2012); and
 - global food fish supply has grown steadily at 3.2% (compared to 1.6% population growth).
 - Levels and growth patterns in per capita consumption of fish are uneven geographically. Those regions with low per capita fish consumption showing relatively high growth in consumption include India, Middle East/North Africa and South Asia.
 - According to food modelling by the International Food Policy Research Institute (IFPRI), for the World Bank (World Bank, 2013), predictions of per capita fish consumption to 2030 (under a baseline scenario) suggests a number of regions with:
 - high per capita consumption and high growth in consumption (China, South East Asia and North America);

Figure 3.2 Changing consumption of meat in relation to gross national income in China, India, Brazil, UK and USA (1961-2007). (Foresight, 2011: Fig 2.3)



Source: FAOSTAT; World Bank

- o high per capita consumption and low growth in consumption (East Asia and Pacific, Europe and Central Asia, Japan); and
- o low per capita consumption and high growth in consumption (India, Latin America).

iv Resource availability/depletion

- See Table 3.1
- There are strong environmental reasons to limit significant future expansion of land.
- Such constraints suggest seafood may offer an important contribution to *food security*.
- In the last 20 years seafood production has continued to increase due to sustained wild capture levels and increased aquaculture production.
- The IFPRI model suggests a potential pathway for global fish production to 2030 (World Bank, 2013: 39-40), baseline assumptions suggest:
 - o Global aquaculture continues to increase but at a decelerating rate with zero growth for capture production.
 - o Global fish supply is projected to rise to 187 million tons by 2030 with aquaculture and wild capture making an equal contribution to that supply.
- The IFPRI model further suggests a concentration of global fish production in Asia towards 2030 (69% of global production particularly in India, South East Asia, and China).
- The model anticipates that, of the global fish supply to 2030, those species amenable to aquaculture production (shrimp, salmon, tilapia, carp and pangasius) are likely to drive growth in supply. Those species with limited aquaculture potential will see only marginal growth in supply: demersal and pelagic – including tunas (World Bank, 2013; 41-42).

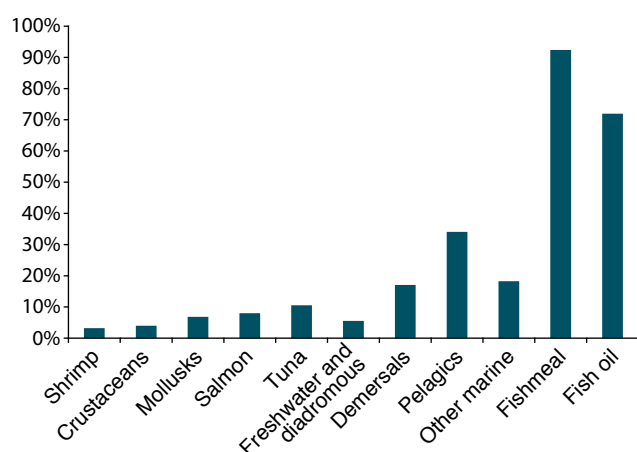
Table 3.1 Growth in per capita fish consumption by region 2010-2030 (projected), kg/person/year (World Bank, 2013: 13, 45)

| Abbreviation | Description | 2010 | 2030 | % change 2000-2030 |
|--------------|--|------|------|--------------------|
| AFR | Sub-Saharan Africa | 6.8 | 5.6 | -18% |
| CHN | China | 32.6 | 41.0 | 26% |
| EAP | East Asia and the Pacific, including Mongolia and developed nations, excluding Southeast Asia, China, and Japan. | 27.1 | 23.8 | -12% |
| ECA | Europe and Central Asia, including developed nations | 17.4 | 18.2 | 5% |
| IND | India | 5.6 | 6.6 | 18% |
| JAP | Japan | 64.7 | 62.2 | -4% |
| LAC | Latin America and Caribbean | 8.4 | 7.5 | -11% |
| MNA | Middle East and North Africa | 9.3 | 9.4 | 1% |
| NAM | North America (United States and Canada) | 22.9 | 26.4 | 15% |
| SAR | South Asia, excluding India | 11.0 | 15.7 | 43% |
| SEA | South East Asia | 25.8 | 29.6 | 15% |
| ROW | Rest of the world, including Greenland, Iceland, Pacific small island states | 9.4 | 9.6 | 2% |
| | | | | |
| AVGE | | 17.2 | 18.2 | 6% |

v International trade

- International seafood trade developments in the period 2002-2012 reveal accelerating trade growth in the last 10 years (FAO, 2014: 49-51).
- The balance of seafood trade is changing with an increasing share of imports for developing countries, and a decrease in share amongst developed countries.
- According to IFPRI's baseline assumptions and model, compared with 2006 the projection for 2030 suggests Europe's position as a net *importing region* is likely to **fall** as a share of global imports in molluscs and freshwater and diadromous species, but **rise** in demersal fish. Europe's position as a *net exporting region* is likely to **rise** as a share of global exports for pelagic species.
- The model projects that overall fish and fish product prices will increase to 2030 but with important differences between species. Most fish species will see modest price increases, however price increases are expected in pelagic and demersal species.
- See Figure 3.3

Figure 3.3 Projected change in real prices 2010-2030 by commodities (World Bank, 2013: Fig3.6)



Source: IMPACT model projections.

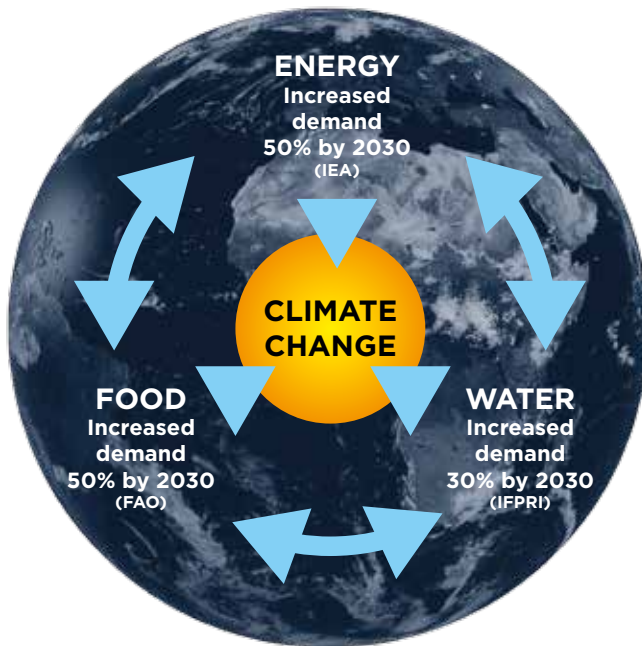
vi UK domestic/international dependencies

- The UK has long been an importing nation with dependence on both international and domestic trade.
- In terms of overall food dependence, the UK is around 60% self-sufficient and in terms of the food types grown in the UK self-sufficiency rises to around 74% (Barling et al, 2008).
- In seafood trade, there are considerable regional dependencies in major whitefish, pelagic, and shellfish subsystems: North Atlantic, Indian Ocean, and South East Asia respectively.
- In whitefish, the North Atlantic basin illustrates such a subsystem having major regional interdependency, a considerable amount of regional import/export trade, and exposure to *food security* risks.

vii Future scenarios: a perfect storm

- The reliability and resilience of UK food supply needs to be considered in relation to other dependencies at the global level: the food, water and energy nexus (PwC, 2013: 39).
- As chief scientific adviser to HM government, Sir John Beddington considered the potential for *food security* developments - together with water, energy and climate developments - to threaten a 'perfect storm' scenario (Beddington, 2009: 8).
- Should such a scenario play out, with major climate change and energy disruption, this could be damaging to future prospects for seafood and therefore *food security*. Given future years are likely to see global price competition becoming much more intense with a reliance on maintaining stable supplies of wild capture production, disruption could have major consequences on securing a pathway of sufficient supplies.
- See Figure 3.4

Figure 3.4 Perfect Storm (Beddington, 2009)



3.2 Policy positions and initiatives

- *Food security* is not a new phenomenon. In a policy context *food security* has arguably been a point of discussion in the UK since the 19th century.
- Various definitions of *food security* have arisen in subsequent debates. Although there are variations, the following is a generally accepted definition:
 - o 'Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.' - 1996 World Food Summit.
- *Food security* policies range from a concern for self-sufficiency to securing supplies from a wide range of food sources. *Food security* concerns at a UK level shape and are influenced by *food security* concerns in European and Global contexts.
- At a national level:
 - o The Department for Environment, Food and Rural Affairs (Defra) is the lead department on *food security* policy.
 - o Although the UK is, and has long been, food secure (Defra, 2006), *food security* has moved up the UK policy agenda in recent years.
 - o As of 2014, the UK Government policy orientation remains one grounded on trade, open markets and diversity of supplies. *Food security* is ensured by being part of world markets, rather than self-sufficiency.
 - o The UK policy position on *food security* is not without criticism; considered by some to have an overly narrow perspective in its horizons (rooted in the near term and inadequately integrated to other policy areas) and failing to grasp underlying fundamental drivers generating food insecurities. This concern over short termism is highlighted as a major barrier in dealing with global challenges (Oxford Martin School, 2013).
 - o More recently the main threats to UK *food security* are recognised to be from long-term trends in global availability and demand as identified in the Foresight report *The Future of Food and Farming* (Foresight, 2011:165). High-level conclusions from this report emphasise that an holistic approach, and a portfolio of actions, is required to address the complex and inter-related nature of the challenges facing food systems. Conclusions highlight: substantial changes will be required within food systems, the dual imperative of addressing both climate change and sustainability, the need to revitalise moves to end hunger, policy options should not be closed off and the rejection of self-sufficiency as a viable option for global *food security*.

- o In addition to the conclusions above, the Foresight exercise (Foresight, 2011), highlighted the importance of monitoring *food security*. Recommendations include developing metrics, a portfolio approach to deal with the complexity of the issue, and the suggestion that a food system dashboard is developed. *Food security* is currently monitored through the 'UK Food security Assessment'. The assessment looks specifically at the UK, across all foodstuffs and assesses whether there are *food security* issues or not. The assessment was first conducted in 2009 by Defra and the devolved administrations and is expected to be revisited periodically. The last review was in 2012 and the principles were considered to still hold.
- o A number of recent UK initiatives, at various levels and scales, have sought to respond to the *food security* challenge. This includes the UK Strategy for Agricultural Technologies (BIS, 2013), the Global Food security Programme (a collaboration of the UK's main public funders of food related research and training) and a recent research exercise conducted to identify *the priority research questions for the UK food system* (Ingram et al, 2013).
- o It is noteworthy that UK food policy, monitoring and research have a general focus on agriculture. Wild capture fisheries and aquaculture are considered but to a much lesser extent.
- At a European level:
 - o There has been an historical focus on self-sufficiency, driven by post war food shortages.
 - o This was reinforced by the introduction of the Common Agricultural Policy (CAP) that had an objective and incentives associated with 'certainty of supplies'. A similar orientation can be seen in the Common Fisheries Policy (CFP) with the general focus on managing who can fish what and how much of a shared resource is accessed by member states. In doing so, attention is given to overfishing, industry profitability, fishing communities, markets and aquaculture in an EU context (Engel et al, 2013:19).
- o Although *food security* has been raised in policy-making, and led to some tangible efforts, it would appear that it has yet to become part of the agenda in final policy decision making (Engel et al, 2013:35).
- At a Global level:
 - o *Food security* has connotations that range from food disruption to 'a matter of life and death'. It is unsurprising therefore that the orientation of the UN is on the needs of developing countries.
 - o A recent review of the role of fisheries and aquaculture in *food security* and nutrition by the High Level Panel of Experts on Food security and Nutrition (HLPE) for the United Nations Committee on World Food security concluded that:
 - Fish is a critical food source.
 - Fish has received limited attention in *food security* and nutrition strategies and was deserving of a more central position.
 - There were a number of risks and pressures affecting world fisheries, including climate change.
 - Aquaculture faces both opportunities and challenges, with more effort required in enhancing sustainability and productivity (including the reduction of fish meal and oil in aquaculture and livestock feed).
 - There were important issues to resolve in terms of small scale/large scale operations, fish trade, social protection, gender equity and governance.





4. Industry perspectives on food security in seafood and related developments

In addressing the *food security* issue it is important to have a shared understanding of the problem in the context of wider industry developments. This section explores industry interpretations of the problem, how the problem may develop, how the industry may look in future, and whether a common position can be reached on *food security* in seafood.

- Industry stakeholders look at *food security* from their own situation and vantage point.
- *Food security* in seafood is subject to a wide range of interpretations; considered to be both:
 - o A non-issue for seafood *and* a fundamental issue for seafood.
 - o About feeding the UK *and* feeding the world.
 - o Local *and* Global. Examples of extremities include:
 - Local - maximising the food resource available to society/safety and integrity of the product.
 - Global - ensuring supplies of food and raw materials/continuity of supply for those species industry highlight as sustainable.
- The evidence and industry feedback suggests that, in a general sense, *food security* is an issue of concern for the industry.

4.2 Key *food security* developments in seafood and industry landscape beyond 10 years

- Key *food security* developments in seafood, similarly differ dependent on where stakeholders are in the industry landscape:
 - o International stakeholders are sensitive to the influence of developing countries (those with increasing purchasing power), regulation, provenance, impacts on availability and consumer choice.
 - o Domestic stakeholders are sensitive to low investment, integrity/reputation, balance of local ownership, sustainable production and access to the fish resource.

- The industry landscape beyond 10 years could be markedly different, with:
 - o Very populous countries potentially eating more seafood.
 - o More sustained availability of wild fish (dependent on effective management)/ increases in aquaculture production (with uncertainties about sufficient levels of production).
 - o A more difficult trading environment.
 - o Higher, and/or more variable, food prices, and possibly less choice (although the UK is unlikely to run out of food).

4.3 Common position on food security in seafood

- Despite the wide range of *food security* interpretations, a common position on *food security* in seafood could be reached. The interpretations reveal common aspects of *food security* in seafood in terms of a focus on:
 - o the resource itself;
 - o how the resource is fished/farmed (responsible use of the resource); and
 - o access to the material at the right economic level (people can get it at the right price).
- *Food security* in seafood should focus on seafood in the wider context of food production:
 - o Often we focus on seafood in isolation (focus on species; whitefish, pelagic etc).
 - o We should reflect on the issue at two levels, the:
 - seafood context; and the
 - broader food production context (and the contribution seafood is making to this).



5. Industry response

This section provides industry perspectives on how to respond to *food security*. The section explores the extent to which the issue presents opportunities and threats for the industry, the actions industry and other organisations might take in response. The fit with other initiatives is also considered and how we might gauge the success in responding to *food security*.

i High level opportunities and threats

- Opportunities and threats presented by *food security* are interpreted differently depending on where stakeholders operate in the seafood system. For example, in the:
 - o International domain – *food security* is a potential threat with increased competition against BRIC and MINT countries and securing supplies a rising challenge.
 - o Domestic domain – *food security* presents opportunities for increased exports and making the case against more extreme environmental perspectives (that would halt fishing altogether).

ii Supporting action:

- Action already underway can make a contribution to *food security*:
 - o There are already initiatives, albeit most at a general food level, entirely focussed on *food security*.
 - o Action already underway may make no reference to *food security* but nevertheless contribute to securing opportunities and mitigating risks e.g. well managed fisheries.
 - o Responding to *food security* should not suggest a set of separate actions. Any response should 'wash across other activities where they exist'. *Food security* is more about pulling other work together rather than a huge amount of new work.
- Industry action:
 - o *Food security* action must not be in isolation, often we are too focussed on 'our action' when we need to think about global action and shaping that.
 - o Relevant action may include seafood industry action but also action in other sectors.

- Seafish action:
 - o There may be merit in mapping *food security* related efforts and engaging/ convening a meeting to explore to what extent we:
 - are seeing the issue in the same way;
 - can draw lessons from elsewhere; and
 - are operating at the right level (UK/ Europe/etc).
 - o The World Seafood Congress in Grimsby in 2015 provides an opportunity to engage a global community and convene such a meeting.
 - o Existing work could be mapped and linked to *food security* (using elements of the *food security* definition and applying to all actions). Gaps could be highlighted where actions do not reflect a contribution to *food security* (suggests a centralised role for Seafish/individual).
 - o As a practical example Seafish activity, described in workstreams, could highlight their contribution to *food security* (a bullet point) and this could extend out to other initiatives elsewhere. This could then be used to articulate action underway and contribution to *food security* (to Seafish panels and other groups).
 - o Current Seafish action on *food security* (this research) is supporting an exploratory stage. A discussion still needs to be had on what further activity is required - for example, there is a debate to be had on whether a lead role or a supporting role can be played.
 - o Action ought to be concerned with linking existing groups, and is less about establishing 'another group'.

5.2 Domestic

- *Food security* concern amongst stakeholders in the domestic system tends to centre on maximising the available fish resource, and ensuring safety and integrity of the seafood product. The future of the domestic industry landscape, beyond ten years could conceivably see greater fish availability and a smaller industry operating in a more regulated market with generally higher food prices. The following highlights a number of opportunities and threats with a number of suggested actions in response.

i High level opportunities and threats

- *Food security* presents domestic stakeholders with several opportunities, including:
 - o Higher value sales in UK and export markets.
 - o Healthier profits for those remaining in the industry that are lean and compliant operators.
 - o The development of platforms/frameworks to support collaboration and resolve problems.
- *Food security* highlights a number of threats for domestic stakeholders, including:
 - o A failure to secure the fishing opportunity.
 - o Very low, and/or fluctuating, profit margins and weakening investment that drives the decline, rather than the renewal, of the industry.
 - o Exposure to burdensome regulations.
 - o Elusive collaboration amongst industry stakeholders.

ii Specific support action

- In responding to these opportunities and threats support action ought to focus on:
 - o Higher volumes of seafood being *phased in*.
 - o Sensible regulation and voluntary codes of practice.
 - o Managing reputation (driving positions away from extremes towards reasonable ground – by establishing early dialogue).
 - o Securing exports.
- To account for the different industry sectors, and illustrate *food security* developments, concerns and actions, particular fisheries and what they deliver to the UK could be examined. For example, in:
 - o Whitefish - squeezed margins leads to a much-reduced level of investment, and a reliance on migrant workers etc. There is a need to rebalance multiple retailers pre-occupation with driving down price (as illustrated in current efforts to compete with the likes of Aldi).
 - o Pelagic - there is a need to cope with potential NGO pressure pushing for pelagic fisheries to be small scale/artisanal.
 - o Aquaculture – how the domestic sector may develop and contribute to the developing import/export markets.

5.3 International

- *Food security* concern amongst stakeholders in the international system tends to centre on securing supplies in an increasingly competitive global market. The future of the international seafood landscape, beyond 10 years, could reasonably see a more regulated operating environment and a greater share of the world population consuming more seafood; with acute price competition and UK suppliers increasingly having to compete on a non-price basis to secure material and UK customers facing less choice. The following highlights a number of opportunities and threats with a number of suggested actions in response.

i High level opportunities and threats

- *Food security* presents opportunities to international stakeholders with:
 - o Seafood potentially a major part of the *food security* solution and especially with aquaculture development.
 - o Seafood in some respects being a lower risk protein (potentially less exposed to major risks than other food proteins).
 - o Potentially higher volumes of seafood (greater fish availability *contingent on the delivery of* reformed fishery management and improved aquaculture production).
 - o Attractive investment returns in aquaculture for responsible industry players.
- *Food security* highlights a number of threats for international stakeholders, namely:
 - o Rapidly developing economies, China and India for example, absorbing seafood material and disturbing trade patterns.
 - o A weakening of price advantage to secure material.

- o An unbalanced regulatory environment in which emerging economies develop seafood industries to different standards (compared to developed economies) and European regulatory burden legislate the industry out of world markets, ultimately contributing to, ...
- o ... The disruption to, or loss of, supply continuity.

ii Specific support action

- In responding to these opportunities and threats support action ought to focus on:
 - o Efforts in wild capture to ensure good practice in fishery management and trade (including IUU), and in aquaculture addressing the issue of sustainable feed.
 - o Revisiting business models (e.g. seafood manufacturers may switch to importing substitutes or reorient their business towards export).
 - o Enlarging industry perspective and ambition (for example *food security* is not just about addressing waste and depletion at the fishery resource but addressing these issues right across the chain).
 - o Forming opinions, leading the debate within a wider protein context (influencing and affecting developments, interpreting and shaping international initiatives, not just responding). For example, with the development of GM technology there is a need to have a mature debate on aspects of this technology (recognising that a key factor – namely the adoption or otherwise of GM in other foods – is outwith the control of the seafood sector). Such a debate might include:
 - Improved visibility of the role of GM in human food and animal feed provision.
 - Public opinion as a potential barrier to gene technology.
 - A joined up agenda on GM and *food security* (involving Government, academia, industry, NGOs and media).

- o Addressing policy and production imbalances:
 - EU policy orientation is considered to focus on self-sufficiency in seafood. A review of production since the 1950s and 1960s would suggest this is very unlikely to be achieved. Other countries have recognised they are unable to be self-sufficient and are responding accordingly. An appropriate orientation would not just focus on fisheries and biomass. The current focus (too much focus on the catching sector) highlights how the economics of the industry are misunderstood.
 - In addressing *food security*, there needs to be more balance between wild capture and aquaculture production. Aquaculture may not be the only solution; the competition for resources has been pushed upstream into feed and wild capture fisheries. This may be why aquaculture production is flattening off. The potential contribution to *food security* of wild capture is being missed (including the role and scope of improved raw material utilisation e.g. the use of trimmings in feed).
 - To account for the different industry sectors, further consideration of specific examples could illustrate *food security* developments, concerns and lessons:
 - o Whitefish - in looking ahead 10 years, pangasius could be a good case to consider, for a number of reasons: production was volatile but is now stabilising, the species was grown for a non-local market, and there have been a number of challenges (economic, ethical – which has been negative, quality and food safety). It could also be set alongside wild capture whitefish as it is an aquaculture product.
 - o Shellfish - in looking at recent events, production in South East Asia shellfish may be a good case to illustrate changes in international trade and the challenge of maintaining UK access to supplies.
 - o Other proteins. Seafood may respond to *food security* developments in ways other commodities, poultry for instance, do not. It is difficult for the seafood industry to respond to changes quickly (it takes years to set up a seafood supply chain compared to poultry, which can be as short as six months). The effect of *food security* developments and changes in the landscape may be visible earlier in the seafood industry. In this sense, seafood may be a ‘canary in the mine’ compared to other commodities.

5.4 Industry success in food security

- There are a range of views on what we might consider ‘successful *food security* in seafood’ (see Annex 3). Some stakeholders feel success can be clearly articulated, others less so:
 - o Some suggest success should be guided by what we want to achieve e.g. some ‘desired future’ or ‘based around the *food security* definition’ with appropriate indicators linked to this.
- For others, it is a difficult question to answer because the industry has not yet established and agreed what is to be achieved in terms of *food security* in seafood.





6. Synthesis

As an initial exploration of *food security* in UK seafood, this research exercise has highlighted a number of general developments influencing the food and seafood industry and captured a range of stakeholder perspectives. Although a short exercise, a number of broad themes and conclusions can be drawn.

6.1. The nature of food security in seafood

- Current global conditions reveal a dynamic in which relatively uncertain economic prospects sit in contrast with relatively certain global population growth. This marks a key shift from previous expectations of global economic development prior to 2008 towards the uncertainty, vulnerability and introspection of recent years.
- Despite this uncertainty, the feedback from this exercise confirms that *food security* is an important issue that affects the seafood industry at a range of geographical and temporal scales.
- However, the key question of appropriate scales remains as yet undefined. The range and scale of the problems likely to occur over the medium and longer-terms could be expected to vary in different parts of the industry and these are not yet fully understood.
- At this stage important questions remain, for example.
 - o In seafood demand:
 - How might changes in spending power affect seafood-buying habits?
 - If there is increasing convergence of middle classes and spending power, what are the implications for future patterns of international trade?
 - Where are the critical trends in per capita meat/fish consumption? Might certain geographies (e.g. Africa) or cultural factors (e.g. religious orientation and disposition to consuming seafood) be under considered?
 - How might these developments affect existing markets for UK industry?
 - How do *food security* concerns in seafood relate to those for other protein sectors given patterns in protein consumption (seafood/other protein) in the UK and elsewhere?

- o In seafood supply:
 - Where might increases in seafood supply occur, in what form and what happens to the increased production?
 - How might changing trade protocols (arising from economic and food supply uncertainties) disrupt trading patterns?
 - How might these developments affect sources of UK supply?
- Longer-term, fundamental questions also remain. For example:
 - o What, if anything, makes the seafood industry's contribution essential to resolving *food security* issues?
 - o How may the seafood industry's role be altered by the predicted shifts in the types and location of food production?

6.2. Industry and UK Government focus on food security in seafood: fit with existing food security activity

- Both industry and other stakeholders are at an early stage in discussing *food security* as it relates to seafood. As such the focus and perceptions are around immediate concerns raised by the *food security* issue.
- There is a need to recognise that existing frames of reference can be narrow. For many industry stakeholders interest is localised (on their part of the industry landscape). Meanwhile UK *food security* policy has been criticised as overly narrow (including an emphasis on agriculture). If there is to be a meaningful response to *food security* there is a need to expand/extend frames of reference to consider the fundamental drivers and shifts taking place.
- More particularly, there is a need to acknowledge that:
 - o Industry focus has been on improving resource availability through longer-term sustainable exploitation. However there has not been a focus on the global disposition of the available resource.

- o There is both a national and a global interest:
 - Strong developing world markets offer an opportunity to improve the value of UK seafood exports.
 - Increased seafood consumption in global markets reduces supply to the UK, threatening *food security* in seafood.
- In some instances, the conclusions drawn from industry suggest areas of fit with existing *food security* activity but in other areas there are some challenges to resolve.
- *Food security* definition:
 - o A common position should build on an existing, and commonly accepted, definition rather than creating something separate. The definition provided in section 3.2 is a reasonable starting point, a common position should make reference to this, and some of the key dimensions it articulates (e.g. availability, access etc.).
- Food security policy:
 - o UK policy orientation and priorities, grounded on trade, open markets and diversity of supplies (Defra, 2010; Foresight, 2011), may be well suited to the challenges facing stakeholders in the international system. However, for stakeholders in the domestic system this policy orientation may only support some of the challenges (e.g. export opportunities) and may fall short in relation to others (e.g. investment in domestic production). The contrast between the opportunity (seafood could play a large part in the overall food solution) and the response (seafood plays a relatively minor part in the policy framework) is noticeable in the UK context.
 - o The existing 'UK Food security Assessment' framework (Defra, 2009) may be a useful starting point for monitoring *food security* in seafood.
 - o To the extent that European policy focus remains oriented towards self-sufficiency, this is unlikely to support the challenges faced by stakeholders in the international system, but may lend support to the needs of the domestic system where there are production related concerns (although less so in other aspects e.g. export opportunities).
 - o However, in line with previous commentary on policy shortcomings, feedback provides additional criticism of current *food security* policy. A specific concern is the emphasis on food demand and supply and a failure to consider longer-term fundamentals driving risks in food systems.

6.3 Providing context and addressing gaps

- Industry feedback highlights the importance of providing wider context to support:
 - o Industry wide collaborative action (actions through Seafish, Seafish panels and corporate plan, and actions through the Scottish Seafood Partnership, etc).
 - o Industry action (key subsystems such as the North Atlantic basin).
- Addressing knowledge gaps and guiding action through *food security* research:
 - o Addressing knowledge gaps and guiding action depends on two distinct knowledge systems: conceptual knowledge (built and guided by theory and evidence), and practical knowledge (built and guided by intuition and practical experience). Academic research tends to support the former, industry research the latter.
 - o As illustrated by recent initiatives, such as identifying the priority research questions for the UK food system (Ingram et al, 2013), the research sector is often looking for:
 - defined, 'researchable' questions concerning 'known issues';

- 'context-free' outputs from a defined question; and
 - industry to participate in a time bound exercise.
- o The industry sector is often:
- concerned with immediate, problem driven interests;
 - operating in particular contexts that are uncertain and evolving; and
 - looking for solutions and context.
- o Given the margins available in the seafood industry to support investment, the balance of resource to address knowledge gaps lies in public funds: industry levy and academic research funding. Industry levy is subject to competing demands and directed towards solving industry problems and near term imperatives. Academic research, meanwhile, is likewise subject to competition (increasingly intense), and suffers from a number of weaknesses particularly in the area of management and business. Research of this kind can:
- Often come from a particular perspective, or worldview, and this is rarely acknowledged as problematic. People (including researchers) see the world in very different ways and this tends to be weakly considered. Research is often assumed to be value-free and objective when it can be value-laden and serve sectional interests (Tourish, 2012). Management research, in particular, has been criticised for rarely acknowledging how 'findings' might be heavily influenced by how the researcher sees the world (Johnson and Duberley, 2000).
 - Tend to view the closing of knowledge gaps as a 'knowledge transfer' problem (of scientists producing 'answers' and then finding novel ways of communicating this to industry), failing to recognise the specific challenges associated with co-producing knowledge (combining evidence and experience).
- o The challenge would appear to be how knowledge gaps can be addressed holistically in a way that draws upon and integrates the two knowledge systems through long-term collaboration. However this challenge does not seem to be recognised and appears to be underestimated.
- o A potentially useful contribution to closing knowledge gaps might be to provide the strategic context (relating to these longer-term developments) to support the framing and re-framing of industry-wide and other action in industry (near term imperatives). Examples include providing context for discussions and planning on the part of Seafish and Seafish panels, on the part of the Scottish Seafood Partnership, etc.



Image: Lewis Houghton photography

7. Forward pathway

This exploratory research exercise has highlighted a number of different interpretations and a wide range of impacts and suggested actions concerning *food security*. In forging a forward pathway, a number of key conclusions and recommendations can be drawn from the findings of this initial exercise.

At this exploratory stage only broad conclusions and action areas can be identified. Accordingly section 7.1 provides conclusions in terms of overall *food security* in seafood and in terms of important longer term developments. Sections 7.2, 7.3, and 7.4 provide recommendations on how industry Seafish and UK Government should respond in the near term.

7.1 Conclusions - *Food security* in seafood and longer term developments

- Industry stakeholders look at *food security* from their own vantage point.
- Despite the wide range of *food security* interpretations, there are common aspects of food security in seafood, namely a concern for: the resource itself, how the resource is fished/farmed, and access to the material.
- In a general sense *food security* is an issue of concern for the industry, with a broad range of implications.
- Of particular note is the contrasting set of challenges, opportunities, threats and pathways facing stakeholders in the domestic system on the one hand, and those in the international system on the other.
- In addition there are particular subsystems in seafood (whitefish, pelagic and shellfish) that, if explored further, can illustrate acute *food security* concerns and pressures.
- Key *food security* developments in seafood similarly differ dependent on where stakeholders are in the industry landscape.
- International stakeholders are sensitive to the influence of developing countries with increasing purchasing power, regulation, provenance, impacts on availability and consumer choice.
- Domestic stakeholders are sensitive to low investment, integrity/reputation, balance of local ownership, sustainable production and access to the fish resource.
- The industry landscape beyond 10 years could be markedly different, with very populous countries eating more seafood, more sustained availability of fish (if wild is effectively managed and aquaculture resolves production uncertainties), a more difficult trading environment, higher (and/or more variable) food prices and possibly less choice.
- Although *food security* was considered to be an issue for the industry, stakeholders highlighted that, to an extent, the industry are already on that road now. *Food security* is about continuing and enhancing that.
- Industry feedback suggests it is still 'early days' for *food security* in seafood and further discussion is required on the pathway forward. However, the concerns of the seafood industry need to be recognised, and incorporated, within the overall strategic view of UK *food security*.
- If *food security* in seafood is to be taken forward, the evidence and industry feedback from this initial exploratory exercise highlights:
 - o the need to find common ground and build on existing definitions, policy and initiatives.
 - o that many seafood stakeholders are focussed on their part of the industry landscape rather than taking a whole systems perspective. If an holistic approach is adopted then progress on this issue should be made on an iterative, stepwise basis.
 - o the need to connect across groups/ networks rather than establishing a specific '*food security* group' in isolation (the nature of the *food security* issue affects multiple systems in different ways).

7.2 Recommended response - Industry

- Determine the longer term pathway for addressing *food security* in seafood. An holistic, whole systems, approach should be taken with progress made on an iterative stepwise basis. In progressing this:
 - o Convene a special meeting of industry stakeholders to consider the *food security* issue (with stakeholders drawn from domestic and international domains).
 - o Review and discuss existing definitions, policy and initiatives (in this report and elsewhere) and agree approach to be taken.
 - o Agree the nature of the problem and the timescales of concern, what is to be achieved, and how can it be supported.
- Identify, continue and enhance industry actions already underway that are aligned with *food security*.

7.3 Recommended response - Seafish

The following actions are subject to the conclusions of the special industry meeting on *food security* (above):

- Engage a range of existing industry groups/networks in progressing *food security* as a cross cutting issue.
- Present the agreed *food security* definition for seafood and a description of the global context for *food security* (this report) to Seafish panels, Scottish Seafood Partnership etc for discussion.
- Build on this research to identify:
 - o key aspects of the *food security* definition and the opportunities and threats they present to particular parts of the industry. The domestic and international systems, and various sub systems (whitefish, pelagic, shellfish) of the seafood sector as well as other protein sectors - should be considered.

- o actions that contribute to addressing *food security*. To achieve this, overlay *food security* opportunities and threats to current industry plans and priorities (Seafish Corporate Plan, SSP, etc). Map and review initiatives for their contribution to food security. Highlight synergies and shortcomings (gaps) in existing industry and support action, and identify any opportunities to influence the wider *food security* issue.

7.4 Recommended response - UK Government

- Raise *food security* concerns facing the seafood industry within the overall strategic view of UK *food security* (Defra).
- Recognise the different pressures brought to bear on different parts of the seafood industry (e.g. domestic and international systems) by the *food security* issue and ensure policy responses are tailored accordingly (Defra and devolved administrations).

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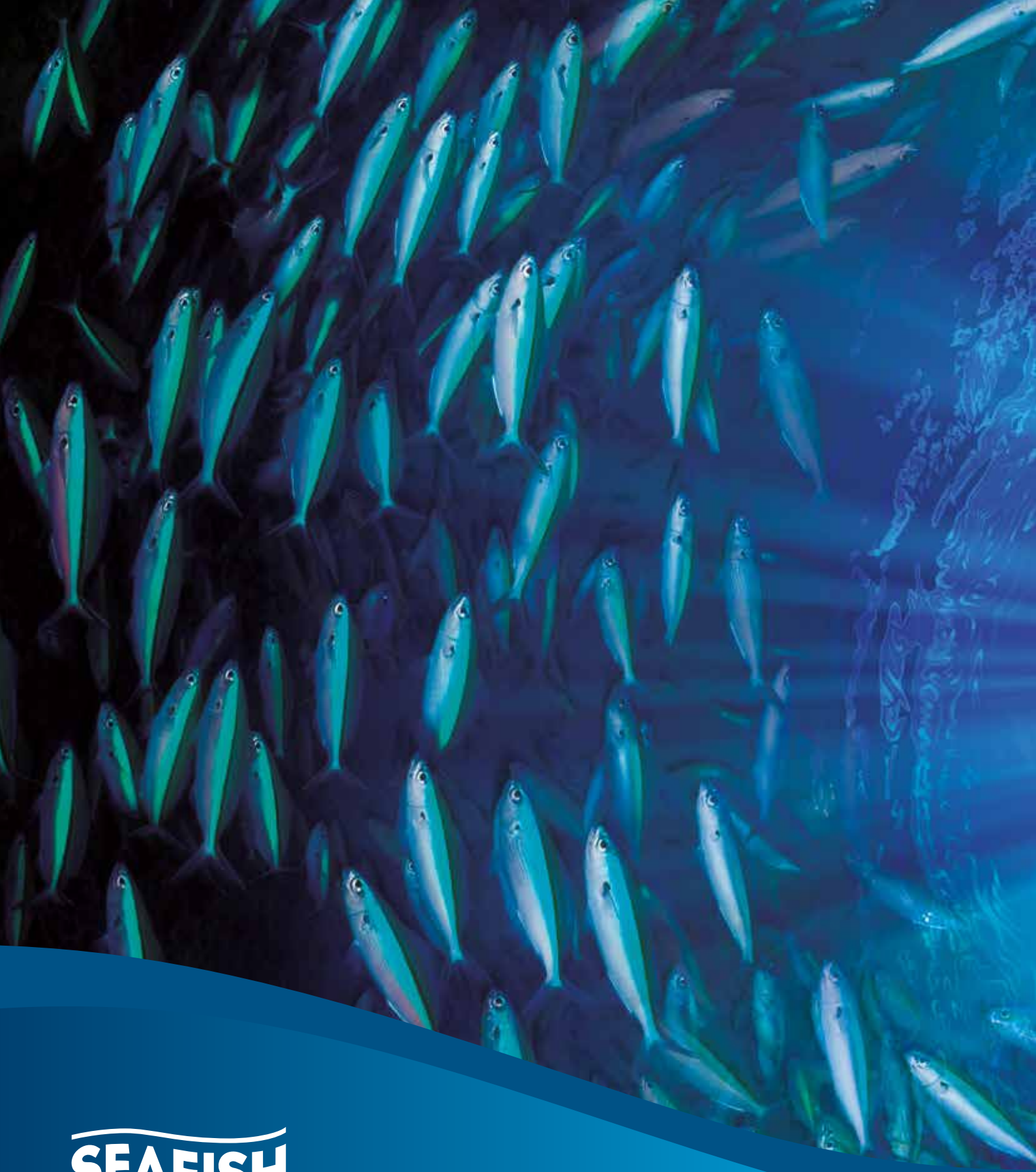
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Notes





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