

1. Introduction

1.1 FISHERIES AND AQUACULTURE PRODUCTION, UTILIZATION AND TRADE

1.1.1 Production, consumption and utilization

Fisheries and aquaculture are vital for global food security. While fish supply from wild capture fisheries has stagnated over the years, the demand for fish and fish products continues to rise. Consumption has more than doubled since 1973. The perceived health benefits of fish and technological developments enabling its increased availability in the form of convenience products suited to more modern and affluent lifestyles are key reasons for this rise in consumption.

Increasing demand for fish and seafood has been met by a robust increase in aquaculture production, with an estimated average annual growth rate of 8.5 percent in volume in the period 1990–2005. As a result, the contribution of aquaculture to fish food supply has increased significantly, reaching almost half (47 percent) in 2008 from a mere 8 percent in 1970. This trend is projected to continue, with the contribution of aquaculture to fish food supply estimated to reach 60 percent by 2020 (Table 1).

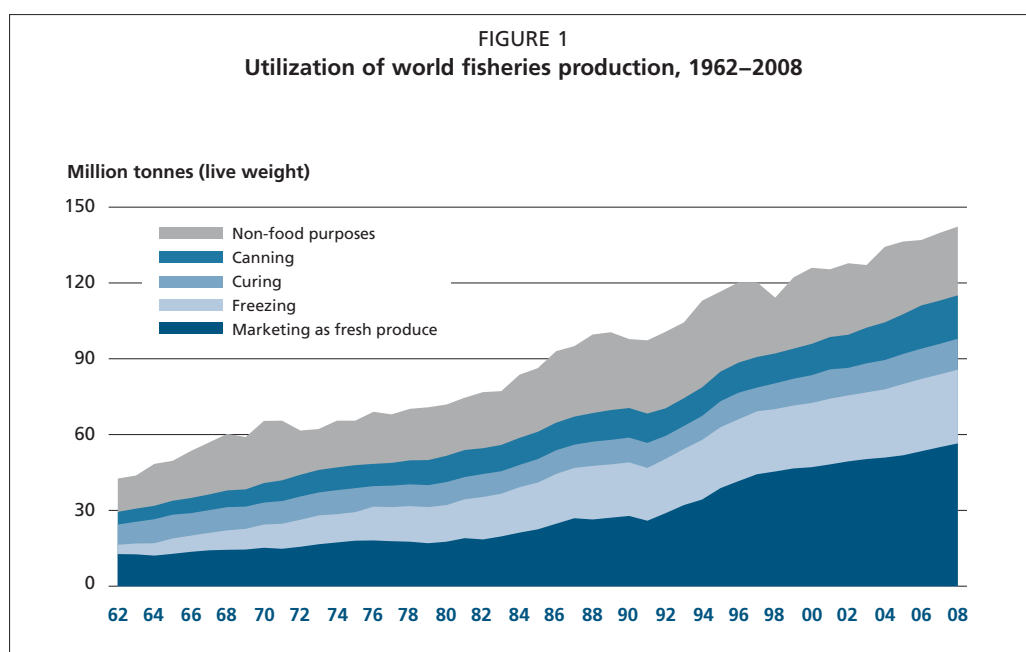
TABLE 1
World fisheries and aquaculture production and utilization

	2003	2004	2005	2006	2007	2008	2009
	(Million tonnes)						
PRODUCTION							
Inland:							
Capture	9.0	8.6	9.4	9.8	10.0	10.2	10.1
Aquaculture	25.5	25.2	26.8	28.7	30.7	32.9	35.0
Total inland	34.4	33.8	36.2	38.5	40.6	43.1	45.1
Marine:							
Capture	81.5	83.8	82.7	80.0	79.9	79.5	79.9
Aquaculture	17.2	16.7	17.5	18.6	19.2	19.7	20.1
Total marine	98.7	100.5	100.1	99.6	99.2	99.2	100.0
TOTAL CAPTURE	90.5	92.4	92.1	89.7	89.9	89.7	90.0
TOTAL AQUACULTURE	42.7	41.9	44.3	47.4	49.9	52.5	55.1
TOTAL WORLD FISHERIES	133.2	134.3	136.4	137.1	139.8	142.3	145.1
UTILIZATION							
Human consumption	103.4	104.4	107.3	110.7	112.7	115.1	117.8
Non-food uses	29.8	29.8	29.1	26.3	27.1	27.2	27.3
Population (billions)	6.4	6.4	6.5	6.6	6.7	6.8	6.8
Per capita food fish supply (kg)	16.3	16.2	16.5	16.8	16.9	17.1	17.2

Note: Excluding aquatic plants. Data for 2009 are provisional estimates.

Source: Adapted from: FAO. The State of World Fisheries and Aquaculture 2010, Table 1. Rome, FAO. 2010. 197p.

Fish utilization has also changed significantly in the last few decades. Advances in technology and logistics, in particular improvements in storage and processing capacity, together with major innovations in refrigeration, transportation, food-packaging and fish-processing equipment have enabled product diversification. Vessels incorporating processing facilities are able to stay at sea for extended periods, and permit the distribution of more fish in fresh or frozen forms as well as higher yields from the available raw material. The proportion of fish marketed in live or fresh form increased from 25 percent in 1980 to more than 39.7 percent in 2008. The proportions represented by frozen, canned and cured product have remained relatively static over that period although frozen fish still represents about half of total fish processed for human consumption (Figure 1).



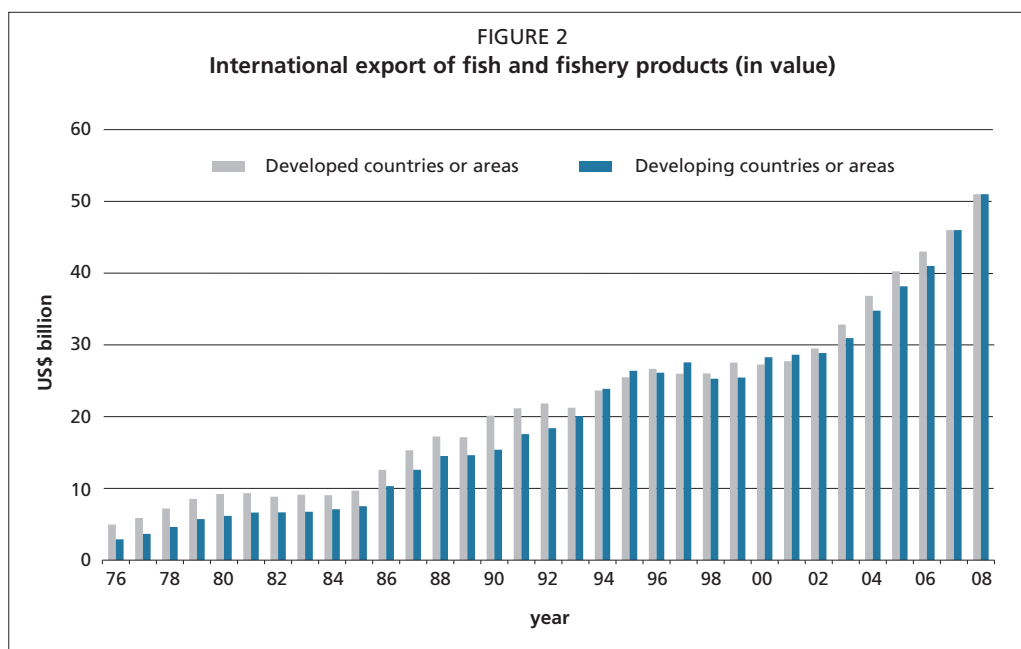
Source: FAO. The State of World Fisheries and Aquaculture 2010, Figure 20. Rome, FAO. 2010. 197p.

1.1.2 Fish trade

Fish and fish products are the most traded food commodity. World fish trade has developed rapidly in the last three decades, increasing from a US\$8 billion in 1976 to US\$101.8 billion in 2008. In real terms (adjusted for inflation), fish exports increased by 104 percent between 1985 and 2008, including a 50 percent increase in the period between 1998 and 2008. Indeed, more than one-third (39 percent live weight equivalent) of total annual production enters international trade. About 50 percent (US\$50.6 billion) of that international fish trade by value originates in developing countries (Figure 2), where it represents an important source of foreign exchange earnings and employment opportunities. Net fish exports (i.e. the total value of exports less the total value of imports) from developing countries have increased significantly in recent decades, growing from US\$1.8 billion in 1976 to US\$26.5 billion in 2008.

However, the bulk of fish and seafood products from developing countries end up in developed countries. Three-quarters (75 percent) by value of the fisheries exports from developing countries ends up in developed country markets (FAO, 2010). Three main

markets dominate: the European Union (EU), Japan and the United States of America. China is also playing an increasingly important role as both a fish importer and exporter (often re-exporting value-added imported product). These markets dominate international fish trade in terms of prices as well as market access requirements.



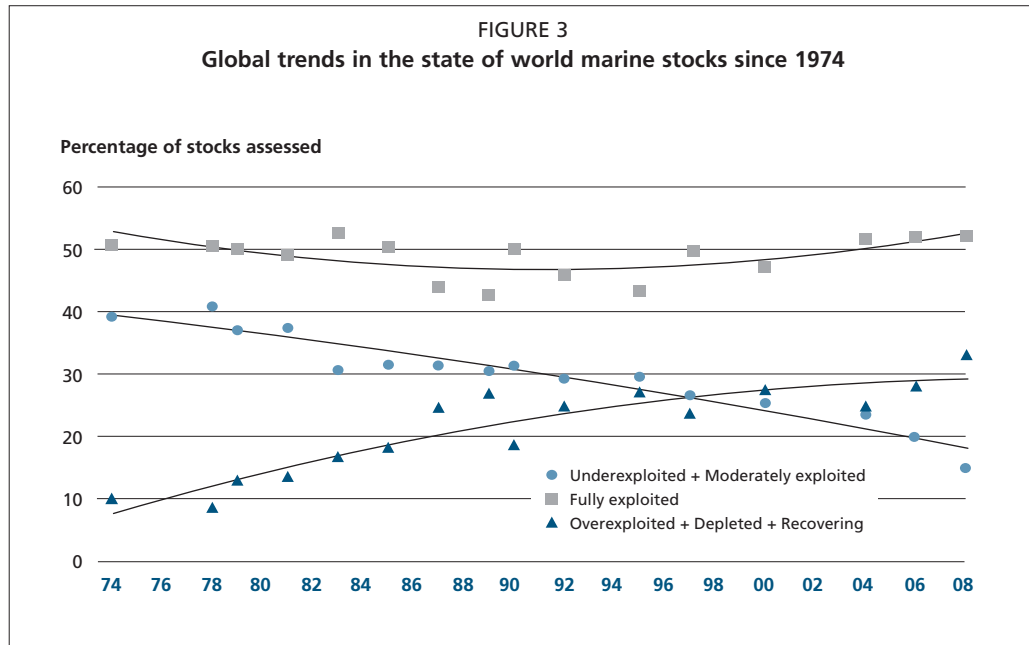
Source: FAO Globefish (www.globefish.org).

Globalization of fish supply chains means that a significant amount of fish and seafood is caught or farmed in one part of the world, transported to another for processing and finally consumed in yet another country. Systems to enable international market access and to ensure food safety that function across national borders are therefore vital. A range of national and international regulatory frameworks has been developed accordingly. Consumers expect their food to be safe and of acceptable quality regardless of how and where it is produced, processed or ultimately sold. While safety and quality are of primary concern – consumers' interests tend to be strongest where the potential impact (such as a threat to their personal health) is most direct – consumers in developed countries are also increasingly interested in the social or environmental impacts of the food they consume. This trend is also starting to take hold in emerging and developing countries. In terms of fish and seafood, this means that more and more consumers are concerned that capture stocks are managed sustainably, that wider ecosystems and related plant and animal life are protected, and that social responsibility is exercised throughout the value chain, from production through to distribution.

1.2 STATE OF THE RESOURCE

In the past few decades, serious concerns have been raised about the state of the world's marine resources. In its regular publication *The State of World Fisheries and Aquaculture*, FAO updates the international community on the status of global fish stocks. In its latest report (based on 2009 figures) it stated that more than half (53 percent) of the stocks were fully exploited (FAO, 2010). This means that they are producing at or close to their maximum sustainable limits with little or no potential for catch increases. Slightly more than one-quarter are either overexploited

(28 percent), depleted (3 percent) or recovering from depletion (1 percent), and hence need rebuilding and protection from further stock declines. Only about one-fifth of stocks monitored by FAO currently have the potential to produce more (Figure 3). Despite the introduction of a range of national and international mechanisms aimed at managing the sustainability of marine resources, these proportions have remained fairly stable in the last decade or so (FAO, 2010).



Source: FAO. The State of World Fisheries and Aquaculture 2010, Figure 19. Rome, FAO. 2010. 197p.

While aquaculture production has increased to meet some of the increased demand for fish and seafood, it is not a panacea. Fish from some marine capture stocks is used as feed for farmed fish. Despite increases in feed conversion efficiencies and attempts to find alternative sources of fish feed, some 20 percent of world fish production goes into fishmeal and fish oil.

Increases in supplies of farmed fish and seafood do not reduce the need for measures to restore fisheries and to ensure the sustainability of wild fish stocks and related ecosystems. Moreover, aquaculture has posed some challenges to the increasingly positive image of fish and seafood as sources of healthy food. Concerns relate to the use of veterinary drugs and the risks of contamination and tainted feed, as well as other environmental concerns associated with fish farming (e.g. marine ecosystems, farmed fish escaping into wild aquatic environments, and destruction of mangroves).

1.3 PROLIFERATION OF PRIVATE STANDARDS IN GLOBAL FISH TRADE AND MARKETING

In addition to the range of public regulatory frameworks for food safety and quality and for the protection of natural resources, including fisheries, a range of related standards has been introduced by the private sector. Private standards and related certification are becoming significant features of international fish trade and marketing. The standards relate to a range of objectives including sustainability of fish stocks, environmental protection, food safety and quality, as well as to aspects such as animal health and even social development. They are increasingly linked to private firms' corporate social responsibility (CSR) strategies.

The proliferation of private standards is partly a response to perceptions that public regulatory frameworks have been inadequate to ensure the sustainability of fisheries and food safety. However, they are perhaps even more a result of attempts by private firms to differentiate themselves and their products in increasingly competitive markets. They also serve as a means of protecting corporate reputations from negative publicity driven by civil society.

The food industry overall has undergone considerable consolidation and concentration in industrialized countries, resulting in some markets being dominated by fewer but increasingly powerful food firms, typically large-scale processors and retailers. These firms have significant influence over other businesses in the food chain, including in terms of setting environmental, quality and safety requirements. These requirements are particularly prevalent where they relate to a firm's "private label" or house brand products, a growing trend in fish and seafood marketing (albeit to a lesser extent than other food commodities). Moreover, some private standards are in essence becoming international standards as they come to define the relationships between these globalized firms and their suppliers. From the perspective of the firm, private standards and the certification sitting behind them can serve as mechanisms for safety and quality assurance, traceability, standardization of products from a range of international suppliers, and transparency of production processes.

1.4 ISSUES ARISING FROM THE PROLIFERATION OF PRIVATE STANDARDS

The proliferation of private standards raises a range of issues:

- What role do private standards play in overall governance for fisheries sustainability and food safety?
- What value-addition do they and their related certification schemes offer? How do they interact with public regulation? Do they complement, duplicate or undermine public regulatory frameworks?
- Do they impose deadweight compliance costs for the various stakeholders in the supply chain or can they facilitate market opportunities? How are the costs and benefits distributed?
- Can they help facilitate international trade by encouraging good practices and by compensating for local institutional shortfalls or, instead, do they amount to a significant barrier to trade that threatens to undermine the internationally binding agreements of the World Trade Organization (WTO)?
- What are the implications for exporting developing countries and for small-scale fisheries and aquaculture?

There is currently a lack of empirical evidence on the growing market importance of private standards and in particular on their impacts on the various actors in the fish and seafood supply chain. The effects on markets and international trade are equally difficult to quantify. This technical paper outlines the context in which private standards are developing, including the increasing globalization of the food industry. It aims to sketch current practice and to shed some light on the issues arising in relation to the two main types of private standards that affect fish trade and marketing:

- "Ecolabels" or private standards and certification schemes related to the sustainability of fish stocks. Ecolabels are seals of approval given to products that are deemed to have fewer impacts on the environment than functionally or competitively similar products¹. Ecolabelling is a market-based tool to promote the sustainable use of natural resources by rewarding those in the fishing industry practicing responsible fisheries. The international debate around

¹ For a discussion of the theoretical foundations, institutional and legal aspects of ecolabelling, see Wessells *et al.* (2001).

ecolabels applies mainly to marine capture (and inland) fisheries, although the environmental impacts of aquaculture are also relevant.

- Private standards and certifications related to food safety and quality (from retailers in-house specifications to international food safety management schemes (FSMSs) designed for food generally but increasingly applied to fish and seafood. Private standards related to quality and safety criteria apply to fish and seafood from both marine capture and farmed sources, although prior to the processing stage of the supply chain their impact is mainly in aquaculture. A range of private standards schemes specific to aquaculture has also emerged in the last decade. Most aquaculture certification schemes include multiple standards criteria (safety, quality, environmental, social, animal health), and are used in order to market farmed fish as a safe, sustainable and environmentally sound alternative to fish and seafood from dwindling marine capture stocks.

Other types of private standards, such as organics, fair trade, or social and labour standards, have limited application in fisheries and aquaculture and are only considered for comparative purposes and where they are included as an aspect of a wider ecolabelling or food quality and/or safety scheme. Ecolabels and quality and/or safety standards schemes are covered in two separate chapters (Chapters 4 and 5). Each of those chapters:

- reviews the range of standards and certification schemes operating in relation to fish and seafood;
- attempts to define the characteristics of markets or segments within markets where the pressure to comply with those standards will be more or less intense;
- discusses the opportunities and challenges those private standards present for the various stakeholders in the fish and seafood supply chain (including governments, fishers and/or farmers, processors and retailers);
- examines the specific impact on international trade;
- discusses the interface between private standards and national public regulation and policy frameworks; and
- suggests areas requiring further investigation and attention.

The technical paper then examines key policy issues arising from the application of private standards generally in fisheries and aquaculture, including:

- opportunities for reducing and/or redistributing the costs of multiple standards and certification;
- the specific challenges and opportunities private standards pose for developing countries;
- the effects of private standards on international trade and their relationship to WTO mechanisms; and
- the extent to which private standards add value to global food safety governance, and global governance for fisheries and aquaculture sustainability.

The report draws on current literature and recorded debates in international fora and includes anecdotal evidence from market players. It attempts to describe private standards generally, and specifically as they apply to fish and aquaculture products.