PART I

General Survey 2009

Introduction

This General Survey consists of three sections. Section 1 describes recent trends in the OECD fisheries and aquaculture sector. Section 2 introduces four policy issues that are relevant for fisheries governance in member countries while Section 3 provides an outlook and future policy challenges in the fisheries sector.

Although this edition of the *Review of Fisheries* covers the period of 2006-2007, it is worth highlighting the impacts of the recent financial and economic crisis on fisheries.

Box I.1. **Impacts of the recent financial crisis on fisheries**

More recent developments in the world economic climate have had an impact on the world's fisheries markets. Compared to most meat products, fish and fish products have higher income elasticity in most OECD countries. It is therefore expected that demand for fish and fish products might fall or be re-directed towards low priced species. For example, Danish fish exporters claim that the rather expensive cod products are gradually being replaced by lower priced substitutes like pangasius. In addition, high end markets like the sashimi grade tuna market in Japan are suffering from declining demand. China, the world's main producer and exporter of fish products, is also facing difficulties with its trade partners. Traders in Russia can't access credit to pay for Chinese products and the commodities are being re-directed to the domestic market.

The principal concern is fish exporters' access to export finance and in particular to export insurance. Major exporters are having problems in ensuring that they can get payments for their goods; in the short term this may mean that recourse to export credit/ insurance institutions is needed. In the medium term it is expected that more consolidation in the fish processing industry may take place.

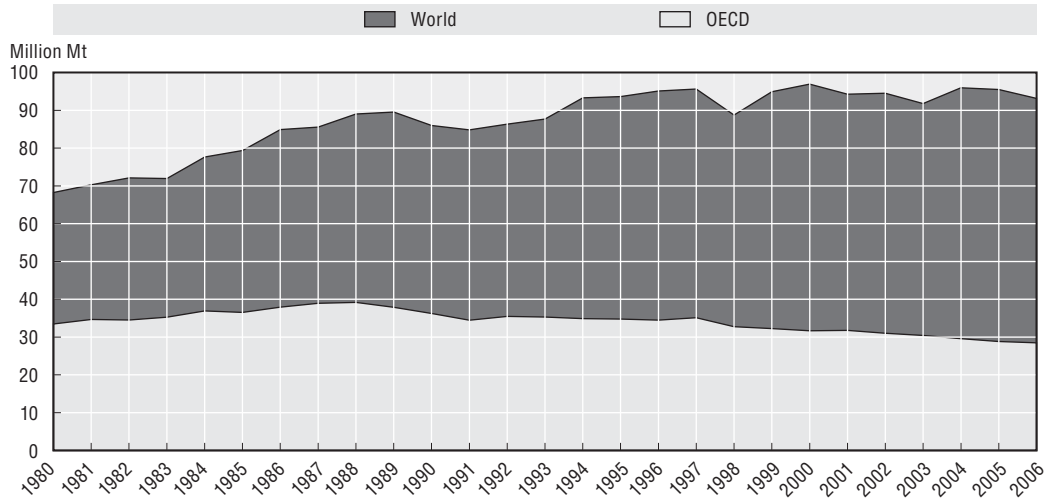
Also of concern is the response by the fishing fleet to the changing markets conditions. Although energy prices have been falling, the lower prices for fish have, in certain cases, triggered fleets to fish harder in order to compensate for falling fish price. It is critical that governments take the necessary steps to ensure that the current economic crisis does not lead to unsustainable fishing.

Recent trends in the OECD fisheries and aquaculture sector[1]

Marine capture fisheries

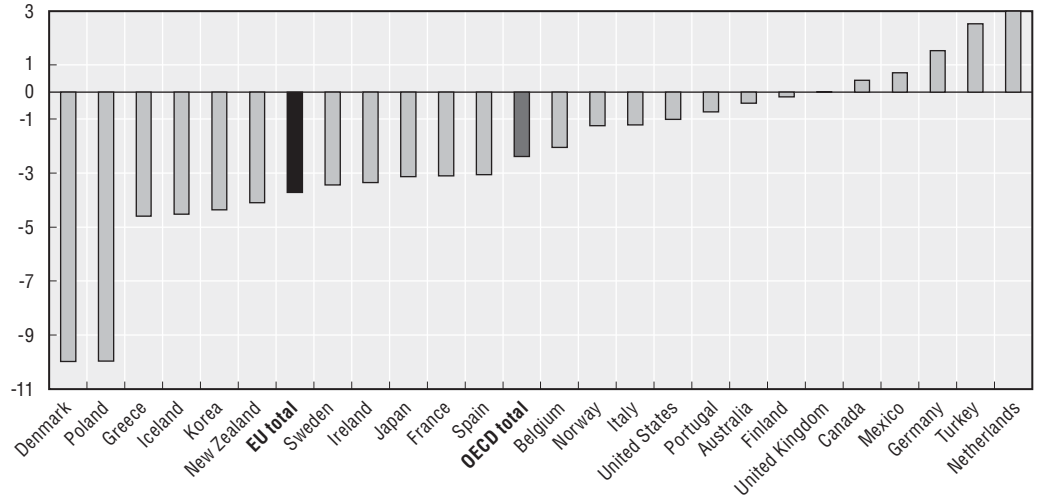
Marine capture fisheries production in OECD countries reached 28.5 million tonnes in 2006, accounting for around 30.6% of the total world marine capture fisheries production (Figure I.1). However, OECD production continued its long-term downward trend which has seen production decline by an average of 2.7% a year over the last decade. In 2006, the value of OECD marine capture production totalled USD 31 billion. Declines in production have mostly occurred in a number of EU countries, Iceland, Korea and New Zealand (Figure I.2). Denmark, Poland, Greece and Iceland suffered the largest decreases in marine capture

Figure I.1. **World and OECD marine capture fisheries production**



Source: FAO.

Figure I.2. **Average annual changes in OECD marine capture fisheries production (volume) (1997-2007)**



Source: OECD based on FAO.

production while Turkey and Germany raised their tonnages by an average of 1% or more per year between 1997 and 2007. Japan, the United States, Norway and Korea are the largest marine capture fisheries producers amongst OECD countries, accounting for 58% of the total OECD production (Figure I.3).

Aquaculture production

Worldwide, the aquaculture sector has grown by an average of 8.2% a year since 1970 while OECD aquaculture production has grown at a slower rate, averaging 1.7% per year between 1996 and 2006. OECD countries accounted for 7% of total world aquaculture production in 2007. Figure I.4 reflects relative production by OECD and non-OECD countries, highlighting the major producers in each.

Figure I.3. **Fish landings in domestic and foreign ports as a percentage of OECD total, 2007**

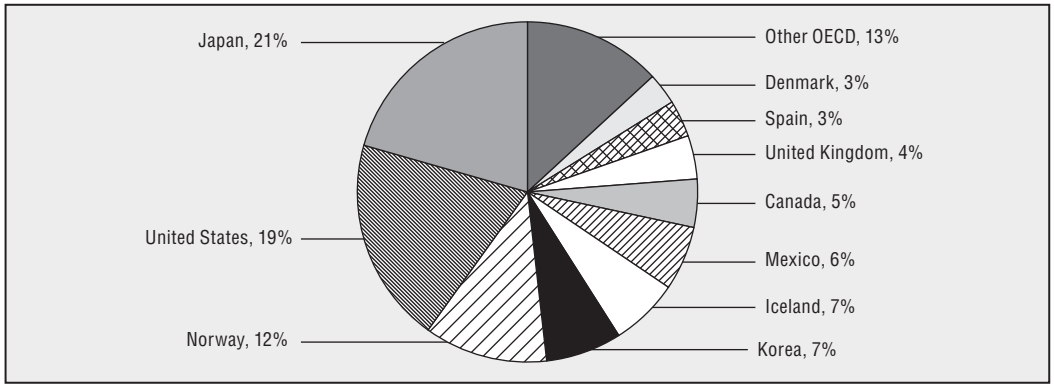
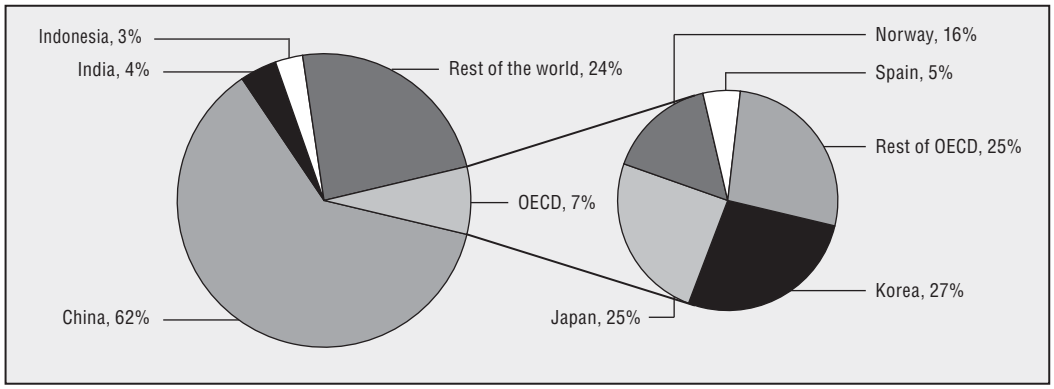


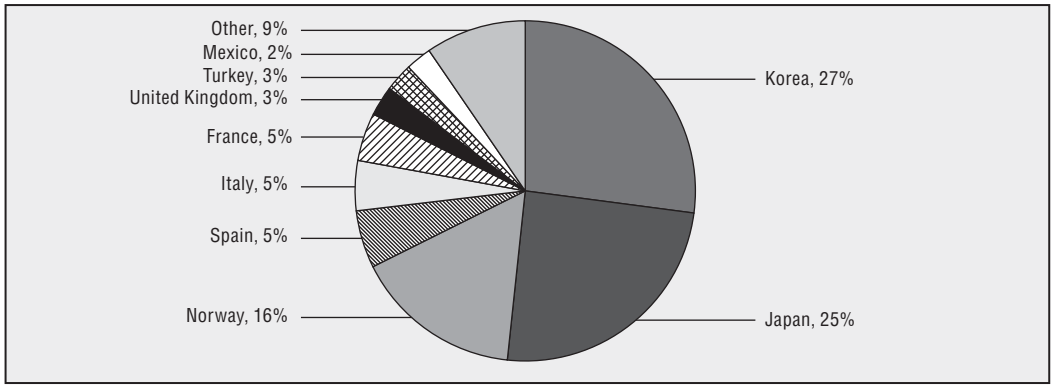
Figure I.4. **Sources of aquaculture production, 2007**



Source: OECD (OECD countries production) and FAO.

Aquaculture contributed 20% to the total OECD fisheries production in 2007 compared to 43% globally. High rates of growth continued in Korea, Norway, Australia and Germany while Japan, France and the Netherlands registered a slight decrease. Just six countries – Korea, Japan, Norway, Spain, Italy and France – accounted for 88% of total aquaculture production in OECD countries in 2007[2] (Figure I.5).

Figure I.5. **Share of aquaculture production in OECD countries, 2007 (by volume)**



The relatively slower rate of OECD aquaculture production growth reflects a number of factors. Lower production costs in non-OECD countries and increasing competition for coastal ocean space make OECD countries relatively less attractive for investment in aquaculture. Aggressive expansion of aquaculture production in a number of non-OECD countries, especially China, has been assisted by the offer of attractive terms and conditions for establishing aquaculture facilities (such as concessional financing and tax holidays) as well as less stringent application of environmental regulations in some cases.

Major species farmed in OECD countries are Atlantic salmon (714 794 tonnes in 2006), oysters (667 639 tonnes), mussels (474 161 tonnes), catfish (265 415 tonnes), rainbow trout (214 206 tonnes), scallops (212 454 tonnes) sea bream (158 414 tonnes) and sea bass (86 927 tonnes).

In the aquaculture sector, technological progress is advancing rapidly. For example, the full life cycle of the bluefin tuna can now be replicated in controlled aquaculture conditions, opening the way for high value farmed tuna production in the near future. Cod production from aquaculture passed 8 000 tonnes in 2005, doubling production from 2004, again underlining the fact that high value species are rapidly finding their way into aquaculture production systems.

Trade

Most OECD countries have increased the value of both their fisheries exports and imports over the past decade (Figures I.6 and I.7). OECD countries exported USD 35.1 billion of fish and fish products while they imported USD 31 billion in 2007. Norway, the United States, Canada, Spain, Denmark and the Netherlands are the major export countries, accounting for 55% of total OECD exports in 2007 (Figure I.8). The major importers in 2007 were the Unites States, Japan, Spain, France, Italy, Germany and the United Kingdom, accounting for 71% of total imports to the OECD (Figure I.9).

Figure I.6. **Average annual growth in fishery product exports from OECD countries, 1997-2007 (by value)**

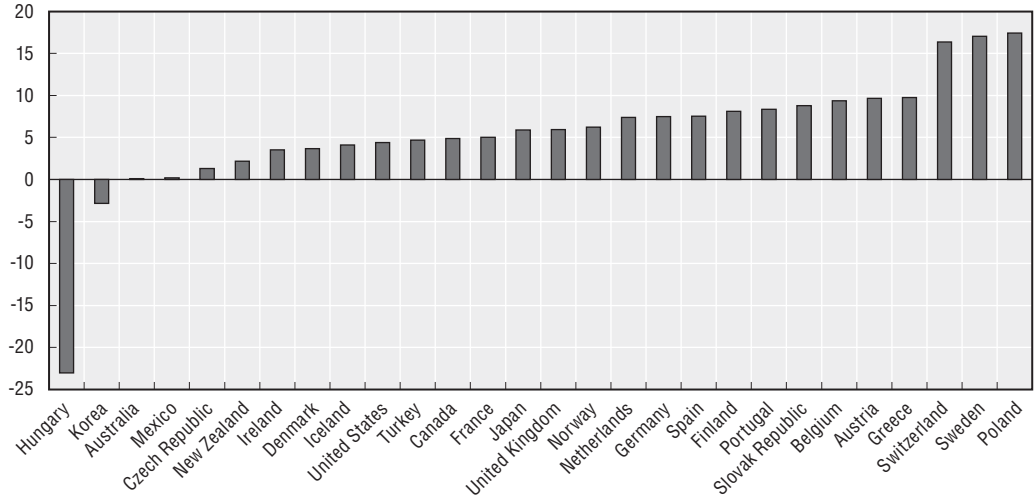


Figure I.7. **Average annual growth in fishery product imports to OECD countries, 1997-2007 (by value)**

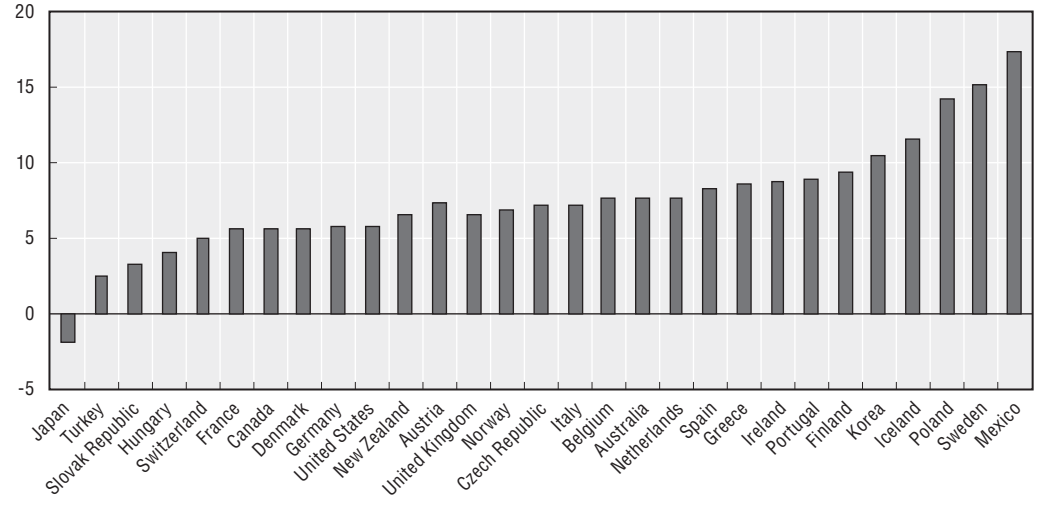


Figure I.8. **Major OECD exporters: country shares of total OECD exports, 2007 (by value)**

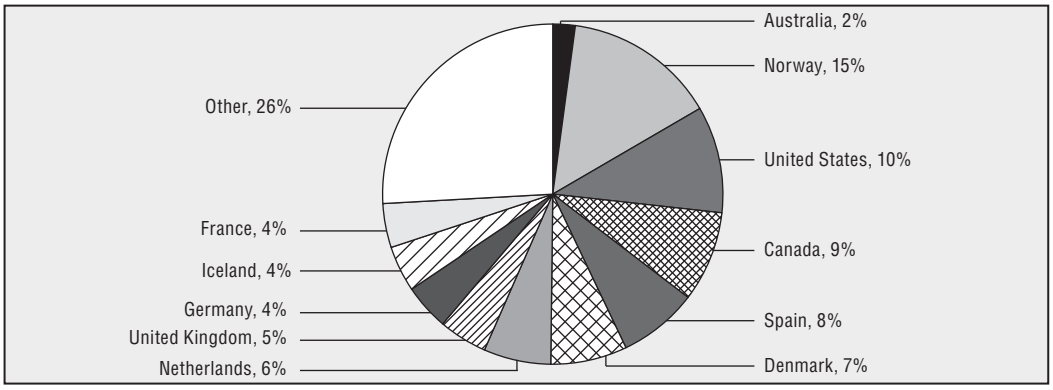
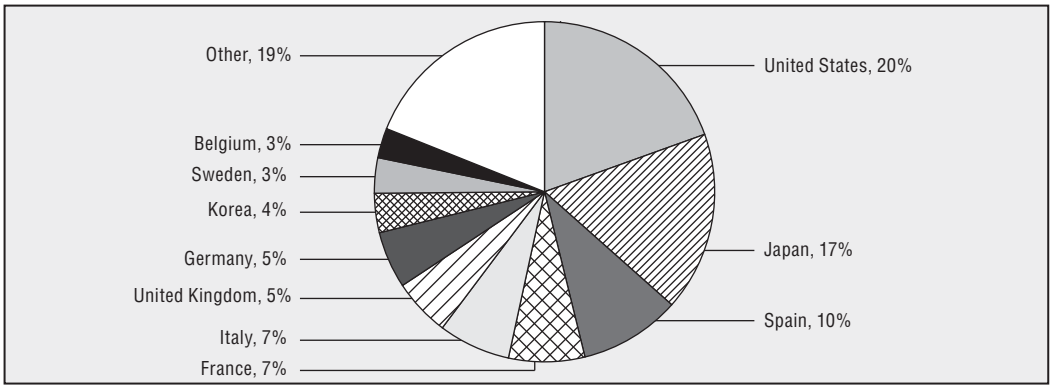


Figure I.9. **Major OECD importers: country shares of total OECD imports, 2007 (by value)**



With respect to OECD imports, more than 50% of the imports originated from non-OECD countries in 2007 (Figure I.10). However, in terms of export destinations, trade among OECD countries is still of primary importance, accounting for 81% in 2007 (Figure I.11).

Figure I.10. **Origins of OECD imports in 2007 (by value)**

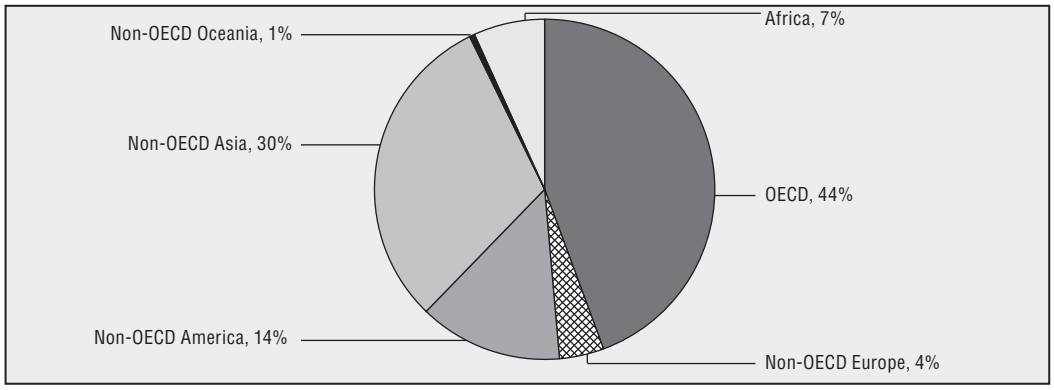
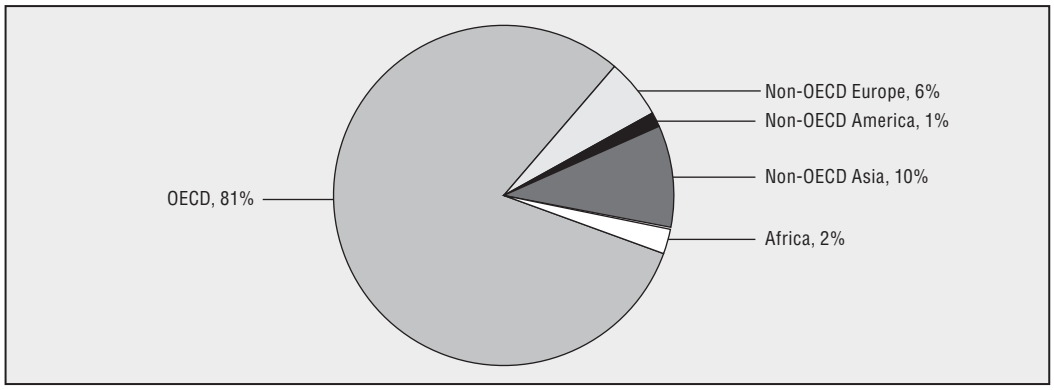


Figure I.11. **Destinations of OECD exports (by value)**



Fishing fleets

Many OECD countries have been actively reducing the size of their fleets through management and decommissioning programs in order to better match fleet capacity with available resources. However, some OECD fleets need additional re-structuring to further decrease overcapacity. The OECD Council Recommendation on the Design and Implementation of Decommissioning Schemes in the Fishing Sector and its underpinning review and analysis of OECD experiences[3] provide a series of key lessons learned from the best practices of OECD and non-OECD countries and present a set of best practice guidelines for governments.

Within the European Union, strict capacity management has been established since the new Common Fisheries Policy came into force in 2003, resulting in a 11.3% decrease in the number of vessels and a 11.2% decrease in total GRT up to 2007.[4] The fleets of Denmark, Germany, Portugal and Sweden have been reduced the most during the period. Such measures are implemented through two key requirements: any entry of capacity has to be compensated by the exit of at least an equivalent capacity, measured both in terms of

Box I.2. **OECD Council Recommendation for decommissioning schemes**

Decommissioning schemes are widely promoted as providing a "win-win" outcome for fisheries with expectations of reductions in capacity, improved profitability and less pressure on stocks. Around USD 430 million was spent on such programs in OECD countries in 2005, accounting for 7% of total government financial transfers to the sector. However, there are concerns that decommissioning schemes often fail to reach their objectives from both an economic and an environmental perspective. So why do they remain so popular with policy makers?

The OECD's Committee for Fisheries has developed a set of best practice guidelines, based on an analysis, that identify the key areas that policy makers need to be aware of if designing decommissioning schemes. The guidelines are intended to assist policy makers ask the right set of questions as they develop programs and will help ensure that decommissioning schemes are efficient and cost-effective in meeting their stated capacity reduction objectives.

In July 2008, the principles and guidelines were adopted by the OECD as a Council Recommendation, reflecting the high level of political importance attached to the issue of ensuring effective fishing capacity adjustment and resource sustainability.

tonnage and power; and fishing vessels scrapped with public aid cannot be replaced. However, the impact of technological creep has eroded many of the gains from these stronger capacity management measures, indicating that further restructuring is required.

Among other OECD countries, Iceland, Norway, New Zealand and Korea have significantly reduced their fishing fleets in recent years. From 2005 to 2007, the number of Icelandic fishing vessels decreased from 1 449 to 1 294 (–10.7%) while the number of Norwegian vessels decreased from 7 722 to 7 041 (–8.8%) and New Zealand's fleet fell from 1 654 units to 1 508 (–8.8%). The number of Korean fishing vessels also decreased from 90 735 to 85 627 (–5.6%).

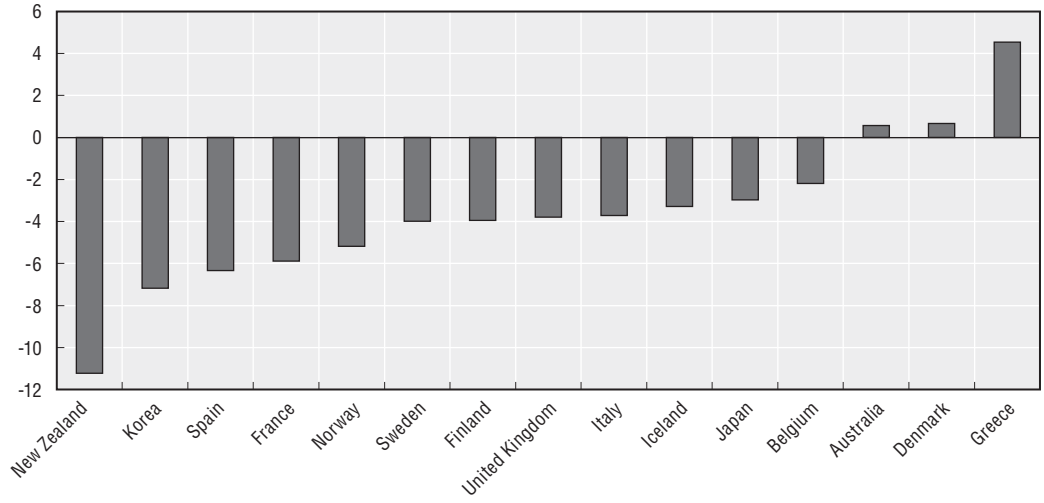
Employment

Data on total employment in the fisheries and aquaculture sector are not collected by every OECD country. Therefore, reliable employment data are only available for a number of OECD countries. According to the available data, the number of workers in the harvesting sector in OECD countries has been steadily falling over the past decade while in contrast, the number of employees in the processing sector has been increasing (Figure I.12). Workers in the harvesting industry still outnumber those in the processing and aquaculture industries. However, there is considerable employment in the aquaculture sector in Korea (45 524), France (21 076) and Mexico (24 998). The employment in the processing sector in Denmark, Germany, the Netherlands, Poland and New Zealand outnumbers that of harvesting and aquaculture sector.

Government financial transfers

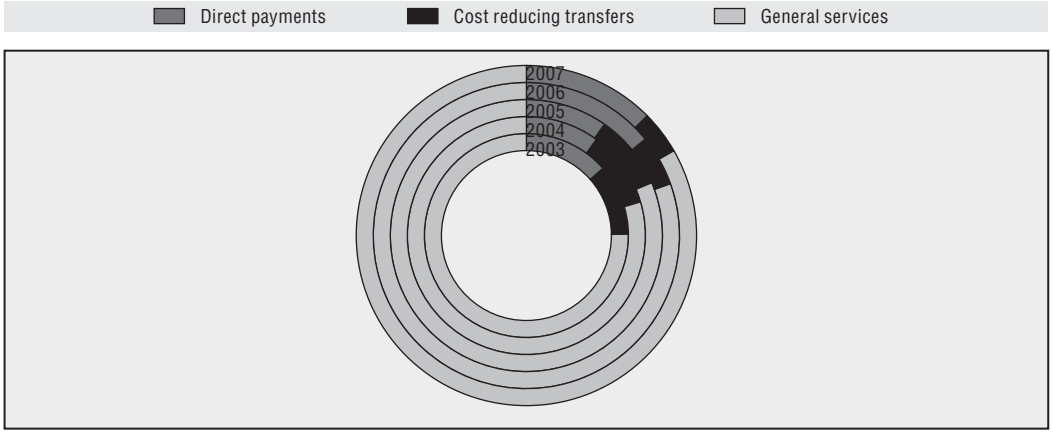
Government financial transfers (GFTs) to the fishing industry in OECD countries have slightly reduced over the last 10 years, from USD 6.8 billion in 1996 to USD 6.4 billion in 2006. GFTs in OECD countries represented around 19% of the value of the total catch from capture fisheries in 2006. The majority of GFTs are categorized as general services, accounting for 75% of the total GFTs in 2006 (Figure I.13). Specifically, OECD governments spent USD 1.6 billion for management and enforcement while USD 736 million were used to conduct fisheries research. Other GFTs under the general services category included

Figure I.12. **Annual rate of change in employment (in percentage) in the harvesting sector, 1996-2006**



harbour construction and maintenance as well as stock enhancement and habitat conservation. However, significant GFTs for general services (USD 2.1 billion out of 5.3 billion) fell into the "programs not specified" category because several countries have not reported details (Table I.1). In the meantime, direct payments represented 19% of total GFTs. USD 185 million were dedicated to decommissioning schemes in 2006 while USD 32 million were used to construct or modernize fishing vessels. Other direct payments included unemployment insurance (USD 223 million) and disaster relief (USD 188 million) (Table I.2). The third category, cost reducing transfers, accounted for 6% of the total GFTs.

Figure I.13. **GFTs in OECD Countries (2003-2007)**



GFTs for individual countries have fluctuated considerably over the last 10 years. Japan, the United States, the European Union, Korea and Canada remain the largest providers of GFTs to the sector, accounting for 92% to the total OECD GFTs. The greatest rates of decline in GFTs are most evident in Japan (–38.8%) and in a number of EU countries (–43.7%)[5] (Figures I.14 and I.15).

Table I.1. **General services of GFTs to marine capture fisheries sector in OECD countries, 2006 (USD million)**

	Total	Research	Management and enforcement	Infras tructure	Stock enhancement/ habitat conservation	Programs not specified	Others
Australia	52	14	25	0	0	13	0
Canada	315	77	195	82	0	0	–39
European Union	377	116	125	75	5	37	19
Denmark	72	9	34	23	0	3	3
Finland	12	5	4	0	0	0	3
France	17	0	0	17	0	0	0
Germany	3	0	0	0	0	0	3
Greece	16	3	1	12	0	0	0
Netherlands	3	0	0	0	0	2	1
Poland	7	3	4	0	0	0	0
Portugal	28	13	15	0	0	0	0
Spain	85	48	0	23	5	0	9
Sweden	32	0	0	0	0	32	0
United Kingdom	102	35	67	0	0	0	0
Iceland	35	19	26	0	0	0	–10
Japan	1 934	0	0	0	0	1 934	0
Korea	554	40	24	284	97	109	0
Mexico	4	2	2	0	0	0	0
New Zealand	38	0	58	0	0	0	–20
Norway	135	46	97	0	0	0	–8
Turkey	136	1	36	40	0	59	0
United States	1 760	426	1 026		47		261
Total	**5 340**	**741**	**1 614**	**481**	**149**	**2 152**	**203**

Note: (–) numbers in the "Others" category implies cost recovery charges.
Source: OECD, country submissions.

Table I.2. **Direct payments of GFTs to marine capture fisheries sector in OECD countries, 2006 (USD million)**

	Total	Decommissioning	Vessel construction/ modernization	Unemployment Insurance	Disaster relief	Others
Canada	223	0	0	223	0	0
European Union	202	101	32			69
Belgium	7	0	0	0	0	7
Denmark	18	18	0	0	0	0
France	20	4	15	0	0	1
Germany	1	0	1	0	0	0
Greece	15	0	15	0	0	0
Ireland	20	15	1	0	0	4
Netherlands	16	16	0	0	0	0
Poland	26	0	0	0	0	26
Portugal	1	0	0	0	0	1
Spain	75	48	0	0	0	27
Sweden	1	0	0	0	0	1
United Kingdom	2	0	0	0	0	2
Japan	13	13	0	0	0	0
Korea	70	70	0	0	0	0
Mexico	5	0	0	0	0	5
Norway	2	1	0	0	0	1
United States	263	0	0	0	188	75
Total	**778**	**185**	**32**	**223**	**188**	**150**

Source: OECD, country submissions.

Figure I.14. **GFTs for selected countries**

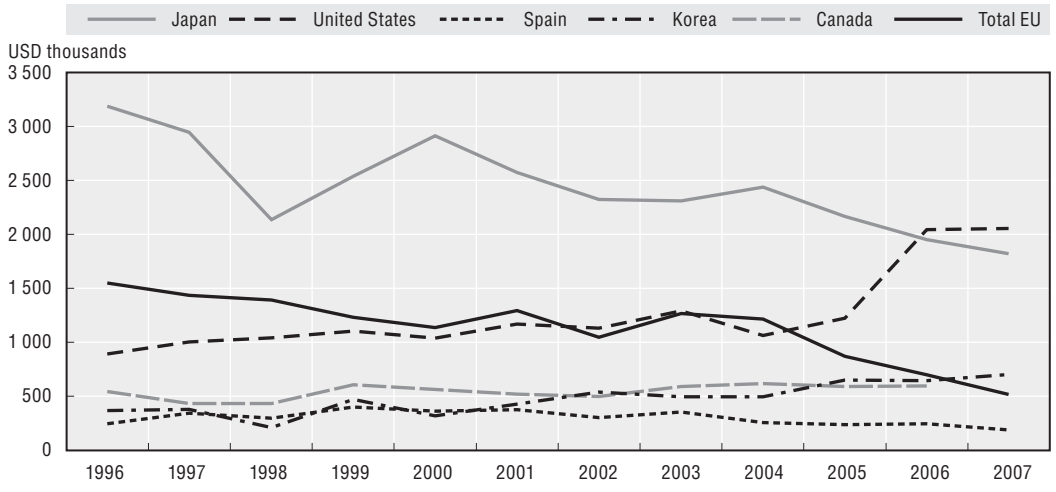
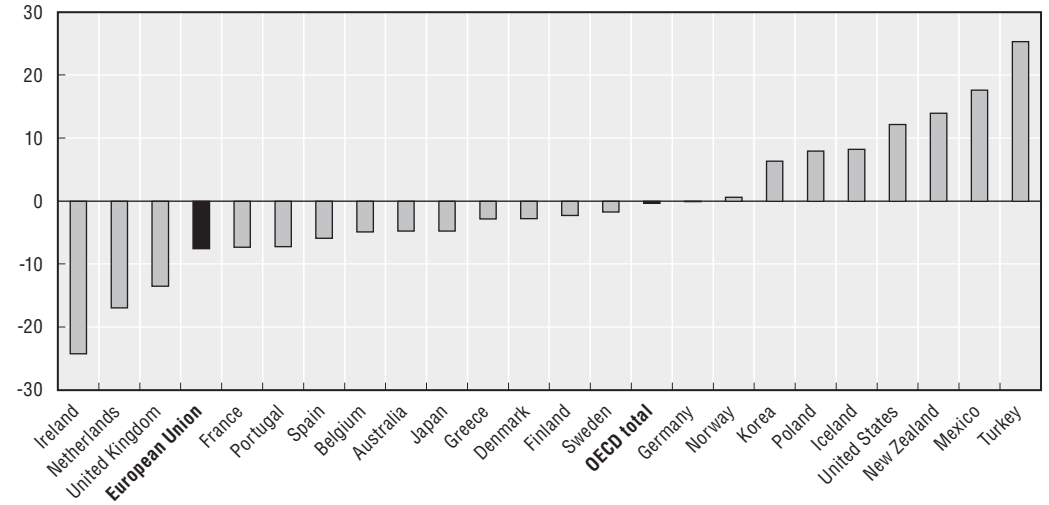


Figure I.15. **Average annual growth of GFTs, 1997-2007**



Recent developments in OECD fisheries policies

This section describes key developments in the fisheries sector that are of particular policy relevance for fisheries governance in OECD countries. The four selected policy issues are: fisheries and policy coherence for development; globalisation and fisheries; ecosystem approach to fisheries management: recent development and issues; and fuel prices and the fishing sector. Each of these areas points to the need for flexible and adaptive fisheries management frameworks that can address a multiplicity of societal, environmental and development issues without compromising both current and future sustainability.

Fisheries and policy coherence for development

In its broadest sense, policy coherence implies an overall state of mutual consistency among different policies, although levels of ambition are reflected in definitions ranging from policies that are "mutually supporting" to "not contradicting" (Hersoug 2006). The main challenge in the field of policy coherence for development (PCD) is to find policy coherence

between international development policies and national trade and sector policies. At the OECD, policy coherence for development has a unique multidisciplinary expertise that enables members to enhance understanding of the development dimensions of policies, particularly in an area such as fisheries. The OECD is well placed in this regard to constructively contribute to an integration of the development dimension into other policy domains thanks to its analytical capacity and horizontal method of working.

In the area of fisheries, neglecting the development dimension of policies will, in time, undermine the pursuit of other objectives, particularly in the areas of economic development, humanitarian and security concerns. Although few economies can boast of a GDP contribution by the fisheries sector higher than 5%, the picture alters when focus is directed to the regional or national level. Fish is a critical component in the diet of many people in developing countries, contributing a large share of total animal protein intake. In addition, more than 30 million people worldwide, almost all of them in developing countries (95%), rely directly on the fisheries sector for their livelihoods, with a further 10 million people dependant on aquaculture. OECD countries import around 60% of fish products from developing countries, meaning that policies affecting developing countries can originate from a number of sources, such as domestic fisheries management in OECD countries, international trade rules, trade liberalisation and aid.

The main challenge for PCD lies at the national level – with national policy making and implementation. The link between PCD and the political economy is a vital factor to consider when promoting policy coherence in the fishing sector. In particular, the following areas are potential sources of policy incoherence:

- The fisheries sector in OECD countries benefits from **domestic support** in the form of government transfers, totalling around USD 6 billion annually. Some of these supports could be distorting the competitiveness of developing country fisheries and its long-term sustainability. Subsidies aimed directly at expanding capacity have declined but many subsidies such as transfers for vessel modernisation continue to inhibit the contraction of fishing capacity in many countries, and have slowed the recovery of fish stocks. The recent rise in fuel prices has meant that subsidy policies could re-emerge.
- Access to OECD markets, accounting for 80% of world trade, may be constrained by **tariff and non-tariff measures**. The average WTO bound tariff rate applied by OECD countries for fish and fish products is 4.5%. However, this low average fails to account for the incidence of tariff peaks and instances of tariff escalation, where the tariffs on imports rise as the degree of processing in an item increases. In this respect, some developing countries may be penalised for adding value to products for export, restraining their own economic development.
- Trade in fish and fisheries products is also subject to **stringent regulatory policies**. These include sanitary and phytosanitary standards (SPS), packaging, traceability and labelling requirements. While such policies generally pursue legitimate public interests, they can also be unnecessarily protectionist. In retail supply chains, private standards may act as a market access barrier in some cases.
- Specific concerns raised by developing countries centre around a **lack of capacity**, including issues such as access to information, predictability and transparency; a lack of involvement in international standard-setting bodies and insufficient funds and knowledge to comply with requirements, particularly non-regulatory standards such as eco-certification.

- Trade liberalisation and improved access for developing countries to OECD markets alone cannot ensure economic growth and poverty reduction. Poor infrastructure and underdeveloped institutions prevent many countries from fully exploiting market access and developing countries therefore need assistance in order to partake more effectively in the rapidly changing world of fisheries. For a long time, **aid** was directed towards the development of an industrial fishing capacity and the construction of harbour infrastructure and processing plants. At the 2002 World Summit on Sustainable Development in Johannesburg, governments agreed that specific actions, such as strengthened donor co-ordination and partnerships between international institutions and bilateral agencies are needed to achieve sustainable fisheries and pro-poor growth. In recent years there has been a reorientation towards institutional support and integrated ecosystems for fisheries resource management. But diminishing aid overall to the fisheries sector makes coherent policies in other sectors even more significant.

In light of these concerns, actions by OECD countries could include:

- Adjusting their fishing capacity and methods to allow for sustainable levels of exploitation, introducing structural adjustment policies to provide transition to alternative activities.
- Rebuilding depleted fish stocks by adopting, implementing and enforcing fisheries management and governance regimes towards this end.
- Increasing developing country market access in general through capacity-building and to the value-added sector in particular through changes in international trading practices.
- Enhancing the transparency of fisheries access agreements with a more fully integrated development dimension.
- Focusing aid on key challenges, such as the development of science-based management systems and improved infrastructure in the post-catch sector.
- Working towards an early finalisation of the Doha round of trade negotiations which specifically includes aspects of relevance to relations with developing countries.

At the same time, developing countries have primary responsibility in ensuring that their policies are sound and support sustainable growth. Good governance, including the rule of law, accountability and transparency, and tackling corruption, are vital to development and play a critical role in the fisheries sector. While capacity building and improved scientific and technical knowledge are areas where development aid is having a remarkably positive impact, there is a continuing need for improved legal frameworks and development of adequate transport and post-catch infrastructure.

Potential incoherence arising from developing country policies includes:

- While women are the dominant actors at the post-harvest, processing and marketing stages, their earnings do not always reflect this fact. Increased recognition in developing countries' regulatory and investment policies of women's contribution to the fishing industry can help stimulate female entrepreneurship and economic growth.
- Developing countries also provide subsidies to the fisheries sector, particularly for fuel and tax reductions on the purchase of gear and equipment. These may be provided without sufficient controls on stock management or enforcement, allowing overexploitation of valuable fish stocks and inefficiencies in the local fishing industry.
- The long-term role of fisheries for sustainable development and growth needs to be taken into account to reconcile export development, food security and resource

preservation objectives. Compromises between different actors, such as small-scale and industrial fishers, have led to serious management problems in some countries.

- Developing countries could benefit from improved monitoring of fishing activities through combining resources, such as regional coalition building, as exemplified by the Southern African Development Community.

Developing countries, for their part could:

- Continue to improve governance, promote transparency, accountability and effective user rights, and tackle corruption.
- Improve scientific and technological knowledge, as well as assessment and sustainable management of fishery resources.
- Incorporate fisheries and aquaculture policies into national development plans to promote coherence across policy domains.
- Build capacity and advanced fishing technologies, develop effective quality and safety certification procedures and improve infrastructure, especially in the post-harvest sector.
- Establish regional co-operation to tackle illegal, unreported and unregulated fishing, through regional co-operation initiatives that pool resources where required.

Globalisation and fisheries

Over the past decades, global markets for fish and fish products have changed considerably. This is a continuous process in which fishers, fish farmers, traders, processors and retailers search for new opportunities linked to a reduction in their production costs as well as profitable investments. New products and production methods, fragmentation and outsourcing of production processes and changing value chains are characteristics of such developments.

In **harvesting**, globalisation is driven by the need to secure access to fish and to ensure a return on capital investments in vessels. In cases where domestic fisheries management frameworks have limited access to domestic resources, access to foreign or high seas resources is one way of deploying capacity, including through access agreements, joint ventures, setting up foreign operating companies, etc. Fishing on the high seas may also be a way to expand activities, for example fishing under and in compliance with a Regional Fisheries Management Organization (RFMO) regime. While fishing outside of domestic EEZs is still a marginal activity (high seas catches contribute less than ten per cent of global catches), many vessels do steam in and out of domestic EEZs in particular in areas where EEZs are contiguous and where stocks are shared. The principal concern for legal harvesting operators when seeking opportunities to globalise is associated with how secure fishing rights to the resources are and, more generally, the degree of stability of management frameworks.

Aquaculture continues to grow in importance for global fisheries markets. This is likely to continue as demand for fish is increasing, due in part to growing populations and rising incomes. Globalisation in aquaculture generally occurs through foreign direct investment in the sector (either directly by aquaculture producers, or by expansion from other parts of the value chain, such as feed processors) and through outsourcing of production processes. Aquaculture companies globalise in order to increase profits, gain from economies of scale and to control inputs such as feed. As for the geographical location of production, differences in production and transport costs are also important parameters.

Globalisation in the **processing** sector is the result of a search by processors for profit, stability and security in raw material supply and quality, while simultaneously seeking opportunities to reduce costs against a backdrop of increasing competition. It takes place along three main paths: first, outsourcing of production; second, expansion of a company's base (such as establishing companies abroad, mergers and acquisitions); and third, the global sourcing of raw material. The regulatory environment in the processing sector is primarily concerned with trade measures, seafood safety standards and traceability, which may pose challenges for developing countries in some cases.

In the **retail** sector, supply structures for the sourcing of fish are shifting to fit the demands of retailers for volume, quality and consistency from suppliers. The retail sector is experiencing both expansion and consolidation, and is a key point of sale for fish. Retailers are vulnerable to issues that may challenge their reputation and are increasingly held accountable for local and global needs and concerns, such as social responsibility, environmental impact and sustainability. Brand value to retailers is extremely important, particularly in markets where retailers are highly concentrated and where brands play a significant role. As a result, it is often the retailers that are the driving force in standard-setting and in the promotion of sustainability labels, sometimes with detrimental effects for developing countries.

Policy challenges raised by the globalisation of the fishing industry

At the OECD it is generally recognised that open economies underpin growth and improvements in material living standards. Globalisation in the fisheries sector contributes to such effect through improved access by consumers to a diverse range of fish on the menu, and, all other things being equal, at a lower price. Concurrently, companies can use resources more efficiently, exploiting comparative advantages and scale effects. However, further efficiencies in the use of fisheries resources, a liberalised trading regime and meeting the risks that can be associated with the globalisation process, will further improve outcomes.

Nevertheless, a number of policy challenges associated with globalisation remain. In the fishing sector, the key to meeting these challenges lies in developing and implementing fisheries management frameworks that can accommodate globalisation, without compromising the sustainability of the resource.

There are potential important benefits of having **fleets** operating internationally, including better use of investments, responding to seasonality in fishing and exploiting comparative advantages. However, for policy makers, challenges exist in the areas of access to resources, domestic fisheries management settings including how overcapacity is dealt with, and high seas governance. At a very general level, the quest for increased access to resources makes the world's fisheries a shared problem that requires global action. In this respect, developing and developed countries need to reassess domestic fisheries management frameworks and the developmental needs of their fisheries sector while strengthening fisheries governance and associated institutions. Policy makers should begin to eliminate fleet overcapacity and subsidies for fleet operations; provide development assistance and capacity building for developing countries, particularly in the area of improvements to governance; and ensure that fisheries access agreements are coherent with other policy domains.

Policy makers also need to ensure that **aquaculture** can benefit from the opportunities globalisation brings, while reducing the potential hazards (mainly environmental externalities) associated with fish farming. This may require regulation and standard setting in a number of areas, including the environment, spatial planning, governance of the industry, food safety and animal health and research. Aquaculture strategies and action plans can make an important contribution in this respect to ensure sustainable production processes, market access and the tradability of products. However, only some countries heavily engaged in aquaculture have developed national plans and more work towards developing and implementing aquaculture plans is required. In developing countries, small-scale producers may require access to finance, capacity-building and technology transfer to be able to meet the requirements of export markets.

Policy challenges related to market access and the capacity of developing countries to meet increasing numbers and stringency of standards to ensure food safety and quality are particularly important for the **processing industry**. Both developed and developing countries are affected by tariff escalation and there is a need for substantial progress in reducing tariff and non-tariff barriers, and ensuring technical assistance and capacity building to developing countries to respond to the proliferation of standards. Finally, as expansion through acquisitions and buy-outs increasingly feature in strategies by large investors, a more transparent and deregulated investment climate would help ensure that the opportunities brought by globalisation are realised.

The key policy challenge in relation to the **retail** sector is how to respond to the proliferation of private standards. In light of the complexity regarding the number of and relationships between standards, policy options include the harmonisation (or equivalence) of standards or the provision of minimum standards (to provide a minimum level playing field), and to ensure truthfulness in marketing. In this respect, the role of public policy may also be capacity assistance to develop country producers in order to help them meet the standards that would allow them to benefit from globalisation.

Reaping the benefits of globalisation across the value chain

A characteristic of the benefits of fisheries globalisation is that they are shared among many: welfare gains benefit consumers, processors, and distributors amongst others, while remaining fairly non-tractable. Conversely, the costs of fisheries globalisation, most often in terms of structural adjustment and overfishing, are fairly easy to identify and tractable, are more local in nature and are focussed on a few easily identifiable groups *e.g.* fishers and fish processing workers. To garner further benefits from globalisation, it is important to ensure sustainable and responsible fishing while concurrently implementing fisheries management models that provide flexibility for fishers and resilience for fishing communities.

The key to setting a future agenda in which fisheries can thrive and benefit from the opportunities that globalisation can offer, is a more resilient national and international governance framework for fisheries management, trade, investment and service provision, and for public health issues. Against the limited public resources available, prioritisation of policy action and international co-operation in the following areas are crucial:

- As globalisation advances, the international governance architecture for fisheries and aquaculture products faces challenges; a fresh look at the present governance frameworks combined with increased speed of national implementation of already existing provisions is needed. This concerns, in particular, high seas governance and IUU fishing. At the same

time, as national fisheries sectors adapt to new market realities, structural adjustment policies that bring into play a broader range of policy areas than just fisheries will be needed. This includes, for example, retirement, social policies, education and re-training that can effectively assist fisheries employment to new occupations.

- In light of increasing demand for fish and fish products, countries should actively develop and implement national aquaculture plans. Such plans can benefit the further development of aquaculture in a sustainable way and provide a more vigorous contribution to globalisation.
- Developing countries are an increasingly important factor in the internationalisation of fisheries markets. Transfer of technology and development assistance (in particular management knowledge) from developed to developing countries is "help to self-help", as OECD markets will increasingly become dependent on supplies of fish and fish products from outside sources.
- The increasing integration of markets, combined with the free flow of fish and fish products across international borders, may spread new pathogens and diseases. HACCP and traceability systems provide the best guard against such risks. Private companies, in particular in processing and retailing, which have a major stake in ensuring that their reputation is not compromised, have undertaken a major effort in ensuring that these risks are contained. Concurrently, there is a need for more international co-operation to ensure that private standards are not an unnecessary *de facto* market access barrier.
- As globalisation provides opportunities to relocate fleets and processing facilities or outsource processing to other countries, there is a potential for some to seek shelter in countries with low or no environmental and social standards, including a lack of respect for international fisheries commitments. It is important to recognise that globalisation is not the root cause of poor standards; it is the standards themselves that may not reflect international expectations and the ability and willingness of national governments to enforce those standards. Acknowledging that some fishing companies will seek to profit from countries offering low standards and that a global solution may be difficult to reach, more concerted and collaborative international action may be required to coerce certain countries into implementing and respecting international labour, social and environmental standards.

Growth through more liberal trading, investments and service regimes is important for overall welfare. It can be further sustained by sustainable and responsible fisheries. Global interdependence is constantly on the move and hence new challenges and opportunities will regularly arise. For fisheries policy makers, staying ahead of this game is an important challenge.

Ecosystem approach to fisheries management: recent developments and issues

Development of EAF concept and guidelines

The concept of an Ecosystem Approach to Fisheries is not new, but has been developed through a number of existing conventions, conferences and agreements, starting with the 1982 United Nations Convention on the Law of the Sea (UNCLOS), which provided a legal framework for the management of marine living resources. UNCLOS has played a significant role in stimulating international efforts to manage the resources in a sustainable manner. Agenda 21 of the 1992 United Nations Conference on Environment and Development also takes an ecosystem approach to ocean management. Furthermore,

EAF principles have been embodied in the Code of Conduct for Responsible Fisheries adopted by the Food and Agriculture Organization (FAO) in 1995 (FAO 2003).

The EAF concept was more explicitly advanced in the Reykjavik Declaration on "Responsible Fisheries in the Marine Ecosystem", issued in October 2001. The declaration requests that the FAO prepare guidelines for best practices to introduce ecosystem considerations into fisheries management. In response, the FAO held an Expert Consultation on Ecosystem-based Fisheries Management in September 2002. The Consultation decided to adopt the term Ecosystem Approach to Fisheries instead of other terms such as Ecosystem-Based Fisheries Management (EBFM[6]), in order to include a broader range of ocean activities (FAO 2002). In addition, the Plan of Implementation of the World Summit on Sustainable Development (WSSD) in 2002, acknowledging the Reykjavik Declaration, encouraged nations to apply the ecosystem approach to fisheries management by 2010.

The FAO published technical guidelines (No. 4, Supplement 2) in 2003 as one of the organisation's Technical Guidelines for Responsible Fisheries series. In the guidelines, the FAO describes EAF as striving to balance diverse societal objectives by taking into account the knowledge and uncertainties regarding biotic, abiotic and human components of ecosystems and their interactions, and applying an integrated approach to fisheries within ecologically meaningful boundaries. The purpose of EAF is to plan, develop and manage fisheries in a manner that addresses the multiplicity of societal needs and desires, without jeopardizing the options for future generations to benefit from a full range of goods and services provided by marine ecosystems (FAO, 2003).

It is important to note that there are different views on how to understand the role of EAF in the broader context of ocean governance. Some argue that an ecosystem approach to fisheries management can be a first step toward a "true" ecosystem approach (EA) to marine resource management or Ecosystem-based Management (EBM). This view considers EAF or EBFM as a component of EBM. In this regard, EAF is necessary but often not sufficient for marine resource management as a whole. However, managing individual sectors, fisheries for example, is still useful because managing the whole ecosystem cannot always be achieved. Others consider EBM as a prerequisite to EAF or EBFM, emphasizing the objectives of fisheries management cannot be achievable without EBM. However, even in this case, there may be instances where fisheries are dominant and therefore big improvements can be made through EAF or EBFM alone (MEAM 2009). In summary, these arguments highlight the importance of the approach to multi-species management rather than single-species management and multiple marine resource management rather than individual sector management.

National, regional and international efforts to implement EAF

EAF has broadly been accepted as a reference framework for fisheries management, although the principles and operational implications may not be fully grasped at a grass-roots level (FAO, 2007a). In fact, intensive efforts have been made in recent years to promote the implementation of EAF. In the following section, notable examples of efforts at the national, regional and international level are introduced.

At the national level

In the United States, an Ecosystem Principles Advisory Panel submitted a report to Congress in 1999, recommending the US government to apply ecosystem principles, goals and policies to fisheries management and to develop Fisheries Ecosystem Plans (FEPs).

Moreover, Strategic Guidance for Implementing an Ecosystem-based Approach to Fisheries Management was issued by the Ecosystem Approach Task Force in 2003. In response to these recommendation and guidance, several FEPs have been implemented, including the Chesapeake Bay Fisheries Ecosystem Plan, in place since 2000. Other examples include the South Atlantic Fishery Ecosystem Plan and the Aleutian Islands Fishery Ecosystem Plan. Five draft Western Pacific Fishery Ecosystem Plans have been completed while pilot projects in New England, the Mid-Atlantic and the Gulf of Mexico are on-going.

Australia has been one of the leading nations making good progress in implementing many elements of the ecosystem approach in managing fisheries. In December 2005, the Australian government launched "Securing our fishing future", which explicitly linked to a transition toward ecosystem-based fisheries management. Specific elements that have been integrated include: implementing formal harvest strategies for target and by-product stocks in every fishery; undertaking ecological risk assessments and developing a risk management response; implementing large scale spatial management; enhancement of fishery data collection; and enhancing liaison and communication capacity (Nordic Council of Ministers *et al.*, 2006).

In the United Kingdom, the Department of Environment, Food and Rural Affairs (DEFRA) is funding a pilot study of EAF in the Celtic Sea and western Channel. This project is aimed at developing and testing a management system for implementing EAF. This five year project, which stated in June 2007, is being carried out by the Centre for Environment, Fisheries and Aquaculture Science and the Universities of Wales, Newcastle, Exeter and York. DEFRA plans to apply lessons learned from the pilot project to other areas.

Norway has also adopted ecosystem approaches to ocean management and established a management plan for the Barents Sea, which is in the implementation stage (Nordic Council of Ministers *et al.*, 2006). Norway is also at present establishing a management plan for the Norwegian Sea. Furthermore, Norway has adopted a new Act relating to the management of wild living marine resources as from 1 January 2009. The purpose of the Act is, among other things, to ensure sustainable and economically profitable management of wild living marine resources and genetic material derived from them. The Act also states that special importance shall be given to a precautionary approach in accordance with international agreements and guidelines and an ecosystem approach that takes into account habitats and biodiversity, when managing living marine resources. The Institute of Marine Research has been reorganised to take this into account. In addition, the Act introduces a new principle for sustainable management in the legislation relating to living marine resources in Norway. Section 7, Paragraph 1 of the Act thus states that "The Ministry shall evaluate which types of management measures are necessary to ensure sustainable management of wild living marine resources". The Act puts an obligation on the Ministry to evaluate the living marine resources on a regular basis and to adopt relevant management measures.

In Canada, the *Oceans Act* (1997) provides a legislative basis for ecosystem management and the precautionary approach, while the Oceans Strategy in 2002 and the Ocean Action Plan in 2005 describe details of an ecosystem approach to the management of human activities in the oceans. Specifically, the *Oceans Act* has enabled integrated management, through which Canada has developed a network of five Large Ocean Management Areas (LOMAs). For each LOMA, an Ecosystem Overview and Assessment report has been prepared with the goal of producing ecosystem objectives. In addition,

Canada is developing a Resource Management Sustainable Development Framework that will address the need to factor in ecosystem considerations when managing fisheries, as part the country's Fisheries Renewal agenda. In 2007, Canada published a science framework for applying the ecosystem approach to integrated management for fisheries, oceans, aquaculture and species at risk management.

At the regional level

EAF has been implemented at the regional level as well. One example is the Benguela Current Large Marine Ecosystem (BCLME) project, which started in 2004 through collaboration between the management agencies of three countries in the region (Angola, Namibia and South Africa) and the FAO. The main objective of the project was to investigate the feasibility of EAF in the region by examining the existing issues, problems and needs related to EAF and considering different policy options to achieve sustainable resource management (FAO, 2007a). In addition, the formation of the Benguela Current Commission (BCC) in 2006 has facilitated the co-ordinated efforts of the countries involved to address broad issues such as recovery of depleted stocks, restoration of degraded habitats and control of coastal pollution. Further development and implementation will continue over the next five years, supported by the BCC. The Commission will extend its focus beyond fisheries management and therefore implement EAF plans in broader context of an ecosystem approach to ocean governance (MEAM, 2009).

RFMOs are expected to play an important role in managing fishery resources beyond national jurisdictions. An FAO delegate pointed out in a UN meeting in 2006 that several RFMOs have adopted not only the concept of EAF (6 bodies) but also specific management measures such as bycatch reduction measures (6 bodies) and habitat protection and Marine Protected Areas (2 bodies) (UN, 2006).

One notable example is the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), which has been pioneering and leading the way, especially when it comes to assessing performance and reviewing fisheries management outcomes against ecosystem-based objectives (Grieve and Short, 2007). In addition, the Convention embraces the precautionary approach and the need to consider ecological links between species as part of the management plans. Further, an adaptive management system for Antarctic marine living resources has been developed based on small scale management units. However, the experience of the CCAMLR also reveals that implementing EAF is a long process and it requires substantive discussions and agreements on the management systems and measures among member countries (MEAM, 2009).

The European Commission is also working towards implementation of EAF through various instruments in the region. The Marine Strategy Directive of the Commission recognizes EAF as one of the most important issues in the European context (Cochrane, 2007). Another effort can be found from the Regional Advisory Councils (RACs) established by the Commission. For example, the North Sea Regional Advisory Council, the first RAC established in 2004, has incorporated an ecosystem based approach and precautionary principles into its advice (Hawkins, 2007). In addition, the European Parliament adopted a report on the Commission communication "The role of the Common Fisheries Policy in implementing an ecosystem approach to marine management" in January 2009. The report recognizes that an EAF provides the best basis for a global management and decision-making system which takes into account all of the

stakeholders and elements concerned, their requirements and needs, as well as future effects on the system and its interaction. It further emphasises the need for the ecosystem approach to fisheries management to lead to a dynamic and flexible system of management, mutual learning and research (European Parliament, 2009).

At the international level

The FAO held an Expert Consultation on the Economic, Social and Institutional Considerations of Applying the Ecosystem Approach to Fisheries Management in June 2006. Participants of the meeting recommended that the FAO publish technical guidelines on economic, social and institutional aspects of EAF, and provided substantial guidance on the background paper prepared by the FAO Secretariat. These efforts have been incorporated into a FAO technical paper,[7] published in 2008. The paper describes the importance of understanding human dimensions, *i.e.* political, cultural, social, economic and institutional aspects, in the process of EAF implementation. It also provides guidelines to facilitate the implementation of EAF, which includes setting appropriate boundaries, scale and scope; assessing impacts resulting from EAF management with regard to potential costs and benefits from social, economic, ecological and management perspectives; utilizing incentive mechanisms; and exploring external financing (Young *et al.*, 2008).

The United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea, at its 7th meeting in June 2006, discussed "ecosystem approaches and oceans" issues as a major theme. The meeting was composed of four sections: Demystifying the concept and understanding its implications; Moving to implementation: Implications for enabling elements; Lessons learned from implementation of the ecosystem approach at the national level in developed and developing States; and International co-operation to implement ecosystem approaches at the regional and global levels. The summary record was submitted to the UN General Assembly providing results of findings of the meeting on various current issues that should be addressed by the international community (UN, 2006).

The Bergen Conference on Implementing the Ecosystem Approach to Fisheries, organized by the Nordic Council of Ministers in co-operation with the governments of Iceland and Norway and the FAO, was held in September 2006. The aims of the conference were: to review concepts and address implementation issues related to applying the EAF; to exchange experiences made and constraints encountered so far; and to identify strategies and best practices that will facilitate further implementation in practical fisheries management (Nordic Council of Ministers *et al.*, 2006). The conference discussed concepts, strategies, knowledge base and tools for managing fisheries as part of the ecosystem approach. Experiences and lessons were shared through case study presentations.

Ecosystem management was one of the major themes at the 14th Biennial International Institute of Fisheries Economics and Trade (IIFET) conference held in Vietnam in July 2008. It was observed in the conference that many countries had adopted EAF as an explicit goal of their fisheries policies and strategies but only a few had been able to put the concept and principles of EAF into practice (*Fishing News International*, November 2008).

It is worth noting that NGOs have been involved in facilitating the implementation of EAF. In 2002, the World Wildlife Fund (WWF) published policy proposals for ecosystem-based management in marine capture fisheries.[8] The proposals describe four principles,

six elements for successful implementation, and twelve operational components, or steps, for the implementation stage, which are useful for those involved in ecosystem-based management in fisheries.

WWF also published the result of 12 case studies from its marine eco-region projects in 2007.[9] Lessons learned from these case studies include the need to develop outcome oriented objectives for management activities; to delineate boundaries for the management system including ecologically defined spatial boundaries and relevant ecological and socio-economic factors influencing the productivity of the resource and integrity of the ecosystem; and to involve stakeholders in all aspects of management (Grieve and Short, 2007).

Policy challenges in implementing EAF: eight issues to tackle

This section draws a number of policy challenges that have been discussed in various meetings and publications mentioned above, particularly from social, economic and institutional perspectives.

The main questions here are whether the concept of EAF has been put into practice, whether the efforts have been successful, and what the obstacles to implement EAF are. These questions can be broken down and analyzed by using a political economy of reform framework. From a political economy point of view, there are several factors to encourage implementation of EAF, including recognition of shortcomings of single-species management approach and international commitments and agreements such as the Reykjavik Declaration, the WSSD request, FAO guidelines, etc. However, there are other obstacles and constraints for implementing EAF because the implementation inevitably involves redistribution of costs among different groups and therefore resistance from those who bear the costs may be expected. In the following section, some examples of the key policy challenges are discussed.

Implementation: Review of existing literature and reports from national, regional and international organisations reveals that EAF has been adopted as an appropriate and necessary framework for fisheries management by many national governments and international organisations; however, there have been only a limited number of programs or national policies where the concept and principle of EAF has clearly been embedded. Many experts claim that actual implementation of EAF is harder than simply expressing intentions to adopt the ecosystem approach to fisheries management.

Clearer definition: Despite international efforts to clarify the concept of EAF, different concepts and terms are used in different contexts, contributing to a lack of clarity and confusion. Therefore, provision of clearer definitions and explanations of terminology have been identified as an essential step to avoid misunderstandings in practice (Nordic Council of Ministers *et al.*, 2006). However, it is generally accepted that the lack of a clear definition should not be a critical obstacle to EAF implementation.

Principles vs. operational objectives: A group of experts comments that although implementation of EAF is underway in many countries and regions, attempts to make these concepts operational based on clearly specified ecosystem guidelines and standards, are still in an early stage (Marasco *et al.*, 2007). Therefore, there is a need to subdivide higher-level concepts and principles into operational objectives, to develop indicators and reference points, to develop decision rules on applying management measures and to monitor and evaluate performances (Parson, 2005).

Uncertainty and lack of data: The current knowledge on individual environmental and ecological factors and interactions between human activities and ecosystem elements is limited. This has been considered an obstacle for the implementation of EAF. However, EAF can be implemented even if little information is available. Lack of information cannot be an excuse since an ecosystem approach is neither inconsistent with nor a replacement for current fisheries management. This means that an ecosystem approach should be adopted as an incremental extension of current fisheries management approaches. What is necessary when dealing with uncertainty is a precaution because poor knowledge entails limited ability to predict the impacts of management measures (UN 2006; Nordic Council of Ministers *et al.,* 2006; Marasco *et al.,* 2007; Pitcher *et al.,* 2008). Therefore, more research is needed through standardized data collection methods while better co-ordination and use of current knowledge and resources in different sectors are required.

Costs and benefits: Among economic elements of EAF, assessment and distribution of costs and benefits should be taken into account in applying EAF, since the implementation of the ecosystem approach inherently leads to the redistribution of costs and benefits. The FAO technical paper presents a list of ecological, management, economic and social costs and benefits with various methodologies to measure them. With respect to the distribution of costs and benefits between fishers and between fishers and society, it is important to note that distributional impacts can occur not only across stakeholder groups at a given point in time, but also across time (*e.g.* between generations) and across scales (Young *et al.,* 2008).

Stakeholder participation: Stakeholder participation should be ensured from an early stage. However, it is not always easy to identify stakeholders – not only within the fisheries sector but also across different sectors – and to figure out their needs and interests. It is even more difficult to reconcile conflicting stakeholder interests. Nonetheless, stakeholder involvement should be strengthened since it is important to implement fisheries management measures effectively and at lower cost, as well as to increase stakeholder compliance. Therefore, there is a need to develop new approaches to facilitate stakeholder participation, such as an integrated advisory process (UN 2006; Nordic Council of Ministers *et al., 2006*).

Capacity building: There is a need for capacity building through awareness programs and direct technical assistance to help developing countries build their national capabilities to achieve ecosystem management (Pitcher *et al*., 2008).

Institutional frameworks: Implementation of EAF may require changes in institutional frameworks, including rules and regulations governing fisheries and organisational arrangements involved in ecosystem management. In addition, EAF calls for close co-ordination, consultation, co-operation and joint decision-making between fisheries management agencies and agencies managing other sectors that are related to fisheries, as well as between different fisheries in the same geographical region (FAO, 2005). However, it has been pointed out that some co-ordination and co-operation is unsuccessful in many countries and this is an impediment to EAF implementation.

Fuel prices and the fishing sector

Fuel prices rose significantly between 2005 and mid-2008 (Figure I.16) with the crude oil price increasing by around 200%. The price rose particularly sharply in 2008, reaching a peak in July before declining rapidly in the following months. The cost of marine diesel rose

and fell in line with the crude oil price[10] and had a significant impact on the operating costs of certain segments of the fishing fleets in both OECD and non-OECD countries. High fuel prices led to widespread protests by fishers in many countries in mid-2008, with marches, strikes, blockages of ports, and civil unrest. The protests attracted a great deal of media attention and generated considerable pressure on governments to develop policy responses to alleviate the adverse effects on the industry.

While oil prices have declined in recent months from the high levels seen in mid-2008, it is likely that oil prices will once again increase to high levels in the future. It is, therefore, important to ensure that the fishing sector faces a policy environment that allows it to respond and adapt to changed economic conditions, both with respect to fuel prices as well as to broader economic conditions. This section reviews the impacts of fuel price rises on the sector and the policy responses by OECD governments, and examines the policy insights to be learned with respect to two key issues that affect the industry's ability to absorb such price shocks: the scope for increasing fuel efficiency; and the ability to pass on cost increases to processors, retailers and consumers.

The impact of fuel prices

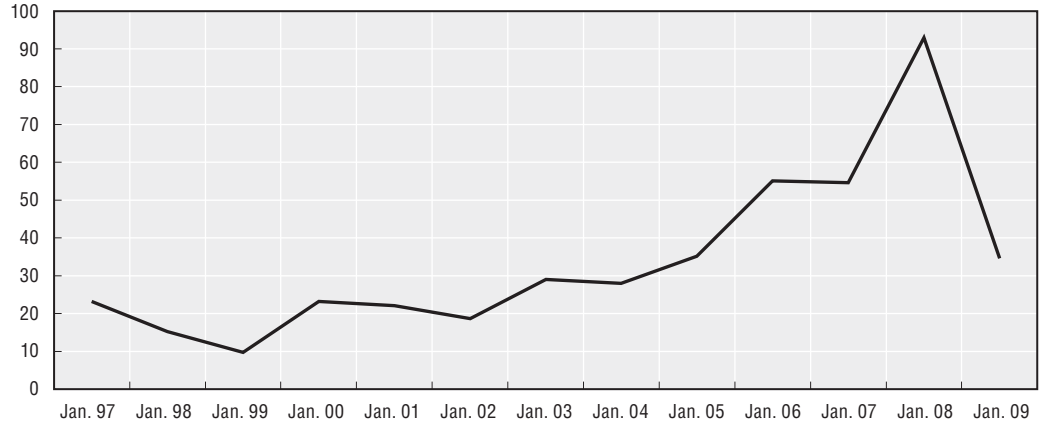
The impact of fuel prices on the cost of fishing varies significantly according to the type of gear used, target species, age of the vessel and engine, and skipper behaviour. Vessels using towed gears (such as beam trawlers) tend to have engines with large engine power and are heavy users of fuel. Such vessels drag gear along the ocean floor, further reducing energy efficiency and increasing fuel costs. Trawlers targeting pelagic species and shrimp also tend to be heavy users of fuel due to the distances they have to travel in search of their catch and their use of towed gear. In contrast, the fuel intensity of vessels using passive gears (such as traps, gillnets, and long-lines) is significantly less given the nature of their fishing operations. For example, data from the French fleet indicate that *chalutiers de fond exclusifs* (16-24 m) typically consume around 1 600 litres of fuel per day at sea, while trawlers (16-24 m) consume around 700 litres per day and *dragueurs polyvalents* (< 12 m) consume around 85 litres per day (Planchot and Daures, 2008).

The intensity of fuel use by different segments of the fleet is reflected in the relative importance of fuel costs in the total operating costs of fishing vessels. For example, Iceland's coastal vessels less than 10m in length have fuel costs that measure 3% of operating costs. For the UK's North Sea beam trawlers (over 300 kW), fuel costs amount to 78%, demonstrating that the relative importance of fuel costs varies considerably between countries, vessels and types of fishing.

The impact of increasing fuel prices will therefore also vary considerably, both between fleet segments and between countries. Detailed data on costs and earnings are not available at this stage to evaluate the effect on the economic performance of vessels in 2008. However, there is anecdotal evidence that a number of fleets are staying in port rather than putting out to sea as the increased fuel costs outweigh the expected revenue from fishing. In addition, fishermen are paid on a share basis in many countries, usually a percentage of the value of landings after costs of fuel have been subtracted. So when the fuel price rises, part of the cost burden is born by the crews in the form of decreased income (if the price of fish does not rise commensurately).

In general, the economic profitability of many segments of the fishing fleets across OECD countries has been poor for a number of years due to the accumulated effects of

Figure I.16. **Weekly average crude oil prices (USD/barrel)**



a) Weekly all countries spot price FOB, weighted by estimated export volume.
Source: US Energy Information Agency (2008).

excessive fishing effort and overcapacity. The economic impact of price shocks (as well as fluctuations in environmental conditions) will be greater on those fleets that are already under economic pressure due to overcapacity and overfishing. This indicates a lack of flexibility and resilience in such fleets and signals a need to restructure the particular fleet segment or change the fisheries' management arrangements to address fundamental problems of overcapacity and overfishing. In addition, market prices for fish have generally not risen to cover increasing costs in recent years due to a range of factors (discussed further below).

Policy responses

The policy responses of OECD governments to the fuel price increases focused on either "business as usual" or accelerating much-needed structural reform in order to develop a more robust and flexible fishing sector. Many governments viewed fuel price increases as a normal part of the business conditions that affected all segments of the economy, not just the fishing sector. For example, Norway, New Zealand, Canada, Australia, the United States and Iceland made no policy changes and provided no special assistance to the sector in response to the fuel price increase in 2008. For these governments, the fishing sector was expected to respond to the economic fluctuations as appropriate. In general, fishing companies in these countries were able to avail themselves of the normal policy measures available to businesses in general in times of economic downturn (such as business planning advice, unemployment benefits, etc.).

In addition, many governments pointed out that the fishing sectors in OECD countries (and in many non-OECD countries) already receive a fuel subsidy in the form a tax exemption on diesel used in fishing operations.[11] Such exemptions mean that the sector does not face the same price for diesel as that faced by most other sectors in the economy. The value of the exemption is difficult to calculate as it relies on estimating the demand responsiveness of different segments of the industry. However, a recent study has estimated the value of the fuel tax exemption for the OECD countries to be around USD 2.4 billion a year, and for the global fishing fleet to be around USD 6.4 billion a year (Sumaila *et al.*, 2006).

In some other OECD countries, governments responded with assistance packages for the fishing sector, primarily aimed at helping the industry to undertake restructuring in

the face of the changed economic conditions. The type and targeting of assistance varied from country to country, with some providing broad financial support to all segments of the industry, while others tailored their assistance to meet specific objectives and criteria. A number of countries provided or extended temporary aid to deal with short term economic hardship.

The most broad-ranging policy response was put in place in the European Union. In July 2008, the European Union responded to the fuel price issue by agreeing to a package of measures focused on promoting the restructuring of those segments of the European fishing fleet which are most affected by fuel price increases and providing short-term support to fishers who undertake restructuring (European Commission 2008b, 2008c). The package also aimed at reducing fuel dependency in the sector and enhancing market measures to help fishers raise the first-hand sale value of their fish. The objectives and structure of the package reflected concerns that the economic viability of many segments of the EU fisheries sector, and hence their ability to absorb economic shocks such as fuel price increases, is jeopardised by overcapacity and excessive fishing effort (European Commission, 2008a). The package therefore focused on achieving fundamental structural reform in the most economically vulnerable fleet segments.

The package of measures included:

- Emergency measures, consisting of temporary cessation aid to cover the crew costs and fixed costs of vessels where there is an explicit commitment to undertake restructuring within six months;
- A range of restructuring measures under one or more national Fleet Adaptation Schemes focused on the fleet segments that are relatively more fuel-intensive, including increased aid for permanent and temporary cessation, increased aid for modernisation schemes for gear and engine replacement, and greater flexibility in decommissioning assistance;
- Additional horizontal measures including allowing increased public assistance under the European Fisheries Fund (EFF) for fuel-saving equipment, energy audits, restructuring plans, early retirement, and pilot projects on fuel-saving technologies;
- Market measures under the EFF and the Common Organisation of the Market to increase the value of fish at first sale, including the setting up of a price monitoring system and additional financing for stakeholder-led initiatives; and
- Measures designed to facilitate the use of the EFF by the national administrations, to improve the ability of member states to take fast and targeted action.

The total value of the emergency assistance needed by the sector was estimated to be in the area of EUR 2 billion. Much of the funding (EUR 1.4 billion) would come from the current budget of the EFF operational programs, which will be re-programmed in order to transfer allocation from the other priority axes towards the specific “fleet” axis. The European Commission also expressed its readiness to consider making additional funds available for the restructuring process under certain conditions. However, no additional funds have been allocated in 2008 or 2009. In addition, the Commission is examining possible changes to the de minimus rules for the fisheries sector and social aid in the form of decreased social security contributions. In particular, the European Commission has proposed to analyse whether an increase in the amount of de minimus aid that can be provided by EU member states from EUR 30 000 per firm over three years to EUR 30 000 per vessel, with an overall cap of EUR 100 000 per enterprise would be justified. (European Commission, 2008a).

In addition to the EU-wide policy package, the French Government implemented a sustainable fisheries plan worth EUR 310 million of national funds over two years to support the fishing industry and, in particular, to help offset increased fuel costs.

The Scottish government provided GBP 29 million in funding over the next three years to help the Scottish fishing industry adjust to higher fuel costs (Scottish Government, 2008). The funds will be used to: introduce innovative fuel efficiency measures to cut fishing vessels' fuel consumption and running costs; improve the marketing of Scottish seafood; and reduce some non-fuel costs (such as e-logbooks) and address the issue of discards. The money for the initiative is coming from the European Fisheries Fund (GBP 19 million) and the Scottish Government (GBP 8 million).

Korea introduced an economy-wide assistance package valued at KRW 10.5 trillion (USD 9.8 billion) aimed at low-income earners and self-employed small business owners as a response to the increasing fuel price. The package of measures included increased expenditure of KRW 254 billion (USD 254 million) on decommissioning of fishing vessels affected by the rising oil price. Under the scheme, an additional 1 900 vessels will be scrapped over the next few years (including 1 500 coastal vessels and 400 offshore vessels).

In some countries, state (rather than federal) governments are providing assistance. In the United States, the state government of Massachusetts has announced a USD 13.4 million relief package for the state's fishing industry in response to the high fuel prices (*WorldFish Report*, 2008b). The assistance will be available for fish permit holders to pay for the upkeep of commercial fishing vessels across the state. In Australia, the Queensland state government provided AUD 8 million (USD 7.5 million) in assistance to the sector to assist with rising fuel prices (*Intrafish*, 12 June 2008).

Increasing fuel efficiency in the fishing sector

One of the keys to reducing the vulnerability of the fishing sector to high fuel prices is to increase the fuel efficiency of fishing operations. Fishing is a major user of fuel with the global fishing industry estimated to consume approximately 50 billion litres of oil a year, accounting for around 1.2% of global oil consumption (Tyedmers *et al.,* 2005). Increased fuel efficiency in the sector is driven by three factors: technological change, behavioural change, and prices.

First, there is an increasing investment in research on technological innovations to increase fuel efficiency. For example, the development and extended use of more fuel efficient engines is a key step towards improving fuel efficiency. The use of propulsion systems incorporating high efficiency nozzles and optimised propeller blades has been trialled and introduced on a number of vessels. Similarly the development of new gears and techniques, particularly for beam and bottom trawlers, can significantly reduce operating costs. The use of outrigger trawls to replace beam trawls can result in fuel savings of 40-70%, while changes towards more hydrodynamic beam shapes can lead to fuel savings of 10-15%. Similarly, the use of by catch reduction panels can lead to fuel savings of 20%, as well as having a reduced impact on the benthos and a cleaner catch that is less costly to sort and process on deck. Research on the use of very large diamond mesh trawls for pelagic trawlers to reduce gear drag indicates that fuel savings of up to 30% can be achieved. The use of bio-diesel has been trialled in several Scottish fishing vessels, while a purse seiner incorporating computer-operated sails is due to be launched in Norway.

Second, behavioural change often works in partnership with technological change to increase the scope for improving fuel efficiency. Slower steaming speeds can lead to significant fuel savings: engines are usually at their most efficient when operating at 80% of the full throttle revolutions per minute and burn 70% of the fuel and achieve 90% of the speed compared to steaming at full throttle (*Seafish*, 2008). Similarly, slower trawling speeds reduce gear drag and improve fuel efficiency with little or no impact on the efficiency of the catch. The focus of vessel skippers on fuel costs can be increased by the use of fuel consumption meters which will help monitor fuel usage and the conduct of energy audits on-board vessels. In addition, improved engine, vessel and hull maintenance and monitoring can improve fuel efficiency.

Third, higher fuel prices also provide a strong incentive for fishers to undertake measures to increase fuel efficiency, when not negated by subsidies. Indeed, this is demonstrated by response to the recent high fuel prices which has seen increased efforts to improve technology and change skipper behaviour in those parts of the fishing industry that are particularly vulnerable to fluctuations in oil prices.

It is unclear at this stage if the rapid decline in fuel prices has stalled the pressure for improving the fuel efficiency in the fishing sector. Much depends on the expectations of individual fishing operators about the future path of fuel prices and the impact of the various restructuring and fuel efficiency plans put in place by the various governments. The global economic crisis and the resulting impact on fish prices and trade may also reduce the willingness and ability of fishers to undertake significant changes to become more flexible and adaptive to future fuel price increases. Incentives generated by fisheries management systems, including both market-based and community-based co-management systems, can play an important role in inducing changes towards energy efficiency.

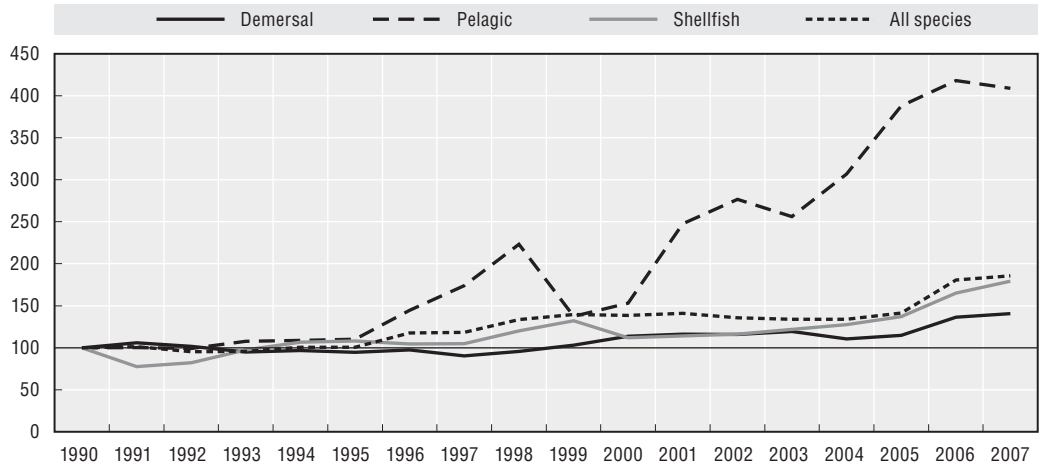
Challenges in the market for fish

A second key factor affecting the economic situation facing fishers is the extent to which cost increases can be passed on to processors, retailers and consumers. Combined with increasing cost prices, this can lead to a "double squeeze" on the economic profitability of many fishing operations. It is generally considered that the fragmented nature of the fishing industry, the lack of vertical integration between fishers and the rest of the value chain, and the substantial buying power of major processors and marketing chains, combine to prevent fishers from passing their increased costs down the value chain in many cases. In addition, the ready availability of substitutes such as chicken, pork and beef tends to place an effective ceiling on any price increases for fish products.

These factors have resulted in relatively stagnant prices for many fish products over recent years, although this has not been the case for all fish products. Some segments of the seafood market have been experiencing a strong growth in prices. In the UK, for example, the price of pelagic fish (particularly mackerel and pilchards) has increased significantly since 1990 while the prices of demersal and shellfish species have experienced more modest growth (although there is significant variation between individual species within these broad categories) (Figure I.17). In another example, there has been a 16% increase in Alaska pollack prices in Europe in the first half of 2008, due largely to decreasing catch quotas and higher fuel costs (*Globefish,* July 2008).

In general, however, fishers are price-takers and can do little to influence the prices they receive. Furthermore, the market for fish products is highly heterogeneous and segmented, so

Figure I.17. **United Kingdom fish price indexes**



Source: Seafish Industry Authority.

that prices often respond to local market and resource conditions as much as to international market developments. As a result, changes in catch quotas, local overfishing, and the seasonal nature of fishing can all have an influence on market conditions in the various markets for fish products. Within these broader market constraints, there is some scope for fishers to undertake initiatives to improve market prices through, for example, improved marketing, development of niche markets, value-added processing, and improved handling.

Policy outlook

While a great deal of progress has been made in a number of policy areas in the OECD fisheries sector, a number of challenges remain. Many of these are interlinked and may, where robust and resilient management frameworks are in place, be important opportunities for the fishing industry. For example, the recent fuel crisis provided an opportunity for some OECD member countries to accelerate restructuring in some fleets in order to better match capacity to available resources. The pressures of globalisation are also a driver to move towards more responsive management and governance frameworks, such as those set out in an ecosystem approach to fisheries. Globalisation is also increasing linkages between OECD and non-OECD countries in fisheries procurement and trade while the impact of this is increasingly featuring in international discourse seeking coherence across a broad range of sectors.

Looking to the future, a number of issues feature prominently on the policy horizon. The most important issues are: establishment of conservation and management measures based on scientific advice; continued responses to IUU fishing; rebuilding depleted fish stocks; certification and standards for fisheries and aquaculture; increasing aquaculture production; and the impact of climate change on fisheries. Critical success factors in delivering responsible and sustainable fisheries include the further development of policy in these areas alongside the full and consistent implementation of existing frameworks.

First of all, the establishment of conservation and management measures based on scientific advice is crucial for the development of sustainable fisheries. However, even if best scientific advice is used, it still remains that managing fisheries is also about managing people and their incentives to fish.

Against this perspective, it is clear that continued efforts are required to further combat IUU fishing as, in essence, IUU fishing, whether in national or international waters, seriously undermines the sustainability of fisheries resources. Much has been accomplished in recent years, but efforts currently underway on the development of additional policy tools will help to more effectively address IUU fishing.[12] In particular, work on port state controls and flag state controls will be essential to close existing policy gaps. In 2007, the FAO published a Model Scheme on Port State Measures to Combat Illegal, Unreported and Unregulated Fishing, to facilitate the implementation of action by port States to prevent, deter and eliminate such activities. It targets issues relating to the inspection of vessels while they are in port, actions to be taken when an inspector finds there is reasonable evidence for believing that a foreign fishing vessel has engaged in, or supported IUU fishing activities, and information that the port State should provide to the flag State. Alongside this, in a number of countries IUU fishing in domestic waters by national vessels has also been more actively addressed.

The European Council has adopted a Regulation to prevent, deter and eliminate illegal, unreported and unregulated fishing that will enter into force on 1 January 2010. The Regulation aims to prevent, deter and eliminate all trade of fishery products into the European Community deriving from IUU fishing in all waters, and the involvement of Community nationals in IUU activities conducted under any flag. Alongside this, the European Commission is proposing a substantial reform of the control system of the Common Fisheries Policy, including harmonised inspection procedures and improved standards to ensure uniformity in the implementation of control policy at member state level.

Also, the task of rebuilding depleted fish stocks to meet the 2015 WSSD target poses a significant challenge for OECD (and non-OECD) countries. FAO data on the state of fish stocks encapsulates the problem: 19% of the world's fish stocks are overexploited, 8% are depleted and 1% is recovering from depletion (FAO, 2009). The collapse of several high profile stocks and the limited success of some rebuilding have raised concerns that in many cases such plans might be much more difficult and longer-term than originally anticipated. For example, the northwest Atlantic cod has only very recently begun to show slight signs of recovery despite having been under a commercial fishing moratorium since 1992. However, the economic benefits of rebuilding fish stocks could be significant: Sumalia and Suatoni (2006) estimate that the potential economic benefit from rebuilding 17 different overfished stocks in the United States amounts to around USD 567 million, or approximately three times the estimated net present value of the fisheries without rebuilding.

Progress to date on rebuilding stocks has been patchy and a more concerted effort is necessary to help governments develop and implement stock rebuilding programs. Convincing policy makers and fisheries stakeholders that it would be wise to undertake stock rebuilding is only a first step. Policy makers also need to know how to go about it in a cost efficient and effective way. In particular, rebuilding programs should be integrated with the broader fisheries management regime for the fisheries in question so that lessons learned during the depletion and rebuilding program can contribute to improving fisheries management. Rebuilding programs should not be seen in isolation from other policy areas and a coherent package of policy responses that addresses economic, social and environmental issues may be warranted.

Another important issue that is rapidly moving to centre stage relates to the role of ecolabelling and certification in the fisheries sector. Globalisation of the fisheries value chain is creating an increasingly multifaceted trading environment involving a large number of interactions and possibly standards as well. As OECD based enterprises outsource processing activities and source from increasing numbers of sources, the supply chains become more complex, reflecting the need for more sophisticated logistics and traceability schemes. Little work has so far been undertaken on the economic consequences of certification, on how different standards and methods of certification, including requirements for traceability may influence the market for fish and fish products, and how different actors and stakeholders in the sector interact.

Certification takes places against a standard. At one end of the spectrum is self-certification and at the other is third-party independent certification. Similarly, there is a wide variation on the cost of certification. Fishing companies and governments share objectives and incentives in the area of hygiene and sanitary standards in providing consumer protection. For sustainability standards, the picture is more blurred. The growing numbers of private and public standards as well as schemes for sustainability, run the risk of presenting a confused picture to consumers, producers and governments alike. Such labelling schemes may prove particularly difficult for developing countries, whose exports to OECD markets are of essential importance to the overall supply of fish and fish products. The key challenge for OECD governments is to determine the most appropriate role for regulatory policy and identify the most effective policy tools to meet policy objectives.

Finally, aquaculture is a significant industry in many OECD countries, and with global demand for fish rising alongside limited possibilities of increasing production from capture fisheries, the aquaculture sector is seen as an increasingly important supplier of healthy, high quality seafood. There are strong expectations that the aquaculture sector will continue to grow at a rapid pace and many countries are investing heavily in the sector expecting that future demand for high quality seafood will be met by farmed fish. However, aquaculture has economic, environmental and social implications that may be poorly evaluated or inadequately addressed within current policy frameworks. governments are becoming increasingly involved in monitoring the aquaculture industry and its effects on the environment and public safety, resulting in the extension of regulatory measures to ensure good governance of the sector. The future development of the aquaculture industry is also partly linked to issues regarding access to and the use of resources; new technologies to improve economic efficiency; frameworks regulating industrial fisheries; and trade.

Despite the obvious success of the aquaculture industry to date, the potential development of the industry is linked to the ability of policy makers to provide a conducive policy landscape for sustainable and profitable operations. The aquaculture sector will face new challenges that require sustained commitment by policy makers.

A longer term issue is that of climate change and the fisheries and aquaculture sector. Fisheries ecosystems and fishing-based livelihoods are subject to a range of climate-related environmental variability, ranging from extreme weather events, floods and droughts, to changes in aquatic ecosystem structure and productivity, and changing patterns in, and abundance of, fish stocks. In order for policy makers to ensure sustainable resource management in the future, policies and practices will need to be adjusted to take account of changes to productivity and distribution of fisheries resources as a result of climate-related environmental variability. While climate change is only one of the many

threats to sustainable fisheries in the future, it has until recently received less attention in international fisheries policy debates, especially with respect to economic implications of climate change impacts on fisheries. Increasingly, fisheries policy makers are becoming more aware of the need to anticipate and incorporate climate-related changes into local, national and international coping responses.

In the meantime, the current financial crisis is likely to continue to have an impact on the fishing industry. As slower (and perhaps negative) economic growth continues and spreads, the domestic pressure for governments to attempt to insulate their economies using protectionist measures will increase. Such action would exacerbate global economic difficulties, increase price variability on world markets and reduce trading opportunities. While the outcome of various efforts by OECD member countries to address issues of liquidity, solvency and recapitalisation is still unknown, the financial crisis may have a number of effects on fisheries. The crisis will reduce the availability of loans – lenders will want more equity and collateral before approving loans. This will not only affect harvesters but also processors, traders and retailers who rely on credit in an industry that is perceived to be risky. It will also increase the cost of borrowing through higher interest rates and at the same time reduce the level of foreign direct investment, which is crucial to the development of emerging economies. The financial turmoil is also likely to result in calls for increased levels of government support in a number of industries, including in fisheries.

Should the crisis be of a longer term nature, it will indirectly put downward pressure on food prices, including seafood. While this may be beneficial for consumers and reduce input costs for producers, it sends a signal to decrease production, for example in aquaculture, which may lead to future shortages in supply. It will also put pressure on government budgets (through reduced tax revenue and higher borrowing costs), which may lead to a reduction in expenditure on fisheries including on general services such as management, surveillance and research all of which are key to sustainable fisheries management. Such potential developments may require on-going monitoring.

Meanwhile the present financial and economic crisis is a window of opportunity to ensure that, once the economy start expanding again, the departure will be on a more solid basis of sustainable fisheries practices. While it may not be a paradigm shift insofar the ingredients of sustainable and responsible fisheries management are known, the start of a new more sustainable and "green" era may be an outcome policy makers may wish to actively pursue. This would benefit the fishing industry and consumers alike.

Notes

1. Please note that this section describes recent trends and developments in the OECD fisheries and aquaculture sector up to 2007 although some statistics are still missing. The Secretariat has made best efforts to analyze recent trends based on available data.
2. The United States is not included among the major producers because the data for 2007 are not available. The United States was the fourth aquaculture producer in OECD countries in 2006.
3. OECD has recently published *Reducing Fishing Capacity: Best Practices for Decommissioning Schemes*, which was a result of the Committee for Fisheries' work on political economy of fisheries policies reform.
4. *Source:* Eurostat; includes: EU15 countries.
5. It should be noted that in the case of EU, the reduction was calculated between 1996 and 2005, instead of 2006, because the GFT data for all EU countries in 2006 were not available.

6. US National Research Council (1998) defined EBFM as an approach that takes major ecosystem components and services into account in managing fisheries. Its goal is to rebuild and sustain populations, species, biological communities and marine ecosystems at high levels of productivity and biological diversity, so as not to jeopardize a wide range of marine goods and services. It is not the purpose of this paper to discuss in detail the difference between EAF and EBFM. However, it has been pointed out that the difference between approaching fisheries management with ecosystems in mind (EAF) and basing fisheries management on ecosystems (EBFM) is a subtle but important. Nevertheless, this paper adopts the term EAF while the term EBFM is also used if necessary.
7. FAO (2008), "Human dimensions of the ecosystem approach to fisheries: an overview of context, concepts, tools and methods", *FAO Fisheries Technical Paper 489*, FAO, Rome.
8. Ward, T. *et al* (2002), *Policy Proposals and Operational Guidance for Ecosystem-based Management of Marine Capture Fisheries*, WWF-Australia, Sydney.
9. Grieve, Chris and Katherine Short (2007), Implementation of Ecosystem-Based Management in Marine Capture Fisheries.
10. Note that the price of marine diesel used by most fishing vessels is typically around 60% of the cost of crude oil, depending on the supply and demand factors in the oil production chain.
11. Fuel tax exemptions are also often available to other primary production sectors such as agriculture, forestry and mining.
12. Illegal fishing refers to activities: *i)* conducted by national or foreign vessels in waters under the jurisdiction of a State, without the permission of that State, or in contravention of its laws and regulations; *ii)* conducted by vessels flying the flag of States that are parties to a relevant regional fisheries management organisation but operate in contravention of the conservation and management measures adopted by that organisation and by which the States are bound, or relevant provisions of the applicable international law; or *iii)* in violation of national laws or international obligations, including those undertaken by co-operating States to a relevant regional fisheries management organisation. Unreported fishing refers to fishing activities: *i)* which have not been reported, or have been misreported, to the relevant national authority, in contravention of national laws and regulations; or *ii)* undertaken in the area of competence of a relevant regional fisheries management organisation which have not been reported or have been misreported, in contravention of the reporting procedures of that organisation. Unregulated fishing refers to fishing activities: *i)* in the area of application of a relevant regional fisheries management organisation that are conducted by vessels without nationality, or by those flying the flag of a State not party to that organisation, or by a fishing entity, in a manner that is not consistent with or contravenes the conservation and management measures of that organisation; or *ii)* in areas or for fish stocks in relation to which there are no applicable conservation or management measures and where such fishing activities are conducted in a manner inconsistent with State responsibilities for the conservation of living marine resources under international law (FAO, International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing 2001).

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ANNEX I.A1

Statistical Summary Tables to the General Survey, 2009

Table I.A1.1. **National unit per US dollar (USD)**

	Monetary unit	2005	2006	2007	2008
Argentina	Argentine peso	2.92	2.90	3.09	3.14
Australia	Australian dollar	1.31	1.33	1.20	1.19
Belgium	Euro	0.81	0.80	0.73	0.68
Canada	Canadian dollar	1.21	1.13	1.07	1.07
Chinese Taipei[1]	Taiwanese dollar	34.42	31.71	32.85	31.53
Czech Republic	Czech koruna	23.96	22.59	20.29	17.07
Denmark	Danish krone	6.00	5.94	5.44	5.10
Finland	Euro	0.81	0.80	0.73	0.68
France	Euro	0.81	0.80	0.73	0.68
Germany	Euro	0.81	0.80	0.73	0.68
Greece	Euro	0.81	0.80	0.73	0.68
Iceland	Icelandic krona	62.88	69.90	64.08	88.47
Ireland	Euro	0.81	0.80	0.73	0.68
Italy	Euro	0.81	0.80	0.73	0.68
Japan	Yen	110.10	116.35	117.76	103.36
Korea	Won	1 024.23	951.82	929.46	1 102.05
Mexico	Peso	10.89	10.90	10.93	11.13
Netherlands	Euro	0.81	0.80	0.73	0.68
New Zealand	New Zealand dollar	1.42	1.54	1.36	1.42
Norway	Norwegian krone	6.44	6.42	5.86	5.64
Poland	Zloty	6.23	3.10	2.77	2.41
Portugal	Euro	0.81	0.80	0.73	0.68
Russian Federation	Ruble	28.81	28.28	25.58	24.85
Slovak Republic	Slovak koruna	31.04	29.65	24.68	21.36
Spain	Euro	0.81	0.80	0.73	0.68
Sweden	Swedish krona	7.47	7.37	6.76	6.59
Thailand	Baht	40.22	40.22	34.51	33.31
Turkey	Lira	1.34	1.43	1.30	1.30
United Kingdom	Pound	0.55	0.54	0.50	0.54
United States	US dollar	1.00	1.00	1.00	1.00

1. *www.x-rates.com*.

Source: OECD.STAT.

Table I.A1.2. **OECD fishing fleet, 2006 and 2007**

	Total vessels				Vessels without engines				Vessels with engines			
	2006		2007		2006		2007		2006		2007	
	Number	GRT/GT	Number	GRT/GT	Number	GRT/GT	Number	GRT/GT	Number	GRT/GT	Number	GRT/GT
Australia	494	. .	381	. .	0	0	0	0	494	. .	381	. .
Canada	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
European Union	80 052	1 732 792	80 533	1 771 880	5 512	3 996	5 375	3 847	74 540	1 728 796	75 158	1 768 033
Belgium	107	20 035	102	19 292	0	0	0	0	107	20 035	102	19 292
Czech Republic	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Denmark	3 136	85 731	2 963	76 526	75	60	76	62	3 061	85 671	2 887	76 464
Finland	3 196	16 413	3 162	15 425	0	0	0	0	3 196	16 413	3 162	15 425
France	7 671	208 493	7 631	210 754	0	0	0	0	7 671	208 493	7 631	210 754
Germany	. .	. .	1 873	69 081	. .	. .	0	0	. .	. .	1 873	69 081
Greece	17 854	92 527	17 580	90 641	318	165	306	154	17 536	92 362	17 274	90 487
Ireland	1 932	80 634	1 935	70 829	6	5	6	5	1 926	80 629	1 929	70 824
Italy	13 955	192 396	13 604	195 099	1 696	1 720	1 664	1 694	12 259	190 676	11 940	193 405
Netherlands	894	158 920	903	164 289	0	0	0	0	894	158 920	903	164 289
Poland	881	31 593	870	31 212	34	27	32	24	847	31 566	838	31 188
Portugal[...]	8 717	106 917	8 632	106 699	1 591	845	1 556	825	7 126	106 072	7 076	105 874
Slovak Republic	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Spain	13 400	480 778	13 008	468 946	1 782	1 165	1 726	1 074	11 618	479 613	11 282	467 872
Sweden	1 551	43 768	1 504	42 929	0	0	0	0	1 551	43 768	1 504	42 929
United Kingdom	6 758	214 587	6 766	210 158	10	9	9	9	6 748	214 578	6 757	210 149
Iceland	1 344	167 842	1 294	160 808	0	0	0	0	1 344	167 842	1 294	160 808
Japan	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Korea	86 113	673 719	85 627	663 869	2 755	2 420	2 831	2 350	83 358	671 299	82 796	661 519
Mexico	106 225	240 856	106 181	240 856	102 807	16 166	102 807	18 462	3 418	224 690	3 374	222 394
New Zealand	1 582	154 095	1 508	138 475	9	5	6	1	1 573	154 090	1 502	138 474
Norway	7 301	363 895	7 041	354 907	0	0	0	0	7 301	363 895	7 041	354 907
Turkey	18 790	189 777	18 343	187 101	97	181	90	167	18 693	189 596	18 253	186 934
United States	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
OECD total	**301 901**	**3 522 976**	**300 908**	**3 517 895**	**111 180**	**22 768**	**111 109**	**24 827**	**190 721**	**3 500 208**	**189 799**	**3 493 068**
Argentina	1 100	. .	1 098	. .	. .	. .	443	. .	. .	. .	655	198 672
Chinese Taipei	26 216	766 385	25 622	687 884	998	172	940	151	25 218	766 213	24 682	687 733
Russian Federation	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	
Thailand	12 552	407 913	12 552	407 913	0	0	0	0	12 552	407 913	12 552	407 913

..: Not available.
Source: OECD.STAT.

Table I.A1.3. **Employment in fisheries, 2006-2007**

	2006				2007			
	Harvest sector	Aquaculture	Processing	Total	Harvest sector	Aquaculture	Processing	Total
Australia	9 735	3 628	2 001	15 364	. .	. .	. .	. .
Canada	. .	. .	. .	. .	. .	. .	. .	. .
European Union	168 303	46 145	43 921	258 369	159 009	44 780	27 815	231 604
Belgium	481	. .	. .	481	690	. .	. .	690
Czech Republic	. .	1 714	140	1 854	. .	1 714	140	1 854
Denmark	2 897	553	5 148	8 598	. .	. .	. .	. .
Finland	2 766	494	824	4 084	2 628	. .	. .	2 628
France	20 869	21 076	. .	41 945	20 319	21 200	. .	41 519
Germany	2 133	. .	8 524	10 657	2 067	. .	8 155	10 222
Greece	30 040	6 653	2 918	39 611	29 637	6 734	3 020	39 391
Ireland	4 226	2 058	2 867	9 151	4 461	1 998	. .	6 459
Italy	31 302	. .	. .	31 302	30 214	. .	. .	30 214
Netherlands	1 938	260	6 000	8 198	. .	. .	. .	. .
Poland	4 340	5 000	17 500	26 840	4 309	4 202	16 500	25 011
Portugal	17 261	. .	. .	17 261	17 021	. .	. .	17 021
Slovak Republic	. .	313	. .	313	. .	1 079	. .	1 079
Spain	35 236	8 024	. .	43 260	33 069	7 853	. .	40 922
Sweden	1 880	. .	. .	1 880	1 865	. .	. .	1 865
United Kingdom	12 934	. .	. .	12 934	12 729	. .	. .	12 729
Iceland	4 300	. .	4 100	8 400	4 500	. .	2 800	7 300
Japan	212 470	. .	. .	212 470	204 330	. .	. .	204 330
Korea	90 954	45 524	. .	136 478	86 201	44 951	. .	131 152
Mexico	257 940	24 998	19 402	302 340	*253 238*	*30 418*	*19 464*	*303 120*
New Zealand	1 495	770	5 770	8 035	1 476	750	6 490	8 716
Norway	13 735	4 459	. .	18 194	13 336	4 745	. .	18 081
Turkey	110 230	6 143	6 775	123 148	136 782	6 400	9 739	152 921
United States	. .	. .	40 823	40 823	. .	. .	. .	. .
OECD total	**869 162**	**131 667**	**122 792**	**1 123 621**	**858 872**	**132 044**	**66 308**	**1 057 224**
Argentina	16 917	. .	. .	16 917	16 554	. .	. .	16 554
Chinese Taipei	245 113	108 982	. .	354 095	237 705	98 477	. .	336 182
Russian Federation	. .	. .	. .	. .	. .	. .	. .	. .
Thailand	. .	. .	. .	. .	. .	. .	. .	. .
Total	**1 131 192**	**240 649**	**122 792**	**1 494 633**	**1 113 131**	**230 521**	**66 308**	**1 409 960**

Note: In italics, preliminary data.
..: Not available.
Source: OECD.STAT.

Table I.A1.4. **Government financial transfers to marine capture fisheries sector, 2005**

	Direct payments (A)	Cost reducing transfers (B)	General services (C)	Total transfers (D)	Total landed value (TL)	(A + B)/TL	(A + B + C = D)/ TL
	USD million	USD million	USD million	USD million	USD million	%	%
Australia	0	0	46	46	1 136	0	4
Canada	228	34	258	521	1 723	15	30
European Union	273	161	437	872	8 606	5	10
Belgium	1	0	0	1	107	1	1
Denmark	3	0	51	54	470	1	12
Finland	2	5	18	25	17	41	146
France	19	5	77	101	1 279	2	8
Germany	4	2	12	17	253	2	7
Greece	33	28	15	76	393	15	19
Ireland	10	0	0	10	397	3	3
Italy	65	0	54	119	1 726	4	7
Netherlands	9	0	3	11	558	2	2
Poland	47	0	4	51	. .	. .	. .
Portugal	1	0	32	33	313	0	10
Spain	77	106	65	247	1 961	9	13
Sweden	3	5	28	37	117	7	31
United Kingdom	0	10	80	90	1 015	1	9
Iceland	0	20	29	49	1 055	2	5
Japan	15	11	2 140	2 165	10 076	0	21
Korea	43	57	543	642	3 770	3	17
Mexico	5	73	6	85	951	8	9
New Zealand[1]	0	0	37	37	. .	. .	. .
Norway	7	6	122	135	1 815	1	7
Turkey	0	0	101	101	1 091	0	9
United States[1]	93	3	1 127	1 223	3 990	2	31
OECD total	**664**	**365**	**4 848**	**5 876**	**34 213**	**3**	**17**
Argentina	. .	. .	. .	. .	. .	. .	. .
Chinese Taipei	28	2	8	38	1 949	2	2
Russian Federation	. .	. .	. .	. .	. .	. .	. .
Thailand	. .	. .	. .	. .	. .	. .	. .
Total	**693**	**368**	**4 855**	**5 914**	**36 162**	**. .**	**. .**

..: Not available.

1. Includes an estimate of market price support (that is, transfers from consumers to producers).

Source: OECD.STAT.

Table I.A1.5. **Government financial transfers to marine capture fisheries sector, 2006**

	Direct payments (A)	Cost reducing transfers (B)	General services (C)	Total transfers (D)	Total landed value (TL)	(A + B)/TL	(A + B + C)/TL
	USD million	USD million	USD million	USD million	USD million	%	%
Australia	0	0	52	52	1 077	0	5
Canada	223	58	315	596	1 661	17	36
European Union	202	120	377	700	8 969	4	8
Belgium	7	0	0	7	113	6	6
Denmark	18	0	72	90	512	4	18
Finland	0	5	12	17	23	22	75
France	20	0	16	37	1 304	2	3
Germany	1	1	3	5	267	1	2
Greece	15	27	16	58	439	10	13
Ireland	20	0	0	20	628	3	3
Italy	. .	…	. .	. .	1 877	. .	. .
Netherlands	16	0	3	19	586	3	3
Poland	26	0	7	34	76	34	44
Portugal	1	0	28	29	304	0	10
Spain	75	86	85	246	1 957	8	13
Sweden	1	1	32	35	137	2	25
United Kingdom	2	0	102	104	747	0	14
Iceland	0	17	35	52	1 040	2	5
Japan	13	3	1 934	1 950	9 462	0	21
Korea	70	20	554	644	2 717	3	24
Mexico	5	80	4	89	1 069	8	8
New Zealand	0	0	38	38	. .	. .	. .
Norway	2	7	135	143	1 824	0	8
Turkey	0	0	136	136	715	0	19
United States	263	20	1 760	2 043	4 055	7	50
OECD total	**778**	**326**	**5 340**	**6 444**	**32 588**	**3**	**20**
Argentina	. .	. .	4	4	. .	. .	. .
Chinese Taipei	71	3	14	87	1 804	4	5
Russian Federation	. .	. .	. .	. .	. .	. .	. .
Thailand	. .	. .	. .	. .	. .	. .	. .
Total	**848**	**329**	**5 359**	**6 535**	**35 357**	**. .**	**. .**

..: Not available.
Source: OECD.STAT.

Table I.A1.6. **Government financial transfers to marine capture fisheries sector, 2007**

	Direct payments (A)	Cost reducing transfers (B)	General services (C)	Total transfers (D)	Total landed value (TL)	(A + B)/TL	(A + B + C)/TL
	USD million	USD million	USD million	USD million	USD million	%	%
Australia	0	0	60	60	1 191	0	5
Canada	. .	. .	. .	. .	1 755	. .	. .
European Union	160	76	219	517	10 319	2	5
Belgium	3	0	0	3	123	2	2
Denmark	4		58	62	491	1	13
Finland	0	8	13	21	27	29	78
France	25		10	35	1 402	2	3
Germany	0	0	6	6	302	0	2
Greece	22		14	35	467	5	8
Ireland	6	0	0	6	1 031	1	1
Italy	. .	. .	. .	. .	1 807	. .	. .
Netherlands	0	0	6	6	661	0	1
Poland	9	1	11	20	77	12	27
Portugal	1	0	30	31	375		8
Spain	71	61	56	188	2 245	6	8
Sweden	5	1	39	46	160	4	28
United Kingdom	. .	. .	. .	. .	1 150	. .	. .
Iceland	0	17	51	68	1 269	1	5
Japan	13	3	1 808	1 824	. .	. .	. .
Korea	142	22	539	703	3 124	5	23
Mexico	0	85	0	85	1 083	8	8
New Zealand	0	0	41	41	. .	. .	. .
Norway	2	7	160	169	2 056	0	8
Turkey	0	0	145	145	919	0	16
United States	245	20	1 788	2 053	4 151	6	49
OECD total	**562**	**231**	**4 811**	**5 665**	**25 867**	**3**	**22**
Argentina	. .	. .	3	3	. .		. .
Chinese Taipei	33	2	17	52	1 975	2	3
Russian Federation	. .	. .	. .	. .	. .	. .	. .
Thailand	. .	. .	. .	. .	. .	. .	. .
Total	**595**	**233**	**4 831**	**5 720**	**27 842**	**. .**	**. .**

..: Not available.
Source: OECD.STAT.

Table I.A1.7. **Capture fish production, 2005-2007**

	Total volume (000 tonnes)			Total value (USD million)			Unit value (USD/kg)		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Australia	237	197	186	1 136	1 077	1 191	4.80	5.47	6.41
Canada	1 082	1 070	983	1 723	1 660	1 755	1.59	1.55	1.78
European Union	5 002	4 822	4 779	7 744	8 963	10 242	1.55	1.86	2.20
Belgium	22	20	22	107	113	123	4.97	5.59	5.66
Czech Republic	. .	. .	. .	. .	. .	. .	. .	. .	. .
Denmark	899	857	645	470	512	491	0.52	0.60	0.76
Finland	77	102	117	17	23	27	0.22	0.22	0.23
France	606	602	474	1 279	1 304	1 402	2.11	2.17	2.96
Germany	246	259	262	253	267	302	1.03	1.03	1.16
Greece	92	94	95	393	433	467	4.27	4.33	4.72
Ireland	302	275	219	397	628	1 031	1.31	2.28	4.71
Italy	268	286	267	1 726	1 877	1 807	6.43	6.56	6.77
Netherlands	547	469	464	558	586	661	1.02	1.25	1.43
Poland	136	126	133	60	76	77	0.44	0.60	0.58
Portugal	172	181	196	313	304	375	1.82	1.68	1.92
Slovak Republic	. .	. .	. .	. .	. .	. .	. .	. .	. .
Spain	717	677	752	1 961	1 957	2 245	2.74	2.89	2.99
Sweden	248	262	246	117	137	160	0.47	0.52	0.65
United Kingdom	670	614	888	1 015	747	1 150	1.51	1.22	1.30
Iceland	1 441	1 018	1 399	1 055	1 040	1 269	0.73	1.02	0.91
Japan	4 512	*4 511*	*4 417*	10 076	*9 462*	. .	2.23	*2.10*	. .
Korea	1 829	1 311	1 550	3 770	2 717	3 124	2.06	2.07	2.02
Mexico	1 203	1 244	*1 312*	951	1 069	*1 083*	0.79	0.86	0.83
New Zealand	633	468	427	. .	. .	. .	. .	. .	. .
Norway	2 546	2 402	2 520	1 815	1 824	2 056	0.71	0.76	0.82
Turkey	523	504	589	1 091	715	919	2.09	1.42	1.56
United States	4 463	4 374	4 259	3 990	4 055	4 151	0.89	0.93	0.97
OECD total	**23 472**	**21 920**	**22 420**	**33 351**	**32 657**	**25 867**	**1.42**	**1.49**	**1.15**
Argentina	862	1 069	916	. .	. .	. .	. .	. .	. .
Chinese Taipei	1 007	968	1 174	1 949	1 804	1 975	1.94	1.86	1.68
Russian Federation	. .	. .	. .	. .	. .	. .	. .	. .	. .
Thailand	1 702	*1 723*	*1 710*	932	*965*	*1 126*	0.55	*0.56*	*0.66*
TOTAL	**27 042**	**25 681**	**26 220**	**36 232**	**35 426**	**28 968**	**1.34**	**1.38**	**1.10**

Note: Total national landings, including fish, crustaceans, molluscs and algae. In italics, preliminary data.
..: Not available.
Source: OECD.STAT.

Table I.A1.8. **Aquaculture production, 2005-2007**

	Total volume ('000 tonnes)			Total value (USD million)			Unit value (USD/kg)		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
Australia	47	54	60	483	560	661	10.36	10.35	11.08
Canada	154	171	. .	583	796	. .	3.78	4.66	. .
European Union	1 306	1 336	1 238	3 141	3 335	3 006	2.40	2.50	2.43
Belgium	. .	. .	. .	0	0	. .	. .	. .	. .
Czech Republic	20	20	20	38	51	57	1.87	2.49	2.77
Denmark	40	38	40	127	138	146	3.21	3.66	3.64
Finland	14	13	13	55	55	58	3.82	4.30	4.48
France	238	238	238	633	644	759	2.66	2.71	3.19
Germany	46	45	52	217	198	230	4.73	4.42	4.43
Greece	110	113	110	454	480	. .	4.14	4.25	. .
Ireland	63	87	48	134	152	140	2.12	1.74	2.90
Italy	234	242	247	698	789	897	2.98	3.26	3.63
Netherlands	70	42	. .	129	122	0	1.86	2.89	. .
Poland	38	36	36	90	92	110	2.38	2.60	3.10
Portugal	7	8	. .	42	54	0	6.31	6.84	. .
Slovak Republic	1	1	1	. .	. .	. .	. .	. .	. .
Spain	273	295	285	502	530	608	1.84	1.80	2.13
Sweden	7	9	. .	21	28	. .	3.11	3.26	. .
United Kingdom[1]	145	149	148	. .	. .	. .	. .	. .	. .
Iceland	8	10	5	. .	. .	. .	. .	. .	. .
Japan	1 254	1 224	1 279	4 274	4 153	. .	3.41	3.39	. .
Korea	1 087	1 280	1 408	1 437	1 695	1 928	1.36	1.32	1.37
Mexico	102	123	128	388	411	435	3.81	3.35	3.39
New Zealand	105	108	112	210	225	246	1.99	2.09	2.19
Norway	662	712	830	2 135	2 745	2 967	3.23	3.85	3.57
Turkey	118	129	140	526	536	646	4.44	4.16	4.62
United States	358	360	. .	1 092	1 244	. .	3.05	3.45	. .
OECD total	**5 201**	**5 507**	**5 200**	**14 269**	**15 699**	**9 889**	**2.74**	**2.85**	**1.90**
Argentina	2	3	3	. .	. .	. .	. .	. .	. .
Chinese Taipei	307	316	320	987	904	997	3.21	2.86	3.12
Russian Federation	. .	. .	. .	. .	. .	. .	. .	. .	. .
Thailand	1 304	1 387	1 388	1 739	2 413	2 216	1.33	1.74	1.60
TOTAL	**6 814**	**7 213**	**7 021**	**16 995**	**19 016**	**13 102**	**2.49**	**2.64**	**1.87**

..: Not available.
1. only Scotland.
Source: OECD.STAT.

Table I.A1.9. **OECD imports of food fish by major product groups and major world regions, 2006 (kg)**

Tonnes	All fish	%	Fish, fresh, frozen, incl. fillets	%	Fish, dried, smoked	%	Crustaceans and molluscs	%	Prepared and preserved	%
Importers										
EU[1]	8 062 772 148	49	4 466 038 867	48	293 172 328	75	1 788 216 099	49	1 515 344 853	49
Japan	3 724 800 300	23	2 449 874 312	26	26 289 843	7	638 515 331	17	610 120 814	20
United States	2 315 883 407	14	968 451 075	10	33 614 621	9	708 411 143	19	605 406 568	20
OECD total	**16 417 126 673**	**100**	**9 296 021 525**	**100**	**388 409 191**	**100**	**3 658 654 946**	**100**	**3 074 041 011**	**100**
Origins										
OECD	6 965 641 093	42	4 675 847 435	50	283 761 720	73	1 061 043 056	29	944 988 882	31
Non-OECD[2]	9 451 485 580	58	4 620 174 090	50	104 647 471	27	2 597 611 890	71	2 129 052 129	69
America	1 944 596 920	21	941 178 322	20	24 289 332	23	687 866 919	26	291 262 348	14
Asia	5 498 417 921	58	2 508 184 831	54	45 414 649	43	1 477 558 651	57	1 467 259 790	69
Europe	924 400 287	10	681 284 480	15	31 207 625	30	179 780 683	7	32 127 499	2
Oceania	108 485 507	1	71 559 916	2	28 698	0	2 072 950	0	34 823 943	2
Africa	1 093 825 575	12	538 379 231	12	4 565 167	4	244 111 472	9	306 769 706	14

1. EU = EU member countries which are OECD members: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Spain, Sweden, UK.
2. The total of the imports from the five non-OECD zones may not correspond to the global figure for non-OECD as a whole, since the latter also includes values from non-specified origin.

Note: Fish, fresh, frozen, including fillets = HS Codes 302, 303, and 304. Fish, dried, smoked = HS code 305. Crustaceans and molluscs = HS codes 306 + 307. Prepared and preserved = HS codes 1604 + 1605.
Source: OECD, *International Trade Statistics Database*, 2009.

Table I.A1.10. **OECD exports of food fish by major product groups and major world regions, 2006 (kg)**

Tonnes	All fish	%	Fish, fresh, frozen, incl. fillets	%	Fish, dried, smoked	%	Crustaceans and molluscs	%	Prepared and preserved	%
Exporters										
EU[1]	5 053 048 128	47	3 285 587 767	44	167 779 660	39	816 835 322	53	782 845 380	65
Japan	530 217 834	5	399 130 009	5	3 059 101	1	31 690 098	2	96 338 626	8
United States	1 340 045 718	13	1 047 359 781	14	34 322 585	8	140 538 851	9	117 824 501	10
OECD total	**10 719 398 452**	**100**	**7 547 644 385**	**100**	**435 701 038**	**100**	**1 538 167 422**	**100**	**1 197 885 607**	**100**
Destination										
OECD	7 381 892 345	69	4 840 142 133	64	316 135 865	73	1 192 787 179	78	1 032 827 168	86
Non-OECD[2]	3 338 933 944	31	2 707 502 253	36	119 565 172	27	345 380 243	22	166 486 276	14
America	259 026 870	8	160 909 548	6	58 752 257	49	27 122 494	8	12 242 571	7
Asia	1 306 438 630	39	953 714 239	35	19 483 430	16	234 919 342	68	98 321 619	59
Europe	1 074 021 446	32	978 950 241	36	4 916 754	4	60 339 181	17	29 815 270	18
Oceania	22 734 503	1	17 692 538	1	112 859	0	1 665 428	0	3 263 677	2
Africa	661 880 199	20	585 281 814	22	35 234 082	29	22 937 481	7	18 426 822	11

1. EU = EU member countries which are OECD members: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Spain, Sweden, UK.
2. The total of the exports to the three OECD zones may not correspond to the global figure for non-OECD as a whole, since the latter also includes values from non-specified origins.

Note: Fish, fresh, frozen, including fillets = HS Codes 302, 303, and 304. Fish, dried, smoked = HS code 305.Crustaceans and molluscs = HS codes 306 + 307. Prepared and preserved = HS codes 1604 + 1605.
Source: OECD, *International Trade Statistics Database*, 2009.

Table I.A1.11. **Imports of fish, crustaceans, molluscs and products thereof by OECD countries according to origin,[1] 2006**

Importing country

USD million	Australia	Canada	Iceland	Japan	Korea	Mexico	New Zealand	Norway	Switzerland	Turkey	United States	**Total EU**
Origin												
Australia	3	3	. .	307	1	. .	6	. .	1	. .	96	**44**
Canada	21	11	9	439	50	15	7	26	8	. .	2 215	**526**
Iceland	1	10	. .	115	10	1	. .	86	6	2	152	**1 361**
Japan	13	18	. .		181	2	2	2	4	. .	210	**45**
Korea	5	7	. .	551	. .	14	2	. .	. .	. .	84	**85**
Mexico	. .	9	. .	85	7	. .	. .	2	. .	. .	486	**34**
New Zealand	130	10	. .	103	18	1	3	1	4	. .	151	**173**
Norway	14	29	26	384	42	11	. .	. .	. .	28	171	**4 038**
Switzerland	1	. .	. .	. .	. .	5	. .	2	. .	. .	. .	**5**
Turkey	. .	1	. .	66	9		. .		2	. .	3	**197**
United States	26	657	1	1 287	143	56	4	63	11	1	. .	**941**
European Union	41	44	9	370	76	1	. .	272	307	6	257	**13 398**
Austria	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	. .	**6**
Belgium	. .	. .	. .	. .	. .	. .	. .	2	6	. .	. .	**531**
Czech Republic	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	**14**
Denmark	19	7	5	66	9	. .	. .	158	69	. .	7	**2 369**
Finland	. .	. .	. .	2	. .	. .	. .	1	. .	. .	. .	**. .**
France	1	3	. .	27	11	1	. .	8	55	4	20	**1 307**
Germany	2	2	1	9	. .	. .	. .	8	55	. .	7	**1 414**
Greece	1	2	. .	18	1	. .	. .	. .	2	1	10	**372**
Hungary	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	**5**
Ireland	1	2	. .	7	11	. .	. .	17	3	. .	10	**436**
Italy	5	5	. .	67	8	. .	. .	1	28	. .	9	**524**
Luxembourg	. .	. .	. .	. .		. .	. .		1	. .	. .	**12**
Netherlands	1	1	. .	25	1	. .	. .	7	38	. .	36	**1 887**
Poland	2	2	1	5		. .	. .	5	8	. .	14	**601**
Portugal	1	5	. .	1	3	. .	. .	1	5	. .	10	**432**
Slovak Republic	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	**8**
Spain	1	5	. .	125	9	. .	. .	1	14	. .	50	**1 424**
Sweden	1	2	. .	1	. .	. .	. .	21	2	. .	2	**574**
United Kingdom	4	9	1	14	23	. .	. .	44	21	1	82	**1 484**
Non-OECD America	47	196	3	1 458	157	106	7	157	10	43	2 893	**4 479**
Non-OECD Asia	541	752	3	6 764	1 447	199	55	57	106	3	6 661	**4 759**
Non-OECD Oceania	10	5	. .	146	1	9	3	. .	. .	. .	102	**70**
Africa	75	7	1	444	38	2	1	19	13	20	165	**3 958**
World	901	1 797	79	13 707	2 555	438	92	834	523	100	14 050	**34 957**

..: Not available.

1. Comprises HS codes 0302-0307, 121220, 1504, 1604, 1605 and 230120.

Source: OECD, *International Trade Statistics Database*, 2006.

Table I.A1.11. **Imports of fish, crustaceans, molluscs and products thereof by OECD countries according to origin,[1] 2006** *(cont.)*

Importing country

USD million	Austria	Belgium	Czech Republic	Hungary	Denmark	Finland	France	Germany	Greece	Ireland	Italy	Luxembourg	Netherlands	Poland	Slovak Republic	Portugal	Spain	Sweden	United Kingdom	**Total OECD**
Origin																				
Australia	3	. .	. .	. .	. .	. .	13	1	4	. .	4	. .	. .	. .	. .	. .	15	. .	5	**463**
Canada	1	52	1	. .	131	4	76	39	3	3	26	. .	12	2	. .	2	39	14	123	**3 327**
Iceland	1	88	1	. .	70	8	113	85	20	10	. .	. .	123	33	. .	33	196	10	571	**1 744**
Japan	1	2	. .	. .	. .	. .	24	6	. .	. .	1	. .	6	. .	. .	. .	3	. .	3	**478**
Korea	. .	4	. .	. .	1	. .	3	2	. .	. .	14	. .	1	. .	. .	. .	54	1	4	**750**
Mexico	. .	1	. .	. .	1	. .	3	1	. .	. .	15	. .	1	. .	. .	. .	13	. .	. .	**623**
New Zealand	1	6	. .	. .	12	. .	28	17	8	1	12	. .	1	3	1	3	64	5	11	**594**
Norway	10	2	8	. .	425	105	504	383	7	2	1	. .	50	305	1	305	115	1 560	256	**4 743**
Switzerland	. .	. .	. .	. .	. .	. .	. .	5	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	**13**
Turkey	1	5	2	1	1	. .	15	10	31	. .	58	. .	28	5	. .	5	32	2	1	**277**
United States	2	42	5		56	1	235	190	5	1	63	. .	46	22	2	22	94	11	143	**3 191**
European Union	250	1 004	76	50	536	100	1 976	1 503	296	164	2 752	80	877	191	27	191	2 044	306	978	**14 780**
Austria	. .	. .	1	1	1	. .	1	2	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	**. .**
Belgium	3	. .	1	. .	10	. .	133	57	8	. .	31	31	150	. .	. .	. .	79	3	24	**539**
Czech Republic	. .	. .	. .	3	. .	. .	2	1	. .	. .	. .	. .	. .	. .	8	. .	. .	. .	. .	**14**
Denmark	31	110	11	6	. .	37	249	414	59	7	433	3	142	65	3	65	201	195	338	**2 709**
Finland	. .	. .	. .	. .	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	**2**
France	10	185	6	6	28	4	28	89	14	3	351	24	53	5	1	5	388	13	95	**1 437**
Germany	143	109	15	11	164	10	134		37	12	152	5	300	28	4	28	54	28	182	**1 499**
Greece	2	2	. .	. .	1	. .	62	18	. .	1	172	. .	6	2	. .	2	72	. .	35	**407**
Hungary	. .	. .	. .	. .	. .	. .	4	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	**5**
Ireland	1	5	3	. .	16	1	119	25	1	8	29	. .	36	8	3	8	93	5	74	**487**
Italy	17	12	4	3	14	1	68	55	46	. .	. .	. .	11	1	1	1	280	1	9	**647**
Luxembourg	. .	4	. .	. .	2	. .	3	1	. .	. .	. .	. .	2	. .	. .	. .	. .	. .	. .	**13**
Netherlands	26	437	6	5	56	3	236	317	52	5	395	10	. .	29	. .	29	241	40	. .	**1 996**
Poland	1	11	21	10	44	. .	64	342	. .	1	17	. .	7	. .	4	. .	2	10	68	**638**
Portugal	5	5	. .	. .	9	. .	63	3	2	1	54	4	3	. .	. .	. .	253	1	30	**459**
Slovak Republic	3	. .	1	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	. .	. .	. .	**8**
Spain	3	19	7	3	14	3	319	68	50	. .	857	1	16	9	2	9	. .	3	40	**1 629**
Sweden	2	25	1	1	116	43	40	19	19	1	120		16	22	. .	22	46	. .	80	**602**
United Kingdom	3	79	1	. .	59	1	451	92	7	126	141	2	136	22	. .	22	335	7	1	**1 684**
Non-OECD America	7	117	9	5	489	1	661	488	30	5	555	. .	45	50	4	50	1 686	7	270	**9 557**
Non-OECD Asia	25	446	34	4	147	23	558	772	60	8	525	1	347	161	11	161	660	88	727	**21 348**
Non-OECD Oceania	7	1	. .	. .	3	. .	11	13	1	. .	15	. .	2	. .	. .	. .	. .	1	15	**345**
Africa	10	119	3	1	8	2	711	173	100	5	647	1	153	10	1	10	1 715	2	287	**4 742**
World	308	1 900	151	64	2 063	258	5 061	3 877	590	200	4 707	84	1 732	841	56	841	6 498	2 025	3 701	**70 034**

..: Not available.

1. Comprises codes SH 0302-0307, 121220, 1504, 1604 1605 and 230120.

Source: OECD, *International Trade Statistics Database*, 2006.

Table I.A1.12. **Exports of fish, crustaceans, molluscs and products thereof by OECD countries according to destination,[1] 2006**

	Exporting country											
USD million	Australia	Canada	Iceland	Japan	Korea	Mexico	New Zealand	Norway	Switzerland	Turkey	United States	**Total EU**
Destination												
Australia	. .	14	1	8	4	. .	142	11	1	. .	48	**44**
Canada	3	. .	8	11	5	4	8	21	. .	. .	837	**32**
Iceland	. .	8	. .	. .	. .	. .	. .	22	. .	. .	1	**40**
Japan	260	302	59	. .	558	57	93	296	. .	45	969	**299**
Korea	1	41	11	188	. .	5	40	40	. .	6	414	**43**
Mexico	. .	3	. .	. .	7	. .	1	10	. .	. .	86	**11**
New Zealand	16	5	. .	19	39	. .	. .	. .	. .	. .	4	
Norway		9	90	1	2	2	. .	. .	. .	. .	28	**307**
Switzerland	1	5	6	4	. .	. .	2	34	. .	. .	13	**328**
Turkey	. .	. .	. .	. .	1	1	. .	39	. .	. .	2	**15**
United States	87	2 253	136	181	79	498	136	150	. .	. .	. .	**220**
European Union	42	478	1 277	30	51	33	156	3 427	6	127	1 038	**15 962**
Austria	. .	. .	. .	. .	. .	. .	. .	5	. .	1	. .	**291**
Belgium	. .	43	63	2	3	. .	8	50	. .	. .	41	**912**
Czech Republic	. .	. .	. .	. .	. .	. .	. .	4	. .	. .	. .	**88**
Denmark	. .	110	71	. .	. .	1	2	520	. .	1	22	**509**
Finland	. .	3	6	. .	. .	. .	. .	109	. .	. .	1	**126**
France	12	57	103	17	2	2	21	605	1	12	164	**2 770**
Germany	1	37	93	. .	2	. .	23	202	3	6	266	**2 006**
Greece	6	3	30	. .	. .	1	8	32	. .	23	5	**284**
Hungary	. .	. .	. .	. .	. .	. .	. .	1	. .	. .	. .	**52**
Ireland	. .	2	7	. .	. .	. .	1	3	. .	. .	1	**227**
Italy	3	22	24	1	12	14	11	222	1	40	65	**2 699**
Luxembourg	. .	. .	. .	. .	. .	. .	. .	1	. .	. .	. .	**78**
Netherlands	. .	28	125	8	2	1	3	195	. .	20	180	**1 045**
Poland	. .	2	22	. .	. .	. .	. .	280	. .	. .	14	**463**
Portugal	1	13	73		1	1	5	282	. .	. .	58	**993**
Slovak Republic	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	**34**
Spain	14	35	202	1	28	14	60	230	. .	24	97	**1 914**
Sweden	. .	14	9	. .	1	. .	4	263	. .	. .	7	**349**
United Kingdom	6	108	449	1	2	. .	10	423	2	. .	119	**1 123**
Non-OECD America	. .	46	3	12	4	8	1	216	. .	. .	86	**252**
Non-OECD Asia	483	405	50	798	179	97	234	316	4	. .	671	**460**
Non-OECD Oceania	3	1		38	2	. .	11	. .	. .	. .	7	**7**
Africa	1	5	55	53	6	. .	22	79	. .	. .	35	**586**
World	905	3 665	1 807	1 355	952	706	869	5 493	14	184	4 376	**19 387**

..: Not available.

1. Comprises HS codes 0302-0307, 121220, 1504, 1604, 1605 and 230120.

Source: OECD, *International Trade Statistics Database*, 2009.

Table I.A1.12. **Exports of fish, crustaceans, molluscs and products thereof by OECD countries according to destination,[1] 2006** *(cont.)*

Exporting country

USD million	Austria	Belgium	Czech Republic	Hungary	Denmark	Finland	France	Germany	Greece	Ireland	Italy	Luxemburg	Netherlands	Poland	Portugal	Slovak Republic	Spain	Sweden	United Kingdom	**Total OECD**
Destination																				
Australia	. .	. .	. .	. .	21	. .	1	2	1	1	4	. .	4	2	2	. .	1	1	4	**273**
Canada	1	. .	. .	. .	3	. .	2	1	2	. .	4	. .	1	1	8	. .	3	1	7	**931**
Iceland	. .	. .	. .	. .	9	. .	. .	23	. .	. .	. .	. .	1	5	. .	. .	. .	. .	1	**71**
Japan	. .	. .	. .	. .	58	1	22	7	16	7	39	. .	30	6	1	. .	101	. .	9	**2 937**
Korea	. .	. .	. .	. .	9	. .	2	1	. .	4	. .	. .	2	1	1	. .	5	. .	19	**788**
Mexico	. .	. .	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	10	. .	. .	**119**
New Zealand	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	**81**
Norway	. .	1	. .	. .	188	1	10	58	. .	. .	. .	. .	7	4	. .	. .	. .	21	18	**439**
Switzerland	. .	1	. .	. .	58	. .	37	55	2	1	23	1	122	8	5	. .	11	2	1	**393**
Turkey	. .	. .	. .	. .	2	. .	3	1	6	. .	. .	. .	1	. .	. .	. .	2	. .	1	**58**
United States	. .	. .	. .	. .	12	. .	12	7	9	5	9	. .	34	13	10	. .	36	3	69	**3 742**
European Union	9	1 102	26	5	2 509	7	1 331	1 676	461	403	509	13	1 810	707	442	7	2 173	1 468	1 307	**22 628**
Austria	. .	6	. .	. .	45	. .	10	166	2	1	20	. .	22	2	5	. .	3	6	3	**297**
Belgium	. .	. .	. .	. .	83	. .	179	108	2	5	12	4	392	12	6	. .	19	25	65	**1 121**
Czech Republic	1	1	. .	. .	14	. .	4	22	. .	3	5	. .	6	21	. .	5	6	3	. .	**92**
Denmark	. .	13	. .	. .	. .	. .	31	168	1	11	1	. .	21	71	3	. .	13	136	40	**1 236**
Finland	. .	1	. .	. .	45	. .	4	8	. .	. .	1	. .	4	1		. .	2	61	1	**245**
France	. .	409	2	5	313	. .	. .	319	66	106	58	5	276	51	79	. .	353	309	419	**3 765**
Germany	5	113	2	. .	578	. .	133		24	34	70	2	355	396	4	. .	79	95	115	**2 640**
Greece	. .	7	. .	. .	64	. .	13	35	. .	1	48	. .	18	. .	2	. .	66	22	8	**392**
Hungary	1	1	3	. .	7	. .	6	9	. .	. .	4	. .	3	11	. .	2	5	1	. .	**53**
Ireland	. .	1	. .	. .	9	. .	11	11	3	. .	. .	. .	5	1	. .	. .	2	2	182	**240**
Italy	3	28	. .	. .	393	. .	385	137	217	27	. .	. .	297	18	52	. .	856	133	152	**3 113**
Luxembourg	. .	32	. .	. .	1	. .	25	5	. .	. .	. .	. .	7	. .	3	. .	1	1	2	**80**
Netherlands	. .	315	. .	. .	193	. .	48	341	19	21	9	1	. .	19	3	. .	19	56	. .	**1 606**
Poland	. .	2	2	. .	118	. .	6	62	. .	6	1	. .	27	. .	. .	. .	9	212	18	**781**
Portugal	. .	8	. .	. .	8	. .	40	23	20	2	1	. .	46	. .	. .	. .	681	141	22	**1 427**
Slovak Republic	. .	. .	18	. .	2	. .		6	. .	1	. .	. .	2	4	. .	. .	1	. .	. .	**34**
Spain	. .	95	. .	. .	152	. .	323	75	70	78	266	1	188	3	268	. .		118	277	**2 618**
Sweden	. .	6	. .	. .	224	7	14	24	. .	6	. .	. .	44	15	1	. .	5		4	**646**
United Kingdom	. .	65	. .	. .	259	. .	100	156	37	100	13	. .	96	82	17	. .	52	146	. .	**2 241**
Non-OECD America	2	1	. .	. .	11	. .	28	2	. .	1	1	. .	5	3	37	. .	49	. .	113	**626**
Non-OECD Asia	. .	1	. .	. .	152	. .	23	14	. .	9	7	. .	90	4	7	. .	105	1	48	**3 697**
Non-OECD Oceania	3	. .	. .	. .	. .	. .	5	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	**69**
Africa	4	11	. .	. .	8	. .	81	13	1	12	11	. .	240	1	23	. .	170	. .	11	**842**
World	12	1 126	27	8	3 227	26	1 581	1 924	524	448	683	15	2 401	780	538	7	2 792	1 543	1 726	**39 714**

..: Not available.

1. Comprises HS codes 0302-0307, 121220, 1504, 1604, 1605 and 230120.

Source: OECD, *International Trade Statistics Database*, 2009.

Table I.A1.13. **OECD imports of food fish by major product groups and major world regions, 2007 (kg)**

Tonnes	All fish	%	Fish, fresh, frozen, incl. fillets	%	Fish, dried, smoked	%	Crustaceans and molluscs	%	Prepared and preserved	%
Importers										
EU[1]	7 981 667 857	45	4 313 702 651	54	301 320 576	78	1 782 366 047	50	1 584 278 583	54
Japan	2 341 342 554	16	1 385 285 212	17	18 942 515	5	532 889 674	15	404 225 153	14
United States	2 295 190 159	15	1 006 218 907	13	34 620 145	9	696 694 535	20	557 656 572	19
OECD total	**14 819 553 022**	**100**	**7 981 046 454**	**100**	**384 865 930**	**100**	**3 538 467 768**	**100**	**2 915 172 871**	**100**
Origins										
OECD	6 417 854 861	43	4 096 421 099	51	284 413 188	74	1 059 394 397	30	977 626 177	34
Non-OECD[2]	8 401 698 161	57	3 884 625 355	49	100 452 742	26	2 479 073 371	70	1 937 546 694	66
America	1 774 891 455	21	772 246 352	20	23 032 971	23	687 243 777	28	292 368 356	15
Asia	4 810 162 721	57	2 076 015 280	53	45 995 972	46	1 397 171 737	56	1 290 979 731	67
Europe	882 667 862	11	647 589 501	17	28 320 415	28	174 639 595	7	32 118 351	2
Oceania	88 664 276	1	50 234 875	1	7 783	0	1 998 533	0	36 423 086	2
Africa	944 324 530	11	439 664 981	11	3 823 100	4	213 921 613	9	286 914 837	15

1. EU = EU member countries which are OECD members: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Spain, Sweden, UK.
2. The total of the exports to the three OECD zones may not correspond to the global figure for non-OECD as a whole, since the latter also includes values from non-specified origins.

Note: Fish, fresh, frozen, including fillets = HS Codes 302, 303, and 304. Fish, dried, smoked = HS code 305. Crustaceans and mollusks = HS codes 306 + 307. Prepared and preserved = HS codes 1604 + 1605.
Source: OECD, *International Trade Statistics Database*, 2009.

Table I.A1.14. **OECD exports of food fish by major product groups and major world regions, 2007 (kg)**

Tonnes	All fish	%	Fish, fresh, frozen, incl. fillets	%	Fish, dried, smoked	%	Crustaceans and molluscs	%	Prepared and preserved	%
Exporters										
EU[1]	4 823 988 502	46	2 886 890 646	40	230 168 574	54	844 309 267	53	862 620 014	74
Japan	581 910 606	6	515 891 195	7	822 259	0	39 802 614	2	25 394 538	2
United States	1 297 003 602	12	1 035 326 973	14	27 093 202	6	126 857 223	8	107 726 204	9
OECD total	**10 487 299 615**	**100**	**7 285 865 923**	**100**	**428 811 328**	**100**	**1 601 608 680**	**100**	**1 171 013 684**	**100**
Destination										
OECD	6 908 376 902	66	4 347 918 201	60	308 767 483	72	1 187 672 129	74	1 064 019 088	91
Non-OECD[2]	3 578 922 713	34	2 937 947 721	40	120 043 845	28	413 936 551	26	106 994 596	9
America	200 162 393	6	92 864 259	3	60 770 831	51	37 944 608	9	8 582 694	8
Asia	1 383 105 171	39	1 057 907 617	36	12 575 867	10	269 804 939	65	42 816 748	40
Europe	1 282 325 432	36	1 163 054 916	40	4 217 744	4	81 626 603	20	33 426 169	31
Oceania	43 037 105	1	37 977 587	1	110 150	0	1 700 880	0	3 248 489	3
Africa	657 800 801	18	578 081 547	20	40 918 736	34	23 575 454	6	15 225 063	14

1. EU = EU member countries which are OECD members: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Spain, Sweden, UK.
2. The total of the exports to the three OECD zones may not correspond to the global figure for non-OECD as a whole, since the latter also includes values from non-specified origins.

Note: Fish, fresh, frozen, including fillets = HS Codes 302, 303, and 304. Fish, dried, smoked = HS code 305. Crustaceans and molluscs = HS codes 306 + 307. Prepared and preserved = HS codes 1604 + 1605.
Source: OECD, *International Trade Statistics Database*, 2009.

Table I.A1.15. **Imports of fish, crustaceans, molluscs and products thereof by OECD countries according to origin,[1] 2007**

Importing country

USD million	Australia	Canada	Iceland	Japan	Korea	Mexico	New Zealand	Norway	Switzerland	Turkey	United States	**Total EU**
Origin												
Australia	2	4	. .	295	1	. .	7	. .	2	. .	99	**27**
Canada	17	9	18	418	52	12	8	39	11	. .	2 235	**639**
Iceland	1	15	. .	118	16	1	. .	120	6	1	130	**1 495**
Japan	12	21	. .		227	4	3	2	2	. .	236	**38**
Korea	6	8	1	512		2	1	5	. .	. .	87	**136**
Mexico		7	. .	105	7	. .	. .	. .	. .	. .	537	**66**
New Zealand	168	10	. .	109	18	3	1	1	3	. .	141	**174**
Norway	22	34	24	442	62	16	. .	. .	33	35	202	**4 219**
Switzerland	. .	. .	. .	. .	. .	9	1	. .	. .	. .	. .	**8**
Turkey	. .	1	. .	86	10	. .	. .	1	1	. .	5	**261**
United States	29	696	1	1 184	134	77	6	102	13	1	. .	**1 183**
European Union	42	41	9	379	73	11		319	356	2	305	**16 021**
Austria	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	. .	**7**
Belgium	. .	. .	. .	. .	. .	. .	. .	1	6	. .	. .	**585**
Czech Republic	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	**15**
Denmark	17	5	6	54	6	. .	. .	203	74	. .	5	**2 327**
Finland	. .	. .	. .	1	. .	. .	. .	1	. .	. .	. .	**23**
France	2	3	1	30	15	1	. .	9	62	. .	19	**1 504**
Germany	3	2	. .	14	1	. .	. .	16	69	. .	7	**1 686**
Greece	1	3	. .	13	2	. .	. .	. .	2	1	13	**480**
Hungary	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	. .	**10**
Ireland	1	2	. .	9	9	. .	. .	10	3	. .	10	**465**
Italy	5	4	. .	76	10	. .	. .	1	29	. .	8	**532**
Luxembourg	. .	. .	. .	. .	. .	. .	. .			. .	. .	**10**
Netherlands	2	2	1	29	1	1	. .	3	67	. .	49	**2 319**
Poland	4	2	1	9	. .	. .	. .	8	12	. .	20	**758**
Portugal	2	6	. .	4	2	. .	. .	1	5	. .	10	**502**
Slovak Republic	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	**10**
Spain	2	4	. .	124	6	9	. .	5	13	1	45	**2 363**
Sweden	. .	. .	. .	1	. .	. .	. .	31	2	. .	3	**787**
United Kingdom	4	8	1	16	21	. .	. .	32	12	1	116	**1 638**
Non-OECD America	53	230	5	1 404	162	128	7	227	11	50	2 957	**4 617**
Non-OECD Asia	609	845	4	6 126	1 536	262	64	70	123	3	6 793	**5 513**
Non-OECD Oceania	13	3	. .	129	2	12	3	. .	. .	. .	103	**89**
Africa	77	8	. .	482	45	2	1	15	17	21	167	**4 475**
World	1 025	1 976	99	12 951	2 811	539	104	1 095	588	108	14 437	**39 735**

..: Not available.

1. Comprises HS codes 0302-0307, 121220, 1504, 1604, 1605 and 230120.

Source: OECD, *International Trade Statistics Database*, 2009.

Table I.A1.15. **Imports of fish, crustaceans, molluscs and products thereof by OECD countries according to origin,[1] 2007** *(cont.)*

Importing country

USD million	Austria	Belgium	Czech Republic	Hungary	Denmark	Finland	France	Germany	Greece	Ireland	Italy	Luxemburg	Netherlands	Poland	Portugal	Slovak Republic	Spain	Sweden	United Kingdom	**Total OECD**
Origin																				
Australia	. .	. .	. .	. .	. .	. .	9	2	2	. .	2	. .	. .	. .	. .	. .	6	. .	7	**438**
Canada	2	49	1	. .	177	5	89	44	3	3	26	. .	13	2	18	. .	42	20	145	**3 458**
Iceland	1	96	2	. .	106	14	94	72	13	12	. .	. .	144	32	46	. .	186	12	663	**1 902**
Japan	. .	. .	. .	. .	. .	. .	16	4	1	. .	2	. .	10	. .	. .	. .	3	. .	3	**544**
Korea	. .	13	. .	. .	1	. .	6	6	. .	. .	27	. .	4	1	4	. .	71	1	3	**758**
Mexico	. .	. .	. .	. .	. .	. .	7	1	4	. .	26	. .	. .	. .	. .	. .	28	. .	1	**723**
New Zealand	1	6	. .	. .	13	. .	25	15	10	1	11	. .	2	4	3	. .	65	5	13	**629**
Norway	11	1	8	. .	397	134	546	354	14	1	3	. .	82	340	58	1	124	1 905	240	**5 089**
Switzerland	. .	. .	. .	. .	. .	. .	1	5	. .	. .	. .	. .	2	. .	. .	. .	. .	. .		**18**
Turkey	1	4	3	1	1	. .	20	21	49	. .	56	. .	46	7	. .	. .	47	2	2	**365**
United States	15	32	7	. .	55	2	228	268	8	3	74	. .	48	24	98	2	136	15	171	**3 428**
European Union	323	1 110	90	56	519	104	2 095	1 598	367	202	2 920	90	970	236	1 278	32	2 340	385	1 305	**17 558**
Austria	. .	. .	1	1	1	. .	. .	3	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	**7**
Belgium	4	. .	1	1	8	. .	137	54	16	1	25	34	192	. .	10	. .	76	3	24	**591**
Czech Republic	1	. .	. .	3	. .	. .	2	2	. .	. .	. .	. .	. .	1	. .	8	. .	. .	. .	**15**
Denmark	37	103	13	6	. .	36	225	398	66	6	408	4	152	73	41	2	211	226	320	**2 697**
Finland	. .	. .	. .	. .	5	. .	. .	1	. .	. .	. .	. .	. .	1	. .	. .	. .	17	. .	**24**
France	12	197	6	4	23	5	23	80	20	8	366	28	51	6	47	1	469	23	136	**1 647**
Germany	188	127	19	13	150	13	145		62	18	183	5	348	50	23	3	60	29	250	**1 799**
Greece	3	3	2	. .	1	. .	71	17	. .	1	224	1	6	1	25	. .	88	. .	39	**514**
Hungary	. .	. .	1	. .		. .	8	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	**10**
Ireland	1	7	2	. .	17	. .	128	26	1	12	31	. .	19	9	2	1	98	5	108	**508**
Italy	23	17	6	3	15	. .	64	53	48	. .	. .	1	15	2	10	1	261	1	13	**665**
Luxembourg		5	. .	. .	1	. .	4	. .	. .	. .	1	. .	1	. .	. .	. .	. .	. .	. .	**11**
Netherlands	36	497	6	5	65	4	263	349	53	5	396	11	. .	35	128	. .	276	43	147	**2 475**
Poland	4	12	23	11	37	1	85	452	. .	1	16	. .	4	. .	. .	5	6	16	84	**814**
Portugal	5	5	. .	. .	8	. .	75	5	3	. .	57	4	3	. .	. .	. .	292	1	44	**531**
Slovak Republic	. .	. .	1	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	6	. .	. .	. .	**10**
Spain	4	22	9	6	8	3	362	64	67	1	922	1	17	11	812	4	. .	7	45	**2 569**
Sweden	2	35	1	1	120	42	44	20	20		128	. .	19	24	160	1	77	. .	93	**823**
United Kingdom	4	81	1	1	62	1	459	75	10	149	162	2	144	24	21		428	15	. .	**1 847**
Non-OECD America	8	115	9	4	544	4	678	556	44	3	590	. .	50	45	47	2	1 747	7	166	**9 851**
Non-OECD Asia	40	517	45	4	155	31	633	928	84	14	619	1	389	224	85	14	776	121	832	**21 950**
Non-OECD Oceania		3	. .	. .	2	. .	16	20	1	1	17	. .	7	2	. .	. .	5	. .	16	**353**
Africa	3	122	3	1	8	2	764	155	116	8	740	1	200	10	148	1	1 887	3	304	**5 308**
World	402	2 097	181	70	2 162	315	5 383	4 216	738	249	5 121	94	2 000	996	1 844	61	7 182	2 486	4 137	**75 469**

..: Not available.

1. Comprises HS codes 0302-0307, 121220, 1504, 1604, 1605 and 230120.

Source: OECD, *International Trade Statistics Database*, 2009.

Table I.A1.16. **Exports of fish, crustaceans, molluscs and products thereof by OECD countries according to destination,[1] 2007**

Importing country

USD million	Australia	Canada	Iceland	Japan	Korea	Mexico	New Zealand	Norway	Switzerland	Turkey	United States	**Total EU**
Destination												
Australia	. .	7	1	9	4	. .	177	18	. .	. .	42	**43**
Canada	3	. .	9	14	5	2	8	23	. .	. .	894	**39**
Iceland	. .	13	. .	. .	1	. .	. .	15	. .	. .	1	**34**
Japan	272	278	63	. .	481	76	89	296	. .	41	798	**292**
Korea	1	37	16	227	. .	5	34	50	. .	9	357	**39**
Mexico	. .	. .	. .	1	6	. .	2	15	1	. .	74	**11**
New Zealand	13	4	1	19	68	. .	. .	1	. .	. .	6	
Norway	. .	17	110	1	1	. .	. .	. .	. .	. .	39	**361**
Switzerland	2	5	8	1	. .	. .	1	32	. .	. .	7	**371**
Turkey	. .	. .	1	. .	. .	1	. .	50	. .	. .	2	**17**
United States	91	2 290	123	215	81	562	118	170	. .	. .	. .	**286**
European Union	24	518	1 466	28	103	60	150	3 809	6	151	1 082	**17 665**
Austria	. .	. .	. .	. .	. .	. .	. .	6	. .	. .	. .	**318**
Belgium	. .	34	66	3	3	. .	8	51	. .	1	30	**987**
Czech Republic	. .	. .	. .	. .	. .	. .	. .	7	. .	. .	. .	**114**
Denmark	1	122	105	. .	1	. .	3	558	1	. .	20	**526**
Finland	. .	4	14	1	. .	. .		126	. .	. .	. .	**144**
France	8	65	96	9	2	9	18	653	1	13	169	**2 828**
Germany	2	39	90	1	3	1	21	207	2	7	241	**2 197**
Greece	4	3	29	1	. .	5	8	46	. .	39	9	**326**
Hungary	. .	. .	. .	. .	. .	. .	. .	1	. .	. .	. .	**78**
Ireland	. .	3	8	. .	. .	. .	1	4	. .	. .	2	**287**
Italy	1	21	22	1	25	19	9	225	1	35	80	**2 935**
Luxembourg	. .	. .	. .	. .	. .	. .	. .	2	. .	. .	. .	**88**
Netherlands	. .	29	144	9	2	1	4	247	. .	25	175	**1 234**
Poland	. .	2	20	. .	1	. .	. .	316	. .	. .	12	**480**
Portugal	. .	17	113	. .	5	. .	4	388	. .	. .	63	**1 204**
Slovak Republic	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	**37**
Spain	5	36	201	2	58	25	57	247	. .	31	137	**2 103**
Sweden	. .	20	11	. .	1	. .	5	285	. .	. .	11	**394**
United Kingdom	5	124	545	1	2	1	13	440	2	1	132	**1 386**
Non-OECD America		47	5	13	10	26	1	252	. .	. .	107	**143**
Non-OECD Asia	494	361	42	947	307	93	265	382	4	. .	791	**515**
Non-OECD Oceania	3	1		50	2	. .	11	. .	. .	. .	12	**7**
Africa	1	3	59	59	11	. .	41	110	1	. .	31	**708**
World	910	3 694	2 030	1 603	1 099	826	924	6 241	15	202	4 410	**21 516**

..: Not available.

1. Comprises HS codes 0302-0307, 121220, 1504, 1604, 1605 and 230120.

Source: OECD, *International Trade Statistics Database*, 2009.

Table I.A1.16. **Exports of fish, crustaceans, molluscs and products thereof by OECD countries according to destination,[1] 2007** *(cont.)*

Exporting country

USD million	Austria	Belgium	Czech Republic	Hungary	Denmark	Finland	France	Germany	Greece	Ireland	Italy	Luxemburg	Netherlands	Poland	Portugal	Slovak Republic	Spain	Sweden	United Kingdom	**Total OECD**
Destination																				
Australia	..	..	..	..	17	..	1	3	1	2	4	..	3	4	2	..	2	1	4	**301**
Canada	..	..	..	..	4	..	4	1	2	..	4	..	4	2	8	..	2	1	8	**997**
Iceland	..	..	..	..	8	..	..	17	..	..	..	..	2	7	..	..	..	..	1	**63**
Japan	..	..	..	..	45	1	17	8	10	5	31	..	33	8	3	..	124	..	8	**2 688**
Korea	..	..	..	..	8	..	1	1	..	7	..	..	1	..	..	..	4	..	18	**774**
Mexico	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	9	..	..	**111**
New Zealand	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	**111**
Norway	..	2	..	..	237	1	11	55	..	..	1	..	6	6	..	..	4	30	8	**529**
Switzerland	..	1	..	..	72	..	49	65	2	1	26	..	122	11	5	..	12	2	3	**428**
Turkey	..	..	..	..	1	..	6	1	5	..	..	..	2	..	..	..	2	..	1	**71**
United States	..	1	..	..	14	..	16	11	11	7	8	..	49	18	11	..	34	4	104	**3 937**
European Union	15	1 142	31	..	2 532	18	1 529	1 853	532	429	521	14	2 079	832	519	5	2 491	1 525	1 596	**25 061**
Austria	..	5	2	..	45	..	12	186	3	1	25	..	19	1	5	..	3	6	5	**324**
Belgium	..	..	..	..	80	..	196	106	2	7	15	4	458	14	5	..	20	18	61	**1 181**
Czech Republic	1	1	..	..	15	..	5	28	2	2	7	..	10	28	..	3	7	6	1	**121**
Denmark	..	16	..	..	..	1	29	160	1	17	1	..	23	47	2	..	12	173	45	**1 335**
Finland	..	1	..	..	52	..	3	11	..	..	..	..	5	2	..	..	3	65	1	**289**
France	..	370	2	..	275	1	..	335	75	117	57	6	318	58	80	..	409	278	446	**3 872**
Germany	9	111	2	..	598	1	152		24	32	73	2	379	488	4	..	89	96	137	**2 809**
Greece	..	8	..	..	62	..	18	42	..	2	57	..	24	..	4	..	74	25	10	**468**
Hungary	2	1	3	..	5	..	4	12	..	..	4	..	3	15	..	3	24	1		**79**
Ireland	..	1	..	..	12	..	14	13	4	..	1	..	7	2	2	..	3	2	226	**305**
Italy	2	23	..	..	392	..	421	146	258	27	..	1	365	27	58	..	951	95	168	**3 375**
Luxembourg	..	36	..	..	2	..	29	5	..	..	..	..	9	..	4	..	1	1	1	**90**
Netherlands	1	382	..	..	195	..	50	353	18	13	10	1	..	17	4	..	22	48	119	**1 870**
Poland	..	3	1	..	99	..	7	96	..	5	2	..	43	..	..	..	9	202	14	**831**
Portugal	..	8	..	..	19	..	36	24	22	2	1	..	43	..	..	..	800	225	24	**1 794**
Slovak Republic	1	..	20	..	3	..	..	5	..	1	..	..	..	4	..	..	2	1	1	**37**
Spain	..	79	..	..	164	..	388	85	84	86	252	1	199	3	308	..		123	331	**2 903**
Sweden	..	7	..	..	244	16	20	20	..	6	..	..	48	21	1	..	6		7	**728**
United Kingdom	..	91	..	..	269	..	144	225	40	112	18	..	126	104	43	..	56	159	..	**2 650**
Non-OECD America	..	1	..	..	12	..	6	3	..	..	2	..	6	1	48	..	61	..	4	**603**
Non-OECD Asia	..	1	..	..	147	..	34	13	1	5	6	..	94	9	6	..	136	1	61	**4 202**
Non-OECD Oceania	..	..	..	..	..	..	5	..	..	..	1	..	..	..	..	..	1	..	..	**86**
Africa	..	15	..	..	10	..	95	13	1	27	18	..	249	2	31	..	223	..	25	**1 024**
World	21	1 175	35	1	3 328	45	1 810	2 097	603	488	726	15	2 739	934	636	6	3 249	1 628	1 980	**43 469**

..: Not available.

1. Comprises HS codes 0302-0307, 121220, 1504, 1604, 1605 and 230120.

Source: OECD, *International Trade Statistics Database*, 2009.