

Moroccan Fishery Products Exports On the World Market

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List of acronyms in French and English

- CAPI** : Industrial Fish Approval Unit
- DPM** : Department of Maritime Fishing
- FAO** : Food and Agriculture Organization
- SWOT** : Strengths, Weaknesses, Opportunities, and Threats
- OFIMER** : National Inter-professional Office of Fishery and Aquaculture Products
- OC** : Foreign Exchange Office

Introduction

The fishery sector plays a major socio-economic role and is one of the pillars of the national economy. The foreign currency inflow and the wealth it generates means it is a strategic sector, not only in sustaining macroeconomic stability, but also in making a dynamic contribution to the country's development in terms of employment (with more than 660,000 jobs that provide a living for some 3 million people), food security and income, as well as in creating momentum for other sectors of the national economy.

Thanks to its abundant fishery resources and its privileged geographical position, Morocco is one of the top African countries in the production and export of fishery products. In 2011, Moroccan exports of fishery products amounted to MAD 11.7 billion, comprising 58% of food products exports and 6.8% of overall exports.

While significant, these achievements do not yet reflect the potential of a sector that offers considerable opportunities to boost export competitiveness. Indeed, given the considerable fishery resources of our coastline, the closeness to potential markets, notably in Europe, the free trade agreements signed with foreign partners, and the large experience gained by Moroccan operators in processing and packaging fishery products, Morocco has a solid competitive advantage on the international fishery products market. Moreover, the implementation of major sector based development plans, such as the Halieutis Plan, the Green Morocco Plan, the Emergence Plan, the Rawaj Plan and the Logistics Plan, as well as the structuring measures undertaken, should contribute, directly and indirectly, to improved competitiveness in the sector of fishery products exports.

Nevertheless, the sector's improved competitiveness can only be achieved by better understanding the sector's potential, capitalizing on the sector's strengths, addressing its weaknesses and constraints to its development, and finally putting in place specific and adequate public support mechanisms.

To this end, this document aims to assess the performance of Moroccan fishery products exports, and identify opportunities for further development. First and foremost, this document will draw up a map of the fishery products export sector by analyzing the breakdown of exports in terms of products and markets, and trends in the sector. Then, the focus will be on the assessment of the performance of Moroccan fishery products exports on the international market, and on breaking down trends into structure and performance effects, with a special interest in the main products exported and the main target markets.

The study of markets with a demand for fishery products around the world will also be included, to assess the export destinations Morocco has chosen and identify destinations with strong growth potential.

The final part of this document consists of a SWOT analysis of the fisheries export sector, and will highlight the sector's constraints, weaknesses, opportunities and threats.

1. Overview of trends in international fishery products trade

The study of recent production trends in the fishery and aquaculture sector around the world, has confirmed the on-going growth in overall production worldwide (fish, crustaceans and molluscs), which reached 145 million tons in 2009. However, in the last ten years, production in capture fisheries has levelled off, with an annual average of 90 million tons, while production in aquaculture has grown from 38 million tons in 2000 to 55.1 million tons in 2009.

World fishery production is increasingly processed through international marketing channels (38.5% in 2009 against 25% in 1976). According to the FAO, exports of fish and other fishery products reached \$95.4 billion in 2009, 4% more than in 2007 and nearly double 1998 exports (\$51.5 billion). Such a trend is the result of an increase in international demand, especially in rich countries that currently receive around 80% of exports.

Table 1: General overview of world fishery market in the last 3 years

	2007	2008	2009	2010 ¹ estim.
	million tons			
Production	139.8	142.3	145.1	147.7
Capture Fisheries	89.9	89.7	90	89.8
Aquaculture	49.9	52.5	55.1	57.2
Market value and Volume (in \$ million)	52.9 92.8	52.2 102	54.9 95.4	55.3 101.9

Source: FAO

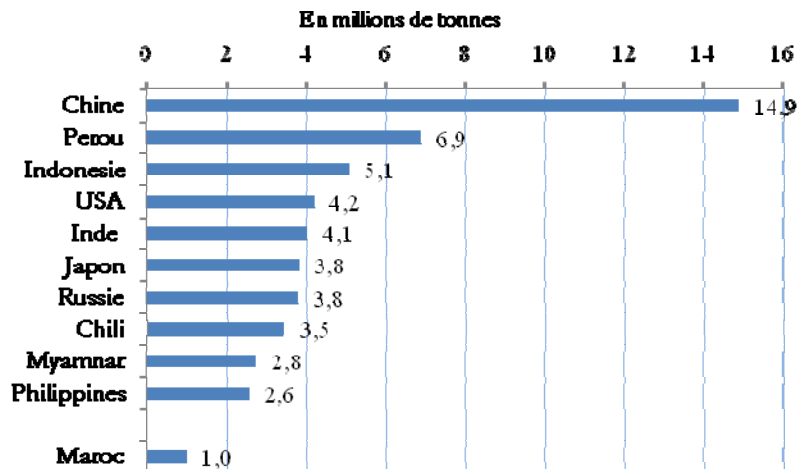
Trade in fishery products includes a large range of products. In terms of value, prawns remain the product most in demand, with 15% of all fishery products traded worldwide in 2009. The other top species exported comprise salmon and trout with 14% of overall trade, groundfish (hake, cod, ...) with 9.4%, and tuna with 8.3%. Moreover, in 2009 fishmeal and fish oil accounted for 3.8% and 1.1% of exports respectively.

1.1. Main producing countries

World fishery production largely depends on a number of major producing countries, such as China and Peru which have topped the list since 1999, with respective shares of 16.6% and 7.7% in 2009. Indonesia comes third after overtaking the U.S.A in 2007. For its part, Morocco currently produces around 1 million tons, which amounts to 1% of world production.

¹ Official FAO statistics do not go beyond 2009, given that as of 2010 the FAO faced more difficulties in gathering national statistics on fisheries. Some data gathering programs on national fisheries have probably been discontinued or reduced, like other publicly funded schemes, as a result of the 2009 world recession.

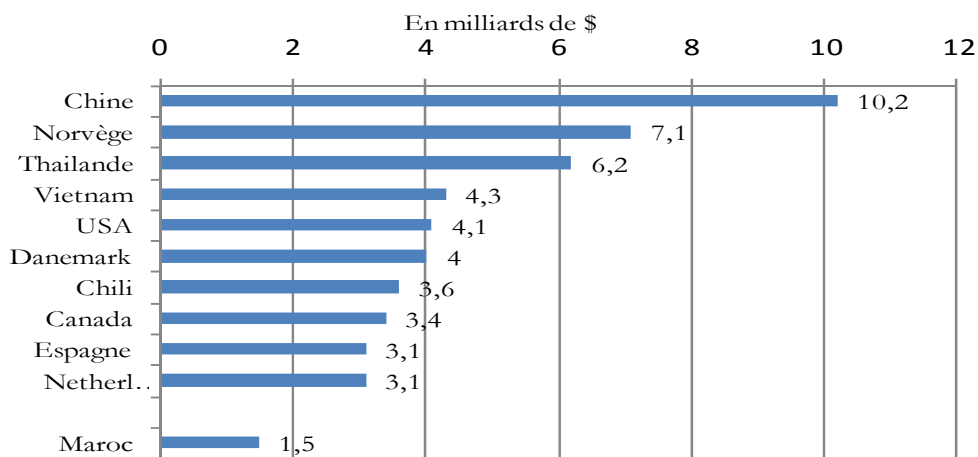
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Graph 1: Main countries producing fishery products in 2009 (capture fisheries)

Source: FAO

1.2. Main exporting countries

China is by far the largest exporter of fishery products with 10.6% of overall fishery products exports that amounted to \$ 96 billion in 2009. Norway, Thailand, and Vietnam follow behind with 7.4%, 6.5%, and 4.5%, respectively. Furthermore, the contribution to world fishery products exports of developing countries is considerable, with nearly half of the overall volume exported. Nevertheless, these countries remain heavily dependent on markets in the developed world that offer the main export opportunities for fishery products.

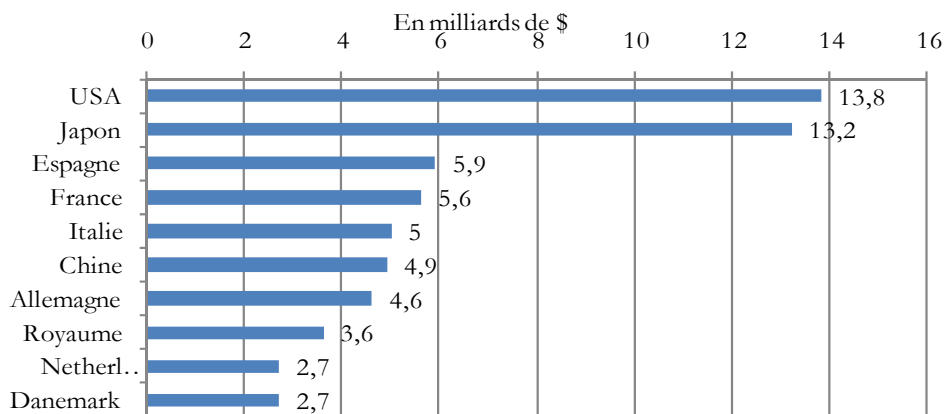
Graph 2: Main countries exporting fishery products in 2009

Source: FAO

1.3. Main importing countries

The largest part of world exports of fishery products is headed for developing countries, with nearly 80% of overall fishery imports in 2009. The U.S.A tops the ranking of importing countries with 13.8% of overall world imports, a position Japan held for 30 years. In 2009, Japan came second with 13.2%, followed by EU countries led by Spain and France with 5.9% and 5.6%. In this regard, the U.S market should offer opportunities for Moroccan exporters under the free trade agreement signed by Morocco and the U.S.A.

Graph 3: Main countries importing fishery products in 2009



Source: FAO

1.4. Trade flow

With regard to fishery trade between geographical regions, most of the trade takes place between developed countries, despite the fact that an increasing share of fishery products traded is supplied by developing countries. The largest share of fishery products exported by developed countries, expressed in market value (80% in 2009), is destined for other developed countries. Likewise, nearly half of fishery products imports by developed countries come from other developed countries. Special mention is made of the significant trade level between European countries, as 84% of exports by the European Union in 2009 were destined for other countries within the Union.

Trade between developing countries accounts for a mere 25% of the value of fishery exports in these countries. This trade level remains low, given the advantages derived from regional agreements signed in different regions around the world (Africa, Latin America, and Asia).

In this regard, it appears that obstacles to the growth in fishery products exports from developing countries have more to do with the capacity to abide by import requirements regarding quality and food safety, than with customs duties. Furthermore, measures on sustainable development adopted by some major importing countries to promote the health of animal stocks, environmental norms, and socially fair trade, have somewhat held back such growth. Finally, the lack, or the weakness of, appropriate infrastructure and logistics in producing countries is another obstacle to the promotion of fishery products exports (see Box 1: Case of the sardine market).

Box 1: Trends on the international sardine market and performance of Moroccan exports

According to FAO statistics, the international sardine market has seen significant changes in the last two decades. In 1988, three countries dominated the sardine market: Peru, Japan, and Chile. After 1988, landings of pilchard, the better quality of sardine, dropped rapidly (1.5 million tons in 1997), while pilchard catches in Morocco remained at the same level.

Furthermore, the fishing of sardinella, the lesser quality of sardine, developed at the end of the 1990s along the West African coastline, particularly in the territorial waters of Senegal and Mauritania, with the arrival of European freezer trawlers. Frozen sardinella is a cheap source of proteins for African countries as well as a good raw product for the canning industry, replacing pilchard.

Morocco is currently the first producer of sardines (*Sardina pilchardus*) with nearly half of all sardines landed in the world, followed by Spain. However, around three quarters of Morocco's production go to by-products, which does not yield the best return. As to processing destined for human consumption, it is essentially centered on canned sardines, even though the consumption of fresh sardines is on the increase, especially in Morocco.

On the world market, sardine is marketed in two main ways, canned sardines and fresh or frozen sardines. Morocco is by far the world's top exporter of canned sardines, but its production volume fluctuates significantly as a result of irregular supply to processing units. In Europe, the main producers are Spain and Portugal with 25,000 tons each, followed by France with 10,000 tons, even though the production in European Union countries is in steady decline. But Spain and France are the consumer markets for canned sardines.

For fresh or frozen sardines, most of the trade takes place within the European community, Portugal, Spain and Italy being the main exporting countries. Morocco's supply to the international market remains limited, due to the following factors:

- significant needs of the canning industry in the country;
- reduced landings following the imposition of biological rest periods;
- mediocre product quality due to the shift to remote fishing areas in the south and to the inadequate upgrading of fishing fleets, which means that fish catch is not processed and preserved in good conditions.

Recent efforts made in different regions of the world to modernize and upgrade equipment and production should improve product quality and competitiveness, and help develop new products to meet changing demand (e.g.: filleted sardines). In this regard, other more marketable opportunities for sardine are emerging, besides canning, especially in the growing market of ready-to-eat fishery products, such as terrines, pâtés, marinades, and other new products.

2. Trends and map of Moroccan fishery products exports

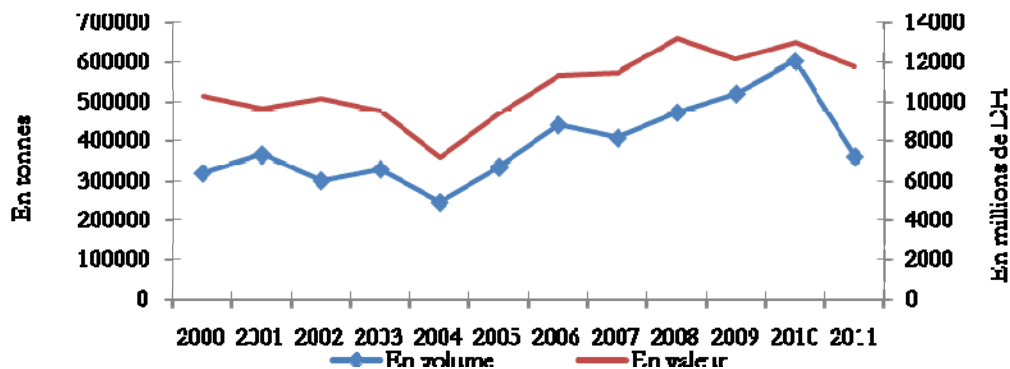
The exclusive Moroccan economic zone is endowed with large and varied fishery resources, comprising around 500 species distributed along the country's coastline, with small pelagic species accounting for the largest part of production (over 80% of all catches).

In terms of trade in fishery products, Morocco is one of the most dynamic exporting countries. Canned sardine is its showcase product, granting Morocco its position as a world leader on this market as well as a significant share of fishery products exports around the world.

2.1. Trends in fishery products exports

Moroccan fishery products exports enjoyed an upward trend between 2004 and 2010, both in volume and market value, with a peak of MAD 13.2 billion in 2008. The decline in market value seen in 2009 (-7%), despite the steady increase in the volume of exports (+10%), is mainly due to the drop in prices on the international market. Moreover, a sizable drop in the volume of exports occurred in 2011 (-40% in volume and -9% in market value), reflecting a fall in fishery production, especially in pelagic fish production.

Graph 4: Trends in Moroccan fishery products exports



Source: Department of Maritime Fishing

2.2. Analysis of the breakdown of exports

The market value of exports is essentially derived from three main product types: frozen products (41%), canned and semi-cured products (38%), and fresh products (13%).

As seen in the table below, the introduction of a variable in the analysis of this breakdown leads to the conclusion that four products make up 77% of all exports. These products are frozen cephalopods (27%), canned pelagics comprising mainly sardines (37%), fresh fish, white fish and other fish types (8%), frozen crustaceans, mainly peeled prawns (6%).

Table 2: Breakdown of Moroccan fishery products exports according to processing and to species in MAD million (2008-2011 averages)

	Fresh	Frozen	canned and semi-cured	fish oil and fishmeal
Pelagics	115 (1%) ^{***}	601* (5%) ^{***}	4634** (37%) ^{***}	1006 (7%) ^{***}
White fish	371 (3%) ^{***}	149 (1%) ^{***}		
Cephalopods	74 (1%) ^{***}	3436 (27%) ^{***}		
Crustaceans	532 (4%) ^{***}	725 (6%) ^{***}		
Other	498 (4%) ^{***}	174 (1%) ^{***}		
Total	1590 (13%)^{***}	5085 (41%)^{***}	4707 (38%)^{***}	1007 (8%)^{***}

Source: OC

* Despite making up a small part of the overall value of fishery products exports, the value of exports of frozen pelagics, which include mainly frozen sardines, has increased in the last ten years.

** This processing type mostly comprises canned sardines and, to a lesser extent, semi-cured anchovies. *** Average percentage of overall value of fishery products exports (2008-2011).

Moroccan fishery products are sold in many countries around the world, and have made inroads into Africa in recent years. But the European market remains the main outlet for nearly 70% of Moroccan fishery products exports.

As to exports to Africa, they nearly tripled between 2000-2011, from MAD 570 million to MAD 1,530 million, peaking at MAD 1,900 million in 2009. The African market still offers enormous opportunities for Moroccan exports.

It should also be noted that fishery products exports to Asia, notably to Japan, have dropped over the last ten years, to stand at MAD 727 million in 2011, against MAD 2,700 million in 2000 (- 73%).

Table 3: Trends in Moroccan fishery products exports by destination between 2000 and 2011

year	Average													Average
Destination	2000	2001	2002	2003	2004	2005	2000-2005	2006	2007	2008	2009	2010	2011	2006-2011
UE	6 376	6 088	6 015	6 237	5 107	6 991	4 971	7 938	7 967	9 017	8 334	8 630	8 242	8 268
Rest of Europe	71	168	109	226	90	299	111	329	346	477	491	557	517	446
Asia	2 700	1 966	2 659	1 450	417	952	1 532	831	1 069	1 117	973	961	727	946
Middle East	174	297	256	326	264	214	220	369	324	333	449	403	230	351
America	346	332	310	358	323	341	278	430	363	549	587	723	437	512
Africa	571	771	805	908	914	1 096	662	1 354	1 361	1 656	1 561	1 902	1 535	1 559
Oceania	15	18	21	24	25	39	17	36	28	32	24	44	60	37
TOTAL In MAD million	10254	9 640	10174	9 528	7139	9932	7 789	11287	11458	13183	12422	13221	11747	12 135

Source: DPM

2.3. Map of exports by main market and product (2008-2011)

The largest part of Moroccan fishery products is exported to the European Union (77% of the overall market value of fishery products between 2008 and 2011). As shown in the table below, exports headed for Europe comprise frozen products (notably cephalopods and crustaceans) with 45%, canned and semi-cured pelagics with 30%, and fresh fish with 17%. Geographical proximity is one of the main factors for the predominance of the European market.

Africa is the second largest market with 11% of overall exports, overtaking Asia whose imports of Moroccan fishery products began to drop in 2003.

However, exports to the African market mostly comprise canned pelagics which make up 86% of all exports, due notably to geographical distance and lack of adequate transport logistics.

A similar concentration is noticeable with the Japanese market where frozen products make up 76% of all fishery products exports to Asia.

Table 4: Matrix and breakdown of fishery products exports by main markets and products in MAD million (2008-2011 averages)

	E.U (MAD 8,560)				Africa (MAD 1,654)				Asia (MAD 900)			
	Fresh	Frozen	Canned and semi-cured	Fishmeal and fish oil	Fresh	Frozen	Canned and semi-cured	Fishmeal and fish oil	Fresh	Frozen	Canned and semi-cured	Fishmeal and fish oil
Pelagics	43	157	2487 ¹	523	128	1425	35		52	15		
White fish	340	131			40							
Cephalopods	74	2799 ³							552 ⁵			
Crustaceans	532	725 ⁴										
Other	473	-			54							
Total	1462 2	3877	2559	526	193	1426	35		102	687	-	-

1 This figure essentially comprises canned sardines exported notably to France and Germany, with some exports heading for the Italian and Spanish markets in recent years, as well as semi-cured anchovies destined for Italy, Spain, and France.

2 In 2011, the Netherlands have overtaken Spain as the first market for this product.

3 and 4 The main bulk of these exports are headed for Spain.

5 This market is dominated by Japan.

This analysis shows that the breakdown of Moroccan fishery products exports by product and market produces the ranking below:

Table 5: Map and breakdown of Moroccan fishery products exports by product and destination between 2008 and 2011 (in market value)

	UE	Africa	Asia
Frozen cephalopods	22%*		5%*
Canned pelagics	20%*	11%*	
Fresh fish	8%*		
Frozen crustaceans		6%*	

* Average percentage for each product on each specific market, in the overall market value of Moroccan fishery products exports.

2.4. Explanatory factors for trends in fishery products exports: breakdown into performance effect and structural effect

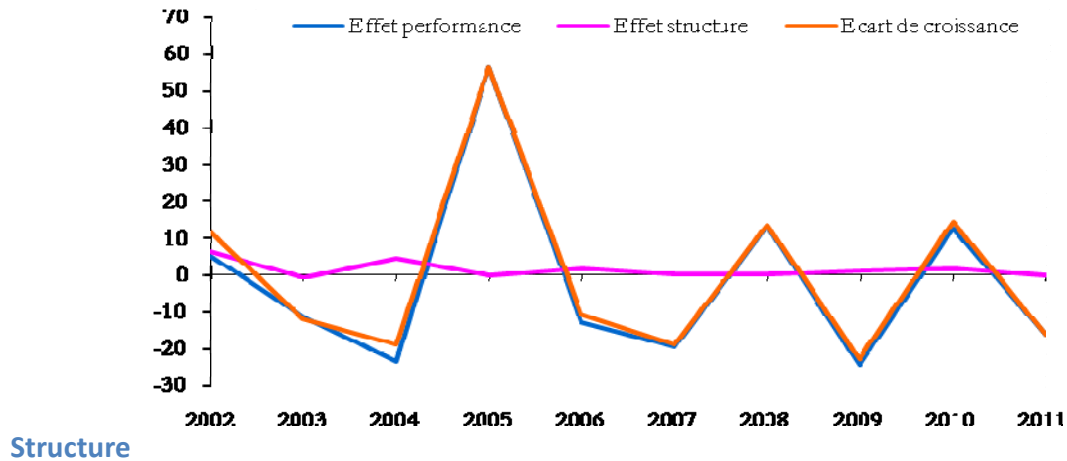
To understand the performances and counter-performances of fishery products exports over the last ten years, export trends are broken down into two effects: structural effect and performance effect (cf. Annex 1).

The structural effect is obtained by disregarding the impact of differences in performance from one period to the next, and taking into account differences in the breakdown by product only. The structural effect obtained is made manifest when the growth rate of a country's exports increases or drops, due to greater exposure to a type of product with a growing or shrinking market.

The performance effect is obtained by disregarding structural divergences, taking into account rises and falls in performance only. The effect measures the increase or decrease in exports, other things being equal, that is an unchanged breakdown by product.

Thus, the breakdown of trends in fishery products exports between 2002 and 2011 yields the conclusion that growth trends are primarily the result of a strong performance effect. The structural effect only explains the growth gap to a lesser extent. For instance, for a positive growth gap of 56.3 points in 2005, compared to 2004, the structural effect only accounts for 0.1 point, while the performance effect accounts for 56.2 points.

Graph 5: Breakdown of trends in growth gap in fishery products exports into performance effect value and structural effect value



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
performance effect	5,2%	-11,3%	-23,1%	56,2%	-12,8%	-19,2%	13,2%	-24,2%	12,6%	-16,1%
structural effect	6,3%	-0,5%	4,4%	0,1%	2,0%	0,2%	0,2%	1,4%	2,0%	-0,1%
growth gap	11,5%	-11,9%	-18,7%	56,3%	-10,8%	-19,0%	13,4%	-22,8%	14,6%	-16,2%

Structural effect and performance effect by product

The findings of the breakdown of growth gaps in fishery products into structural and performance effects from one year to the next presented in the tables below show that:

- the structural effect by fishery product type exported between 2000 and 2011
- Shows a relatively stable trend, which indicates that the breakdown of fishery products remained stable or unchanged.
- Given its low impact, the positive structural effect has not helped close the negative growth gap seen over several periods.
- The positive performance effect achieved in 2005 compared to 2004, and in 2010 compared to 2009, is the result of the positive contribution of frozen products, while growth achieved in 2008 compared to 2007 is attributed to improved performance, first in canned products, and second in frozen products.

Table 6: Trends in annual growth gaps in fishery products exports

	Growth gaps									
	2002-2001	2003-2002	2004-2003	2005-2004	2006-2005	2007-2006	2008-2007	2009-2008	2010-2009	2011-2010
Canned products	-1,2%	0,8%	-3,6%	6,2%	0,3%	-8,2%	7,0%	-3,6%	1,5%	-9,3%
Semi-cured products	-0,1%	0,8%	-1,5%	1,0%	-0,2%	-1,1%	1,2%	0,2%	-0,7%	0,0%
Fish meal and fish oil	-7,7%	5,4%	-3,0%	3,8%	-0,6%	-2,3%	3,5%	-1,3%	1,3%	-6,5%
Frozen products	24,2%	-21,0%	-7,4%	38,2%	-8,4%	-5,5%	5,9%	-21,1%	12,5%	-1,5%
Fresh or live fish	-3,8%	2,2%	-3,3%	6,3%	-1,7%	-0,8%	-4,0%	1,8%	0,9%	0,5%
Other	0,1%	0,0%	0,0%	0,8%	-0,2%	-1,1%	-0,2%	1,2%	-0,9%	0,5%
Total	11,5%	-11,9%	-18,7%	56,3%	-10,8%	-19,0%	13,4%	-22,8%	14,6%	-16,2%

Table 7: Impact of performance effect in accounting for annual growth gaps in fishery products exports

	Performance effect									
	2002-2001	2003-2002	2004-2003	2005-2004	2006-2005	2007-2006	2008-2007	2009-2008	2010-2009	2011-2010
Canned products	-2,0%	0,6%	-3,9%	5,7%	1,0%	-8,2%	7,1%	-3,6%	1,3%	-9,2%
Semi-cured products	-0,2%	0,8%	-1,6%	1,0%	0,0%	-1,1%	1,2%	0,2%	-0,8%	0,0%
Fish meal and fish oil	-12,2%	5,9%	-3,5%	3,9%	-1,4%	-2,4%	3,6%	-2,3%	0,6%	-6,5%
Frozen products	23,5%	-20,8%	-10,9%	38,8%	-10,7%	-5,7%	5,4%	-21,0%	11,6%	-1,4%
Fresh or live fish	-4,0%	2,2%	-3,2%	6,2%	-1,5%	-0,7%	-3,9%	1,4%	0,9%	0,5%
Other	0,1%	0,0%	0,0%	0,7%	-0,1%	-1,1%	-0,3%	1,2%	-1,0%	0,5%
Total	5,2%	-11,3%	-23,1%	56,2%	-12,8%	-19,2%	13,2%	-24,2%	12,6%	-16,1%

Table 8: Impact of structural effect in accounting for annual growth gaps in fishery products exports

	Structural effect									
	2002-2001	2003-2002	2004-2003	2005-2004	2006-2005	2007-2006	2008-2007	2009-2008	2010-2009	2011-2010
Canned products	0,8%	0,1%	0,3%	0,6%	-0,6%	0,0%	-0,1%	0,1%	0,2%	-0,03%
Semi-cured products	0,1%	0,0%	0,1%	0,1%	-0,1%	0,0%	0,0%	0,0%	0,1%	-0,01%
Fish meal and fish oil	4,6%	-0,5%	0,5%	-0,2%	0,7%	0,1%	-0,2%	1,0%	0,7%	0,00%
Frozen products	0,7%	-0,2%	3,6%	-0,6%	2,3%	0,2%	0,5%	0,0%	0,9%	-0,01%
Fresh or live fish	0,2%	0,0%	-0,1%	0,1%	-0,2%	-0,1%	0,0%	0,4%	0,0%	-0,02%
Other	0,0%	0,0%	0,0%	0,1%	-0,1%	0,0%	0,1%	0,0%	0,0%	0,02%
Total	6,3%	-0,5%	4,4%	0,1%	2,0%	0,2%	0,2%	1,4%	2,0%	-0,07%

Thus, it appears that the make-up of Moroccan fishery products exports has not helped overcome effects linked to counter-performance on the international market. Indeed, even if the structural effect remains positive, it is too slight to counter the performance effect.

3. Trends in Moroccan fishery products exports on the international market

3.1. The European Union market

3.1.1. Trends in Moroccan fishery products exports on the EU market

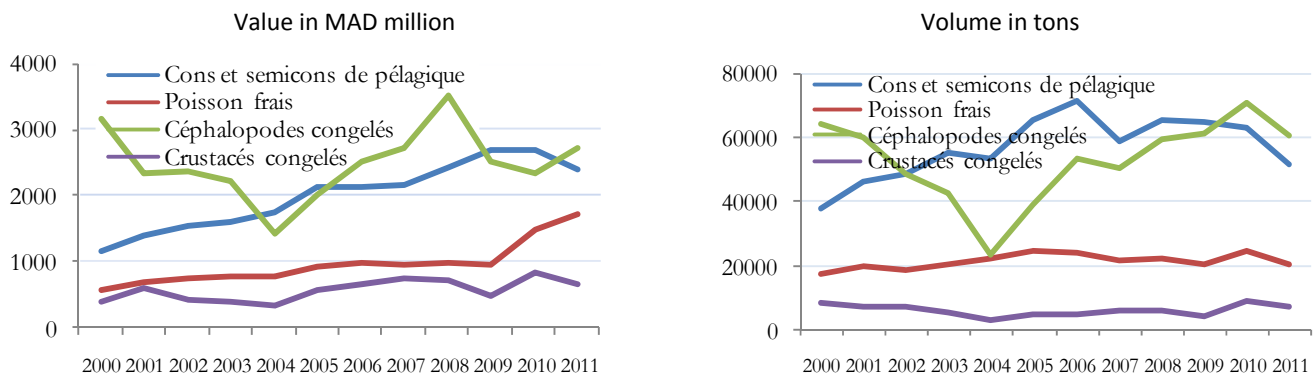
Trends in Moroccan exports of frozen cephalopods to the EU market between 2000 and 2011 show a considerable increase in market value between 2004 and 2008, leaping from MAD 330 million to MAD 760 million over this period, thanks to the increase in volume exported, notably to Spain. The drop in market value seen in 2009 and 2010 is due to the fall in the price of octopus. In this regard, it should be noted that Moroccan exports of frozen cephalopods to Spain in market value, comprise octopus (75%) and squid and cuttlefish (25%). Moreover, despite the 14% drop in export volume seen in 2011, compared to 2010, the market value of these exports increased (+ 16%).

Likewise, exports of canned and semi-cured pelagics rose steadily between 2000 and 2010, following the increase in tonnage exported to the EU, combined with the rise in prices seen since 2005. The drop registered in 2011 is due to a fall in tonnage exported.

As to frozen crustaceans, the growing market value of exports since 2004 is essentially attributed to the rising prices of frozen prawns on the international market, concurrent with a growing demand for such a product.

Exports of fresh fish have developed steadily between 2000 and 2009, both in terms of volume and market value, and registered an increase in market value of 55% in 2010 and 16% in 2011, following the rise in prices on the international market.

Graph 6: Trends in fishery products exports on the EU market (volume and market value)



Source: Department of Maritime Fishing

3.1.2. Main EU countries importing Moroccan fishery products: Spain as top client

The European market is still the main market for Moroccan fishery products exports, with Spain at the top with 46% of all exports headed for the EU, followed by Italy with nearly 16%.

In terms of specific products, Spain is Morocco's first client for frozen cephalopods and crustaceans, with a 71% share. In 2011, the Netherlands overtook Spain to become the top client for fresh fish with a 44% share. For canned and semi-cured fish, four important markets stand out: Spain, Italy, France, and Germany.

Table 9: Ranking of main EU countries importing Moroccan fishery products (2011)

Share in value of exports headed for the EU									
Share in overall exports		Share in exports of frozen products		Share in exports of fresh products		Share in exports of canned products		Share in exports of semi-cured products	
Spain	46%	Spain	71%	Netherlands	44%	Italy	29%	Italy	29%
Italy	16%	Italy	14%	Spain	41%	Spain	18%	Spain	28%
Netherlands	12%	Netherlands	5%	Portugal	6%	France	17%	France	28%
France	8%	Portugal	3%	BLEU	6%	Germany	15%		
Germany	6%								

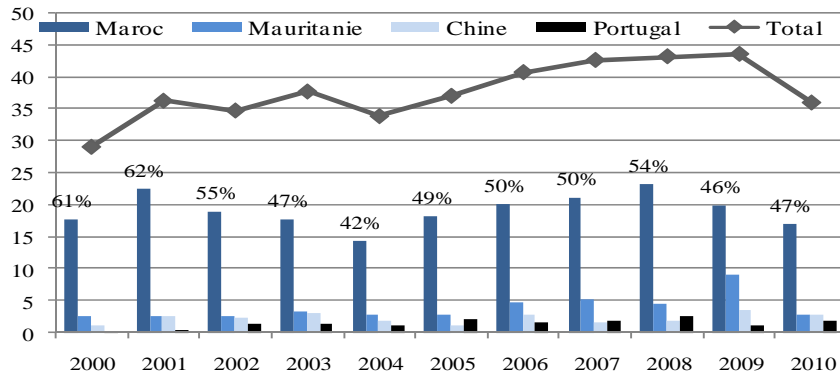
Source: Department of Maritime Fishing

3.1.3. The frozen cephalopods market

While Japan remains the top importer of cephalopods in the world, Spain and Italy are claiming increasingly larger shares of the market. Overall Spanish imports of frozen cephalopods coming from different regions of the world essentially comprise squid and cuttlefish (88%) and octopus (12%).

Frozen octopus mainly comes from West Africa, with Morocco topping the list of exporting countries with an average market share of nearly 55% in the last decade, followed by Mauritania. However, despite growing demand for frozen octopus from Spain over the same period, Morocco's market share suffered a sizeable drop between 2001 and 2004, to stand at 42% in 2004 compared to 62% in 2001, following a reduction in the country's production of octopus (see Figure 8). Subsequently, Morocco's market share picked up somewhat and reached 47% in 2010.

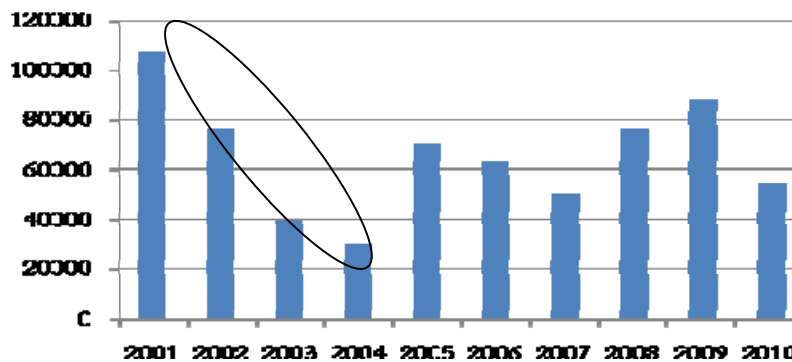
Graph 7: Trends in Spanish imports of frozen octopus by main countries of origin (tons)



Source: Comtrade

It should also be noted that fishing levels in Morocco, one of the main producers of octopus in the world, have reached their limits. Such a development will limit supply to freezing plants, resulting in an increase in prices in view of the ever-growing demand for octopus.

Graph 8: Trends in the production of cephalopods in Morocco (tons)

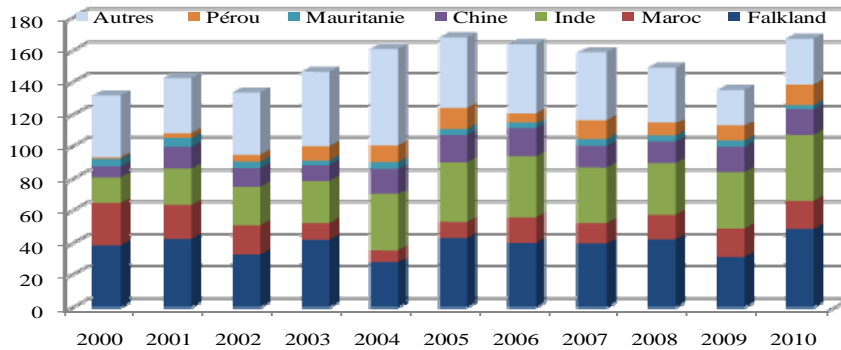


Source: Department of Maritime Fishing

New trade regulations on the fishing of undersized octopus will also have an impact on production and exports, helping replenish fish stocks. However, these regulations will initially cut the level of supply.

With regard to squid and cuttlefish, the Falkland Islands were Spain's top supplier of squid and cuttlefish up until 2008 (30% of imports). India took over this top position in 2009 and 2010, with a 26% market share. Considered one of the main suppliers of these products, Morocco nevertheless suffered a significant drop in market share over the last ten years, sliding from 20% in 2000 to 10% in 2010.

Graph 9: Trends in Spanish imports of frozen squid and cuttlefish by main countries of origin (1000 tons)



Source: Comtrade

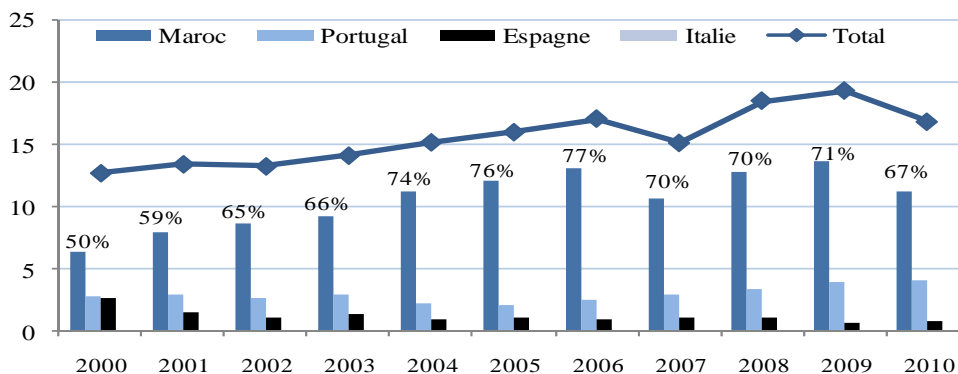
3.1.4. The fish canning market

In Morocco, fish canning is mainly centered on sardines (91%), mackerel (7%), and tuna (2%). In terms of destination, Europe receives nearly 44% of Morocco’s canned fish exports, followed by Africa with 39%, the Middle East with 12%, and finally the American continent with 5%.

Imports of Moroccan canned sardines have a significant place on EU markets, especially in France, Spain, and Germany. In 2010, out of 33,000 tons of canned sardines imported by these 3 countries, 23,000 tons came from Morocco (70%). These markets are important outlets for Moroccan canned sardines, absorbing nearly 20% of the overall volume of exports of this product. Morocco enjoys a dominant position on these markets, even though its development is dependent on demand in each of these countries.

Thus, the French market mainly receives imports from Morocco (a 67% market share) and from Portugal (20%). Spain and Italy’s shares on this market are limited, and have even dropped over the last ten years, even though French imports of canned sardines have steadily increased over the same period. In 2010, out of a total of 16,700 tons of canned sardines imported by France, 11,300 tons came from Morocco, while Portugal supplied most of the remaining volume.

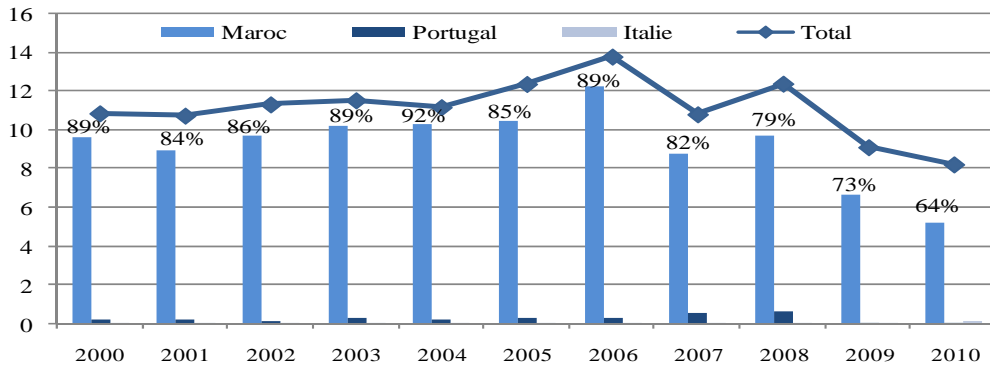
Graph 10: French imports of canned sardines by main countries of origin (1000 tons)



Source: Comtrade

With regard to Germany, Morocco remains its main supplier of canned sardines, with an average share of 64% of German imports, even though Morocco's share has steadily decreased since 2006 (89% of overall German imports).

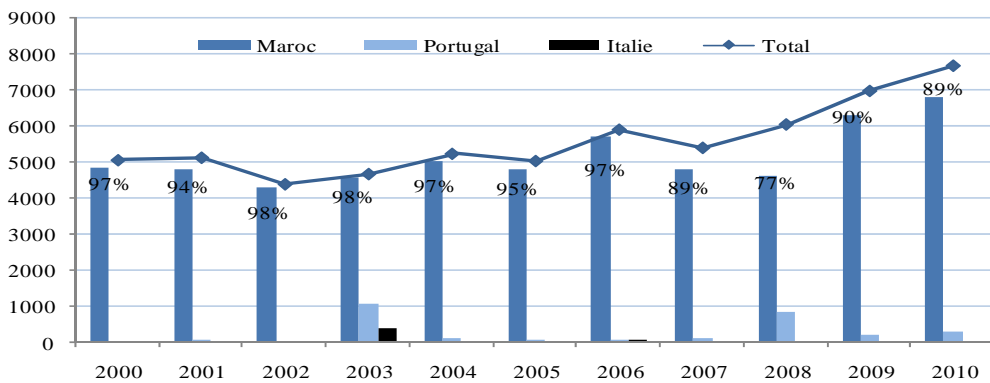
Graph 11: German imports of canned sardines by main countries of origin (1000 tons)



Source: Comtrade

As to Spain, Morocco remains its main supplier of canned sardines, with a share of nearly 95% of Spanish imports. However, Morocco's share dropped slightly in 2007 and 2008, standing at 77% in the latter year, compared to 97% in 2006. This drop was offset by the increase in Morocco's share on the Portuguese market. Since 2009, Morocco's share on the Spanish market has recovered and reached nearly 90% in 2009 and 2010.

Graph 12: Spanish imports of canned sardines by main countries of origin (1000 tons)



Source: Comtrade

3.1.5. The frozen crustaceans market

Spanish imports of frozen crustaceans come from different countries, headed by Argentina (15%), the United Kingdom (10%), and China (9.6%). Spanish imports have increased steadily over the last ten years, in response to growing demand. However, despite this growth in demand, Morocco's share on the Spanish market dropped from 7% in 2000 to 4% in 2008, and was lost to other competitors on the market, such as Argentina, Belgium, and China.

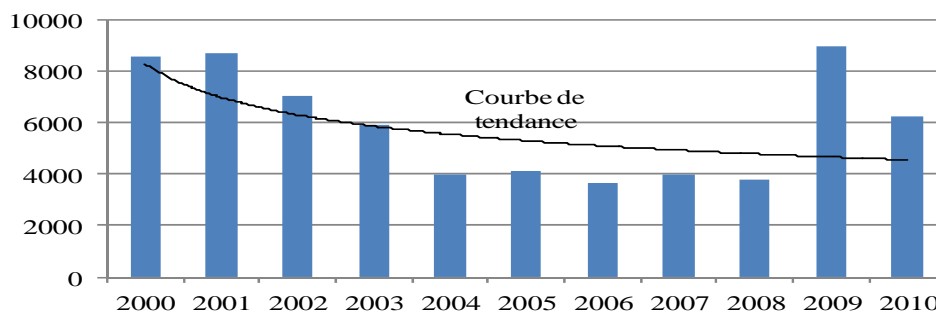
Table 10: Spanish imports of frozen crustaceans by main countries of origin (tons)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Market share (2000-2010)	TCA M
Countries within U27													
United kingdom	16290	17380	20866	21750	20956	18746	17470	18678	15451	15159	14736	10%	-1%
France	5743	3766	3350	4743	4286	4980	4182	7284	5301	3950	4455	3%	-3%
Portugal	3963	4154	3945	4227	2551	3031	3159	4255	4806	4183	4859	2%	2%
Belgium	2468	2366	3589	2960	2909	3575	4818	3622	4814	3921	4175	2%	5%
Countries outside U27													
Argentina	18732	37337	33441	29987	20745	5399	24698	34052	28552	36251	42709	15%	9%
China	17862	14856	2909	1305	2927	26759	29214	28269	27311	25841	22745	10%	2%
Morocco	10771	9660	9313	9299	6575	7337	6764	7681	7353	6469	5405	4%	-7%
Mozambique	5152	4627	4175	3850	3714	4584	4633	5652	4016	3415	4147	2%	-2%
Tunisia	4276	2599	2575	2000	2185	2078	2278	1628	1139	1187	2327	1%	-6%
Total imports	143708	162059	159093	177911	176776	190555	216313	218035	204312	193669	202397	100%	3%

Source : Comtrade

This drop in Morocco's market share is attributed to the fall in the country's production of prawns that make up the bulk of Moroccan exports of frozen crustaceans to Spain. Indeed, following the reduction of fish stocks and the introduction of fishing quotas, landings of prawns have been cut by half in recent years, falling from 8,606 tons in 2000 to 4,200 in 2008. Although its production of prawns picked up in 2009, Morocco has not been able to regain its market share, achieving less than 3% in 2009 and 2.5% in 2010.

Graph 13: Trends in landings of prawns in Morocco (tons)



Source: Department of Maritime Fishing

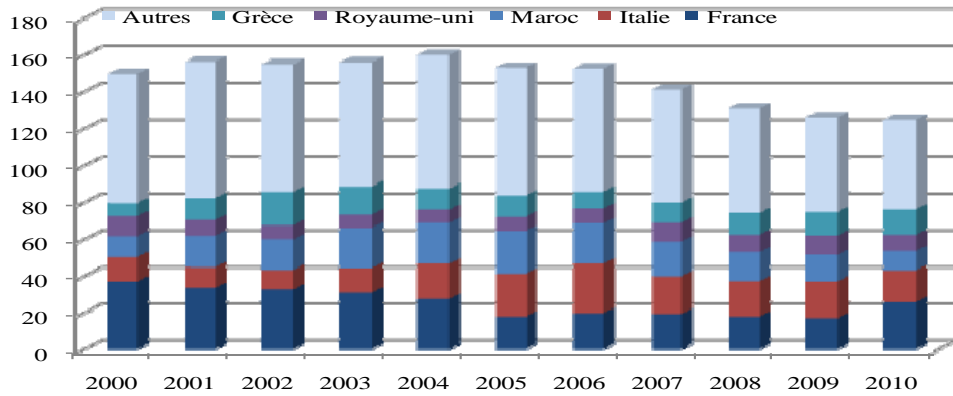
3.1.6. The fresh fish market

Morocco is, alongside France, Italy, the United Kingdom, Namibia, Greece and Denmark, one of Spain's main suppliers of fresh fish. Unlike Denmark, which exports mainly salmon and tuna to Spain, Morocco's exports of fresh fish to Spain comprise mainly demersal fish. Morocco's main competitors on this market segment are France, Italy, Namibia, and the United Kingdom.

Trends in market shares of Spain's main suppliers of demersal fish show Morocco's improved performance up to 2005, with a market share of 15% in the same year, compared to 8% in 2000. Since then, the country's market share has declined steadily, to stand at 8% in 2010. While Italy has also suffered a similar

decline, dropping from 18% in 2006 to 14% in 2010, France's market share has picked up significantly, climbing from 14% in 2006 to 21% in 2010.

Graph 14: Trends in Spanish imports of fresh demersal fish by country of origin (1000 tons)



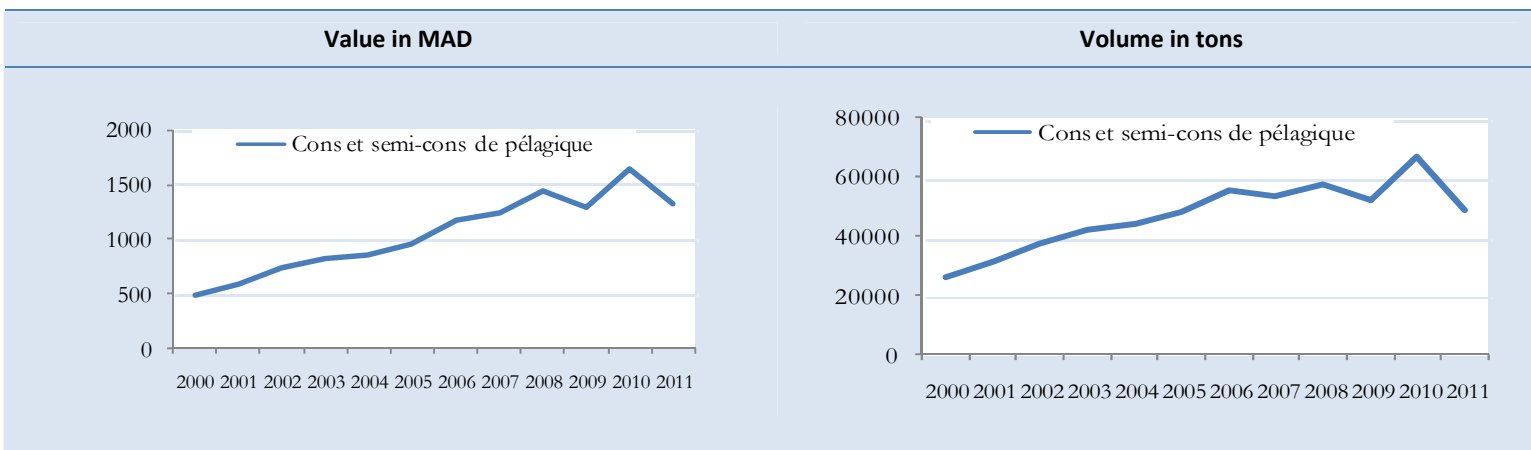
Source: Comtrade

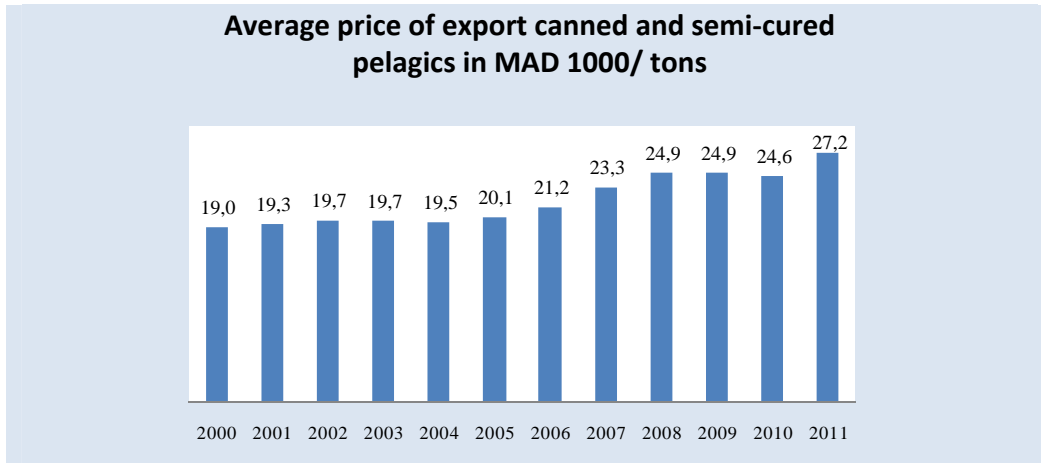
3.2. The African market

3.2.1. Trends in Moroccan fishery products exports to Africa

Exports of canned and semi-cured pelagics to Africa have increased between 2000 and 2011, despite the drops in volume exported in 2007, 2009, and 2011. However, prices of export canned and semi-cured fish have increased slightly since 2005.

Graph 15: Trends in exports of canned and semi-cured pelagics to the African market (volume and market value)





Source: Department of Maritime Fishing

On the African and Middle Eastern markets, Moroccan exports comprise only canned sardines and are only headed for Nigeria, Angola, and Syria, with market shares fluctuating from year to year.

Table 11: Morocco's main customer markets in Africa and the Middle East

Parts dans les exportations totales de conserves de sardines					
	2006	2007	2008	2009	2010
Syria	6%	3%	5%	8%	6%
Nigeria	1%	5%	6%	5%	8%
Angola	4%	3%	7%	1%	5%
Guinea	0,50%	1%	1%	3%	1%

Source: Comtrade

Shares in overall exports of canned sardines

3.2.2. The canned fish market

In terms of outlets for Moroccan canned fish on the African market, Nigeria stands out. Nigeria is one of the most populated countries in Africa, where fish is the primary food source for animal proteins. Nigerians consume 2.1 million tons of fish, but only produce 30% of it.

Nigeria is the largest importer of fish in Africa and one of the largest import markets for small pelagics in the world, with volumes imported in the hundred of thousand tons a year. Nigeria also imports frozen fish, such as mackerel, sardinella, hake, herring, mullet, caught on the West African coast (Senegal, Mauritania), and in the North Sea. Nigeria's main suppliers include Spain, the Netherlands, Russia, Denmark, Ireland, and Norway.

Moroccan fish exports to Nigeria basically comprise canned sardines, a market share of 15% to 40%. This is mainly due to deficient logistics and poor efforts to promote Moroccan products on this market.

Table 12: Nigerian imports of canned fish (tons)

	2000	2001	2002	2003*	2006	2007	2008	2009	2010
Overall imports of canned fish	804	748	3.651	4.011	4.750	5.676		9.573	23.455
Overall imports of canned sardines	126	429	110	233	1.502	1.961	2.794	1.974	5.525
Imports of canned sardines from Morocco	-	129	-		459	188	822	-	-

In the last years, the origin of Nigeria's imports of canned sardines has changed from one year to the next. From 2006 onwards, Nigeria has significantly increased its imports of this product, with 1,502 tons in 2006, compared to 233 tons in 2003, and Morocco has become one of its main suppliers. Nevertheless, Morocco's market share remains relatively modest and volatile; fluctuating from 30% in 2006 to 10% in 2007, then back to 30% in 2008. In 2009 and 2010, Morocco did not feature among the main suppliers of the Nigerian market and fell behind other countries such as South Africa, Singapore, and Australia. In this regard, Moroccan exporters should focus on Nigeria, a country that offers great potential for growth, and should provide stable and sustainable exports.

Table 13: Origin of Nigerian imports of canned sardines between 2006 and 2010 (tons)

2006		2007		2008		2009		2010	
Morocco	459	Bangladesh	909	Morocco	822	Bangladesh	675	Bangladesh	2472
Spain	288	China	421	Bangladesh	632	China	362	China	1509
China	353	Morocco	188	Arab Emirates	553	India	222	South Africa	510
Thailand	126	Belgium	151	China	207	Australia	333	Singapore	351
South Africa	97			Brazil	84	Ireland	149	Australia	308
India	95							France	114
								Brazil	105
Total	1.502	Total	1.961	Total	2.794	Total	1.974	Total	5.525

Source: Comtrade

Besides Africa, Middle East is a big market for Moroccan exports of canned sardines (see Box 2)

Box 2: The canned sardine market in the Middle East

In the Middle East, Morocco's canned sardine exports are exclusively headed for one country in the region, Syria. Morocco enjoys a dominant position on the Syrian market, and basically meets all the demand for canned sardines. Over the last decade, Morocco's share of the Syrian market for canned sardines was nearly 95%.

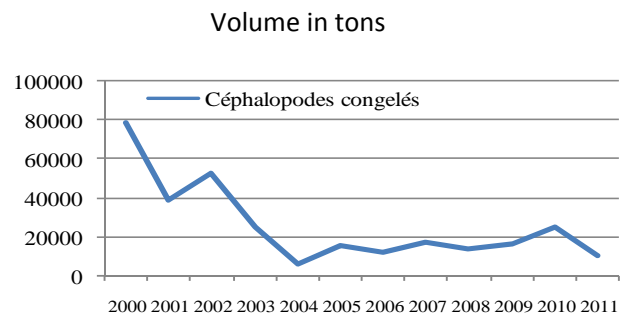
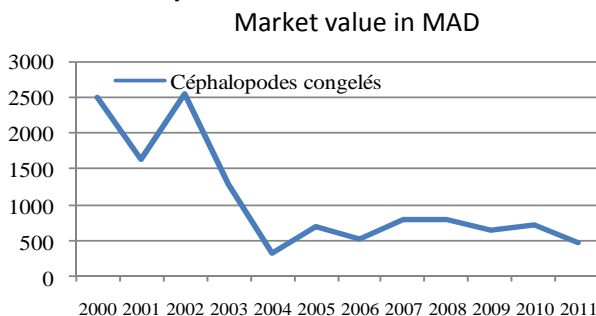
Table 14: Syrian imports of canned fish (kg)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Overall imports of canned fish	6.202	12.115	12.799	13.50	11.696	17.028	16.424	13.628	22.288	17.548
Overall imports of canned sardines	---	6.990	7.729	9.473	5.026	9.122	8.426	7.566	10.567	8.011
Imports from Morocco (100% sardines)	3.510	6.990	7.723	9.173	5.026	8.765	7.647	7.167	10.303	7.567

Source : Comtrade

3.3. The Asian market**3.3.1. Trends in Moroccan fishery products exports to the Asian market**

Dominated by Japan, the Asian market was since the 1990s the main importer of Moroccan frozen cephalopods. However, since 2002 the volume of Moroccan exports has dropped significantly, following a sharp fall in exports to Japan. This is due to a drastic reduction in catches of octopus caused by long periods of overfishing. Consequently, if this trend continues, the drop in exports of cephalopods to the Asian market means that exports of Moroccan octopus risk being outpaced by exports from more competitive producers, such as Mauritania.

Graph 16: Trends in Moroccan exports of main fishery products to the Asian market (volume and market value)

Source: Department of Maritime Fishing

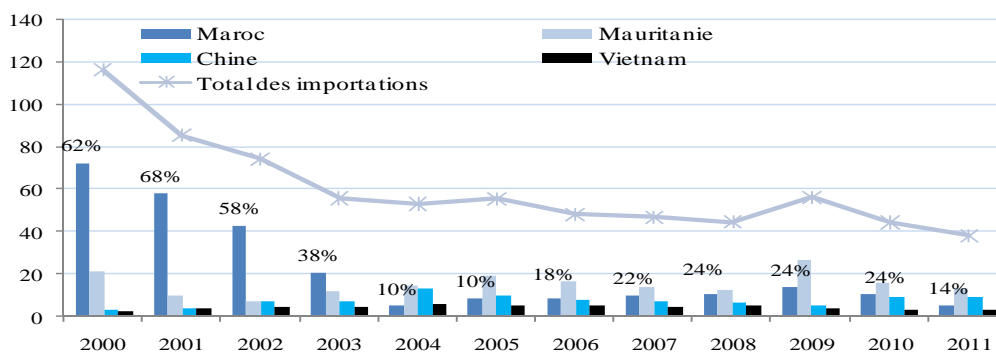
3.3.2. The Japanese market for frozen cephalopods

On the international market, Japan remains the main importer of cephalopods, despite the strong fluctuations seen from year to year and clear downward trends resulting from the economic recession gripping the country.

Thus, Japan imports on average 60,000 tons of cephalopods, mainly from Morocco and Mauritania, out of the average 300,000 tons produced annually around the world over the last ten years. In market value, Moroccan exports of frozen cephalopods to Japan comprise essentially octopus (90%).

Furthermore, as presented in the graph below, trends in Japanese imports of octopus by main country of origin highlight the decline of the market share of Morocco, hitherto ranked as the top supplier. Morocco's market share dropped from 68% in 2001 to 14% in 2010, including a drastic low in 2004 with a market share of 10% of all octopus imports. Mauritania and China, Morocco's two main competitors on the market, have capitalized on such a setback, significantly increasing their respective market shares from 18% and 3% in 2000 to 35% and 24% in 2011.

Graph 17: Trends in Japanese imports of frozen octopus by main country of origin (1000 tons)



Source: Comtrade

The decline in Moroccan exports of octopus to the Japanese market results from a fall in demand caused by the economic recession, as well as from a drop in octopus production in Morocco due to the ever increasing pressure on fish stocks. Indeed, landings of cephalopods in Morocco, comprising mainly octopus, shrank from 108,000 tons in 2001 to a minimum volume of 30,000 tons in 2004. Furthermore, despite the increase in production seen in recent years, with 89,000 tons in 2009 and 54,548 in 2010, Morocco's market share has continued to decline as a result of falling demand on the Japanese market.

4. Dynamics of world demand for fishery products by country and by fish species: case studies of main species exported by Morocco

The performance of Moroccan fishery products exports is dependent on external factors linked to the dynamics of the international market (supply, demand, trade), among other factors. This section aims to analyze trends in international demand for fishery products by country over the last decade, based on case

studies of the main products exported by Morocco. This will help identify and rank the main importers, as well as the main promising markets, to boost Moroccan exports of fishery products.

4.1. Pelagics

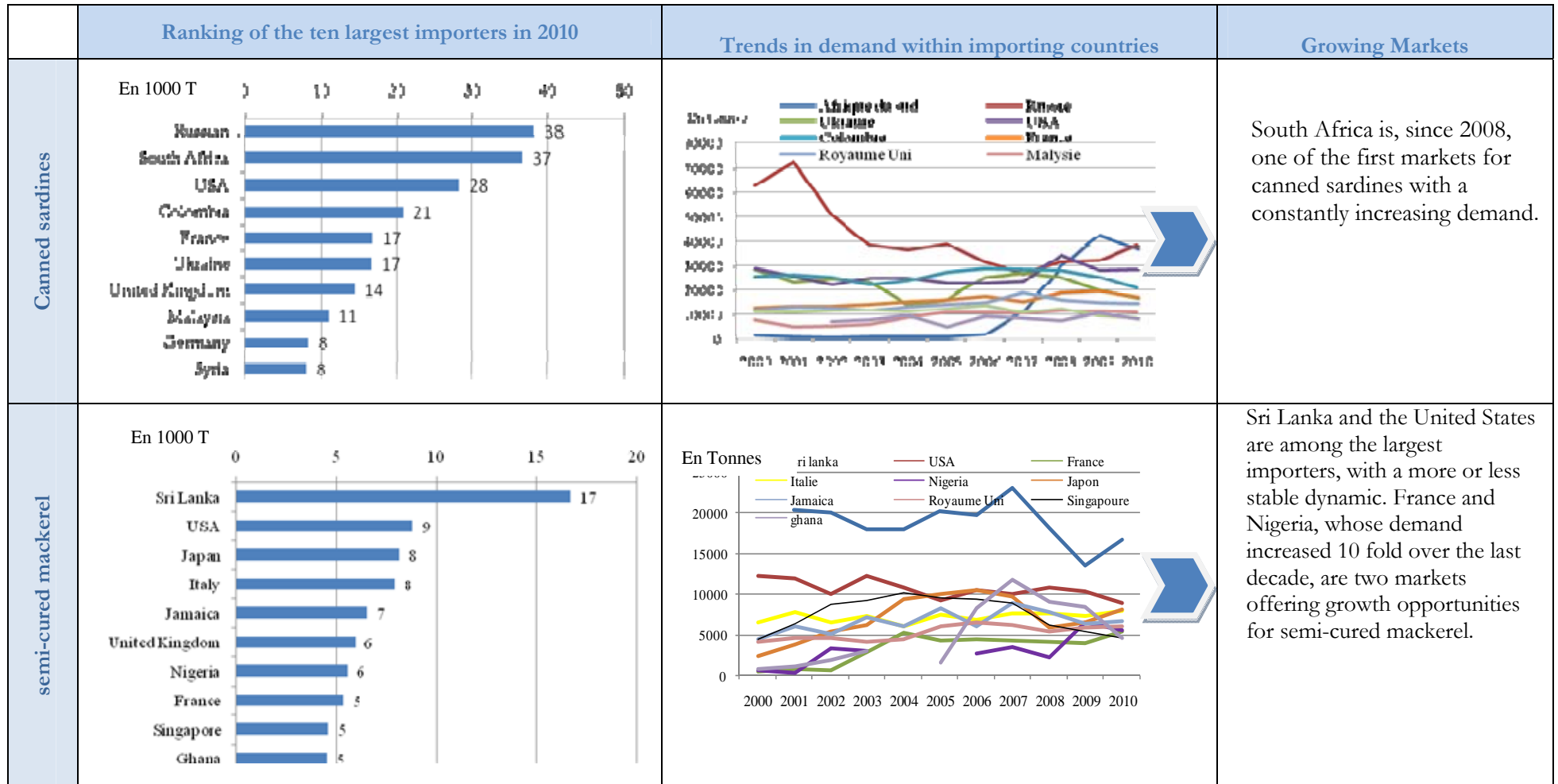
For pelagics, the study will be limited to canned sardines and semi-cured mackerel which make up the bulk of Moroccan exports.

The dynamics of world demand show that the Russian Republic has been the largest importer of canned sardines in the world (70,000 tons in 2001), followed by the United States, Colombia, and Ukraine. Since 2001, Russian imports have decreased to level off around 30,000 tons between 2006 and 2009. In 2010, Russian imports picked up again and rose by nearly 18%.

South African imports of canned sardines have steadily and significantly increased since 2006, reaching 37,000 tons in 2010. In 2009, South Africa was the largest importer of canned sardines in the world, while it is currently the second largest importer behind Russia.

World imports of semi-cured mackerel are dominated by Sri Lanka, with 16,700 tons in 2010, followed by the United States. Recent trends in demand for such a product around the world highlight the emergence of new markets, notably France and Nigeria, with imports that have been multiplied by 10 over the last decade, to reach 5,000 tons in 2010. Elsewhere, the demand for canned mackerel remains strong and relatively stable in Japan, Jamaica, and in Europe, especially in Italy, the United Kingdom, and Spain.

Graph 18: Dynamics of world demand for canned pelagics



4.2. Frozen cephalopods

Octopus

With more than 116,000 tons in 2000, Japan was the largest importer of frozen octopus in the world. However, its share was cut by nearly two thirds, to stand at 45,000 tons in 2010. Conversely, South Korea's imports more than doubled over the same period and reached 65,000 tons in 2010, making it the largest importer in the world.

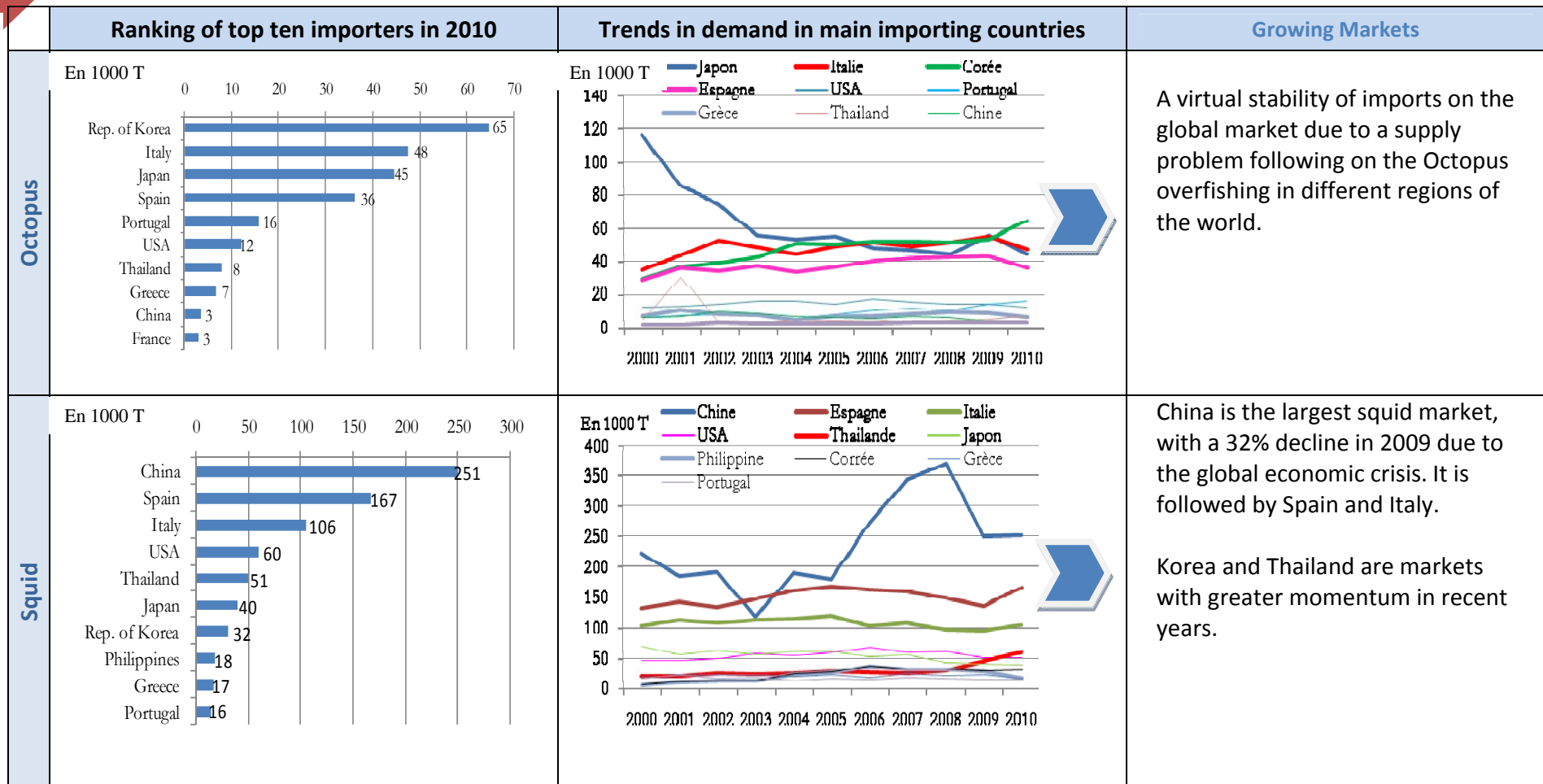
European countries are also among the largest importers of frozen octopus, with Italy still in the lead, followed by Spain. Recent trends in demand in these two countries show a steady increase, with respective growth rates of 36% and 25% between 2000 and 2010.

Squid

China is a large importer of frozen squid on the world market, with imports of 370,000 tons in 2008. In 2009, its demand dipped as a result of the world economic recession which affected household spending. In 2010, Chinese imports stood at nearly 251,000 tons.

In second place, Spain and Italy remain the top European importers of frozen squid, with respective volumes of 167,000 and 106,000 tons in 2010, an increase of 33% and 11% compared to 2009.

Graph 19: Dynamics of demand for frozen cephalopods on the world market



4.3. Prawns

Over the last ten years, economic growth in the United States has boosted the consumption of, and the demand for prawns in the country. Indeed, imports of prawns rose from 380,000 tons in 2000 to 530,000 tons in 2010, making the United States the top importer of prawns in the world over the last decade. The United States have outpaced Japan which has seen its imports drop steadily from 390,000 tons in 2000 to 263,000 tons in 2010.

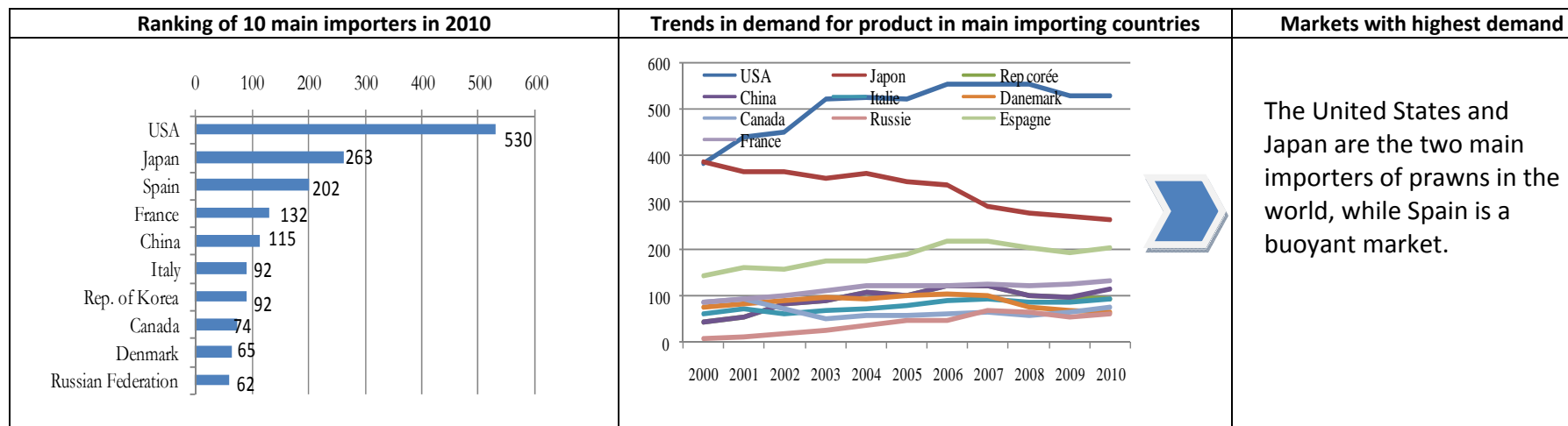
With regard to the eight other main importers of prawns around the world, demand has essentially stabilized over the last ten years, except in Spain where imports have risen by nearly 25% over the same period.

4.4. Fresh fish

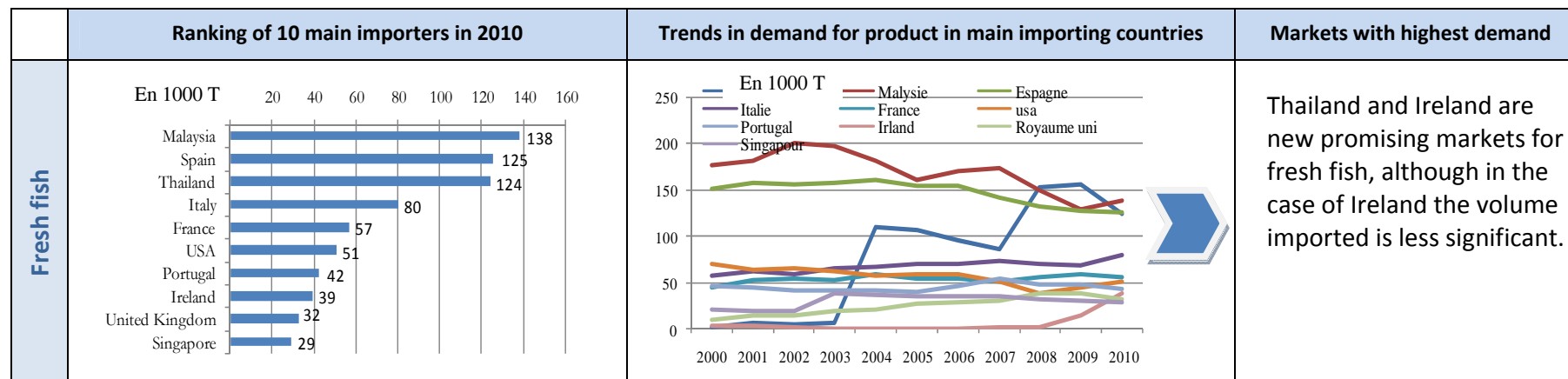
For more than ten years, Malaysia and Spain were the largest importers of fresh fish in the world, with imports in the region of 130,000 tons. However, in recent years their imports have declined steadily. Conversely, demand in Thailand has grown since 2003, leaping from 6,000 tons to 124,000 tons in 2010, making Thailand one of the three largest importers of fresh fish since 2008.

Other European countries also continue to feature among the main importers of fresh fish, with Italy in the lead, followed by France and Portugal. Despite its modest imports, Ireland has seen its demand for fresh fish rise significantly, from 1,500 tons in 2008 to 39,000 tons in 2010.

Graph 20: Trends in demand for prawns on the world market



Graph 21: Trends in demand for fresh fish on the world market



5. Assessment of export destinations favored by Moroccan fishery products, based on world market trends

According to the analysis presented in the table below, Moroccan fishery products exports are mainly headed for the EU market as well as a few Asian and African countries. Markets with a high demand for these products, such as the United States and other Asian and African countries, are underexploited.

Table 15: Current situation of main export destinations for Moroccan fishery products, and markets with the highest demand around the world (2010)

Main products exported by Morocco	Main export destinations for Moroccan products	Markets with highest demand
Canned sardines	Africa: Nigeria – Guinea - Ghana	1. Russian Federation 2. South Africa 3. United States
	EU: France – Spain - Germany	
	Syria	
Semi-cured mackerel	EU: Italy – Spain	1. Sri Lanka 2. United States 3. Japan 4. Italy
Frozen octopus	EU: Spain – Italy – Japan	1. Rep. of Korea 2. Italy 3. Japan 4. Spain
Frozen squid	EU: Spain – Italy	1. China 2. Spain 3. Italy 4. Thailand
	Japan	
Frozen crustaceans	EU: Spain – Netherlands	1. United States 2. Japan 3. Rep. of Korea 4. China
Fresh demersal fish	Spain – Japan	1. Malaysia 2. Thailand 3. Spain 4. Italy

Morocco commands a leading position in canned sardines on the world market, and the bulk of its exports are destined for a few European countries and a few African countries (Nigeria, Guinea, and Ghana). However, trends in world demand show that South Africa was the largest importer of canned sardines around the world in 2010, while the Russian Federation and the United States have, for more than ten years, featured among the largest importers. Morocco exports modest volumes of canned sardines to these markets with high demand, and there are, therefore, great opportunities to be seized on these growing markets.

Similarly, Moroccan exports of semi-cured mackerel are headed for countries with low demand, such as Italy and Spain, and not for countries with high demand, such as Sri Lanka, the United States, Japan, and Italy.

This analysis also shows that for Moroccan fishery products, Asia is a region with high growth potential. For instance, the Republic of Korea and China are among the largest importers of octopus and squid, but Moroccan exports of these products to Asia are focused on Japan. With regard to fresh fish, Malaysia and Thailand feature among the largest importers with high growth potential markets.

Thus, to enable Moroccan products to reach South-East Asian markets in the very near future, measures must be taken to boost Moroccan exports to the region, notably regarding the easing of procedures and the revision of tariffs agreements.

The United States market also offers great opportunities for the whole range of fishery products exported by Morocco. Addressing logistical issues such as transport can boost trade with a country ranked as the largest importer of fishery products.

6. Strengths and Weaknesses of the sector of Moroccan fishery products exports: SWOT analysis

The sector of fishery products exports enjoys assets and opportunities, and has a large potential for development. Nevertheless, the marketing of fishery resources still needs to be optimized along the entire value chain.

6.1. Weaknesses and threats regarding the improvement in competitiveness of Moroccan fishery products exports

The breakdown of exports by product underscores the predominance of a limited number of species (octopus, squid, cuttlefish, prawns, sardines, and anchovies) and product ranges (canned and frozen). Moroccan exports remain centered on two traditional markets, Spain and Japan. Together these two countries account for 83% of the market value of Moroccan exports and 68% of their volume. Such a dual rigidity in terms of products and markets is the main weakness of the sector's exports.

While the liberalization of world trade has brought down customs barriers to grant access to the European market, other types of barriers have gradually been introduced and are having a significant impact. These include the strict regulations on quality and traceability which Moroccan fishery products exports are subject to, especially exports headed for the European market.

Besides traditional challenges, such as heavy geographical concentration, limited number of partners, limited product ranges, the competitiveness of exporters is also undermined by weak export logistical chains. High logistical costs can hamper any policy to promote exports.

For instance, Moroccan fishery products exports to Africa are limited to canned pelagics, which make up 90% of the market value of exports to Africa. Such a concentration in terms of product range is mainly due to geographical distance and the lack of direct transport links. Likewise, Morocco's poor showing on large markets with high demand, such as the United States and the Russian Federation, results in many ways from such logistical constraints. In this regard, the creation of a direct maritime link with these countries should help reach intended export destinations.

The issue of logistics is even an obstacle to the improved competitiveness of exports destined for neighboring countries. Indeed, the high costs of crossing the Gibraltar Straits undermine the competitiveness of exports, when compared to the lower costs incurred by Morocco's competitors.

These logistical difficulties also affect product delivery timeframes. Recent developments in the competitive environment have exposed the shortcomings of a strategy based primarily on production costs. What is important is not only to keep production costs low, but also to be more responsive and to manage the timeline for marketing products effectively.

Box 3: New logistics strategy

Logistics is a crucial facet of the country's economic competitiveness, given the significant costs it generates, which can undermine product competitiveness.

Public authorities are fully aware of these stakes, and the logistics sector in Morocco has recently adopted a new national strategy, to support sector based plans already implemented such as "Green Morocco", "Emergence", Halieutis, "Rawaj", and the "energy strategy", which are all parts of a transversal and integrated approach to the competitiveness of the country's economic fabric. The national strategy for the development of logistical competitiveness is the subject of the 2010-2015 program contract, and aims to cut logistical costs by 20 to 15% of GDP, a ratio similar to that of emerging countries such as Brazil and Mexico.

The new logistics strategy, designed to better manage and optimize the flow of goods for import as well as for export, rests on the development of basic infrastructure launched in the last ten years, as part of the major projects policy. The Tanger-Med and Nador West Med port complexes, those of Safi and Dakhla currently under study, the development of railroads connecting these ports, the development of airports in the Casablanca hub and in the regions, the extension of the highway network which will connect all cities with more than 400,000 inhabitants and consist of 1,800 km, are all the more visible components of this policy and its coherence.

The new strategy also entails the liberalization and the revision of the institutional framework of the transport sector, especially for the transport of goods, which was largely opened to competition in 2007, with the implementation of several reforms pertaining to ports, maritime transport, and road and rail transport.

6.2. Strengths and opportunities for improvement in competitiveness of Moroccan fishery products exports

In Morocco, opportunities to develop fishery products exports are considerable, especially in the current climate amid a remarkable growth in demand for fishery products worldwide, and the stagnation of catches around the world (aquaculture excluded). Indeed, despite a decline in resources worldwide, the consumption of fishery products around the world is increasing steadily.

The proximity of markets with high demand, particularly the EU market, the largest importer of fish worldwide and Morocco's largest client, is a major advantage in terms of the significant savings made on transport costs. Besides, European consumers' demand for particular fishery product types that are labour intensive, such as ready-made meals, gives Morocco another notable advantage because it can rely on labour at competitive costs.

Furthermore, the globalization of trade as well as the free trade agreements signed by Morocco, offer new market prospects for Moroccan products. Customs agreements grant these products privileged access to a market of one billion consumers, and 57% of world imports (see Box 4).

Box 4: Morocco's free trade agreements for exports

EU

trade agreement for agricultural and fishery products

Entry into force in 2000

Agreement scope: creation of a free trade zone in 2012

Market: 500 million consumers

40% of world imports

USA

Free trade agreement

Entry into force in 2006

Market: 300 million consumers

15% of world imports

Turkey

Free trade agreement

Entry into force in 2006

Market: 70 million consumers

less than 1% of world imports

Jordan, Egypt, and Tunisia

Free trade agreement

Entry into force in 2006

Market: 95 million consumers

less than 1% of world imports

The Moroccan export sector could clearly benefit further from such openness to trade. Indeed, despite the high quality of fish species exported, Moroccan products are not conveyed to the export market in optimal conditions, even though quality norms are becoming increasingly stringent. Combined with the wealth in fish resources along the Moroccan coast, the openness to international markets gives Morocco a clear competitive edge, if international market requirements on the sustainability of supply, and the quality and traceability of products are fulfilled.

Table 16: SWOT analysis of Moroccan fishery products exports

Strengths	Weaknesses
<ul style="list-style-type: none"> - extensive fishery production capability - underexploited pelagics stock in the south Atlantic region (Zone C) - good product image of the Moroccan sardine (<i>Pilchardus</i>), recognized for its exceptional quality worldwide - leading position on the sardine market - Proximity to markets with high demand. 	<ul style="list-style-type: none"> - Irregular supply to processing units - poor rational management of fish resources - high concentration on the foreign market - limited product range - limited innovation and research and development - lack of aggressive and concerted national strategy to promote the exports of Moroccan products - Deficient logistics to supply African countries and other countries with high demand.
Opportunities	Threats
<ul style="list-style-type: none"> - free trade agreements - strong increase in world demand - emergence of new importing markets (Africa, Middle East, Unites States) - political will to develop exports - Implementation of the Halieutis strategy. 	<ul style="list-style-type: none"> - emergence of new competitors - more stringent requirements for product quality - Depletion of stocks.

Furthermore, given its significant socio-economic stakes, the sector of coastal and traditional fishing is an essential component of the MCA²- Morocco. An amount of nearly MAD 1,367 million has been earmarked to upgrade the sector in all its components, from fishing to marketing.

A new integrated development strategy for the fishery sector in Morocco, called the Halieutis Plan, has been launched. The strategy is articulated around three major areas: the sustainable exploitation of resources and the promotion of responsible fishing, the development of efficient fishing to optimize product quality, and the improvement of competitiveness to conquer new market shares. In terms of strategic and structuring measures, the Halieutis Plan entails the implementation of management plans for fishery (octopus, prawns, and pelagics), the development of aquaculture which can take some pressure off fish stocks, and the creation of poles of competitiveness.

² Millenium Challenge Account.

Diagram 1: "Halieutis" strategy for the development and competitiveness of the fishery sector

Sustainability	Performance	Competitiveness
sustainable exploitation of resources for future generations	well-equipped and well-organized sector to optimize quality, from the landing of fish to the consumer's plate	well-marketed and competitive products on the most promising markets
promote and disseminate scientific knowledge	develop infrastructure and equipment for fish landing	facilitate the industry's access to primary resources
manage fishing on a quota basis	grant specific port areas to fishing and manage them efficiently	guide the industry towards the most profitable markets
upgrade and modernize fishing techniques	enhance the attractiveness of fish markets and industrial fish approval units (CAPI)	set up 3 poles of competitiveness for fishery products in the country's north, centre, and south
Making aquaculture a key driver of growth	Structuring and boosting wholesale and retail markets	

Clarify and extend legal provisions
 Ensure effective control and traceability along the entire value chain
 Enhance skills and attractiveness of jobs in the sector
 Organize the representativity of all professional groups in the sector

Besides the objective of achieving MAD 21 billion in GDP, the Halieutis strategy aims to multiply turnover in exports of fishery products by 2.6, to reach MAD 3.1 billion by 2020. The strategy is also expected to boost Morocco's market share around the world, from 3.3% in 2007 to 5.4% by 2020.

Significant progress in the implementation of the Halieutis Plan

After two years of implementation, the new strategy for the fishery sector has made significant progress with the launch of several projects, some 14 projects according to the supervising ministry.

Instances of good progress made include the management of fish resources, following the implementation of management plans for small pelagics, prawns, hake and seaweed, over 2010. Since June of the same year, the Department has banned the use of driftnets to protect marine biodiversity and vulnerable species that may be caught accidentally. To this end, control measures have been reinforced.

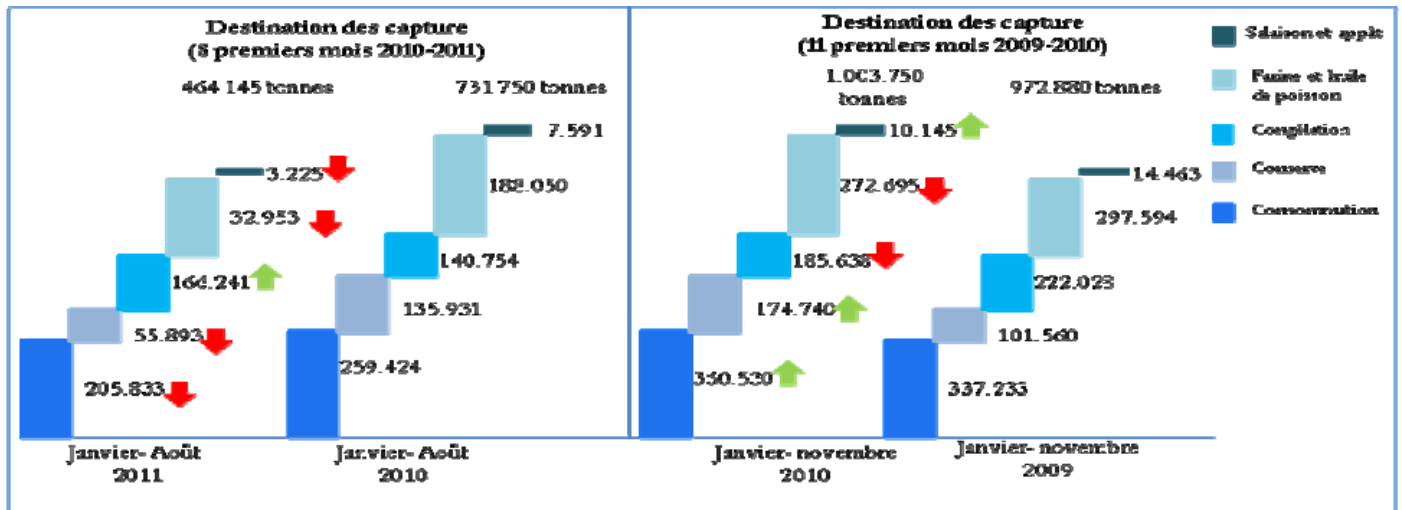
Other measures taken comprise the creation of the agency for the promotion of aquaculture, the designation of a global operator, with the National Fishery Office acting in this capacity since June 2010, the update of legal provisions, and the launch of poles of competitiveness, one in Agadir and the other in Tangier.

In terms of initial results of the new strategy on land-based fish processing, the canning industry increased its supply by 72% over the first eleven months of 2010, while its turnover for exports reached MAD 4.5

billion. However, the freezing industry dropped by 16%, causing a fall in fish oil and fishmeal that it previously supplied in abundance. These are the most notable issues to be addressed.

Similarly, the fish processing industry suffered a sharp drop in volumes processed in 2011 (- 45%) in all its branches, except in freezing. Such a drop was notably due to a decrease in landings of pelagics, which affected supply to canning units (- 59%).

Diagram 2: Initial results of the Halieutis strategy for land-based fish processing



Source: Department of Maritime Fishing – National Fishery Office

Building further consensus among the sector's operators and professional groups

The fishery sector is made up of different operators and professional groups with interests that are at times divergent. It is, therefore, essential to start by building consensus among the different operators, to gain their support for the different reforms initiated to develop the sector.

In this regard, after two years of implementation of the Halieutis Plan designed to address a number of issues and failures in the sector, operators and professional groups have expressed some reservations, which must be taken into account, but have not fundamentally challenged the Plan.

With regard to the management of resources, operators have highlighted the lack of an effective resources management policy, a lack that can lead to an uneven exploitation of stocks and limit the efficiency of measures implemented as part of the new strategy up until now.

Operators have also pointed out that human resources, fundamental to the development of the sector, have not been sufficiently taken into consideration in the Halieutis Plan, and that internal communication has been lacking. Indeed, operators consider that the new strategy has not fully addressed a number of issues such as training, providing support to fishermen during periods of suspension of fishing activities, minimum income, as well as social provisions to make the sector more attractive.

Similarly, according to the sector's operators, the Halieutis Plan has not dealt with the issue of the geographical distribution of fishing as it should have, given that fishing is far too intensive in the north and underdeveloped in the south of the country.

Lack of organization in distribution networks as well as logistical constraints have also been underlined as obstacles to the improvement of the sector's competitiveness, which should be lifted if the objectives of the Halieutis Plan are to be achieved.

In an effort to bring together all the operators of the sector and to build further consensus around the new strategy, a special fair named Halieutis was created under the high patronage of His Majesty King Mohamed VI, and held in Agadir from January 26th to 29th 2011. The success of this great event bodes well for the adoption and the implementation of the Halieutis Plan in the future.

Aquaculture: providing leverage to diversify Moroccan exports

In the Halieutis Plan, the fourth project to ensure sustainability aims to develop aquaculture significantly and make it a driving economic segment for growth. In Morocco, aquaculture has high potential and will aim to achieve a turnover of more than MAD 2 billion by 2020.

Aquaculture is currently underdeveloped, with some ten units producing between 1,000 and 1,500 tons a year (less than 0.1% of all fishery production), divided into fish (88%) and shellfish (12%). The segment has to contend with a whole range of issues, such as the scarcity and prohibitive prices of usable areas, the lack of legal provisions, and its heavy dependence on the international market. Such a dependence results from support policies adopted by some countries, and the customs barriers put up by importing countries, which significantly undermine fair competition. Besides these constraints, aquaculture is known as a capital-intensive venture that requires significant investment and working capital.

Nevertheless, aquaculture can capitalize on the same opportunities as sea fishing, especially with regard to the proximity of importing markets, new prospects offered by economic openness, as well as to the increase in demand for fishery products, domestically and internationally.

In addition to these general opportunities, Morocco is endowed with considerable potential when it comes to sites suitable for aquaculture (lagunas, bays, high sea or offshore, coastal lowland areas). Many potential sites are still underexploited, especially along the Mediterranean coast.

Besides natural assets, aquaculture in Morocco can count on large numbers of workers with fishing skills. For instance, in areas where fishing is too intensive, fishermen could be redeployed to develop aquaculture in these areas.

According to international benchmarks³, and based on the experience of countries well advanced in aquaculture, the development of aquaculture in Morocco can only be achieved through the implementation of coherent strategies with specific objectives, sufficient financial means, and an appropriate legal and regulatory framework.

The study of international benchmarks shows that countries with strong performances in aquaculture have implemented coherent strategies with specific objectives, and provided the sector with effective means as well as the necessary legal and regulatory framework. The main lessons to be drawn from the analysis of experiences worldwide can be summarized as follows:

1. Coherent policies for the sector's development

In most of the cases studied, national governments, in consultation with fishing industry professionals, have adopted coherent policies for the development of aquaculture. These policies often set production target figures over the medium or long term, and propose action plans with the means to implement them and achieve objectives set.

2. Legal provisions specific to aquaculture

Countries that have significantly developed aquaculture, such as Spain and Chile, have legal provisions specific to the sector. These provisions ensure the coherence of the different facets of aquaculture policy (resources, markets, structure, research, training, employment, social relations ...), as well as the coordination between the sector's different actors and greater involvement in research.

3. Integration of aquaculture to related sectors such as sea fishing

Several countries see integration as a process contributing to the development of aquaculture. It is the case with EU countries that encourage the redeployment of sea fishing workers in aquaculture in areas affected by significant drops in catches.

4. Financial assistance to businesses

Most countries provide direct financial assistance to develop businesses, in view of expanding production capacity and/ or enhancing the competitiveness of existing production units. Spain also provides assistance on risk management to aquaculture businesses. Thus, producers of sea bream, sea bass, turbot, mussels, and trout in seawater, have access to fish harvest insurance schemes covering different risks (marine predators, diseases, variations in temperature, bad weather conditions, accidents, changes in salinity, oil slicks, chemical and biological pollution). These schemes are provided by the Spanish insurance group, Agroseguro, which receives subsidies from the Spanish government and autonomous communities.

5. Supporting scientific research and technology transfers

All the countries studied allocate important resources to research and development. They all have some type of national institute for research and development in aquaculture. Most of them allocate resources

³ Comparison between neighboring Mediterranean countries (France, Spain, Egypt), Asia (Vietnam), and South America (Chile), presented in a study published by the Department of Studies and Financial Forecasts in 2008 on "the analysis of the sector of sea fishing and aquaculture in the new context".

for technology transfers, given that it is essential to the innovation process that leads to the adaptation and use of new technology and other research and development findings.

6. Better sanitary control to ensure quality of aquaculture products

The health and safety of aquaculture products is one of the major and primary concerns of government intervention in the different countries studied. Most of these countries have set up national programs for the health of aquatic animals, to support an integrated approach to such an important aspect of aquaculture, provide necessary sanitary services to the industry, as well as take control measures and put in place quick-response measures in case of any epidemic emergency.

In most of these countries, norms and standards are being reinforced, which is an added selling point for the exports of the countries in question, but a supplementary hurdle for fish products imports to these countries.

7. Sustainable development for the sector

All the countries studied support the sustainable development of the sector. However, the type of support provided varies from one country to another and involves a series of advantages and socio-economic benefits. These benefits include, amongst other things, the fact that aquaculture is a reliable source of food, that it creates jobs and wealth, that it attracts foreign currency, that it contributes significantly to regional development, and that it contributes to the use of land and coastal areas.

Conclusion and recommendations

The analysis of the recent performance of Moroccan fishery products exports shows that they fare differently, depending on species and markets.

The breakdown of Moroccan fishery products exports basically shows the preeminence of four main products that account for 80% of all the sector's exports, and that include frozen cephalopods (27%), canned pelagics comprising mainly sardines (37%), fresh white fish (8%), and frozen crustaceans, mainly peeled prawns (6%). These exports are generally headed for EU countries and some African and Asian countries, with market shares that differ according to the market and the product type.

In the European Union, which receives nearly 70% of Moroccan fishery products exports, Spain remains the most important outlet with 46% of the overall value of the sector's exports. Exports to the EU comprise the four main products exported, with frozen cephalopods and canned pelagics enjoying an upward trend in recent years.

In terms of positioning on the EU market, Morocco is the leading exporter of canned sardines, and is considered as one of the main suppliers of frozen octopus to Spain. For fresh fish, and despite a strong potential for production, Morocco does not fare so well on the EU market, with a mere 14% in market share. Nevertheless, in view of the drop in the market shares of its main competitors, especially with France's declining resources, good opportunities to conquer new market shares are emerging. It is important to note that tariff conditions Moroccan products are subjected to on most EU markets have improved, following the Morocco-EU association agreement which came into force in 2000, and the 2012 Morocco-EU trade agreement. These agreements notably pertain to the exemption from customs duties for farming and fishery products, which will give Moroccan products privileged access to a buoyant market, provided that quality norms and standards are met.

Asia is a high potential market for Moroccan products, but fishery products exports are limited to frozen octopus and mainly headed for Japan, which receives 5% of all Moroccan fishery products exports and remains a major importer of crustaceans, molluscs, and shellfish. Moreover, Morocco's position on the octopus market may be undermined by its main competitors, China and Mauritania, which have increased their market shares since 2004. The Asian market could serve as a hub to re-export products to other countries in the region, such as Thailand, Malaysia, and South Korea, the largest importer of octopus since 2010. In order to better market Moroccan products across South-East Asia, measures regarding the simplification of procedures, the revision of tariffs agreements, and the upgrading of canning units, must be taken.

As for Africa, Moroccan fishery products do not fare too well with less than 11% of the overall value of fishery products exports, despite the continent's strong demand for these products. Potential for growth is high, especially for canned and semi-cured products. Moreover, if logistical obstacles, notably regarding transport, are to some extent overcome, trade with the African market can pick up and reach the level of trade with the EU.

Outside these traditional markets, Russia still remains the largest importer of sardines, the Moroccan core product. Morocco is the largest sardine producer in the world, but it has not made any impact on a market with imports worth \$ 40.5 million in 2010 and mainly coming from Ukraine (50%). Ironically, Moroccan exports do reach small markets in the East European region, such as Hungary, a country whose imports of sardines do not exceed \$ 4 million. However, Moroccan exports of canned mackerel to the region are non-existent. More recently, South African imports of canned sardines have soared, and South Africa was ranked largest importer in 2009 and second largest importer in 2010.

Today, the United States is the largest importer of fish and fishery products. The American market should offer opportunities to Moroccan exporters, given the advantages and possibilities entailed in the free trade agreement between Morocco and the US. The promotion of exports to such a large and buoyant market will no doubt require efficient cost control and good management of transport times, which obviously depend on the development of specific logistical services for fishery products exports.

Generally, Morocco should adopt international benchmarks regarding strategies pursued by our main competitors, and draw inspiration from the experiences of other countries to come up with measures, especially in terms of organization and trade, to boost the sector's exports.

On the basis of the analysis proposed in this study, and with the aim of achieving a better positioning for Moroccan fishery products on the international market, several avenues can be explored to make progress:

1. Technological innovation

With regard to product innovation, products adapted to the requirements of clients and to the different uses of products must be developed. To this end, the following pathways to development could be explored:

- optimize the marketing of pelagics, and use the vast stocks available to increase the part which is processed into high added value products;
- further processing of frozen products, currently sold after basic processing;
- boosting high-quality fresh fish exports, in high demand on the international market, by increasing the production of high quality fish and widening the range of species produced;
- developing innovative products, especially ready-made dishes and marinades, to respond to new consumption trends, target new markets, and create more added value;
- complying with clients' sanitary and quality norms, and developing Moroccan labels to improve marketability.

2. Prospecting new markets

Given the costs and logistics of prospecting new markets, notably for small and medium-size businesses, businesses in search of new markets can be given support through the effective use of support measures forming part of the strategy for export (information, export fairs, marketing and communication campaigns, creation of a platform for exports...).

3. Organizing export activities

Boosting Moroccan exports requires a platform for fishery products exports set up to facilitate Moroccan businesses' access to growing export markets. The platform can essentially pool Moroccan fishery production, identify demand on export markets, establish contacts with importers, investors, government services and foreign businesses, as well as improve the visibility of Moroccan businesses abroad.

4. Developing logistics

To enhance the competitiveness of national fishery products, notably on the African, Middle Eastern, and US markets, it is imperative to optimize access costs and improve connectivity between our country and these destinations. The implementation of the national logistics strategy must be speeded up, and the improvement in infrastructure and outreach, especially toward the African market, must be further consolidated. Effectively, this strategy aims to set up 3 agro-processing and marketing platforms, in Agadir (55 ha by 2015), Laayoune (5 ha by 2015), and Dakhla (15 ha by 2015).

The strategy will significantly boost fishery products exports by cutting logistical costs, thanks to optimized, secure, and standardized management of the flow of goods.

With regard to maritime transport (95% of foreign trade), Morocco must modernize and upgrade its fleet to enhance its competitiveness in the field, and reduce its dependence on the fluctuations in cargo costs worldwide. It should also improve repair and maintenance services, in keeping with international norms.

Furthermore, Morocco should, in concert with its African partners, both bilaterally and multilaterally, aim to upgrade different modes of transport available. In this regard, constraints relating to cumbersome regulations and administrative procedures generate additional transport costs in Africa, and must, therefore, be lifted.

5. Developing aquaculture to sustain fishery production

The development of aquaculture can help sustain fishery production and relieve pressure on fish stocks. The following measures could be taken:

- designing a coherent and consensual policy for the sector, with set objectives and the specific means to implement it;
- designing an adequate legal and regulatory framework which reflects the constraints and the potential of the sector;
- developing a comprehensive system (norms, control, institutions...) to guarantee the safety and health of aquaculture products;
- Designing a communication strategy to promote the image of the sector and its products in the eyes of consumers, and for public opinion at large.
- Taking action inspired by, and in keeping with, the more general approach to sustainable development.

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Annexes

Appendix 1: The methodology for decomposing in terms of structure and performance

To identify the origin of the growth gap of fisheries total exports from one period to another, these differences are decomposed into the structure and the performance of the product. To do this, we proceeded first to the decomposition of these exports into the main exported products namely:

- Canned Sardine,
- Semi cured mackerel,
- Frozen,
- Meal and fish oil,
- Fresh or live,
- Others.

We define the year-on-year growth rate of exports of fisheries in value between the timing t and $t-1$, X_t , as follows:

$X_t = \sum_j \omega_{t-1,j} x_{t,j}$, where $\omega_{t-1,j}$ is the weight of product j in overall exports at the timing $t-1$ and $x_{t,j}$ the growth rate of exports of product j between the timing t and $t-1$ (yoy in value).

We then try to identify where does the difference in growth of total exports from one period to another originate in the following way:

$$X_t - X_{t-1} = \sum_j \omega_{t-1,j} x_{t,j} - \sum_j \omega_{t-2,j} x_{t-1,j}$$

This variance can be written as:

$X_t - X_{t-1}$	=	$\sum_j \frac{(x_{t-1,j} + x_{t,j})}{2} \times (\omega_{t-1,j} - \omega_{t-2,j})$	+	$\sum_j \frac{(\omega_{t-1,j} + \omega_{t-2,j})}{2} \times (x_{t,j} - x_{t-1,j})$
Total variance	=	Sectoral structure effect	+	Sectoral performance effect

This decomposition designates two terms: The product structure effect and the performance effect.