SEAFOOD SUPPLY AND VALUE CHAINS IN SPAIN

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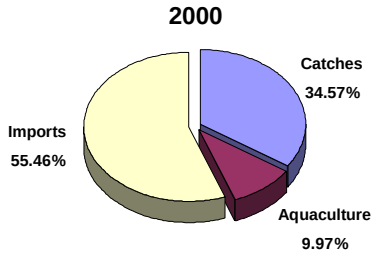
Market access and value-chains in fisheries and aquaculture

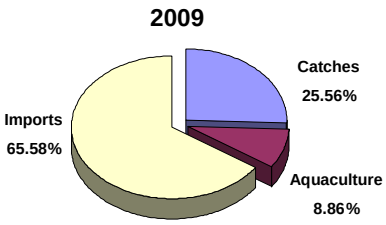
FAO – INFOSAMAK

Tangiers, Morocco
15 March 2012

Sources of seafood supply in Spain



Catches	1,072,153 Tn
Aquaculture	309,095 Tn
Imports	1,719,975 Tn
Total supply	3,101,164 Tn



Catches	805,229 Tn
Aquaculture	279,179 Tn
Imports	1,902,190 Tn
Total supply	3,143,546 Tn

Figures of the Spanish fishing sector

			Catches		
2010	**Vessels**	**Employment**	**Quantity**	**Value**	**€/Kg**
EU waters	10,404	30,252	473,278	1,275,907	2,69
Non EU waters	443	10,809	295,413	546,344	1,85
Total	**10,847**	**41,061**	**768,691**	**1,822,251**	**2,27**

Capacity	**2006**	**2010**
Burden	36.19 GT	38.19 GT
Power	111.78 Kw	117.03 Kw
Length	10.55 m	10.95 m

- **Small scale.** The majority of the Spanish fleet fish in national waters, using minor and artisanal gears in less than 10-meter boats with an average crew of three person. This fleet catches traditional species targeted to human consumption and delivered fresh at port auctions.

- **Large scale.** 5% of the fleet operates in overseas waters using large vessels of a 25-person average crew. An important amount of these catches are targeted to the processing industry and may reach to the final consumer across several different supply and value chains.

Figures of the Spanish fishing sector

Top 10 Species	**1980**	**1990**	**2000**	**2009**
Skipjack tuna	27214	98025	145813	134344
Yellowfin tuna	40679	114656	86034	71321
Jack and horse mackerels	55269	24213	44468	44397
European pilchard	210113	214719	81028	44281
Blue shark			31093	40483
European hake	38288	25902	31183	31832
Bigeye tuna	10800	15571	47324	31290
Longtail Southern cod				28601
Swordfish	4560	15082	15209	27448
Atlantic mackerel	16732	12539	28190	20378

- Six of the top ten species caught by the Spanish fleet are being fish in overseas waters in more that a 70%. These catches are increasing in general. Landings of some local species have declined while other stand or even increase.

Figures of the Spanish Aquaculture

Facilities	2002	2005	2010
Vertical marine	3663	3719	3685
Other marine	1475	1487	1300
Freshwater	267	230	183
Total	**5405**	**5436**	**5168**

Performance	Pre-tax profit in euros	
	2008	2009
Vertical marine	27,015,299	52,609,671
Other marine	-42,235,538	-93,500,155
Freshwater	-2,851,791	-3,737,308
Total	**-18,072,030**	**-44,627,792**

- Spanish aquaculture is dominated by mussel farming in vertical platforms taking place mainly in the northwestern region of Galicia. Activity levels are stable for this activity while declining specially in fish farming.
- Vertical and horizontal molluscs farming have been the only profitable sectors of Spanish aquaculture in the last years. These activities employ a considerable amount of labor force, and exert a relevant influence in welfare and development in surrounding areas.

Figures of Spanish Aquaculture

Species	1995		2005		2009	
	Quantity (mT)	Value (1000 USD)	Quantity (mT)	Value (1000 USD)	Quantity (mT)	Value (1000 USD)
Blue mussels	182,250	71,683	158,166	55,358	198,531	133,306
Rainbow trout	22,000	52,978	25,959	57,110	18,458	58,906
Gilthead seabream	2,706	25,631	15,433	77,165	23,219	120,240
European seabass	461	4,977	5,713	39,991	12,655	90,241
Turbot	2,174	18,794	5,572	39,004	7,188	67,369

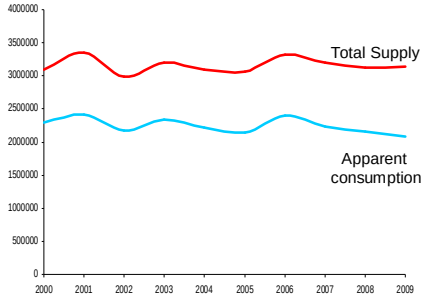
- Mussels accumulate the 75% of national aquaculture production. Despite of competitive conflicts and price crisis in the mid 2000, all indicators point that the sector has recovered stability.
- Trout market seems to have overpass maturity and production has declined. Increases in prices have not yet counterbalanced the negative income trends and the sector is expected to continue regressing.
- Bass & bream production decreased in 2010 due to firms' ceasing. Attempts of concentration did not improved efficiency and rising prices contracted demand. Turbot is assumed to be performing fine, however consumption has declined due to high prices. Domestic targeted production is not expected to grow

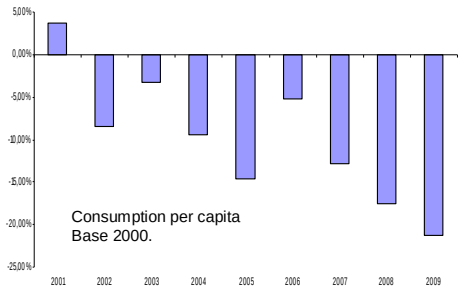
Seafood imports

	2005		2010	
	Tones	1000 €	Tones	1000 €
Live fish (0301)	2,431	25,678	1,947	22,112
Fish fresh or chilled (0302)	252,491	891,188	233,023	811,209
Fish frozen (0303)	335,220	542,164	337,444	582,396
Fish fillets & meat (0304)	144,767	412,367	197,163	553,767
Fish dried, salted, smoked... (0305)	57,070	248,873	51,329	213,901
Crustaceans (0306)	190,555	1,118,211	202,397	1,101,614
Molluscs (0307)	399,191	978,493	375,017	1,000,457
Fish prepared or preserved (1604)	104,580	275,766	142,442	450,948
Crustaceans and molluscs prepared or preserved (1605)	15,664	95,213	27,534	113,834
Fish oil (1504)	28,562	17,004	17,262	12,523
Fish meals (230120)	80,733	46,219	52,590	59,569
TOTAL	**1611263**	**4651176**	**1638147**	**4922330**

- Relevant groups of species: Cephalopods, tunas, shrimp & prawn, hakes, sardines & anchovies, cod fishes and pangasius. Increasing imports of processed or semi processed products for final transformation and consumption. Imports should keep increasing in order to maintain the levels of seafood consumption.

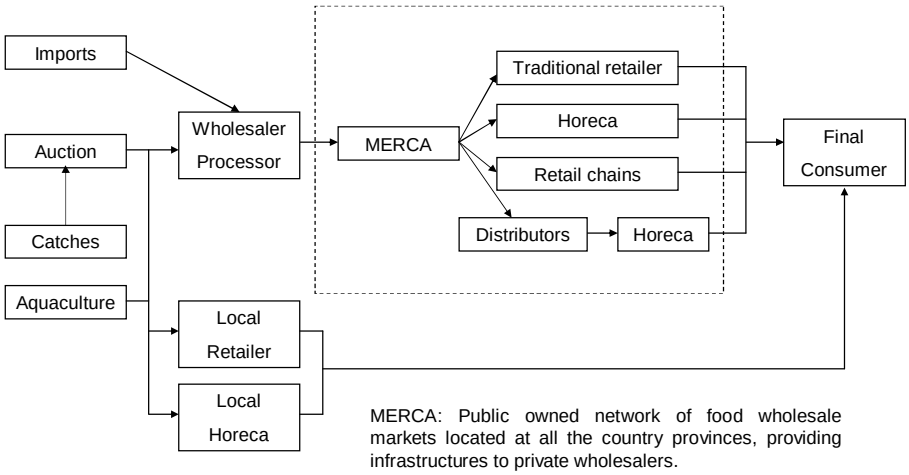
Seafood consumption in Spain





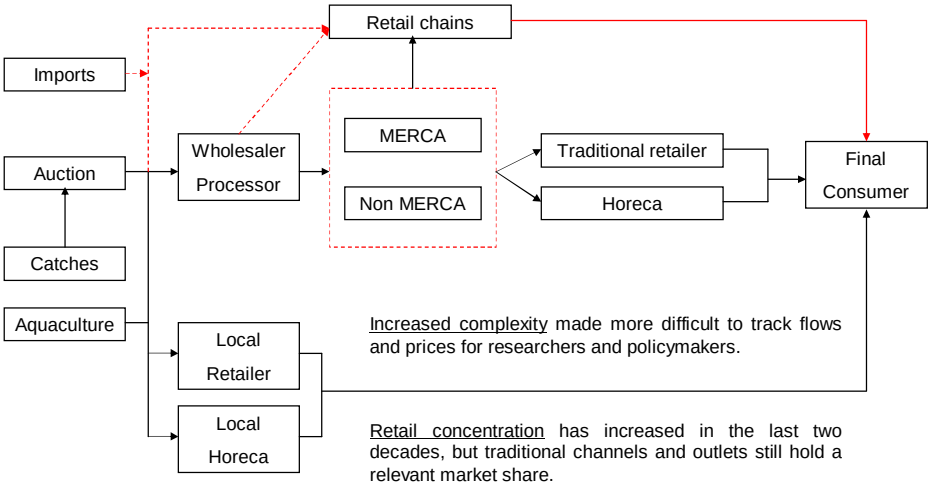
- Despite of increasing imports and supply, consumption, even still relevant, has been declining since 2000. Price levels and reductions in disposable income due to crisis are behind the continued decreasing trend after 2006.

Traditional seafood supply chain in Spain



MERCA: Public owned network of food wholesale markets located at all the country provinces, providing infrastructures to private wholesalers.

Modern seafood supply chain in Spain



Increased complexity made more difficult to track flows and prices for researchers and policymakers.

Retail concentration has increased in the last two decades, but traditional channels and outlets still hold a relevant market share.

Value chain analysis on fresh seafood in Spain

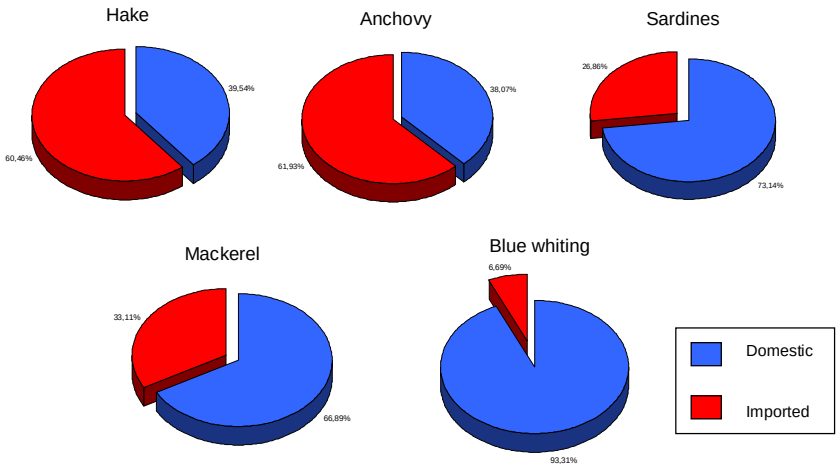
KEY TOPICS

- Prices. Evolution at the different stages of the value chain.
- Value added. Contribution of each stage to product's final value.
- Profits. Gross profit at each stage and its evolution along time.
- Effects of Imports. Compared analysis of domestic vs imported species.

DATA

- Series. Monthly series of Ex-vessel, import, wholesale and retail prices of fresh seafood from 2004 to 2011 (MARM, Eurostat)
- Species. Merlucius hake, sardines, anchovy, mackerel, blue whiting, salmon, trout and mussels.

Supply of selected wild species (2009)



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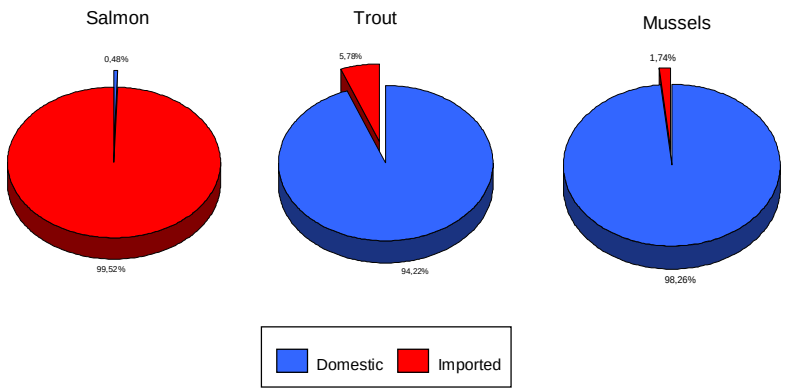
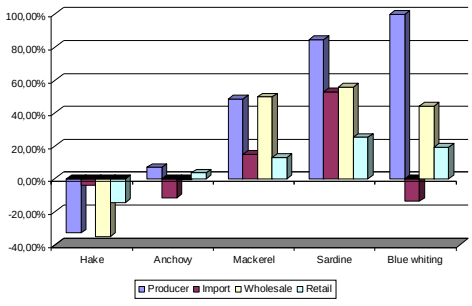
Supply of selected farmed species (2009)

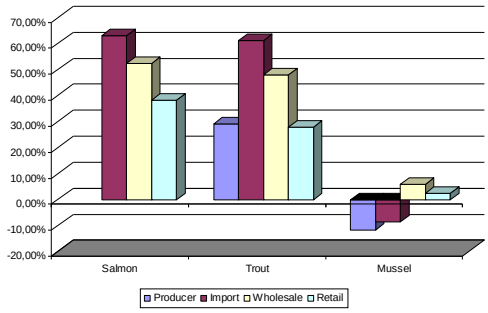


Variation in prices of wild fishery 2004 - 2011



- The prices of species with large amounts of imports have decreased or moderately increased even in periods of shortage in local supply.
- Retail prices experimented less variations that producers' or wholesalers'.

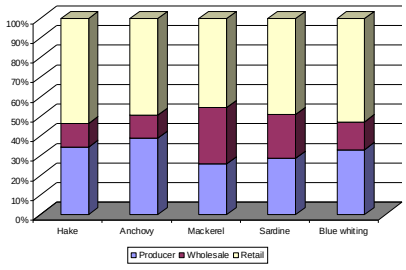
Variation in prices of aquaculture 2004 - 2011



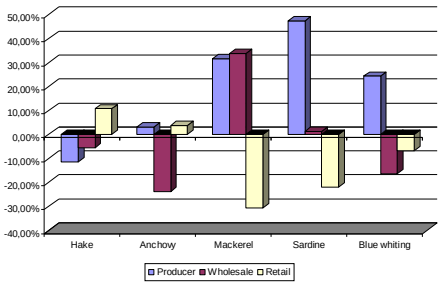
- The evolution of prices in farmed fish species significantly diverge from that of mussels. Price transmission appears to better work in fish than in molluscs.
- Lower volumes of trout imports prevented local producers to rise their prices in a larger amount like it seems that have happened at the international market.

Added value. Local landings & traditional supply chain

Contribution to final value



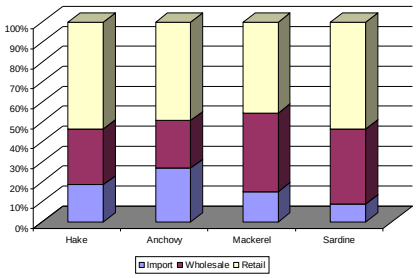
Change in time



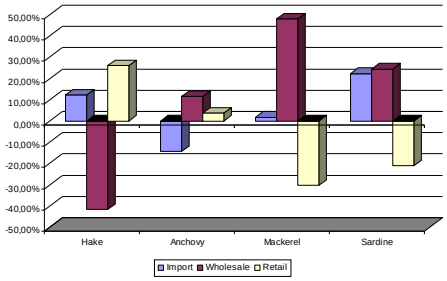
- Value added by wholesalers is bigger for species with low levels of imports. All these species show a decrease in retailers' contribution to final product value.
- Value added by retailers has increased in species with large amount of imported supply while decreased otherwise.

Added value. Imports & traditional supply chain

Contribution to final value



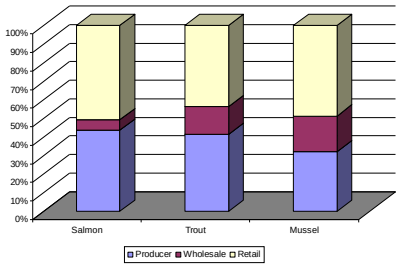
Change in time



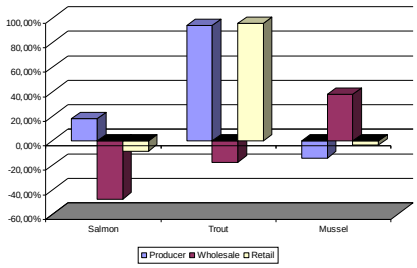
- Direct access to imports enlarges wholesalers' contribution to final product value.
- Value added by wholesalers increases along time in almost all species, with the exception of hake. This is due to more stable prices of imports.

Added value. Aquaculture & traditional supply chain

Contribution to final value

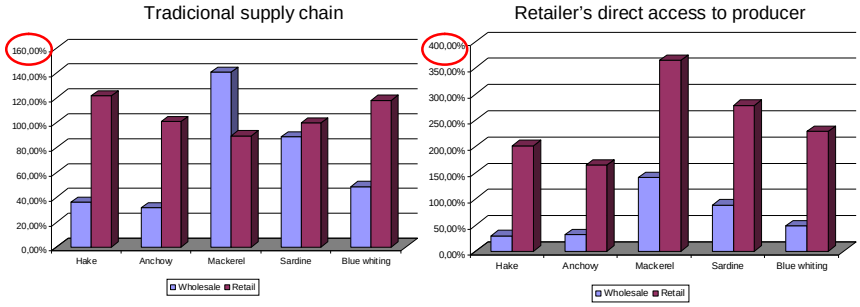


Change in time



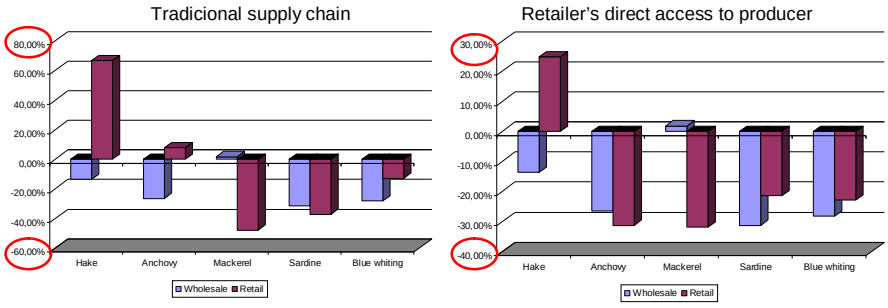
- Wholesalers contribution is lower in farmed fish species than it is in wild fishery. And they are loosing importance.
- Mussels differ from trout and salmon in an increasing larger contribution to value from wholesalers.

Gross profit. Wild fishery.



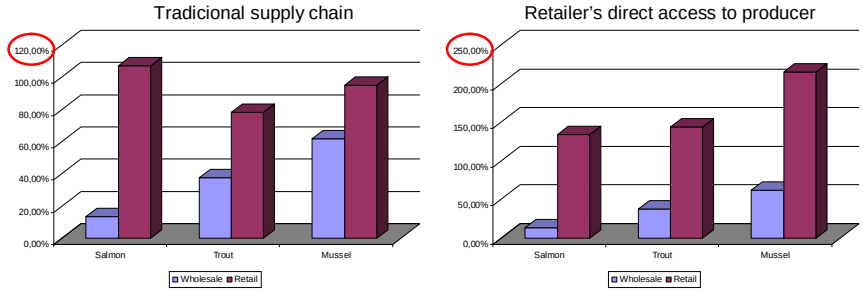
- Backward integration of the supply chain increases considerably retailers' profits but...

Variation in gross profit. Wild fishery.



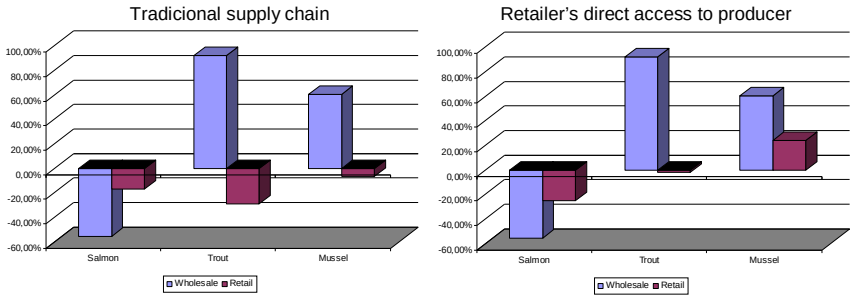
- ... increases also volatility for some species like anchovy and blue whiting. Other like hake improve both in profit and volatility.
- Wholesalers' pricing policies contribute to stabilize retailers' profits and reduce risk.

Gross profit. Aquaculture.



- Retailers increase their profits by backward integration in a larger amount for trout and mussels than for salmon.
- Increased profits due to retailers' access to producers are lower that in wild fishery products.

Variation in gross profit. Aquaculture.



- By direct accessing to local farmers, retailers also reduce volatility of profits.
- No significant improvements are observed in the case of salmon.

Summary. Local Vs imported seafood

- Imports prevent the rise of prices of wild fishery products. Products with a large ratio of imports decrease or stabilize their price. This effect may benefit traders and consumers, but negatively affect fishermen's income.
- Fishermen and farmers will like to produce species with low levels of imports and potential to rising prices. Local wholesalers derive also larger prices and profits from species dominated by local landings.
- Specialization of aquaculture polarizes the geographical origin of the product, making concurrency of local and imported species less usual than in wild fishery. Local prices evolved in a similar way as imports in the observed industries.

Summary. Price and value along the supply chain

- Prices have shown to be less volatile for retailers than in any other stage of the chain for all species observed. The consequences are improved returns when local an imported species decrease their price, but reduced profits in species with increasing prices.
- Value added by wholesalers is bigger in species with large dependence of local catches. But it differs significantly from one species to another. Evolution in time also differs improving profits in some cases and worsening in other.
- Value added by retailers have increased in species with large shares of imports and decreased at different rates in species dominated by local catches.
- Mussels significantly differ from observed farmed fish in the evolution of price and value. Value added by wholesalers is larger and increasing in mussels, while decrease and is less relevant in the other two species. Wholesalers show stronger influence in locally produced species also in aquaculture.

Summary. Backward integration of the supply chain

- Wholesalers' direct access to imports increase their contribution to product value. But this is limited to the availability of species and it may have caused reductions in price and value with some imported products.
- Backward integration by retailers results in considerably larger profits in almost all cases. Some species also result in increasing returns, but other would reduce retailers' profits along time and enlarge volatility and risk.
- Direct access to aquaculture producers by retailers improves profits in locally produced species, but results in low differences or even decreases in imported species.
- When considering backward integration retailers must balance profit versus volatility and risk. Some species like hake and local aquaculture provide both goals. Some other like anchovy and blue whiting will result in less volatility if purchased to wholesalers.

Thanks for your attention

Boats on a sea fishing. Roman early empire 200 – 300 AD.
Archaeological Museum, Sousse, Tunisia

Market access and value-chains in fisheries and aquaculture

Tangiers, Morocco, 15 March 2012