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Trade and Environment Dimensions of the Fisheries Sector in the Arab Countries

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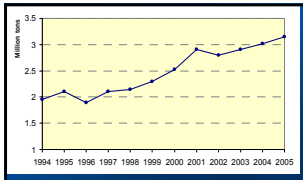
Geneva, 29 November 2007

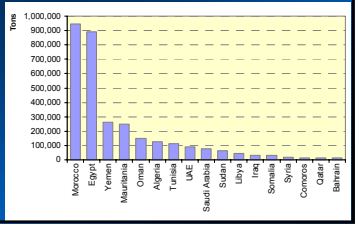
The Fisheries Sector

- **Global trade in fish and fish products is increasing.**
  - **50 million tons (38% of global production) was exported in 2004, representing over $70 billion in trade.**
  - **Major fish importers are the European Union, United States and Japan, who purchased 75% of world exports in 2004 (in terms of value)**
  - **More than half of exported fish (in terms of value) original from developing countries**
- **Consumption of fish is growing in new markets and is an important source of nutrition.**
- **Fishery policies in a trade and environment context seek to balance the following development objectives:**
  - **Expanding exports and increasing profitability**
  - **Maintaining resource sustainability**
  - **Encouraging employment & income generation**
  - **Ensuring food security**

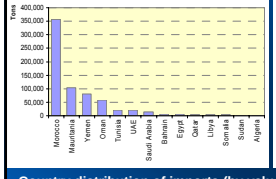


Arab fish production grew by 50% between 1994-2005 (by volume)

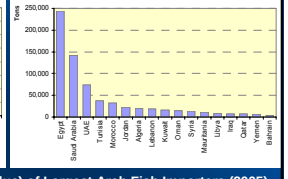
Top Arab fish producers (2005)



Top Arab fish exporters (2005)

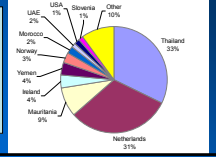


Top Arab fish importers (2005)

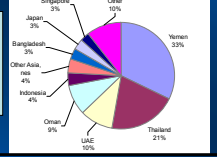


Country distribution of imports (by value) of Largest Arab Fish Importers (2005)

EGYPT



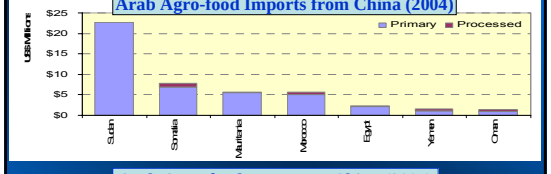
KSA



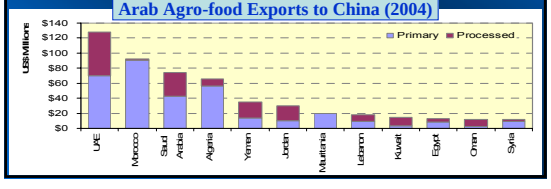
Direction and value of Arab fishery exports (2004)

China: A New Market for Imports & Exports

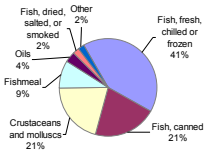
Arab Agro-food Imports from China (2004)



Arab Agro-food Exports to China (2004)



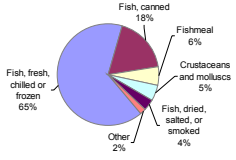
Diversification Arab fishery products (2005)



Arab fish exports:

Fresh/frozen fish
Canned fish (tuna)
Crustaceans & molluscs (increasing)

Arab fish imports

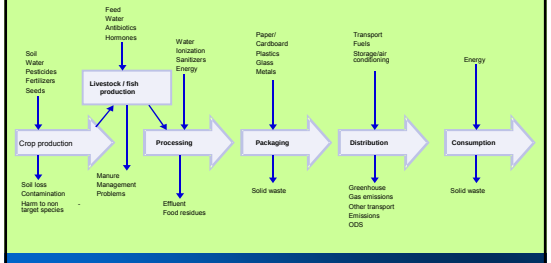


Source: FAO, Fisheries and Aquaculture Department, Fisheries Commodities Production and Trade 1976-2005 dataset, 2007 (extracted using FishStat Plus, available at: http://www.fao.org/fi/statist/FISOFT/FISHPLUS.asp)

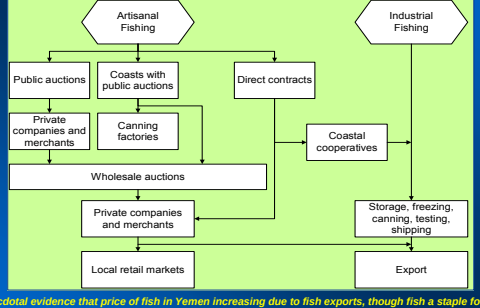
Implications?

- **Changes in the diversification and direction of trade, but traditional markets and unprocessed fish products still dominate**
- **New export-oriented supply chains being formed**
- **Destination markets influence the adoption and producer compliance with standards & technical regulations**
- **Environmental, health and safety requirements have become increasingly rigorous in Europe and the US**
- **Compliance with voluntary and mandatory standards in EU and US those markets must thus be "worth the cost"**
  - i.e., Results in greater profits (due to higher prices) or
  - Secures entry and access in global agro-food supply chains.
  - Otherwise, producers will turn to new markets with less rigorous standards (Arab or East-ward) and effort should be exerted to ensure adequate food safety of goods in those markets as well.
- **Increased exports & consumption depleting fish stocks.**

Agro-Food Cycle & Supply Chain



Fish production & preparation cycle in Yemen



Anecdotal evidence that price of fish in Yemen increasing due to fish exports, though fish a staple food.

From ESCWA Case Study by A. Morfq, Trade and Environment in the Fish Wealth Sector, October 2006
(عبد الرحمن مرقق، قطاع الثروة السمكية والتجارة والبيئة، أكتوبر 2006)

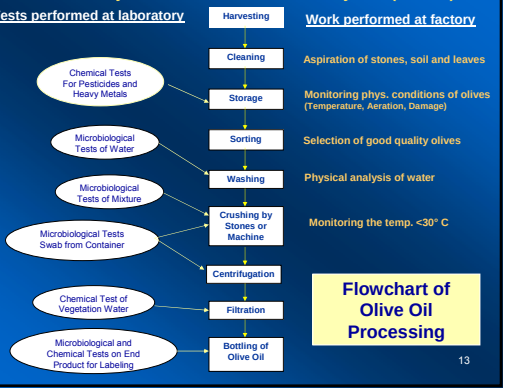
SPS Measures still prove challenging

- **Compliance with Hazard Analysis and Critical Control Point system (HACCP) is a mandatory process requirement for food safety for accessing the US and EU markets and others.**
- **EU approach is "control at the source" with imports only allowed from EU- certified producers.**
- **Testing of final products still required.**
  - **Cost of tests**
  - **Cost of establishing and operating conformity assessment infrastructure (accredited labs for certifying products)**
  - **Capacity for operating conformity assessment infrastructure**

Arab establishments certified to export fish to the EU

Country	Type of establishment	Number of establishments (As of March 2005)	Number of establishments (As of July 2007)	Date decision came into effect
Morocco	Processing plant	333	357	25/06/2007
	Freezer vessel	333	391	
	Factory vessel	0	3	
Tunisia	Processing plant	75	90	25/06/2007
	Freezer vessel	31	76	
	Plant processing materials derived from aquaculture	2	1	
Mauritania	Processing plant	53	54	10/11/2006
	Freezer vessel	100	103	
Algeria	Processing plant	NA	77	10/07/2007
	Factory vessel	NA	48	
Oman	Processing plant	24	21	30/04/2007
	Factory vessel	0	1	
Yemen	Processing plant	22	16	08/01/2007
UAE	Processing plant	9	9	29/08/2006
	Plant processing materials derived from aquaculture	1	3	
Egypt	Processing plant	4	6	08/05/2007
Saudi Arabia	Plant processing materials derived from aquaculture	0	1	19/03/2005
	Total	987	1,257	

Hazard Analysis and Critical Control Point system (HACCP)



Flowchart of Olive Oil Processing

Tests to be Performed for Olive Oil Processing

Type	Tests at Laboratory Level	Unit Price $
1	Chemical Tests of Olives at storage Pesticides Residues	60
	Heavy Metals: Lead, Copper, Iron	90
2	Microbiology test for Water Total Count + Coliforms	30
3	Swabs for Microbiology from Containers of: Crushing	30
	Centrifugation	30
4	Microbiological Test of mixture Total Count + Coliforms	30
	Yeast & Molds	30
5	Chemical tests of Vegetation Water Acidity	25
	Polyphenols (HPLC)	30
6	End Products	
	Impurities (Centrifugation)	30
	Acidity	25
	Peroxide Value	30
	Iodine Value	30
	Fatty Acid Composition	60
	Pesticide Residues	60
	Moisture and Volatile Matter	15
	Refractive Index	20
	Saponification Number	30
	Specific Gravity	20
	Heavy Metals: Lead, Copper, Iron	90
	Total per Batch	$ 765

Notes:

- Highlighted tests are performed periodically, at least once per month.
- **Maximum cost is $765**
- **Minimum cost is $705**
- 1,2,3,4,5 & 6 are shown in the flowcharts of Olive Oil Processing.
- The prices mentioned in the table are at cost, based on cost of testing in Lebanon (2004) and are in US$

Testing for Certification of Final Fish Products

Tests needed for Different Types of Fish Products	Fish product
Microbiology (plate count, coliforms, e-coli, salmonella, etc.)	All fish types
Histamine	Tuna and other fish types
Heavy metals (cadmium, lead and mercury)	All fish types
Volatile basic nitrogen	In case of doubt about fish quality
Sodium metabisulfites	Shrimp
Contaminants in the aquatic environment	All fish types
Trimethylamine nitrogen	In case of doubt about fish quality

YEMEN

Equipment, tools and chemicals needed for Fish Products Testing Lab	Estimated cost (USD)
Microbiology section	37,620
Culture preparation room	41,840
Decontamination room	34,260
Chemical tests section	3,900
Organoleptic tests section	9,640
Parasitology section	1,900
Atomic absorption spectrophotometer (including accessories and spare parts)	63,240
Nitrogen generator	24,400
Various equipment	14,240
Various glassware	4,421
Chemicals	11,500
Total cost	**246,961**

Source: (A. Morfq, Trade and Environment in the Fish Wealth Sector, October 2006),2006

Oman Success Story

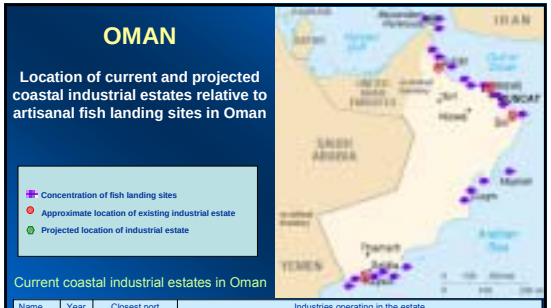
- **EU ban on its fish exports from Oman in 1998 due to food safety concerns.**
- **The incident represented a turning point for the industry**
- **Triggering Omani fish producers to upgrade their processing plants and establish HACCP-compliant systems in conformity with international standards.**
- **Targeted investments made in modern production and process technologies, enhanced technical capacity and improved infrastructure at fish landing sites to improve the competitiveness of the fisheries industry**
  - **Supported by Government and donors, including EC**
- **Oman was able to regain access to the EU market less than one year after the ban was imposed.**

Need for Integrated Planning

- **Expanding fish exports need to be sustainable**
  - Most countries have a licensing system in place
  - Some tension between revenues generated from sale of fishing licensing to international trawlers (often subsidized from national governments) for national revenues in least developed countries who also fish for local consumption and export.
- **Integrated sustainable development planning also requires policy coherence**
  - Coordination needed between national development policies, plans and projects across sectors based
  - Must be based on informed planning and implications for employment, income generation, environment and sustainability where export growth is not the only goal.

OMAN

Location of current and projected coastal industrial estates relative to artisanal fish landing sites in Oman



Current coastal industrial estates in Oman

Name	Year	Closest port	Industries operating in the estate
Rusayl	1983	Sultan Qaboos	Chemicals, batteries, electrical and building materials, fiber optic cables, food, textiles and garments, stationery, paints
Sohar	1992	Sohar Port	Marble, paper recycling, food, detergents, leather, furniture, toothpaste, resins, glass, steel bars, engine oil
Raysut	1992	Salalah Port	Stationery, food (including ice and fish processing), PVC pipes, steel fabrication, medical supplies, solar heaters, fertilizers
Sur	1999	own port	Fertilizers, natural gas and its associated industries

YEMEN

Location of current and projected coastal industrial and free zones in Yemen relative to major industrial and artisanal fishing ports

Fish preparation facilities in major coastal governorates in Yemen (2004)

	Hadramout	Aden	Al-Hudaydah	Mahrah	Total
Number of facilities	24	5	4	3	36
Total number of workers	971	195	140	165	1471
Total freezing capacity (tons per day)	295	75	37	52	459
Total storage capacity (tons)	12,880	3,630	630	1,000	18,140
Total ice production capacity (tons per day)	165	20	40	26	251
Total quantity of processed fish (tons per year)	20,000	5,000	1,700	1,300	28,000

Notifications by EU Rapid Alert System for Food & Feed involving fish shipments from Yemen, Morocco & Oman (2006)

Date	Notified by	Reason for notifying	Country of origin
28/02/2006	Spain	**cadmium** in frozen whole round cuttlefish	Yemen
28/02/2006	Spain	cadmium in frozen whole round cuttlefish (Sepia spp)	Yemen
30/05/2006	Spain	mercury in frozen grouper (Epinephelus spp)	Yemen
16/06/2006	Spain	**mercury** in fresh grouper (Epinephelus spp)	Yemen
07/08/2006	Spain	cadmium in frozen whole cuttlefish	Yemen
05/07/2006	Spain	mercury in lantern shark (Etmopterus spinax)	Morocco
14/07/2006	Greece	Cadmium in canned sardines in soya oil	Morocco
14/07/2006	Greece	Cadmium in canned sardines in tomato sauce	Morocco
14/07/2006	Italy	Cadmium in canned sardines in vegetable oil	Morocco
24/07/2006	Greece	Cadmium in spiced sardines in soya oil	Morocco
24/07/2006	Greece	Cadmium in sardines in soya oil	Morocco
31/07/2006	Portugal	Mercury in frozen velvet belly lantern shark (Etmopterus spinax)	Morocco
31/07/2006	Portugal	Mercury in frozen velvet belly lantern shark (Etmopterus spinax)	Morocco
03/10/2006	Spain	Diarrhoeic Shellfish Poisoning (DSP) toxins in frozen razor clams	Morocco
30/10/2006	Spain	Diarrhoeic Shellfish Poisoning (DSP) toxins in razor clams (Solen marginatus)	Morocco
02/02/2006	Italy	Unauthorized use of colour E 122 - azorubine and of colour E 129 - Allura Red AC in fresh grouper fillets (Pagrus pagrus)	Oman
02/02/2006	Italy	Unauthorized use of colour E 122 - azorubine and of colour E 129 - Allura Red AC in fresh grouper fillets (Pagrus pagrus)	Oman
02/02/2006	Italy	Unauthorized use of colour E 122 - azorubine and of colour E 129 - Allura Red AC in fresh grouper fillets (Pagrus pagrus)	Oman
10/05/2006	Italy	**Lead** in sliced fresh chilled tuna	Oman
17/10/2006	Italy	Lead in slices of chilled fresh tuna (Thunnus albacares)	Oman

Recommendations

Regulatory actions

- Develop/update fishing laws, regulations for better monitoring and enforcement
- Regulate, and possibly reduce, duration of fishing seasons for over-exploited fish species, such as squids, shrimps and lobster;
- Develop aquaculture standards;
- Require fish processing factories to comply with international standards related to food safety, even for products not destined for export, including artisinal fisheries.

Infrastructure development

- Encourage private sector investment in energy-efficient ice production and refrigeration facilities throughout the coastline; Supply units with power generators and spare parts.
- Facilitate purchase of refrigerated trucks for enhanced transport and trade;
- Develop hygienic fish landing & distribution sites & equip with quality assurance laboratories.

Capacity building activities

- Train fishermen in the hygienic cleaning, preparation, storage & stocking of fish to extend shelf life, and improve artisanal processing methods (smoking and drying)
- Modernize the artisanal boat industry to equip all boats with cold storage areas;
- Support research and development in aquaculture;
- Build the capacity of government in monitoring & reporting on renewable resources & quality control

Policy coherence and integrated sustainable development planning

- Integrate fisheries development policies, including aquaculture, into national development strategies, by drawing upon linkages between industrial development, agricultural intensification, income generation, environmental protection and trade.
- Improve environmental management policies associated with the trade, transport and disposal of chemicals and hazardous substances that pose a threat to marine environments;
- Balance gains from the issuance of industrial fish licenses in EEZ to preventing over-fishing.
- Encourage coordination between national and regional organization on fish & marine pollution

Thank you.

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