



**WORLD TRADE ORGANISATION
STANDARDS AND TRADE DEVELOPMENT FACILITY**

PROJECT PREPARATION REPORT (STDF 69)

TITLE:	IMPROVED CAPACITY FOR ENSURING THE QUALITY AND SAFETY OF YEMENI SEAFOOD PRODUCTS
REQUESTING ORGANISATION:	YEMENI SEAFOOD EXPORTERS ASSOCIATION (YSEA)

DRAFT FINAL REPORT

DECEMBER 2005



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TABLE OF CONTENTS

PROJECT SUMMARY

1	PROJECT BACKGROUND AND OBJECTIVES	1
1.1	INTRODUCTION	1
1.2	YEMEN AND WTO ACCESSION.....	1
1.3	AIMS AND OBJECTIVES OF STDF	2
1.4	REVIEW OF THE YEMEN FISHERIES SECTOR.....	3
1.5	ISSUES AND CAPACITY CONSTRAINTS FOR FISHERIES SPS	17
1.6	CURRENT AND PROPOSED FISHERIES SECTOR DEVELOPMENT ACTIVITIES	24
1.7	KEY OBJECTIVES TO BE ACHIEVED BY THE PROPOSED PROJECT.....	30
2	PROJECT ACTIVITIES.....	31
2.1	COMPONENT 1: PRODUCT QUALITY AND SAFETY IMPROVEMENT	31
2.2	COMPONENT 2: REDUCTION OF SPS BARRIERS TO MARKET ACCESS	36
2.3	COMPONENT 3: 'YSEA' CAPACITY DEVELOPMENT	39
3	PRIVATE / PUBLIC SECTOR CO-OPERATION	42
4	INSTITUTIONS INVOLVED	43
4.1	IMPLEMENTING INSTITUTIONS	43
4.2	STDF PARTNER INSTITUTIONS.....	45
5	LINKAGES WITH RELATED PROGRAMMES	46
5.1	FISHERIES RESOURCE MANAGEMENT AND CONSERVATION PROJECT	46
5.2	SUSTAINING COMPETITIVENESS IN GLOBAL MARKETS: PREPARING YEMEN FOR WTO ACCESSION – FISH SECTOR SUB-COMPONENT (UNIDO)	47
5.3	FISHERY QUALITY CONTROL FOR EXPORT PROMOTION (UNDP / IF).....	47
6	PROJECT OUTPUTS	48
6.1	OUTPUTS.....	48
6.2	RELEVANCE TO STDF OBJECTIVES	50
7	PROJECT IMPACT.....	51
8	PROJECT INPUTS	53
8.1	COSTS	53
8.2	RESOURCES.....	57
9	NON-STDF CONTRIBUTIONS.....	60
10	TIMETABLE.....	61
11	PROJECT MANAGEMENT, MONITORING AND EVALUATION	62
11.1	PROJECT MANAGEMENT	62
11.2	PROJECT MONITORING AND EVALUATION	63

Appendices

APPENDIX A: DATA SOURCES	65
APPENDIX B: ENDORSEMENTS	67
APPENDIX C: EC WORKSHOP TOPIC PAPER AND RESULTS SUMMARY (FEBRUARY 2005)	70

Figures and Tables

Figures

FIGURE 1: DISTRIBUTION OF FISH STOCKS IN YEMEN WATERS	5
FIGURE 2: PROBLEM TREE - QUALITY CONTROL.....	17
FIGURE 3: LOGICAL FRAMEWORK FOR THE EC QUALITY CONTROL IMPROVEMENT COMPONENT OF FRMCP	26
FIGURE 4: COMPONENT 1 - PRODUCT QUALITY AND SAFETY	31
FIGURE 5: COMPONENT 2 - BARRIERS TO MARKET ACCESS REDUCED	36
FIGURE 6: COMPONENT 3 - YSEA CAPACITY DEVELOPMENT	39
FIGURE 7: PROJECT LINKAGES WITH FRMCP	46
FIGURE 8: YSEA STAFF CONTRIBUTIONS	57
FIGURE 9: LOCAL CONSULTANT RESOURCES.....	58
FIGURE 10: INTERNATIONAL CONSULTANT RESOURCES.....	59
FIGURE 11: PROJECT WORK PLAN.....	61
FIGURE 12: PROJECT MANAGEMENT STRUCTURE.....	62

Tables

TABLE 1: ESTIMATES OF POTENTIAL YIELD OF FISHERY RESOURCES.....	4
TABLE 2: NUMBER OF FISHERS, VESSEL NUMBERS AND CATCH BY GOVERNORATE IN 2003	6
TABLE 3: ESTIMATES OF YELLOWFIN TUNA CATCHES OVER 2004.....	8
TABLE 4: AIR SHIPMENTS OF FRESH FISH FROM YEMEN (2003)	11
TABLE 5: EU CERTIFIED PROCESSING FACILITIES IN YEMEN	12
TABLE 6: FISH EXPORTS BY GOVERNORATE (2001 – 2003)	13
TABLE 7: FISH EXPORTS BY PRODUCT AND GOVERNORATE (2003)	13
TABLE 8: MEAN RURAL MARKET PRICES FOR STAPLE MEATS BY GOVERNORATE (1998 – 2002)	15
TABLE 9: MARKETS AND THEIR QUALITY DEMANDS	18
TABLE 10: SUMMARY OF CURRENTLY PLANNED QC-RELATED CAPACITY-BUILDING INITIATIVES IN YEMEN	29
TABLE 11: PROJECT COOPERATION WITH MFW	42
TABLE 12: RELEVANCE TO STDF OBJECTIVES.....	50
TABLE 13: FEE & SUBSISTENCE COST SUMMARY	53
TABLE 14: EXPENSES COST SUMMARY	53
TABLE 15: BREAKDOWN OF COSTS BY COMPONENT AND WORK PACKAGE.....	54
TABLE 16: VERIFIABLE OUTPUTS OF THE PROJECT	64

Acknowledgements

I would like to express my appreciation to a number of people for their support in preparing this project. In particular I thank Ali Al Habshi, Secretary-General of the Yemen Seafood Exporters Association for his help in steering the review of the proposals as they developed. I would also like to thank Dr. Hamoud Al Najar, Chief of the Communication and Coordination Office (CCO) at the Ministry of Industry and Trade for his assistance in coordinating the study and in organising the cross-Ministerial meeting to review the project design draft. Finally I would like to thank John Williams, General Manager of Yemeni Fish in Mukalla for his generous hospitality when staying on the Gulf of Aden coast.

Acronyms Used

AYI.....	Association of Yemeni Industrialists	OIE.....	World Animal Health Organisation
CCO	Communication and Coordination Office	PCFSM	Public Corporation for Fisheries Services and Marketing
CFC	Coastal Fishing Corporation	PCM.....	Project Cycle Management
CSP	Country Strategy Paper	PCMA.....	Public Corporation of Marine Affairs
DTIS	Diagnostic Trade Integration Study	PIU.....	Project Implementation Unit
EC.....	European Commission	PPM.....	Project Preparation Manager
EEZ.....	Exclusive Economic Zone	QIF	Quality Improvement Fund
EPC	Environment Protection Council	SMART	Sector Management Adjustment and Restructuring Team
EU	European Union	SPS	Sanitary and Phytosanitary
FA	Fisheries Authority	STDF	Standards and Trade Development Facility
FAO	Food and Agriculture Organisation	t.....	Tonnes
FCU	Fisheries Cooperatives Union	TA	Technical Assistance
FFP	Fourth Fisheries Project	TNA.....	Training Needs Analysis
FMDC.....	Fisheries Manpower Development Centre	UNDP	United Nations Development Programme
FMIS.....	Fisheries Management Information System	VMS.....	Vessel Monitoring System
FMP.....	Fisheries Management Plan	WHO	World Health Organisation
FRA	Fisheries Research Authority	WTO.....	World Trade Organisation
FRMCP	Fisheries Resource Management and Conservation Project	YR	Yemen Riyal (US\$ 1 is worth approx. 194 YR in November 2005)
FVO	Food and Veterinary Office	YSEA.....	Yemen Seafood Exporters Association
GEF.....	Global Environment Facility	YSMQCO..	Yemen Standards, Metrology and Quality Control Organization
GoY.....	Government of Yemen		
HACCP.....	Hazard Analysis and Critical Control Point		
IDA	International Development Association		
IF	Integrated Framework		
LAN	Local Area Network		
MCS.....	Monitoring, Control and Surveillance		
MFW	Ministry of Fish Wealth		
MIT	Ministry of Industry and Trade		
mm.....	man months		
MoT.....	Ministry of Transport		
MSRRC	Marine Science and Resources Research Centre		
NFRC	National Food Resource Centre		
NGO	Non-Governmental Organisation		
NIP	National Indicative Programme		
OECD.....	Organisation for Economic Co-operation and Development		

Project Summary

1. Project title	Improved Capacity for Ensuring the Quality and Safety of Yemeni Seafood Products (STDF 69)
2. Requesting body	Yemeni Seafood Exporters Association (YSEA)
3. Collaborating government agency	Ministry of Fish Wealth (MFW)
4. Project objectives	<p>To enable YSEA to develop the capacity of its members to better meet the commercial requirements of SPS measures and thereby improve the quality and safety of seafood products emerging from Yemen. In particular to:</p> <ul style="list-style-type: none"> • Raise the minimum standard of Yemeni seafood in terms of their quality and health in order to reduce the risk sometimes associated with these products and to improve opportunities for value adding. • Instil a greater understanding of export market needs and requirements so that Yemeni seafood producers can respond to these markets and maintain their competitiveness with other producers. • Enable YSEA to become an effective and proactive organisation that provides both the private and public sector with the information and resources to improve the quality of their products and ability to access key overseas markets.
5. Project activities	<p>1. Product Quality Development</p> <p>WP 1.1: Develop risk assessment methodologies WP 1.2: Development of a SPS Standard WP 1.3: Develop Yemeni seafood quality mark WP 1.4: Develop harmonised training standards</p> <p>2. Reduction of SPS Barriers to Market Access</p> <p>WP 2.1: Develop sector-wide SPS strategy WP 2.2: Compile SPS regulation database</p> <p>3. YSEA Capacity Development</p> <p>WP 3.1: Develop Business Planning Capacity WP 3.2: Develop YSEA Website</p>
6. Private/public sector co-operation	A number of key project activities will be undertaken in co-operation with MFW. In particular risk assessment, quality standard development and sectoral training.
7. Partner institutions involved	World Bank via linkages with the forthcoming 'Fisheries Resource Management and Conservation Project' (FRMCP).
8. Project outputs	<p>The project outputs are anticipated to be the following:</p> <ol style="list-style-type: none"> a) Product risk assessment methodologies tried and tested b) Quality standard developed for seafood production processes c) Quality mark developed for Yemeni quality standard d) Standardised training curricula and delivery approaches e) Strategy to address non-tariff barriers and market needs f) Interactive database of regulations for key markets g) Vision, strategy and business plan for LSEA h) LSEA website live and productive

9. Project Impact	<p><u>Complement efforts by bilateral agencies:</u> strong linkages will be established with the World Bank / EC 'FRMCP'. FRMCP will seal mainly with capacity building in the public sector and assisting quality development early in the supply chain whilst this project focuses on improving the private sector processing capacity and its ability to delivery safe and high quality products to regional and international markets.</p> <p><u>Linkages to country or regional program development priorities:</u> The Yemen Strategic Vision up to the Year 2025 focuses on raising productivity and improving quality and competitiveness.</p> <p><u>Capacity enhancement:</u> the project focuses on the development of the YSEA's capacity to deliver safer and higher quality products through influencing the activities and practises of its members.</p> <p><u>Improved market access and trade opportunities:</u> access to markets will be improved by a better understanding of the potential barriers that exist and the implementation of diagnostic studies to determine the best approaches to overcome these.</p> <p><u>Poverty reduction:</u> This project is intended to further strengthening this growing industry sub-sector and ensure that it continues to contribute to the local economy.</p> <p><u>Public-private co-operation:</u> this project will see the strengthening of existing ties between the processing industry and the Ministry of Fish Wealth.</p> <p><u>Innovativeness:</u> risk assessment have rarely been used in the fisheries sector. The empowerment of a private sector organisation such as YSEA through the development of their business planning capacity is a novel approach in Yemen.</p> <p><u>Demonstration potential:</u> the development of a industry-based training capacity that operates in partnership with together with approaches such as risk assessment are potential areas of replication.</p>
10. Project inputs	The total cost of the project is anticipated to be \$452,050. This consists of US\$ 284,250 in fees and US\$ 167,800 in expenses.
11. Non-STDF contributions	Of the total cost of US \$452,050, STDF is being requested to finance US \$371,075 (82.1%). The remaining US \$80,975 (17.9%) will be funded by the Yemeni Seafood Exporters Association.
12. Timetable	<p>Start: July 2006</p> <p>Finish: June 2008</p> <p>Duration: 24 months</p>

1 PROJECT BACKGROUND AND OBJECTIVES

1.1 INTRODUCTION

This document provides the rationale and operational details for a proposed project to improve the quality and safety of Yemeni fish products for domestic and overseas consumption. This project preparation activity has been carried by Tim Huntington¹ of Poseidon Aquatic Resource Management Ltd with funding from the Standards and Trade Development Facility (STDF). Project preparation has been undertaken over November and December 2005 and included a two week mission to Sana'a and the Hadramaut coast in Yemen. The mission concluded with a small workshop that was attended by the Deputy Minister of Fish Wealth as well as representatives from the Ministry of Industry and Trade, the Ministry of Planning, the Royal Netherlands Embassy and the Yemeni Seafood Exporters Association. This workshop was followed with a briefing to His Excellency the Minister of Fish Wealth of the project objectives, activities and implementation strategy. It is expected that the proposed project would be submitted for STDF review, currently scheduled for 3 February 2006.

1.2 YEMEN AND WTO ACCESSION

Global trade has grown exponentially over the last decades and represents a major source of growth and prosperity for many countries. For Yemen, along with many other developing countries, especially LDCs, this has not been the case. Only a limited number of Yemeni products have access to international markets. If this is to change, many efforts are necessary, both from Yemen and the international community. Yemen is currently preparing for WTO accession and opening its markets. At the same time, initiatives such as the EU "Everything but Arms" for LDCs show the readiness of industrialized countries to ease access to their markets. The Doha Development Agenda gives a prominent place to the provision of technical assistance to developing countries, and in particular LDCs, to ensure that they will benefit from their WTO accession. The World Bank-led 'Integrated Framework', the core mechanism of the donor community for trade-related technical assistance to LDCs, has selected Yemen as a pilot country.

Nevertheless, in order to realize the potential of all these efforts, additional efforts have to be made to ensure that productive capacities in Yemen are made competitive in global markets. Yemeni products have to be able to comply with standards and technical regulations of client countries and proof of such compliance has to be internationally recognized. In addition, open borders mean more imports. Local institutions therefore need to have the capacity to assess whether these imports meet international standards, in particular, to protect consumers against potential health and safety risks.

As recognised by UNIDO in 2002 (UNIDO, 2002), the fisheries sector represents one of Yemen's best opportunities for contributing to global trade. However there are a number of non-tariff barriers to access the lucrative markets in the EU and USA, mainly stemming from ever more stringent product quality standards. With regards to the EU market there are three main issues:

- EU standards for sanitary and phytosanitary (SPS) measures;
- EU legislation on residue levels and heavy metals in fishery products; and
- EU legislation on labelling and traceability

Whilst these measures are recognised to be necessary to protect the health of consumers, they do represent additional costs to exporters in terms of (i) standard setting, (ii) the costs of technical compliance, (iii) the costs of verification and (iv) transitional arrangements.

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These non-tariff barriers – and the costs incurred to overcome them – are well known and considerable efforts are being made by the development agencies to assist countries overcome them through bilateral aid. However much of this is aimed at improving public sector capacity to perform the role as ‘competent authority’ and relatively little is aimed at the private sector enterprises investing in seafood export. This has been recognised by the Standards and Trade Development Facility, which has been tasked with improving the capacity of private and public sector organisations involved in trade development.

1.3 AIMS AND OBJECTIVES OF STDF

STDF is a partnership and trust fund established by Food and Agriculture Organization (FAO), World Organization for Animal Health (OIE), World Bank, World Health Organization (WHO) and the World Trade Organization (WTO) in 2002. The strategic aim of the STDF is to assist developing countries enhance their expertise and capacity to analyze and to implement international sanitary and phytosanitary (SPS) standards, improving their human, animal and plant health situation, and thus ability to gain and maintain market access. In addition to facilitating international trade, SPS capacity building, notably in the area of food safety, can result in improved health conditions for local markets and so favour economic and social development.

The STDF is both a financing and a co-ordinating mechanism. Grant financing is available for private and public organizations in developing countries seeking to comply with international SPS standards and hence gain or maintain market access. Applications are particularly encouraged from stakeholders in Least Developed Countries (LDCs). As a co-ordinating mechanism, the STDF acts as a forum for information sharing on the regular activities of the five partners, notably on technical assistance. Sharing of calendars, training materials and data on technical assistance are core co-ordination functions.

The STDF is designed to complement the current and expected future assistance efforts by bilateral agencies, to draw upon and apply important implementation lessons from recent assistance efforts in this field, and to achieve additional improvements in the quality of assistance work through deeper collaboration among major multilateral agencies working in this field. This is particularly important in the context of the current project, as Yemen has a long history of bilateral development assistance in the fisheries sector.

STDF intends to add value in the following ways:

- STDF shall act as a reference point for good practice by implementing demonstration projects with innovative approaches;
- STDF shall address longer term issues of capacity and compliance, rather than involve itself in short term policy-driven “fire-fighting” projects; and
- By nature of its make-up, which includes the standard setting organizations recognized by the SPS Agreement, the STDF has technical expertise and experience to offer in this highly technical area.

STDF funding is available to (i) public sector entities with responsibility for SPS measures or policy, (ii) private sector entities such as farming organisations as well as trade and industry associations, (iii) STDF partner organisations (FAO, OIE, the World Bank, WHO and WTO) as well as (iv) suitable ‘not for profit non-governmental organisations (NGOs).

STDF funded projects must address one of three themes:

- **Theme 1:** SPS capacity evaluation and planning tools, including the need for and implications of international standards and their application.
- **Theme 2:** Capacity building for public and private organizations, notably with respect to market access.
- **Theme 3:** Information sharing on standards and technical assistance activities.

These theme headings are acknowledged to be broad and are therefore not mutually exclusive. For example, capacity building initiatives (under Theme 2) might also be included as an element for Themes 1 and 3 projects. Projects must (i) enhance capacity to meet official or commercial requirements in the sanitary and phytosanitary field and/or to (ii) better protect human and animal health and plants against disease and pest hazards related to cross border trade.

1.4 REVIEW OF THE YEMEN FISHERIES SECTOR

1.4.1 Marine Resources

The Republic's of Yemen 2,200 km long coastline has very few natural bays and indentations. The coastline of the Gulf of Aden² measures 1,550 km from Bab el Mandab, the narrow straits separating the country's south-west peninsula from the African continent, to the border with Oman in the east. The Red Sea coastline stretches 650 km north from Bab el Mandab to the border with Saudi Arabia. The Socotra Archipelago, which lies off the tip of the East African Horn, has a coastline of 320 km. Yemen's closest neighbours are Oman in the east, Somalia and Djibouti across the Gulf of Aden, Eritrea across the Red Sea and Saudi Arabia in the north.

Yemen claims sovereignty over a territorial sea of 12 nautical miles, a three nautical mile coastal limit and a 200 nautical mile EEZ off the southern coast. Under UNCLOS, Yemen also claims jurisdictional rights over its 22,225 km² southern continental shelf and 11,200 km² shelf in the Red Sea. Subject to any constitutional implications of the 1990 Unification of the former PDRY and YAR, Yemen has ratified UNCLOS and has declared 12, and 200 nautical mile zones in accordance with this convention.

1.4.1.1 Oceanographic features

The *Gulf of Aden* is dominated by the Indian Ocean monsoon system. The winds blow from east to north-east during the north-east monsoon, October to April, and from south-west during the south-west monsoon, May to September. The strongest winds and associated water currents occur in July/August. During the south-west monsoon, oceanic upwelling stimulates primary production of phytoplankton and ultimately creates an increase in the abundance of pelagic fish. The north-eastern part of the Gulf and the area south of Socotra are among the most productive marine areas in the world, with productivity levels comparable to those off the coasts of Peru and West Africa.

The *Red Sea*, a semi-enclosed body of water, covers an area of about 440,000 km² and is characterised by high water temperatures and high salinity. There are no major river inflows and water lost through evaporation far exceeds precipitation. The loss of water through evaporation is replenished through the inflow from the Gulf of Aden through the Straits of Bab el Mandab. Primary productivity is relatively low due to poor surface circulation in the absence of strong wind systems. Productivity is greatest in the south where it is stimulated by the inflow of nutrient rich Indian Ocean water from the Gulf. An important feature of the southern part of the Red Sea is the numerous small islands and the reefs of different types extending far out in the sea.

² The eastern limit of the Gulf of Aden is normally considered to be Ras Fartak (near Nishtun). In this report, however, Gulf of Aden refers to the waters along the entire southern coast extending to the border with Oman.

1.4.1.2 Potential yields and rates of exploitation

Very little quantitative and scientific information is available on the fisheries resources of Yemen. Most of the past research work was done 15-25 years ago, undertaken in connection with externally supported development projects, where FAO played a prominent role. With regard to demersal (i.e. bottom living) species in the Gulf of Aden, it is only cuttlefish, previously exploited by industrial trawlers and now heavily targeted by the artisanal fisheries and rock lobster that have received continuous, though sometimes limited attention.

The industrial trawler fleet has exploited large quantities of demersal fish over the years but surprisingly there has been little research carried out. In the Red Sea, only the shrimp resources, which are not very large, have been studied to some extent. No scientific investigations of any kind have been done on other demersal resources exploited by the artisanal fisheries.

In the period 1975-84, the small pelagic species in the Gulf of Aden were surveyed by acoustic methods during seven cruises undertaken with *FRV Dr Fridtjof Nansen* under the auspices of FAO (Morgan and Sanders, 1989). The estimates of potential yield were in the order of 130,000-150,000 tonnes. Besides this, very little scientific work in terms of resources assessment has been undertaken on the abundant small pelagic fish resources off the south coast. Only the sardine resource has received some attention because of its potential value as raw material for a fish meal industry. Large pelagics, including yellowfin tuna, shark, kingfish, etc. have not been studied at all. Likewise, the pelagic resources in the Red Sea have been not been studied.

Table 1 below gives estimates of potential yield for both the Red Sea and Gulf of Aden. The large gaps in the data provides an indication as to the lack of information on Yemen's fish resources and their potential yield.

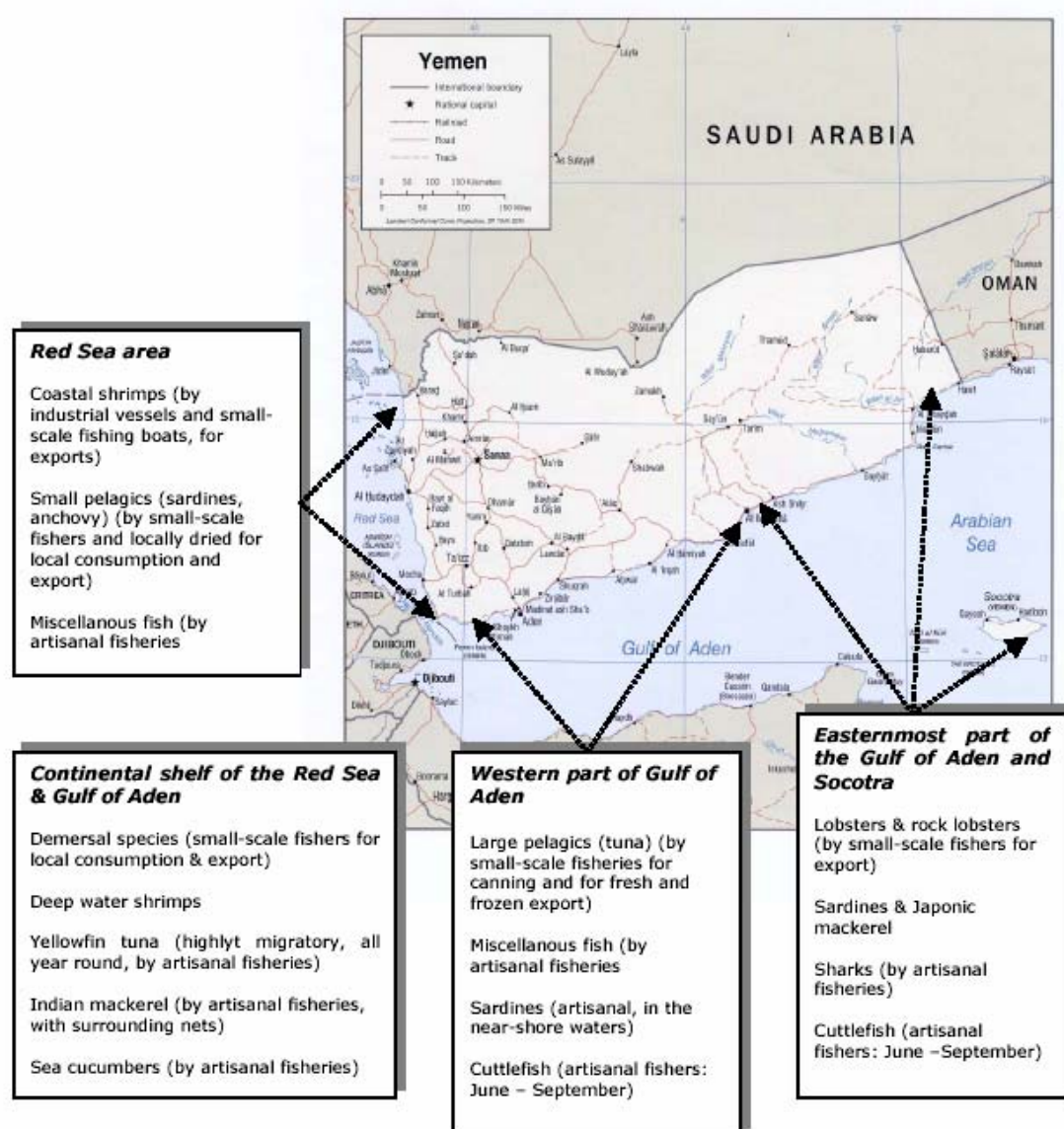
Table 1: Estimates of potential yield of fishery resources

Area and species	Potential sustainable yield (t)	
	Gulf of Aden	Red Sea
Yellowfin tuna	High?	?
Demersal fish	12,000	?
Cuttlefish	3,000	?
Rock lobster	700	?
Sardines	20,000	?
Sea cucumber	?	?
Shrimp	-	1,000
Deep-sea lobster/shrimp	500	?
Pacific mackerel and scads	24,000?	?
Anchovy	16,000?	?
Meso-pelagics	?	?
Misc. fish (shark, Indian mackerel etc)	?	?
Total		?

Source: Adapted from the IV Fisheries Project Fisheries Sector Review (MEP, 1998)

Inherent in these estimates is a high degree of uncertainty due to the poor statistical data base, insufficient research since before 1990 and the large natural variations in resource abundance.

Figure 1: Distribution of Fish Stocks in Yemen Waters



Source: Bonfiglioli and Hariri (2004)

1.4.2 Fisheries

Until the last couple of years, fisheries production has been dominated by an industrial fishery targeting cuttlefish, trawled demersal fish and deep-water lobster and shrimp. An important artisanal fishery has also been developing, mainly targeting tunas, kingfish and demersal species. Since the recent policy decision to cease industrial fishing, combined with a rapidly expanding trade in demersal fish (mainly to Saudi Arabia) and tunas and cuttlefish (to Europe and the Far East), the artisanal fisheries have expanded rapidly. The artisanal sector now catches over 230,000 tonnes and employs over 50 thousand fishers (see table overleaf). At present there is no indication that industrial fishing will be resumed, although the Minister of Fish Wealth is under pressure to replace the previous income of some 1 billion YR (around € 4 million) as the Government still has notional target income of 1.5 billion YR (€ 6 million) from the fisheries sector.

Table 2: Number of fishers, vessel numbers and catch by Governorate in 2003

Governorate	No. of Fishers	Vessel Numbers		Catch (t)	
		Boats	Sambuks	t	%
Haija	2,600	382	-	1,484	1%
Hodeidah	18,326	1,750	242	17,050	7%
Taiz	1,515	545	9	5,280	2%
Lehaj	1,950	390	-	4,877	2%
Aden	2,996	1,252	39	29,829	13%
Abiyan	2,273	890	-	13,724	6%
Shabun	768	524	-	3,515	2%
Hadramout	11,944	4,694	177	77,148	34%
Al Mahrah	7,197	2,477	2	75,818	33%
Total	49,569	12,904	469	228,723	100%

Source: MFW statistics

The most productive fisheries are found in the Hadramaut and Al Mahra Governorates, which together account for around 70% of landings. A brief description of the main fisheries of the Gulf of Aden and the Red Sea are described below.

1.4.2.1 Fisheries of the Gulf of Aden

Yellowfin tuna (*Thunnus albacares*): the most important large pelagic species caught in the Gulf of Aden is yellowfin tuna. It is available all year round, but with a peak season between March and April when the fish appear in large quantities off Hadramaut Governorate. Since Yellowfin are highly migratory, the fish present in Yemeni waters are most likely part of the larger Indian Ocean stock rather than a separate, resident stock. The potential yield is therefore influenced by the catch taken in other Indian Ocean nations which share the stock. The landings of Yellowfin by the artisanal fleet have increased strongly in recent years, driven by demand from canneries and export-orientated processors, mainly in Shihr and Mukalla. These landings were estimated at around 20,000 tonnes in 2004 (see table overleaf). The fish is caught by hook-and-line, trolling or by baited drop-line. The fish caught by the inshore boats are mostly small 6-10 kg juveniles, which are not favoured by EU consumers. The larger school fish are mainly found at least 50 km off the coast. This has cost implications for artisanal fishers, who can only operate economically through subsidised fuel costs. Should these rise, fishers are likely to react by reducing ice use to decrease fuel costs and increase fish payloads, thus reducing quality.

Other large pelagic species: This category includes a large variety of species such as kingfish (*Scomberomorus commersoni*), jacks of the Carangidae family, billfish (sailfish and marlin), cobia (*Rachycentron candus*), dolphin fish (*Coryphaena hippurus*), queenfish (*Scomberoides* spp.) etc. as well as tuna species other than yellowfin, i.e. skipjack (*Katsuwonus pelamis*), bonito (*Euthynnus affinis*) and frigate mackerel (*Auxis thazard*). No research or scientific assessment work has been attempted. Some of these stocks are definitely migratory over large areas but others might be resident in Yemeni waters but nothing about this appears to be known. These species are commonly caught all along the coast but it is not possible to quantify the amount landed.

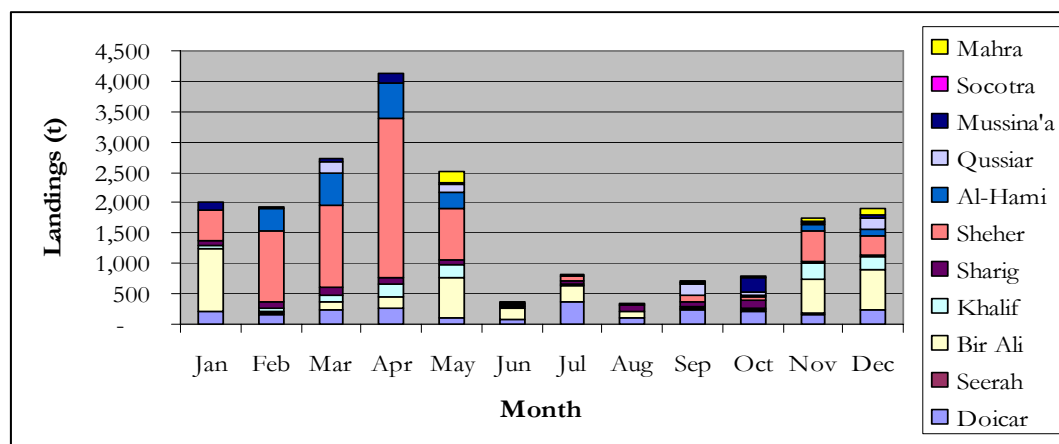
Demersal fish: in the mid-1980s, analyses based on surveys undertaken by the fisheries research vessels *Fridtjof Nansen* and *Ibn Magid*, resulted in sustainable yield estimates of 10,000-15,000 tonnes from a stock of about 120,000 tonnes. About one third of the catches consisted of low-value or non-commercial species. The most common commercial species are breams (*Nemipterus* spp.), emperors (*Lethrinus* spp.), snappers (*Lutjanus* spp.) and grunts (*Pomadasys* spp.), Ribbonfish (*Trichiurus* spp.) and Lizardfish (*Saurida* spp.). The composition varies by area, season and water depth and species like barracuda (*Sphyræna*) and jacks (*Caranx*) may sometimes also constitute significant portions of the catch.

Cuttlefish (*Sepia pharonis*): industrial exploitation of cuttlefish in the Gulf of Aden commenced in 1966 and continued until recently until trawlers were banned and it has been taken over by the artisanal fishery. The virgin stock was large and because of its high export value, assessment of the cuttlefish stock and estimation of potential yields have been attempted more or less continuously since the start of exploitation. The first estimates of sustainable yield were in the order of 5,000-7,000 tonnes. In the late 1970s, these were revised upwards to 5,000-20,000 tonnes. An internal MSRRC report in 1993, suggests that a catch of about 3,000 tonnes is sustainable. The resources are located east of Ras Quesir in Hadramaut Governorate, with highest densities found between Ras Sharween and Ras Fartak. Cuttlefish are found to a depth of 120 m, although most of the fishing is carried out in waters of less than 50 m. A short-lived species, the stock of cuttlefish is largely dependent upon the relative success of the recruits of each year. The two major spawning periods are February/March and August/September. A closure of the season during the spawning in August/September is usually recommended. The opening and closing of the cuttlefish season are announced in ministerial resolutions, but as with most conservation measures in Yemen, management of the fishery is not well enforced. Recent bans on cuttlefish catching have been heavily criticised by the processing industry who have become increasingly dependent upon this high value resource.

Rock lobster (*Panulirus homarus*): Commercial exploitation of rock lobster began around 1975. Because of the high export value of the lobster, the resource has received a lot of attention and is relatively well researched. This work has been facilitated by the availability of reasonably accurate catch and effort data due to CFC's monopoly in buying and marketing of the lobsters. Rock lobsters are abundant in shallow waters along the coast between Mukalla in the west and the Al Mahra Governorate in the east. The heaviest concentrations are found off Al Mahra Governorate. Potential yields have been estimated by several scientists at different times. They vary between 300 and 1,000 tonnes. Catches increased steadily during the 80's due to increased effort and reached a peak of 935 tonnes during the 1989/90 season. It has since declined and the recorded catch in 1996 was 350 tonnes. The actual catch is probably significantly higher since there are indications that lobsters are illegally fished and exported but the magnitude of this illegal catch is not known. Fishing takes place during seven months of the year. The rest of the year is designated as a closed season.

Table 3: Estimates of Yellowfin Tuna Catches over 2004

Month	Catch by Landing Location (tonnes)											Total Landings
	Doicar	Seerah	Bir Ali	Khalif	Sharig	Sheher	Al-Hami	Qussiar	Mussina'a	Socotra	Mahra	
Jan-04	205	2	1,039	61	62	523	-	-	123	-	-	2,014
Feb-04	165	12	35	57	101	1,163	378	-	15	1	-	1,927
Mar-04	230	11	118	130	109	1,366	517	182	58	5	-	2,726
Apr-04	252	1	207	203	99	2,639	558	10	162	2	-	4,133
May-04	118	0	660	200	70	855	261	133	6	29	181	2,514
Jun-04	69	12	195	23	11	2	-	25	-	2	27	366
Jul-04	374	8	247	22	51	94	4	3	17	6	-	825
Aug-04	95	1	125	-	107	11	-	0	5	7	-	351
Sep-04	248	15	10	8	96	91	0	194	29	15	-	705
Oct-04	212	16	22	3	149	58	10	66	241	23	0	798
Nov-04	157	32	558	261	18	507	98	40	18	5	59	1,753
Dec-04	226	1	674	217	27	300	118	173	61	7	95	1,900
Total (t)	2,351	112	3,890	1,184	900	7,609	1,944	825	736	101	362	20,014
%	12%	1%	19%	6%	4%	38%	10%	4%	4%	1%	2%	100%



Source: YemeniFish (pers. comm.)

Small pelagic species: the main species among the sardines is *Sardinella longiceps*, which is abundant in the near-shore waters east of Mukalla. Traditionally, it was caught by castnets and more recently by small purse-seines or surrounding nets. In connection with the attempts to establish a fish meal industry in the 1970s, several exploratory fishing trials were undertaken using larger purse-seiners. Catch rates up to an average of 40 tonnes/day were achieved over 51 fishing days but expectations were not fulfilled during the commercial phase of the fish meal fishery and the fishery was terminated. Assessments of the stocks of sardine, based on commercial data from the area between Mukalla and Ras Sharma indicated that the stocks were heavily exploited. Landings were about 18,000 tonnes against an estimated yield of 21,000 tonnes. The Indian mackerel (*Rastrelliger kanagurta*) is abundant along the entire coast of the Gulf of Aden and is caught by means of surrounding nets and gillnets by artisanal fishermen. It is particularly abundant in the western part of the Gulf. There are no estimates available on the size of the stock or the potential yield. There are also no records detailing landings of the Indian Mackerel. However, it forms a very important basic, low cost protein food source throughout the country.

Shark (mainly *Charcharinus* spp.): sharks are caught all along the coast and using a variety of gear including longline, driftnet and hook-and-line. Many species migrate over long distances while others may well form resident stocks. There are no data or research at all on which estimates of potential yields can be made. The reproductive strategy of sharks means that populations are easily over-exploited and Yemeni stocks are probably approaching this condition. Sharks are a major component of many inshore fisheries and their decline or collapse would have catastrophic consequences for the livelihood of many coastal communities. Fish markets throughout the country often offer large numbers of very small sharks for sale. The practice of finning larger sharks at sea and dumping the carcass overboard is widespread.

1.4.2.2 Fisheries of the Red Sea

Estimates of the potential yield of demersal and pelagic fish from the Red Sea were made during the 1970's and early 1980's. These were based on trawl surveys, commercial trawling data and on the production of the artisanal fishery. Estimates varied from about 20,000 tonnes to 31,000 tonnes. No other, more recent, stock assessment efforts appears to have been made. The catch is taken with a variety of different fishing gears, especially static set-nets, trammels and surround nets of various kinds.

The highest value fishery in the Red Sea is **shrimp**. The most common species is *Penaeus semisulcatus* but there are also smaller quantities of *P. monodon*, *P. indicus* and *P. japonicus*. The resources are concentrated in the areas of Ras Katib, Taif, Haroumia, Salif and Al Luhaiya. The potential yield of shrimp was estimated in 1989 (Sanders and Morgan, 1989) to be 1,000 tonnes, based on an analysis of available stock assessment results. There have been no surveys, research or stock assessment work conducted for this resource since the termination of the FAO regional project for Development of Fisheries in Areas of the Red Sea and the Gulf of Aden in the early 1980's.

1.4.3 Aquaculture

Yemen's first commercial shrimp farm is now in operation 170 km north of Hodeidah, farming the salinity-tolerant species *Penaeus indicus*. In an investment of around US\$ 7 million (€5.5 million) by Hodeidah-based shrimp processor Musallam Trading Co., 50 hectares (ha) are currently under culture with a further 200 ha under preparation. Production of 10 t/ha is anticipated, giving an initial production of 500 t per year, using imported expertise from India. This investment has been prompted by the rising price of shrimp and increased buyer competition from the Saudi traders.

1.4.4 Processing, Markets and Distribution

1.4.4.1 Infrastructure

Landing infrastructure, in terms of the availability of sheltered quays, slipways and fish handling mechanisms (i.e. from moored vessel to quay-side selling point) is still generally poor, varying from donkey-drawn carts across mudflats in Salif (Red Sea) to purpose-built fishing quays of varying states of repair in Hodeidah, Aden and Nishtun. This inevitably impacts upon fish quality as it increases the number of handling and potential contamination points. Although fish boxes are starting to be used, especially for low volume, high value catches such as shrimp, most transfer mechanisms are poor (i.e. woven baskets, wheelbarrows or larger fish are simply dragged along the ground).

After landing, the single most important form of infrastructure is the *auction hall*. Almost all the fish in the Red Sea are marketed through the auctions halls (of which all but one are owned and managed by the PCFSM) as are around 70% of fish on the Gulf of Aden. Fishermen prefer to utilise the auction halls as they guarantee buyer competition and prefer the potential for higher prices to the relative stability of direct sale to the traders or processors. In addition many of the auction halls in the south coast are owned and maintained by fishing cooperatives.

The condition of many of these facilities are poor. A good example is the auction hall in Hodeidah that handles around 3,388 t fish per year (MSRRC, 2005). This facility was constructed in the 1980's and was designed to receive 80 boats per day. It now receives the fish from over 300 boats per day and has not seen any material maintenance or renovation since it was built. As a result the quay is very crowded, with boats queuing for around 3 hours to unload, sanitary conditions are non-existent (despite the recent introduction of stainless steel display tables) and the drainage is extremely poor. Its owners, PCFSM, state that the lack of investment has been due to the high level of dredging maintenance required to keep the harbour clear, estimated at 25 million YR per year (around €100,000). The remainder of PCFSM's 55 million YR (€232,000) income from this auction hall is apparently invested to support ice and fuel provision to outlying auctions in the Hodeidah Governorate.

Auctions are also a key point for *revenue collection* by MFW and more recently the Ministry of Finance (MoF). Fishermen selling their catch through auctions must pay 10% of the catch value, of which 5% goes to the auctioneer, 3% to the auction owner (i.e. PCFSM or the cooperative) and 2% to the cooperative to which he belongs. In addition, a recently passed agreement between MFW and the Ministry of Finance now requires that traders or processors purchasing fish at designated sites must pay 3% by value (6% in the case of invertebrates), a revenue split equally between the Governorate and MFW.

There has been the emergence of an *export-led processing sector* over the past five years. Around 25 companies have achieved adequate standards to export to the EU, although two (both public sector corporations) have had their licences withdrawn (see Table 5). These facilities are mainly based in the Hadramaut (56%) whilst the rest are in Hodeidah (24%), Aden (16%) and a single plant in Socotra. The Hadramaut plants mainly produce tuna (both fresh and frozen) for the European market, together with cuttlefish (mainly for China) and some demersal fish for the Far East Market. The Hadramaut includes two tuna canning plants. Many of these plants now employ women workers, although the Ministry of Labour usually ensures these are normally not mothers with young children.

1.4.4.2 Markets

Fish exports leave mainly by road to Saudi Arabia, although frozen shipments also leave by sea and fresh shipments by air. Table 6 and Table 7 show the point of exit point for Yemeni fish exports by Governorate and product respectively. These figures, which have been based on MFW health certificate records for the years 2001 – 2003, indicate the following:

- The majority (>70%) of fresh fish crosses the border at Harab, destined for Saudi Arabia's border inspection point at Jizan, where fish is inspected and cleared for further distribution and processing.
- Aden is the second biggest exit route, accounting for mainly fillets and loins (57% of the country's total) as well as a quarter of Yemen's other frozen fish.
- Sana'a sees the balance of the fillets and loins as well as a considerable quantity of fresh fish. Sana'a is currently the major exit route for fresh whole fish, fillets and loins being exported by air (see Table 4 below).

The main European markets for Yemeni products are France, Spain, Italy and the UK. These markets are primarily for fresh and frozen yellowfin tuna (whole and loins), cuttlefish (frozen whole) as well as some demersal species (groupers and snappers).

1.4.4.3 Local markets and food security

There does not appear to be any information on the internal trade and consumption of fish within Yemen. Certainly the major cities in the interior, such as Sana'a and Taiz, have a number of important fish markets but little is known about trade and consumption trends. Food security for both coastal and interior populations has become an issue of national interest. The recent rapid increase in fresh fish exports to Saudi Arabia, especially of demersal fishes popular in city markets such as emperor fish and groupers is likely to have altered the availability of fish to the local market. This seems to have had a number of consequences:

- Certain species are less available to both coastal and inland domestic consumers e.g. groupers and lethrinids;
- Increased price of fish to consumers – fresh fish prices have risen by around 24% over 1998 – 2002 (see Table 8 overleaf). However mutton and lamb prices have risen more sharply (32%) whilst chicken has only risen by 7%. The greatest price increase for fresh fish was 56% in Aden Governorate.
- Poor quality of fish available to the local market – the better quality grades of fish go for export and less quality is left to the local market where it is more affordable. In coastal areas this is less pronounced as fresh fish is made directly available from the fishermen.

Table 4: Air Shipments of Fresh Fish from Yemen (2003)

Airport	Volume	
	t	%
Sana'a	2,222	85%
Aden	5	0.2%
Mukalla	393	15%
Total	2,620	100%

Source: MFW figures

Table 5: EU Certified Processing Facilities in Yemen

Location	Name of Company	EU No.
Aden (4)	Coastal Fishing Corporation	01 (rescinded)
	Public Corporation for Services and Fish Marketing	02 (rescinded)
	Aden Gulf Fisheries Co. Ltd	21
	Searah Fishing Co. Ltd	23
Hodeidah (6)	Musallam Trading Est.	05
	United Fish Export Co. Ltd.	06
	Qatari Fish Processing	07
	Al Jazira Marine Resources Ltd	11
	Al Marsa for Marine Life	24
	Quality Processing Ltd	25
Mukalla (5)	Al Wadi Central Coldstorage	12
	Sabaa Fish Canning Factory	14
	Al Riyan Seafood Co. Ltd	15
	Tuna for Canning & Packing Fisheries Factory	18
	Mukalla Fish Canning Factory (Al Gwaizi)	22
Shihr (9)	Burum Fishing and Marketing Co.	03
	Shihr Fisheries Co.	04
	Mermaid for Fish Trading	08
	Trust Co. (Yemeni Fish)	09
	Al Marjan Marine Resources Ltd	10
	Tamimi Fisheries Co. Ltd	16
	Arabian Seafood Ltd	17
	Apasra International Corporation	19
	Al Bashair Fisheries Co.	20
Socotra (1)	Taj Socotra for Fisheries	13

Source: MFW

Table 6: Fish Exports by Governorate (2001 – 2003)

Fishery Origin	Check Point	2001				2002				2003			
		Volume (t)	%	Value (€ '000)	%	Volume (t)	%	Value (€ '000)	%	Volume (t)	%	Value (€ '000)	%
Artisanal Landing Products	Sana'a	3,794	8%	€ 6,534	13%	3,589	7%	€ 8,332	8%	5,202	8%	€ 11,361	8%
	Hadramout	8,720	18%	€ 6,248	12%	1,609	3%	€ 2,371	2%	4,069	6%	€ 4,123	3%
	Aden	17,060	35%	€ 18,742	36%	4,232	8%	€ 6,907	7%	10,192	16%	€ 16,210	12%
	Hodeidah	2,157	4%	€ 4,009	8%	2,913	6%	€ 11,131	11%	2,592	4%	€ 9,055	7%
	Al Mahrah	1,545	3%	€ 68	0%	No record				632	1%	€ 977	1%
	Haradah	11,010	23%	€ 13,880	27%	18,052	34%	€ 46,544	44%	23,658	37%	€ 61,293	45%
	Sub-total	44,286	92%	€ 49,481	96%	30,394	58%	€ 75,284	71%	46,345	73%	€ 103,020	76%
Industrial Products	Arabian Sea	No record				16,332	31%	€ 15,203	14%	8,690	14%	€ 10,027	7%
	Al Mahrah	No record				587	1%	€ 635	1%	No record			
	Red Sea	4,085	8%	€ 2,214	4%	5,435	10%	€ 14,435	14%	8,564	13%	€ 22,111	16%
	Sub-total	4,085	8%	€ 2,214	4%	22,353	42%	€ 30,273	29%	17,254	27%	€ 32,138	24%
Grand total		48,371	100%	€ 51,695	100%	52,747	100%	€ 105,557	100%	63,599	100%	€ 135,158	100%

Table 7: Fish Exports by Product and Governorate (2003)

Product	Artisanal Fishery Products												Industrial Fishery Products				Total	
	Sana'a		Hadramout		Aden		Hodeidah		Al Mahra		Hadarah		Arabian Sea		Red Sea			
	t	%	t	%	t	%	t	%	t	%	t	%	t	%	t	%	t	%
Fresh fish	1,677	5%	95	0%	139	0%	26	0%	26	0%	22,628	70%	-	0%	7,600	24%	32,166	100%
Frozen fish	853	7%	3,049	23%	3,499	27%	1,261	10%	296	2%	498	4%	3,966	30%	-	0%	13,126	100%
Fillets / loins	955	41%	29	1%	1,296	56%	44	2%	-	0%	-	0%	-	0%	-	0%	2,324	100%
Cuttlefish	1,699	13%	634	5%	5,094	38%	612	5%	41	0%	-	0%	4,597	34%	710	5%	13,346	100%
Shrimp	3	0%	-	0%	48	6%	332	39%	1	0%	272	32%	8	1%	194	23%	856	100%
Lobster (live)	-	0%	32	100%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	32	100%
Lobster (frozen)	-	0%	26	31%	57	69%	-	0%	62	75%	-	0%	-	0%	-	0%	84	100%
Others	15	1%	203	20%	58	6%	317	31%	206	20%	260	25%	120	12%	60	6%	1,033	100%
Total	5,202	8%	4,069	6%	10,192	16%	2,592	4%	632	1%	23,658	38%	8,690	14%	8,564	14%	62,966	100%

Source: MFW Health Certificate Records

1.4.4.4 Quality Control

MFW quality control staff are required to provide quality assurance across the full width of the catching – landing – processing – distribution chain. Emphasis is said to be put upon land-based infrastructure such as the auction halls and through inspection of private sector processing facilities. Due to the lack of training, inadequate logistical support and poor motivation, actual implementation is patchy and rarely enforced.

Processing inspections are said to be conducted every 2-3 months, where the plant is expected and checks made on the plants own records, including that of their own water and product testing.

A *Central Laboratory* for fish product assessment (i.e. chemical, microbiology and pathology) was established by IFAD and subsequently equipped under EU funding in 2000. This facility, which is adjacent to the MFW Aden main office, is well staffed with around 12 qualified technicians and operates under the supervision of the QC section in Sana'a. The laboratory is essentially self-financing, using test fees to fund the purchase of consumables and recurrent costs as well as part-time staff (salaries are paid by MFW in Aden). However there seems to be little provision for longer term equipment maintenance and replacement nor upgrade of the main building. Elsewhere in Yemen, the large numbers of exporters in the Hadramaut use the Hadramaut University's Faculty of Fisheries and Environment laboratory or send it to Aden. Commercial companies, such as SGS, do offer certification services but their fish health laboratory is based in Egypt and both costs and time delays are significant.

Control of regional trade through the *Border Inspection Points* (BIPs) has become increasing important as trade with Saudi Arabia and Oman grows. There are three border transit points of importance: with Saudi Arabia at Harab adjacent to the Red sea coast and at Al Wadi'ah in the interior where a soon to be completed asphalt road is likely to lead to a big increase in fish exports from the Hadramaut, and with Oman in Al Mahra. The BIP at Harab operates from early morning to 2 pm only in order to concentrate inspection requirements. Border processing include the issue of a health certificate (based on a visual inspection only) by MFW, followed by an export certificate by the Customs department certifying the country of origin before the goods are sealed before official reception in Jizan across the border in Saudi territory.

Table 8: Mean Rural Market Prices for Staple Meats by Governorate (1998 – 2002)**Sana'a Governorate**

Commodity	Price per Kg (1998 - 2002)					Change (1998 - 2002)	
	1998	1999	2000	2001	2002	Price	%
Mutton & lamb	600	700	700	700	800	200	33%
Chicken	320	320	320	300	320	0	0%
Fresh fish	250	250	300	250	280	30	12%

Hodeidah Governorate

Commodity	Price per Kg (1998 - 2002)					Change (1998 - 2002)	
	1998	1999	2000	2001	2002	Price	%
Mutton & lamb	570	667	650	700	750	180	32%
Chicken	270	310	310	300	310	40	15%
Fresh fish	230	240	220	190	250	20	9%

Aden Governorate

Commodity	Price per Kg (1998 - 2002)					Change (1998 - 2002)	
	1998	1999	2000	2001	2002	Price	%
Mutton & lamb	600	600	650	650	750	150	25%
Chicken	270	278	350	310	320	50	19%
Fresh fish	160	270	350	290	250	90	56%

Hadramaut Governorate

Commodity	Price per Kg (1998 - 2002)					Change (1998 - 2002)	
	1998	1999	2000	2001	2002	Price	%
Mutton & lamb	580	600	650	650	800	220	38%
Chicken	350	300	340	350	340	-10	-3%
Fresh fish	190	250	300	270	250	60	32%

Al Mahra Governorate

Commodity	Price per Kg (1998 - 2002)					Change (1998 - 2002)	
	1998	1999	2000	2001	2002	Price	%
Mutton & lamb	560	560	650	650	750	190	34%
Chicken	350	350	350	360	360	10	3%
Fresh fish	250	260	270	250	250	0	0%

Average

Commodity	Price per Kg (1998 - 2002)					Change (1998 - 2002)	
	1998	1999	2000	2001	2002	Price	%
Mutton & lamb	588	642	663	675	775	188	32%
Chicken	303	302	330	315	323	20	7%
Fresh fish	208	253	293	250	258	50	24%

Source: Agriculture Statistical Year Book (2002)

1.4.5 Sector Management

The principal institution responsible for fisheries sector management is the Ministry of Fish Wealth (MFW). MFW is responsible for, amongst other things, (i) collection of statistical data relevant to the fisheries sector, (ii) controlling the quality of fish production, and (iii) supervising the activities of public corporations in the fisheries sector e.g. PCFSM, CFC and the publicly owned canneries. The most recent policy for fisheries development has been articulated in MFW's 'National Strategy for Development of the Fisheries Sector' (MFW, 2000).

The principal barrier facing sector management is MFW's modest capacity to plan and prepare development programmes and activities. This will be addressed in part by the measures contained in the national strategy but as articulated in the World Bank's 'Fisheries Project Identification Mission' Working Paper (World Bank, 2004), there is now an urgent need for a far reaching institutional reform to strengthen fisheries resources management. FAO supported a workshop to catalyse institutional reform (held January 2004) and it is apparent that the Minister is firmly committed to progressing reform initiatives but with limited impact to date. The element of this reform process include:

- Decentralisation of MFW's management role to at least Governorate level and below to encourage resource co-management at local level;
- Role of Sana'a MFW to oversee two new public authorities (i) *Fisheries Authorities* at Governorate level and (ii) a *General Authority for Research and Extension* that will subsume the existing PCFSM, CFC and the Fisheries Manpower Development Corporation;
- Empowerment of 'model' cooperatives

These reforms will be strongly supported by the World Bank-funded elements of the FRMCP (see page 46).

1.5 ISSUES AND CAPACITY CONSTRAINTS FOR FISHERIES SPS

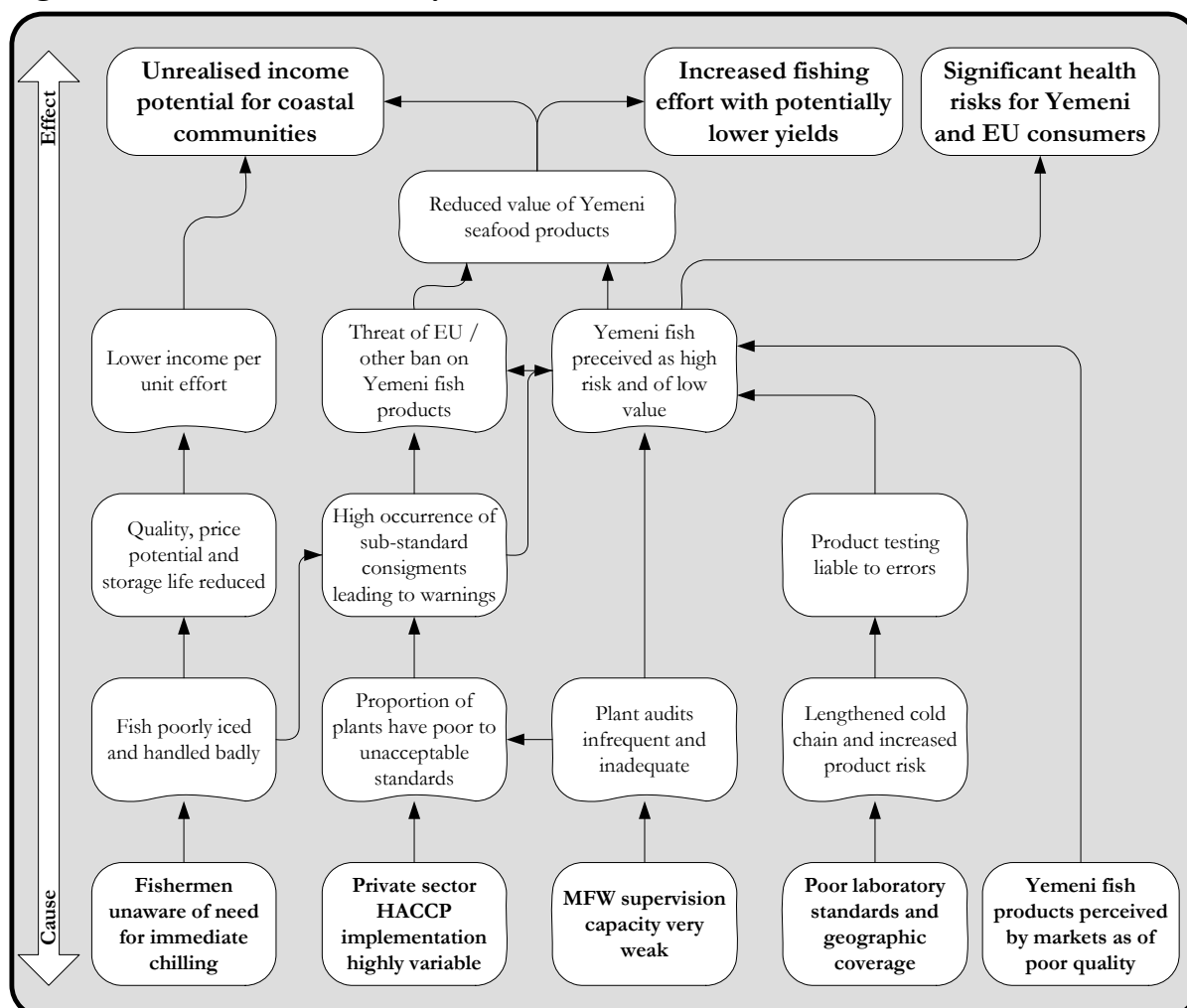
This project proposal has leaned heavily upon two sources: (i) the *Diagnostic Trade Integration Study* (DTIS) fisheries sector study conducted by the World Bank over 2001 – 2002 and (ii) a fisheries sector appraisal conducted by the European Commission in December 2004 – February 2005. This latter sector appraisal was part of the preparation activities for the proposed *Fisheries Resource Management and Conservation Project* that will be jointly financed by the World Bank, and one where the EC is focusing particularly upon quality control and SPS issues in Yemeni fisheries.

1.5.1 Assurance of Fish Quality to End Consumers

Fish products, by their nature, are susceptible to decomposition and therefore require an established ‘chill chain’ from the point of capture to the final consumer. Any breaks in the chill chain, or damage to the product through poor handling or contamination, will lead to an irreversible reduction in quality and therefore value. In extreme cases, poor product quality may be injurious to the health of the consumer.

As the problem tree below shows, there a number of reasons why fish product quality is so variable in Yemen.

Figure 2: Problem Tree - Quality Control



These primary causes can be summarised as follows:

1. Fishermen are unaware of the need for immediate chilling and in many cases insufficiently compensated for doing so;
2. Private sector implementation of HACCP is variable in its effectiveness throughout the industry;
3. MFW supervision of quality control, especially at landing and auction areas, is weak;
4. There is insufficient laboratory standardisation and insufficient coverage of the main production areas; and
5. The international perception of fish products from Yemen is still poor, despite large investments in modern processing infrastructure.

The consequences of these factors is that Yemen fish and fish products are under-valued when considering the artisanal nature of the fishery, where a high proportion of the catch destined for export is line-caught by day boats. With increasing numbers of people entering the artisanal fishery and no regulation, this will inevitably impact on the sustainability of the resource.

The problems in assuring fish quality in Yemen can be assessed from four main viewpoints, these being (i) on-boat storage and handling, (ii) the landing / auction facilities and the domestic market and distribution system, (iv) processing for the export market and (iv) quality control management and assurance systems.

1.5.1.1 On-boat storage and handling

With the cessation of industrial fishing, the artisanal fishing sector has grown through increased demand for both regional markets (Saudi Arabia, Egypt and Oman) as well as for consumers in Europe. These markets are important ‘drivers’ for quality and largely influence how fishermen respond in terms of their treatment of catches and therefore the overall quality of fish that is available to the markets.

With the high and growing demand for fish and shrimp from all three market segments, and in particular from Saudi Arabia, the incentive for providing high quality fish has declined in recent years, despite growing awareness of the importance of good on-boat storage and handling. This is particularly pronounced on the *Red Sea* coast, where competition from Saudi-destined traders is particularly fierce and the export processing sector is struggling to compete for supply. For the multi-day boats operating out of the Red Sea ports, block ice is generally used by in insufficient quantities, possibly at a ratio of around 4:1 fish to ice, rather than the generally accepted 1:1 ratio.

Table 9: Markets and their Quality Demands

Market	Drivers	Consequences
International	Highly regulated e.g. import controls & processor licensing.	Limited number of licensed processors demanding high quality material at a consistent price. High cost of compliance restricts buying power.
Regional	Some border quality inspection (i.e. Jizan in Saudi Arabia). High and growing demand.	High demand for a wide range of products capable of paying high prices as costs are low. Less quality aware. Tuna in this bracket may go for canning.
Domestic	Limited quality assurance	Absorbs remaining products of often poor quality and at lower prices. Very poor product salted or dried.

Multi-day boats operating in the *Gulf of Aden* from the southern coast tend to use flake ice, but again in insufficient quantities. The shark fishery is particularly poor, with fish being kept on insufficient ice for up to 20 days before being landed (mainly in Quesir where the main shark auction is held). The majority of the large number of fibre-glass day boats do not use ice, despite repeated attempts to encourage its use. The essential reason behind this is the reduced fish storage resulting from the carriage of ice and the additional cost of ice and fuel. Whilst these extra costs may be compensated by the increased value of iced fish (approx. 50 YR/kg, depending upon the buyer and the market), the economics are uncertain and more importantly the fishermen are convinced it is not worth the extra cost and time.

Generally the basic thermodynamics behind ice use is rarely understood e.g. ice must melt to extract the heat from the fish. Many day boats, especially on the southern coast, do not use ice at all. This widespread inability to cool fish immediately after capture and maintain this low temperature until landing results in a significant degree of spoilage that rendered catch unacceptable to most processors, yet it is readily accepted by both the local market and to a certain extent the regional markets. Even with the day boats, the lack of ice to preserve tuna, especially larger fish (e.g. 10 kg+) that are so attractive to the European market and take longer to cool, is likely to render the fish unacceptable for export. One processor on the Hadramaut (Borum Fisheries) considered that only around 12% of fish landed is suitable for fresh export, 38% is frozen for other export markets whilst at least half is “only suitable for the local market”.

Other quality control issues at sea include:

- The *handling of fish* – including gaffing into the boat, killing, storage and loading within the boat and transfer to the shore – needs to be more sensitive to prevent bruising and puncturing of the skin. This is not confined to fish - it is estimated that up to 20% of shrimp is either forced to be headed and peeled or B-graded due to handling damage;
- Despite previous attempts to improve *boat design*, boats equipped with ice boxes are less seaworthy, require greater engine power and fuel consumption, are less efficient in fish storage and hinder the removal fish at landing.
- Fishers *poorly educated* about the need to chill warm blooded fish like tuna immediately. Larger fish (> 10kg destined for top overseas markets) need more cooling and better handling.
- Water used for ice machines is often *contaminated* with bacteria and it may be necessary to certify the quality of water used for ice production in the seafood and other food industries. Other contamination sources include diesel and petrol from leaking fuel tanks
- The level of interaction with, and their understanding of fishermen by *MFW staff* has declined. It is therefore increasingly difficult for the Government to target development initiatives at the artisanal catching sector.

1.5.1.2 Landing sites, auctions, the domestic market and distribution system

With the exception of the Al Mahra Governorate, the vast majority of fish are brought ashore at recognised landing sites and auctioned immediately. Fishermen are very reluctant to bypass these sites for a number of reasons and this restriction on primary landing places aids statistics collection and assists the Government collect sales revenues. However these fish landing sites and auction halls are widely regarded as a major weak link in the quality control chain for a number of reasons:

Poor organisation: the fish landing areas are simply covered concrete pads of varying sizes. Whilst a huge improvement from beach landing, they suffer because of poor product flow management that becomes a particular issue during peak landings. There is a need to designate

particular product reception, auction and dispatch areas with an established on-way flow through the system. If processing is carried out on site, this being usually limited to some gutting, then this should also be factored in to prevent cross-contamination with blood and other wastes. Whilst this process is mainly a management issue, some facilities may need some expansion or redesign.

Insufficient capacity: fish landings have increased significantly over the past few years and many landing/auction centres have insufficient capacity to manage during peak landings. Whilst this can be largely mitigated through better organisational management (see above), some facilities need larger reception areas and where necessary, chill areas. The need for post-sale chill and cold storage is usually less necessary since high demand invariably means that product is moved away from the site immediately after auction.

Sanitary conditions: cleaning of auction halls is often limited by an inadequate water supply, insufficient use of proper sanitary cleaning materials, the uneven nature of most floor surfaces and poor drainage. There are insufficient and poorly located washing and toilet facilities. Many areas are not fenced off and are often plagued by pests such as cats, dogs and rats.

Waste management: although there is little processing conducted at auction sites, there is usually some gutting or skinning activities being carried out. Solid wastes are usually thrown into the sea whilst blood and ice water is simply channelled off the immediate site into the sand. There is rarely any attempt to trap solids nor filter liquid wastes and dispose of them properly. As a result the foreshore in front of auction halls is often highly contaminated.

Facility management: cooperative organisation who manage landing and auction facilities are usually staffed by ex-fishermen who, whilst knowing the product well, have insufficient management experience to efficiently operate such as complex logistical challenge. As a result, reinvestment into facility maintenance and development is usually poor and other services to cooperative members could be improved.

Quality enforcement: although MFW and PCFSM is responsible for maintaining auction hall standards, inspections are weak and rarely enforced. The last FVO visit in November 2004 apparently suggested the use of inspecting larger boats (*sambuqs*) and auction halls, but these are not yet in widespread use.

Domestic distribution: there are currently around 30,000 vehicles trading fish within Yemen, with the vast majority taking fish up to the Saudi border at Harab. These vehicles usually have a single insulated box where fish is either laid on ice or less frequently, properly stored in boxes. Most of these boxes are not chilled and are rarely washed properly after each trip. At present there is little regulation of the national and regional trade - all traders wishing to export fish products, whether via the processors or directly over neighbouring borders by truck, must register with the MFW for an annual export licence, costing around €78. However this register is not computerised not is it used to track fish movement or exports.

Domestic fish markets: as with the coastal auctions, inland fish markets suffer from insufficient icing of product on display, poor product storage and little management. Fish is usually displayed without ice and if unsold simply returned to a fridge for overnight storage. The poor quality of this fish is a major deterrent to domestic consumption in inland areas of Yemen.

Regional exports: fresh fish now being exported to Saudi Arabia at Harab and soon at Al Wadi'ah and the Oman border at Hawf needs to undergo final health inspection and excise requirements. The facilities at these locations are insufficient to ensure the cold chain and need to be equipped with proper shelter, inspection areas and re-icing ability.

1.5.1.3 Processing for the export market

As discussed above, in the face of fierce competition from the Saudi traders, the export processing sector on the *Red Sea* is struggling to obtain sufficient high quality material at a viable price. As a result, some of these companies have adopted different strategies to ensure raw material availability, including (i) diversification into shrimp farming (Musallam Trading Co.) and (ii) specialising in products such as shark and cuttlefish (Al Kubaib Fisheries) that are less attractive to the Saudi market that specialises in carangids and demersal fish. The domestic retail market is essentially limited to lethrinids (emperor fish) and groupers.

On the *Gulf of Aden* coast, most processors specialise in tuna, although cuttlefish, lobster and demersal fish are also important raw materials. Quality control issues from the largely day-boat fishery stem mostly from poor handling and icing by fishermen as well as the frequent need for product to be purchased through the auction system with the quality risks described in the previous section.

Once fish is under the control of the processors, a quite different set of quality assurance issues appear. The main concerns raised by processors, EC's FVO inspection visit in December 2004, and those observed during project preparation are:

Poor product flows: in some cases product is held for considerable lengths of time and often with inadequate cooling (environment or icing), possibly due to restricted number of processing lines. This could be improved through better awareness and training in product flow management.

Variable implementation of HACCP: the recent FVO visit highlighted the poor implementation of HACCP by some plants. The primary reason behind this is the level of experience, knowledge and competence of plant QC and production managers, as well as commercial pressures of operating in a cost-competitive environment. This resulted in evident risks to product quality and safety.

Traceability: whilst batch numbering is used by most companies, formal traceability systems are rare, although one company (Borum) uses the British Retail Consortium BRC quality assurance system whilst another (YemeniFish) will introduce a sophisticated traceability software system into their batch processing. It is considered that the introduction of this and other QA systems e.g. ISO 9001 would be highly beneficial in ensuring product traceability.

Waste management: the production of considerable quantities of fish offal and frames poses a problem for disposal. In Aden this material is burned whilst elsewhere it is land-filled. In Socotra this has proven a particular problem (Taj Socotra produces up to 2-3 t/day waste material) and land-filling conflicts with the islands' conservation status as well as causing problems with roaming domestic animals. The development of small-scale fish waste management alternatives, including conversion into compost materials, needs to be investigated.

Export logistics: logistical failures can have quality implications as well as affecting the ability to maintain trading relationships with overseas buyers. Processors spoke of two different issues here, one being lack of support by MFW in facilitating export bureaucracy and secondly in the differing procedures at each port authority for export and container handling. It is difficult to import more advanced equipment into Yemen and there are shortages of key consumables such as advanced disinfectants, vacuum and other packaging material. Labour costs are low in Yemen and some processors will tend to rely on labour intensive processing techniques that are both prone to error and contamination, rather than investing in machinery.

Information and market awareness: processors also report that they find EU food safety legislation difficult to understand and track. This is being further complicated with the industry moving into aquaculture products. A number of leading processors have started to form an

association representing the sub-sector's interests, named the *Yemeni Seafood Exporters Association (YSEA)*. This association has strict entry requirements and is designed to provide a collective voice to communicate with MFW as well as the export markets. The draft mandate also looks at providing assistance to non-members who wish to improve their quality standards. The association has recently been approved by MFW and the Ministry of Social Affairs.

1.5.1.4 Quality control management and assurance

Testing facilities belonging to MFW currently only exist in the central laboratory in Aden. Other main production centres, such as Mukalla and Hodeidah, currently rely upon other Government laboratory facilities i.e. the Ministry of Health laboratory in Mukalla and College of Marine Sciences in Hodeidah University laboratories. The use of non-sector public facilities usually means slow and expensive testing and until accredited private sector laboratories become a reality, it will probably be necessary to build dedicated MFW facilities over the medium term.

As mentioned in the previous section, the central laboratory currently lacks a long-term strategy or budget for equipment maintenance and replacement, staff skill development or the introduction of new testing equipment for emerging health issues, such as antibiotic testing for aquaculture products. Of more immediate concern is that the laboratory is not certified by any internationally accepted body and admits that they are unable to ensure adequate equipment calibration. Yemen does not have any national capacity for laboratory certification or accreditation but it is understood that the Ministry of Trade is currently investigating accreditation under the Royal Jordanian Scientific Association. It is evident that there still exist a number of key skill gaps in the laboratory staff, both at technical and managerial levels. It is suggested that the laboratory undergo ISO 9001 quality assurance training and certification.

Inspection by the Competent Authority (MFW³) is also constrained by a number of issues, including:

- Lack of basic equipment: including thermometers, sample preservation and transport materials, balances etc.
- Poor industry awareness: a number of processing companies said that although relations with inspectors was good, they rarely understood the nature of export-led processing and its particular requirements (e.g. shipments of perishable products needs a rapid and effective response).
- Insufficient skills and knowledge: despite the training under the previous EC funded project in quality control in 2000, there are still large skill gaps in government staff working in quality control, especially in HACCP implementation, microbiology and practical laboratory operation. This is particularly evident at regional level (FVO, 2004).
- Insufficient knowledge and understanding of key market legislation: the EC FVO noted that MFW staff that a number of requirements of the EC's Council Directive 91/493/EC⁴ were poorly understood and followed.
- Institutional overlap: canned products need to have health certificates issued by both MFW and the Ministry of Industry – neither will accept the other's certificate.

³ 1999/528/EC: Commission Decision of 14 July 1999 laying down special conditions governing imports of fishery and aquaculture products originating in Yemen

⁴ Council Directive 91/493/EEC of 22 July 1991 laying down the health conditions for the production and the placing on the market of fish products (as amended)

Although further *awareness building* of the importance and benefits of ensuring quality control is essential, there are those in the industry who consider that firm Government *enforcement* will always be required to ensure industry-wide compliance.

Some processors consider the intermittent inspection by FVO (roughly every five years) to be too infrequent and would welcome more regular inspections, together with a greater element of surprise, to ensure a more consistent standard within the sub-sector.

1.6 CURRENT AND PROPOSED FISHERIES SECTOR DEVELOPMENT ACTIVITIES

There are a number of current and proposed sectoral development activities that are highly relevant to this project proposal. An understanding of these is essential to ensure that this project complements and builds upon these other activities.

1.6.1 Strengthening of Yemen's Fishery Products Quality Control System (EC)

An EC-funded project over October 2000 to September 2001 looked at strengthening Yemen's fishery products quality control (QC) system (GOPA, 2001a). During this period an evaluation was made of the current QC system and provided the MFW (the national Competent Authority CA) with some training. When the programme came to an end implementation of the proposed Competent Authority's reorganisation had just started, the central laboratory was not fully operational and the fish processing sector had started implementing their own HACCP plans. In December 2001 a second implementation phase requiring around €2 million was proposed (GOPA, 2001b) but never funded.

1.6.2 Fisheries Resource Management and Conservation Project (World Bank / EC)

The largest and most relevant project is the joint World Bank / EC *'Fisheries Resource Management and Conservation Project'* (FRMCP). This two phase, US\$ 25 million 10 year initiative will focus on institutional reform to enable MFW, MSRRC and its dependent institutions such as the Public Corporation for Fisheries Services and Marketing (PCFSM). The project is composed of four project components:

- Component 1: Strengthening of fisheries resources management. Under this component, the proposed project would strengthen Ministry of Fish Wealth (MFW) resource management capacity to undertake more effective fisheries research, resource management and fish landing regulation activities at Governorates level.
- Component 2: Improved fisheries infrastructure and fish quality. This component would support the improvement of facilities and handling procedures at existing fish landing sites to avoid deterioration in fish quality due to unsanitary conditions, delays in handling and auctioning of fish at these sites, and shortage of ice needed to maintain fresh fish quality. It would provide support for on-board fish preservation. Training will be provided to MFW staff in setting quality control guidelines and ensuring their implementation on board of fishing vessels and at fish landing places. The project will establish a quality control system consistent with international standards.
- Component 3: Cooperative development & income generation for fishing communities. The project would assist cooperatives to strengthen their management skills and improve their ability to operate and maintain their physical assets. These cooperatives have more or less experience and need further strengthening of their operational capacity. The project would also fund income-generating activities at local communities' level.
- Component 4: Implementation support and preparation of a follow-up project: This component would provide MFW with support for project implementation, and would assist MFW in conducting technical and economic analysis of the need for future ports and landing sites along the Qusayer-Mukalla-Bir Ali corridor and the Red Sea Coast. The component would also support necessary surveys, environmental assessments and detailed designs of selected proposed investments.

The EC funded activities within Component 2 of the FRMCP include improving fish quality control as well as the installation of a 'fisheries information system'. This former component is closely connected with the current project and the component logical framework is provided in Figure 3 overleaf and described briefly below.

Capacity-development: the EC will improve the capacity for fisheries quality control training, research and development, and facility improvement. Training courses will be designed and implemented that build awareness of the importance of ensuring fish quality as well as providing the practical skills to do so. The initial training courses should be followed up after six months to determine the changes in fishing and handling practices as well as the impact on cost and earnings. Cooperative management will be trained in quality control and facility management. Training will also be given in the introduction and implementation of quality assurance mechanisms (e.g. ISO 9001, the British Retail Consortium and the EU Draft Standard for Traceability of Capture and Farmed Fish. A series of training workshops and wider awareness-building activities will also target the traders, wholesalers, retailers and the food service sector (e.g. especially fish restaurants) supplying fish to the Yemeni public. In addition, awareness-building campaigns (via posters, radio and newspaper) will inform the public on the training program and promote consumer preference for fresh fish. Following a training-need analysis process, MFW staff will undergo a series of especially designed courses that may be followed by overseas placements with relevant EU Competent Authorities to see how inspection systems are run in Europe. Exporter knowledge of value-adding opportunities, market product development needs and opportunities will be strengthened. To improve laboratory quality assurance and management, a combination of technical and management training will be provided to Aden, Mukalla, Hodeidah and Al Ghaydah laboratories. The technical training will concentrate on ensuring staff are up to date with new chemical and microbiological testing methods and requirements, as well as basic equipment calibration and maintenance. The management training will focus upon providing a cost-effective product testing service to the private sector and preparing business plans that allow for further investment and maintenance over the medium term. This activity also sees the introduction of quality assurance and traceability through training in ISO 9001.

Research and Development: A series of studies will re-evaluate the requirements and feasibility of using ice on board small fishing boats, review fish landing practices and assess the use of ice and other practices on vessel costs and earnings. This evaluation will be strategic, looking at whether a move to larger boats is financially feasible and attractive to fishermen. It will be participatory, involving fishermen, boat design specialists, fish quality specialists as well as the national and possibly regional fibre-glass boat building industry. The vessel design assessment will be closely linked to the cost and earnings study that will model the different design scenarios for their financial attractiveness to fishermen. The fish landing practices study will look at options for the more efficient and sanitary transfer of fish from fishing craft to auctions and onward transport from auctions. Where possible integrated approaches will be sought (e.g. where fish boxes can be incorporated into boat design) and the same system can be applied to the auction process and onward transport. This study would consider the technical and financial feasibility for different options through a participatory approach with potential beneficiaries. These solutions would be demonstrated and pilot projects supervised and monitored to further develop the most appropriate options. The costs and earnings analysis will assess what would encourage ice use by fishermen and how sensitive the costs and benefits are the major variables (fuel costs, ice costs, hold capacities, the supply/demand state, etc.). It would recommend strategies to encourage fishers to use ice. Volumes and nature of wastes arising from fish processing and assess how these might change over the future. Based on this, it will recommend appropriate pilot projects for funding over a second phase of this activity.

Figure 3: Logical Framework for the EC Quality Control Improvement Component of FRMCP

Narrative Summary	Objectively Verifiable Indicators (OVIs)	Means of Verification (MoVs)	Important Risks and Assumptions
Overall Objectives			
A. Increased incomes for coastal communities B. Lower health risks for Yemeni and other consumers C. Reduced pressure on fish stocks	Income per kg fish caught increased. Ratio of rejected shipments reduced. Lower CPUE.	Cost and earning surveys. Export and processor records. FIS records.	Quality constrained by increasing demand upon a limited supply base.
Specific Purposes			
1. To encourage fishers to better handle and conserve raw materials in order to realise higher and more stable prices.	Increased proportion of boats carrying ice. Increased ratio of export quality fish available from fishers.	Processor and MFW surveys Processor records	Economic incentives to invest in high quality products established through supply chain. MFW inspection services financially enabled and provided with enforcement capability. Exporter/processor association fully representative of the sub-sector.
2. To improve product flows and to reduce risks to quality during landing, sale and distribution	Contamination of landing, auction and market sites reduced.	MFW inspection records	
3. To develop and facilitate the preparation of high quality and value-added fisheries products for export.	Higher ratio of fresh & value-added exports Higher unit prices obtained	Processor / MFW export records. Processor / MFW records	
4. To improve the capacity of the Competent Authority to facilitate and ensure high quality processes and facilities within Yemen.	Increased inspection rates and outputs. Improved FVO reports.	MFW inspection levels and QC annual report. FVO reports.	
Results			
1. Fishers' cost : earnings ratio improved through delivering better quality fish.	Sector survey data	Recurrent project and MFW surveys.	More fuel efficient boats, ice/fish storage and trans-shipment processes.
2. Landing sites and auctions have higher product throughput, improved sanitary conditions and better reinvestment levels.	Cooperative data and MFW inspection records.	Cooperative and MFW reports.	Capacity-building effectiveness and MFW enforcement capability.
3. Increased value-adding throughout the supply chain, which is market-focused and provides improved margins to all sector participants.	Higher ratio of fresh & value-added exports. Improved cost : earnings ratios	Processor / MFW export records. Recurrent project and MFW surveys.	Position of Yemeni fish products in the international market can be improved.
4. MFW staff active in supporting sector participants to achieve quality and product safety targets.	Increased inspection rates and outputs. Better FVO reports.	MFW inspection levels and QC annual report. FVO reports.	Adequate funding commitment from MFW.
Activity		Resources & Means	Important Risks and Assumptions
WP 1: Capacity building a) Fish handling & preservation at sea a) Cooperative QC & facility management b) HACCP implementation and quality assurance c) Developing exporter knowledge of market product development needs and opportunities. d) Quality control inspection e) Laboratory quality assurance and management f) Quality development in distribution & marketing		a) 'On-the-job' training and training of trainers b) 'On-the-job' training & regional exchanges c) Training and EU exchanges. d) Support development of an exporter's association e) TA and training f) TA and training g) Training and awareness building.	Suitable trainee trainers can be found (a). PCFSM facilities privatised (b).

WP 2: Research and development <ul style="list-style-type: none"> b) Improved boat design (fuel efficiency, payload and ease of product handling) c) Improved product handling solutions e.g. boxed transfer systems d) Development of small-scale processing waste management solutions e) Cost and earnings study of artisanal fishers in the Red Sea and Gulf of Aden. 	<ul style="list-style-type: none"> a) Preparation of boat design guidelines and prototype construction b) Diagnostic study and pilot facilities c) Identification of appropriate means and pilot facilities d) Technical study 	Boatyards and fishermen prepared to invest in new boat designs (a).
WP 3: Critical facility improvement <ul style="list-style-type: none"> a) Rehabilitation of key auctions and landing areas as demonstration facilities. b) Extend product certification laboratory network. c) Improve border inspection point quality inspection facilities. d) Improve MFW QC IT and communication capabilities for assuring product traceability. 	<ul style="list-style-type: none"> a) Physical upgrading of landing sites / auctions b) Equip new laboratories in Hodeidah, Mukalla & Al Ghaydah c) Install fish inspection facilities. d) Install IT hardware (PCs and comms) and develop QA & traceability processes. 	Accreditation of private sector laboratories not feasible over NIP period (b). Increased exports via Harab, Al Wadi'ah and Hawf (c)

Product Certification Laboratory Network: Under the EU funded component, new laboratories will be equipped by the project in buildings to be supplied by MFW. These will be based in Hodeidah and the Hadramaut (either Mukalla, Al Shihr or Riyan) capable of conducting tests required by European and other discerning markets. A case for expanding this laboratory network to the Al Mahra Governorate will also be examined. Following installation of the equipment, training will be provided by laboratory quality assurance and management training. Border inspection point (BIP) quality inspection facilities will also be improved. A software-based system for export product traceability will be developed that will link processors, traders, government QC inspection/certification and BIP inspection.

1.6.3 Sustaining competitiveness in global markets: Preparing Yemen for WTO Accession – Fish Sector Sub-Component (UNIDO)

A UNIDO project funded by UNDP Yemen (UNIDO, 2002) developed a programme, which integrates the need to upgrade productive capacities with the imperative to strengthen local infrastructures and services able to support enterprises in the development of their competitiveness and to verify product compliance with international standards. The programme will strengthen the competitiveness of selected sub-sectors such as fish and honey, and will enhance supporting capacities in Standards, Quality, Testing, and Metrology (SQTM) whilst taking into account inter-linkages with other trade-related infrastructures and services.

The programme has five main aims:

1. Development of productive capacities for products with high export potential through enterprise upgrading and provision of technical support services;
2. Enhancement of the capacity to meet market requirements, i.e. international standards, technical regulations, their harmonization with national with international level, and thereby enabling enterprises to reach economies of scale.
3. Upgrading of conformity assessment capabilities of products in particular through international recognition of product testing undertaken by local laboratories;
4. Strengthening of export promotion activities through support to local service providers of market intelligence services such as trade information and promotional activities;

5. Enhancement of negotiation capacity for WTO/trade negotiations through strengthening of local authorities and negotiating teams. A complementary element for improving the connectivity to foreign markets is the streamlining of customs procedures and mechanisms.

Two food-manufacturing sub-sectors were chosen for pilot application of the programme – fish and honey. Fish (in synergy with on-going EU support activities), including the reduction of post-harvest losses; improvement of on-board handling and handling at landing sites; enabling fish processing establishments to conform with international good practice in fish-processing; strengthening of laboratory capacity to conform with international requirements. Two sub-components were envisaged:

Sub-Component 1 – Improvement of handling and icing on artisanal fishing vessels (US\$165,000 over 3 years): aimed at encouraging the use of ice and insulated fish boxes in the artisanal fisheries, including the development of a training and extension strategy.

Sub-Component 2. Development of a Fisheries Inspection Information Management System (US\$165,000 over 4 years): introduction of an information management system that will enable government regulatory organizations and fish processing establishments to capture and manage data essential to effective food health quality control.

These activities would involve the *Association of Yemeni Industrialists* (AYI), the proposed National *Food Resource Centre* (NFRC), the Yemeni standards body (YSMQCO), as well as related Ministries, in particular the Ministry for Fish Wealth.

To date, neither of these pilot projects have been designed in detail nor implemented. Sub-component 1 was supposed to be implemented in concert with a proposed extension to the EC ‘Strengthening of Yemen’s Fishery Products Quality Control System’ (see 1.5.1 on page 24), but this project was also not funded. Many of the activities under both this UNIDO pilot project are now being implemented under the joint WB/EC ‘Fisheries Resource Management and Conservation Project’.

1.6.4 Fishery Quality Control for Export Promotion (UNDP / IF)

The Integrated Frameworks (IF) Trust Fund is providing US\$ 350,000 to MFW to operationalise the fish product quality control laboratory in Hodeidah through the provision of equipment (US\$ 149,000) and technical assistance (US\$ 90,000) and training (US\$ 35,000) to both laboratory staff (i.e. inspectors and technicians) as well as fishing communities in order to improve the handling and quality of fish. The remainder of the funds (US\$ 67,000) is allocated to project management. The project was signed in August 2005 and will be operational until December 2006.

1.6.5 Other relevant sector initiatives

Other donors are also known to be investing in the fisheries sector. This includes UNDP, which is developing an *‘Integrated Coastal Management for Sustainable Development and Conservation of the Yemen Red Sea’* – this proposed project includes a component to achieve “improved post-harvest handling, landing, value-added processing and marketing promoted”.

The French Government is also looking at funding the *physical improvement to the fish market in Sana’a* and may also *fund support to the MSRRRC* and the creation of the new *Fisheries Research Authority*. Both these activities are compatible with the proposed project that could provide considerable capacity-building assistance to fulfil their mutually compatible objectives. The Dutch Government has also employed an intern to assess potential development opportunities in the fisheries sector. His report is due for submission in February 2006 (Arnout Wagenaar, pers. comm.).

1.6.6 Synthesis

In summary, there are currently a number of initiatives aimed at improving the quality of fish production and marketing in Yemen. These can be summarised as follows:

Table 10: Summary of Currently Planned QC-related Capacity-building Initiatives in Yemen

Activity	Donor	TA recipients				
		Fishers	Coops	Processing & distribution		MFW
				<i>Domestic</i>	<i>Export</i>	
Improved fish handling and preservation at sea	EC	✓				
Improved boat design	EC	✓				
Improved landing and handling solutions	EC/UNDP	✓	✓			
Cooperative quality control management	WB/EC		✓			
Rehabilitation of auctions & landing sites	WB/EC	✓	✓			
HACCP implementation & quality control	EC			✓	✓	
Quality control in the domestic distribution chain	EC			✓		
Surveillance of quality control implementation	EC					✓
Laboratory quality assurance	EC/UNDP					✓
Expansion of QC laboratory network	EC/UNDP			✓	✓	✓
Improve border QC capacity	EC				✓	
Introduce computerised traceability system	EC				✓	✓
Improve exporter market awareness	EC				✓	

1.7 KEY OBJECTIVES TO BE ACHIEVED BY THE PROPOSED PROJECT

The World Bank / EC *Fisheries Resource Management and Conservation Project* is a comprehensive, long-term programme that is intended to address many of the issues raised in the sectoral analysis above. Particularly, support to the recently created Yemeni Seafood Exporters Association received scant attention in the IDA/EU project, as the project's aim is essentially public sector capacity building.

Specifically, the IDA/EU project does not address:

- How the private processing industry could assist the small-scale fishermen in taking steps to ensure better quality fish is being landed;
- How the industry could create harmonized quality standards that would affect all fish exports, even those to countries with lower standards;
- The Association has already expressed its frustration with the fact that it does not have access to up-to-date changes in SPS requirements in its client markets, and
- Similarly, the Association expressed an interest to learn how the private sector as a group, by itself, could best approach key import markets.

The overall objective of this current project is therefore to enable the Yemeni Seafood Exporters Association (YSEA) to develop the capacity of its members to better meet the commercial requirements of SPS measures and thereby improve the quality and safety of seafood products emerging from Yemen.

Allied to this, the project also intends to:

- Through a more comprehensive and deep-set understanding of the non-tariff barriers governing entry into the key regional and overseas markets, enable a strategy and approach that maximises the opportunities for adding value and achieving the highest prices possible for Yemeni seafood products;
- To establish the Association as a vital component organisation within the fisheries sector that provides valued services to its members as well as acting as a responsible forum for development initiatives in cooperation and consultation with the artisanal sector as well as the Ministry of Fish Wealth;
- To act a driver for better practises at sea and during early stages of the supply chain that will result in better quality and safer products to become available on the domestic market.

Individual component and work package objectives are provided in the next section.

2 PROJECT ACTIVITIES

The project will address issues under **Theme 2** (*Capacity building for public and private organisations, notably with respect to market access*) of the STDF Business Plan. The main beneficiaries will be members of the Yemeni Seafood Exporters Association (YSEA) although it is considered that the majority of activities will also benefit seafood markets within the country and within the Arabian Peninsula region as a whole. The activities are also designed so that the capacity of the Competent Authority (Ministry of Fish Wealth, MFW) is also enhanced. In a number of such activities, a strong degree of public/private partnership is built in (see Section 3 for further details).

To a lesser extent, the proposed project will also address some the issues under STDF Themes 1 and 3. Under **Theme 1** (SPS capacity evaluation and planning tools), actions plans (in the form of a time-bound business plan for YSEA) and risk assessment tools are developed. Under **Theme 3** (Information sharing on standards and technical assistance activities), SPS training materials will be collected and an SPS database developed.

The following section examines the main proposed activities which have been divided into three components:

1. Product Quality and Safety Improvement
2. Reduction of SPS Barriers to Market Access
3. YSEA Capacity Development

For each Work Package, a brief description of the objective, justification, activities and deliverables is provided.

2.1 COMPONENT 1: PRODUCT QUALITY AND SAFETY IMPROVEMENT

Overall objective: to raise the minimum standard of Yemeni seafood in terms of their quality and health in order to reduce the risk sometimes associated with these products and to improve opportunities for value adding.

Figure 4: Component 1 - Product Quality and Safety

Component Activity		TA mm			2006												2007												2008											
		IC	LC	YSEA	J1	A2	S3	O4	N5	D6	J7	F8	M9	A10	M11	J12	J13	A14	S15	O16	N17	D18	J19	F20	M21	A22	M23	J24												
Project Manager	WP 1.1: Develop risk assessment methodologies	0.75	0.00	2.25																																				
	a) Assess risks for production & product types	0.25	0.00	0.25																																				
	b) Develop risk assessment methodologies	0.50	0.00	0.50																																				
	c) Conduct risk assessment	0.00	0.00	1.50																																				
	WP 1.2: Standardised SPS Framework	1.00	1.25	2.50																																				
	a) Agree objectives of the SPS standard	0.25	0.25	0.25																																				
	b) Evaluate scope of SPS standard	0.25	0.25	1.00																																				
	c) Research and define SPS standard	0.25	0.50	1.50																																				
	d) Agree certification process and rules	0.25	0.25	0.50																																				
	WP 1.3: Develop Yemeni seafood quality mark	0.75	1.25	0.00																																				
	a) Determine and agree marking objectives	0.25	0.25	0.00																																				
	b) Establish logo use rules	0.00	0.25	0.00																																				
	c) Design mark logo and marketing approach	0.25	0.50	0.00																																				
	d) Publicity material & dissemination	0.25	0.25	0.00																																				
	WP 1.4: Develop harmonised training standards	1.00	6.50	14.00																																				
	a) Conduct sector-wide training needs analysis	0.50	1.50	2.00																																				
	b) Develop training curricula and standards	0.50	3.00	3.00																																				
c) Conduct training of trainers	0.00	2.00	4.00																																					
Sub-total (WP 1)	3.50	9.00	18.75																																					

2.1.1 Work Package 1.1: Investigate risk assessment methodologies for Yemeni fish products

WP Objective: to prepare a risk assessment framework for major fisheries products that allows major risks to product health and safety be to be identified at an early stage and suitable strategic responses to be prepared and communicated.

Justification: the resources of MFW to inspect and maintain SPS standards across the Yemeni seafood industry are limited, both in terms of staff capacity as well as their means of deployment over what is a large geographic area. The capacity issue of the MFW staff is being specifically addressed by the jointly funded World Bank / EC '*Fisheries Resource Management and Conservation Project*', but it is considered that a joint industry/Government approach to identify key SPS risk areas and approaches to address these would be the most cost-effective solution to ensuring product quality and safety. The advantages of a risk-based approach is that valuable resources can be targeted at recognised weak points and thus the more robust elements in the supply chain inspected at less frequent intervals.

Description and activities: the process will commence with a joint YSEA / MFW workshop with leading industry and Government figures to provide a risk framework that identifies the scope and relevance of different SPS risks in the Yemeni seafood industry. This workshop will be facilitated by an international specialist, after which a local team would take responsibility for the work package. Once a risk framework has been agreed, appropriate risk assessment methodologies would be investigated and suitable approaches determined. Following this, the Government and industry responsibilities for assessing risk on a periodic basis would be defined and appropriate response mechanisms put in place. Finally suitable communication mechanisms, including industry alerts, would be developed. The main activities envisaged are:

- a) Develop risk framework: through a workshop with 8-10 representatives of Government and industry, the key risks would be determined. These risks would be categorised according to their place in the supply chain, product linkages and management responsibilities.
- b) Develop risk assessment methodologies: based on proven risk assessment strategies for the food industry, a combination of appropriate risk assessment approaches will be identified and developed to match the risk framework determined above. This process would include the agreement of implementation responsibilities and funding to be shared by Government and the industry.
- c) Conduct periodic risk assessment and review strategic response: commence implementation of risk assessment methodologies and test management response and communication approaches. Refine risk assessment methodologies based upon inspection results and buyer feedback patterns.

Verifiable outputs:

- Hold workshop and develop written risk assessment framework (Month 3)
- Risk assessment methodologies finalised and implementation plan agreed (Month 5)
- Risk assessment system under implementation (Month 8)
- Risk assessment undergoes first major review (Month 12)

2.1.2 Work Package 1.2: Develop a SPS standard for all plants in Yemen producing fish for the domestic and international markets

WP Objective: an agreed SPS standard to which all exporters should aspire to adopt. Verified adoption will allow members to carry the Yemeni seafood quality mark (see linked Work Package 1.2).

Justification: although some 22 companies are officially recognised to produce fish for the EU market, in reality there is a wide variation in the capacity of private sector companies to responding to SPS demands. This was demonstrated by the most recent (Dec 2004) EC FVO mission, which found 5 of the 13 plants visited (38%) as non-compliant. This situation is also echoed by the frequency with which Yemen is mentioned in DG Sanco's SPS alerts. As a result, those companies who have high standards are concerned about the negative publicity this generates and the poor image of Yemeni seafood products that results. A primary driver for the creation of the YSEA was this disparity and the recognised necessity to raise the minimum standard of production in Yemen. This meant that, together with MFW inspections, peer pressure is needed to encourage the less able factories to raise their standards. The main approach advocated is to create a verifiable SPS standard that was more encompassing than the regulatory framework that was imposed by buyers such as the EU. It is important that this standard is simple and thus easily audited, yet sufficiently comprehensive to provide confidence in its ability to raise SPS levels throughout the industry. This standard would be independently certified by third party organisations accredited jointly by MFW and YSEA.

Description and activities: this work package would see the development of a Yemeni SPS standard for fish production. Although this would be aimed primarily at export markets, it could equally be applied to regional and domestic sales. The standard would also be used as the basis for assessing eligibility for carrying a quality mark to be developed under the next work package. The standard would be agreed developed with and endorsed by the Ministry of Fish Wealth, who would jointly accredit third parties (e.g. SGS, Bureau Veritas, etc.) certified to assess whether companies have attained the standards required. As such, even companies not belonging to YSEA could undergo certification as well, thus ensuring that a *de facto* monopoly is not created.

The main activities envisaged are:

- a) Agree objectives, scope and contents of SPS framework: the scope of the standard is key. It might for instance include non-quality elements such as sustainability sourcing, but is likely to include upstream factors such as icing at sea, handling and transport practices etc. Technical guidance will be provided by an international / domestic consultant team.
- b) Define and develop SPS framework: to produce a standard that is easy and relatively cheap to verify yet is sufficiently comprehensive so that it genuinely raises standards across the industry. Technical guidance will be provided by an international / domestic consultant team, although the majority of the input will be undertaken by the Association themselves.
- c) Agree certification process and rules: once a standard is agreed between YSEA and MFW, an accreditation programme will be undertaken to allow independent certification to be undertaken. Rules need to be set for the period of certificate validity, renewal processes and arbitration in the case of disputes. Again, technical guidance will be provided by an international / domestic consultant team

Verifiable outputs:

- Written and agreed objectives and scope of the standard (Month 3)
- Standard elaborated and agreed with MFW (Month 5)
- Accreditation process completed and certification of plants underway (Month 8)

2.1.3 Work Package 1.3: Development of a Yemeni seafood quality mark

WP Objective: to create a premium Yemeni seafood mark that demonstrates quality and safety.

Justification: at present, Yemeni fish products have a mixed reputation on the international markets. There is a general recognition that the artisanal nature of much of the catching sector is attractive because of the potential quality of hand-lined fish, such as tunas and some demersal species, yet this is rarely realised as a result of poor icing at sea and subsequent careless handling. Weaknesses in the rest of the supply chain also contribute to quality issues, and this is reflected in variable buyer satisfaction, that manifests itself as quality alerts from organisations such as DG Sanco in the EC.

These problems need to be addressed through a number of approaches (e.g. better preservation and handling at sea, improved HACCP implementation, etc.), a wider approach is also considered necessary, this being the development of the standard discussed in Work Package 1.1 above. In order to capitalise on this, it is suggested that a seafood quality mark is developed and only permitted to be used if the standard is certified as being achieved. This would allow the products to carry a logo, which will be supported by appropriate promotion in the key markets. Some degree of cost recovery may be possible through a logo licensing scheme.

Description and activities: this marking scheme will be built upon the standard developed in Work Package 1.2. The process will involve the agreements of the scope and objectives of the marking scheme, how the mark and logo will be applied to products and how the marking scheme will be 'sold' to seafood buyers in the region and overseas. The main activities envisaged are:

- a) Determine and agree marking objectives: the scope of the marking scheme will be developed e.g. its application to the Yemeni seafood quality standard, the purpose and objectives of the marking exercise and the extent to which it can be marketed locally, regionally and internationally.
- b) Design logo and establish logo use rules: design logo which will be attractive to regional and international markets. Determine the process by which this logo can be applied (size, position, design, copyright issues etc).
- c) Determine marketing approach, prepare publicity material and dissemination means: based on the scope and objectives of the marking exercise, conduct a marketing exercise to prepare appropriate launch and on-going publicity. Launch at up to four major international seafood shows e.g. Brussels, Boston and Dalian through hosting of Yemeni exports under a single Yemeni 'pavilion'.

Verifiable outputs:

- Marking scope and objectives agreed and formalised (Month 7)
- Logo designed and agreed, together with usage rules (Month 8)
- Publicity material published and marketing underway (Month 11)

2.1.4 Work Package 1.4: Develop a cross sector training strategy based on common standards

WP Objective: to harmonise the currently disparate training standards and to develop a pooled capacity for practical industry training to be coordinated by the Yemen Seafood Exporters Association.

Justification: at present, companies involved in the processing and marketing of seafood products are required to train their staff in a manner proscribed in their HACCP plans. In reality, the scope and quality of this training varies highly from company to company, and this has a significant impact of staff skills and capabilities across the board. There is a real need to

establish a common level of training capacity across the industry which can be extended to the whole supply chain in Yemen from boat to shipping. There are also real advantages in transferring from individual company training to a joint training capacity in terms of both cost efficiency, but more importantly it allows the cross-dissemination of good practise and knowledge between companies.

The Ministry of Fish Wealth's involvement in this process is essential. At present there is no effective training and extension system for the artisanal sector, and thus the addition of this training capacity would represent major progress. It is expected that MFW will have an important role in the training needs assessment, as well as contributing to curriculum development and training implementation.

This work package will be carefully coordinated with the EC-funded components of the Fisheries Resource Management and Conservation Project (FRMCP) and may provide services to capacity-development initiatives under this project.

Description and activities: this work package will see the creation of an industry training centre focusing on quality and safety management in the fisheries sector. This will be developed through a process of train needs assessment, curriculum development and the implementation of joint courses that will serve both the processing sector as well as fishers and Government staff. The centre's building will be provided by one of the YSEA members and the project will contribute to basic furniture as well as essential training aids.

The main activities envisaged are:

- a) Conduct sector-wide training needs analysis: international and local fisheries training specialists will conduct a comprehensive training needs analysis (TNA), a process that will involve the participation of the processing industry, fishers and MFW staff. The scope of the TNA is expected to focus on quality and safety issues and cover handling and preservation at sea, shore-side handling, processing and distribution.
- b) Develop harmonised and standardised training curricula and standards: a series of standardised training courses will be developed that integrate the existing training materials already prepared and utilised by individual companies. These courses will then be formally jointly approved by MFW and YSEA. YSEA will also build up a training database to monitor individual and organisational training records so that capacity-development efforts are spread evenly over the industry.
- c) Conduct training of trainers in capacity building delivery methods: trainers will be selected from YSEA members as well as MFW and provided with training from a domestic consultant in appropriate skill development techniques. YSEA will also agree with MFW appropriate cost-recovery mechanisms to fund on-going training and curriculum development.

Verifiable outputs:

- TNA completed and inventory of skills gaps and training needs published (Month 4)
- Training curricula and course contents designed and agreed (Month 8)
- Training centre equipped and operational, trainers trained and courses underway (Month 9 onwards).

2.2 COMPONENT 2: REDUCTION OF SPS BARRIERS TO MARKET ACCESS

Overall objective: to instil a greater understanding of export market needs and requirements so that Yemeni seafood producers can respond to these markets and maintain their competitiveness with other producers.

Figure 5: Component 2 - Barriers to Market Access Reduced

[illegible]

2.2.1 Work Package 2.1: Develop a sector-wide SPS strategy for key Yemeni seafood markets

WP Objective: to better understand the seafood markets that are receptive to Yemeni seafood products and to develop a strategy that addresses the SPS requirements and barriers to these markets.

Justification: the wide variation in both the nature and the quality of seafood products emanating from Yemen has resulted in producers approaching a number of different markets. The more quality conscious tend to sell to Europe whilst others may prefer less discerning markets in Asia and the Middle East. Whilst a diversity of products and markets is a healthy indicator, there is a need for exporters to consider the quality element and focus on high value markets, especially as buyers in Yemen are rapidly exceeding supply, with resultant high raw material costs.

One approach is for the industry to approach the market as a joint entity with the assistance of the YSEA. A move to identify high value markets for Yemeni products and in particular value-adding opportunities, is seen as a strategic response to high raw material costs and inconsistent product quality. These markets have been seen by many of the less experienced exporters as difficult to penetrate due to the quality requirements and other perceived SPS barriers. This work package will therefore attempt to further identify higher value markets for Yemeni seafood products and through a series of short term feasibility and diagnostic studies, reduce the barriers – perceived or otherwise – to Yemeni exporters.

Description and activities: this is a three stage process, initiated by a series of consultations with the industry to identify where the main markets are and the opportunities they afford, followed by a consultant-mediated study to develop a strategy to address the SPS challenges these afford. This strategy will also identify specific issues that can be addressed through short-term feasibility or diagnostic studies. The results of these studies will be made freely available to the Yemeni industry. The main activities envisaged are:

- a) Define key markets for Yemeni seafood products: identification of key markets, value adding opportunities and product quality and specification requirements. Conducted by a local consultant with the support of the YSEA.
- b) Develop SPS strategy addressing the needs of these markets: an international consultant will assist the YSEA to develop a strategy to raise quality and food safety standards to allow the industry to access more discerning and lucrative markets. The study will also prioritise opportunities and identify specific barriers to access.

- c) Conduct targeted short-term studies if needed: based on the previous step, 4 mm of international consultancy are set aside for diagnostic studies that can be conducted either in Yemen or in the target market themselves. The outputs from these studies will be made in the form of practical recommendations that will be conveyed over seminars to be arranged with the industry by the YSEA.

Verifiable outputs:

- Key markets and value-adding opportunities identified and reported (Month 4).
- SPS strategy developed and informed to the industry (Month 5)
- Diagnostic studies undertaken and results made available to the industry (Month 9)

2.2.2 Work Package 2.2: Compile a database of regional and international SPS regulations and requirements for periodic update and distribution

WP Objective: to provide exporters with an up-to-date, accessible and easy to use database of regional and international SPS regulations.

Justification: although there exist a number of centralised resources, such as FAO's international portal on food safety, animal and plant health (<http://www.ipfsaph.org>), understanding the plethora of SPS regulations is still a major hurdle for the majority of Yemeni exporters. The capacity of many industry participants to understand complex technical regulations in English is extremely limited and whilst the availability of internet access is increasing, few have access to high speed connections that are increasingly important for accessing online resources. As observed by the December 2004 EC FVO visit, none of the 13 establishments visited had a copy of the relevant EC legislation. The purpose of this work package is therefore to compile relevant legislation, guided by the market assessment conducted in the previous work package, and make it available in an easily assimilable form in both English and Arabic. This will then be updated, with a system for disseminating critical alerts to relevant parties.

This issue is relevant to Government departments as well. The FVO mission also noted that “the local CA lacks the practical understanding of these provisions and that compliance with the requirements of the Community legislation depends more on the company owners than on the CA”. Therefore this system would be developed with the participation of the QC Technical Department of MFW and the outputs made available to them, online if technically feasible. Workshops and seminars organised by the YSEA would also include MFW, particularly at regional level where MFW is particularly weak.

Description and activities: this work package will consist of the preparation of a comprehensive database of market import regulations and requirements. This would be readily searchable by country, regulatory authority and product type and be able to produce outputs in both the original language (by default English) and Arabic. This information would be available on-line (possibly via the YSEA's website), via MFW and disseminated in CD-ROM and hard copy formats. Suitable cost structures would be investigated, but it is considered if the main library is compiled under this project, maintenance and update costs can be minimised.

The main activities envisaged are:

- a) Develop frame survey of legislation to be covered: based on the outputs of Work Package 2.1, an international consultant will assist the YSEA to compile a frame survey of legislation to be included in the database. This frame survey will be disaggregated into regions, countries and product types to be covered. He/she will also advise on the main data sources to be used and the most appropriate data input and information output formats.

- b) Design database and information system: the project will provide a PC-based IT solution based on locally available software which can be readily and cheaply maintained. A local database consultant will be engaged to design the database structure and if appropriate, decide on how this will be integrated into existing or planned IT infrastructure, such as the YSEA website and the 'Fisheries Management Information System' (FMIS) planned by the EC component of FRMCP.
- c) Researcher conducts web and other assessment of relevant legislation: once the database is operational, a researcher engaged by YSEA will be responsible for populating the system with relevant legislation and other material. Established sources (such as FAO) will be used and the assistance of the EC funded component of the FRMCP will also be sought. The database will also be designed so that it can be easily updated with new information, and linkages established with the major information sources.
- d) Development of dissemination approaches: a key part of this work package is ensuring that the database and its contents are readily available to both the private and public sector. Online access via the YSEA website will be investigated, as will network links with the planned EC FMIS. Other more traditional dissemination approaches will also be used, such as a newsletter (paper and email) as well as periodic seminars to provide information on legislative changes and other implications to Yemeni seafood exporters.

Verifiable outputs:

- Information frame survey complete (Month 4)
- Database established and ready for data input (Month 6)
- Database populated (Month 8)
- Dissemination mechanisms in place and underway (Month 8)

2.3 COMPONENT 3: 'YSEA' CAPACITY DEVELOPMENT

Overall Objective: to enable the YSEA to become an effective and proactive organisation that provides both the private and public sector with the information and resources to improve the quality of their products and ability to access key overseas markets.

Figure 6: Component 3 - YSEA Capacity Development

Component Activity		TA mm			2006												2007												2008											
		IC	LC	YSEA	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J												
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24												
Project Manager	WP 3.1: Develop Business Planning Capacity	0.75	1.50	0.50																																				
	a) Facilitated development of vision & strategy	0.25	0.25	0.50																																				
	b) Prepare business plan	0.50	0.50	0.00																																				
	c) Business plan revision & update	0.00	0.75	0.00																																				
	WP 3.2: Develop YSEA Website	0.35	2.50	0.00																																				
	WP 3.2: Develop YSEA Website	0.10	0.50	0.00																																				
	a) Design website	0.25	2.00	0.00																																				
	Sub-total (WP 3)	1.10	4.00	0.50																																				

2.3.1 Work Package 3.1: Support development of a vision, strategy and time-bound, costed action plan for the Association

WP Objective: based on a common vision and strategy, to prepare a time-bound action plan against which financial and physical resources can be identified and allocated.

Justification: the Yemen Seafood Exporter's Association (YSEA) is a relatively new organisation. Formed out of a common private and public sector concern over the growing gap in the capacity of the private sector to respond to SPS challenges, it presents a singular opportunity to (i) mentor weaker members of the private sector, (ii) provide a joint platform from which to support private sector development and (iii) provide a point of interaction between the private sector and the Government.

Whilst the YSEA now has a basic organisational structure and objects, and had already achieved some notable successes in its own right, it needs guidance and support to ensure that it evolved into an organisation that truly represents the diverse fisheries sector and one that works with in harmony with the regulatory authorities. This will require instilling a business planning capacity that will allow YSEA to become an active influence and service provider for the foreseeable future.

Description and activities: this capacity-building process will see YSEA develop into a sustainable and proactive organisation representing high quality fish producers in Yemen. This process will commence with the elucidation of a common vision and strategy for the seafood export sector, followed by the preparation of a detailed strategy and costed business plan that would be subject to periodic review and revision. The business plan might be used to leverage further funding for the Association outside of the membership fee scheme. The main activities envisaged are:

- Facilitated development of vision and strategy: an international facilitator would be engaged to develop YSEA's vision in terms of how it sees its role in the industry over the longer-term. A strategy would then be developed to achieve this vision, with a focus on identifying the 'products' that YSEA can deliver to its members as well as other sectoral participants that will justify its existence.
- Facilitated preparation of a detailed action-orientated business plan with detailed budget and funding programme: the facilitator would then assist the Association to prepare a business plan. This would be provided at two time scales - short term e.g. during project implementation and long-term e.g. post project to around 2012. This business plan will provide a practical action plan for implementation of the strategy and will include details of the costs involved and anticipated revenue streams from different sources.

- c) Periodic review of work plan progress and revision: it is expected that the business plan will be formally reviewed every six months during the remaining project period to ensure that it remains realistic and practical. A local consultant will be engaged to facilitate this process.

Verifiable outputs:

- YSEA Vision and Strategy agreed and distributed (Month 1)
- YSEA Business Plan (2006 – 2007) agreed and distributed (Month 2)
- Business Plan review and update (Month 13)

2.3.2 Work Package 3.2: Develop an Association website

WP Objective: to (i) connect overseas buyers with Yemeni seafood producers and (ii) provide a resource area for YFEA members.

Justification: the Internet is now the premier global information repository. Its advantages are almost universal access, the ability to upload and receive new information almost instantaneously and the power of search engines. As raised earlier, high speed (ADSL) internet access in Yemen is emerging in the main towns, although dial-up access is common-place. With the geographic spread of Yemen fish production along the Red Sea and Gulf of Aden coasts, the Internet represents a promising connectivity tool. To buyers in Europe, North America and Asia, the Internet already represents a primary means of identifying potential suppliers, especially in emerging supply areas. At present, about five of the main exporters have websites providing product and contact details and these represent an important ‘shop window’ for the industry.

Whilst individual company websites are useful tools for direct buyer/seller contact, there is an opportunity to provide buyers with a central point of contact that can perform a number of tasks such as (i) give a single point of contact for all exporters in Yemen, (ii) provide linkages to other relevant private and public sector organisations such as MFW, customs and excise, product certification and distribution networks and (iii) information on the Yemen seafood resources and harvest regulations. Equally, the website has the potential to act a resource centre for YSEA members, such as access to the SPS legislation database, a directory of key market contacts (i.e. Government departments, BIP details, importers), a compilation of national, regional and international seafood news articles of general interest as well as ‘knowledge portals’ e.g. processing, packaging and QC technologies.

Description and activities: the project will support the design and ‘construction’ of a YSEA website, including the development of the two main resource centres for overseas buyers and YSEA members respectively. The main activities envisaged are:

- a) High quality website design: an experienced domestic website designer, with the home-based assistance of an international specialist, will be engaged to develop a website concept (structure, content, graphics, resource and database linkages) for approval by YSEA.
- b) Development of key website tools and resources: following approval of the website concept, the domestic website designer will create the site and publish it online, utilising a domain name registered by the YSEA (for instance www.yemeniseafood.com is currently available). The site should include establishment of the buyer and YSEA resource portals, which should be populated with information provided by YSEA. The site will be reviewed by an experienced international web specialist to ensure it confirms to international perceptions and requirements. The website should be available in English and Arabic.

Verifiable outputs:

- Website concept agreed (Month 3)
- Completed website published online (Month 6)
- Website reviewed and overhauled (Month 14).

3 PRIVATE / PUBLIC SECTOR CO-OPERATION

Preparation of this project proposal has been conducted in consultation with the main public sector organisation involved in fisheries, the Ministry of Fish Wealth (MFW). The preparation process has recognised that in order to be effective, the Yemeni Seafood Exporters Association (YSEA) needs to ensure cooperation and coordination with MFW, who are the recognised Component Authority for confirming that Yemeni seafood products have met the SPS measures stipulated by import market regulations.

In terms of project activities, cooperation with MFW will occur at a number of different points as demonstrated in the table below.

Table 11: Project Cooperation with MFW

Component	Work Package	Project Cooperation with MFW
1. Product Quality Development	1.1 Develop risk assessment methodologies	Participation in workshop to develop risk assessment framework; contribute to risk assessment strategy in order to better target MFW's inspection programme.
	1.2 Development of a SPS Standard	The standard would be developed with MFW participation. Certification arrangements would be agreed with MFW.
	1.3 Develop Yemeni seafood quality mark	No particular cooperation anticipated.
	1.4 Develop harmonised training standards	MFW to participate in training need analysis. They will also provide trainers and trainees for the 'trainers of trainers' process. MFW will also be provided with facilities to conduct their own training as part of a wider initiative to improved product quality early in the supply chain – this is likely to be coordinated through the FRMCP.
2. Reduction of SPS Barriers to Market Access	2.1: Develop sector-wide SPS strategy	MFW may participate in the feasibility / diagnostic studies if appropriate.
	2.2: Compile SPS regulation database	Assistance will be sought from MFW to compile and update the database. In return the completed system will be made available to MFW via an electronic link.
3. YSEA Capacity Development	3.1: Develop Business Planning Capacity	MFW will be invited to participate in establishing the vision of YSEA and ensuring that this concurs with Government policy.
	3.2: Develop YSEA Website	MFW will be invited to contribute to the website concept design and to provide public service and regulatory information that might be of interest to imports of Yemeni seafood products.

The mechanisms for cooperation with MFW will primarily be through joint participation on project activities as described above. However one additional mechanism deserves particular mention – this is a linkage with the FRMCP Project Service Centre (PSC) in Aden, where coordination with that project's public and private sector development activities will be particularly important. The PSC will include a Project Director funded by the EC, together with a PSC Director-General provided by MFW.

4 INSTITUTIONS INVOLVED

4.1 IMPLEMENTING INSTITUTIONS

4.1.1 Yemeni Seafood Exporters Association

The Yemeni Seafood Exporters Association (YSEA) was formally established in early 2005 under regulation 'National Associations and Establishments No. 1 (2001)' as promulgated by the Ministry of Social Affairs and Work. As required by this regulation, YSEA must be associated with a sectoral ministry, this being the Ministry of Fish Wealth.

According to YSEA's Articles of Association, the organisation's *objectives* (Article 3) are to:

1. Exchange the experience and knowledge between its members and other companies and similar associations with the same interests.
2. Organize meetings, conferences and venues related to the Member's activities.
3. Organize cultural, sporting, social and healthful activities in between members.
4. Conduct feasible and diagnostic studies, training and information systems related to the Association's activities & Members.
5. Extend and ensure cooperation in between members.
6. Play a professional role in social society and the economy.
7. Issue booklets, brochures and posters showing Fishes of Yemen and their quality.

The *tasks and role* of the Association (Article 4) is to:

1. Develop professional methods within the fisheries sector
2. Assist in solving fishing problems, especially through technical assistance
3. Make feasibility studies, assist in statistics collection and coordinate with similar organizations, working in all aspects serving fishermen.
4. Work to safeguard interests and jobs of fishermen.

Membership of YSEA is open to those (Article 5):

1. Of age not less than 18 years
2. A fish or seafood exporter that owns a license from an approved government office
3. Having a representative in the YSEA General Assembly (or Committee)
4. Who pay the Association all fees and subscriptions
5. Of good conduct and not convicted by court for misconduct or dishonesty unless dismissed by court

YSEA is *organised* as follows:

- The General Assembly: the wider membership of YSEA
- The Administration Committee: an elected committee of seven persons from the General Assembly, including (i) a Chairman, (ii) an Secretary-General and (iii) a Financial Officer.
- The Monitoring Committee: consists of five persons not on the Administrative Committee whose task is to (i) oversee and ensure the legality of YSEA's administration, (ii) review the annual accounts, (iii) present a yearly report to the General Assembly on performance of the Administrative Authority and (iv) review the complaints of any members. .

The *income* of YSEA is based on a 50,000 rial (US\$ 280) registration fee as well as 50,000 rial monthly membership fee.

The formation and formal registration of the YSEA was encouraged and facilitated by MFW, who recognised that there was a need for a non-Governmental body that represented private sector interests in promoting high quality fish production in Yemen. They also compared the situation with the agricultural sector, where it is increasingly aware that the private sector's knowledge and dynamism has accelerated SPS development via various sector associations such as the *Federation of Agricultural Associations* and the *Agriculture Cooperation Association (ACA)*. The latter organisation received a US \$70,000 grant from FAO for studies and research on the conditions of agriculture and the needs of agricultural association (1998). Since its formation, MFW and YSEA have cooperated on a number of issues, such as coordinating the visit of the EC's *Food and Veterinary Office* inspection team and the subsequent follow-up actions.

4.1.2 Ministry of Fish Wealth

The principal institution responsible for fisheries sector management is the Ministry of Fish Wealth (MFW). MFW is responsible for (MFW, 2000):

1. Planning and implementing national policies and projects linked to the sector;
2. Fisheries research;
3. Collection of statistical data relevant to the fisheries sector;
4. Monitoring, control and surveillance and fisheries regulation;
5. Controlling the quality of fish production;
6. Supervise the activities of fishing cooperatives, research and education institutions; and
7. Supervise the activities of public corporations in the fisheries sector e.g. PCFSM, CFC and the publicly owned canneries.

The most recent policy for fisheries development has been articulated in MFW's 'National Strategy for Development of the Fisheries Sector' (MFW, 2000). The main elements of this strategy can be summarised as:

- Reducing the manpower of MFW by pensioning off redundant staff;
- Networking of MFW's offices to improve communication and information exchange;
- Replacement of industrial fishing with coastal activities;
- Increased artisanal fishing licence fees to compensate for lost industrial revenue;
- To enact and issue regulations to control the growing artisanal fishing sector;
- Increased revenue collection from traders to fund improvement to market infrastructure.
- Development of fish retail markets in Sana'a, Aden, Mukalla, Taiz and Ibb
- To redefine the rules and regulations governing the fisheries sector;
- To continue encouraging the formation of fisheries cooperative societies as a focus for fisheries development and regulation approaches.
- To review the future of public corporations such as the PCFSM, including the possible privatisation of some or all of its assets.
- Restructuring of MSRRC and its branches.

MFW is organised in five Technical Departments, including (i) Planning and Statistics and (ii) Technical Affairs (inc. QC). The latter department's functions are to:

- Ensure that government institutions (PCFSM, CFC) and joint venture companies (FICO, YFC) conduct facilities maintenance programmes;
- Follow up the implementation of fisheries related projects with respect to harbours, workshops, cold stores and other fish receiving facilities.
- Inspect fish product quality for domestic and export markets;

- Issue health certificates for export goods;
- Collect export marketing fees;
- Keep records of export volumes, values and destinations; and
- Develop new product ideas.

MFW's Technical Affairs Department of Quality Control is the formal 'Competent Authority' under the EC's Commission Decision 1999/528/EC. MFW has issued different Ministerial Decrees (refs 87/2002 to 97/2002) that came into force on 25 December 2002 and transpose the main European legislation align with fish and fish products. It has branches in all Governorates, but is only really active in Hodeidah, Aden and Mukalla.

As the Competent Authority, MFW has a number of responsibilities only it can fill. This includes:

- Request the addition or removal of establishments approved for export to the EU
- Ensuring compliance with the SPS provisions in Art. 11(4) of EC Directive 91/493/EEC
- Certification that fish products have originated from an approved establishment
- Communicating information and notifications from counterparts in the EC's DG Sanco and DG Fish, as well as the US's FDA.

With the possible exception of the latter point, none of these functions can be vested to the private sector.

The principal barrier facing sector management is MFW's modest capacity to plan and prepare development programmes and activities. There is an urgent need for far reaching institutional reform to strengthen fisheries resources management. FAO have supported a workshop to catalyse institutional reform (held January 2004) and it is apparent that the Minister is firmly committed to progressing reform initiatives but with limited impact to date. The element of this reform process include:

- Decentralisation of MFW's management role to at least Governorate level and below to encourage resource co-management at local level;
- Role of Sana'a MFW to oversee two new public authorities (i) a *Fisheries Authorities* at Governorate level and (ii) a *General Authority for Research and Extension* that will subsume the existing PCFSM, CFC and the Fisheries Manpower Development Corporation;
- Empowerment of 'model' cooperatives

The World Bank / EC 'Fisheries Resource Management and Conservation Project', which was agreed with MFW in November 2005, proposes to strengthen MFW's resource management capacity to undertake more effective fisheries research, resource management and fish landing regulation activities at Governorates level. This will essentially be achieved through decentralization of most of its activities from the current main centres in Sana'a and Aden.

4.2 STDF PARTNER INSTITUTIONS

None of the five STDF partner institutions is anticipated to have a direct role in the project. However, the World Bank will have a strong ancillary position in that the 'Fisheries Resource Management and Conservation Project' it is jointly financing with the EC will have strong linkages with the proposed project (see Section 5.1, page 46). In particular, close coordination between the FRMCP's Component 2 is anticipated and will be implemented through project management linkages with the FRMCP 'Project Service Centre' in Aden.

5 LINKAGES WITH RELATED PROGRAMMES

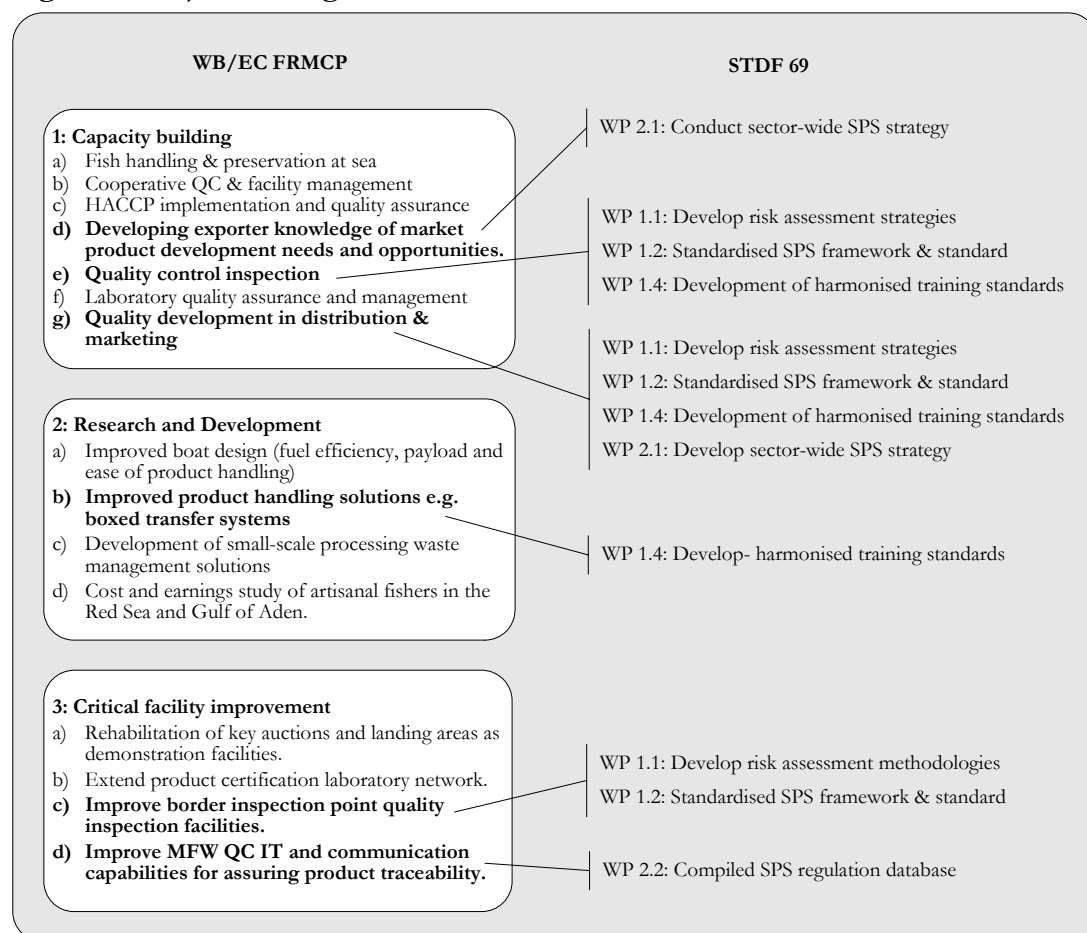
5.1 FISHERIES RESOURCE MANAGEMENT AND CONSERVATION PROJECT

This two phase, US\$ 32⁵ million 10 year initiative will focus on institutional reform to enable MFW, MSRRC and its dependent institutions such as the Public Corporation for Fisheries Services and Marketing (PCFSM). The project is composed of four project components:

- Component 1: Strengthening of fisheries resources management.
- Component 2: Improved fisheries infrastructure and fish quality.
- Component 3: Cooperative development & income generation for fishing communities.
- Component 4: Implementation support and preparation of a follow-up project:

As discussed in Section 1.6.2 (page 24), the largely EC-funded Component 2 is directly compatible with the activities envisaged under this proposed project. FRMCP will be managed from a 'Project Service Centre' in Aden but will be implemented through proposed 'Fisheries Authorities' in each Governorate. Close links will be developed by the YSEA project management with the FRMCP offices, especially in Mukalla and Hodeidah, where the seafood processing industries are mainly based. The component linkages between the two projects are highlighted in the figure below.

Figure 7: Project Linkages with FRMCP



⁵ World Bank US\$ 25 million, EC €5 million (US\$ 7 million)

5.2 SUSTAINING COMPETITIVENESS IN GLOBAL MARKETS: PREPARING YEMEN FOR WTO ACCESSION – FISH SECTOR SUB-COMPONENT (UNIDO)

As discussed earlier in this report, UNIDO proposed two pilot programmes within the fisheries sector. However these were never progressed and the majority of their activities have been subsumed into the World Bank / EC 'Fisheries Resource Management and Conservation Project'.

5.3 FISHERY QUALITY CONTROL FOR EXPORT PROMOTION (UNDP / IF)

The Integrated Frameworks (IF) Trust Fund is providing US\$ 350,000 to MFW to operationalise the fish product quality control laboratory in Hodeidah through the provision of equipment (US\$ 149,000) and technical assistance (US\$ 90,000) and training (US\$ 35,000) to both laboratory staff (i.e. inspectors and technicians) as well as fishing communities in order to improve the handling and quality of fish. The remainder of the funds (US\$ 67,000) is allocated to project management. The project was signed in August 2005 and will be operational until December 2006.

There is potential for the various training programmes to be integrated into training standard development programme to be implemented under WP 1.4 of the STDF funded project. In particular it might be possible to develop a small training facility in Hodeidah in collaboration with one of the YSEA members there.

6 PROJECT OUTPUTS

6.1 OUTPUTS

6.1.1 Component 1: Product Quality Development

This project component is intended to lead to an improvement in the minimum quality of fish being produced for discerning domestic, regional and international markets. This reflects the acknowledged gap between the top producers who currently supply some of the most demanding markets in the world (see FVO, Dec 2004) and others where both practises and product quality are less satisfactory. Therefore it is intended to raise the baseline quality and safety levels by focussing on the weaker producers through a combination of risk assessment, development of an industry SPS standard allied to a premium quality mark and a focused training capacity. The outputs of the individual Work Packages in Component 1 are examined below:

WP 1.1: Develop risk assessment methodologies:

- Production of a risk assessment framework that allows YSEA members to focus on vulnerable areas;
- Tool for the Ministry to target and assist weaker producers
- To our knowledge this is this first time such risk assessment approaches have been implemented in this region of the Middle East.

WP 1.2: Standardised SPS Framework:

- Improved recognition of the wide variety of factors and actors that influence product quality and safety that will improve coordination and integration within the sector;
- An SPS standard that is recognised and endorsed by MFW and the industry, that is straightforward to certify compliance and one that will encourage businesses to address weak points in their SPS strategies.
- The increased use of third party certification services for independent verification.

WP 1.3: Develop Yemeni seafood quality mark:

- The creation of a generic quality mark for Yemeni seafood
- Increased consumer confidence in Yemeni seafood products – this can be applied to discerning domestic as well as international markets.
- Provision of a Yemeni seafood pavilion to launch the quality mark that will further demonstrate the combined will of Yemeni seafood producers to provide a world-class product.

WP 1.4: Develop harmonised training standards:

- Sector-wide training needs analysis completed
- Harmonised training curriculum developed and approved by MFW
- Fishing industry training centre established and operational
- MFW and industry delivering and receiving training as a partnership.

6.1.2 Component 2: Reduction of SPS Barriers to Market Access

Despite the efforts of the bilateral donors and organisations like FAO, the SPS requirements and regulations of key markets such as Europe and North America still represent a considerable challenge to Yemeni producers. This component will address these through providing a better understanding of the particular requirements relevant to Yemeni seafood products and provide a centralised resource for accessing and understanding these potential barriers.

WP 2.1: Develop sector-wide SPS strategy:

- Identification of key markets, value adding opportunities and product quality/specification requirements
- Industry strategy for raising food quality and safety standards in order to access existing and emerging high value markets;
- Identification of key SPS constraints and researchable issues and studies conducted to address these.

WP 2.2: Compile SPS regulation database:

- Information on the SPS requirements of major regional and international markets available to all Yemeni producers in a readily accessible and usable format (key items summarised in English and Arabic).

6.1.3 Component 3: YSEA Capacity Development

YSEA is a new organisation, having been formally promulgated in February 2005. It has been formed to enable the weaker producers, who have historically struggled to meet the exacting standards of the European markets, improve the quality of their production and therefore raise the overall expectations of Yemeni fish production. The output of this component will therefore be an organisation that utilises both the knowledge of its more experienced members, as well as a strengthened partnership between the private and public sectors, to provide focused support to the industry as a whole. YSEA will be an effective and proactive organisation that provides both the private and public sector with the information and resources to improve the quality of their products and ability to access key overseas markets.

WP 3.1: Develop Business Planning Capacity:

- A producers organisation with a clearer focus and strategy to assist the industry in raising its quality and safety standards
- A short-term (2006 – 2008) and longer-term business plan with clear goals, objectives and action requirements. Costs, funding opportunities and internal resources, both fiscal and other, will be identified and committed.
- A business review process and timetable agreed.

WP 3.2: Develop YSEA Website:

- A website designed to international standards constructed and online
- A suite of online resources e.g. SPS legislation database, directory of private and public sector contacts in Yemen and overseas as well as various knowledge portals (processing, packaging and QC technologies) in English and Arabic.
- A 'one stop shop' for information on the Yemeni seafood industry including information and linkages to the key actors, information on the seafood products and resources available, national and regional legislation as well as export facilitation services that might be offered by YSEA.

6.2 RELEVANCE TO STDF OBJECTIVES

This project has been designed so that the proposed assistance conforms with the STDF objectives. These have been summarised in the table below, together with an indication as to which Work Packages contribute to their achievement.

Table 12: Relevance to STDF Objectives

STDF Theme	STDF Supported Activities and Objectives	Project Component & Work Packages							
		1. Product quality development				2 SPS barrier reduction		3. YSEA development	
		1.1	1.2	1.3	1.4	2.1	2.2	3.1	3.2
1	Develop action plans							✓	
	Support risk analysis methodologies	✓							
	SPS standard impact assessment					✓			
2	Strengthen public/private partnerships	✓	✓		✓	✓	✓		
	Training of staff in the field of food safety				✓				
	Analytical support to identify potential markets and their SPS requirements			✓		✓			
	Applied research for analysing, assessing and solving SPS obstacles		✓			✓			
	Feasibility studies for important investments					✓			
3	Collation of SPS training materials				✓				✓
	Analysing information on official and commercial SPS requirements						✓		

7 PROJECT IMPACT

Whilst it is considered that the project components respond to the specific objectives of the STDF programme, efforts have been made to ensure that project impacts are coherent with the wider STDF goals. These are briefly examined below.

Complement efforts by bilateral agencies: this project was conceived to specifically complement the World Bank / EC joint-funded ‘Fisheries Resource Management and Conservation Project’ (FRMCP). This joint US\$ 33 million project will provide development assistance to the fisheries sector, with a particular focus on technical and institutional capacity-building, especially for the Ministry of Fish Wealth. The project is mainly (but not exclusively) orientated to ensuring the safety and quality of products prior to processing e.g. at sea, at landing centres and at the auctions. In contrast this project focuses on improving the private sector processing capacity and its ability to delivery safe and high quality products to regional and international markets. Further comments on the coherence with other initiatives can be found in Section 5.

Linkages to country or regional program development priorities: The Yemen *Strategic Vision up to the Year 2025* sees the development of coastal areas as an important approach to mitigating migration onto urban areas. It also regards the fisheries sector as “one of the most promising economic sectors over the next period” and specifically focuses on the development of modern refrigeration, storage and marketing of fish products in order to “raise productivity and improve quality and competitiveness”. The strategy also advocates greater collaboration between the Government and private sector, with the private sector instigating economic growth whilst the government provides the governance and fiscal regime in order to allow growth to flourish.

The *Poverty Reduction Strategy Paper* (PRSP) 2003 – 2005 sees the fisheries and agriculture sectors as the most promising sectors in the Yemeni economy. An average growth of 7.8% is foreseen over the PRSP planning period and it advocates “optimal exploitation of the fish wealth so as to raise output without affecting the fish stock reserves”. Amongst the seven priority programmes contained in the PRSP, one is particularly relevant: the creation of quality control laboratories and associated monitoring system so as to improve fisheries products and promote exports.

The *Third Five Year Plan for Fish Wealth Development and Poverty Reduction based on the Millennium Goals (2006-2010)* represents the fisheries component of the Third Five Year Development Plan (2006 – 2010). Prepared with the assistance of FAO, this plan recognises the main constraints to the sector’s contribution to economic growth to be, amongst others:

- A large and growing artisanal fisheries sector with inadequate port and fish landing infrastructure and with appropriate conditions (cold chains, transport and marketing);
- Modest local fish processing capacity;
- A serious lack of data on all aspects of the sector; and
- A limited capacity to monitor and enforce fish quality control.

The plan then goes onto identify six “priority elements for the development of the fisheries sector in the long term” including (i) strengthening MFW capacity in sector development planning and (ii) improve fish quality through the introduction of quality control laboratories, improving fish catching techniques, landing facilities and the auction system.

Capacity enhancement: the project focuses on the development of the YSEA’s capacity to deliver safer and higher quality products through influencing the activities and practises of its members. In order to enable it do so, the project’s Component 3 will provide business planning skills as well as an ability to strategise and direct development to overcome non-tariff barriers and target emerging markets.

In addition to YSEA, the project will also enhance the capacity of the Ministry of Fish Wealth in a number of areas including (i) risk assessment, (ii) product quality development and inspection, (iii) training needs assessment and (iv) regulatory frameworks governing access to key overseas markets.

Improved market access and trade opportunities: access to markets will be improved by a better understanding of the potential barriers that exist and the implementation of diagnostic studies to determine the best approaches to overcome these. Greater trade opportunities will come about due to the raising of the minimum standards of Yemeni seafood products, which will be supported by the adoption of an independently certified standard. Improved market knowledge and confidence will also result in greater value-adding opportunities.

Poverty reduction: fishermen and coastal communities have already benefited substantially from the development of the canning and fresh/frozen capacity, especially on the Hadramaut coast. This project is intended to further strengthening this growing industry sub-sector and ensure that it continues to contribute to the local economy. Progress in accessing higher value and more lucrative markets will provide higher margins, with a trickle-down effect to fishers and local communities.

Public-private co-operation⁶: this project will see the strengthening of existing ties between the processing industry and the Ministry of Fish Wealth. As discussed above, the main areas of cooperation will be in risk assessment and the development of a joint training capacity.

Innovativeness: the project does not contain any particularly innovative approaches and in fact relies on previous experience and lessons learned in the fisheries sector's development (e.g. the last World Bank / EC 'Fourth Fisheries Project'). However the whole approach is relatively new in Yemen and tools such as risk assessment have rarely been used, certainly in the fisheries sector. In addition, the empowerment of a private sector organisation such as YSEA through the development of their business planning capacity is also a novel approach in Yemen.

Demonstration potential: Yemen is the only coastal country on the Arabian peninsula that is considered a non-ACP 'Less developed country'. As such, it might be difficult to replicate any of the lessons with any of its comparatively rich neighbours. However there are a number of nations on the other side of the Red Sea - such as Somalia, Sudan and Eritrea - which have strong fisheries export potential and that might benefit from the approaches and experience from this project. In particular the development of a industry-based training capacity that operates in partnership with government might be particularly attractive, as fisheries administration in these countries is considered weak and would benefit from the experience and dynamism of the private sector. Experience of other approaches, such as risk assessment, would also be useful as they provide a possible solution to reducing the costs of SPS surveillance, benefiting both the private and public sectors.

⁶ The 1992 Earth Summit in Rio de Janeiro sent a clear message that the issues facing the developing world were too important and too great in scope for governments to address in isolation, and that new partnerships would have to be created with the private sector. Agenda 21 talks about 'public-private partnerships' (PPPs), and that the public and private sectors "should strengthen partnerships to implement the principles and criteria for sustainable development," and the public sector "should establish procedures" to allow for an "expanded role" for the private sector.

8 PROJECT INPUTS

8.1 COSTS

The total cost of the project is anticipated to be \$452,050. This consists of US\$ 284,250 in fees (see Table 13) and US\$ 167,800 in expenses (see Table 14).

Table 13: Fee & Subsistence Cost Summary

Post		mm	Fee costs	DSA costs	Total
YSFA Staff costs	SPS Standard Coordinator	5.25	\$7,875		\$7,875
	Training Coordinator	14.00	\$21,000		\$21,000
	Marketing Coordinator	4.00	\$6,000		\$6,000
	Regulations Coordinator	5.00	\$7,500		\$7,500
	<i>Sub-total</i>	<i>28.25</i>	<i>\$42,375</i>		<i>\$42,375</i>
Local consultant	Project manager	15.00	\$30,000	\$8,250	\$38,250
	QC Standard Specialist	1.25	\$2,500	\$1,875	\$4,375
	Marketing Specialist	4.75	\$9,500	\$7,125	\$16,625
	Training specialist	6.50	\$13,000	\$9,750	\$22,750
	Business management specialist	1.50	\$3,000	\$2,250	\$5,250
	Website designer	2.50	\$5,000	\$3,750	\$8,750
	<i>Sub-total</i>	<i>31.50</i>	<i>\$63,000</i>	<i>\$33,000</i>	<i>\$96,000</i>
International consultant	QC Standard Specialist	4.25	\$63,750	\$15,938	\$79,688
	Marketing Specialist	1.50	\$22,500	\$5,625	\$28,125
	Training specialist	1.00	\$15,000	\$3,750	\$18,750
	Business management specialist	0.75	\$11,250	\$2,813	\$14,063
	Website designer	0.35	\$5,250		\$5,250
	<i>Sub-total</i>	<i>7.85</i>	<i>\$117,750</i>	<i>\$28,125</i>	<i>\$145,875</i>
	Total	67.60	\$223,125	\$61,125	\$284,250

Table 14: Expenses Cost Summary

Cost	No.	Total
International flights	18	\$27,000
Domestic flights	61	\$12,200
Equipment		\$8,000
Workshops		\$20,000
Training Materials		\$12,000
Training costs		\$17,000
Publicity materials		\$45,000
Office rent		\$12,000
Secretarial support		\$9,600
Translation		\$5,000
Total		\$167,800

The costs have been broken down by Component and Work Package in the table overleaf.

Table 15: Breakdown of Costs by Component and Work Package**A. Component 1: Product Quality Development**

Component Details	International TA			Local TA			YSEA staff time		Int'l Flights		Local flights		Equipment & materials
	mm	Fees	DSA	mm	Fees	DSA	mm	Fees	No.	Cost	No.	Cost	
WP 1.1: Develop risk assessment methodologies													
a) Assess risks for production & product types	0.25	\$3,750	\$938		\$0	\$0	0.25	\$375	1	\$1,500	1	\$200	\$5,000
b) Develop risk assessment methodologies	0.5	\$7,500	\$1,875		\$0	\$0	0.50	\$750		\$0	1	\$200	
c) Conduct risk assessment		\$0	\$0		\$0	\$0	1.50	\$2,250		\$0	3	\$600	
Sub-total	0.75	\$11,250	\$2,813	0	\$0	\$0	2.25	\$3,375	1	\$1,500	5	\$1,000	\$5,000
WP 1.2: Development of a SPS Standard													
a) Agree objectives of the SPS standard	0.25	\$3,750	\$938	0.25	\$500	\$375	0.25	\$375	1	\$1,500	1	\$200	\$5,000
b) Evaluate scope of SPS standard	0.25	\$3,750	\$938	0.25	\$500	\$375	0.25	\$375		\$0		\$0	
c) Research and define SPS standard	0.25	\$3,750	\$938	0.5	\$1,000	\$750	1.50	\$2,250		\$0	1	\$200	
d) Agree certification process and rules	0.25	\$3,750	\$938	0.25	\$500	\$375	0.50	\$750		\$0	1	\$200	
Sub-total	1	\$15,000	\$3,750	1.25	\$2,500	\$1,875	2.50	\$3,750	1	\$1,500	3	\$600	\$5,000
WP 1.3: Develop Yemeni seafood quality mark													
a) Determine and agree marking objectives	0.25	\$3,750	\$938	0.25	\$500	\$375		\$0		\$0		\$0	\$5,000
b) Establish logo use rules		\$0	\$0	0.25	\$500	\$375		\$0		\$0		\$0	
c) Design mark logo and marketing approach	0.25	\$3,750	\$938	0.5	\$1,000	\$750		\$0		\$0		\$0	\$5,000
d) Publicity material & dissemination	0.25	\$3,750	\$938	0.25	\$500	\$375		\$0	12	\$18,000		\$0	\$40,000
Sub-total	0.75	\$11,250	\$2,813	1.25	\$2,500	\$1,875	0.00	\$0	12	\$18,000	0	\$0	\$50,000
WP 1.4: Develop harmonised training standards													
a) Conduct sector-wide training needs analysis	0.5	\$7,500	\$1,875	1.5	\$3,000	\$2,250	2.00	\$3,000		\$0	3	\$600	
b) Develop training curricula and standards	0.5	\$7,500	\$1,875	3	\$6,000	\$4,500	3.00	\$4,500		\$0	3	\$600	\$2,000
c) Conduct training of trainers		\$0	\$0	2	\$4,000	\$3,000	4.00	\$6,000		\$0		\$0	\$5,000
c) Conduct training		\$0	\$0		\$0	\$0	5.00	\$7,500		\$0		\$0	\$5,000
Sub-total	1	\$15,000	\$3,750	6.5	\$13,000	\$9,750	14.00	\$21,000	0	\$0	6	\$1,200	\$12,000
TOTAL	3.5	\$52,500	\$13,125	9	\$18,000	\$13,500	18.75	\$28,125	14	\$21,000	14	\$2,800	\$72,000

B. Component 2: Development of an SPS Standard

Component Details	International TA			Local TA			YSEA staff time		Int'l Flights		Local flights		Equipment & materials	Training costs
	<i>mm</i>	<i>Fees</i>	<i>DSA</i>	<i>mm</i>	<i>Fees</i>	<i>DSA</i>	<i>mm</i>	<i>Fees</i>	<i>No.</i>	<i>Cost</i>	<i>No.</i>	<i>Cost</i>		
WP 2.1: Develop sector-wide SPS strategy														
a) Define key markets		\$0	\$0	1.00	\$2,000	\$1,500	1.00	\$1,500		\$0	4	\$800		\$0
b) Develop SPS strategy	0.50	\$7,500	\$1,875	0.50	\$1,000	\$750	1.00	\$1,500	1	\$1,500	1	\$200		\$0
c) Conduct targeted short-term studies	2.00	\$30,000	\$7,500	2.00	\$4,000	\$3,000	2.00	\$3,000	2	\$3,000	4	\$800		\$0
Sub-total	2.50	\$37,500	\$9,375	3.50	\$7,000	\$5,250	4.00	\$6,000	3	\$4,500	9	\$1,800	\$0	\$0
WP 2.2: Compile SPS regulation database														
a) Develop frame survey	0.50	\$7,500	\$1,875		\$0	\$0	0.50	\$750		\$0		\$0		\$0
b) Design database and information system	0.25	\$3,750	\$938		\$0	\$0	0.50	\$750		\$0		\$0	\$5,000	\$0
c) Research and populate database		\$0	\$0		\$0	\$0	2.00	\$3,000		\$0		\$0		\$0
d) Development of dissemination approaches		\$0	\$0		\$0	\$0	2.00	\$3,000		\$0		\$0	\$2,500	\$0
Sub-total	0.75	\$11,250	\$2,813	0.00	\$0	\$0	5.00	\$7,500	0	\$0	0	\$0	\$7,500	\$0
TOTAL	3.25	\$48,750	\$12,188	3.50	\$7,000	\$5,250	9	\$13,500	3	\$4,500	9	\$1,800	\$7,500	\$0

B. Component 3: Capacity Development of YSEA

Component Details	International TA			Local TA			YSEA staff time		Int'l Flights		Local flights		Equipment & materials	Training costs
	<i>mm</i>	<i>Fees</i>	<i>DSA</i>	<i>mm</i>	<i>Fees</i>	<i>DSA</i>	<i>mm</i>	<i>Fees</i>	<i>No.</i>	<i>Cost</i>	<i>No.</i>	<i>Cost</i>		
WP 3.1: Develop Business Planning Capacity														
a) Facilitated development of vision & strategy	0.25	\$3,750	\$938	0.25	\$500	\$375	0.50	\$750	1	\$1,500	2	\$400	\$5,000	\$0
b) Prepare business plan	0.50	\$7,500	\$1,875	0.50	\$1,000	\$750		\$0		\$0		\$0		\$0
c) Business plan revision & update		\$0	\$0	0.75	\$1,500	\$1,125		\$0		\$0	2	\$400		\$0
Sub-total	0.75	\$11,250	\$2,813	1.50	\$3,000	\$2,250	0.50	\$750	1	\$1,500	4	\$800	\$5,000	\$0
WP 3.2: Develop YSEA Website														
a) Design website	0.10	\$1,500	\$0	0.50	\$1,000	\$750		\$0		\$0	1	\$200		\$0
b) Develop website tools and resources	0.25	\$3,750	\$0	2.00	\$4,000	\$3,000		\$0		\$0	3	\$600	\$500	\$0
Sub-total	0.35	\$5,250	\$0	2.50	\$5,000	\$3,750	0.00	\$0	0	\$0	4	\$800	\$500	\$0
TOTAL	1.10	\$16,500	\$2,813	4.00	\$8,000	\$6,000	0.50	\$750	1	\$1,500	8	\$1,600	\$5,500	\$0

A brief explanation as to the fees and expenses is provided below.

8.1.1 Fees

The fees have been based on the following:

- a) **YSEA staff time** has been costed at the equivalent of US\$ 1,500 per month. No daily subsistence allowance (DSA) has been provided as it is assumed that these duties will be undertaken from their home offices.
- b) **Local consultancy** has been costed at US\$ 2,000 per month. A DSA allowance of US\$ 50 has also been included.
- c) **International consultancy** has been costed at US\$ 15,000 per month. A DSA allowance of US\$ 125 has also been included, which will cover all accommodation and subsistence costs, together with registration of a local mobile phone and all local (intra-city) transport costs.

8.1.2 Expenses

The following expenses categories have been identified and a brief explanation is provided:

International flights: 18 flights at an average cost of US\$1,500 return has been included, totalling \$27,000. These flights include both (i) flights to Yemen for the international consultants and (ii) a number of flights for YSEA and MFW staff to attend international trade fairs under the promotion activities.

Domestic flights: 61 internal flights in Yemen have been included at a total cost of US\$12,200. These flights are for (i) the Project Manager who will need to make frequent visits all around the country and (ii) flights for the consultants who may have to visit more than one location in their duties:

Equipment: a total of \$8,000 has been allocated for equipment. This is to cover (i) a PC and software for the regulations database, a laptop computer, a multimedia projector for LSEA's use during promotional and fund raising activities.

Workshops: US \$20,000 has been allocated to support workshops. This will cover flights, accommodation and other costs as it is expected that a large number of stakeholders from both the private and public sectors will be required.

Training Materials: a total of US \$12,000 has been allocated for training aids such as OHPs, multimedia projectors and furniture for two training faculties (one in Mukalla and one to be based in Hodeidah).

Training costs: the project will allocate \$17,000 towards training costs, such as the transport, accommodation and subsistence for trainees. It is estimated that 20 training courses will be run over the course of the project with an average of 10 persons per course of 5 days duration.

Promotion: \$45,000 will be allocated to promotion of YSEA's activities under the project. Small proportion of this will be allocated to the printing of materials, but the majority will go towards providing a 'Yemeni Seafood Pavilion' at up to four international seafood shows in Europe, the USA and the Far East.

Office rent: \$12,000 will be allocated to office costs over the two year project period. This includes office rental cost (@\$300/month) and utilities (@\$200/month).

Secretarial support: Secretarial support over the two year period will cost \$4,800.

Translation: a lump sum of \$5,000 has been allocated to the translation of English material into Arabic.

8.2.2 Local Consultants

Based on the experience and preference of YSEA staff during project preparation, the emphasis of the project will be on the use of experienced local consultants. This is because the English language capacity for many of the YSEA members is weak and there is a growing private sector consulting capacity in Yemen, which is appropriate to foster.

A total of 31.5 mm of local consultancy time is envisaged, with almost half the time (15 mm) allocated to Project Manager. It was decided to outsource project management in order to (i) engage of professional project manager and (ii) provide a degree of objectivity to project administration, procurement, monitoring and evaluation.

The Project Manager's role will be pivotal, as he will be responsible for the implementation of all the project activities, in particular:

- Under YSEA guidance, preparation of Terms of Reference for all domestic and international consultants;
- Recruitment of suitably qualified and experienced domestic and international consultants;
- Coordination and compilation of activity completion reports from consultants and the YSEA coordinators;
- Coordination and compilation of the main project reports; and
- Managing project fund disbursement and accounting.

Other local consultants will include:

QC Standard Specialist (1.25 mm): working principally on Work Package 1.2 (standardised SPS framework), will also assist with the risk assessment framework development.

Marketing Specialist (4.75 mm): will work on (i) the generic quality marking of Yemeni seafood products and (ii) the development of a sector-wide SPS strategy. Will be a lead participant in the diagnostic studies under Work Package 2.2.

Training specialist (6.5 mm): an experienced training specialist will be engaged to assist with Work Package 1.4. He will be instrumental in establishing a training capacity within the YSEA which will have strong linkages with MFW, in both terms of delivering and receiving training. He will lead the establishment of wide-ranging training curricula as well as the training of trainers.

Business management specialist (1.5 mm): with the international consultant, the business development consultant will facilitate the development of a vision and delivery strategy for the YSEA, as well as the subsequent delivery of a business plan.

Website designer (2.5 mm): an established website design consultancy will be engaged to firstly develop a website concept for approval by YSEA. Following approval of the website concept, the domestic website designer will create the site and publish it online. The website should be available in English and Arabic.

Figure 9: Local Consultant Resources

Activity	TA mm			2006							2007												2008																			
	IC	LC	LSEA	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	F	M	A	M	J									
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	1	2	3	4	5	6	7	8	9	10	11	12			
Project manager		15.00																																								
QC Standard Specialist		1.25																																								
Marketing Specialist		4.75																																								
Training specialist		6.50																																								
Business management specialist		1.50																																								
Website designer		2.50																																								

8.2.3 International Consultants

A limited number of international consultants will be engaged by the project. Their main role will be to provide guidance and an international perspective to the local consultants and the YSEA coordinators. The latter is expected to be particularly important, as it is essential that the project activities are relevant to international buyers and benefits from wider experience in global fisheries trade.

A total of 7.85 mm of international consultants will be utilised (see figure below). The description of their duties are essentially the same as the domestic consultants (see previous section).

Figure 10: International Consultant Resources

Activity	TA mm			2006					2007												2008						
	IC	LC	LSEA	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
QC Standard Specialist	4.25																										
Training specialist	1.00																										
Marketing Specialist	1.50																										
Business management specialist	0.75																										
Website designer	0.35																										

9 NON-STDF CONTRIBUTIONS

Of the total cost of US \$452,050, STDF is being requested to finance US \$371,075 (82.1%). The remaining US \$80,975 (17.9%) will be funded by the Yemeni Seafood Exporters Association.

The **STDF** is being asked to fund the following:

- Domestic consultancy fees and costs (\$96,000)
- International consultancy fees and costs (\$145,875)
- International flights (\$27,000)
- Domestic flights (\$12,200)
- Equipment (\$8,000)
- Workshops (\$20,000)
- Training Materials (\$12,000)
- Publicity materials (\$45,000)
- Translation (\$5,000)

The YSEA has committed to fund the following:

- The salaries and costs of the thematic coordinators (\$42,375)
- Training costs e.g. venue, subsistence and travel costs of participants (\$17,000)
- Office rent (\$12,000)
- Secretarial support (\$9,600)

Figure 11: Project Work Plan



11 PROJECT MANAGEMENT, MONITORING AND EVALUATION

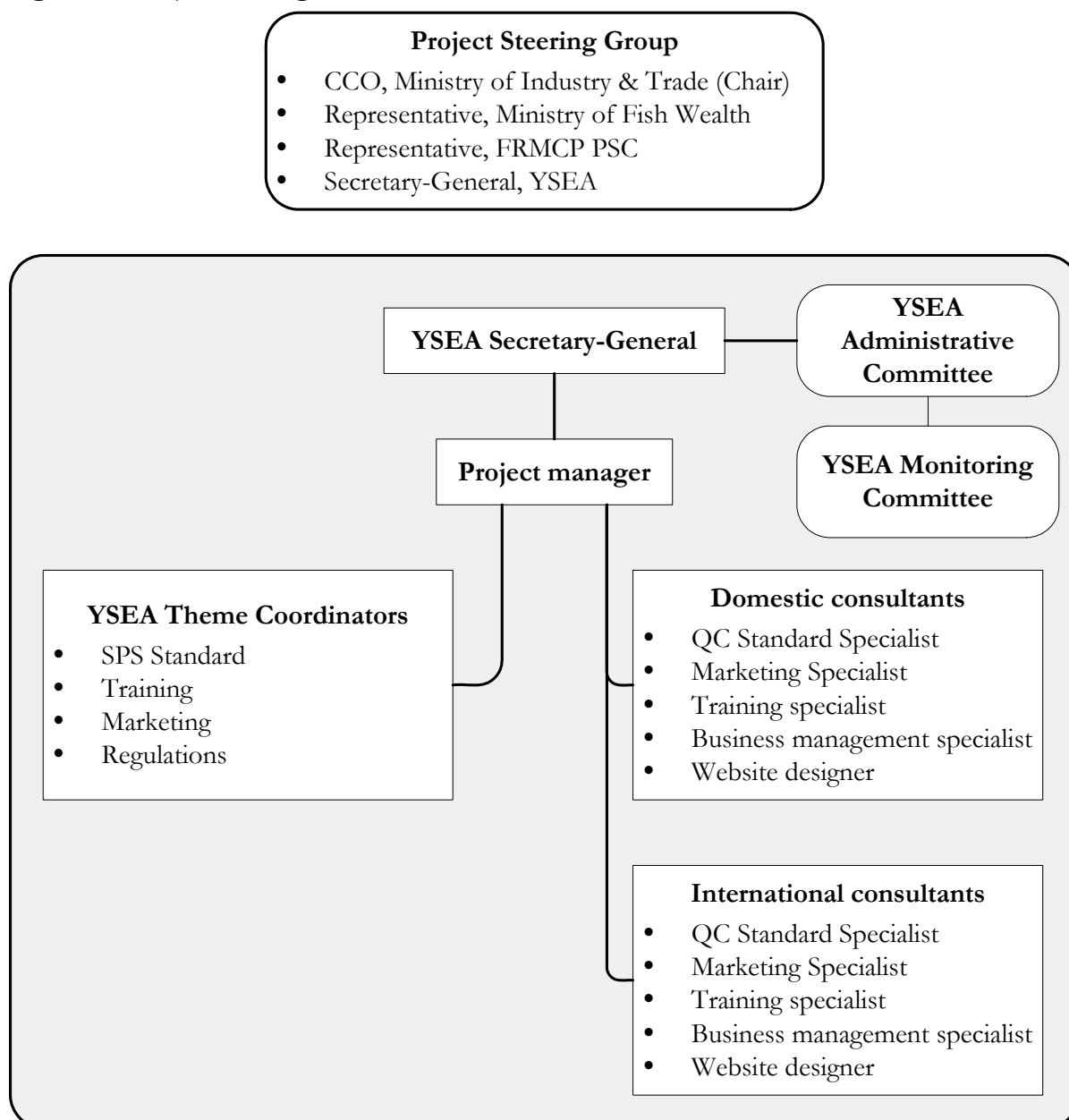
11.1 PROJECT MANAGEMENT

It is envisaged that project management will take place at two levels: (i) a Project Steering Group and (ii) day to day management via YSEA (see figure below).

11.1.1 Project Steering Group

The Project Steering Group will meet quarterly and will provide the overall direction to the project. The Steering Group will consist of representatives from YSEA, MFW and the WB/EC funded FRMCP Project Service Centre. The latter representative will ensure adequate coordination with the compatible activities being undertaken by the FRMCP. The Steering Group will be chaired by the Chief of Coordination and Communication Office at the Ministry of Industry and Trade. Representatives from other organisations involved in fisheries and trade development may also be asked to attend if appropriate.

Figure 12: Project Management Structure



11.1.2 Day-to-day Project Management

Over the first year of the project, the day to day project management will be undertaken by the full time Project Manager. He will be based at YSEA's office in Sana'a but will travel extensively throughout Yemen in order to supervise the project's activities. Sufficient travel and subsistence allowances have been included in the budget. The Project Manager will report to the YSEA Secretary-General and through him to the YSEA Board of Directors. YSEA will provide the Project Director with full secretarial support, including access to telephones, fax, computers, and printing and copying facilities.

The Project Manager will assist coordinate the activities of the YSEA thematic coordinators with those of the domestic and international consultants. In particular, he will assist the YSEA thematic coordinators prepare the Terms of Reference for the consultants and assist in their deployment. He will also be responsible for the financial management of the project, together with the YSEA Financial Controller.

11.2 PROJECT MONITORING AND EVALUATION

11.2.1 STDF Monitoring and Evaluation Requirements

The systematic monitoring and evaluation of projects undertaken by STDF is one way in which information can be disseminated about the relative effectiveness of different approaches to SPS capacity building. Monitoring and evaluation of projects is undertaken as follows:

- The executing agency or eligible beneficiary organization will ensure quality control, consistency of objectives, and other criteria as outlined in the STDF guidelines.
- The STDF Secretary shall arrange for ex-post evaluation of all projects under Theme 2 financed by the STDF. Evaluation shall be by independent consultants and financed by STDF. The basis for evaluation of the project shall be the activities and outputs described in the project document – in particular, a measurable impact on market access, improved SPS situation and poverty reduction.
- The STDF Secretary shall arrange for ex-post evaluation of projects over \$200,000 in size financed by under Themes 1 and 3. Evaluation shall be by independent consultants. The basis for evaluation of the project shall be the activities and outputs described in the project document.

11.2.2 Reporting Obligations

For projects implemented by eligible beneficiary organizations, the contract between the Administrator and that organization shall include reporting obligations such as an inception report, project progress report, draft final report and final report. Successful applicants have the obligation to make all information available to the Executing Agency and/or the Facility on techniques, methods, procedures, and information for better managing SPS market requirements developed with the help of the grant.

It is anticipated that the following reports will be submitted by the project:

- Inception Report (end Month 3)
- Six monthly progress reports (Months 6, 12 and 18)
- Draft Final Report (end month 21)
- Final Report (end Month 24).

11.2.3 Project Monitoring Indicators

In order to assist in developing a monitoring framework, various verifiable monitoring indicators have been developed for each of the work packages identified in Section 2. These have been summarised in the table below.

Table 16: Verifiable Outputs of the Project

Component / WP		Verifiable Outputs (completion month)
1. Product Quality Development	1.1 Develop risk assessment methodologies	<ul style="list-style-type: none"> • Hold workshop and develop written risk assessment framework (Month 3) • Risk assessment methodologies finalised and implementation plan agreed (Month 5) • Risk assessment system under implementation (Month 8) • Risk assessment undergoes first major review (Month 12)
	1.2 Development of a SPS Standard	<ul style="list-style-type: none"> • Written and agreed objectives and scope of the standard (Month 3) • Standard elaborated and agreed with MFW (Month 5) • Accreditation process completed and certification of plants underway (Month 8)
	1.3 Develop Yemeni seafood quality mark	<ul style="list-style-type: none"> • Marking scope and objectives agreed and formalised (Month 7) • Logo designed and agreed, together with usage rules (Month 8) • Publicity material published and marketing underway (Month 11)
	1.4 Develop harmonised training standards	<ul style="list-style-type: none"> • TNA completed and inventory of skills gaps and training needs published (Month 4) • Training curricula and course contents designed and agreed (Month 8) • Training centre equipped and operational, trainers trained and courses underway (Month 9 onwards).
2. Reduction of SPS Barriers to Market Access	2.1: Develop sector-wide SPS strategy	<ul style="list-style-type: none"> • Key markets and value-adding opportunities identified and reported (Month 4). • SPS strategy developed and informed to the industry (Month 5) • Diagnostic studies undertaken and results made available to the industry (Month 9)
	2.2: Compile SPS regulation database	<ul style="list-style-type: none"> • Information frame survey complete (Month 4) • Database established and ready for data input (Month 6) • Database populated (Month 8) • Dissemination mechanisms in place and underway (Month 8)
3. YSEA Capacity Development	3.1: Develop Business Planning Capacity	<ul style="list-style-type: none"> • YSEA Vision and Strategy agreed and distributed (Month 1) • YSEA Business Plan (2006 – 2007) agreed and distributed (Month 2) • Business Plan review and update (Month 13)
	3.2: Develop YSEA Website	<ul style="list-style-type: none"> • Website concept agreed (Month 3) • Completed website published online (Month 6) • Website reviewed and overhauled (Month 14).

Appendix A: Data Sources

Bonfiglioli, A and K.I. Hariri (2004). Small-scale fisheries in Yemen: Social Assessment and Development Prospects. FAO and the World Bank, December 2004. pp 105

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FCU (2003). Evaluation Report on the Activities of the FCU for the Period June 2002-October 2003 Sana'a: FCU Executive Bureau (in Arabic).

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GOPA (2001a). Final Report. Vol. 1:??? Strengthening of Yemen's Fishery Products Quality Control System. GOPA Consultants, Bad Homburg, Germany. ?? pp + annexes.

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MacAlister Elliott and Partners Ltd (1998). Fisheries Sector Review. Prepared for the IV Fisheries Project. MEP-YE-108D. 43 pp + annexes.

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Ministry of Fish Wealth (2000). Main trends of the National Strategy for Development of the Fisheries Sector. Ministry of Fish Wealth, Sana'a, Republic of Yemen. May 2000. pp 57

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UNIDO (2002). Sustaining competitiveness in global markets – preparing Yemen for WTO accession. UNDP Report NC/YEM/000/003. July 2002. pp 82

Valle S V & Ahmed H R (1993). Preliminary stock assessment of the cuttlefish (*Sepia pharonis*) in the Gulf of Aden. MSRRC, 1993.

World Bank (2004). Fisheries Project Identification Mission: Working Paper. Unpublished paper produced by the World Bank, Washington D.C., USA. 29 pp.

World Bank (2005). Fisheries Resource Management And Conservation Project – Project Appraisal Document. Report No: 33015-YE. Washington DC, USA. Pp 98

Appendix B: Endorsements

Letters from:

1. Yemeni Seafood Exporters Association
2. Ministry of Fish Wealth

الجمعية اليمنية لمصدري الأسماك
Yemeni Seafood Exporters Association
(YSEA)

19-11-2005

To whomever it may concern

World Trade Organisation
Centre William Rappard
Rue de Lausanne 154
Geneva
Switzerland
Dear Sir / Madam

Application for Funding Support to Improve the SPS Standard Constraints in the Yemeni Fisheries Sector

Thank you for this opportunity to support the further improvement of the quality and safety of seafood produced in Yemen.

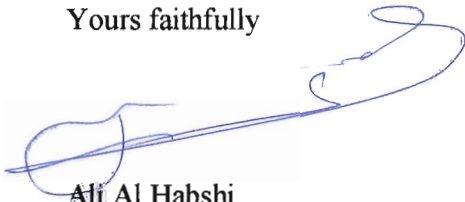
We fully support and endorse the project proposals that have been prepared by your consultant, Mr. Tim Huntington. We consider that, if funded, these activities will have a major impact on the ability of the Association and its members to:

- Provide a standardised SPS code to which all producers should adhere and one that demonstrates the high quality and safety of Yemeni seafood products;
- Determine the key risks associated with Yemeni fish production, together with management strategies to overcome these;
- To overcome SPS barriers and requirements to our key markets through better information and awareness; and
- Strategise and plan support to the export and domestic sector through the development of a business-orientated Association management capacity.

We have reviewed the finances and are pleased to confirm our financial contribution to the project.

We understand that the project proposals will be considered by the STDF in February 2006 and we look forward to the results of their deliberations with interest.

Yours faithfully



Ali Al Habshi
Secretary General

Letter from Ministry of Fish Wealth

In preparation and will be forwarded in due course

Appendix C: EC Workshop Topic Paper and Results Summary (February 2005)

A one-day workshop on quality assurance issues in Yemen fisheries was held at the Hadramaut Hotel in Mukalla on 24 February 2005 as part of the preparation process for the EC funded elements of the Fisheries Resource Management and Conservation Project (FRMCP). This was attended by 36 participants from all around Yemen and represented fishermen, co-operatives, processors and Government. A topic paper (see below), presenting current problems, development options and issues was presented by the mission consultant and formed the basis for ensuing discussions. Wrap-up sessions then allowed some degree of consensus to be formed and is also presented here.

A. Workshop Discussion Topics

1. On-boat storage and handling

The initial point of the chill chain starts at the point fish are landed aboard the boat. At this point, it is necessary to reduce the temperature of the fish and ensure it is sensitively handled, especially for longer distribution chains. Fish handling practise in Yemen have improved, but is still highly variable, especially on the Gulf of Aden coast where relatively few boats carry ice or fish boxes.

Key issues:

- Most boats on the Gulf of Aden coast are not equipped with fish boxes or carry ice
- Ice availability is well covered in the north but is patchy in the south
- Block ice stores well but is inefficient and can damage fish
- Buyer preferences for iced fish – and premiums paid – are variable

Development options:

- Development of an extension system for promoting good fish handling practices (i.e. training of trainers), including practical training & the preparation of extension materials.
- Promoting the use of ice and ice/fish holds, possibly through an extension programme
- Improving landing infrastructure (i.e. reception, washing & temporary storage facilities)

Development issues:

- Could an extension system be privatised e.g. cooperatives or organisations provide training services to fishermen?
- How can we encourage fishermen to carry ice – and ensure they are rewarded for producing better quality ice?
- Will there be a movement towards bigger, more modern multi-purpose boats that need sheltered harbours and better landing facilities?
- What level of infrastructure is required – and who should pay for it?

2. Auctions, Markets and National Distribution

The internal marketing and distribution system for fish products requires improvements to ensure that consumers – both in Yemen and the region (i.e. Saudi Arabia and Oman) – are provided good quality fish that is safe to eat.

Key issues:

- Conditions of auctions and markets highly variable. Landing areas are often exposed and only few have hygienic surfaces for sorting and sales and lack adequate water supplies and drainage
- Product flow and traceability through the auctions is inefficient & difficult to follow.

Development options:

- Rehabilitation of auctions and markets on a priority basis
- Segregation of different quality fish by an independent quality inspector and the subsequent sale of fish at different quality grades.
- Training of MFW and cooperative staff in quality management. Co-operative staff also need
- Establishment of key infrastructure (ice, shade, sorting facilities) at official border inspection points.
- Use of fish boxes to carry fish to and from boats, the auction and trader's vehicles.

Development issues:

- Who pays for infrastructure? Private sector uses it but does pay a 3-6% traders tax.
- Should NCFSM continue to operate public-owned auction facilities? If not, who should – MFW or the private sector?
- How can we improve product quality for the domestic market?

3. Processing and quality control for the Export Market

The ban on industrial fishing has seen a massive increase in coastal landings and the development of a land-based fish processing industry. As a result fresh exports increased from 12,000 mt in 2001 to 24,000 t in 2003 (mainly to Saudi) and high value loins (mainly to the EU) from 339 t to 2,300 t over the same period. The latter is worth around \$11 million with Saudi fresh fish exports now worth \$85 million. As indicated by the recent FVO mission, this valuable industry is both at risk from quality deficiencies and is under-valued. Quality control can be managed through a combination of industry-led systems (such as HACCP) that minimise the opportunities for product deterioration and contamination

Key issues:

- Highly variable product quality, stemming from poor handling/storage/processing practices in a number of establishments.
- The application of HACCP and quality control management is varies in the different establishments.
- Poor image from overseas buyers resulting from EU FVO inspection results
- Increasing production of waste from fish frames and offal

Development options:

- Form an exporter's association to establish quality standards, codes of practice and market development initiatives appropriate to the Yemen.
- Information and technical assistance to assist the introduction of value adding and quality improvement technologies into the Yemen industry.
- Twinning and exchange visits between Europe and Yemen
- Introduction of small-scale fish waste management techniques such as composting.

Development issues:

- Is the increasing supply of fish to regional (i.e. Saudi Arabia), European and Asian markets leading to poorer quality and choice of fish on the local markets?
- What much support should the Government – and the EC – provide to the processing sector?

4. Quality certification and assessment

Quality certification in Yemen varies from a simple visual inspection at the main land borders to the need for product certification to EU standards by independent laboratories that are accredited by the Government and works to a certified MFW reference laboratory.

Key issues:

- Government inspection system variable in effectiveness
- MFW laboratory coverage limited to Aden
- Fish going onto the domestic market has no quality assurance

Development options:

- Developing a network of certified laboratories covering all main export routes to assure quality
- Improve MFW's ability to accredit laboratories and ensure their effectiveness
- Training of MFW and co-operative staff in quality control management techniques

Development issues:

- Could the private sector play a greater role in self-regulation of quality? If so, how?
- Should certification laboratories be government owned – or certified private establishments
- What are the key skill shortages within the public and private sectors?

6. Traceability

Traceability is the means to ensure a 'chain of custody' for fish products from boat to the consumer. This allows a better control and understanding of trade flows and also ensures that quality problems can be traced back to source. Traceability can be operated at the large scale i.e. through the entire industry and at the micro-scale e.g. within individual auctions and processing plants.

Key issues:

- Traceability is currently limited to the processors.
- The large number of small traders (c. 30,000) makes traceability difficult.
- Auction systems are not currently suitable for adopting traceability

Development options:

- Introduction of ISO 9001 and other quality assurance systems to processors and laboratories
- Possible computerisation of the main auctions to improve record keeping.
- Improved supervision and possibly control of the largely unregulated truck trade mainly bound for Saudi Arabia.

Development issues:

- Is Yemen ready yet for industry-wide traceability?
- How can the EC assist developing traceability of fish, especially that bought from through the auctions?

B. Results of Workshop Discussions

The Problems

On-boat storage and handling

- Tuna catch – killing methods need to be made more humane and to mark fish less
- Boat designs are poor and do not have space for ice boxes and products
- Fishermen may overload boats, sacrificing quality for quantity
- Poorer quality fish are at the bottom of the boat.
- Practical problems of transshipping iced fish.
- Ice only attracts a premium of around 50 YR/kg (5-10%), although this varies between buyers and the state of the market
- Fishers poorly educated about the need to chill warm blooded fish like tuna immediately. Larger fish (> 10kg destined for top overseas markets) need more cooling and better handling.
- Training is old, many new entrants and new regulations. Also training selection has been poor.
- Ice is not tested for contamination (microbiology and heavy metals).
- Baskets are not hygienic, esp. from boat to auction.
- Fishermen should be in good health
- Artisanal fisheries needs better guidelines on ensuring quality control & if necessary, regulation.

Auctions, markets and national distribution

- Auctions are insufficient in size, esp. for incoming product storage (Mukalla IV Fish site designed for 60-80 t, but regularly see 100 t).
- Sites need to be arranged better for product flow e.g. reception, processing, auction and dispatch.
- Hygienic conditions very poor – water, washing and drainage.
- Co-operatives may not cooperate with each other over hygiene maintenance.
- Sites need pest control (dogs, cats etc - need to be sealed off).
- Waste management needs to be improved.
- Auction managers poorly trained and unaware of key QC problems.
- Trucks, esp. for export poor hygiene – not washing between trips.
- Local markets in cities in poor condition and need improvement.
- Rural places dry fish also very poor hygiene and technical approaches.

Processing and quality control for the export market

- Some processors vary in their quality requirements, depending upon their market and their quality management
- The effectiveness of HACCP is variable – some plans are only partially implemented.
- Effluent treatment insufficient in some plants
- No EIAs for most facilities
- Differing procedures at each port authority for export and container handling.

Quality certification and assessment

- Non-EU exports are rarely tested for quality
- The price of product certification is too high.
- MFW staff are insufficiently experienced and knowledgeable for inspection and sampling
- There is some confusion over who supervises the European regulations – ports, labs or MFW?

Traceability

- Needs to be implemented in Yemen.
- Will be difficult to implement traceability at sea.

B. Potential solutions

On-boat storage and handling

- Fishermen need extension for gear use, esp. that damages fish and the environment.
- Fishermen need training in maintaining quality of the fish and protect from marine pollution
- Boat design needs revisiting again in association with fishermen, boat designers and specialist advisers for fuel efficiency, ice/fish/gear handling & storage and reduce pollution levels (in and out of boat). Donors need to supply funds for improvements as a grant to the fishermen to improve the quality of the catch. Possibly larger boats that can be more efficient.
- To increase ice production and quality of ice through inspection.
- Training courses for all employers dealing with fish dealing with the catch to the consumers to give them facilities for the users and fishermen for handling, landing and auctioning.
- Would appreciate exchange visits as well as on the job training.
- Government should regulate fisheries more.
- Maybe coops to introduce some form of health certification and compensation
- Establish telecommunication network on the boats along the main fishing coasts

Auctions, markets and national distribution

- Establish new, modern auctions that fulfil modern standards and rehabilitate existing auctions which fulfil the regulations for human consumption and to ensure they can accommodate the increased in landings.
- Training courses for all employers dealing with fish dealing with the catch to the consumers to give them facilities for the users and fishermen for handling, landing and auctioning.
- To improve regulation of quality control on auctions. To ban all processing activities on the auctions sites which will be restricted to specialist processing areas
- New policies and regulations, inc. technical guidelines that prevent cross-contamination on the auctions.
- Waste management (inc. pest control) needs to include solid wastes or to recycle in some way.
- Improve the ability of the MFW inspectors to maintain good quality control.

- Trucks need to be regulated to ensure they meet certain criteria that ensures transport of food for human consumption. These should be enforceable by the relevant authorities.
- Re-educate people running retail markets in lines with proper town management.

Processing and quality control for the export market

- Establish a training centre for quality control and improve the infrastructure and equipment.
- Develop extension and awareness facilities to ensure people can achieve export standards

Quality certification and assessment

- Improve the facilities and equipment needed for inspecting shipments, esp. in the Hadramaut and the Red Sea coasts.
- Educating and training persons involved in quality control
- Training focused on the processors to ensure proper sampling. Need more awareness of the process for sample analysis (i.e. want it next day but needs 3 days for micro cultures).
- Review instructions relevant to QC control and amend where necessary.
- Focus on local government management of QC

Traceability

- ‘On the job training’ for fishermen, auction employees and all the traders in the supply chain.