Yemen Fisheries Market Systems Analysis Report

Implemented by the United Nations Development Programme (UNDP) As a part of the Fishery Harbour Rehabilitation and Value Chain Development in Aden (AFH) Project

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EXECUTIVE SUMMARY

This study presents findings on the Yemeni Fisheries sector, more specifically the four regions under the General Authority for Fisheries: the Red Sea, Gulf of Aden, Arabian Sea and Al Mahrah.

The fishery sector **is stuck in a cycle where fisherpersons remain highly vulnerable, facing acute risks and financial insecurity and without credit and investment opportunities**. This leaves them heavily dependent on traders. Wholesale traders, processors and exporters drive the value chain, yet lack strategic planning, operating reactively to daily challenges rather than focusing on long-term growth. A poor environment for growth and sustainability continues to hinder the sector's development.

Rising fuel prices, limited access to capital, and unstable fish prices have left many operating on a subsistence basis, unable to invest in essential inputs like ice, fuel and gear. This vulnerability is compounded by widespread cash shortages, pushing many stakeholders—including input suppliers, processors, and traders—to rely on credit or installment-based transactions. High fuel costs have emerged as a major barrier to competitiveness, not only affecting fishing operations but also the operation of ice factories and transportation of fish to domestic and export markets.

Fishing associations, once vital institutions, have seen their roles diminish significantly, with their primary function now focused on helping fisherpersons find buyers and secure payments. **Their presence and effectiveness vary by region, with Hadramout maintaining relatively strong associations. In many areas where associations are inactive or nonexistent, private sector actors—mainly wholesale traders—have taken over.** These traders now exert substantial control over fish sales, pricing and credit and often act as intermediaries between fisherpersons and exporters. Interestingly, they carry minimal financial risk, as the funds they extend come from advance payments provided by exporters and processors, who depend on them to ensure consistent fish supply. This dynamic has reinforced their influence within the value chain and may expand further if no institutional alternatives emerge.

The availability and affordability of ice is a critical constraint, especially in regions like Taiz and Al Mahrah. Ice shortages disrupt cold chain logistics and affect the quality of fish destined for high-value markets. **Export markets remain**

the main source of value creation, driven by strict regulatory and quality standards. These requirements influence behavior throughout the value chain, encouraging better fish handling and hygiene practices. However, restrictions such as the Saudi ban on Yemeni fresh fish imports in late 2024 had serious consequences and highlight the vulnerability of the sector to external market shifts.

In terms of processing and value addition, the sector remains largely traditional and stagnant. **Most value-added activities are limited to drying, freezing, and canning specific fish types, with little to no innovation or diversification**. The sector also faces significant labor and inclusion challenges. Informal employment dominates, with low wages for unskilled labor, while demand for skilled labor—especially in processing and boat manufacturing—remains unmet. This shortage drives wage competition and limits modernization efforts. Women's economic participation is notably limited, confined to small-scale home processing without meaningful growth prospects. Their involvement is often driven by household survival rather than entrepreneurship or empowerment, reflecting deeper gender inequalities and missed opportunities for inclusive development within the fisheries sector.

Finally, despite the lack of accurate catch data anecdotally fisherpersons report a decrease in their catch and wholesalers and processors identify securing sufficient quantity and quality of fish as being one of their main challenges. In many locations destructive and illegal fishing practices are employed with close seasons rarely being respected. Sustainable management of the natural resource is the main challenge that the sector faces and will require collaborative action from all actors, fisherpersons, communities, private sector and Government, if is to be addressed.

Other key areas that warrant further support include investigation of viable alternatives—particularly mariculture—to diversify livelihoods and manage resources sustainably. Strengthening active associations and assessing informal alternatives where associations have collapsed. Provision of financial services at every level of the value chain from fisherpersons through to exporters. Acknowledgement that behavioral change must be driven by incentives and accountability in connection with issues such as use of ice and prevention of destructive fishing practices. Strengthening the competitiveness of processors by adding increased value to exports and not ignoring the domestic market. Fostering women's participation is a must and an obvious opportunity here are interventions that focus on the needs of the domestic market. Finally, while infrastructure investments should be sustained, they must be coupled with more rigorous sustainability plans.

1. GLOSSARY

AFH	Fishery Harbour Rehabilitation and Value Chain Development in Aden
CBI	Centre for the Promotion of Imports from Developing Countries
DG	Discussion Guide
ESDR	Environmental and Social Due Diligence Report
EU	European Union
FAO	Food and Agriculture Organization
GAF	General Authority for Fisheries
GCC	Gulf Cooperation Council
GiZ	Gesellschaft für Internationale Zusammenarbeit (German Development Agency)
HACCP	Hazard Analysis and Critical Control Points
IFPRI	International Food Policy Research Institute
IPC	Integrated Food Security Classification
ISO	International Organization for Standardization
ITC	International Trade Center
KFW	Kreditanstalt für Wiederaufbau (German Development Bank)
KS Relief	King Salman Humanitarian Aid and Relief Centre
KSA	Kingdom of Saudi Arabia
M4P	Making Markets Work for the Poor
MSD	Market System Development
SA8000	Social Accountability 8000 (certification standard)
SAR	Special Administrative Region
SFISH	Sustainable Fishery Development in the Red Sea & the Gulf of Aden
SMEPS	Small and Medium Enterprise Promotion Service
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
YR	Yemeni Rial

1. BACKGROUND

The fisheries sector in Yemen is a major contributor to the economy, providing one to five percent of GDP, the third largest share[1]. With its long coastline and proximity to the Red and Arabian seas, Yemen is blessed with rich and diverse marine wealth. This provides employment and income for around 18 percent of the coastal population and supports food security along the coast. It generates around 15 percent of total exports, ranking as the second largest export sector after oil and gas[2].

The 2015 outbreak of civil war had a dramatic impact on the sector, destroying major landing sites and fishing equipment. Sea mines and piracy limited access to the sea, fuel scarcity significantly increased operational costs, and exports fell by more than half due to the closing of ports and airports[3]. The sector has since suffered from poor governance and management, market and institutional challenges and overexploitation of the significant marine resources that exist[4].

There are a large number of different organizations active in the fisheries sector including UNDP, GiZ, FAO and Expertise France to name just some of the main players. UNDP is currently implementing two large projects in the sector. Sustainable Fishery Development in the Red Sea & the Gulf of Aden (SFISH) supported by the World Bank and Aden Fishery Harbour & Value Chain Development (AFH) supported by the German Government through KFW. This study is implemented under AFH, and the purpose is **to better understand the fisheries value chain**. Using a market systems approach, the study's key objectives were:

- To map and analyses key players and market dynamics within the sector, focusing on different private sector actors along the fisheries value chain as well as stakeholders influencing the business environment: the public sector, non-governmental organizations, finance institutions, technology and research providers, experts and others.
- To identify the growth potential of the sector or key interventions to enhance

[1] UNDP and Impact Consulting 2022.
[2] USAID 2019.
[3] UNDP and SMEPS 2022.
[4] USAID 2019.

productivity, strengthen the formal economy, reduce the national trade deficit and promote sustainable livelihoods, all while sustaining national fish stocks.

The study focused on the four regions under the General Authority for Fisheries: The Red Sea, Gulf of Aden, Arabian Sea and Al Mahrah (Figure 1).

Figure 1. Market System Map for the Fisheries Sector

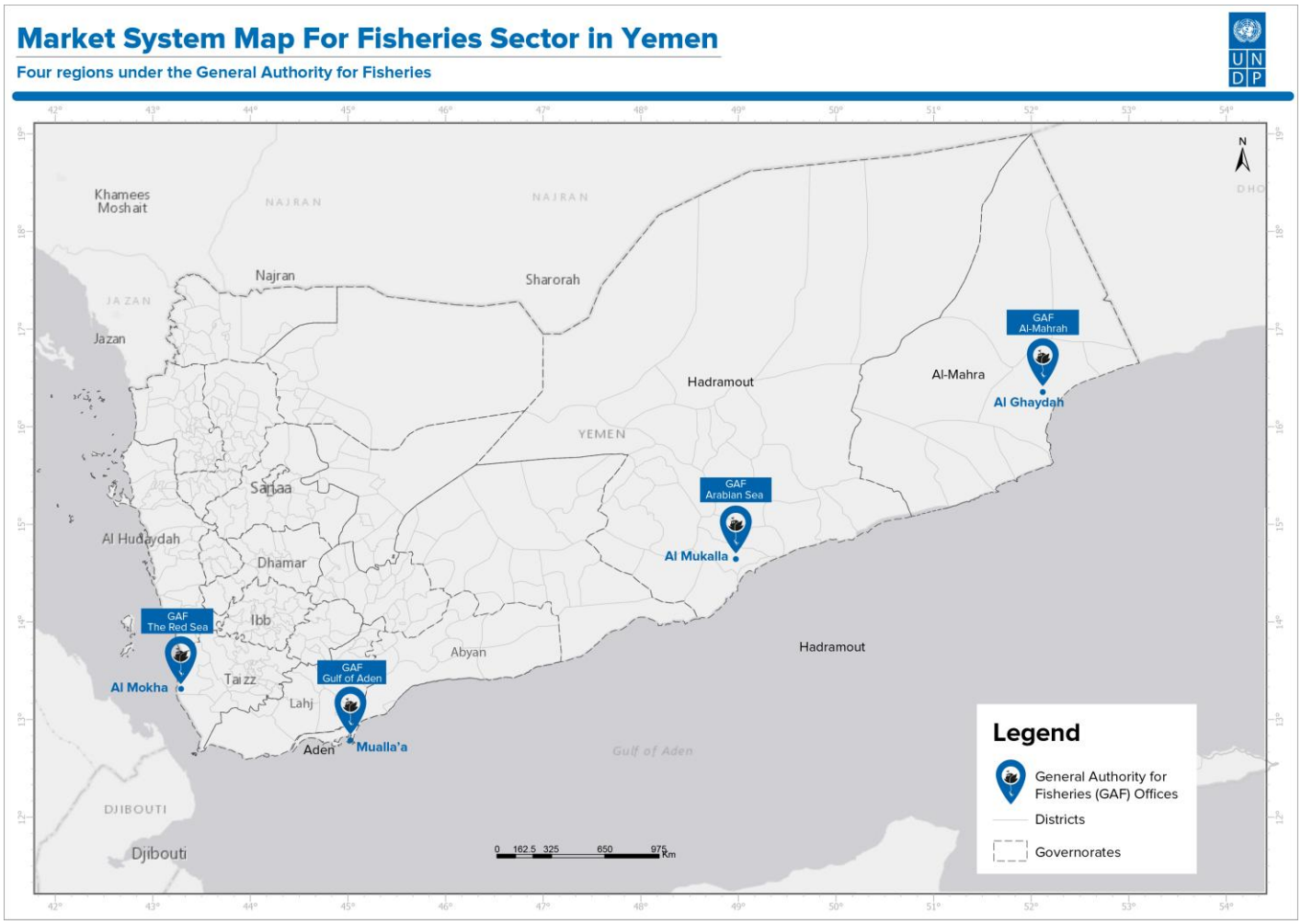


Figure 1: Market System Map for Fisheries Sector in Yemen

The study was implemented employing a Market System Development approach, to provide a snapshot of the current value chain. There were a team of four local researchers each of whom covered one of the areas highlighted in the map. This team was led by an international consultant who was in constant contact with them. Initially prior to beginning the exercise the local researchers had completed a two-

day training on MSD. In total during the course of the exercise a total of 140 individual interviews and 15 focus group discussions were conducted. Refer to Annex One, Three and Four for background on MSD and more detail on the process.

2. FISHERIES MARKET SYSTEM IN YEMEN

2.1 OVERVIEW OF THE FISHERIES SECTOR

Yemen accounts for over 50 percent of fish production and exports across the Red Sea and Gulf of Aden[5]. The fisheries sector provides livelihoods for approximately 667,000 people, playing a crucial role in poverty reduction and contributing to sustainable development[6].

Fishery exports made up 15 percent of Yemen's total exports in 2019, providing a vital source of employment, income and food security for coastal communities[7].

2.2 TRADE CHARACTERISTICS AND OPPORTUNITIES

EXPORTS

Yemen's fisheries exports expanded after unification in 1990, with further growth following the suspension of industrial fishing in 2004. Exports began to decline, after 2015 due to the impact of the war as well as the increased fishing effort required and the growing presence of grinding mills. In 2023, the global fisheries trade was valued at $120 billion, with processed seafood (including canned tuna) accounting for $58 billion[8].

The fisheries sector contributes to Yemen's exports through two primary commodity categories. The largest category, classified under HS Code 03 (fish, crustaceans, mollusks and other aquatic invertebrates), has a total export value of $224.4 million[9]. This includes fresh, chilled or frozen seafood with minimal processing. The second category, classified under HS Code 16 (preparations of meat, fish, crustaceans, mollusks or other aquatic invertebrates), accounts for $8.07 million in exports. It includes canned tuna and other processed seafood products that undergo significant processing before export. Combined, these two commodity

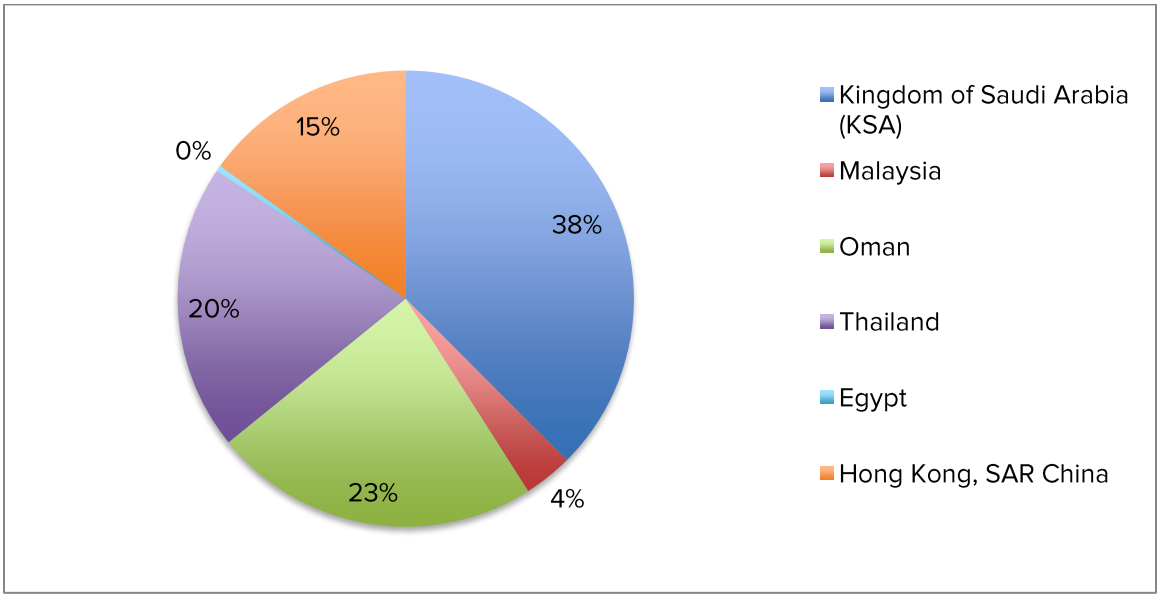
[5] UNDP and SMEPS 2022.
[6] Ibid.
[7] Ibid.
[8] United Nations Comtrade Database: https://comtradeplus.un.org/TradeFlow.
[9] Ibid.

groups represent 25 percent of Yemen's total reported exports, highlighting the importance of the fisheries sector in the country's trade balance.

The main exported fish types include mostly frozen mollusks ($65.4 million) and chilled mollusks ($13.9 million), general types of fish ($34.5 million), fresh/chilled mackerel ($26 million) and fresh/chilled Jack and Horse Mackerel ($19.4 million) [10]. Within these categories, frozen fish exports account for 58 percent of the total value of exported fish, at $127.8 million out of $224 million.

The Kingdom of Saudi Arabia (KSA) is Yemen's largest seafood market, comprising 38 percent of total exports[11], despite a significant drop in volume and value compared to pre-war levels. Other important export destinations include Egypt and Oman as well as Malaysia, Thailand and Hong Kong Special Administrative Region (SAR) of China. European Union markets account for less than 10 percent of the market value. Figure 2 provides an overview of the top five export destinations in 2023.

Figure 2. Top Five Export Destinations for Yemeni Fish and Seafood (2023)

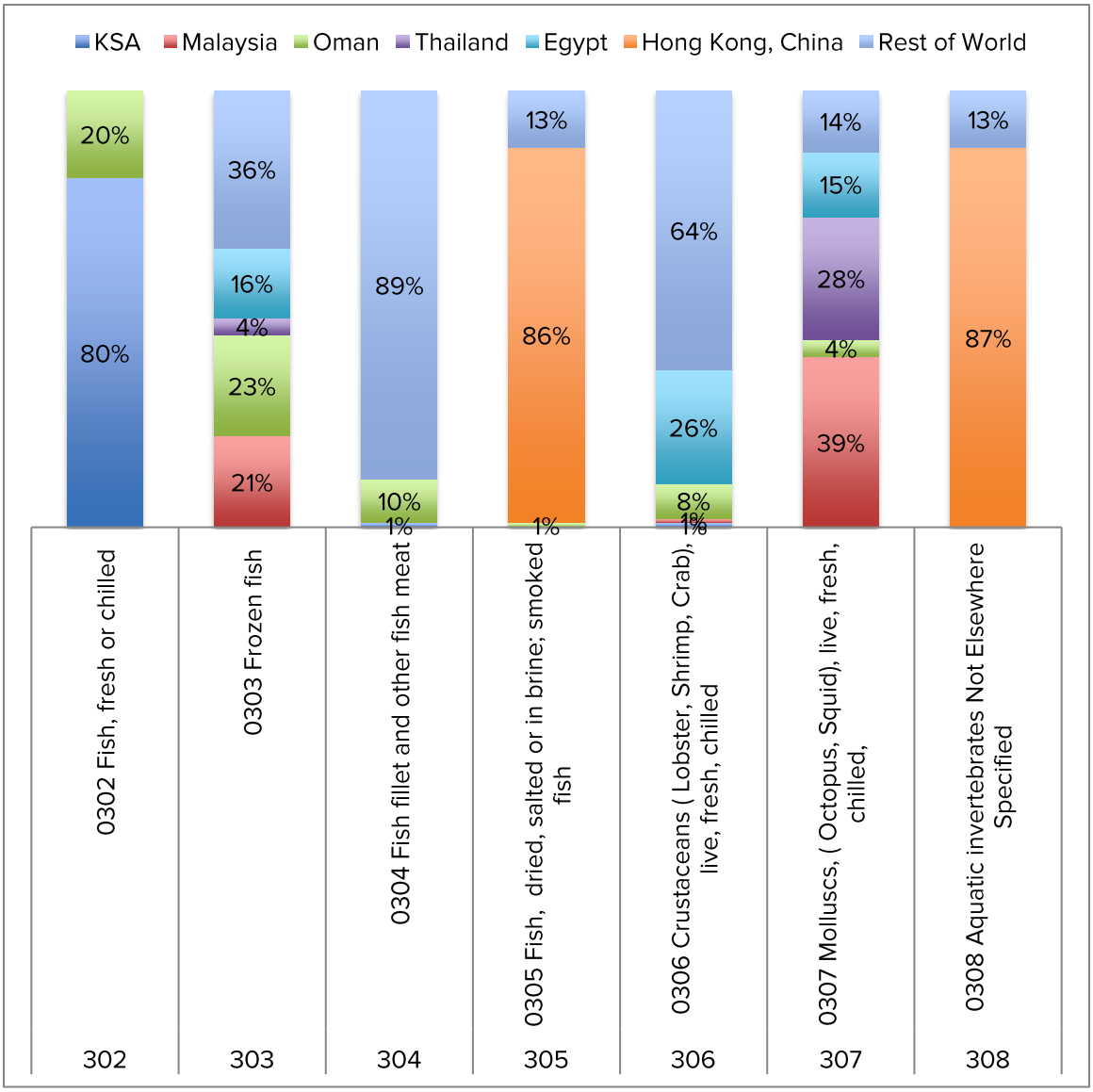


Source: ITC 2023.

Exported products encompass seven categories of processed seafood, such as frozen fish whole or filleted, or dried or chilled mollusks and crustaceans (shrimp, lobster, squid, others). Figure 3 provides an overview of these categories and their shares in target export destinations.

[10] Ibid.
[11] ITC 2023.

Figure 3. Share of Yemeni Export Markets per Product (2023)



Source: ITC 2023.

Whole fish exports (whether fresh or chilled) accounted for 80 percent of seafood exports to Saudi Arabia, while aquatic crustaceans (such as crab, lobster and shrimp) dominated exports to Hong Kong SAR China. Demand for fresh, chilled or smoked mollusks (squid, octopus, cuttlefish) represented around 40 percent of

exports to Malaysia. There is more variation in demand for seafood products based on different forms of processing, namely, chilled, frozen, dried or salted.

IMPORTS

Yemen is also a major importer of processed seafood, namely, canned tuna. The United Arab Emirates accounted for the largest share of Yemeni imports in 2023 (around $34.7 million in value), mostly for processed seafood, and despite not being a main trading partner that year. Thailand was the second largest exporter to Yemen, dominating the market for canned tuna (around $25 million in value)[12]. Table 2 shows top import partners in processed seafood.

Table 1. Exports of Prepared Seafood to Yemen by Country (2023)

Country	Import Value (US dollars)
United Arab Emirates	34,771,974.56
Thailand	25,799,343.86
Saudi Arabia	3,621,374.04
Other countries (India, China, Netherlands, Indonesia)	3,972,956.5

Canned tuna imports into Yemen have risen as exports have declined sharply, from nearly $9 million prior to the war to around $1.5 million[13] in 2023, as shown in Table 3.

Table 2. Canned Tuna Trade Deficit (US dollars)

Year	Yemen's Export to GCC and EU Markets	Yemen's Import from GCC and EU Markets	Trade Deficit
2009	8,997,679	22,151,669	13,153,990
2014	3,224,714	34,332,351	31,107,636
2023	1,507,177	54,038,996	52,531,819

[12] UN Comtrade Database: https://comtradeplus.un.org/TradeFlow.
[13] Ibid.

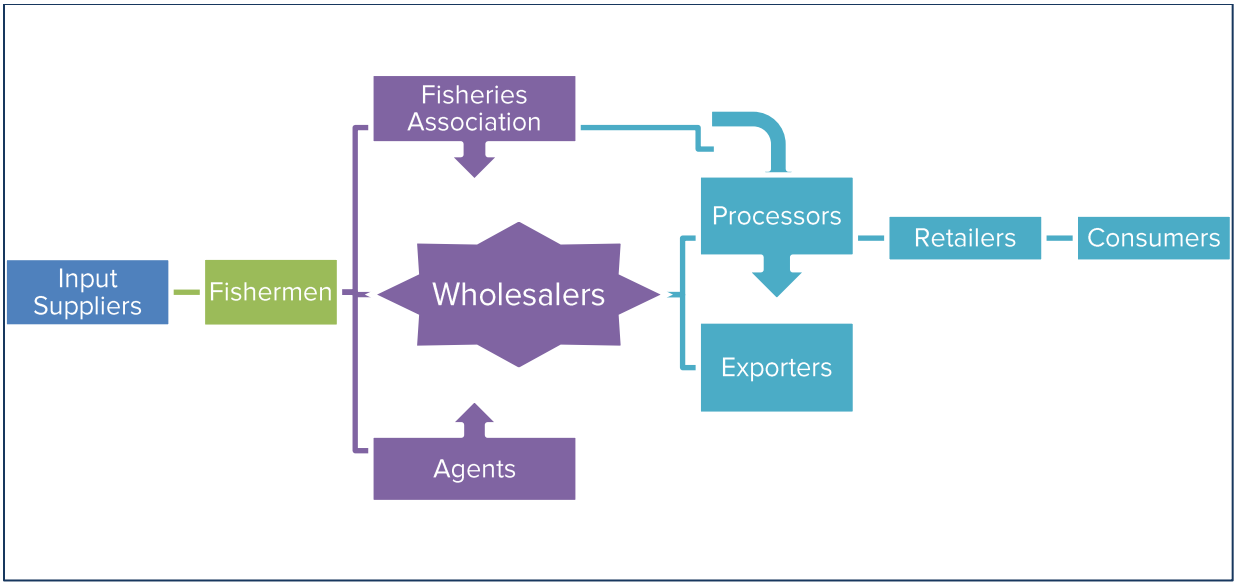
Looking at the broader picture, even though Yemen's fisheries sector is a pillar of the national economy, it faces structural trade imbalances. While exports are significant, added value is limited. The growth in Yemen's imports of processed fish, mainly canned tuna, has resulted in a significant trade deficit. Product-wise, frozen seafood exports currently make up 58 percent of the sector's value, with Oman, Saudi Arabia and Thailand as key importing partners for Yemen's seafood exports. The European Union accounts for less than 10 percent of Yemen's seafood exports.

2.3 THE FISHERIES VALUE CHAIN

This study, conducted in Al Mahrah, Taiz, Hadramout and Aden, highlights key dynamics within the value chain, including the flow of fish, marketing margins and competition among market players. Figure 4, a visual map of the value chain, shows the main findings. Notably, it reveals how fish prices and profits shift as products move further along the chain, and how the presence or absence of fishing associations influences market dynamics. In regions where fishing associations are inactive or absent, competition among traders and wholesalers tends to intensify, impacting fisherpersons' earnings and market access.

The figure includes value chain actors from input suppliers (fishing nets, boat manufacturers and repairs, bait, engines, etc.) to final consumers, whether local or export. It maps interactions among the main actors along the chain, where input suppliers mainly provide products and services to fisherpersons, whose end clients can be fisheries associations or wholesalers and agents. Fishing associations sell to wholesalers, processors or exporters. In their absence, wholesalers sell to clients, who in turn export or sell in local markets through retailers, on to the final consumers.

Figure 4. The Fisheries Value Chain in Four Regions



The value chain has not changed much in recent years. Yet the dynamics have altered, mainly in the shift in power, with some actors gaining more control over the processes and routes through which fish products pass. Interviews with actors along the value chain in the four regions revealed several insights into patterns of behaviors and power differences.

THE INCREASED INTENSITY OF THE ECONOMIC CRISIS IMPACTS ALL VALUE CHAIN ACTORS BUT MOST OF ALL FISHERPERSONS

The dire economic situation in Yemen, reflected in the devaluation of the currency, scarcity of fuel and lack of basic services, has had a huge impact. Fisherpersons are increasingly vulnerable due to rising operational costs, fluctuating fish prices and limited access to capital for essential inputs such as fuel, ice and fishing gear. The currency depreciation has eroded purchasing power, making it difficult to sustain daily fishing activities.

Many fisherpersons find themselves trapped in a cycle of debt, unable to break free or improve their financial situation. They rely on informal credit as the only means to maintain their activities. This is invariably provided by input suppliers and wholesale traders or extended family members and covers operational costs such as fuel and maintenance. As a result, fisherpersons operate on a day-to-day basis, focusing solely on immediate survival and find themselves in perpetual debt. Many are obliged to sell their catch to a certain buyer. While buyers may provide services and are not all bad, this scenario limits options for fisherpersons. Decreasing catches compound the situation because fisherpersons have to spend longer at sea. Those at the base of the value chain remain unable to achieve stability or sustainable growth.

CASH IS KING

The ongoing economic crisis is transforming the economy into a cash-driven one, where transactions rely heavily on physical currency due to the lack of liquidity and limited purchasing power. Given cash shortages and financial constraints, many actors within the fisheries value chain, such as input suppliers, wholesale traders, processors and exporters, have adapted by offering credit facilities or accepting installment payments. This shift has become a key strategy in their business models, setting them apart from competitors and ensuring continuity in transactions despite economic instability.

For instance, input suppliers provide fisherpersons with essential gear, fishing nets, bait and other items on installment plans or credit, with repayment due at the end of the fishing season for trusted clients. New customers must pay in cash. Similarly, wholesale traders extend credit (without interest) to fisherpersons to purchase fuel, ice, boats or even food but under stricter conditions, such as requiring exclusivity in selling their catch or taking a percentage of sales in cash. This arrangement gives traders greater control over fisherpersons. As financial hardships persist, these informal credit arrangements have become a defining feature of the fisheries sector, reinforced power imbalances and shape market dynamics in ways that further constrain the most vulnerable actors.

Wholesale traders extend credit to exporters, selling fish with partial upfront payments, while the remaining balance is settled after the fish is sold, typically within a week to 10 days. This practice has created a cycle of continuous credit transactions across the fisheries value chain, where each actor relies on deferred payments to sustain operations. Fisherpersons remain the most vulnerable within this system, however, as they lack the financial resilience to endure long payment delays or repay mounting debts. Unlike traders and exporters, who have greater bargaining power and access to multiple buyers, fisherpersons are often forced into unfavorable credit agreements that leave them in a constant state of financial strain.

The situation is even more challenging in regions like Taiz, Al-Mahrah and Aden, where fish exports are minimal, and local markets are weak. Unlike Hadramout, which has a more active export sector and better market stability, these regions rely heavily on domestic demand, making fisherpersons even more vulnerable to fluctuating prices and delayed payments. With limited market alternatives, fisherpersons in these areas face greater financial hardship, struggling to maintain their livelihoods amid an economy that increasingly depends on credit-based transactions. This severely constrains their ability to break free from the cycle of debt and financial insecurity.

For example, a fisherperson interviewed in Taiz, who has been in business for 37 years and owns a small four-meter boat, said his daily fishing trips are fully financed by the wholesaler or agent, who provides fuel and fishing inputs and records such costs as debts. Upon returning, the fisherperson is obliged to sell the catch to the agent. The following comments from the research further highlight this issue.

"We used to make around $300 to $400 monthly income from fishing. But after the devaluation, we are barely making $100 per month. Now, the number of fish is not sufficient for fishermen even during abundant fishing seasons. We are forced to stay for long hours at sea to earn a living, and we barely get enough to cover daily living expenses. Most of the time, we return from fishing trips burdened with debts." **Focus group discussion with fisherpersons, Aden**

"Personally, I try to invest the season's profits by buying gold for my wife, so we can retain some value and sell it if necessary." **Focus group discussion with fisherpersons, Taiz**

"Ten years ago, we would need 10,000 YR for a single boat trip, including fuel and inputs, but now we need 60,000-80,000 YR on a daily basis and at least 60 to 120 liters of fuel, accounting for at least 50 percent of our costs." **Focus group discussion with fisherpersons, Hadramout**

FUEL IS A KEY DETERMINANT OF VALUE CHAIN COMPETITIVENESS

Fuel is critical to competitiveness because it is essential at every stage of the value chain—from inputs to fishing, transportation, processing and exports. Diesel and petrol are required for fishing boats, the transportation of fish to markets and the operation of ice factories. Processing plants, whether for frozen or canned fish, rely heavily on fuel, while exporters depend on energy-intensive refrigerated trucks and storage facilities.

> The Al-Arshi Ice factory in Seyhout, Al Mahra has been in business for six years. Its daily capacity is 900 bags of ice, relying on two main inputs: water and diesel. Water is sourced from nearby wells, while diesel is purchased from petrol stations and used for generators during power cuts. Prices have gone up significantly for the factory, with fuel the highest cost at 1,500 YR per litre or 50,000,000 YR on a monthly basis ($23,500). Another challenge is the major drop in off-season fishing, which affects liquidity and revenues. The factory sells on credit to known customers, with payment within two weeks.

Any fluctuations in fuel prices impact the entire fisheries sector. Sharp increases make it difficult for all value chain actors to remain competitive. Fisherpersons struggle with high fuel expenses for their boats, reducing their ability to venture further into productive fishing grounds. Ice factories and processing plants face

spikes in overall costs that force some to go out of business. Transporting fish to both domestic and international markets has become more expensive, squeezing profit margins and jeopardizing export competitiveness, especially in the Gulf.

Fuel price hikes disproportionately affect smaller players in the value chain, particularly artisanal fisherpersons and small-scale traders and processors. They lack financial capacity to absorb rising operational costs. Large-scale actors with better access to capital are more able to cope, but smaller businesses face declining profits. The net result being consolidation of the value amongst a few key actors.

THE DIMINISHING ROLE OF FISHING ASSOCIATIONS AND THEIR REPLACEMENT BY PRIVATE SECTOR ACTORS

Fishing associations in Yemen have traditionally provided crucial support to fisherpersons. However, over time, many have become inactive or significantly diminished their functions. Instead of providing a full range of services, including credit, subsidized fuel and better bargaining power, many associations now primarily act as sales mediators. Their main role has shifted to securing buyers and cash payments for fisherpersons' catch, helping them remain operational despite financial difficulties. Due to liquidity constraints, associations cannot offer loans, provide subsidized fuel or invest in improving fishing infrastructure. Some have maintained fuel stations at landing sites based on arrangements with private fuel stations, making fuel more accessible and affordable.

The Shihr Fishing Association in Hadramout has more than 2,000 members. It owns a petrol station, retail shops, ice factory and hotel. The association carries out auctions and acquires a 6 percent sales commission from fisherpersons (1 percent for association services, 1 percent for a member support fund and 4 percent as savings) and 3 percent from buyers. The association used to provide loans to fishermen but discontinued these due to the war and liquidity challenges. Some fisherpersons left the association, seeking support elsewhere.

The presence and effectiveness of fishing associations vary by region, with Hadramout standing out as an area where they remain relatively strong. The historical importance of fisheries in Hadramout has fostered a culture of cooperation among fisherpersons, helping to keep associations active and

providing some level of support. The region's thriving fisheries sector also gives associations more influence in market negotiations.

In contrast, in Taiz, Al-Mahra and Aden, many fishing associations have become inactive or fallen under the control of influential figures, such as tribal or military leaders, who prioritize personal gain over the collective interests of fisherpersons. Seeing little benefit, members have moved away from such associations. Some fishing associations in Taiz, namely in rural areas, comprise of family members who dominate management and membership. Annex 2 provides a list of active fishing associations in each region.

The Al KhawKha Fishing Cooperative in Taiz was established in 2019 to release at least 2,000 fisherpersons trapped in Eritrean waters. It now mostly manages auctions and secures sales for members. The cooperative received support through the Red Crescent of the United Arab Emirates to rehabilitate the landing centre and equip it with two large refrigerators to store fish. The refrigerators are not operational, however, due to a lack of electricity or diesel generators.

Where fishing associations no longer function, private actors—particularly wholesale traders and agents—have stepped in to fill the gap. They act as intermediaries, negotiating sales on behalf of fisherpersons while charging commission fees. In many cases, they secure exclusive agreements with fisherpersons, further consolidating their control over the value chain. Once they obtain the fish, they sell it to wholesale traders, earning an additional commission. Such increased dependency on private actors reduces the bargaining power of fisherpersons and constrains their ability to obtain fair market prices or improve their economic standing.

WHOLESALE TRADERS ARE MOST LIKELY TO GROW IN INFLUENCE

Wholesale traders have emerged as dominant players in the fisheries value chain. Their influence is likely to grow further if the current economic crisis persists. They hold the most power in regions where fishing associations are inactive, as they control fish sales and prices, and serve as the primary financial backers for fisherpersons. They provide financial assistance in various forms, including direct loans for purchasing inputs; guarantees for credit-based purchases for input suppliers, fuel stations or ice manufacturers; and even financing for boats, ice and fuel. Such support comes with strict conditions, such as exclusivity in fish sales or

partial control over the catch. In many cases, traders deduct loan repayments directly from fish sales, paying fisherpersons only a fraction in cash, resulting in a cycle of financial dependency.

Despite their central role in the fisheries value chain, wholesale traders bear minimal financial risk. The money they lend to fisherpersons is not from their personal savings but from advance payments provided by exporters and processors who rely on them to secure a steady supply of fish. These wholesalers have mostly collaborated with exporters for a long time, so the advance payment is higher. With new wholesalers, payment is at lower levels to build trust; it also depends on the type of fish they supply. This system ensures that traders face little to no financial loss, while fisherpersons remain locked into unfavourable agreements with limited negotiating power. Additionally, wholesale traders dictate commission rates based on the type of fish and transportation costs. Such flexible commission structures further strengthen their financial position while squeezing fisherpersons, who already struggle with high operational costs and limited market alternatives.

This growing power is somewhat countered by active fishing associations that uphold the interests of fisherpersons in terms of price and payment terms. Such associations charge the wholesaler 3 percent fees as a commission and provide support through the consolidation of a bulk supply. Associations also help sell the catch on behalf of the fisherpersons at market prices, taking 5 percent fees or a commission but also paying the fisherpersons in cash, regardless of whether they obtain payments from wholesalers in cash or on credit. They thus secure a daily income for fisherpersons and reduce wholesalers' influence. Some exporters deal directly with fisherpersons, cutting down the role of wholesalers, but not very often, especially when fish is sourced from different regions.

Profit margins vary significantly based on the type of fish caught, with certain species commanding higher prices due to specialized export demand. High-value fish, such as tuna, grouper, mackerel and shark, are primarily sold to specialized exporters, allowing wholesale traders to secure better margins. These fish are often in high demand in international markets, where prices are more favourable compared to local sales. Premium seafood such as squid and lobster can sometimes yield even higher profit margins, particularly when destined for export markets where they are considered delicacies. The ability of wholesale traders to connect with these specialized exporters strengthens their financial position and increases their control over pricing dynamics.

For example, one of the leading export companies in Hadramout sells frozen fish to its target markets. Upon receipt of the fish, they sort, clean, chill and pack it for

export, adding small margins for tuna and higher ones for squid and shrimp per Table 4.

Table 3. Export Price Differences by Fish Type

Fish Type	Purchase Price, YR/kg	Sales Price, YR/kg
Tuna	8,000	10,000
Shrimp	9000	10,500
Squid	12,000	15,000

Conversely, fish species primarily consumed in the local market, including *Jahsh*[14] and other common varieties, generate significantly lower profit margins, such as 5 percent. They have high turnover and are significantly cheaper. Since these fish are sold within Yemen, where purchasing power is limited, prices remain relatively low, and traders earn less per transaction. As a result, wholesale traders prioritize high-value species for export while ensuring that lower-value fish are sold locally to sustain the flow of business. This dual-market approach allows them to maximize their earnings while managing risks associated with market fluctuations. Yet it leaves fisherpersons with little say in determining where and how their catch is sold, further reinforcing their financial dependence on traders, who ultimately control both market access and pricing. Figure 5 provides an overview of different margins as fish travel through the value chain.

Figure 5. Commission Fees and Margins Across the Fishing Value Chain

[14] Local fish species

Commission fees vary depending on the actor, transaction volume and value addition. In Hadramout, some fishing associations charge 6 percent (as opposed to 5 percent normally charged) due to additional services provided (pension services, family member support in times of sickness, etc.). These associations collect 3 percent from wholesalers as auction fees and 5 percent from fisherpersons on their sales value. Wholesalers, who serve as the main intermediaries in the chain, impose commission fees on their buyers, typically between 3 and 5 percent, depending on the volume and value of the fish. While these rates are not strictly fixed, wholesalers often charge between 500 YR/kg and 1,000 YR/kg for high-value fish.

Processors, despite adding value through handling, processing and packaging, operate on tighter margins, as they frequently cater to local markets with lower consumer purchasing power. Their added markup generally falls between 17 and 50 percent (500 YR/kg and 2,000 YR/kg), with higher-value fish or export-bound products commanding the upper range. Retailers, particularly those supplying restaurants and specialty shops, exhibit the most flexibility in pricing, with markups reaching up to 80 percent (3,000 YR/kg for premium fish). Retail margins are highly volatile, however, as they are influenced by fluctuations in demand and supply. Unlike retailers, wholesalers maintain a more stable role in the value chain, serving

as the primary source of supply. They are preferred suppliers for both exporters and processors due to their ability to ensure consistent availability and bulk trade capacity. This differentiation in commission structures and market positioning highlights the varying levels of profitability and influence across different actors within the fisheries sector.

VALUE ADDITION IS LIMITED TO TRADITIONAL PROCESSING AND FOCUSED ON SPECIALIZATION BY FISH TYPE AND PROCESSING TECHNIQUES

Value addition remains largely confined to traditional processing methods, primarily focused on specialization in specific fish species and corresponding processing techniques. The most common forms of processing include drying and freezing fish for export as well as canning tuna for both local and international markets. Beyond these established methods, there has been little innovation or diversification. This limited scope is a missed opportunity as developing new processed fish products—such as ready-to-eat meals or high-value seafood derivatives—could generate economies of scale and open new export markets.

Hadramia Factory in Hadramout has been in business for 24 years, producing canned tuna, canned sardines in tomato sauce, mackerel in tomato sauce, grilled sardines and canned bonito tuna. Preparation of the fish is done manually, and then a steamer is used for cooking, skinning and then canning. The company sells mostly to the local market. It has recently faced an inflow of cheaper imports, with which it cannot compete given higher production costs. Fish accounts for 45 percent of the cost of production, followed by fuel at 25 percent, labour costs at 20 percent and 10 percent for packaging. The company attempted to obtain a loan for expanding and buying new equipment but was not successful. The cost of transportation is a major challenge in expanding to other regions.

A key barrier to diversification in fish processing is the declining purchasing power of Yemeni consumers. This has dampened local demand for higher-value seafood products. Additionally, the high costs of technology integration, coupled with economic uncertainty and limited access to investment capital, discourage processors from taking risks to enhance productivity and expand market reach. As a result, the sector continues to operate within traditional boundaries. It misses opportunities for value chain upgrading that could strengthen the industry and improve competitiveness in regional and global markets.

THE CRUCIAL ROLE OF ICE

Fisherpersons, wholesale traders and exporters alike recognize that ice helps maintain the marketability of fish, reducing spoilage and ensuring better conditions

for buyers. This is particularly crucial for high-value species such as tuna, squid and grouper, where freshness directly influences market price. Yet using ice presents several challenges, particularly for small-scale fisherpersons operating on short trips.

The primary concern is the cost of ice. Beyond the direct purchase price, storing ice onboard takes up valuable space that could otherwise be used for additional catch, ultimately impacting earnings. Moreover, the extra weight of the ice increases fuel consumption, driving up operational costs. Given that most small-scale fishing trips are relatively short, fisherpersons often view ice as an unnecessary expense, especially when their catch is destined for local markets where immediate sale is possible. Without a direct financial incentive, many prefer to forgo ice unless it is absolutely necessary.

For longer fishing trips or when targeting high-value species, however, ice use is often mandated by wholesalers who require a certain quality before purchasing the catch. In such cases, ice is provided to the fisherpersons, but its cost is deducted from the final payment for their fish. This arrangement ensures that fish quality meets market expectations. But it also means that fisherpersons do not directly benefit from any price premiums associated with better-preserved fish. Instead, they bear the additional operational costs without a corresponding increase in revenue, reinforcing their reluctance to use ice unless required.

The high cost of ice production is primarily driven by fuel consumption and dependency on diesel-powered generators, especially in regions with unreliable electricity. In Taiz and Al Mahrah, demand for ice exceeds supply. The limited number of ice factories in these areas struggles to meet the growing needs of the fishing industry, leading to shortages that disrupt the supply chain. Moreover, sharp rises in fuel prices and operational expenses have forced several ice factories to shut down. The remaining ice factories are not located near landing sites, resulting

Al-Hadhah company is the only company exporting directly from Taiz Governorate in the Red Sea region. It also supplies other exporters based in Hadramout. Specializing in frozen fish production, it has operated for three years with around 80 workers, most of whom are daily labourers. The company has collection sites managed by individuals who buy fish from wholesalers and transport them to exporters in Hadramout. The company itself mainly exports to Asian and South-East Asian markets and has the potential to expand. Yet it has limited storage capacity and suffers from interrupted ice supplies in peak seasons. These issues, coupled with high energy costs and delays in exports through the Aden Port, impact the quality of the fish exported. Plans to expand have been put on hold until sufficient capital is acquired to upgrade and acquire ice-making equipment.

in additional transportation costs, another disincentive for fisherpersons to use ice unless required.

THE SECURITY SITUATION AND HIGH TRANSPORTATION COSTS LIMIT EXPANSION TO OTHER MARKETS

The security situation poses a significant challenge to expanding the fisheries sector to other markets, particularly due to multiple checkpoints and a strong military presence along key transportation routes. Fisherpersons and traders transporting fish from coastal areas to major markets or export hubs frequently encounter delays at these checkpoints, where inspections and bureaucratic procedures slow the movement of perishable goods. In many cases, unofficial fees must be paid for passage, increasing costs. These challenges disproportionately affect traders operating in conflict-prone or highly militarized areas, making fish transportation a risky and costly endeavor.

Regions such as Taiz, Aden and Al-Mahrah, which are located far from the primary export hub in Hadramout, face significant logistical difficulties in ensuring timely delivery. The longer the travel time, the greater the need for ice and refrigeration, both of which carry additional costs. Fish is mostly transported in plastic crates with ice on top and sent in trucks with fiberglass for insulation. This is mostly for fish destined for export. Delays at checkpoints not only increase fuel consumption but also reduce the shelf life of fresh fish, leading to potential losses for traders and exporters.

Owning a transport truck is considered a major advantage in the fisheries value chain, as it enhances a trader's ability to market fish and establish direct connections with buyers. In some cases, independent truck owners provide transportation services and act as intermediaries, earning commissions from wholesale traders while sometimes sourcing and selling cheaper fish themselves.

The challenges posed by security constraints and high transportation costs are not limited to fisherpersons and traders alone. They also affect other key actors, including input suppliers, processors and retailers. Those seeking to expand their businesses and offer their products or services to regional markets face similar obstacles when transporting goods such as fishing gear, packaging materials or processed seafood. The costs of fuel, ice and checkpoint fees make expansion costly and often impractical. As a result, many value chain actors find themselves unable to fully capitalize on potential opportunities beyond local markets.

Al Nabeel Fish Transport is owned by Mr. Nabeel Ahmad. He has been in the business for 40 years, transporting fish from Taiz to other regions. Occasionally, he sells fish when prices **are** high**.** He works for one client, an export company in Shihr, Hadramout that specializes in squid and swordfish. Mr. Awad's main challenge involves multiple checkpoints that delay deliveries and force him to restock on ice at the nearest point available. Additionally, difficulties in obtaining spare parts for refrigerated transport trucks mean that any accident poses the risk of further delays. Mr. Awad reports losses in the quality of fish during transport due to improper fish stacking. In such cases, he sells discarded fish to grinding factories.

PRODUCT LOSSES RANGE FROM LOW TO MEDIUM BUT ARE NOT SEEN AS CRITICAL GIVEN THE PRESENCE OF FISH-GRINDING FACTORIES

Product losses occur at multiple points, whether due to spoilage, damage or an inability to sell fish at auctions, export facilities or processing factories. These losses typically range from 2 to 15 percent, depending on the species, handling conditions and market demand. Despite financial implications, losses are not perceived as a critical issue requiring urgent intervention. This is largely due to a widespread belief that any unsold or spoiled fish can be repurposed. Grinding factories, which process discarded fish into animal feed, have created a fallback option where stakeholders offload losses without major concerns.

Grinding factories, however, are also associated with environmental harm, particularly the depletion of sardine stocks. Many value chain actors believe that the large-scale harvesting of sardines for animal feed is unsustainable and contributes to the decline of marine resources.

EXPORT MARKETS ARE THE MAIN DRIVER OF VALUE CREATION AND QUALITY

Export markets drive value creation, shaping business incentives and quality standards. With international buyers demanding high-quality fish, exporters dictate quality requirements that ripple down to traders and fisherpersons. The promise of higher earnings in the Gulf and South-East Asian countries motivates stakeholders to prioritize premium species such as tuna, grouper, squid, cuttlefish, sharks and shrimp, where strict handling and preservation methods improve marketability.

The Pearl Fishing Export Company is among the leading export businesses in Shihr, Hadramout. Founded 23 years ago, the company has 47 employees and 33 daily workers, half of whom are women. The company specializes in exporting tuna, squid and shrimp, operating six medium-sized boats and two smaller ones to ensure a consistent supply. It also recruits agents in different areas who buy from fishing associations as well as wholesale traders depending on demand. The main export markets include Africa, East Asia and Europe. Despite being a leader in its business, the company faces challenges, including high transportation costs for the inland movement of fish as well as exports, competition with other exporters, limited information on new market opportunities, an unstable security situation, and limited access to finance to expand and procure new equipment to increase capacity.

To export, businesses must obtain the necessary licenses and certifications that reinforce the emphasis on quality control. The General Authority of Fisheries (GAF), under Law #2 of 2006, regulates the issuance of export licenses, particularly for fresh fish, alongside the mandatory fishing license for those involved in harvesting. For frozen fish, additional requirements include a health certificate issued by the authority, microbiological testing results from its quality control department and a certificate of origin obtained from the chamber of commerce. These measures create a formalized pathway for fish exports to meet health and safety standards.

This stringent regulatory framework also creates a trickle-down effect. Since exporters require fish that meet specific size, freshness and hygiene criteria, they transfer these expectations down the supply chain by insisting on proper handling and the use of ice. Fisherpersons, with support from wholesalers, are incentivized to comply with these requirements to obtain higher prices.

The Aden Gulf Fisheries Company is a leading company in the Mansoura free zone in Aden Port. It exports fresh, chilled and frozen fish as well as seafood products. With more than 22 years in the business, the company has 20 offices and 130 workers, an in-house quality lab for testing, five cold storage facilities and an ice factory with a daily production capacity of 10 tons. The product range covers more than 40 types of fish. The company specializes in tuna, squid, octopus and cuttlefish, which are available all year, sourced mainly from fishing associations and wholesale traders in different regions.

The company's location grants it a competitive advantage as fish can be sourced within easy reach and a short transportation time from the Gulf of Aden, Arabian Sea and Red Sea. The company has a marketing office in Dubai and the United Arab Emirates and its export markets include Malaysia, Thailand, the United States of America, Hong Kong SAR China and other Middle Eastern and North African countries, and Europe. Fresh chilled products, and those higher in value are exported by air, via Jordan to UAE where they are then exported to Rome, Amsterdam, Frankfurt, Paris, Athens and other locations. Despite having a prosperous business, the company faces concerns related to the declines in fish stocks attributed to illegal fishing practices. Other challenges highlighted include a marine security situation that adds to transportation costs, increased power cuts that raise production costs, and restrictions on fishing in certain areas defined as 'military zones'. All these factors increase costs and reduce competitiveness.

Countries in the Gulf and South-East Asia are particularly lucrative destinations, where consumers are willing to pay premium prices for top-quality seafood. Ultimately, the pursuit of export opportunities serves as both a financial motivator and a catalyst for stronger quality standards throughout the fisheries value chain.

SUSTAINABILITY CHALLENGES OF DONOR INTERVENTIONS

In addition to targeted interventions supporting fisherpersons, traders and processors, several donor-funded projects in recent years have focused on rehabilitating basic services and fisheries infrastructure. Organizations such as KS Relief, United Arab Emirates Red Crescent, GiZ, UNDP and FAO have rebuilt landing sites and improved essential facilities to support fishing communities. These projects have helped to restore operational capacity in key coastal areas, so fisherpersons have functioning harbours, cold storage and auction areas.

Despite these investments, the overall impact remains constrained by deeper structural and economic challenges. Many fisherpersons, while gaining improved access to landing sites and services, still struggle with high operational costs, limited access to finance and market instability. Without complementary support mechanisms, such as financial assistance for maintenance, training in business

management or linkages to sustainable markets, the benefits of rehabilitation risk being short-lived.

PREVAILING UNEMPLOYMENT HAS INCREASED THE AVAILABILITY OF UNSKILLED LABOUR PAID LOW WAGES; COMPETITION GROWS WITH HIGHER SKILLS

Informal employment structures and low wages characterize much of the fisheries sector. Unskilled daily workers involved in fish handling, sorting and basic processing earn between 60,000 and 100,000 YR per month. Wages increase significantly for more skilled workers, ranging from 100,000 to 500,000 YR per month depending on expertise and experience.

Demand for skilled labour is notably higher in the manufacturing segment, particularly in boat manufacturing and fish processing. These industries require specialized technical skills related to carpentry, engine mechanics, refrigeration and quality control which are not widely available in the local labour market. As a result, businesses in these sectors face competition in securing skilled workers, leading to wage increases for those with the necessary expertise. The scarcity of highly trained professionals in fish processing, especially in quality supervision and control, amplifies competition and constrains growth and modernization.

> For 34 years, Zeidan Factory in Hadramout has manufactured fiberglass boats for fishing and ice buckets for storage. It also provides repair and maintenance services for fishing boats. With only four employees, the business relies on basic traditional moulds for boats, with raw materials sourced from wholesale traders in other regions (it previously imported such materials directly from Dubai but halted this due to increased shipping costs). According to the owner, there is now increased demand for repair services and less demand for new boats as fishermen lack capital. Reduced demand increases the cost of production. Further, competition for skilled labour increases wages and makes it difficult to find new staff. The company often has to source employees from other areas and add greater transportation costs to the offer. Wages range from 70,000 YR/month for new and unskilled workers to as much as 300,000 YR/month for highly skilled ones.

WOMEN'S INTEGRATION IN THE VALUE CHAIN IS LIMITED, WITH NO POTENTIAL FOR GROWTH

Women's integration in Yemen's fisheries value chain remains largely confined to small-scale, traditional home processing with little potential for growth or economic empowerment. Most women in the sector work on drying, salting or fermenting fish for local markets, mainly in processing factories to support their households rather than as entrepreneurs. While there are some exceptions, including in cities like Mukalla and Shihr, where women own seafood restaurants and are employed in processing factories, their roles are generally confined to unskilled labour. Higher-paying positions in food safety and quality control are available but require academic qualifications that most women lack, restricting their upward mobility within the sector.

"Most of us in the area are uneducated and lack academic qualifications as we were unable to attend school because of social and religious restrictions, making it difficult to find job opportunities." **Focus group discussion with women, Aden**

"We used to know everyone in our community but now things have changed. There are more strangers, and this makes us afraid and limits our mobility." **Focus group discussion with women, Taiz**

"Only 15 percent of the women work in the fishing sector, in cleaning and preparing and processing in factories. We want to work in research, quality control and production but we don't have opportunities as there is a lot of nepotism and favoritism." **Focus group discussion with women, Hadramout**

*"We can work in tailoring, beauty salons, clothes shops for women or drying/salting fish at home. Pursuing employment for only $23 per month is not worth the risk***."** **Focus group discussion with women, Al Mahrah**

Beyond limited employment opportunities, restrictions on mobility due to societal and cultural norms remain a major barrier to women's economic participation. Many training programmes, while well intentioned, tend to reinforce traditional gender roles rather than breaking barriers to integrate women into non-traditional sectors of the labour market.

In Taiz, two women interviewed, operate a home-based business to process and sell tuna in jars to the local market. With funds from UNDP and the Small and Medium Enterprise Promotion Service (SMEPS), they procured jars and basic cooking equipment but continue to face challenges such as a consumer preference for factory-made products and an inability to reach buyers due to mobility limitations. Selling only to small networks, they are unable to grow or expand by becoming automated and setting up their own factories.

2.4 SUPPORTING FUNCTIONS

INFRASTRUCTURE (LANDING SITES, ROADS AND EXPORT LOGISTICS)

The ongoing conflict has damaged vital fishing infrastructure facilities, making it difficult for fisherpersons to dock, unload and sell their catch efficiently. The Government, facing financial constraints, has been unable to rehabilitate these sites, leaving the sector reliant on international donor-funded organizations for partial restoration. While these interventions have helped to improve conditions in some areas, infrastructure overall remains inadequate, limiting the sector's recovery and growth.

A recurring challenge raised during focus group discussions is the urgent need for wave-breakers. Strong winds during the monsoon season cause significant damage to boats and make landing challenging. However, the open beach nature of much of the Yemeni coastline does not lend itself to the construction of such structures. Consequences include erosion and the silting up of protected areas. Such infrastructure also requires significant investment.

On the export side, damage to the Port of Aden and the limited capacity of Mukalla (Hadramout) have shifted export logistics towards road transportation, adding further strain to an already challenged supply chain. In many cases, exporters prefer to use trucks to export fish to Salahah in Western Oman. It is then exported via ship to the Asian market. This reflects the greater efficiency of that port compared to those in Yemen. Trucks transport most of Yemen's fish exports to Saudi Arabia.

QUALITY AND TESTING FACILITIES

Quality and testing facilities are crucial, particularly for exports requiring compliance with international standards. The Department of Quality Control at the Hadramout GAF conducts a range of tests to determine fish quality, pollutant and heavy metal levels, and microbiological, chemical and physiological properties. Additionally, it is the sole authority for issuing the quality certificates required for exports, ensuring that fish products meet market regulations. The department oversees the monitoring and supervision of fish processing factories and conducts environmental impact assessments for them. The destruction of its fully equipped lab during the war, however, significantly reduced capacity. Much of the necessary equipment was lost, leaving the department able to conduct only microbiological tests; chemical testing must now be outsourced to other labs. This has delayed test results and the issuance of quality certificates, ultimately slowed exports and increased costs for exporters.

The College of Marine and Environmental Sciences at Hadramout University houses eight research and testing laboratories that could support the sector. These labs

also face challenges including sourcing the necessary chemicals required for testing and a shortage of qualified personnel.

There is a Government Laboratory situated in Aden at the Ministry of Irrigation Agriculture and Fisheries Wealth that provides the necessary testing for exports of fish products. This has recently been rehabilitated by UNDP. Other regions, such as Taiz and Al Mahrah have no dedicated fish testing facilities so exporters must send their samples to Aden or Hadramout. Given that the vast majority of exports exit the country through Aden port or via Hadramout this is not such a major challenge.

MARKET INFORMATION

The flow of market information in the fisheries value chain is highly fragmented and lacks structured dissemination. Price information is primarily obtained through direct contacts with wholesale traders, other fisherpersons or fishing associations, without any systematic approach to making this data widely available. Fisherpersons seeking price updates typically rely on informal sources, such as fishing associations or fellow fisherpersons, or simply base their pricing on the previous day's sales. Wholesalers gather pricing details through informal interactions with agents in other regions via WhatsApp or through exporters. Exporters themselves depend on their clients for market updates, often in a subjective manner rather than through standardized reporting.

The chambers of commerce, which could play a vital role in market information, currently faces significant limitations on capacity and resources. Only two chambers exist, one in Aden and one in Al Mahrah. Their roles are restricted to issuing certificates of origin for exporters. They do not conduct market studies, promote the sector internationally or support exporters in developing export marketing strategies. This lack of structured market intelligence limits the ability of fisheries businesses to make informed decisions, expand into new markets and enhance competitiveness in international trade.

2.5 RULES AND REGULATIONS

CERTIFICATIONS

In Yemen, compliance with regulatory and certification requirements is essential for entities operating within the fishing value chain, particularly those engaged in export activities. The process begins with obtaining a fishing license, issued by the GAF through the respective fishing association in the relevant region. For entities looking to export, a license to export is also required, issued by GAF in accordance with Law No. 2 of 2006, which governs fishery resource utilization and trade.

Additionally, exporters must secure a health certificate, granted based on testing to verify compliance with hygiene and food safety regulations. To authenticate the product's origin, a certificate of origin must be obtained from the chamber of commerce. To be eligible for certification, the exporting company must be formally registered and maintain a commercial registry that is renewed annually. Processing facilities handling fishery products for export must adhere to internationally recognized food safety management systems, typically obtaining HACCP (Hazard Analysis and Critical Control Points (HACCP) certification or ISO (International Organization for Standardization) 22000 certification. These certifications affirm that products meet international safety and quality standards, facilitating access to export markets. Such requirements are mainly for regional export markets such as Oman, Saudi Arabia or the United Arab Emirates. Exports to Europe require additional tests for chlorate and pesticide residue levels (added to the health certificate), food safety certifications (International Featured Standards), and social compliance certifications, mostly for processing facilities. Finally there are third-party social compliance accreditation schemes such as Social Accountability International's SA8000 Standard and the Business Social Compliance Initiative[15].

GOVERNING LAWS

Law #2 of 2006 For Regulating Fishing, Exploitation and Protection of Aquatic Organisms

The law, comprising 78 articles divided into six parts, aims to protect and support the sustainable development of marine life and ecosystems. Its objectives include regulating and promoting investment in the fishing sector, facilitating the marketing and commercialization of marine resources and strengthening the cooperative sector. The law also encourages investment in aquaculture, supports the development of an integrated fisheries database and reinforces marine monitoring and surveillance to combat illegal, unregulated and unreported fishing as well as smuggling.

Despite these legal provisions, Yemen's coastal areas continue to suffer from destruction and overexploitation due to weak enforcement and inadequate marine monitoring. The shortage of patrol boats equipped with navigational and communication systems, for example, has severely limited the Government's ability to conduct marine surveillance, protect coastal waters and prevent unauthorized fishing activities. This enforcement shortfall has allowed some traditional fisherpersons to engage in illegal fishing practices that exacerbate the strain on marine resources.

[15] CBI 2022.

At the same time, illegal fishing has significantly affected the livelihoods of coastal communities and all actors in the value chain. All report declining fish stocks, reduced catches and increased competition over marine resources. Many blame the crisis on foreign fishing vessels, particularly those operated by Somalia and Iran, whom they accuse of engaging in unregulated and exploitative fishing practices in Yemeni waters. Their concerns, however, often overlook the role of local overfishing and the continued use of harmful traditional fishing equipment, which also contribute to the depletion of marine resources.

Ministerial Resolution No. (23) of 2024 for Fish Grinding

On 13 August 2024, the Council of Ministers issued Ministerial Resolution No. (23) of 2024, banning and shutting down all existing fish-grinding factories and prohibiting the establishment of any new facilities in Al Mahrah and Hadramout. The decision was part of a broader effort to protect fish resources and wildlife conservation, particularly in response to concerns over excessive fish extraction for industrial use. Additionally, the resolution introduced new regulations for fish exports and the export of powdered fish products and cosmetics, aiming to ensure more sustainable use of marine resources. The timing of the decision sparked significant backlash from fisherpersons and factory owners as it coincided with the start of the sardine season, a critical period when many had already invested in fishing equipment and were reliant on sardine fishing as their primary source of income.

In response to intense lobbying from fisherpersons and factory owners, the Government revisited the decision and, at the end of November 2024, issued a new resolution temporarily allowing grinding factories to resume operations until mid-April 2025. This reversal came despite strong opposition from the GAFs and chambers of commerce, both of which had advocated for maintaining the ban due to the severe environmental consequences associated with fish grinding. These entities raised concerns over the depletion of fish stocks and the broader ecological impacts, warning that continued fish grinding could threaten marine biodiversity and disrupt local fisheries.

2.6 SUMMARY OF CHALLENGES/CONSTRAINTS

Table 5 summarizes the key constraints of the value chain along with underlying causes at each level.

Table 4. Summary of Constraints and Underlying Causes

Constraints	Underlying Causes
Fishing	- Decreasing fish stocks. - Artisanal fisherpersons increasingly find themselves in a debt cycle and reliant upon buyers/private sector actors to finance them. - Fisherpersons, make limited use of ice.
Distribution channels	- Increased dominance of wholesale trader power with commissions between 3 and 5 percent. - Replacement of associations with agents, adding more layers to cost structures and reducing the services available to fisherpersons.
Retail	- Limited space for expansion. - Limited value addition except for high-value fish such as squid and tuna. - Reduced purchasing power of consumers
Processors	- Limited diversification into new products, confined to freezing, drying or canning. - Limited access to markets beyond traditional ones. - Lack of actors investing in new technology for processing, logistics, etc.
Exporters	- Transport logistics. - Limited diversification to new markets, inability to comply with additional quality standards. - Increased costs of production from energy and transport, hindering competitiveness

3. POTENTIAL INTERVENTION AREAS

Based upon the identified challenges and constraints the following are eight key areas that warrant further investment.

1. SUSTAINABILITY OF THE FISHERY

This is a very high level objective that addresses the core issues that the value chain faces. That is sustainable management of the resource. There is anecdotal evidence to indicate reductions in catch of all fish species and while with the pelagic species this is a broader issue with Dermersal species there are specific actions that need to be taken. First and foremost, it is essential that the GAF and Ministry are supported to collect and monitor catch data. This will provide the basis for important policy and decision making. Secondly fishing communities need to be supported in taking a greater role in the management and protection of the local habitat and various demersal fish species that inhabit it.

2. EXPLORING ALTERNATIVES

Given the demand for species such as Lobster there is a growing interest in developing aquaculture. This topic is constantly raised by both Government and Private Sector as a possible solution to the diminishing supply. However, experience from neighbouring countries, the exposed coastline and the capital intensive nature of Aquaculture all lead one to the conclusion, given the current context in Yemen, this is not the best solution.

Rather research and investment in Mariculture would be a far more suitable solution. The difference between the two is that Aquaculture is literally farming where the fish are actively managed and fed. Mariculture on the other hand is sustainable management of the resource, which includes harvesting the fish as well as upgrading and provision of habitat for different species.

3. STRENGTHEN THE ASSOCIATIONS

The associations have historically played a strong role in the support of the fishery sector offering services such as credit, supply of ice and fuel and even in some cases social and health support to fisherpersons and their families. Unfortunately, this role has greatly diminished in effectiveness over the last decade and the only Governate where they really remain active is Hadramout.

The recommendation is to ensure those that remain are supported and strengthened. In areas where they no longer exist the mechanisms that have filled the gap need to be further studied. In many cases in effect associations have been replaced by powerful individuals and a fledging private sector. These actors are not all bad and offer services to the fisherpersons most notably in the form of credit. However, in many cases their very existence contributes to perpetuating the debt trap that many fisherpersons are in.

The development of institutions banking/credit unions that allow fisherpersons to both borrow and save would be a major benefit to the sector as a whole.

4. FACILITATE THE PROVISION OF FINANCIAL SERVICES

Following on from the last point, the limited access to tailored financial services, restricts not just the fisherpersons but the sector as a whole. At every level of the value chain investments in processing, technology and export expansion are hindered. For example, many processors would consider investments in renewable energy if viable credit lines were available. This is an issue that goes beyond the fishery value chain and impacts the broader private sector.

5. BEHAVIOUR CHANGE WILL NOT COME WITH TRAINING ALONE

Behavior change in the fisheries sector cannot be achieved through training alone, it must be reinforced with practical incentives and clear accountability mechanisms.

INCENTIVES

It is the wholesalers and buyers who hold power within the market and have the influence to impact the behaviour of fisherpersons. Nowhere is this more obvious than in the relatively low use of ice. Ice is rarely used because it constitutes an additional cost for which the fisherperson is not compensated. However, where the buyer stipulates ice is required then, then it will be used. The point being behaviour change will not come with training and knowledge alone and it must be accompanied by a direct benefit to the fisherperson. The buyers and wholesalers are best placed to deliver this benefit in the form of better prices.

ACCOUNTABILITY

Following on from last point in addition to incentives individuals must also be held accountable for illegal practices that damage the eco system. For example, illegal fishing practices of which there are many must be stopped and the culprits punished accordingly. This is the role of GAF at the local level but they lack capacity and motivation. The challenge is how to effectively support GAF to fulfil this role.

6. STRENTHEN THE COMPETIVENESS OF PROCESSORS

There are two key issues that stand out from the report when it comes to processing

1. Yemen is a net importer of canned Tuna, actually there is a significant trade deficit.
2. The vast majority, of exported fish has limited value added.

Both of the above present real opportunities for the processing industry. The first indicates the potential for import substitution. Despite the fact Yemen is a poor

country with limited resources the market for relatively low costs items such as canned tuna offers opportunity. Secondly there must exist opportunities of adding value to the exports. In particular, fish exported to Saudi Arabia and Oman, which makes up over 50% of total exports, in many cases is simply transported fresh in insulated trucks packed with ice or frozen. The level of processing is minimal and often just involves as cutting off the head and gutting.

Strengthening the competitiveness of fish processors calls for collaborating with universities and non-governmental organizations to develop comprehensive support packages that combine technical and business expertise. These packages should focus on improving product quality by integrating traceability systems that improve fish handling from the source, uphold compliance with international food safety standards and increase the credibility of products in global markets.

7. CONTINUE SUPPORT FOR THE REHABLITATION OF ESSENTIAL INFRASTRUCTURE AND FOCUS ON SUSTAINABILITY

Enhancing the infrastructure of landing sites will improve fishing operations, reduce costs for fisherpersons and support better governance within the sector. Investments should focus on upgrading basic fishing infrastructure, such as cold storage facilities, ice plants, auction halls etc

However, coupled with this the modality of how the long term sustainability of those investments will be ensured must be investigated. Depending on the local context this could be via associations, private sector or even a combination of the two. The challenge is to ensure the infrastructure is maintained and can continue to provide the necessary services. Unfortunately, all too often Landing Sites and Ice plants fall into disrepair and fail to function as there are no resources available for upkeep and maintenance.

8. DEEPENING GENDER ANALYSIS FOR WOMEN'S ECONOMIC PARTICIPATION IN THE FISHERIES SECTOR

The greater involvement of women in the value chain is a laudable target which challenges inherent social and cultural dynamics. Processing, in particular home based "cottage type" investments, offer an opportunity and many organisations have thus supported such initiatives. The challenge is that rarely do these women rise above a village based enterprise and many do not even reach that point. There are many challenges to overcome not least the tendency of the local population to consider imported Tuna as better than locally produced products. However, this sphere does offer a real opportunity, but any intervention must begin with a sound understanding and analysis of the market.

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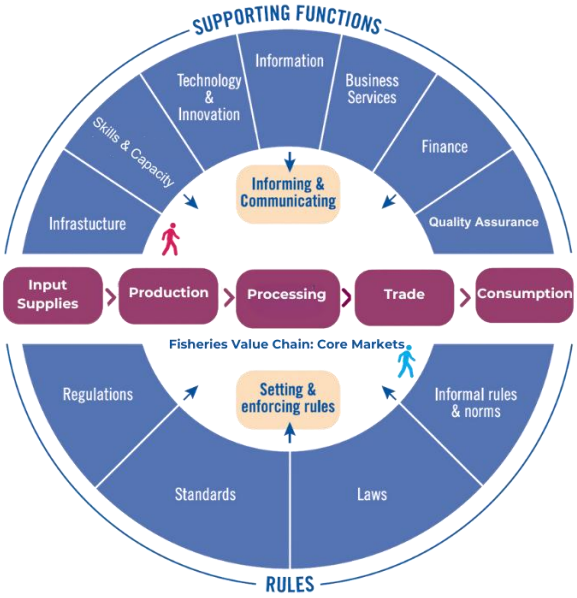
ANNEXES

ANNEX 1. METHODOLOGY

The study of the fisheries value chain in the four regions has been implemented using market system development approach, providing a snapshot of the current market: the exchange of goods and services by the multiplayers or actors in the system throughout the value chain from input providers (equipment, nets, boats) to fisherpersons, wholesalers, exporters, retailers, consumers, as well as the supporting functions and the providers of such functions, and the norms and regulations that govern and determine how such goods and services are produced, marketed, and purchased,[16] as visualized in Figure A.1.

Figure A.1. Market System Map for the Fisheries Sector



Source: International Labour Organization.

[16] The Springfield Center 2015.

The analysis delved deeper to understand the root causes of identified challenges, the 'why', and based on that identified the changes required to address such challenges or the 'what', and the suggested interventions that would trigger a sustainable change in the system or 'how'[17]. The study also identified potential value chain and supporting functions actors who have the willingness and potential to engage with UNDP in order to support recovery and income generation for vulnerable coastal communities, including those who are particularly vulnerable and often excluded, and to advance gender equality.

The different tools utilized provided quantitative and qualitative information on the identified markets systems selected by the project, namely:

DESK REVIEWS of reports, studies, and publications produced by national and international organizations relative to the fisheries sector, on national and regional scale, existing in the regions and economic assessments that make up the foundation of this research, identify the main stakeholders to be considered, as well as the missing information to be included in the scope of this research. Studies to be included mainly include:

- UNDP and Impact Consulting: Fishery Sector in Yemen, 2022.
- UNDP: Regional Analysis of Potential Value Chain Integration, 2023
- UNDP and Small and Medium Enterprise Promotion Service: Fish Value Chain Analysis Ash-Shihr District, Hadramout Area, 2022.
- FAO: Fisheries and Aquaculture Stock Assessment Study, 2022
- GIZ and ESDR: Artisanal Fisheries Sector Market and Risks Analysis Consultancy in the Governorate of Hadramout, 2021.
- USAID: The Fisheries Sector in Yemen: Status and Opportunities, 2019.

The abovementioned studies have generated extensive literature on the fisheries value chain, providing clear overview of the changes and the challenges prior and post the conflict that erupted in 2015. Such studies also provided clear analysis of the status of the different value chain actors, as well as challenges faced, and opportunities for further enhancing the value chain performance. However, such studies have not gone beyond the 'usual suspects' identification, more focusing on the role played by each actor yet not going into root causes as to why such roles have not enhanced performance or the supporting functions for the private sector actors in the value chain. There is little coverage of the private sector performance and the role of supporting functions, as well as the potential of the youth and

[17] Ibid.

women for reaping opportunities presented along the chain. Some of the information that are required include, but not limited to:

- The actors providing supporting functions: Who is providing market information studies, trade licenses, investment opportunities in sector, access to finance (banks or micro-finance), skills enhancement (training institutions and universities), small-scale technology for sector, logistics, marketing and promotion, packaging, and other functions.
- The norms and regulations associated with export licenses, quality regulations, laboratories and testing facilities, third party certifications, women economic integration, youth employment and independent finance providers.
- The different initiatives implemented by international organizations: Who is doing what in the regions in the fisheries sector, including to check initiatives for youth and women's employment and entrepreneurship as well as sectors in which they operate.

KEY INFORMANT INTERVIEWS have been carried out to cover the gaps in the information abovementioned as well as: gain in-depth understanding of the market systems in general, evaluate the enabling and challenging factors, identify further challenges hindering productivity and performance in the identified market systems, and identify opportunities for upgrading and creating job/income opportunities for coastal communities in the different regions—be it employment or self-employment opportunities.

The study carried out 140 interviews with different stakeholders, in the four different regions, covering both the macro-level or environment, and the market system level, at each region, using the snowball effect: Interviewing actor who then refers to the actor at the other level he deals with, who in turn refer to others, and so on, until all levels of the value chain are covered. The breakdown of the interviews is included in the table below, based on regions in consideration, the size of the regions considered, and the stakeholders involved.

FOCUS GROUP DISCUSSIONS were be held with sample group of youth (involved in the fisheries sector and other sectors), fisherpersons, and women to better understand the perceptions, opportunities, and challenges facing their further integration in the fisheries sector, and what needs to change to enable them take full advantage of the opportunities. For the fisherpersons, it was more to understand their current practices, trends they see in the sector, opportunities, and constraints hindering the benefits, more precisely in relation to their operational costs and revenues. Focus Groups were held with three main groups:

- Fisherpersons currently operating, both members and non-members of respective fishing cooperatives in the considered regions.
- Youth aged between 18 and 35 working or seeking employment be it in the who fisheries value chains or related sectors in transport or trade or public sector. The group includes those who have attained technical education but currently unemployed or currently working in the fisheries sector, without technical education.
- Women currently working in the fisheries sector or related sectors, as well as women who currently have attained technical education but unemployed or seeking employment.

The study held 15 focus group discussions, three in each of the three regions and 6 in Hadramout given its size, to better capture the perceptions as well as the differences in the regions among the abovementioned groups.

Table A.1 below provides a better overview of the division of the interviews and focus group discussions as per the regions and the actors along the fisheries value chain. It is important to mention that Hadramout region is the biggest in size and coverage, followed by Al Mahrah and then Aden and Taiz. For that, higher number of key informant interviews and focus group discussions were included to have better representation of the stakeholders in the respective regions.

Table A.1. Summary of Key Informant Interviews and Focus Groups in Four Regions

Institution/Organization	Taiz	Aden	Al Mahrah	Hadramout	National	Total
Key Informant Interviews—National Level						
General Authority for Fisheries	1	1	1	1		4
Chambers of Commerce and Industry (if needed)		1		1		2
GIZ					1	1
FAO					1	1
IFPRI					1	1
Small and Medium Enterprise Promotion Service					1	1
Key Informant Interviews—Regional Level						
University/Research Centers—Training & Expertise	1	1	1	1		4

Laboratories/Testing Facilities		1		1		2
Quality Auditors		1		1		2
Input Suppliers (Gears, Nets, GPS, Modern Equipment)	1	1	2	3		7
Fuel Suppliers	1	1	2	3		7
Ice- Manufacturers	1	1	2	2		6
Boat Manufacturers	1	1	2	2		6
Engine & Maintenance Workshops	1	1	2	3		7
Transport/Logistics: Land, Sea, Airfreight	1	1	2	2		6
Banks/Microfinance Institutions	1	1	1	2		5
Other Financial Providers (Informal)	1	1	1	2		5
Processors (Small-scale and Formal Processing Companies)	2	2	3	4		11
Women Processors	2	2	2	3		9
Wholesalers	2	2	3	4		11
Retailers (Supermarkets, Restaurants)	2	2	3	4		11
Exporters	2	2	3	4		11
Fisherpersons	2	2	3	4		11
Fisheries Associations	2	2	2	3		9
Total	24	27	35	50	4	140
Focus Group Discussions						
Youth	1	1	1	2		5
Fisherpersons	1	1	1	2		5
Women	1	1	1	2		5
Total	3	3	3	6		15

A detailed list of the interviews conducted is provided in Annex 2, by region.

1.1 LIMITATIONS

The data collection process was not void of challenges despite showing more cooperation and responsiveness from the different stakeholders. Among the main challenges faced, which were more of limitations were:

Scheduling interviews with stakeholders: The team of local researchers encountered challenges in scheduling interviews with key stakeholders during the fieldwork, largely due to donor fatigue. Many stakeholders such as fisherpersons, exporters, wholesale traders had been involved in numerous previous projects assessments and consultations, without necessarily benefiting from projects, which led to reluctance to participate in additional interviews. This was a challenge that the team managed to overcome by having more diversified list of stakeholders to interviews, as alternative in case cancellations occur.

Conducting focus group interviews with fisherpersons: Another significant challenge was finding fisherpersons available for focus group interviews, as many fisherpersons were either out at sea or occupied with essential tasks, or just hesitant to participate due to donor fatigue and lack of immediate benefit. This was overcome by having the local researchers conduct focus group discussions at the landing sites through proactive local fishing associations in the different regions, with support of UNDP providing list of the landing sites and the contacts at the respective fishing associations.

Challenging context for focus group interviews with women: Conducting focus group interviews with women presented unique challenges, particularly due to cultural norms and difficulty in finding local women researchers to conduct such interviews. Additionally, logistical barriers, such as travel constraints, made it harder to secure their participation. Whilst the local researchers were able to conduct these discussions through key women informants, within a home setting, the women generally were not openly speaking about sensitive issues, such as economic hardships or gender inequalities, which were prevalent in the fisheries sector. As such the findings from such focus groups have been more general, especially the identified challenges that required more deep diving. Thus, additional gender research will be required for better understanding of the current involvement of women in the overall fisheries value chain.

ANNEX 2. LIST OF ACTIVE FISHING ASSOCIATIONS BY REGION

ACTIVE ASSOCIATIONS IN TAIZ GOVERNORATE

Regions	Active Associations
Hudaydah Governorate, Al-Khokha District	Al-Khokha Sons' Association Al-Mustaqbal Association

	Youth of Al-Khokha Association Al-Jashah Association Al-Khail Association Al-Wa'rah Association Mawshaj Association Al-Khokha Fishermen's Association Al-Nakheel Association
Taiz Governorate, Mokha District	Al-Ziyadi Association Al-Buhayrah Association Nama'a Association
Taiz Governorate, Dhubab District	Knights of the Sea Association Al-Hakam Association Al-Walid Association Al-Abidiyah Coast Association

ACTIVE ASSOCIATIONS IN AL MAHRAH GOVERNORATE

Regions	Active Associations
Seyhout District	Seyhout Fishing Association Khater Fishing Association
Qashn District	Qashn Fishing Association
Damekh District	Hasay Fishing Association Damekh Fishing Association

Hawf District	Damkout Fishing Association

ACTIVE ASSOCIATIONS IN ADEN GOVERNORATE

Governorate	Aden				Lahg	Abyen				Total
District	Sirah	Al-Buraiqah	Other districts	Total	Ras Alarah	Khanfer	Ahwar	Zengubar	Total	
Highly active associations with a fishery landing and fixed HQ building	1			1		1			1	2
Highly active associations with an HQ building		2		2		1	1		2	4
Active associations		13	3	16	2	6	2	6	14	32
No active association		1		1	7				0	8
Total Associations	**1**	**16**	**3**	**20**	**9**	**8**	**3**	**6**	**17**	**46**

ANNEX 3. LIST OF KEY INFORMANT INTERVIEWS AND FOCUS GROUP DISCUSSIONS BY REGION

AL-MAHRAH

No.	Name of Organization	Contact Name	Name of the Organization	Position of the Interviewee & Department	Region/Area
1	General Authority for Fisheries	Abdel Nasser Owaid Kalshat	General Authority for Fisheries in Al-Mahra Governorate	The Head of the General Authority for Fisheries	Al-Ghaydah
2	University/Research Centers—Training & Expertise	Marak Saleh Al-Tamimi	General Authority for Fisheries in Al-Mahra Governorate	Director of Studies and Research, Fishery Authority	Al-Ghaydah
3	Input Suppliers (Gears, Nets, GPS, Modern Equipment)	Ameer Mohammed Bakran	Bin Bakran General Trading Stores	Owner	Hasween
4	Input Suppliers (Gears, Nets, GPS, Modern Equipment)	Ali Omar Al-Amoudi	Al Amoudi Marine Machinery and Fishing Equipment Stores	Owner	Al-Ghaydah
5	Fuel Suppliers	Awad Ahmed Ali	Hani Dakoor Petroleum Services Station	Fuel Attendant	Al-Ghaydah
6	Fuel Suppliers	Haj Mitan	Bin Maitan Petroleum Services Station	Station Manager	Seyhout
7	Ice Manufacturers	Issa Mohammed Al-Arshi	Al-Arshi Ice Factory	Owner	Seyhout

8	Ice Manufacturers	Amjad Abdul Hakim Al-Tamimi	Al Tamimi Ice Factory	Owner	Al-Ghaydah
9	Boat Manufacturers	Salem Salloum Al-Juhaish	Al-Mahrah Factory for Fiberglass, Boat Repair, and Marine Vessel Manufacturing	Owner	Al-Ghaydah
10	Boat Maintenance Workshops	Omer Salem Ba Ghazal	Ba Ghazal	Owner	Seyhout
11	Engine & Maintenance Workshops	Mohammed Saeed Madhous	Madhous Marine Machinery Repair Workshop	Owner	Seyhout
12	Engine & Maintenance Workshops	Ali bin Laden	Bin Laden Marine Equipment Maintenance Workshop	Owner	Al-Ghaydah
13	Transport/Logistics: Land, Sea, Airfreight	Abdullah Hussein Ali Balhaf	Fiberglass Fish Trucks	Owner	Al-Ghaydah
14	Transport/Logistics: Land, Sea, Airfreight	Abed Rabo Mohammed Khamees	Fiberglass Fish Trucks	Owner	Seyhout
15	Banks/Microfinance Institutions	Mohammed Ali Bin Selim	Tadhamon Microfinance	Bank Manger	Al-Ghaydah
16	Other Financial Providers (Informal)	Salem Ali Salem	Wholesalers	Owner	Al-Ghaydah
17	Processors (Small-scale and Formal Processing Companies)	Hassan Al-Tamimi	Houf Fish Company	Manager	Al-Ghaydah
18	Processors (Small-scale and Formal Processing Companies)	Ahmed Al-Bishari	Swahel Al-Mahara Company for Fish & Marine Life	Financial Manager	Al-Ghaydah

19	Processors (Small-scale)	Mubarik Ali Madhoos	Mubarik Ali Madhoos	Owner	Seyhout
20	Women Processors	Malook Awad Al-Abd	Al-Malook for Fish Products	Owner	Seyhout
21	Women Processors	Saleha Alabid Ghabesh	Deluni Aleeh for Seafood	Owner	Seyhout
22	Wholesalers	Mohammed Saleh Qamli	Fiberglass Fish Trucks	Owner	Al-Ghaydah
23	Wholesalers	Mukhtar Salem Shajul	Fiberglass Fish Trucks	Owner	Qashn
24	Retailers (Supermarkets, Restaurants)	Yazid Hamdan	Arabian Sea Restaurant	Manager	Al-Ghaydah
25	Retailers (Supermarkets, Restaurants)	Saned Nasser Mohammed Dheibat	Fish Shop	Owner	Al-Ghaydah
26	Retailers (Supermarkets, Restaurants)	Hussein Mohammed Al-Hamid	Hussein Fish Stores	Owner	Seyhout
27	Exporters	Adel Said Omrein	Bin Nibhan Office for Export and Trading	Owner	Hasween
28	Exporters	Saeed Al-Bukheit Ar'ir Balhaf	Ar'ir Office for General Trading	Owner	Al-Ghaydah
29	Exporters	Ibrahim Hussein Al-Haifidh	Ibrahim Hussein Al-Hafez Office for Export	Owner	Al-Ghaydah
30	Fisherpersons	Tahir Saad Mohammed Hussein Kulshat	Fisherpersons	Fisherperson	Saqr - Hasween
31	Fisherpersons	Fahid Mohammed Khelat	Fisherpersons	Fisherperson	Saqr - Hasween

32	Fisherpersons	Ali Mohammed Salem Al-Jedhi	Fisherpersons	Fisherperson	Qashn
33	Fisheries Associations	Sulaiman Mohammed Isa Madhoos	Khatar and Rakhout Cooperative Fishermen Society	General Secretary	Khatar-Seyhout
34	Fisheries Associations	Shafiq Salem Khamees	The Association of Seyhout Fishermen	Manager of the Association	Seyhout
35	The Chamber of Commerce and Industry	Salem Ahmed Bin Hafeed	The Chamber of Commerce and Industry —Al Hahrah	General Manager	Al-Ghaydah
	Summary of the Focus Group Discussions				
1	Fisherpersons	Mohammed Awad Ashour	Fisherperson	Al-Damkh-Hassay-Al Masila	739860348
2	Fisherpersons	Hussein Mutahar Baabad	Fisherperson	Al-Damkh-Hassay-Al Masila	780958394
3	Fisherpersons	Ahmad Karama Al-Adly	Fisherperson	Al-Damkh-Hassay-Al Masila	733764681
4	Fisherpersons	Salem Saleh Al-Adly	Fisherperson	Al-Damkh-Hassay-Al Masila	738612845
5	Fisherpersons	Said Obaid Al-Kathiri	Fisherperson	Al-Damkh-Hassay-Al Masila	715137655
6	Fisherpersons	Mabkhoot Eida Al-Adly	Fisherperson	Al-Damkh-Hassay-Al Masila	782265957
1	Youth	Nadi Mahwi Salem Meshajel	Youth	Saqr - Hasween	771140861
2	Youth	Ali Jamal Ali	Youth	Saqr - Hasween	

3	Youth	Salem Mohamed Salem Khalat	Youth	Saqr - Hasween	774613061
4	Youth	Abdullah Ali Ali	Youth	Saqr - Hasween	
5	Youth	Saleh Isa Ali	Youth	Saqr - Hasween	
6	Youth	Mohammed Saeed Mohammed	Youth	Saqr - Hasween	
7	Youth	Ali Salem Saeed	Youth	Saqr - Hasween	
8	Youth	Saeed Awatat Salem	Youth	Saqr - Hasween	
1	Woman	Manal Mohammed Abdul-Lah Oweid	Women	Seyhout	774883144
2	Woman	Raheema Oweid Mubarak Rowaydi	Women	Seyhout	773933631
3	Woman	Bageela Hameed Mubarik	Women	Seyhout	
4	Woman	Nadia Mohammed Saeed	Women	Seyhout	
5	Woman	Salha Al-Abed Ghabash	Women	Seyhout	782878622
6	Woman	Marwa Mohammed Abdillah	Women	Seyhout	
7	Woman	Khadeja Abobakar Alhamid	Women	Seyhout	

TAIZ

No.	Number of Interviews	Entity	Representative Name	Position	Phone Number	Directorate
1	1	Focus Group	Fisherpersons	Fisherpersons		Al-Mokha
2	1	Focus Group	Youth	Youth		Al-Khawkhah
3	1	Focus Group	Women	Women		Al-Mokha

4	1	General Authority for Fisheries	General Authority for Fisheries in the Red Sea	Wadah Abdul-Malik Al-Madhaji	Director General of Fisheries Authority in Taiz Governorate	771690283	Al-Mokha
5	1	Universities/Research Centers—Training & Experience	Hudaydah University	Ahmed Mohammed Abdu Maih	University Professor in Marine Sciences	772195521 772547133	Al-Mokha
6	1	Laboratories/Test Facilities	General Authority for Research in Marine Sciences and Water Resources – supported by FAO	Mohamed Hassan Fattini Otheim—Hazza Ahmed Kadaf Fetini	Marine Biology Researcher	770052799 736644628 777612788738699618	Al-Mokha

7	1	Quality Auditors		Saddam Ahmed Said Maglas	Quality Auditor	737455805	Dhobab
8	1	Input Suppliers (Equipment, Nets, GPS, Modern Equipment) Fuel Suppliers	Al-Sallal Stores for Fishing Equipment	Alaa Al-Sallal Zayed Bakri	Owner/Manager	773070874	Al-Mokha
9	1	Fuel Suppliers	Al-Somoud Group for Petroleum Derivatives	Mohammed Ali Ahmed Aish	Owner/Manager	739211555 776467861	Al-Khawkhah
10	1	Ice Makers	Al-Mokha Ice Factory	Rashid Abdullah Awad Mohammed	Manager	772024329 780362008	Al-Mokha
11	1	Boat Makers	Al-Zaybaq Fiberglass Boat Manufacturing and Sales	Ali Thabit Said Baheider	Owner/Manager	770181014 733651094	Al-Khawkhah

12	1	Engine Repair Workshops	Adnan Workshop	Adnan Mansour Said Mohammed	Owner/Manager	711123216	Dhobab
13	1	Transport/Logistics: Land, Marine, Air Freight	Land Transport	Nabil Awad Issa	Owner	770460944 736835648	Dhobab
14	1	Banks/Microfinance Institutions	Al-Kurimi Bank for Islamic Microfinance	Mazen Mansour Ali Haza' Al-Sulawi	Branch Manager in Al-Mokha	772121589	Al-Mokha
15	1		Thimar Microfinance Institution	Waheeb Fouad Mohammed Qasim Al-Sabri	Branch Manager – Mocha Branch	773168524	Al-Mokha
16	1	Other Finance Providers (informal)	Merchant (Agent)	Imad Saleh Zaid Ahmed Ali	Merchant (Agent)	777481485	Al-Mokha
17	2	Processors (Small and Formal Processing Companies)	Ammar Al-Hadha Fish and Marine Life Foundation	Ahmed Hamoud Yahya Dihim	Deputy Director	737982875 772711377	Al-Khawkhah

			Fish Drying and Smoking Factory	Abdullah Abdu Mohammed Hassan - Salman Farah Akeesh Akeesh	Partners/Workers	772240820 773078477	Al-Tahita
18	2	Women Processors	Fish Canning	Hamida Abdu Ahmed Omar	Owner/Manager	737298513	Al-Mokha
			Fish Canning	Marwa Nabil Yahya Ali	Owner/Manager	730638259	Al-Mokha

19	2	Wholesale Traders	Wholesale Merchant	Hilmy Ahmed El-Sayed Ahmed	Owner/Manager	772431730	Al-Mokha
			Wholesale Merchant	Imad Ali Alawi Ali Al-Musafi	Owner/Manager	730494235 733340119	Dhobab
20	2	Retail Traders (Supermarkets, Restaurants)	Al-Rasani Modern Restaurant	Mansour Ali Abdullah Ali	Partner/Manager	778086952	Al-Mokha
			Mobile Fish Retail Cart	Abdu Mohammed Ali Anibi	Owner/Manager	777172811	Al-Mokha

21	2	Exporters	Al-Zarnouki Shark Fish Collection Center	Mohammed Ali Mohammed Al-Zarnouki	Owner/Manager	781095343 738468303 774306716	Al-Mokha
			Al-Faqih Fish Export	Youssef Hiba Abdullah Masawi	Deputy Manager of Al-Mokha Branch	775227485	Al-Mokha
22	2	Fisherpersons	Fisherpersons	Mustafa Saeed Awad Al-Khesawy	Owner/Manager	739499547	Dhobab

			Fisherpersons	Ayyash Omar Amari Kanid	Owner/Manager	777394645	Al-Khawkhah
23	2	Fisherpersons' Associations	Al-Buhayrah Fishery Association	Hassan Faqir Ali Halabi	Association President	735086029	Al-Mokha
			Al-Khawkhah Cooperative Fishermen's Association	Fouad Ali Abdullah Dubbla	Association President	773924915	Al-Khawkhah

HADRAMOUT

No.	Name of Organization		Representative Name	Position	Governorate	Area	Phone Number
Key Informant Interviews—National Level							
1	General Authority for Fisheries	General Authority for Fisheries Hadhramout	Yaslim Saeed Babalgum	Chairperson of the General Authority for Fisheries in the Arabian Sea Hadhramaut Shabwa Socotra	Hadhramout	Mukalla	7777953408
Key Informant Interviews—Regional Level							
2	University/Research Centers—Training & Expertise	Hadhramout University for Science and Technology	Dr. Awsan Marouf Baharmiz	Associate Professor of Food Industries - Hadhramout University	Hadhramout	Mukalla	771952396
3	Laboratories/Testing Facilities	General Authority for Fisheries for Hadhramout	Mohammed Baamer	Director of Fish Quality Control Laboratory at	Hadhramout	Mukalla	770690261

				the Fisheries Authority			
4	Quality Auditors	General Authority for Fisheries for Hadhramout	Salah Saeed Al-Ubaidah	Head of Quality Department, General Authority for Fisheries in the Arabian Sea Hadhramaut Shabwa Socotra	Hadhramout	Mukalla	777488525
5	Input Suppliers (Gears, Nets, GPS, Modern Equipment)	Waves for all types of fishing equipment	Awad Faraj Saeed Basabaa	Shop Manager	Hadhramout	Ash Shihr	777050905
6	Input Suppliers (Gears, Nets, GPS, Modern Equipment)	Al-Amari Fishing Equipment Stores	Mohammed Omar Abdulrahman Al-Amari	Shop Manager	Hadhramout	Mukalla	771973706
7	Input Suppliers (Gears, Nets, GPS, Modern Equipment)	Al-Abbadi Marine Equipment	Abu Bakr Ali Abu Bakr Baabad	Shop Owner	Hadhramout	Qusayr	777346770
8	Fuel Suppliers	Al-Aiq Association Station	Younis Al-Asani	Association Chairman	Hadhramout	Al-Rayda Al-Sharqiya	774088044

9	Fuel Suppliers	Al-Shihr Fishermen Association Station	Hussein Mahmoud Al-Salmah	Station Officer	Hadhramout	Ash Shihr	777626773
10	Fuel Suppliers	Cooperative Association Station	Basem Bashaiban	Association Chairman	Hadhramout	Mukalla	772532105
11	Ice—Manufacturers	Al-Karamah Ice Factory	Karamah Al-Ghathnini	Factory Owner	Hadhramout	Ash Shihr	777158454
12	Ice—Manufacturers	Ain Bamobad Ice Factory	Nasser Jaroul Mohammed Rashid	Factory Manager	Shabwa	Ain Baambad	776731376
13	Boat Manufacturers	Al Sayyad Fiberglass Factory	Ali Mubarak Baraiah	Factory Manager	Hadhramout	Ash Shihr	777508932
14	Boat Manufacturers	Al Redha Factory	Mohammed Khamis Al-Yazidi	Factory Manager	Hadhramout	Al-Rayda Al-Sharqiya	778463288
15	Engine & Maintenance Workshops	Al-Itqan for Boat	Fouad Saeed Driqan	Workshop Owner	Hadhramout	Ash Shihr	777321643
16	Engine & Maintenance Workshops	Bahsin Marine Machinery Repair Workshop	Khaled Mohammed Bahussain	Workshop Supervisor	Hadhramout	Khalf	777378558

17	Engine & Maintenance Workshops	Boat Maintenance Workshop	Salah bin Zahidan	Workshop Owner	Hadhramout	Al Mukalla	771748676
18	Transport/Logistics: Land, Sea, Airfreight	Transportation Owners	Ahmed Mohammed bin Suwaid	Fish Transport Vehicle Owner	Hadhramout	Ash Shihr	777394711
19	Transport/Logistics: Land, Sea, Airfreight	Transportation Owners	Abdullah Mohammed Bawazir	Fish Transport Vehicle Owner	Hadhramout	Al-Dhiss Al-Hami	778456668
20	Banks/Microfinance Institutions	Yemen Bahrain Comprehensive Bank	Raed Salem Bahowarith	Bank Manager	Hadhramout	Ash Shihr	773787189
21	Banks/Microfinance Institutions	Al Basiri Microfinance Bank	Dr. Walid Al-Attas	Bank Manager	Hadhramout	Al Mukalla	777319144
22	Other Financial Providers (Informal)	Ramla Fish Complex	Mohammed Karama Janbin	Head of Ramla Fish Complex	Hadhramout	Ash Shihr	777828840
23	Other Financial Providers (Informal)	Al Abari Association in Hadhramaut Coast	Mahfouz Salem Badbah	Financial Officer	Hadhramout	Al Mukalla	777446031
24	Processors (Small-scale and Formal Processing Companies)	Hadhrami Fish Canning and Packaging F	Ahmed Mohammed Baghuita	Fish Canning and Packaging Factory Owner	Hadhramout	Ash Shihr	775053126

25	Processors (Small-scale and Formal Processing Companies)	Fish drying and salting plant	Saeed Ali Baroud	Fish Drying and Salting Factory Owner	Hadhramout	Al Shihr	777226594
26	Processors (Small-scale and Formal Processing Companies)	Fish drying and salting plant	Mohammed Issa Al-Jamhi	Fish Drying and Salting Factory Owner	Hadhramout	Qusayr	772396120
27	Processors (Small-scale and Formal Processing Companies)	Masa Hadhramaut Company for Agencies and General Trade	Abdurahman Salem bin Sheikh Abu Bakr	Company Manager	Hadhramout	Al Mukalla	778845844
28	Women Processors	Bayti Factory for Preparing and Drying Shark Fish	Ali Saeed Basalaa	Father of Project Owner	Hadhramout	Al-Dhiss Al-Sharqiya	770972004
29	Women Processors	Bayti Factory for Canning Fish	Asrar Salem Baqraf	Project Owner	Hadhramout	Al-Dhiss Al-Sharqiya	702123502
30	Women Processors	Bayti Kitchen for Preparing Seafood Meals	Noura Basis	Owner of a Seafood Kitchen	Hadhramout	Al-Dhiss Al-Sharqiya	770280899
31	Wholesalers	Wholesalers	Salem Awad Bawazir	Wholesaler	Hadhramout	Al-Dhiss Al-Hami	778187772

32	Wholesalers	Wholesalers	Salem Obaid Salem Abolan	Wholesaler	Hadhramout	Ash Shihr	771159950
33	Wholesalers	Wholesalers	Ghabish Ali Al-Gharabi	Wholesaler	Hadhramout	Ash Shihr	773788083
34	Wholesalers	Wholesalers	Khaled bin Salim	Wholesaler	Hadhramout	Al Mukalla	777216096
35	Retailers (Supermarkets, Restaurants)	Retailers	Awad Abdul bin Zain	Wholesaler	Hadhramout	Ash Shihr	772330673
36	Retailers (Supermarkets, Restaurants)	Retailers	Mohammed Faraj Bashadi	Fish Shop Owner	Hadhramout	Al Mukalla	770945328
37	Retailers (Supermarkets, Restaurants)	Retailers	Mohsen Ahmed Basalaa	Fish Shop Owner	Hadhramout	Ash Shihr	777734214
38	Retailers (Supermarkets, Restaurants)	Retailers	Younis Mohammed Bajrad	Fish Shop Owner	Shabwa	Bir Ali	772559241
39	Exporters	Pearl Fish Company	Mohammed Saleh Al Bahri	Chief Executive Officer	Hadhramout	Al-Shahr	779333472
40	Exporters	Brom Fish Company	Majed Mohammed Bahjar	Purchasing Officer	Hadhramout	Al-Shahr	770153113

41	Exporters	Lobster Company	Mohammed Sahl bin Ishaq	Company Manager	Hadhramout	Al-Dhiss Al-Hami	777671337
42	Exporters	Sea Wealth Export Company	Salem Ali Al-Toum	Factory Owner	Hadhramout	Al-Shahr	771617003
43	Fisherpersons	Fisherpersons	Awad Mubarak Al-Jaddaj	Fisherpersons	Shabwa	Bir Ali	781675148
44	Fisherpersons	Fisherpersons	Salah Mohammed bin Waber	Fisherpersons	Hadhramout	Mukalla	777793170
45	Fisherpersons	Fisherpersons	Mohammed Abdullah Saleh	Fisherpersons	Shabwa	Ain Baambad	771293415
46	Fisherpersons	Fisherpersons	Abdullah Salah Al-Samsoum	Fisherpersons	Shabwa	Ain Baambad	771293415
47	Fisheries Associations	Fisheries Associations	Mohammed Obaid Basweed	Head of the Fishermen's Cooperative of Ash Shihr	Hadhramout	Al-Shahr	773532262
48	Fisheries Associations	Fisheries Associations	Awad Mohammed Baraia	Head of the Khor Coast Fishermen's Association	Hadhramout	Al-Shahr	771138195
49	Fisheries Associations	Fisheries Associations	Hani Basloum	Head of the Broum	Hadhramout	Brom	738490525

				Fishermen's Association			
50	Fisheries Associations	Fisheries Associations	Talal Saleh Basahib	Financial Officer of Hisn Al-Gharab Fishermen Cooperative Society	Shabwa	Bir Ali	781361009

ADEN

No.	Name of Organization		Name of interviewee	Role / Position	Contact Number	Governorate	District
1	General Authority for Fisheries	General Authority for Fisheries in Gulf of Aden	Ahmed Al-Hamzah	General Manager of Planning and Development, Fisheries Authority in Gulf of Aden	771274708	Aden	Al-Tawahi
2		Dockyard Fishery Centre	Rashed Mohammed Al-Sha'aby	Centre Manager	771211452	Aden	Almo'alla

3		Lahg Fishery Centre	Ahmed Thyban Muhsen	Centre Manager	771017279	Lahg	Ras Alarh
4	Local Non-governmental Organizations Involved in Fisheries Sector	Nahda Makers Organization	Ali Alsane'e	FSL Manager	772911285	Aden	Khormaksar
5	Research Centers, Training & Experience	Trainer & Expert	Rasheedy Mahmood	Fisheries Expert	777493808	Aden	Al-Buraiqa
6	Ice Suppliers	Mo'ammer Ice factory	Husain Mohammed Baqi	Owner/Manager	770941369	Aden	Al-Mansoorah
7		Amran Ice Factory	Mohammed Ali Afandy	Manager	777332533	Aden	Al-Buraiqa
8	Maintenance Boat Workshops	Fuqom Workshop	Abdullah Mahdi Husain	Owner/Manager	772486722	Aden	Al-Buraiqa
9	Input Suppliers (Equipment, Nets)	Al-Sayyad for Fishing Equipment	Mohammed Anwar Bazara'ah	Owner/Manager	777956078	Aden	Al-Buraiqa

10	Wholesale Traders	Marketer	Magdy Ahmed Hasan	Head of Marketers	779403512	Aden	Almo'alla
11		Wholesale Merchant	Rasheed Azzar	Owner/Manager	777232831	Aden	Al-Buraiqa
12		Wholesale Merchant	Nezar Ahmed	Owner/Manager	772839047	Aden	Almo'alla
13		Wholesale Merchant	Husain Al Hatel	Manager of Shuqrah Service Office	782666545	Abyen	Shuqrah
14		Wholesale Merchant	Mohammed Qasem		774524456	Lahg	Ras Alarh
15	Retail Traders (Supermarkets, Restaurants)	Fresh Fishes Shop	Abdullah Alhydary	Owner/Manager		Aden	Almo'alla
16		Mobile Fish Retail Shop	Arsalan Ahmed	Owner/Manager		Aden	Almo'alla
17	Fisherpersons	Dockyard Fisheries Centre	Khaled Fadhl Gabal	Head of Fisherpersons	772425918	Aden	Almo'alla
18		Fisherperson	Nasser Haydarah	Mariner/Seafaring	771541721	Aden	Al-Buraiqa
19		Fisherperson	Wagdy Yaser	Owner/Manager	775404146	Aden	Al-Buraiqa

20		Fisherpersons	Adnan Hadi Naser	Owner/Manager	773209943	Abyen	Shuqrah
21	Fisherpersons' Associations	Gulf of Aden Fishery Association	Ahmed Rasheedy Awadh	Association President	770272816	Aden	Al-Buraiqa
22		Sirah District Fishery Association	Ali Abdulsalam	Association President		Aden	Sirah
23	Focus Group		Fisherpersons	Fisherperson		Aden	Al-Buraiqa
24	Focus Group		Youth	Youth			Al-Buraiqa
25	Focus Group		Women	Women			Al-Buraiqa

ANNEX 4. RESEARCH TOOLS

Five different discussion guides will be developed for the research, based on the target actors. As such, the document includes the following guides:

1. Discussion guide for organizations, chambers of commerce, and national/international non-governmental organizations
2. Discussion guide for actors of supporting functions
3. Discussion guide for value chain actors
4. Discussion guide for focus groups (women, youth)
5. Discussion guide for fisherpersons focus groups

DG1: DISCUSSION GUIDE FOR THE ORGANIZATIONS INVOLVED IN THE FISHERIES SECTOR: NON-GOVERNMENTAL ORGANIZATIONS, ASSOCIATIONS, CHAMBERS OF COMMERCE, OTHERS

Purpose

The main objective of this market systems assessment is to understand the overall market of the fisheries, the relative supporting functions and the rules/regulations governing the sector. The purpose is to identify opportunities for growth of the sector, analyse the constraints that hinder the enhanced performance of the sector and the potential interventions that would catalyse the growth of the sector.

General Information About the Organization/Interviewee

Association Profile	
Name of the Organization	
Region Covered	
Name of the Interviewee	
Position of the Interviewee & Department	

Address (Phone & Email)	

FOR NATIONAL GOVERNMENTAL AND NON-GOVERNMENTAL ORGANIZATIONS (LOCAL AND INTERNATIONAL)

1. Can you please provide an overview about your organization and the projects implemented or policies developed (in case of governmental organizations)? (Try to obtain information on the fisheries sector projects, regions covered, and latest projects that are relevant to the sector under focus.)
2. How would you describe the sector nowadays? What are the trends and factors influencing the sector nowadays and what efforts are being made to improve the sector and grow it (projects and strategies)?
3. What is the current impact of the war on the beneficiaries? What has changed? How is the organization helping to reduce intensity of crisis on beneficiaries?
4. What type of support and business development services exist for the sector? Are they sufficient? What additional services are required but not available to date?
5. What, in your opinion, are the opportunities that present potential for the fisheries sector? Who would be able to benefit from such opportunities and why?
6. What would be the major challenges hindering recovery and growth of the fisheries sector? In terms of investment, market information, labour, cost of inputs, access to markets?
7. If you were to highlight the lessons learnt from the projects, what would these be? What should be done to scale up the impact?
8. What should be done to modernize the sectors and further develop them? Probe for specific recommendations regarding:
    a. Technology integration
    b. Improving access to market information
    c. Facilitating access to finance

d. Workforce development

e. Access to new markets

DG2: DISCUSSION GUIDE FOR THE ACTORS PROVIDING SUPPORTING FUNCTIONS FOR VALUE CHAIN

Purpose

The main objective of this market systems assessment is to understand the overall market of the fisheries, the relative supporting functions and the rules/regulations governing the sector. The purpose is to identify opportunities for growth of the sector, analyse the constraints that hinder the enhanced performance of the sector and the potential interventions that would catalyse the growth of the sector.

General Information About the Organization/Interviewee

Institution Profile	
Name of the Institution	
Region Covered	
Name of the Interviewee	
Position of the Interviewee & Department	
Address (Phone & Email)	

FOR INSTITUTIONS, BANKS, RESEARCH CENTERS, QUALITY AUDITORS, LABS

1. Can you please provide an overview about your organization and the services you offer? (Try to obtain information on the different services as well as sectors and regions covered.)

2. Who is your clients? Who would qualify as client? (Probe for the type of clients whether companies or individuals, sectors in which they operate.)
3. What is the current impact of the war on your work? What has changed? How did it impact your clients?
4. What challenges do you face in your work? Probe for challenges for the institution and the clients as well
5. What do you think of the fisheries sector? Has your institution been involved in the sector? In what way? (If no, ask why.) Has it changed in the last couples of years and in what way?
6. What type of support and business development services exist for the sector? Are they sufficient in your opinion? What additional services are required but not available to date?
7. What, in your opinion, are the opportunities that present potential for the fisheries sector? Who would be able to benefit from such opportunities and why?
8. What would be the major challenges hindering recovery and growth of the fisheries sector? In terms of investment, market information, labour, cost of inputs, access to markets?
9. What should be done to entice sector actors to benefit from the opportunities and further grow? What role would you potentially play in benefiting from such opportunities? (Probe more on what would make them more engaged in the sector.)

DG3: DISCUSSION GUIDE FOR THE DIFFERENT MARKET ACTORS

Purpose

The main objective of this market systems assessment is to understand the overall market of the fisheries, the relative supporting functions and the rules/regulations governing the sector. The purpose is to identify opportunities for growth of the sector, analyse the constraints that hinder the enhanced performance of the sector and the potential interventions that would catalyse the growth of the sector.

General Information About the Organization/Interviewee

Association Profile	
Name of the Organization	
Region Covered	
Name of the Interviewee	
Position of the Interviewee & Department	
Address (Phone & Email)	

SAMPLE QUESTIONS FOR THE KEY ACTORS IN FISHERIES VALUE CHAIN

1. **General profiling of the actor (fisherperson, wholesaler, retailer, processor, exporter) as large/small/integrated/independent/etc.:**
    a. Type of actor
    b. Years in business
    c. Size of the business (number of workers/employees, boat size, area allocated)?
    d. Product range and quantity of production per season (good and bad years)
    e. Is this a full-time full year activity? What else does he/she do?
    f. Education, other income sources, assets, family resources

2. **What production technology/production model does he/she use?**
    a. Input sourcing: Where do they buy the material from? How Often? How much did it cost before and how much does it cost now? (Please try to get the contact of the input provider/machine operator,

fisherperson or wholesaler they buy from.)

b. How is the modality of work: How are fisherpersons working with wholesalers, how are wholesalers working with retailers, how are processors or exporters working with their fish provider?

   i. What are the conditions for buying?

   ii. What is the sourcing modality (minimum quantity, delivery, contractual, etc.)

   iii. What are the payment terms?

c. How much does the input constitute of the total cost? (Probe for estimated percentage.)

d. What is the cost breakdown in general? Which factor accounts for the higher percentage?

e. What is the main source of finance when needed? What other sources are available? How do they know of them?

f. What are the different challenges he/she faces? What are the Constraints to scaling up production and further growing?

3. **Sales strategy used?**

a. Who does he/she sell to? (Probe for all types of customers they sell to and the regions.) Who takes care of transport?

b. Is there a difference of price by variety/quality of product? What determines this exactly?

c. **For exporters:** who are your target clients in export markets? How have they changed? How have you identified such clients? What are the requirements to access target markets and clients?

For processors and exporters: What process do you have in place once the fish arrives at your premises? What kind of value added processes do you follow? (Check whether they freeze whole fish or cut the head and gut before freezing, or other.) What about canned or filleted fish? Do you engage in such value addition? Why or why not?

d. **Who are the competitors**? How does he/she differentiate themselves from competition?

e. When are price peaks and lows? What are the reasons for that? Who captures the highest profit in that?

f. What are cash terms of sale? Advanced payments from buyer, Cash, delayed payment w/firm price, consignment?

g. Are there lots of buyers/importers—how many in the region?

h. What happens to the unsold produce? How much is in percentage goes to waste? What could be potentially done to reduce the waste?

i. What are the key issues with regards to accessing and/or increasing sale (price) on the local and the export market?

j. **For processors: How much of your production is sold in local markets? In export markets? What are the main challenges hindering further expansion in the local markets? What should be done, in your opinion, to grow the local market?**

k. What different business practices exist among traders for buying and selling? What role

l. Where does he/she access information about the markets? Who provides such services?

m. Are they part of association or cooperative? If so, which one? If not, why?

4. Additionally for Processors/Exporters/Wholesalers:

a. What are the opportunities present for growth, in your opinion? Is there an unmet demand? Where are these present (local or export market)? Let them provide more details on such opportunities.

b. What would help them capture such opportunities? What type of services would they require to improve their performance and grow their businesses? (Probe for quality requirements, volume, role of the General Authority for Fisheries, others.)

c. Have they engaged in new product development? If so, what were such products introduced and how did they decide to work on such products? Who provided support?

a. Do they communicate to the fisherpersons on the market trends? Why or why not?

5. **Recruitment Practices for Processors and Exporters**
    a. How do they find workers? How do they choose them?
    b. How much do they pay? (Men, women?)
    c. What are the problems associated with labour? Is it easier to find now labour or harder? Why?
    d. What are challenges faced in hiring skilled workers?
6. **Ideas on upgrading.** What would help the business the most?
    a. Skilled labour (training of existing or recruiting new ones)
    b. Reduced cost of inputs
    c. Access to new markets
    d. Other
7. **Others: Have you received assistance from any organization? In what way?**

DG4: DISCUSSION GUIDE FOR THE FOCUS GROUP DISCUSSION WITH YOUTH AND WOMEN

Purpose

The main objective of this market systems assessment is to understand the overall market of the fisheries, the relative supporting functions and the rules/regulations governing the sector. The purpose is to identify opportunities for growth of the sector, analyse the constraints that hinder the enhanced performance of the sector and the potential interventions that would catalyse the growth of the sector.

1. How long have you been living in this region? How has it changed in the last ten years in your opinion?
2. What has changed since the beginning of the war? How has this affected the region and economy? Elaborate further please.
3. What are the livelihood opportunities present in the region? What are the sectors providing income opportunities?
4. What are the common jobs acquired by the youth/women in your region? Is it different from other regions? In what sense?

5. How many are currently working now?
    a. For those employed, how did you find the job? Where do you usually look for employment? How is the recruitment process nowadays?
    b. For those unemployed, what, in your opinion, are the challenges for accessing the labour market?
6. What percentage of the youth/women is working in the Fisheries sector?
    a. For those working, how did you start working in the sector? Is it rewarding? In what sense
    b. For those not working in sector, what the reasons for not working in this sector? What would make this sector more attractive to women/youth?
7. What are the different challenges you face these days? Any additional challenges in accessing employment?
    a. **For women:** What challenges do you face as women when accessing jobs? Are there jobs restricted for men only? Which ones are these?
    b. **For employed:** What are the challenges workers/employees face at work? (Probe for wages and wage gap, tasks, working hours, working conditions, overall treatment.)
8. What would be required to overcome such challenges?
9. Have you thought of starting your own business? If so, where has this reached? What additional support is required? If not, why not?
10. In a different world, what would you like to be? What would be your dream job? In which sector?

DG5: DISCUSSION GUIDE FOR THE FOCUS GROUP DISCUSSION WITH FISHERPERSONS

Purpose

The main objective of this market systems assessment is to understand the overall market of the fisheries, the relative supporting functions and the rules/regulations governing the sector. The purpose is to identify opportunities for growth of the sector, analyses the constraints that hinder the enhanced performance of the sector and the potential interventions that would catalyse the growth of the sector.

1. How long have you been living in this region? How has it changed in the last 10 years in your opinion?
2. Have you noticed any changes in fish populations, water quality, or other aspects? If so, how have these changes affected your livelihood?
3. Can you describe your typical fishing routine, day? How long is the fishing operation? What is the size of your boat? What tools and techniques you

use? How many people work with you during this trip? How have these changed over time, if at all?

4. Where do you usually source your inputs? Have you always sourced from these suppliers or changed? What factors do you take into consideration when sourcing these inputs? (Probe for fuel sourcing as well and prices.)
5. Have you face any issues with sourcing these inputs? If so, what are these issues? (Probe for cost, affordability, availability.)
6. What is the modality of payment how do you secure such payment? (Probe for the sources of finance.)
7. What are the sources of finance available? Which ones do you prefer the most? Why so?
8. Where do you sell your fish? Who are your clients you sell to? (Probe for wholesalers.) How do you identify your clients? Are you satisfied with sales? (Dig more into the relationship with suppliers.) Are there any challenges associated with sales? Elaborate more.
9. Are you a member of any fisherpersons' association? What triggered you to be part of it? If not, why not?
10. How do you see the role of the fisherperson's association these days? How could the role be improved? (Probe for changes in the role and what additional role should the association play.)
11. What are the biggest challenges you face in your work? (Probe for challenges in input supply, fishing activities, volume of fish catch, regulations, market access, competition, other.)
12. What kind of support or resources would help improve your fishing activities and livelihood? (Probe for access to finance, technology, capacity building, market access.)
13. Who would be the best support to overcome such challenges and stimulate growth of the sector? (Probe for the government, fisheries association, private sector, non-governmental organizations, etc.)

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