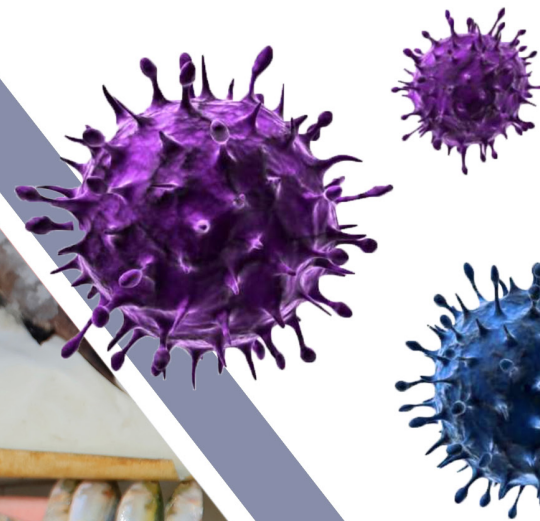




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# Fishery Value Chain

A Market Study with Potential COVID-19 Impact Analysis

Supporting Resilient Livelihoods and Food Security in Yemen:  
A Joint Programme

July 2020



Co-funded by the  
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# List of Acronyms

DPP	Development Plan for Poverty Reduction
ERRY	Enhanced Rural Resilience in Yemen
EU	European Union
FAO	Food and Agriculture Organization
FCU	Fisheries Cooperatives Union
GBV	Gender–Based Violence
KII	Key Informant Interview
IEC	Information, Education, and Communication Initiatives
MFI	Microfinance Institution
MFW	Ministry of Fishery Wealth
MSME	Micro, Small and Medium Enterprise
NGO	Non–Government Organization
SME	Small and Medium Enterprise
UNDP	United Nations Development Programme
USD	United States Dollar
VC	Value Chain
WTO	World Trade Organization
YER	Yemeni Riyal
YSMO	Yemen Standardization, Metrology & Quality Control Organization

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# FISHERY VALUE CHAIN



## INTRODUCTION

This value chain study looks at the market actors in eight districts in Abyan, Hajjah, Hodeidah, Lahj, and Taiz. The study objectives were to identify the current challenges and opportunities among the value chain actors in these targeted locations. The study is to inform Enhanced Rural Resilience in Yemen (ERRY II) programming and assist in identifying areas for improving the value chain. Data were collected via surveys, focus group discussions, and key informant interviews. A separate synthesis report describes the study methodology and sampling strategy. The study analysis started in December 2019 and with the Coronavirus (COVID-19) pandemic outbreak, opportunities were found to provide insight into the potential impact of the virus crisis on the sectors.

## BACKGROUND

There is an abundance of marine wealth along Yemen's long coasts and around its islands. Marine biologists consider the Arabian Sea to be a highly productive fishing ground, and the Red Sea is considered moderately productive. The Yemeni fishing industry is not yet very sophisticated or organized, with three-quarters of the fish production being caught by small boats and sold locally or regionally (Fanack, 2009).

The fishing industry in Yemen is one of four promising sectors with significant potential to achieve diversification in the country economy and in realizing job-creating pro-poor economic growth for the country's socio-economic development. The long coastline of 2,520 kilometres is endowed with diverse coastal habitats and harbours a rich marine resource wealth (UNDP, 2012).

Due to high productivity and a long fishing tradition, it is of major importance for the Yemeni economy. The sector is consistently identified as a key sector in the country's development, contributing to poverty reduction. Furthermore, after petroleum products, fishery exports constitute 15% of total export and are considered as a major source of employment, income and food security throughout the coastal zone. The fishing industry is dominated by small-scale enterprises which currently support the livelihoods of an estimated 83,400 small-scale and 583,600 of their household members, for a total of about 667,000 people. Yemen was classified as major regional fish producer, accounting more than 50% of fish production and exports across the Red Sea and Gulf of Aden (SUN MOPIC, 2019).

As per the Third Five-Year Development Plan for Poverty Reduction (DPPR) 2006–2010, the fisheries sector is considered as a critical source of employment in coastal communities and the Government has encouraged its expansion. Programmes were implemented to improve inadequate ports and fish landing infrastructure for a large and growing artisanal fisheries sector. The fishery sector provides jobs for more than half million people and 18% of coastal communities with a total population of 9.4 million. Therefore, the fishery sector is highly contributing to the Yemeni economy (Yemeni Reconstruction Plan, 2019).

The number of small has increased at an average rate of 7.5% over the past two decades, resulting in significant increases in fish production from the early 1990s to date. Artisanal currently operate in about 19,500 fishing boats and account for over 90% of total production, despite the presence of both licensed and illegal foreign (and national) trawlers in Yemeni waters.

The fishery sector experienced impressive growth from 2000 till 2005, when a decline started. Accordingly, a sharp decline in export growth was noticed despite increased sales level, due to drop in export prices. Similarly, the domestic market was in constant decline, as well as the average catch per fisher.

The fishery sector put Yemen on the top list of fish exporters for Gulf and global markets. Before the conflict, Yemen's fish exports reached 50 Asian, African, and European countries, of which 12 Arab countries represent 58% of the export mar-

ket. Before the crisis, (2000 to 2010) the total market value was USD 188 million. A major boom was witnessed 2013 to 2014, when the total market value of exports reached USD 289 and USD 170 million respectively. As a result of the conflict, the fishery export market value shrunk and reached USD 74 million in 2018 (Trading Economics, 2019).

Traditional fishers are an important productive segment contributing to Yemen economy where they account for 79% of total fish production. Fish production has witnessed a great development during past years, increasing from 1000 tonnes in 1990 to 142,000 tonnes in 2001 and then jumping to 256,000 tonnes in 2004. However, in 2005 and 2006 it decreased to 239,000 tonnes and 230,000 tonnes respectively and 200,000 tonnes during 2013. As a result of the conflict, dramatic declines in production were witnessed after 2014 and 2017, levelling out at 50,000 tonnes (SUN, 2019).

Associations and cooperatives have a big influence in the fishery industry. Fishers Cooperative Union (FCU) and Ministry of Fishery Wealth (MFW) have had a generally poor relationship. Cooperatives believe that MFW does not protect the interests of small by not enforcing fishery law and regulations, leading to unsustainable over-exploitation of the resource base. MFW believes that avoid paying taxes and under-report catch and has implied that cooperatives should be closed. However, recent confidence-building measures, such as joint MFW/FCU study tours, have started to lay the foundation for dispute resolution and improved relationships. It is reported that the Ministry of Social Affairs is facing difficulties in enforcing the Cooperative Law due to budgetary constraints, while the FCU lacks resources for auditing cooperative accounts, as mandated, and is thus unable to recommend the closure of financially non-compliant cooperatives.

The current crisis has been impacting the fishing industry, adding more financial and technical burdens upon actors working at the chain. As per MFW (2019), the total loss was estimated at USD 3.1 billion, while the number of whom were killed is 133. Furthermore, 36,000 have lost their income while 204 fishing boats have been damaged.



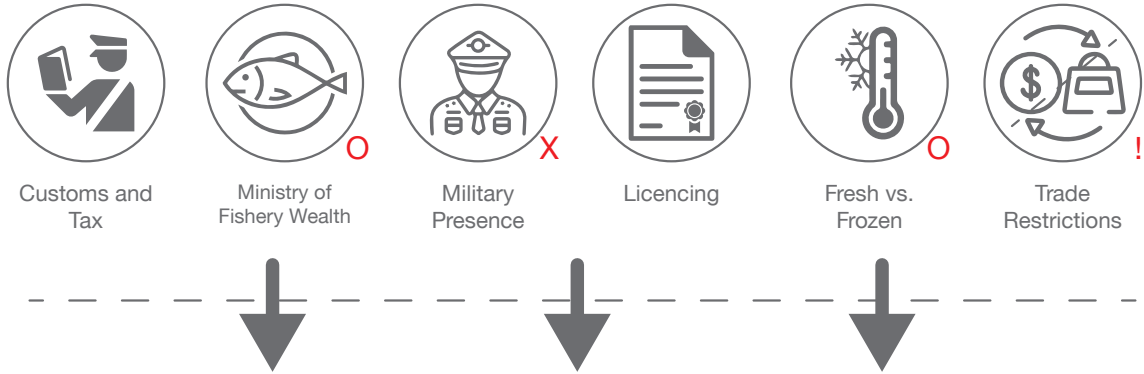
# Fishery Value Chain Map

## Fishery Sector Value Chain Map

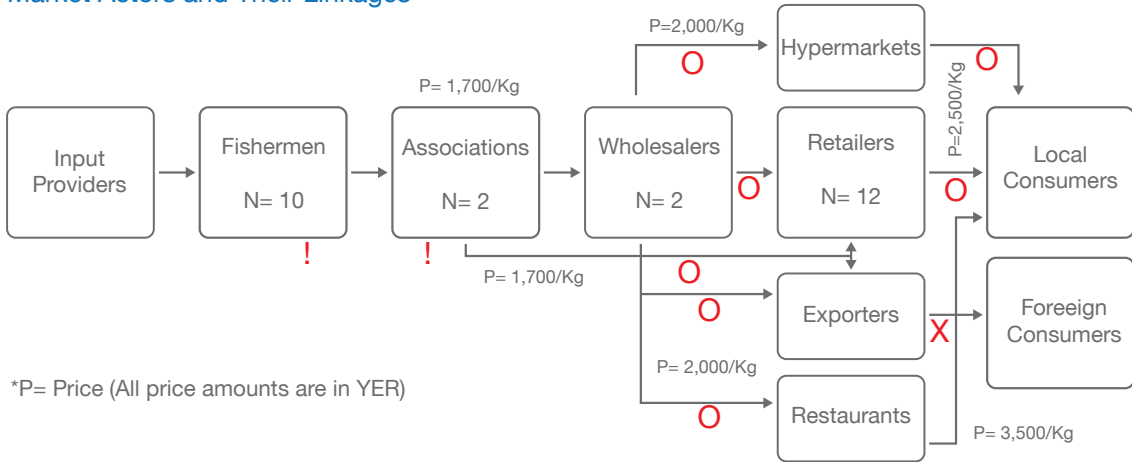
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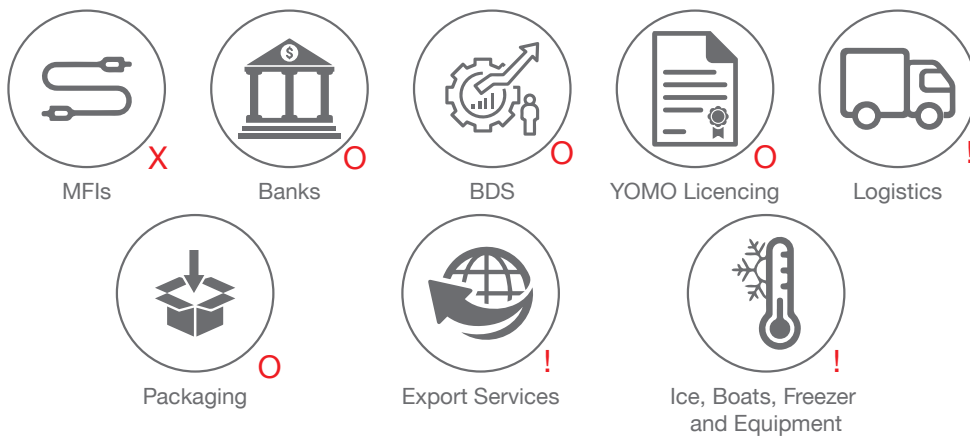
Institutions, Rules, Norms and Trends



### Market Actors and Their Linkages



### Key Infrastructure, Inputs and Market Support Services



# Value Chain Actors

## Fishers

Small boats called “Hoori” with outboard engines are used for single-day inshore fishing trips with around two fishers on board, who go limited distances near the shore and catch mostly small fish. Larger Hooris are used for offshore fishing for trips of up to one week and a crew of up to six people. Similarly, “Sanboogs”, which is a larger version of Hoori with inboard engine and a capacity for 5 tonnes of iced fish and 20 crew members, are used for up to 10-days fishing trips. Inshore fishing provides fishers with smaller fish and less quantities than offshore fishing does with the use of more sophisticated equipment. Landing back at the auction hall, either sell their catch directly to retailers at auction halls, at fish markets or to fishery associations that in turn distribute between different actors.

## Fishery Associations

These are authorities that take care of auctioning at the landing or auction sites operated by them and charge a fee of 3% to –5% for payment into a ‘social fund’. Fish delivered by fishers are bid on and sold to the highest bidders, whether wholesalers, retailers, or export company owners. The fishery associations also determine the quantities to be sold locally and internationally. Auctioneers can fix prices of fish based on quantity landed, its size and the way it was caught and handled. They also consider the prevailing price from competitors and other criteria. Fish are sold by weight, string, or unit. Other roles of fishery associations include financial support as they provide fishers with loans to buy boats and equipment, as well as taking care of maintenance. They also pay fishers on behalf of retailers who purchase on credit and pay to associations after products are sold.

## Wholesalers

Wholesalers have refrigerated vans on which they store fish they buy from fishery associations and distribute to other wholesalers and retailers outside the district or to export companies which export products to the foreign market, or they export products themselves directly outside the country after freezing and packaging. They also provide restaurants in different cities, especially those in non-coastal areas, according to their needs of fresh or frozen fish. A profit of around 8% of total cost is usually gained by wholesalers.

## Export Companies

These are huge companies which handle freezing, packaging, branding, and storing fishery products, after purchasing them from fishery associations or wholesalers to export them outside the country. Exported products need to be approved as meeting quality standards before exporting.

## Retailers

Whether big or small and working from a shop or as street vendor, retailers are the direct interactors with the final consumer and sell in small quantities. Retailers buy stock from wholesalers or fishing associations and sell their products in the fish market directly to consumers after adding a considerably good profit margin – around 30%.

## Restaurants

Restaurants procure stock from wholesalers in the domestic market and sell fish directly to customers after being cooked or as per their requests. In return, they charge an additional 40% approximately on price of fish sold.

## Consumer

The consumer is the final beneficiary in the value chain and is the one who consumes the products.

# Market Environment

The Ministry of Fishery Wealth (MFW), along with fishery associations, determines how much fish is to be exported and how much is to be kept for local consumption. MFW has stated that Small and Medium Enterprises (SMEs) escape paying tax and taking advantage of the country’s fragile situation. However, entrepreneurs indicated that high tax is imposed, reaching 20% for corporate tax and 5% as sales tax. This prevents new entrepreneurs from entering a market as the fish market also depends on seasons and times of the year, especially during monsoons when production is low and profits are limited. Given the fluctuating currency exchange rates and the increase in product prices, customers’ purchasing power has been affected and, as a result, sales of fish have been reduced.

# Key Infrastructure, Inputs and Market Support Services

Microfinance Institutions (MFIs) and banks provide loans to fishers to purchase new equipment and increase production. However, these loans are associated with high interest rates and many borrowers are unable to repay them. MFIs and banks need to support players in the fishery market chain can contribute to the utilization of such rich resourc-

es. Non-Governmental Organizations (NGOs) provide chain players with needed equipment and serve in training them on better handling of the catch during fishing trips. They also provide financial support which helps entrepreneurs start business from scratch.

## SWOT Analysis



### STRENGTHS

- Fish in the sea is available in massive quantities and many varieties.
- Fishing skills can be learned by oneself through experience.
- Availability of a large willing-to-work workforce.
- Source for livelihood and income for around 9 million people.
- A source of food and nutritional security.
- Contributes 15% of total exports.



### WEAKNESSES

- Lack of capital and expensive fishing equipment.
- Untrained labour force.
- Market is supply-driven and actors are unable to meet demand.
- Bad handling of products on boats due to lack of cooling and storage equipment.
- Strong dependency on seasons.
- Insufficiency and high cost of sophisticated technology and equipment.
- Lack of appropriate hygienic conditions.
- Inadequacy of existing auction halls.
- Frequency of accidents due to loss of power as small boats do not have a spare engine or sailing rig.
- High probability of catching fire on board due to outboard engines and carrying large amounts of spare fuel.



### OPPORTUNITIES

- Availability of fishery associations who market fishermen's catches and balance exports with imports.
- Availability of loans and facilitation in heavy equipment purchases (credit terms) for fishermen.
- Provision of services near markets such as ice making, fuel refilling and boat maintenance as well as storage and cooling services.
- Employment opportunities for a large population.
- Investment in value added products including canned fishery products which are ready for consumption.



### THREATS

- Climate change or monsoon and migratory patterns of some fish.
- Competition with large-scale commercial fisheries and canned products.
- Weak purchasing power of customers due to increasing inflation rates.
- High transportation costs and weak transportation networks.
- Low number of businesses and authorities offering apprenticeship.
- Lack of enforced diving and fishing regulations.
- Lack of procedures to control fish quality.
- Overfishing of some species and pollution of the waters.



## Demographics Data

Around half of the workers in the fishery sector including suppliers, retailers and wholesalers were between 25 and 34 years old. Around three-fourths of producers were between 35 to 44 years and less than a quarter of them were younger, aged 15 to 24 years. Only 9% of total respondents were above 45 years of age.

The role of women in the value chain is not satisfying. Likewise, Internally Displaced Persons (IDPs) do not work as producers. Although they form 38% of total respondents, they were all found to be retailers and street sellers.

Getting involved in the profession at an early age and acquiring skills from parents, most workers in the fishery industry find it unnecessary to continue studying as demonstrated by the percentage of them who are illiterate (39%), could only read and write (19%) and those who dropped out of school at elementary level (19%). This totals 72% of respondents which means that only a quarter of workers in this industry finished school and only 9% pursued further studies. Another reason behind the low rate of literacy among workers in this sector is the limited financial capacity of their families who need them to provide income for the family rather than spending on their education.

In the fish market, most respondents (38%) were retailers, 26% were fishery associations referred to as producers and suppliers; 6% were wholesalers; Brokers, distributors, transporters and exporters were represented by 3% each. 93% of all respondents were owners of the business and all were the heads of their households with 66% of them having up to 10 dependents, 25% having between 10 and 20 dependents, and 6% reaching up to 30 dependents.

Fish is considered the main and only source of income to most actors in the chain, excluding fishery associations that offer services and sell goods other than fish such as ice, fuel, fishing tools, and spare parts and also provide boat maintenance services. Depending on fish as the only source of income is a high-risk livelihood activity since supply of fish is seasonal and is highly affected by weather changes. It is necessary that wholesalers and retailers in this industry are trained on other substitute professions that they can practice during slack seasons, so that they can guarantee having a consistent source of income.

Training is a less applicable concept in the fishery industry. Only 13% of the respondents received vocational training, 75% of whom on fishery and the rest on trading. However, 52% of the respondents learned the skills from their parents whom they used to join on fishing trips or as street vendors. The other half acquired skills by themselves through fishing and selling experiences. The learning duration varied among respondents, ranging from a few months to more than a year. Regardless of the leaning source, skills gained were found to be useful as indicated by all respondents. As in any other industry, working in the fishing sector requires more than just fishing skills, especially those working in sales. Based on key informant interviews (KIIs), there are some authorities who provide training on management, marketing, and financing to workers in the fishery sector, yet those services have not reached the respondents to this survey.

In terms of geographic coverage, fishery products are consumed throughout the entire country and a good proportion is exported to foreign markets. Retailers usually sell at the village and district levels; wholesalers and suppliers expand to the regional level and beyond. Most sellers are street vendors or have kiosks and exchange products with other actors in the fish market.

## Inventories, Sales and Competitiveness

Yemeni waters are rich in varieties of fish, some of which are available throughout the year while others are seasonal and can only be found during specific months of the year. The former type registers higher sales with Bagha (Indian mackerel), Thamad (Yellowfin Tuna) and Jadb being the most highly sold types of fish in the targeted districts.



**Table 1. Average Monthly Products, Stock and Sales (Whole Market)**

Product	Product Price	Current Stock	Units Sold Per Month	Sales Earnings /Month (YER)
Baghal (Indian Mackerel)		0	50,269 (Fish)	4,21,153
Thamad (Yellowfin Tuna)		442	6.9 (Tonne)	6,650,192
Jadb		0	2,850 (Fish)	329,166

In terms of inventory, fish cannot be stored unless frozen, so only big sellers can afford having inventories and among those surveyed in the targeted districts, big wholesalers had more than 1000 units in stock.

More than half of the respondents reported medium sales levels while the rest found sales level high and satisfactory. The highest sales level registered among respondents was YER 16 million (USD 32,000) in return for selling 34 tonnes of Indian mackerel during a one-month period.

It is noteworthy that fish prices vary dramatically from one place to another. This is due to their passage through the value chain. The more actors fish passes through, the higher the price. Although associations are the dominant chain actor, they operate at low margins. Wholesalers also add a similar profit margin. Retailers and restaurants get the biggest slice of the pie after fishers until the product is sold to the customer for double the price asked. The gross margin percentage of actors is 100% for fishers, 5% for associations, 8% for wholesalers and 30% and 41% for retailers and restaurants, respectively (World Bank, 2009).

**Table 2: Monthly Sales Distribution Per Governorate**

Product	Governorate		
	Hodeida	Abyan	Lahj
Baghal (Indian Mackerel)	19,823 Fish	30,150 Fish	296 Fish
Thamad (Yellowfin Tuna)	0.6 Tonne	19.5 Tonne	0.5 Fish
Jadb	2,850 Fish		

Competitiveness was found moderate in some areas and stiffer in places where many sellers exist and where similar products are sold. Not only does competition arise from availability of similar products, but also from value-added products like canned fishery products which are ready for

consumption. None of the sellers surveyed was monopolizing the market but a few had only one competitor.

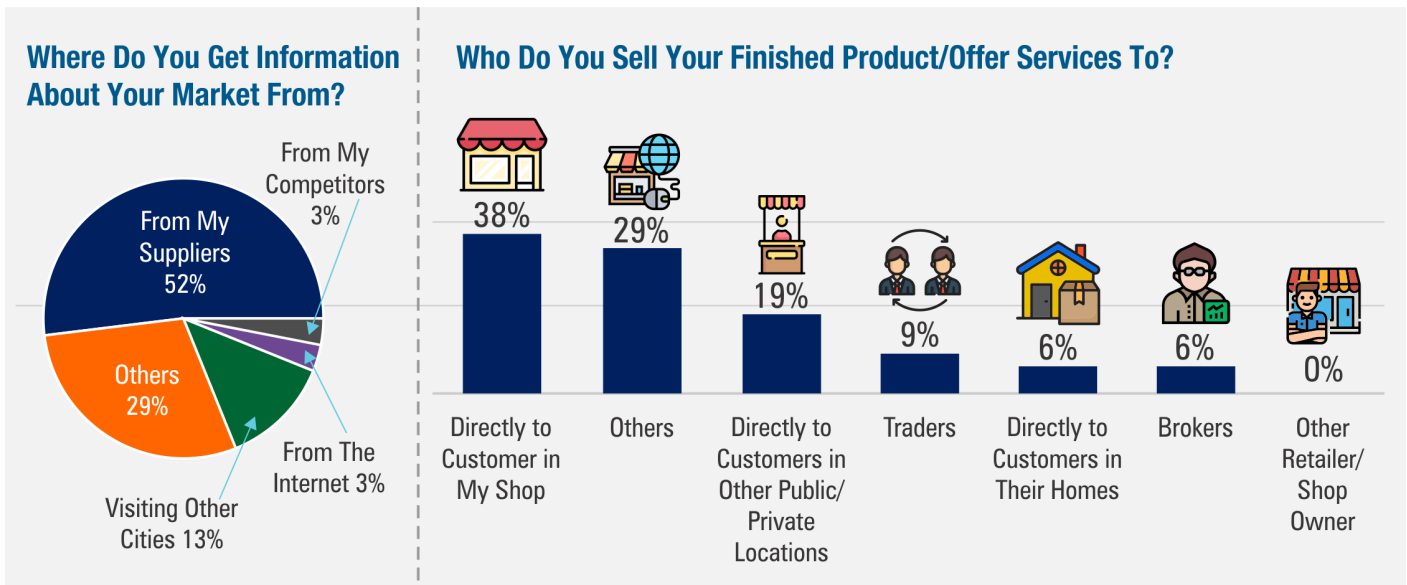
**Table 3: Market Potentia**

Product	Governate	District	Units Sold Per Month	Gender Distribution	
				Male	Female
Baghal (Indian Mackerel)	Hodeida	AlZuhrah	19,823	100%	
	Abyan	Khanfar	30,150	100%	
		Sarar	–	100%	
	Lahj	Almusaymeer	296	100%	
Thamad (Yellowfin Tuna)	Hodeida	AlZuhrah	0.6 tonne	100%	
	Abyan	Khanfar	14 tonnes	100%	
		Sarar	5.5 tonnes	100%	
	Lahj	Almusaymeer	0.5 tonne	100%	
Jadb	Hodeida	AlZuhrah	2,850	100%	
	Abyan	Khanfar	–	100%	
		Sarar	–	100%	
	Lahj	Almusaymeer	–	100%	

**Sales Model**

Because the fish value chain is a supply-driven bulk business and its actors are unconscious of consumer needs, they do not know how to respond to market demand (World Bank, 2009). This can be shown from the high percentage

of actors depending on suppliers (52%) to get information about the market, rather than depending on customers. Others, however, relied on other sources such as the market where they interact with other sellers or competitors (32%), visits to other cities (13%) and the internet (3%).



When it comes to selling their products, sell their catch at the auction hall to retailers or to fishery associations. The latter sell to wholesalers and retailers who sell products to customers in the market, whether through street vendors or

shops, or to brokers who deliver products to customers in private or public locations or even to their homes.

**Table 4: Product Demand**

Product	Governate	District	Demanded Quantity
Baghal (Indian Mackerel)	Hodeida	AlZuhrah	1,170
	Abyan	Khanfar	1,000
		Sarar	–
	Lahj	Almusaymeer	120
Thamad (Yellowfin Tuna)	Hodeida	AlZuhrah	810
	Abyan	Khanfar	990
		Sarar	3,000
	Lahj	Almusaymeer	100
Jadb	Hodeida	AlZuhrah	1,075
	Abyan	Khanfar	–
		Sarar	–
	Lahj	Almusaymeer	–

### Inputs and Production Base

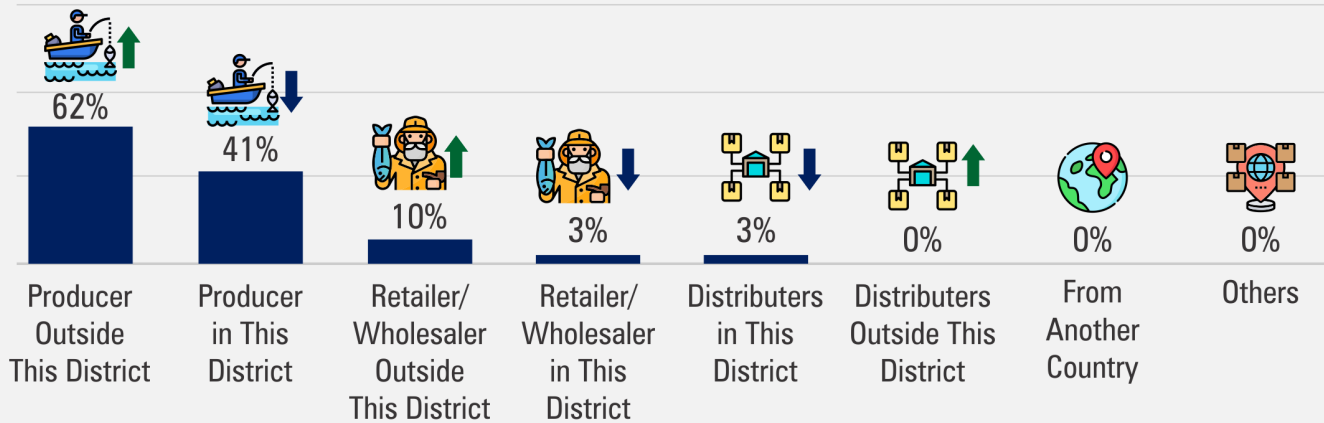
For producers, raw materials needed are the essential tools and equipment for fishing such as boats, fishing rods and nets, bait, and ice boxes. Such materials are mostly provided by fishery associations or suppliers who sell to on credit terms due to their inability to afford the high price of fishing equipment such as engines and nets whose prices have increased from YER 600,000 to YER 1,200,000 (USD 1,200 to USD 2,400) and from YER 200,000 to YER 500,000 or YER 600,000 (USD 400 to USD 1,000 or 1,2000) respectively during the past few years (Norwegian Refugee Council, n.d).

Fishery associations procure their raw materials from producers outside and inside the district. Nevertheless, to other actors, raw materials are fish which they procure from producers, retailers and wholesalers in the same district, mostly in coastal areas or from outside the district, in districts where there is no sea. They also need inputs such as refrigerated vans for wholesalers and iceboxes for retailers which are usually procured from outside the district. Overall, 72% of respondents procure raw materials from outside the district, whereas 47% of them depend on sellers in the district. Market actors in Hodeidah and Lahj were satisfied with their suppliers unlike those in Abyan who complained about the insufficiency of traders and poor quality of fishing equipment as stated by 13% and 10% of respondents, respectively.

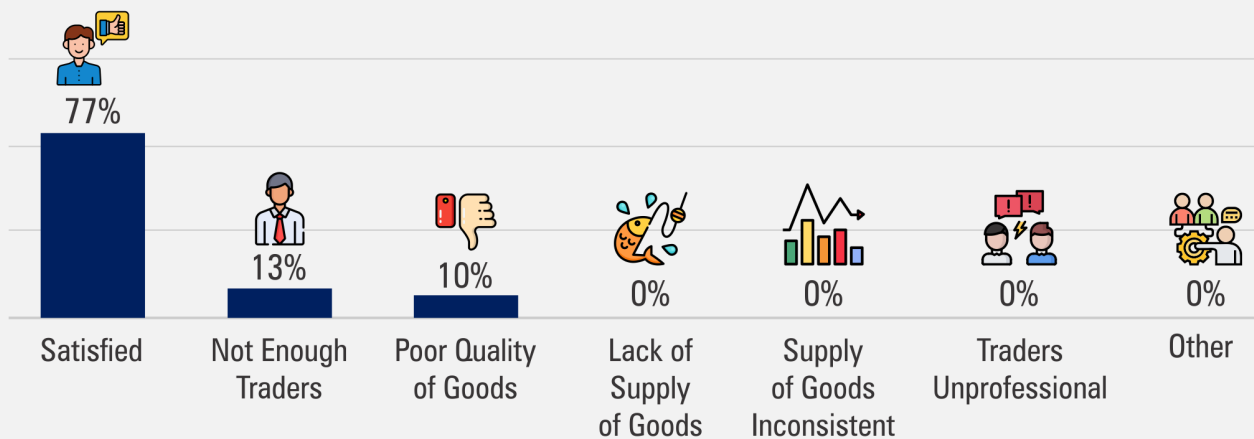
Since the fish chain features short lead times, given that the most important quality feature in fish is freshness, purchasing stock is daily for small sellers or retailers except for suppliers and wholesalers who freeze fish so that it lasts longer. 56% of respondents reported daily purchase orders, 16% made orders every few days, 8% ordered weekly, and another 8% every few weeks. As for fishers who procure durable equipment, orders are made every few months or once a year.



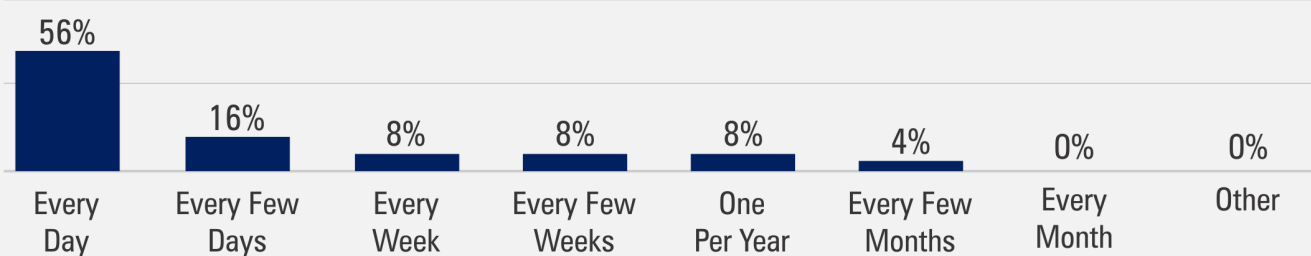
### Where Do You Procure Your Raw Goods or Raw Materials From?



### How Satisfied Are You With Supplier/Wholesaler?



### How Often Do You Purchase Stock or Raw Materials?





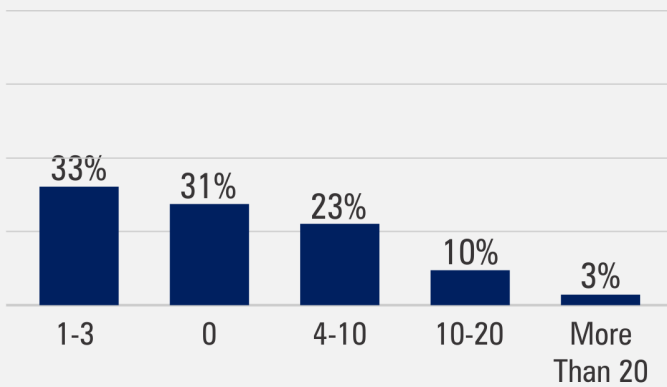
## Business Manpower

More than half a million people were employed in the fishing industry before the war in Yemen began in 2015. Sadly, at least 334 fishers have been reported killed or injured since then, and two fishing depots and 35 boats were reported damaged or destroyed by airstrikes, shelling and sea mines in 2018 (NRC, n.d). These are indicators and some of the factors behind the decrease in employment rate in the fishing sector.

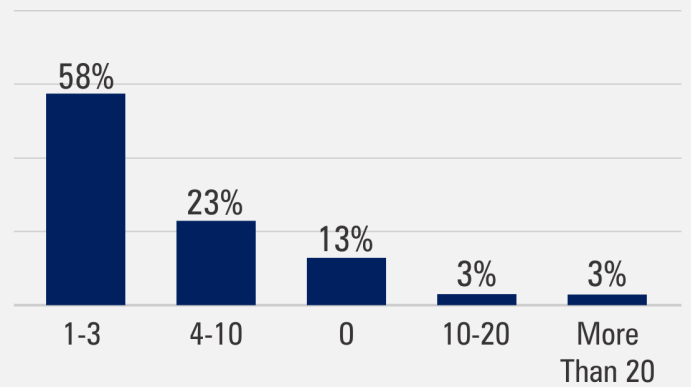
Large producers hire more than 20 permanent and seasonal employees. Smaller ones have fewer employees, depending on the size of their fishing boats. On larger boats like Sanboogs and larger Hooris, additional domestic hired labour

is utilized especially when more sophisticated equipment is available. Unlike other actors, none of the wholesalers and distributors works on their own as they need 1 to 3 employees to handle different tasks like procuring, storing, and driving. Some retailers and suppliers hire more than 3 and up to 10 employees. Regardless of their job, half of the respondents had 1 to 3 permanent employees, whereas one third of them had seasonal ones. Those having 4 to 10 employees, whether permanent or seasonal, represent 23% of respondents, 31% have zero seasonal employees and only 13% have more than 10. It can be concluded from these figures that actors have more permanent employees but hire equivalent numbers of temporary employees during peak seasons.

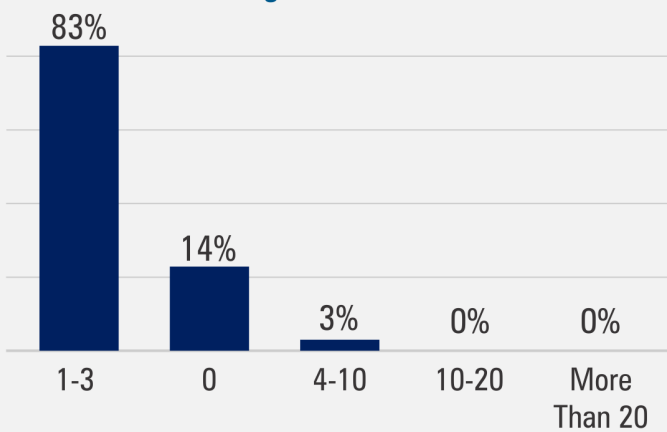
How Many Seasonal Employees Do You Have?



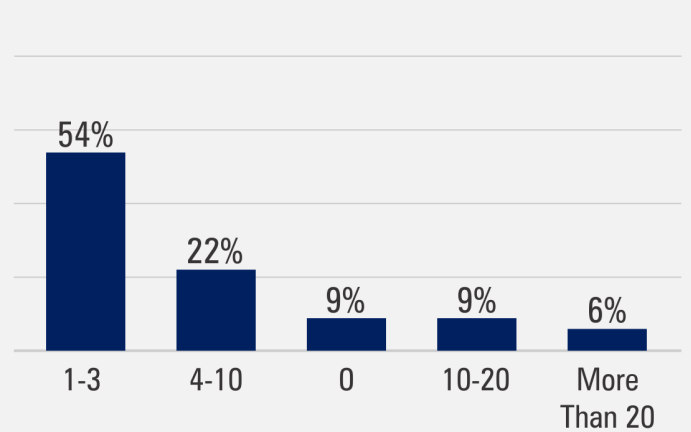
How Many Permanent Employees Do You Have?



How Many of Your Employees Have Completed Vocational Training?



How Many Does This Business Train Apprentices?



It is believed that production is highly influenced by crew numbers; however, more hired workers means more ex-

penditure or smaller profit share for the boat owner.

Hence, it is also crucial to be productive so the crew is equipped with needed skills (World Bank, 2003).

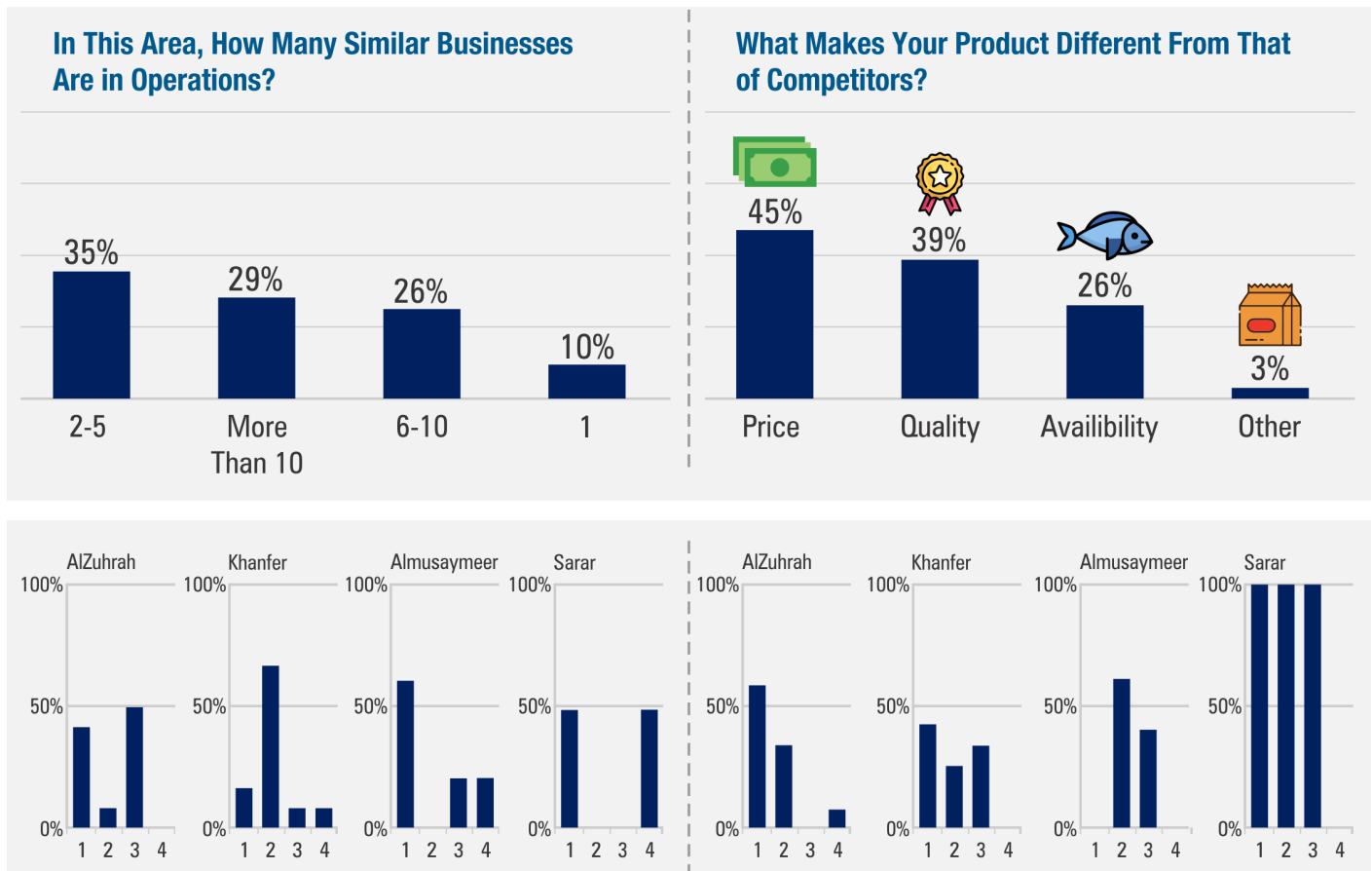
Whether permanent or seasonal, zero employees received training as per 83% of responses, 14% had 1 to 3 trained employees and only 3% had up to 10 employees who had received training. The reason behind such low figures in training is the lack of apprenticeship programmes offered by actors as only half of them approved training apprentices, yet half of which train only up to 3 employees.

### Competition and Product Differentiation

Competition is stiff, yet product differentiation is not highly considered as chain actors focus on volume rather than differentiation and value adding, which imposes a key challenge of making the fish chain more client-oriented and market-responsive (World Bank, 2009).

29% of the respondents, mainly in Khanfar, indicated having more than 10 similar operators in their area and 26%, mostly in AlZuhrah, had less but more than 6 competitors. The other

half experienced less intense competition with 10% having only one rival. Strategies followed by sellers to differentiate their products were mostly focused on price (45%) (this strategy was not focused upon in Lahj), followed by quality (39%), and then availability (26%) which is not at all considered in Hodeidah. If the market remains supply-driven, customers' needs will not be satisfied. It can be observed that only a few actors focus on availability of demanded products, and only 3% pay attention to the importance of value-adding by offering services. Quality in fish means freshness; therefore, the faster the seller can sell his stock, the more profits he gains. But in places where competition is high, focusing on quality as a competitive advantage is not enough as sellers must provide more than rivals to convince consumers to purchase from them. This is practically done by offering cheaper prices, despite having opportunities of value adding where fish can be cleaned, cut and packaged.



Although none of the 72% of respondents who claimed they were unable to compete with rivals in the market stated lack

of skilled labour as a main reason behind their incompetence, 87% of them still had faith in the ability of training to

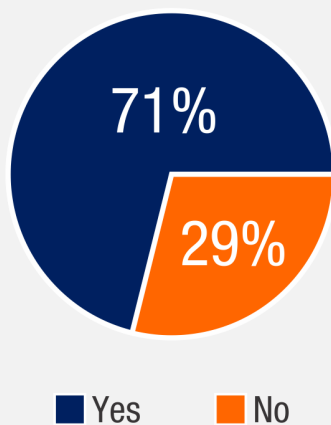
enhance performance. The main skills found to be needed to be learned apart from fishing techniques were marketing (70%), followed by customer service (52%), and business and financial management (35%) to help manage costs and sell products at competitive prices. Many also identified their need to learn finance so that they can access financial sources and learn more about getting loans to purchase heavy equipment. Suppliers and retailers, on the other hand, complained about insufficient quantities and distant markets as reasons for their inability to compete and believed learning related skills will help them overcome these problems.

It can be noticed from the challenges stated by chain actors that their focus is on quantity not quality and that capacity to them is financial and that without money and big quantities they would not be able to compete. This makes the need for training on skills like marketing and customer service urgent to make chain actors understand the real reasons that make them unable to compete, as well as the methods and strategies that will enhance their sales and improve their performance. These include value-adding and differentiation strategies that will result in making the market customer-oriented and enable small sellers to compete despite variances in financial capacities between them and their rivals.

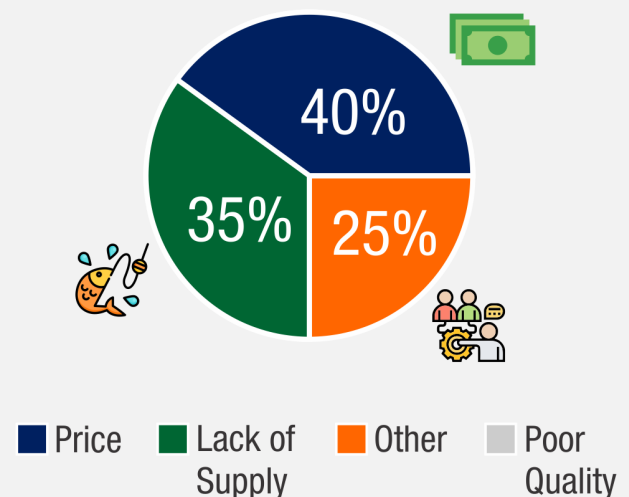
### Consumer Demand

Depending on market information from suppliers without considering consumer needs, 71% of actors were unable to meet customer demand, but from their point of view, that was not the reason behind their inability. For example, 40% of the actors believed inability to control prices was the reason they are unable to meet customer demand, and this comes as a result of the high uncontrollable costs incurred through the chain until the product is delivered to the customer. 25% blamed the lack of capital and 35% complained about the lack of supply which may also mean the lack of supply of certain demanded species and not necessarily in available quantities. There was no complaint about quality and that all were satisfied with the quality of fish they receive, which may be a good sign. However, this might also mean that customers are unaware of quality standards and are satisfied with what is found to be acceptable. 29% indicated they have always met demand represented producers and retailers. This might be because they sell whatever they receive, regardless of what is needed and leave the market when they are out of stock.

**Were You Ever Unable to Meet the Demand of Your Current or Potential Customers for Your Highest Sales Level?**



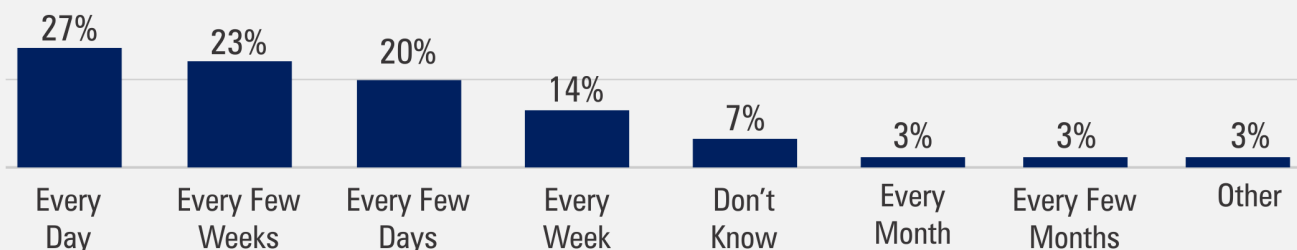
**If So, Why?**



Small boats go into the sea without knowing what types or how much fish they are going to have by the end of the trip. Therefore, to them there is no demand concern and their

catch will be sold anyway. However, the uncertainty level should be lower for retailers who can procure their stock from different suppliers looking for various types of fish

## How Often Do You Purchase Stock or Raw Materials?



based on customers' needs. This makes some of them able to meet demand. However, some retailers sell only one type of fish and leave when what on hand is sold out. As a result, they do not find themselves unable to meet demand at any time.

Time periods during which demand was not met varied, ranging from: daily (27%); less than a week; (20%); weekly (14%); every few weeks (23%); and, monthly (3%). Only 6% of respondents managed constantly meeting demand for longer periods of time. 7% of them, however, were not certain. The majority were unable to meet demand frequently, which raises the need for interventions like providing information on market demand and best spots for fishing, and building capacities, as well as empowering them economically and providing them with the needed tools that would enable them to increase their catch and provide the market with more products.

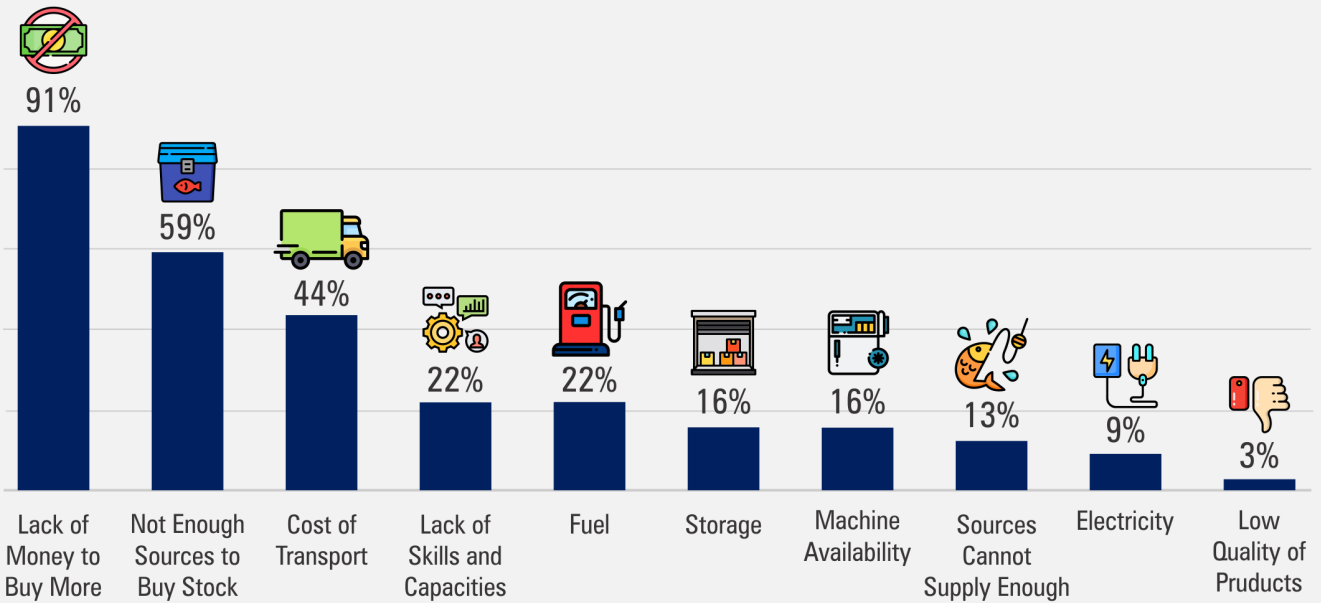
When asked about the main challenges faced to meet customer demand, 91% of actors agreed that lack of money

to buy more is one of the challenges, which was believed to be the main challenge from the perspective of 66% of respondents. Other challenges agreed on by a huge number of actors are the high cost of transportation and fuel (66%), insufficient sources to buy stock (59%) and lack of skills and capacities (22%). Other challenges were related to storage, machine availability and lack of supply as well as electricity.

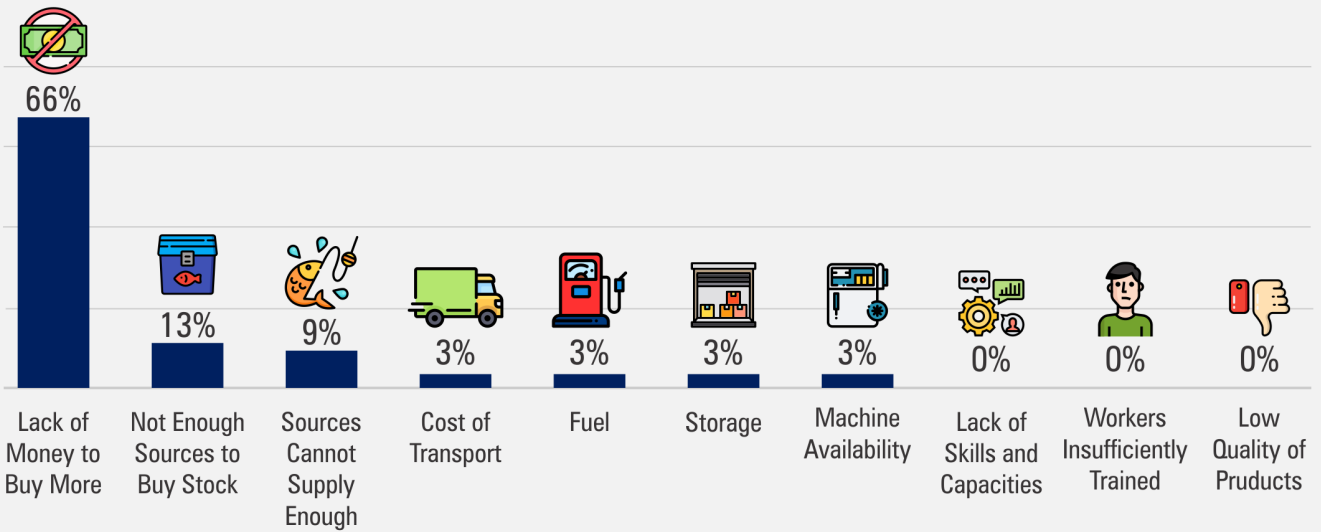
Besides the lack of money challenge, lack of supply or transportation and fuel costs were considered a main challenge to 21% and 6% of respondents, respectively. A large number of difficulties are encountered by coastal communities, such as rising costs for fishing gear and fuel which exasperate their helpless circumstances, restrictions forced by security forces and the dangers of mines and vicious confrontations which avoid from getting to pivotal fishing zones and the seasonality of fishing that makes numerous families lose their source of food and income during the off season (European Union, 2019).



### What Are the Main Challenges Do You Face in Meeting Customer Demand?



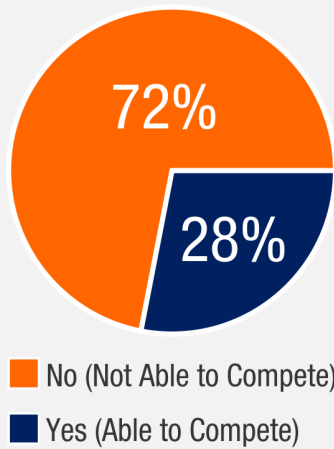
### What is the MAIN Reason Why You Can't Satisfy Demand?



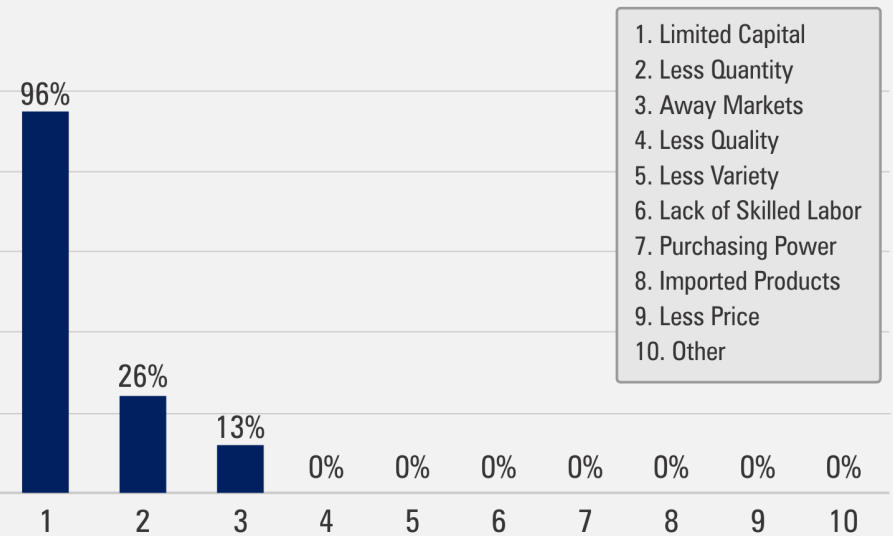
Compared to other challenges, the lack of money was found to be the main challenge, mostly in Hodeidah followed by Abyan then Lahj, because products in the fishery industry are exchanged for cash payments, except for fishers who can buy materials from fishery associations on credit. This means that in order to buy more, retailers, wholesalers and distributors need a sufficient amount of capital that can be used before profits are gained.



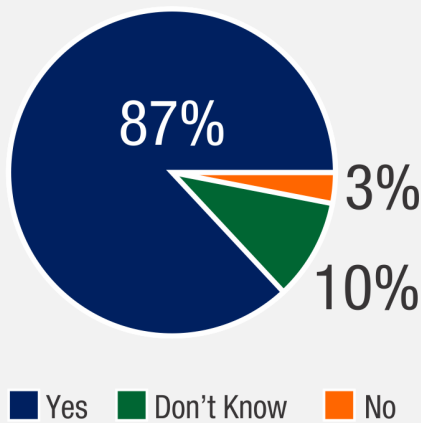
**Do You Feel That You are Able to Compete With Other Businesses Selling Similar Goods?**



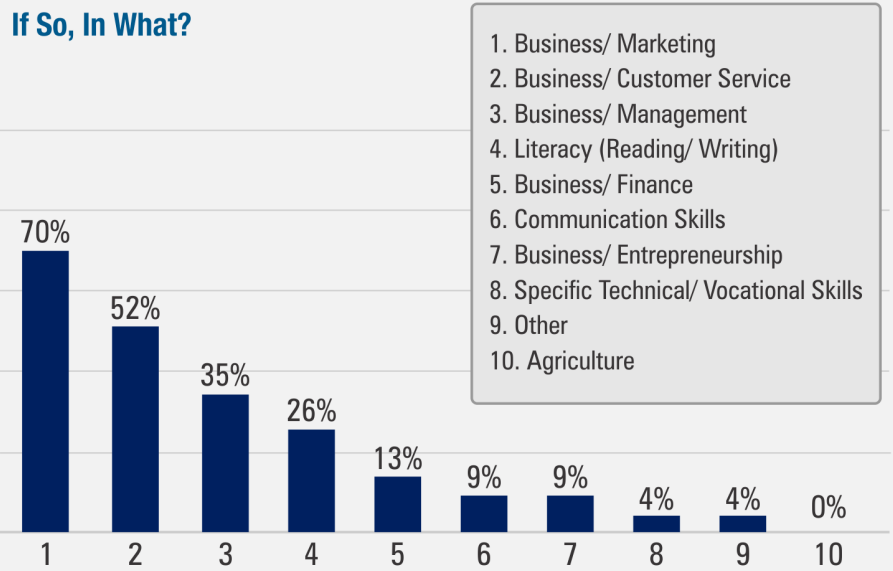
**If Not, What are the Main Reasons Why You are Unable to Compete?**



**Do You Think Receiving Training Would Make You More Able to Compete?**



**If So, In What?**



All respondents have intentions to expand their businesses but lack the money needed to do so. Even with some of them working on their own, all actors in the chain identified a need to hire employees shall they expand, but the numbers of employees to be hired varied depending on the current business size and the extent of expansion intended. 57% of the actors believed having less than three employees would be sufficient, while 30% identified their need for up to 10 employees and only 13% from Abyan needed 10 or more. These figures show that most actors' operations in

the fishery chain are limited and that those with big shares are very few.

Chain actors in Abyan, especially fishers, fishery associations and retailers, saw a crucial need for newly hired employees to receive skills training, whether they worked as fishers, sellers or service providers. Wholesalers, on the other hand, found it unnecessary to train workers. Some fishers and retailers had similar thoughts to those of wholesalers as they (26%) thought that the lack of qualified labour is not a limitation to the growth of the value chain. Three-fourths of the

respondents, nevertheless, were certain of the negative effect of unqualified labour on the chain growth and therefore were convinced that training employees is essential, except for 6% of them who despite realizing that unqualified labour forms a bottleneck for chain growth, still found no need for training new employees.

It is noticeable that advertisements are not used by any of the respondents as a marketing strategy for their products. Although big wholesalers who have branded packaged fish products need to advertise them to increase sales, none of the respondents of this study relied on this method. 76% of the chain actors used word-of-mouth to create customer awareness of their products. As the interaction between sellers and customers usually occurs in fish markets where many sellers are available, each seller invites customers to buy from his stall or kiosk using his personal skills to convince customers to choose him over other sellers. 12% represented by brokers visit customers directly and by making relationships with them, they can somehow guarantee

their loyalty. 12%, mostly wholesalers, have sales agents who market products in the region, depending on personal relations as well. However, the last two methods are not followed in Hodeidah, where they merely rely on word-of-mouth marketing strategy.

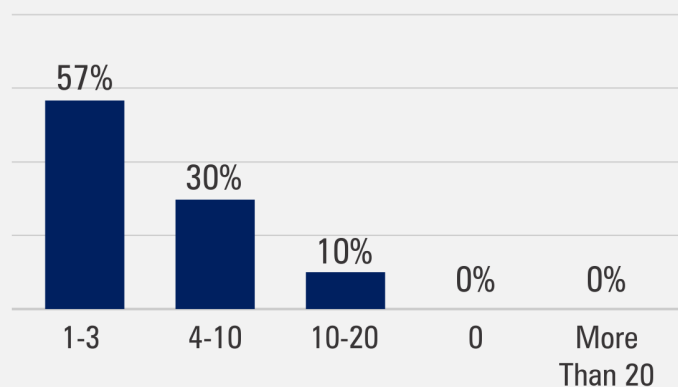
### Business Finance

The most common source for fishery entrepreneurs and business start-up is one's capital/personal saving, as supported by 53% of surveyed actors. The personal savings were commonly found in Abyan, Hodeidah, and Lahj. Utilization of family loans was mostly found in Abyan, Hodeidah, and Lahj governorates, as stated by 20%. 17% have various finance sources. Notably, actors in Abyan rated accessing loans as first priority, as indicated by 34% of respondents. Findings reveal that 66% of business actors have no access to loans at all, in particular retailers and wholesalers. The main contributors in financing business start-ups are parents, friends and other parties. The microfinance organizations rank at the bottom of the list.

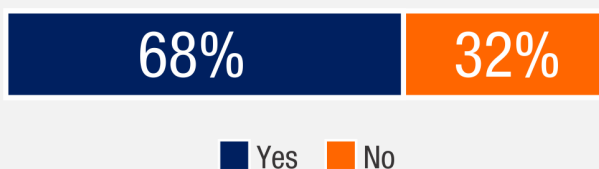
#### Do You Plan to Expand Your Business in the Next Few Years?



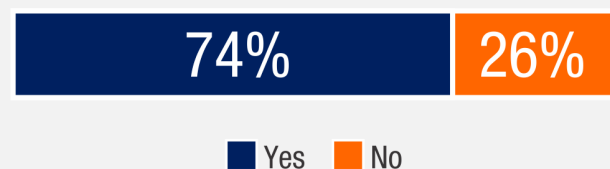
#### How Many New Workers Will You Need to Hire in Order to Expand?



#### Will These Workers Need Any Special Training or Skills?



#### Do You Think the Lack of Qualified Labour is a Limitation for Growth in the Value Chain?

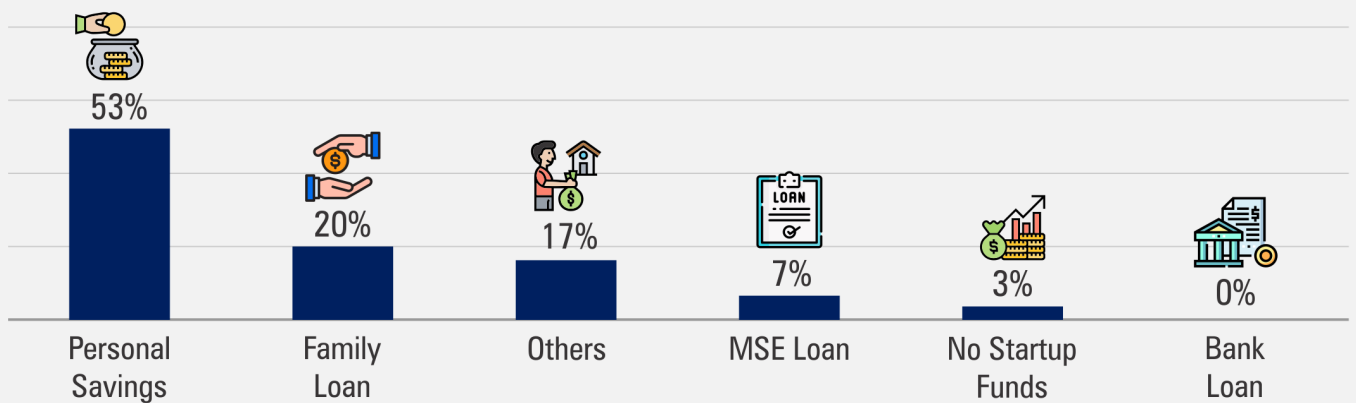


The fishery association plays an essential and exceptional role in supporting actors in the industry. They provide inputs on credit to the fishers. Fishers also take bank loans to bridge the 3-month period that exporters take to pay for the product (World Bank, 2009).

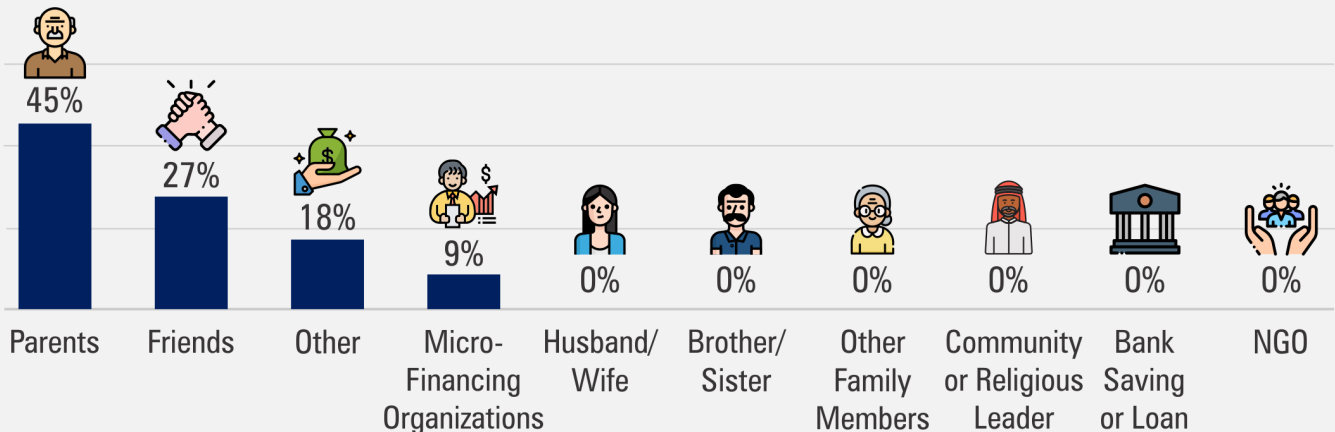
Concerning the need for loans, 93% of respondents, foremost this in Hodeidah, declared their intent to utilize loan opportunities to expand businesses and penetrate the market, in particular increasing the volume of production and sales. The actors in Abyan are planning to acquire loans in order to procure essential fishery machines, equipment and stock in order to strengthen their market position. The study revealed that an average of YER 1,500,000 is the requested amount for starting business over the chain, including storage, selling inputs, retailers and marketing. 94% agree with this statement and only 6% do not. Field visit reports evaluate the role of government as weak in terms of financing support to fishery entrepreneurs and SMEs.



### How Did You Find the Money to Start This Business

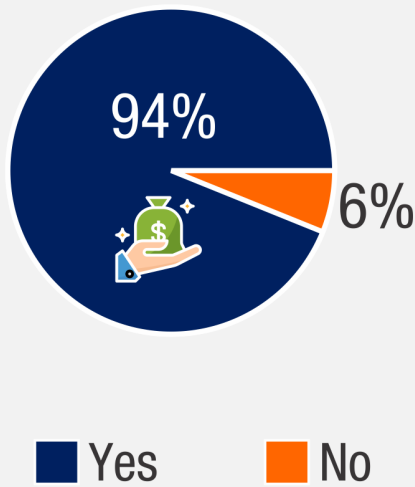


### What Are the Main Challenges Do You Face in Meeting Customer Demand?

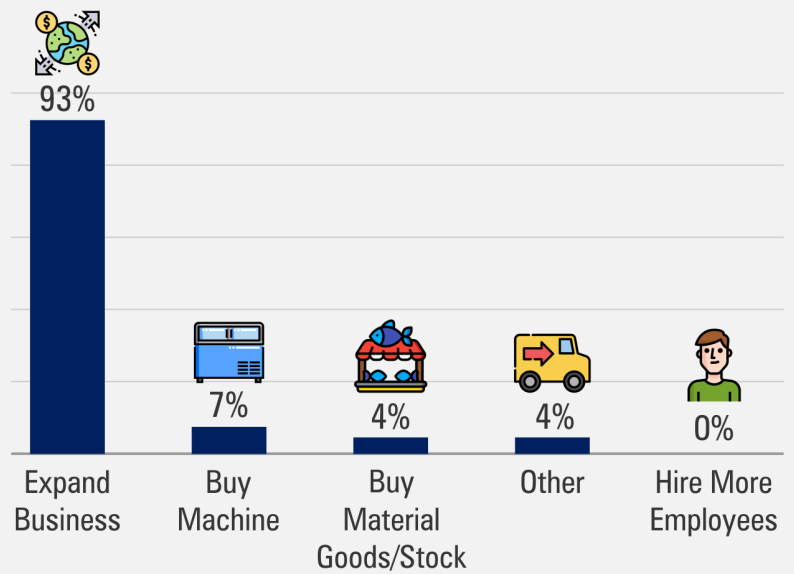




### Do You Currently Need a Loan?



### If You Were to Take Out a Loan, What Would You Use the Money For?

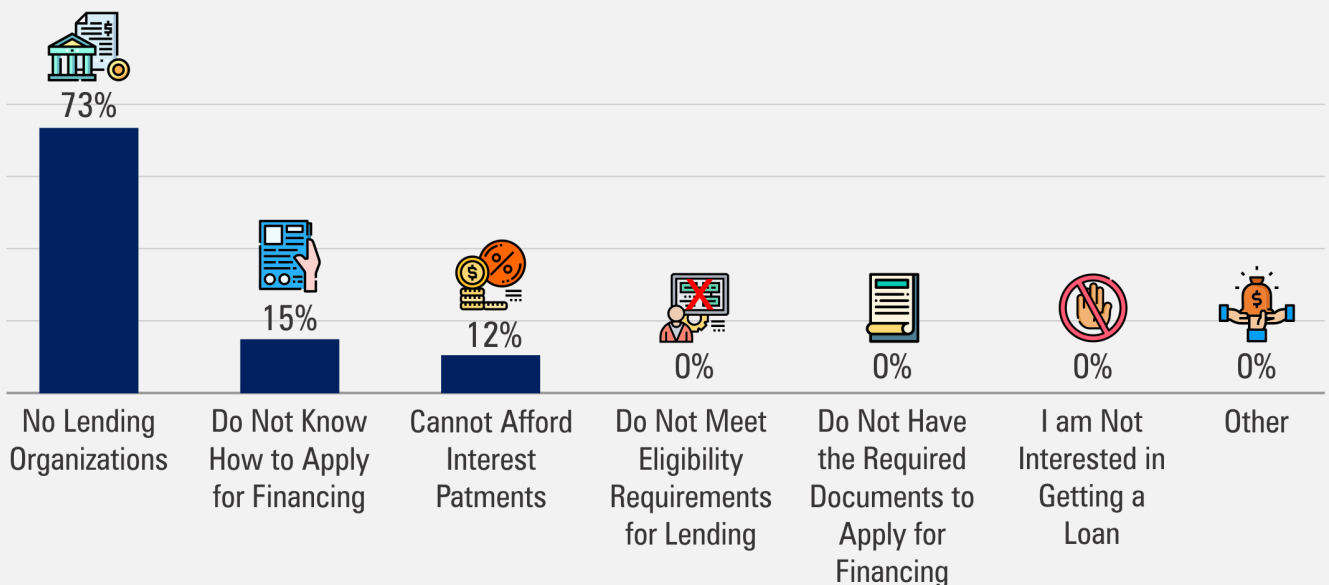


### Obstacles Concerning Business Finance

The main challenge preventing business actors to access finance refers to unavailability of lending organization as supported by 73% of actors. As per Social Development Fund (2019), there are economic and grant support programmes targeting entrepreneurs in Yemen; however, affected people are not aware of or are not interested in those opportunities, particularly women. Entrepreneurs encounter difficulties to access finance due to lack of awareness con-

cerning application process and eligibility requirements, in Abyan, Hodeidah, and Lahj. As per a study conducted by the World Bank (2014), the challenges of finance access are related to high interest rate, which adds burdens on the borrowers. Apart from that, religious perceptions about lending are still common; people consider lending as usury (Reba) and against the religion. Accordingly, the community resists involvement in such practices.

### What Are the Obstacles That You Encounter to Receiving Financing for This Business?



### **Business Partnership and Joint Venture**

The Yemen Fisheries Support Programme (2010) highlighted developing integrated partnerships of all fishery players in the value chain as an essential element to enhance industry growth opportunities such as export and improve the efficiency and effectiveness of the value chain.

The study found that entrepreneurs and SMEs in the fishery industry are mostly a family-oriented business. Therefore, actors are not keen on business partnerships, as indicated by 84% of respondents. Apart from that, actors are not fully aware of joint venture or partnership mechanisms and have no intention of collaborating or being open for mutual agreements. This was highlighted among wholesalers, retailers, and brokers. Few suppliers were found in strong partnerships; mainly fishers and fishery associations because of their strong connection and cooperation. The existing partnership and business ventures have resulted in mutual benefits and learning successes; therefore, they are considered successful experiences.

Both fishers and fishery associations do maintain good relationship with each other in order to facilitate production and sales flow. They were found in collaboration on marketing support and maintenance services. However, retailers were found with minimum supplier service support and inadequate product quantities as stated in the study.

### **Cooperative Union**

The fishery cooperative is a mandate in the fishery industry, mainly in mitigating fishery related sectoral risks. Their role is to contribute in enhancing the traditional fishing and fishery infrastructure, delivering services to fishers, enriching production and marketing, and developing of coastal communities with essential fishery livelihood support (SUN MOPIC, 2019).

The actors stated there is no governing cooperative union in the business chain, as stated by 80% of surveyed actors while 20% confirmed that cooperatives are not available in the industry.

As fishery cooperative unions are main actors in the chain, the number has increased to 178 cooperatives in 2017, and the number of fishers affiliated to fish cooperatives also increased to 76,000. Broadly, 89% of actors are not registered members of the unions, this is contradictory to the growing number of those associations. It indicates lack of awareness among value chain actors and trust towards those coopera-

tives. In addition, retailers and wholesaler complained about interest or benefits requested by cooperatives when performing the purchasing process and sales on credit.

### **Business Relations with Local Authorities**

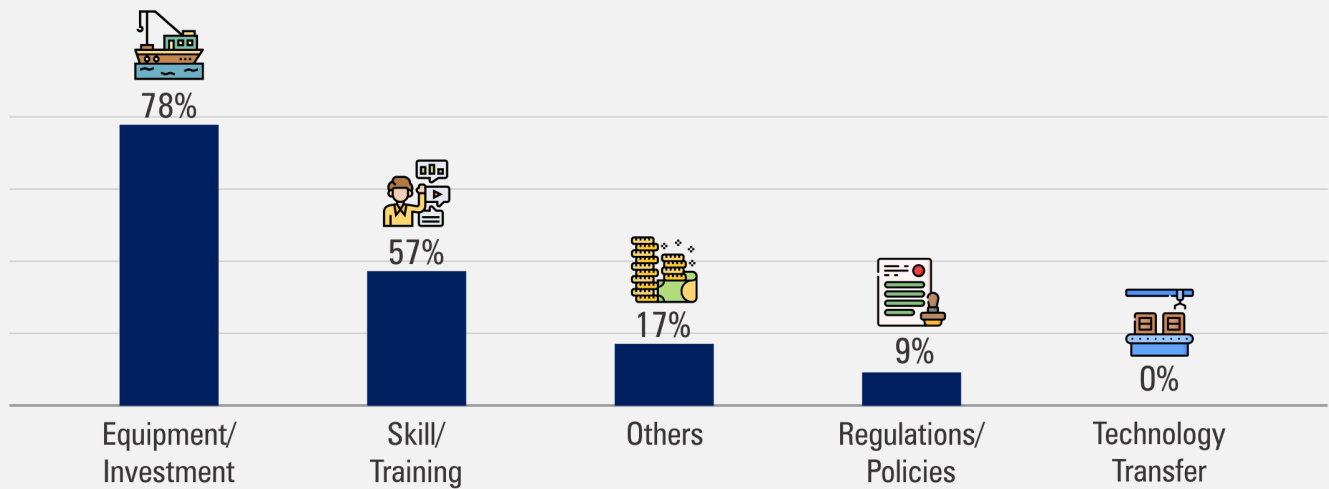
Authorities are one of the key parties influencing the fishery sector. It is important for business actors to promote efficient partnership with national authorities, fishery bodies and international organizations to address the issues and guide informed policy decision-making (UNDP, 2012).

The study found that entrepreneurs and SMEs have inadequate relation with authorities. Restricted level of communication channel led to an inadequate information flow between the government line offices, fishery authorities and business actors as stated by 68% of respondents. Authorities should collaborate with entrepreneurs in alleviating regulation and investment difficulties such as work permit and license, monitor prices and support partnership among business players.

The actors highlighted that authorities pay less attention to affected people and opportunities such as exporting and microfinancing. It was reported that authorities lack capacity of harmonizing and enhancing data collection, analysis and dissemination mechanisms at the fishery sectoral and national levels. Consequently, authorities have less representation in humanitarian response in the form of identifying needs of conflict affected people in the fishery sector. Most of priority geographical areas lag behind in terms of presence of lending organizations, resulting in absence of economic empowerment and employment programmes targeting highly vulnerable people, in particular women. Therefore, authorities and other organizations should endeavour to support affected people with economic opportunities to establish their business and involve in livelihood interventions.



### Potential Solution – Supply



### Supply Challenges and Solutions

Long-term interpersonal relationships are important in the fish industry in Yemen. Buyers and sellers know each other, for an average between 10 and 20 years. Yet, cooperation is limited. There is no exchange of information on supply or demand parameters (quantity, quality, packaging). However, on occasions when fish is left over at the auction site wholesalers and/or associations will begin to contact one another (World Bank, 2009).

The study indicated the scarcity of funding or sufficient capital as the main challenge facing entrepreneurs, restricting them to get sufficient supply quantities. In addition, retailers and wholesalers lack access to trade credit, and are found obliged to afford interest for fishery associations for a maximum of two days. Secondly, there is lack of fish supply due to restriction on production. Thirdly, the bad roads and their closure from time to time add burdens for all chain actors in terms of increasing fuel consumption, checkpoints with forcible payments, van damages, increased taxes and customs as indicated by all actors. Longer road transport leads to regular damages on the supplied products and increase in lead time.

The study stated possible solutions in order to tackle the mentioned issues. Firstly, enhancing the investment and equipment is the first priority as stated by 78% of respondents. Hence, microfinance support is one key area to address regarding supply gaps, so that fishers can procure boats of good quality. Fishery associations are advised to be flexible in credit payment and to increase the supply

ceiling for retailers. Secondly, the authorities and technical line ministers shall monitor fuel prices and support entrepreneurs to access fuel at affordable prices. All actors shed light on the importance of conducting community and government initiatives to open main commercial roads in subdistricts, districts and governorates to ease obstacles in reaching targeted destinations. Thirdly, training is a good opportunity for the entrepreneurs to acquire skills in product supplies, maintaining product quality while transporting and providing sales services, as well as capacity building for due diligence in order to meet finance access criteria. Having flexible regulations, taxation and customs system is proposed to be one of the solutions considering youth and women entrepreneurs in the dire situation of Yemen.

### Production Challenges and Solutions

At first, as the fish value chain is a supply driven bulk business, the chain actors are unaware of consumer expectations, preferences and prices, so they fail to fulfil market demand. Fishers focus on production volume rather than product differentiation and value adding. Therefore, the key challenge is to make the fish chain more client-oriented and market responsive.

There are a number of causes attached to low production volume, including damages of fishery production infrastructure and the siege of fishers. As per Sun Yemen (2019), 37,000 fishers lost their work, others abandoned their coastal villages when prevented to pursue fishing activities. In addition, 14 fish landing sites were destroyed, 230 fishing boats were damaged, and 4,586 boats are out of service.

Furthermore, fishers face different safety and security challenges due to the military presence at sea. Recently, fishers are forced to abide to certain working hours and fishing in particular areas as a result of the security checkpoints. They are unable to do long trips (above 30 miles) due to increased engine prices.

Other challenges are auction halls far from the fishing points and low demand due to the increased prices.

The study suggests solutions to be considered in tackling associated challenges as follows:

- Provision of essential fishery boats, advanced tools and efficient maintenance services. This includes capital facilitation in coordination with microfinance support.
- Strengthen a favourable investment climate through providing a secure and safe working environment so that fishers are safe and secure. This will lead to high production volume and the market will be supplied efficiently.
- Provision of capacity-building of the fishers associations, investment in value adding and focusing on product differentiation rather than quantity focus; and implementation of an effective monitoring and regulating system.

### **Storage Challenges and Solutions**

Actors lack efficient storage facilities mainly for cold storage units at landing centres. The existing boats and Hooris are traditionally designed with limited storage capacity. Loss of fish is experienced by due to poor storage facilities exposed to high temperature, leading to fish damage and insect attacks. The highest maintenance costs are owing to the high electricity and diesel consumption to maintain bulk cold storage units.

The study proposes improving and establishing pre-processing facilities, such as ice-making, gear handling and repair, as well as cold storage units at the landing centres. Possible Public-Private partnerships and linkages shall be identified in this regard with specific support from the fishery associations.

As wholesalers and producers receive services including storage, it is essential to support other actors such as retailers and brokers in efficient storage techniques, maintenance services and other supplementary services in order to effectively build and maintain relationship with the clients and suppliers. According to KIs, fishery associations have

to engage in capacitating programmes for actors across the chain, to enhance storage facilities as per acceptable standards along with financial support.

### **Distribution Challenges and Solutions**

Significant business value is lost due to the lack of market orientation of the chain actors. Entire species of fish are wasted because no market is developed for them, and export prices are consistently decreasing in recent years due to the faulty distribution system (UNDP, 2012).

The study revealed that the distribution chain experiences major effects from increased fuel prices. The actors attached the increased prices to black market trade, absence of monitoring and control of fuel prices, and political disputes within the country. It consequently increased the burden upon distributors, leading to increased prices and major effects on fish quality. As the main roads are closed by conflicting parties, distribution has to take longer alternative routes which impose threats and challenges on them in terms of forcing them to pay money to the checkpoints, taxes and customs, irresponsible inspection, wasting and delaying delivery time, and facing other risks. Furthermore, alternative roads need special transportation vehicles and trucks.

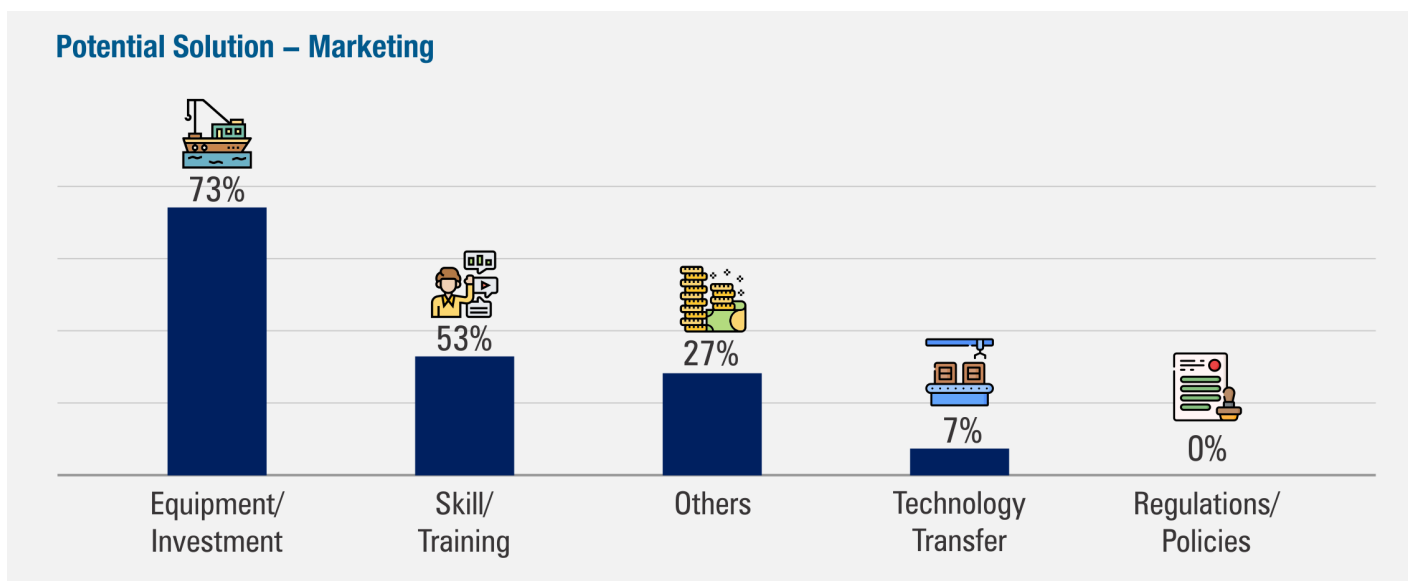
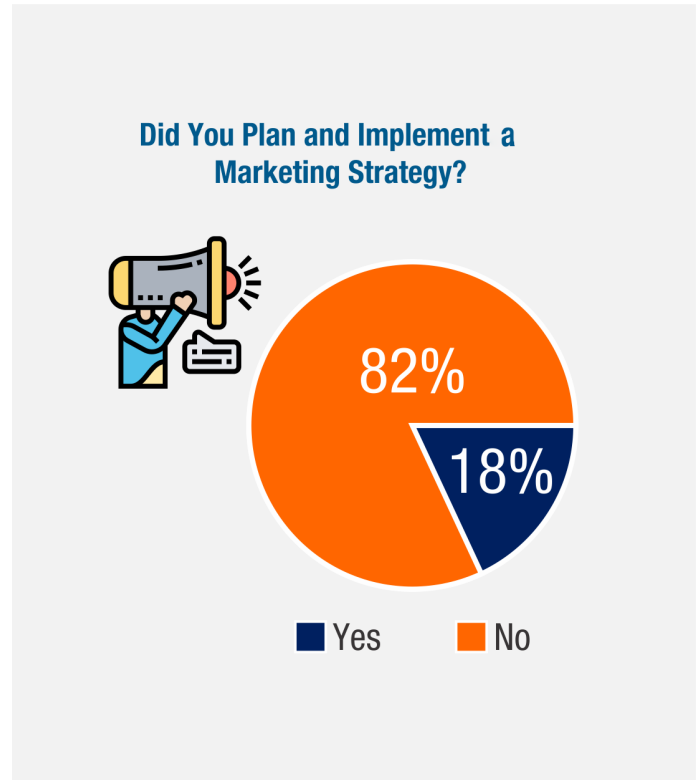
The study revealed that an alternative distribution channel and efficient use of available technology could be used as a tool for communication. A large number of brokers in distribution of fish products increases the cost of the product without adding any physical value to it. Reducing the number can also help in eliminating information blocks from the chain and can also reduce the time spent in delivery of products, and this will lead to faster circulation of money. On the other hand, the distributors could be supported financially to acquire microfinance to meet the distribution costs, including fuel and truck rent. Government institutions need to play a role in opening the roads and being flexible in taxation and customs, especially for the highly affected entrepreneurs.

### **Marketing Challenges and Solutions**

Information on market and business services are vital for the efficiency of the value chain. There is no information made available to the producers on marketing and business opportunities. Producers have no data on consumer preferences and never estimate demands as stated by consumer survey. Despite the role of fishers associations in market-

ing the fishery products at the landing sites, there is lack of awareness of quality aspects among fishers. The study also indicates the marketing techniques that entrepreneurs lack are related to lack of marketing personnel, skills, and competencies, as well as difficulty to access business capital or acquiring equipment such as vans. The study found that 82% of actors never plan or execute marketing strategies for their businesses.

Entrepreneurs in the fishery industry lack essential equipment and investment to tackle marketing constraints and bottlenecks as stated by 73% of respondents. The findings show that entrepreneurs cannot hire marketing staff due to lack of finance. Therefore, microfinance should be a priority for interventions in the fishery industry. Apart from that, a portion of investment should be assigned to increase the capacity of marketing strategy planning and execution.



The study highlighted that skills and training is the second priority as indicated by 53% of respondents. Entrepreneurs and fishery enterprises need to receive essential marketing training on customer demand and value-added services. Pricing strategy must be formulated based on market demand, the segment that is targeted, cost of the production, value added to the product and brand image. After receiving such training, entrepreneurs, especially youth, would be more able to gain livelihood opportunities and SMEs will effectively compete in the market.

### Consumption Challenges and Solutions

The dramatic increase in fishery product price is the first obstacle affecting consumption. Accordingly, the business actors rated consumption as low. As per FAO (2017), people in Yemen are affected by food insecurity and they are exposed to malnutrition. As the fishery business relies on production volume size rather than customer focused market, consumers tend to resist purchasing the products as their preferences are not considered. Consumers indicated that

the lack of purchasing power is one of the key drivers of the decline in sales.

As the fishers encounter difficulties to provide larger quantities as a result of the conflict effects in terms of boat damages, poor landing infrastructure, military presence and other effects on fishers livelihoods, fish supply witnesses a dramatic decrease. The study highlighted training packages as the highest priority to overcome production bottlenecks, as stated by 79% of respondents, followed by the provision of long-term investment in marketing studies and research as supported by 71% of respondents.

Furthermore, the study proposes conducting consumer awareness and promoting knowledge about consumption of safe food, through appropriate information, education, and communication initiatives (IEC). In 2019, the Food Security and Agriculture Cluster– Yemen emphasized the Pooled Fund Strategy to conduct livelihood programmes including microfinance and technical consultancy targeting the fishery entrepreneurs to support people with malnutrition in a conflict setting. Fish product utilization encompasses all food safety and quality aspects of nutrition; its sub-dimensions are therefore related to health, including the sanitary conditions across the entire food chain.

### **Chain Relations**

In the fishery industry context in Yemen, interpersonal business relations are key to business performance due to the effective relationship between suppliers and clients through the chain, as supported by 62% of respondents. This could be seen highlighted among fishers and suppliers as well. So, the actors know each other well and form stable, long-term relationships. Some supply chains are impersonal as in case of traders buying from fishers through auction, then selling to wholesalers through another auction. Contrary wise, 36% of business actors do not have a long-term standing relationship with suppliers and clients. Consequently, that indicates there is less effective coordination between market demand and production planning. Also, there is no trade credit between producers, traders and retailers.

Only 79% of actors do not receive any kind of service support from suppliers. The relation is significantly lower among retailers who lack service support and have poor relations with supplier and client. As per data above, the retailers face issues in terms of receiving differentiated quality and market support. On the other hand, the wholesalers are the most

benefitted party from supplier services, mainly in marketing support and maintenance services such as sales on credit and pre-facilities support.

### **Export and Import**

The study revealed that there are no sales for imported fish products as indicated by 93% of respondents. Yemen joined the World Trade Organization (WTO) in 2013 and different capacity programmes were implemented to ensure improved quality and safety of Yemeni seafood products as per internationally accepted standards; however, fish export has gradually declined in recent years as stated by 93% of respondents.

Furthermore, the declining export was associated with production, storage, packaging, and transport obstacles. For instance, loss of fish and physical effects were experienced by due to poor storage facilities exposed to high temperature leading to fish damages and insect attacks as stated by key informants and actors. Similarly, the highest maintenance costs are owing to high electricity and diesel consumption to maintain bulk cold storage units. The services of middlemen in sales are not applicable in the business chain as per 74% of responses.

As relations among actors are not sustainable and joint ventures are not common in the fishery industry, the exporting opportunities are rare for business actors. Therefore, the Yemen Fisheries Support Programme (2010) emphasizes strengthening integrated partnerships of all fishery players in the value chain. Support for exporters is low as indicated by 96% of respondents.

### **Women and Youth Employment in Fishery Industry**

Youth have a good representation in fishery business. Around half of workers in the sector including suppliers, retailers and wholesalers were found to be between 25 and 34 years old. 75% of fishers or producers belonged to the age range 35 to 44 years, and a quarter of them were younger, aged 15 to 24 years old. No women were found working in this domain at any stage of the value chain.

The study highlighted the great representation and contribution of youth in the fishery industry. As supported by actors, youth may add value to the market and handle different positions at the chain, mainly in production, sales, distribution, and packaging. They also believe this sector may offer livelihood opportunities for vulnerable youth either to earn

income or to establish their businesses, if technical and financial support is guaranteed.

Besides, the study revealed that there is no female employment in the fishery industry. 46% of respondents believe that women cannot engage in the fishery market at all and the profession is not suitable for females. The reasons given relate to fishery business nature and norms, culture and society values, community practices, and lack of competencies and skills. As per key informants, women could be involved in the fishery chain; however, there are no initiatives supporting this approach. Families resist allowing women to work in the fishery market. Moreover, 70% of Yemen population is rural, and women experience high illiteracy preventing them from engaging in any business.

On the other hand, business actors indicate that women, in particular vulnerable groups including IDPs, have the potential of working in the fishery sector and engage in income generating activities, as stated by around half of respondents. They could work mainly in areas of production, marketing, processing, and exporting of 95% of interviewed actors believe that women could successfully engage in the chain and establish their own start-ups. Marketing is the number one recommended feasible option, followed by

aquaculture business. Though women could contribute to the industry, their skills and capacities should be strengthened to be ready to enter the market.

As in any economic sector, women representation is extremely low in fish associations. They are found in office work including administration, support departments, and export. The lack of representation of females is attached to the association nature. For instance, the provision of equipment, safety, guidance, and facilitation support is aimed at male fishers as fishing is considered hard work women are not be suitable for. Around 76,000 of fishers in those associations are male.



### Have You Employed Women With Your Business?



### Do You Think That Working in Your Sector Can be Considered an Opportunity for Income Generation Especially for Vulnerable Women?



### Do You Think Your Domain Could be a Good Opportunity for Vulnerable Women to Start-up Their Enterprises?



**Table 6. Gender Distribution in the Fishery Value Chain**

Product	Governate	District	Fishermen		Fishery Associations		Wholesaler		Retailer		Restaurant	
			M	F	M	F	M	F	M	F	M	F
Baghal (Indian Mackerel)	Hodeida	AlZuhrah							100%			
	Abyan	Khanfar			100%							
		Sarar										
	Lahj	Almusaymeer	20%				40%		40%			
Thamad (Yellowfin Tuna)	Hodeida	AlZuhrah							100%			
	Abyan	Khanfar	37.5%		25%				37.5%			
		Sarar			50%				50%			
	Lahj	Almusaymeer							100%			
Jadb	Hodeida	AlZuhrah							100%			
	Abyan	Khanfar										
		Sarar										
	Lahj	Almusaymeer										

## Barriers

### Limited Growth of SMEs and Entrepreneurs

The study highlighted difficulties of actors over the value chain either to expand enterprises or starting new businesses. There are obstacles such as accessing finance and information of market dynamics. Actors have intentions to expand their businesses but lacked the money needed to do so. Even with some of them working on their own, all actors in the chain identified a need to hire employees shall they expand, but the numbers of employees to be hired varied depending on the current business size and the extent of expansion intended.

### Gender Equality and Underutilized Potential of Fishermen

Existing and entrenched cultural practices create barriers to directly include women in fisheries activities, along with GBV concerns associated with women work.

### Cooperation and Partnership among SMEs and Entrepreneurs are Limited

Cooperatives and partnerships are not available or not effective. Therefore, there is no exchange of information, coordination or sustainable relations among the chain actors.

### The Continuous Closure of Commercial Roads and Disrupted Transportation

The business roads and their closure add burdens for all the chain actors in terms of increasing fuel consumption, checkpoints and forcible payments, van damages, increased taxes and customs as indicated longer alternative roads cause major effects in time, quality and delivery.

### The Limited Fishery Landing and Production

That is due to increased military presence at sea, causing low production volume. There are resulting damages of fishery production infrastructure and the siege of fishers. Various safety and security threats were identified. Recently, fishers have been obliged to accept limited working hours and restrictions in fishing – particularly areas because of security checkpoints. They are unable to do long trips (above 30 miles) due to increased engine prices.

### Low Productivity of Fishermen Communities

The continuous displacement of coastal communities affects fish production and leads to labour movement.



### **SMEs are Unable to Control Fish Prices and Satisfy Customer Demand**

That is because of the high uncontrollable costs incurred throughout the chain until the product is delivered to the end customer.

### **Weak Institutional Management and Capacities for Strategic Planning and Implementation**

The study indicated that half of businesses are family owned enterprises. Therefore, governance is not applied, which consequently prevents those businesses to grow in a fear of losing business. Additionally, there is resistance to hiring new staff or workers due to mistrust.

### **Non-compliance with Fishery Trade Internationally Accepted Standards**

The poor quality of the fish, bad handling practices, lack of hygienic facilities at the fish landing sites, ineffective regulations of quality control and quality assurance had major implications on the expansion of fish/fishery trade.

### **Limited Aquaculture Development**

Lack of investment and support especially after the crisis.

### **Entrepreneurs and SMEs Cannot Access Finance**

Due to unavailability of lending organization, lack of awareness about the application process and eligibility requirements, and high interest rate, which adds burdens on the borrowers.

## **Recommendations**

### **Promote the Creation or Expansion of SMEs by Investing in**

- (i) The identification of profitable markets with growth potential for SMEs products and services.
- (ii) Awareness in communities and the identification of entrepreneurial women and young labour market entrants, particularly young members and women.
- (iii) Skills/business training and advisory services.
- (iv) Provision of credit from microfinance institutions for SMEs start-up and growth.

### **Increase Youth and Women Access to Resources, Economic Empowerment Opportunities and Internship**

Microfinance support is one key support to address supply gaps, with fishers being able to procure boats of good quality as an example.

### **Promote the SMEs by Developing Integrated Partnerships and Joint Venture of Actors in the Value Chain**

This could be through developing integrated partnerships of all players in the value chain for specific fisheries to enhance export opportunities and also to assist in improving the efficiency and effectiveness of the value chain for selected species.

### **Promoting Efficient Partnerships**

in the fishery industry with other institutions (e.g. national authorities and international organizations) is recommended.

### **Improving the Economic Status of Small Fisher Households to Create Sustainable Economic Opportunities for Poor Women, Youth and Men in Fishing Communities**

That includes introducing measures to control fishing and reduce use of illegal and destructive fishing methods. Also, strengthening fishers' organizations and their capability to deliver services for their members, and promote effective women participation in them. Poor women and young entrants into the labour market will also constitute the primary target groups for aquaculture and micro-businesses. It includes development of fish landings and fishing effort sampling system for Yemen's small-scale fisheries.

### **Building Capacity of SMEs in Sales and CRM Strategy**

SMEs and entrepreneurs should be trained in how to differentiate their products in price, availability, value-adding by offering services. This will be through offering cheaper prices, despite having opportunities of value adding where fish can be cleaned, cut and packaged. SMEs should be capacitated in moving from supply driven market to a customer focused market where customer preferences are considered.

### **Women Mainstreaming in Fishery Industry**

Mainstreaming of women in the national policy making and planning for socio-economic development is to be a future core focus. Also, linking two important fields of small-scale fisheries and gender studies aims to improve gender and livelihood goals through appropriate interventions such as

pre- and post-harvest operations, fish product diversification and SMEs promotion.

### Improve Fishery Sector Policy, Institutional Management and Humanitarian Response

This is to take place through strengthening the base for fisheries development and studies through improved data collection and scientific assessment so that decisions and development options are more rationally based and informed.

### Improve Market Functionality and Access Opportunities

As main fish markets were deteriorated and damaged, sellers have scattered to different remote sales points. Accord-

ingly, sales have declined. Thus, gathering sellers into one central market is a practical solution, along with infrastructure rehabilitation for existing markets to strengthen their functionality.

### Strengthening Favourable Investment Climate

Providing a secure and safe working environment so that fishers feel safe and secure. This will lead to higher production volume and the market will be efficiently supplied.

## Fishery Industry Value Chain Summary

Governate	District	Gender	Market Potential	Governate	Supply	Go / No Go
Hodeida	AlZuhrah	Male	High	High	High	Go
		Female	-	-	-	
Abyan	Khanfar	Male	High	High	High	Go
		Female	-	-	-	
	Sarar	Male	Medium	High	Medium	Go
		Female	-	-	-	
Lahj	Almusaymeer	Male	Low	Low	Low	Go
		Female	-	-	-	



Governorate	District	Women Engagement	Youth Engagement (What Can Youth Work With)	Main Difficulties in the Value Chain that Can Be Tackled by UNDP
Hodeida	AlZuhrah	No	<ul style="list-style-type: none"> <li>• Selling in fish market.</li> <li>• Delivering fish to restaurants and customers.</li> <li>• Add-on services like cleaning, cutting and packaging fish.</li> </ul>	<ul style="list-style-type: none"> <li>• SMEs and entrepreneurs are unable to meet demand very frequently, which raises the need for interventions like providing information on market demand and best spots for fishing, and building fishermen capacities, as well as empowering them economically and providing them with the needed tools that would enable them to increase their catch and provide the market with more products.</li> <li>• Fishermen lack essential tools and equipment for fishing like boats, fishing rods and nets, baits and ice boxes. Therefore, their productivity is limited. UNDP may tackle this through micro-finance support.</li> <li>• Non-compliance with fishery trade internationally accepted standards: The poor quality of the fish, bad handling practices, lack of hygienic facilities at the fish landing sites, ineffective regulations of quality control and quality assurance had major implications on the expansion of fish/fishery trade.</li> <li>• Bad handling, storage and packaging practices throughout the supply chain. UNDP could support in building players' capacity in internationally accepted standards.</li> <li>• Lack of available fishery markets and poor market conditions and infrastructure. UNDP could liaise with MFW to support market improvement.</li> <li>• Build fish markets, jetties, and ice plants.</li> <li>• Limited aquaculture development. Lack of investment and support especially after the crisis.</li> <li>• Entrepreneurs and SMEs cannot access finance due to unavailability of lending organization, lack of awareness in application process and eligibility requirements and high interest rate, which adds burdens on the borrowers.</li> <li>• Gender inequality and underutilized potential of fisherwomen. UNDP may work in producing practical manuals for gender mainstreaming and gender analysis in fishery business to facilitate changes.</li> <li>• The disruption of business routes and transportation difficulties of accessing markets by entrepreneurs. UNDP may introduce cash for work projects on road maintenance/paving to increase movement of fishery products.</li> </ul>
Abyan	Khanfar	No	<ul style="list-style-type: none"> <li>• Fishing.</li> <li>• Cleaning boats.</li> <li>• Storing fish on boats.</li> <li>• Carrying fish to market.</li> <li>• Selling and delivering fish</li> <li>• Cleaning and cutting fish</li> </ul>	
	Sarar	No	<ul style="list-style-type: none"> <li>• Selling in fish market.</li> <li>• Delivering fish to restaurants and customers.</li> <li>• Add-on services like cleaning, cutting and packaging fish</li> </ul>	
Lahj	Almusaymeer	No	<ul style="list-style-type: none"> <li>• Fishing.</li> <li>• Cleaning boats.</li> <li>• Storing fish on boats.</li> <li>• Carrying fish to market.</li> <li>• Selling and delivering fish and ice.</li> <li>• Cleaning, cutting and packaging fish.</li> <li>• Carrying fish to trucks.</li> </ul>	

Governorate	District	Proposed Intervention	Proposed Training	Most Profitable Value Chain Player	How to Increase Value Creation?
Hodeida	AIZuhrah	<ul style="list-style-type: none"> <li>Support inclusion of women in the fishery industry to work in retailing, wholesaling or as members of fishery associations</li> </ul> <p>Support vulnerable women with potential to establish SMEs in fishery product processing, marketing and exporting.</p>	<ul style="list-style-type: none"> <li>Customer service</li> <li>Negotiation and bargaining</li> <li>Marketing</li> </ul>	Retailer	<p>Support the following players locally inside the district:</p> <ul style="list-style-type: none"> <li>Fishermen</li> <li>Retailers</li> </ul>
Abyan	Khanfar	<ul style="list-style-type: none"> <li>Improve fishery sector policy, institutional management and humanitarian response:               <ul style="list-style-type: none"> <li>Improved data collection and scientific assessment.</li> <li>Business governance</li> </ul> </li> <li>Provision of financial support or access to monetary resources that guarantees the availability of:               <ul style="list-style-type: none"> <li>High quality iceboxes and fishery tools.</li> <li>Navigation tools.</li> <li>Safe and well-maintained boats.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Training fishermen on use of navigation tools and modern equipment.</li> <li>Introducing fishermen to ways of storage to guarantee fish freshness for a longer time.</li> <li>Training on boat maintenance</li> </ul>	Fishermen Fishery associations Retailers	<p>Support the following players locally inside the district:</p> <ul style="list-style-type: none"> <li>Fishermen</li> <li>Fishery associations.</li> <li>Retailers</li> </ul>
	Sarar	<ul style="list-style-type: none"> <li>Empowerment of SMEs:               <ul style="list-style-type: none"> <li>Development of business planning capacity.</li> <li>Promoting efficient partnerships with other institutions.</li> <li>Microfinance support.</li> </ul> </li> <li>Support entrepreneurs to grow in coastal communities:               <ul style="list-style-type: none"> <li>Establishing new businesses.</li> <li>Engaging women in fishery production.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Customer service</li> <li>Negotiation</li> <li>Marketing</li> <li>Bargaining and bidding</li> </ul>	Fishery associations Retailers	<p>Support the following players locally inside the district:</p> <ul style="list-style-type: none"> <li>Fishery associations</li> <li>Retailers</li> </ul>
Lahj	Almusaymeer	<ul style="list-style-type: none"> <li>Strengthening favourable investment climate:               <ul style="list-style-type: none"> <li>Providing a secure and safe working environment for fishermen to feel safe and secure.</li> <li>Provision of hygienic facilities at the fish landing centres.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Training fishermen on use of navigation tools and modern equipment</li> <li>Introducing fishermen to ways of storage to guarantee fish freshness for a longer time</li> <li>Training on boat maintenance</li> </ul>	Fishermen. Wholesalers Retailers	<p>Support the following players locally inside the district:</p> <ul style="list-style-type: none"> <li>Fishermen</li> <li>Wholesalers</li> <li>Retailers</li> </ul>
Proposed Training for All Districts		<ul style="list-style-type: none"> <li>Customer service</li> <li>Products handling</li> <li>Fishing techniques and usage of new technology</li> </ul>			

Governorate	District	Macro Level Recommendations	Meso Level INGO/NGO Recommendations	Micro Level Recommendations
Hodeida	AlZuhrah	<ul style="list-style-type: none"> <li>• Mainstreaming of women in the national policy making and planning for socio-economic development is to be a future core focus.</li> <li>• Providing a secure and safe working environment for fishermen and remove landing restrictions.</li> <li>• Strengthening the functionality of fish associations and provide flexible support to entrepreneurs and SMEs.</li> </ul>	<ul style="list-style-type: none"> <li>• Support vulnerable women with potential to establish SMEs in fishery product processing, marketing and exporting.</li> <li>• Macro-finance support to ensure availability of: <ul style="list-style-type: none"> <li>• High quality iceboxes and fishery tools.</li> <li>• Navigation tools.</li> <li>• Safe and well-maintained boats.</li> </ul> </li> <li>• Improve fishery sector policy, institutional management and humanitarian response.</li> <li>• Improved data collection and scientific assessment.</li> <li>• Empowerment of SMEs and entrepreneurs: <ul style="list-style-type: none"> <li>• Development of business planning capacity.</li> <li>• Promoting efficient partnerships with other institutions.</li> </ul> </li> <li>• Support internship for vulnerable youth and women.</li> </ul>	<ul style="list-style-type: none"> <li>• Apply for loans to purchase equipment that contribute to production level increment.</li> <li>• Assessing market needs and gathering information on supply and demand to better serve the community.</li> <li>• Forming a joint venture of business partnerships to improve growth opportunities.</li> </ul>
Abyan	Khanfar			
	Sarar			
Lahj	Almusaymeer			

Governorate	District	Recommended Training (Specific Training)	Recommendation for MFIs (What Can Be Financed)	What New Technologies/Tools/ Equipment Can Be Brought in	Tracing the Money along the Supply Chain: Prices below Are for Thamad (Yellowfin Tuna) throughout the Value Chain (YER)
Hodeida	AlZuhrah	<ul style="list-style-type: none"> <li>• Customer service.</li> <li>• Negotiation and bargaining.</li> <li>• Marketing.</li> </ul>	<ul style="list-style-type: none"> <li>• Provision of financial support or access to monetary resources that guarantees the availability of:               <ul style="list-style-type: none"> <li>• High quality iceboxes and fishery tools.</li> </ul> </li> <li>• Navigation tools.</li> <li>• Safe and well-maintained boats.</li> </ul> <p>The estimated amount of finance is YER 1,500,000. Conduct a study on effectiveness of micro-finance responses in targeted governorates</p>	<ul style="list-style-type: none"> <li>• Navigation tools.</li> <li>• Fast engine boats equipped with storage facilities.</li> <li>• Weather forecasting.</li> </ul>	<ul style="list-style-type: none"> <li>• Fisherman: 1,500/kg</li> <li>• Fishery association: 1,700/kg</li> <li>Wholesaler: 2,000/kg</li> <li>• Retailer: 2,500/kg</li> <li>• Restaurant: 3,500/kg</li> <li>– Prices vary among different fishery products.</li> </ul>
Abyan	Khanfar	<ul style="list-style-type: none"> <li>• Training fishermen on use of navigation tools and modern equipment</li> <li>• Introducing fishermen to ways of storage to guarantee fish freshness for a longer time</li> <li>• Training on boat maintenance</li> </ul>			
	Sarar	<ul style="list-style-type: none"> <li>• Customer service</li> <li>• Negotiation</li> <li>• Marketing</li> <li>• Bargaining and bidding</li> </ul>			
Lahj	Almusaymeer	<ul style="list-style-type: none"> <li>• Training fishermen on use of navigation tools and modern equipment</li> <li>• Introducing fishermen to ways of storage to guarantee fish freshness for a longer time.</li> <li>• Training on boats maintenance</li> </ul>			

# Potential Impact of COVID–19 on the Sector<sup>1</sup>

The effect of the COVID–19 pandemic has reached the fishery market in all governorates of Yemen, causing a drop in sales. The main reason for the decrease is customer fear, as indicated by different players in Hodeidah and Lahj markets. Customers are afraid of buying fish, interacting with others in crowded marketplaces, given that contagion safety instructions are not strictly followed. While crowded fish markets were closed by local authorities, market players indicate that fear spread among customers discouraged them from visiting markets that had not been closed. This is an aspect of the negative demand shock, with lowered possibility for people to consume, caused by the pandemic.

In Abyan governorate, however, this fear does not exist as people believe the disease has not reached the area. Yet, sales are affected owing to shortage in supply which usually comes from outside the governorate and due to the fact that other areas are affected, governorate borders have been closed and, thus, sellers are unable to fulfil demand. This is an aspect of the negative supply shock, with reduced ability of people and firms to produce, caused by COVID–19.

## Value Chain

Retailers, restaurants and street vendors are the most affected actors in the fishery value chain, with normal fishery outlets no longer working properly. Consumers have preferred non–fish products in partially locked restaurants with only take–away services. Quarantine checkpoints and transportation delays have impacted the quality of delivered fish throughout the supply chain. Distributors bear the risk of perished food due to checkpoint delays and other transportation challenges.

Due to closure of fishery outlets and restaurants, trade has sharply decreased by more than half. Consequently, almost half of the workers face prospects of being laid off or suspended, with only critical workers retained. Curfew has also forced employers to reduce working hours to half. However, fish being an essential food item, demand will continue to exist during the virus outbreak.

Cessation of fish exports has resulted in huge losses for the fishery associations, as export is considered the main

source of income for them. The first case of COVID–19 in Yemen was reported in Mukalla where many exporters operate. The ensuing lockdown in the city prevented fish packaging for export. The price dropped from YER 1,500 per kilo to less than YER 700 at the borders of Mukalla.

Since many people lost their jobs and were forced to stay at home during the pandemic, their level of income and thus purchasing power declined. This in turn caused a decline in demand. However, prices still increased due to the decrease in supply and increase in transportation costs caused by the use of alternative longer distribution routes.

If fish markets where social distancing cannot be kept are closed by the authorities, there will be no place for fishers to sell their catch. If this happens, other options for distribution have to be found, or the whole sector will suffer. To ensure that actors of the value chain maintain operations and market demand for fish is fulfilled, at least inside governorates with borders closed, fishery associations should make arrangements to buy the day's catch from fishers and sell it to retailers while observing physical distancing. Retailers can then deliver to customers in their homes, taking infection safety instructions into consideration. However, fishery associations would not be able to take on this role without external financial support, given their financial status since exports have come to a halt.

Customer behaviour has changed for health and financial reasons and many market players have lost customers with whom they directly interacted at the market. Some customers may now be able to buy only on credit, while others do not even visit the market. Keeping a database of customers would have been beneficial and would have enabled sellers to continue reaching customers and deliver products directly to their homes.

## Micro, Small and Medium Enterprises (MSMEs)

Market closure in some areas, governorate border closure, customers' fear and declined purchasing power affected the operations of all fishery market players, triggering massive economic loss and causing many to close business.

<sup>1</sup> For a more comprehensive analysis of the potential COVID–19 impact on micro, small and medium enterprises in Yemen, see a synthesis report at this link: <https://www.ye.undp.org/content/yemen/en/home/library/a-synthesis-report-on-micro--small-and-medium-enterprises-in-yem>

Market players, especially fishers and retailers, do not follow any business continuity strategies to adapt to the current circumstances due to COVID-19. The weak infrastructure of the business makes them unable to change their way of doing business. Wholesalers may have the ability to shift to other means of doing business, yet lack the required knowledge and awareness.

Liquidity shortfalls are to be experienced as retailers will not be able to pay immediately to fishers without the intermediation of the fishery associations. In normal times, retailers buy on credit from fishers through fishery associations, which pay on their behalf and later collect money from retailers after products have been sold. With the current situation, since exports have massively dropped, the fishery associations themselves suffer liquidity constraints and are unable to meet retailers' need for trade on credit terms. Assisting fish export would sustain demand for fish and uphold income generated by fishers and fishery associations.

### Livelihoods

In some areas of Yemen, various markets were closed for a short time but were soon opened again as people lost their livelihood. Prior to the COVID-19 outbreak, communities were already vulnerable, suffering decreased income due to the war effects. The fishery industry has been affected by

air strikes which demolished most of the boats in Hodeidah. The current pandemic adds to previous injury, making people even more vulnerable and driving many businesses to bankruptcy.

Most actors in the fishery chain depend on day-to-day income. Small scale fishers who depend on income from daily catch, as well as retailers who pay to associations after they have sold their stock, have lost their jobs and were forced to stay at home in some areas.

Wholesalers and also fishers with big boats, usually carrying a crew of up to 20, have laid off nearly half of their workers and temporarily suspended others; fishers go fishing using smaller boats. The risk of infection is very high given the low literacy rate among fishers and their need for a daily income whatever the circumstances.

Conditions of employment in the beginning of this virus outbreak would probably permanently change. Younger employees are likely to replace the elderly who have been laid off.

Some recommendations on how to facilitate for MSMEs to respond to and ultimately recover from the COVID-19 crisis are given in the table below. The recommendations are framed based on macro, meso and micro level perspectives.

Fishery Sector Recommendations	
<p><b>Macro Level Outlook:</b> Recommended government policies, relaxations and enforcement measures. Also, the role of private sector to support the macro level outlook.</p>	<ul style="list-style-type: none"> <li>• Improve protocols for trade across quarantine checkpoints to be sensitive to perishable commodities such as fish.</li> <li>• Facilitate trade locally and internationally to assure supply chain efficiency.</li> <li>• Support and encourage logistics companies to frame strategies to cope with the new challenges.</li> <li>• Support refrigerators and cold storage at various value chain actors.</li> <li>• Relax taxation on MSMEs and exporters.</li> </ul>



Fishery Sector Recommendations	
<p><b>Meso Level Analysis:</b> Recommended continuity measures to be taken to mitigate the impact, including the need for finance.</p>	<ul style="list-style-type: none"> <li>• Provide financial assistance through MFIs – extending new loans and restructuring repayment of old loans – to assist value chain actors to overcome liquidity challenges.</li> <li>• Introduce more spacious boats and reorganized marketplaces to allow physical distancing, preventing spread of the virus.</li> <li>• Introduce efficient cooling and storage equipment to overcome logistics challenges and interrupted demand.</li> <li>• Support digital literacy, mobile transactions and e-commerce opportunities associated with market information.</li> <li>• Support emergency plans to include fishery products in the food baskets for vulnerable recipients through fish vouchers.</li> </ul>
<p><b>Micro Level:</b> Recommendations related to preparedness and plans to contain the impact of COVID-19.</p>	<ul style="list-style-type: none"> <li>• Follow prevention protocols and actively prevent infected fishers from engaging with the crowd.</li> <li>• Establish network with clients and distributors.</li> <li>• Seek alternative fishing equipment to reduce number of fishers per boat.</li> <li>• Identify various distributors and collaborators in the market for potential shared work, assets, or supplies.</li> </ul>

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