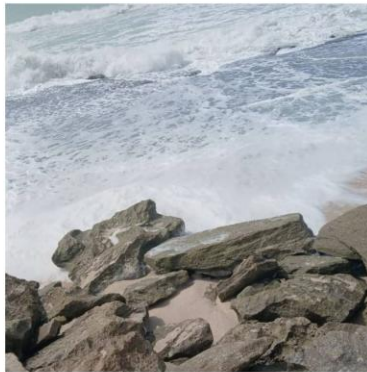




Federal Government of Somalia



FINAL REPORT: CONDUCTING FISH PRICE ASSESSMENT (BASELINE) IN THE FEDERAL REPUBLIC OF SOMALIA & FEDERAL MEMBER STATES

Client: Ministry of Fisheries and Blue Economy, Federal Government of Somalia

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List of Acronyms

Acronym	Full Form
ARD	Africa Research and Data Limited
BRA	Banadir Regional Administration
CSO	Civil Society Organization
DG	Director General
EEZ	Exclusive Economic Zone
ESMF	Environmental and Social Management Framework
ESF	Environmental and Social Framework (World Bank)
FAO	Food and Agriculture Organization of the United Nations
FIMS	Fisheries Information and Monitoring System
FGD	Focus Group Discussion
FGS	Federal Government of Somalia
FMP	Fisheries Master Plan
FMS	Federal Member State
FPI	Fish Price Indicator
GBV	Gender-Based Violence
IOTC	Indian Ocean Tuna Commission
IUU	Illegal, Unreported and Unregulated (fishing)
KII	Key Informant Interview
LSMS	Living Standards Measurement Survey
M&E	Monitoring and Evaluation
MCS	Monitoring, Control and Surveillance
MFBE	Ministry of Fisheries and Blue Economy
NAP	National Adaptation Plan
NDC	Nationally Determined Contribution (climate commitments)
NGO	Non-Governmental Organization
PDO	Project Development Objective
PWD	Persons with Disabilities
SEA/SH	Sexual Exploitation, Abuse and Sexual Harassment
SPSS	Statistical Package for the Social Sciences
SSF	Small-Scale Fisheries
SSFDP	Somalia Sustainable Fisheries Development Project
UNCLOS	United Nations Convention on the Law of the Sea

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1. Executive Summary

Somalia's fisheries sector is one of the country's most valuable but underdeveloped economic resources. With Africa's longest mainland coastline and a vast Exclusive Economic Zone, the country has the potential to harness marine resources to drive national growth, enhance food security, and strengthen livelihoods in coastal communities. Despite this potential, the sector is constrained by weak infrastructure, limited cold storage capacity, rudimentary handling practices, and fragmented market systems. These inefficiencies contribute to high post-harvest losses, reduced profitability, and persistent food insecurity.

In response, the Ministry of Fisheries and Blue Economy (MFBE), supported by the World Bank through the Somalia Sustainable Fisheries Development Project (SSFDP), commissioned this fish price assessment. The study establishes the first national Fish Price Indicator (FPI) for Somalia and provides evidence-based insights into the drivers of price volatility, infrastructure gaps, gender dynamics, and implications for livelihoods and food security.

a) Methodology

The fish price assessment applied a sequential transformative mixed-methods design, integrating quantitative, qualitative, and real-time market data collection to ensure a comprehensive analysis. A total of 673 structured household surveys were conducted with fishers, traders, and processors across all six Federal Member States (FMS) and the Banadir Region Administration (BRA). These surveys collected detailed information on fish species, pricing, sales volumes, costs, storage practices, and income levels.

The quantitative data were complemented by 12 Key Informant Interviews (KIIs) with representatives of government, cooperatives, exporters, and development partners. These provided insights into governance, policy frameworks, and institutional challenges. Additionally, 11 Focus Group Discussions (FGDs) with women traders, youth, and cooperatives captured diverse perspectives on market access, gender barriers, and coping strategies. A 22-day real-time price monitoring exercise was also carried out at key landing sites and markets, ensuring that the analysis incorporated daily variations in price formation and trading behavior.

To derive the Fish Price Indicator (FPI), a weighted average formula was applied to normalize prices across species, volumes, and locations. This approach ensured that the baseline figure was robust, representative, and replicable. Quality assurance mechanisms—including enumerator training, tool pre-testing, digital data collection, spot checks, and validation workshops with stakeholders ensured the reliability, inclusivity, and ownership of the findings.

b) Findings

The assessment established a national Fish Price Indicator (FPI) of USD 3.81/kg, providing the first standardized benchmark for monitoring fish prices in Somalia. Yellowfin tuna, mackerel, and skipjack emerged as the dominant species driving price formation. Despite this, wide disparities in profitability exist across states.

The assessment shows clear variation in net profits across Somalia's Federal Member States. Traders in Banadir achieved by far the highest average daily profit at USD 151.08, driven by Mogadishu's affluent consumer base, strong demand from households, restaurants, and hotels, and better storage access that offsets higher market fees and fuel costs. In contrast, profits in Puntland (USD 14.70) and Galmudug (USD 9.17) were modest to low, reflecting thin markets, fragile transport logistics, and quick turnover sales at landing sites that limit margins. The near-zero figures recorded in Jubaland, SouthWest, and Hirshabelle do not imply an absence of trading activity but instead highlight the structural barriers that constrain value capture in these regions—weak market integration, very limited cold-chain infrastructure, low

consumer purchasing power, and in some cases insecurity and inexperience among traders. These factors combine to depress earnings and explain why profitability is heavily concentrated in Mogadishu's urban market while peripheral states remain marginalized in the fisheries value chain

Gender inequities are evident throughout the value chain. Women are underrepresented in fishing but play essential roles in processing and retail, particularly in Mogadishu and Kismayo. Their profitability (USD 43/day) lags behind men (USD 70/day), driven by smaller sales volumes, weaker bargaining power, and heavier reliance on ambient storage. On average, women wait 7.9 hours before selling, compared to 6.1 hours for men, exposing them to higher risks of spoilage and lower income. Nonetheless, women remain critical to sustaining daily supply in urban markets.

Seasonality significantly influences market volatility. Fishing peaks in January, March, and August, while June is consistently the most challenging month due to oversupply, hot temperatures, and reduced demand following Ramadan. This cyclical price crash undermines incomes and food security. Across all regions, poor cold-chain facilities, high fuel costs, and adverse weather were identified as the three most pressing drivers of price instability, together accounting for over 85% of reported shocks.

The impacts on livelihoods and food security are substantial. Over 60% of households derive 70–100% of their income from fishing, leaving them acutely vulnerable to price shocks. One in four households reported skipping meals, with food insecurity most severe in Galmudug and Jubaland. Women are disproportionately affected, reflecting their dual role as market participants and household caregivers.

c) Conclusion

This fish price assessment provides Somalia's first national Fish Price Indicator (USD 3.81/kg) and highlights the structural barriers undermining the sector. Without urgent interventions, volatility, food insecurity, and gender inequities will persist. By expanding cold storage, stabilizing markets, empowering women, and aligning fisheries with national climate and development strategies, the Ministry of Fisheries and Blue Economy can reposition the sector as a driver of resilience, inclusivity, and prosperity within Somalia's Blue Economy.

d) Recommendations

The assessment identifies a phased set of recommendations to stabilize fish prices, improve livelihoods, and strengthen Somalia's fisheries sector.

Short-Term (1–2 years): Immediate Stabilization:

- Deploy solar-powered ice plants and mobile cold storage in underserved regions (SouthWest, Hirshabelle).
- Establish SMS and mobile app-based platforms for price transparency and trader empowerment.
- Provide targeted grants, microcredit, and business training for women traders.
- Roll out quick-win training on hygienic fish handling, quality grading, and processing.

Medium-Term (3–5 years): Building Market Efficiency

- Invest in cooperative cold-chain hubs through public-private partnerships.
- Strengthen fisher cooperatives and market committees to enforce fair pricing and reduce exploitation.
- Develop tailored fisheries financial products, including weather insurance and input loans.
- Improve transport infrastructure to connect rural landing sites to urban and export markets.

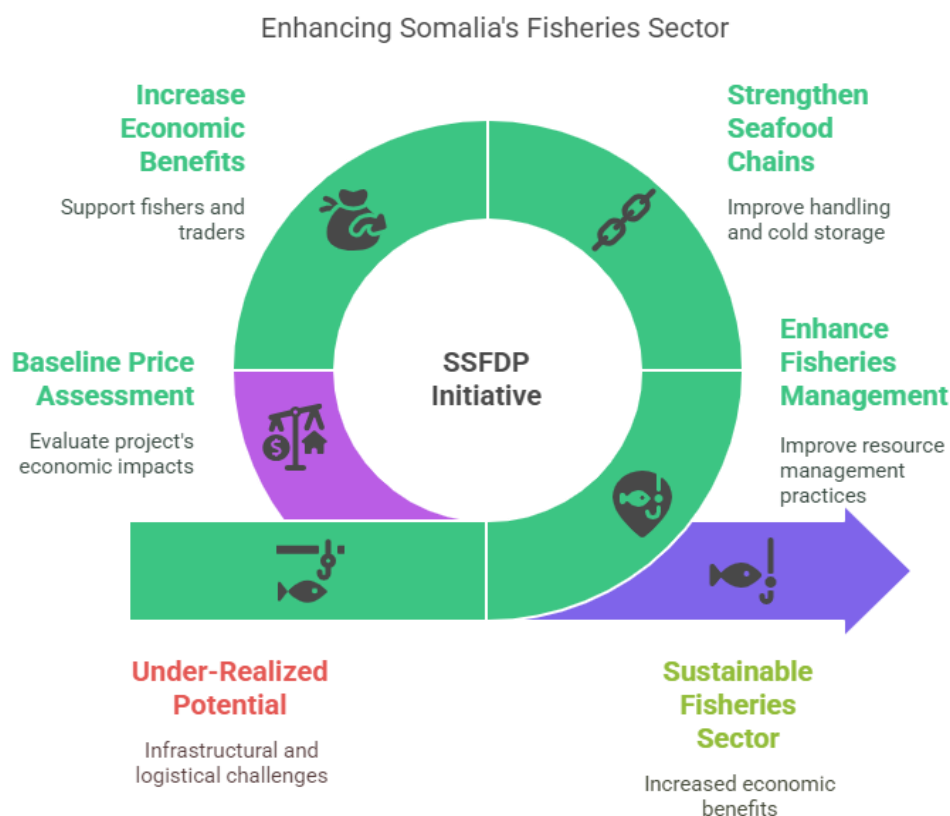
Long-Term (5+ years): Structural Transformation

- Scale up investments in harbor infrastructure, processing plants, and refrigerated transport fleets.
- Institutionalize continuous price monitoring within the Fisheries Information and Monitoring System (FIMS).
- Adopt a national gender-responsive fisheries strategy to promote equitable participation.
- Align fisheries development with Somalia's National Adaptation Plan (NAP), integrating climate resilience and renewable-powered cold-chain investments.

2. Introduction and Background

Somalia's fisheries sector is a critical pillar for the country's economy, livelihoods, and food security, particularly in coastal communities across the Federal Member States (FMSs) and Banadir region. With Mainland Africa's longest coastline spanning approximately 3,330 kilometers and an Exclusive Economic Zone (EEZ) of about 1,165,500 square kilometers, Somalia's waters host abundant and diverse marine resources, including highly valuable species like tuna, mackerel, sardines, lobster, grouper, and snapper. The sector's potential, however, remains significantly under-realized, primarily due to persistent infrastructural and logistical challenges including limited cold storage facilities, inefficient transportation systems, inadequate handling practices, and lack of robust market mechanisms.

Fishery activities in Somalia exhibit significant seasonal variations, heavily influenced by monsoon winds and oceanic currents, with peak fishing seasons occurring notably in March, August, and October. These periods witness considerable fluctuations in fish supply, causing price instability and species- and season-specific fish-loss-and-waste (FLW) rates that are now better quantified¹. Initial findings from the Ministry of Fisheries and Blue Economy's 2024 National Fish Loss and Waste Assessment shows that average FLW expressed as a percentage of weight of landed tuna (all species) for the five landing sites in question may range from 0% to 30% (average of 7%) during a period of low fisheries production, compared to 0% to 1% for grouper and spiny lobsters (average of <1%). These losses are attributed to factors such as inadequate cold storage, inefficient transportation, and lack of training for fishery workers. Such inefficiencies adversely impact the economic returns for fishers and traders and undermine the market's sustainability. Recognizing these challenges and opportunities, the Federal Government of Somalia (FGS), through the Ministry of Fisheries and Blue Economy (MFBE) and with support from the World Bank, initiated the Somalia Sustainable Fisheries Development Project (SSFDP).



¹ <https://www.trade.gov/country-commercial-guides/somalia-fisheries-and-blue-economy>

3. Overarching Project Development Objective (PDO)

The Somalia Sustainable Fisheries Development Project (SSFDP), supported by the World Bank, has a broader mandate than a standalone fish price assessment. The PDO is “to improve fisheries management, strengthen value chains, and boost economic benefits for fishers, traders, and investors. Reducing FLW, improving market access, and investing in infrastructure can make Somalia’s fisheries stronger and more profitable.” Accordingly, this fish price assessment contributes directly to the achievement of the PDO by generating empirical evidence and baseline indicators that will inform strategies under the project’s three components:

- i. Component 1: Increasing the Capacity of Communities**
 - This assessment supports Component 1 by providing fishers, processors, and local traders particularly women and marginalized groups—with access to real-time market data.
 - It identifies pricing barriers and opportunities for improved income generation and equitable participation in fisheries value chains.
- ii. Component 2: Strengthening Marine Fisheries Governance**
 - By establishing a standardized fish price indicator and robust data collection methods, the study strengthens institutional capacity at both federal and member state levels for monitoring, policy formulation, and price stabilization strategies.
 - The integration of price data into the Fisheries Information and Monitoring System (FIMS) will support evidence-based regulatory frameworks.
- iii. Component 3: Project Management, Monitoring and Evaluation**
 - This study will contribute a core baseline for evaluating the economic impact of project interventions.
 - The methodology and tools developed will support ongoing M&E systems for fisheries sector development.

4. Objectives of the Somalia Fish Price Assessment

The primary objective of the Somalia fish price assessment is to systematically analyze and document the pricing dynamics within Somalia’s fisheries sector to support improved market efficiency, profitability, and informed policymaking. The assessment also establishes a reliable baseline fish price indicator that captures variations in pricing related to species diversity, geographical differences across the five Federal Member States (FMS) and Banadir Regional Administration (BRA), and seasonal fluctuations. The specific objectives of the assessment are to undertake the following:

- i) **Fish Price Variation Analysis:** Conduct a comprehensive analysis of fish price variations at targeted sites, accounting for different species, seasonal changes, market conditions, and regional distinctions. This analysis is essential for providing insights into the current market dynamics and the factors influencing price variability.
- ii) **Methodology Development:** Develop and validate a robust, replicable methodology that produces one consolidated baseline figure - that will be calculated across all targeted locations for the assessment - while remaining sensitive to the factors that drive price variation. The methodology incorporates critical variables, including species type, landing site conditions, seasonal fluctuations, inflation rates and currency exchange dynamics, ensuring consistency and comparability over time.
- iii) **Baseline Establishment:** Calculate and document a credible baseline figure for the fish price indicator, crucial for future impact assessments of project interventions. This baseline will serve as a reference point for measuring progress against the project's expected outcomes related to market improvements.
- iv) **Identification of Influencing Factors:** Identify and thoroughly document key factors impacting fish prices, including inefficiencies in supply chains, transportation costs, storage limitations, external market demands, and local market dynamics. A clear understanding of these factors is vital for pinpointing areas requiring targeted interventions.
- v) **Standardized Data Collection Methodology:** Establish and recommend a standardized and sustainable approach for the regular collection, monitoring, and analysis of fish price data. This methodology will be integrated into broader fisheries monitoring systems to ensure continuous availability and reliability of market information.
- vi) **Impact Assessment:** Evaluate and document how fish price variations affect fisher livelihoods, food security, and private sector investment, particularly emphasizing the



Fish Price Variation Analysis

Analyzing price variations across species and seasons



Methodology Development

Creating a robust method for calculating average fish prices



Baseline Establishment

Establishing a baseline for future impact assessments



Identification of Influencing Factors

Identifying factors affecting fish prices



Standardized Data Collection

Implementing a consistent approach for data collection



Impact Assessment

Evaluating the effects of price variations on stakeholders



Recommendations for Market Stabilization

Developing strategies to stabilize fish prices

roles and challenges faced by women, processors, buyers, exporters, and consumers within the fisheries sector.

- vii) Recommendations for Market Stabilization:** Develop specific, actionable recommendations aimed at stabilizing fish prices. These recommendations will focus on infrastructure enhancements, improved fish handling practices, better processing techniques, strengthened market linkages, and investments in cold storage and logistics solutions.

By thoroughly addressing these objectives, the fish price assessment contributes significantly to improving the overall efficiency and profitability of Somalia's fisheries sector, enhancing economic resilience and sustainability for local communities and stakeholders involved.

5. Somalia's Fisheries Sector: A context analysis

i. Geographic and Ecological Endowment

Somalia possesses the longest coastline on mainland Africa approximately 3,333 kilometers - straddling the Gulf of Aden and the Indian Ocean. This coastal extent, coupled with an expansive Exclusive Economic Zone, underpins significant fisheries potential and positions Somalia as a natural maritime economy in the Horn of Africa.²

Ecologically, Somali waters support rich pelagic and demersal assemblages, including tuna, mackerel, sardines, groupers, lobsters and other high-value species. Coastal upwelling systems and productive shelves (especially off Puntland) underpin seasonal abundance, though these resources remain under-exploited relative to regional comparators.³

ii. Structure of the Sector and Domestic Demand

Somalia's fisheries economy is dominated by small-scale fisheries (SSF) and artisanal operators using small vessels and basic gear. Infrastructure deficits landing sites, jetties, cold rooms, and reliable power and water—constrain quality assurance and market access, contributing to persistent post-harvest losses and low value capture. The sector's macroeconomic footprint is still modest, with multiple government documents estimating contribution around 2 percent of GDP.⁴ Domestic fish consumption is among the lowest in Africa, reflecting dietary preferences for livestock products, historic supply unreliability, and knowledge gaps on fish preparation and safety. FAO estimates per-capita consumption at roughly 3.1–3.3 kg - well below continental averages underscoring the unrealized domestic nutrition opportunity.⁵

iii. Policy, Law and Institutional Architecture

Policy momentum has accelerated in recent years. The current legislative framework for Somalia's fisheries sector is anchored in the Fisheries Development and Management Act of 2023, which replaced the 2014 law and provides a comprehensive governance structure for the sustainable use of marine resources. The Act establishes a clear zoning system that reserves the 0–12 nautical mile zone for artisanal fishers under Federal Member State management, designates the 12–24 nautical mile protection zone for Somali vessels with shared management between the Federal Government and Member States, and places the 24–200 nautical mile Exclusive Economic Zone (EEZ) under Federal Government jurisdiction for licensing of both national and foreign fleets. It also strengthens mechanisms for vessel licensing, monitoring, surveillance, and penalties to combat illegal, unreported, and unregulated (IUU) fishing, while embedding conservation measures such as restrictions on destructive gear and protections for marine biodiversity. Implementation of the Act requires strong federal–state coordination, harmonization of regulations, and investment in institutional capacity to ensure effective enforcement and equitable benefit-sharing across Somalia's fisheries sector.

Institutionally, federal–state fragmentation, capacity gaps and under-resourced monitoring systems have hampered coherent management. Recent World Bank project documents highlight persistent structural constraints on the inshore sub-sector—lack of modern vessels

² World Bank, "Somalia Climate Risk Review," 2023,

<https://documents1.worldbank.org/curated/en/099062923035034613/pdf/P17624603756190c409e570193ea2ae944d.pdf> (accessed August 17, 2025).

³ FAO, "A Review of Somalia's (& Semi-Autonomous) Fisheries: Profile and Trends – Somalia," openknowledge.fao.org (various years), <https://openknowledge.fao.org/server/api/core/bitstreams/d2aefd30-4fee-45bf-ae93-f46509ab804c/content> (accessed August 17, 2025).

⁴ Ministry of Fisheries and Blue Economy (MFBE), "BADMAAL Environmental and Social Management Framework," 2024, <https://mfbe.gov.so/wp-content/uploads/2024/09/BADMAAL-Environmental-and-Social-Management-Framework.pdf> (accessed August 17, 2025).

⁵ FAO, "A Review of Somalia's (& Semi-Autonomous) Fisheries: Profile and Trends – Somalia," openknowledge.fao.org (various years), <https://openknowledge.fao.org/server/api/core/bitstreams/d2aefd30-4fee-45bf-ae93-f46509ab804c/content> (accessed August 17, 2025).

and gear, limited processing and storage, and weak logistics to reach urban and regional markets alongside the need to strengthen planning, Monitoring, Control and Surveillance) (MCS) and data systems.⁶

iv. Illegal, Unreported and Unregulated (IUU) Fishing and MCS

IUU fishing remains the sector's most widely cited drain on value and sovereignty. Multiple recent sources estimate annual losses on the order of US\$300 million due to unauthorized foreign fishing and associated practices, including destructive gears. These losses erode local incomes, tax revenue, and biological stocks.⁷

Somalia's legal framework permits licensed foreign vessels to operate only beyond nearshore limits (e.g., outside 24 km from the coast), reflecting the intent to safeguard artisanal grounds. However, limited surveillance capacity and complex jurisdictional arrangements have made enforcement uneven, allowing transgressions and fueling grievances among coastal communities.⁸

v. Post-Harvest Loss, Quality and Market Systems

Evidence from the Fish Loss and Waste Study by Badmaal converges on systemic post-harvest loss and quality challenges. Limited ice production, cold chain and hygienic processing space compounded by erratic power and water lead to spoilage, quality downgrades and compressed margins for fishers and traders.⁹

Urban market studies (e.g., Mogadishu) and legal value-chain assessments document thin or fragmented intermediation, poor handling practices and inconsistent grading and pricing conditions that weaken bargaining power for artisanal actors and reinforce volatility in landed prices.¹⁰

vi. Price Dynamics and Trade Exposure

Export unit values exhibit pronounced volatility. Indicative series show a peak around US\$8.41/kg in 2014, followed by a collapse to about US\$1.15/kg in 2020, with 2023–2024 stabilizing in the US\$1.20–1.25/kg range. While not an official statistical series, these trends align with qualitative accounts of global demand shocks, logistics constraints and domestic cold-chain bottlenecks affecting quality and timing of supply.¹¹ Policy briefs aimed at investors emphasize opportunities from enforcing the EEZ framework, upgrading landing and port infrastructure, and crowding-in diaspora and FDI to unlock value addition (processing, aquaculture and logistics). Realizing these gains, however, hinges on predictability in licensing, health standards and maritime security.¹²

⁶ World Bank, "Somali Sustainable Fisheries and Blue Economy Development Project (P178032): Stakeholder Engagement Plan," March 5, 2024,

<https://documents1.worldbank.org/curated/en/099030724110532662/pdf/P17803213eafd00d919bdc1733b7472f263.pdf> (accessed August 17, 2025).

⁷ UNODC Eastern Africa, "Tackling Illegal, Unreported, and Unregulated Fishing in Somalia,"

<https://www.unodc.org/easternafrica/en/Stories/tackling-illegal--unreported--and-unregulated-fishing-in-somalia.html> (accessed August 17, 2025).

⁸ One Earth Future Foundation, "Rough Seas: Fisheries Conflict in Somali Waters," 2022,

<https://oneearthfuture.org/sites/default/files/2022-05/Rough%20Seas-fisheries-conflict-somali-waters.pdf> (accessed August 17, 2025).

⁹ FAO, "Somalia – Food Systems Profile," 2025, <https://openknowledge.fao.org/server/api/core/bitstreams/5d7c132d-dbe7-47fe-8bad-cf8116385c64/content> (accessed August 17, 2025).

¹⁰ FAO, "Somalia – Food Systems Profile," 2025, <https://openknowledge.fao.org/server/api/core/bitstreams/5d7c132d-dbe7-47fe-8bad-cf8116385c64/content> (accessed August 17, 2025).

¹¹ Selina Wamucii, "Fish Price in Somalia," updated 2025, <https://www.selinawamucii.com/insights/prices/somalia/fish/> (accessed August 17, 2025).

¹² U.S. International Trade Administration, "Somalia – Fisheries and Blue Economy," January 22, 2024,

<https://www.trade.gov/country-commercial-guides/somalia-fisheries-and-blue-economy> (accessed August 17, 2025).

vii. Climate Risk and Adaptation

Climate variability and change are reshaping the operating envelope for fisheries. Rising sea-surface temperatures, shifting currents and more frequent extremes disrupt migration, spawning and accessibility of stocks. Coastal flooding and erosion threaten fishery infrastructure and settlements, particularly around the Juba and Shabelle basins and low-lying urban peripheries.¹³ Somalia's updated NDC (2021), National Adaptation Plan (NAP) Framework and the 2024 National Climate Change Policy all identify fisheries and coastal management as priority adaptation domains calling for risk-informed planning, resilient infrastructure (e.g., renewable-powered ice plants and cold rooms), mangrove restoration and community-based early warning that integrates marine weather services.¹⁴

viii. Gender and Inclusion

Women play substantial roles in trading, processing and market services, but face structural barriers to asset ownership, finance, and formal market participation. Recent studies from Jubaland suggest women comprise a large share of artisanal fish-trade workers, yet their earnings and decision-making power are mediated by access to capital, storage and safe market spaces.¹⁵

ix. Synthesis and Implications for Programming

Somalia's fisheries sector is richly endowed by virtue of its 3,300 km coastline and access to the Western Indian Ocean, yet it remains underperforming and poorly studied. The status of key coastal demersal stocks is largely unknown, while pelagic species, including tuna, are already subject to heavy fishing pressure across the wider region. The combination of weak and fragmented governance, IUU incursions, under-capitalized SSF, chronic post-harvest loss and climate stress depresses value capture at every stage of the chain. At the same time, there is clear policy traction acceptance of the FMP, a pipeline of public investments (e.g., BADMAAL), and a growing focus on climate adaptation and inclusion that provides a platform for measurable gains over the 2025–2030 horizon. Priority directions emerging from the literature include: (i) tightening MCS and transparent licensing to deter IUU while protecting artisanal grounds; (ii) investing in renewable-powered cold chain, quality and health standards to reduce loss¹⁶ and raise unit values; (iii) scaling market linkages and finance for SSF especially women and youth to professionalize handling and aggregation; and (iv) integrating fisheries into national climate adaptation and coastal resilience programmes to protect assets and livelihoods.¹⁷

¹³ International Development Association (World Bank), Project paper (2024) noting post-harvest loss reduction and value-addition aims, <https://documents1.worldbank.org/curated/en/099052324161040631/pdf/BOSIB-08b97878-d848-4270-8d6d-e665f996841d.pdf> (accessed August 17, 2025).

¹⁴ Federal Republic of Somalia, "Updated Nationally Determined Contribution (NDC)," 2021, <https://unfccc.int/sites/default/files/NDC/2022-06/Final%20Updated%20NDC%20for%20Somalia%202021.pdf> (accessed August 17, 2025).

¹⁵ GIZ, "Women's Small-Scale Fisheries Organizations in Jubaland (Somalia)," 2024, <https://www.giz.de/en/downloads/giz2024-en-studie-somalia.pdf> (accessed August 17, 2025).

¹⁶ Federal Republic of Somalia, "Updated Nationally Determined Contribution (NDC)," 2021, <https://unfccc.int/sites/default/files/NDC/2022-06/Final%20Updated%20NDC%20for%20Somalia%202021.pdf> (accessed August 17, 2025).

¹⁷ GIZ, "Women's Small-Scale Fisheries Organizations in Jubaland (Somalia)," 2024, <https://www.giz.de/en/downloads/giz2024-en-studie-somalia.pdf> (accessed August 17, 2025).

6. Approach and Methodology

The fish price assessment adopted a participatory and inclusive approach, engaging fishers, traders (especially women), processors, community leaders, and government actors throughout the process. By combining community consultations, stakeholder workshops, and focus groups, the study ensured that marginalized voices women, youth, and persons with disabilities were represented, building both trust and ownership.

The assessment was grounded in a sequential transformative mixed-methods design. This approach first captured fish price patterns through structured surveys and daily market monitoring, and then contextualized these trends with stakeholder perspectives from interviews and focus group discussions. At the core was the establishment of a replicable Fish Price Indicator (FPI), expressed in USD/kg, which integrates species weighting, regional and seasonal variability, and quality and transaction conditions. A weighted mean formula ensured comparability across locations and over time, with adjustments for inflation and exchange rates.

The assessment was structured across four phases:

- i. **Inception Phase:** Conducted desk reviews of Somali policies, laws, and international commitments, complemented by sectoral and gender studies. This informed the sampling plan and refined survey and interview tools.
- ii. **Data Collection Phase:** Employed a mixed toolkit combining surveys, market monitoring, key informant interviews, and focus group discussions.
 - **Surveys:** 673 structured household surveys with fishers, traders, processors, and cooperatives across Banadir, Puntland, Galmudug, Jubaland, SouthWest, and Hirshabelle.
 - **Market Monitoring:** 22 days of daily price tracking at landing sites, markets, and transport hubs to capture spatial and temporal shifts.
 - **Key Informant Interviews (KIIs):** 12 Interviews with federal and state ministries, local authorities, cooperatives, exporters, and development partners.
 - **Focus Group Discussions (FGDs):** 11 FGDs with fishers, women traders, youth, cooperatives, and market vendors to explore perceptions and coping strategies.
- iii. **Analysis Phase:** Used statistical tools (SPSS, Power BI) and qualitative analysis software (NVivo) to identify trends and drivers of variation, while benchmarking against regional and international markets. Econometric models isolated determinants such as species, infrastructure, and market conditions.
- iv. **Reporting Phase:** Findings were consolidated into a Fish Price Assessment report and presented to the Ministry of Fisheries and Blue Economy.

Challenges encountered during assessment data collection:

During the data collection phase, the assessment faced administrative hurdles in Jubaland, where the state administration initially withheld clearance for the commencement of data collection. Local authorities insisted that the exercise be managed exclusively through their own team, which created delays and disrupted the planned timeline. This constraint not only stalled the deployment of field teams but also introduced uncertainty around access to target sites and respondents.

After several days of negotiation and dialogue with the Jubaland administration, clearance was finally granted to proceed with the data collection. While the approval enabled the successful completion of the exercise, the delays highlighted the complexities of navigating administrative protocols in decentralized governance contexts. The experience underscored the importance of early engagement with state authorities and the need for clear coordination frameworks to avoid disruptions in future exercises.

7. Fish Assessment Findings

a) Section A: Respondent Demographics

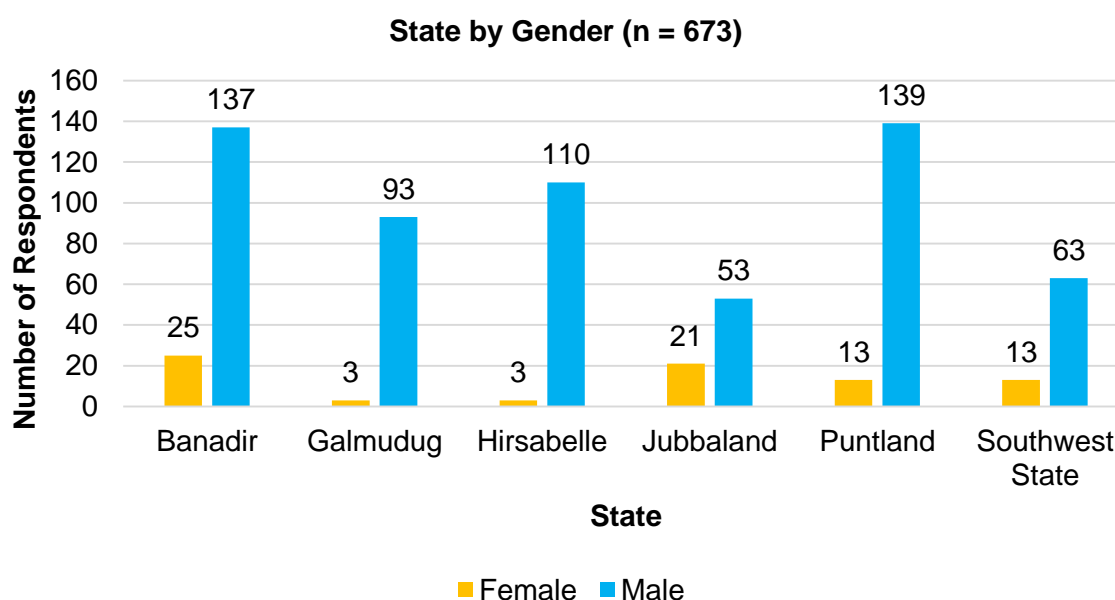
i. Introduction

The assessment covered 673 respondents across Banadir (162), Puntland (152), Galmudug (96), SouthWest State (76), Jubaland (74), and Hirshabelle (113), with a strong male majority (595 men, 78 women). The demographic profile is shaped strongly by gender, geography, and infrastructure. Male respondents dominate overall, but the level of female participation varies considerably between states and across different market or landing sites. These variations reflect a complex interplay of socio-cultural norms, infrastructural development, and the broader enabling environment for women’s engagement in fisheries.

ii. Gender Demographics

Gender demographics by State: The survey revealed notable gendered distributions across the Somali Federal Member States. While men are the dominant respondents across all states, Southwest State and Jubaland stand out for their relatively higher female participation.

Figure 1: Respondent Distribution by State and Gender



The findings suggest that female visibility in the fisheries sector correlates strongly with infrastructure, market access, and socio-cultural norms. In states with better developed roads, cold storage, and vibrant urban markets, women participate more actively often in processing, retail, and small-scale trade. In more conservative or rural states, however, their participation remains extremely limited or informal.

iii. Gender demographics by Market Site

The gender balance also varied across specific fish landing and market sites. Urban and peri-urban locations such as Abbdiaziz in Banadir, Calanley in Jubaland and Jazeera Beach in South West State exhibited more female engagement than rural or remote landing points.

In Hirshabelle State, female participation in the fisheries sector is extremely limited, particularly in the two key coastal areas of Ceel Macaan and Warsheikh. Unlike in some other coastal regions of Somalia where women may be more visibly engaged in processing or retailing, in Hirshabelle their involvement in the fish value chain is minimal and often informal. This is largely due to a combination of cultural norms, seasonal variations in fish supply, and

the specific market dynamics in the area. During the months of July and August, when the fieldwork was conducted, fish availability is relatively low due to seasonal patterns.

This further reduces the likelihood of women being active in fish markets during this period. The few women who do engage in fish trading in Warsheikh operate on a very small scale. Typically, they arrive early in the morning, purchase only a few kilograms of fish, and then transport these to rural villages located several kilometers outside the town, where they resell them in small quantities. Because their trade is not concentrated at the landing sites or in the main markets, they were not captured in the quantitative survey, which primarily targeted actors at the landing and selling points. For this reason, there were no female respondents in the quantitative data collection for Hirshabelle.

While the low number of women interviewed may appear to affect the representativeness of the sample, this reflects the actual structure of the fisheries sector in Hirshabelle and other surveyed states, where women’s participation is generally limited, fragmented, and often informal. The study design prioritized proportional sampling to capture the realities on the ground rather than artificially inflating the numbers of female respondents. In practice, women in coastal Hirshabelle are rarely engaged in boat ownership and only marginally involved in fish trading or processing, with most activity taking place on a very small scale in rural resale markets outside the formal landing sites. For this reason, few women were present in the primary sampling frame. To ensure that women’s perspectives were not excluded, the research team supplemented the quantitative survey with targeted qualitative methods, notably a dedicated Focus Group Discussion with female fish traders in Warsheikh. This mixed-methods approach allowed the study to capture both the statistical reality of women’s limited participation and the nuanced insights into their roles, challenges, and coping mechanisms, thereby maintaining representativeness while enhancing analytical depth.

Table 4: Top Landing/Market Sites by Gender Composition

State	Site	Female	Male	Total respondents	% Male	% Female
Banadir	Shangani – landing site	10	57	67	85.1	14.9
	Abdiyaziz- Kulmis Fish Market	13	71	84	84.5	15.5
Galmudug	Hoby-Midnimo landing site	3	86	89	96.6	3.4
Hirsabelle	Ceel Macaan-Fish Market	3	84	87	96.6	3.4
	Warshikh-Fish Market	3	16	19	84.2	15.8
Jubbaland	Calanley Fish Market	20	50	70	71.4	28.6
Puntland	Garacad	12	129	141	91.5	8.5
SouthWest State	Abaay-dhaxan beach, Landing Site	3	49	52	94.2	5.8
	Barawe-Buntani Fish Landing Site & Market	7	43	50	86	14
	Jazeera beach -Fish Landing Site & Market	3	11	14	78.6	21.4

Findings indicate that sites located in or near urban centers such as Mogadishu, Barawe, and Kismayo demonstrated higher female visibility, with female participation ranging between 13 and 27 percent. Examples include Calanley Market (27.6 percent female), Kulmis (21.2 percent female), and the Mogadishu Fish Market (13.3 percent female). These markets benefit from better infrastructure such as stalls, storage facilities, and access to diverse buyers, providing women with safer and more profitable opportunities to engage in trading and processing.

By contrast, remote landing sites such as Kawanka, Suuqa Malayga, and Garacad are almost exclusively male. These sites tend to function primarily as docking points with limited amenities such as toilets, water, or cold chain storage that might otherwise enable women's participation. Cultural norms in rural contexts also further constrain women's mobility, reinforcing their exclusion from direct market activities. From the findings, several cross-cutting insights emerge:

iv. Gendered Roles in the Value Chain

Men dominate fishing and other capital-intensive, physically demanding roles, while women are more active in lower-capital, trade-oriented activities such as retailing and small-scale processing. This division reinforces disparities in income potential, market influence, and exposure to broader fisheries dynamics.

v. Availability and accessibility of key facilities

Women's participation in the fisheries value chain is highly contingent on the availability and accessibility of certain key facilities. Cold storage facilities play a decisive role: where reliable ice plants and storage rooms exist, women are better able to extend the shelf life of their fish, reduce losses, and negotiate fairer prices. In states such as Galmudug and Banadir, where cooperative cold rooms are more common, women traders reported having more confidence to invest in larger volumes. In contrast, in Hirshabelle and SouthWest State where such infrastructure is limited women traders are forced to sell quickly at lower prices, often under pressure from middlemen. One female trader in Mogadishu explained: *"When I have access to cold storage, I can keep my fish for two or three days. Without it, I must sell in a hurry, even if the price is bad."*

Market stalls and designated trading spaces are another critical enabler. Women are most visible in areas where markets provide safe, sheltered stalls that protect them from the elements and from harassment. In Kismayo, for instance, women described being squeezed out of informal street trading due to insecurity and the dominance of male traders. As one female vendor put it: *"Without a stall, you stand outside and people push you aside. In the stall, you are respected as a seller."* Reliable transport facilities also matter significantly: poor or costly transport restricts women's ability to reach urban centers where fish fetch higher prices. In Jubbaland, women noted that dependence on male relatives or hired transporters not only increases costs but also limits their autonomy. One participant in a focus group said: *"If the road is bad or I cannot pay for a car, my fish will rot before I reach the big market."*

Finally, women's involvement is strongly shaped by physical safety and reliable networks. Locations where markets are well-policed or community watch groups are active see much higher female participation. Conversely, in areas where insecurity is prevalent, women report withdrawing from active trading, leaving men to dominate. *"Sometimes I want to go to the evening market, but it is not safe. My husband goes instead, and I lose the chance to sell,"* explained a trader from Baidoa. This interplay between infrastructure and social protection illustrates why women cluster in urbanized centers such as Mogadishu, Kismayo, and Garowe, where facilities, safety, and networks are stronger, while remaining underrepresented in rural or underserved markets.

vi. Cultural and Social Constraints

In more conservative or rural states and landing sites, women’s participation is minimal, reflecting persistent barriers related to mobility, cultural expectations, and lack of supportive infrastructure.

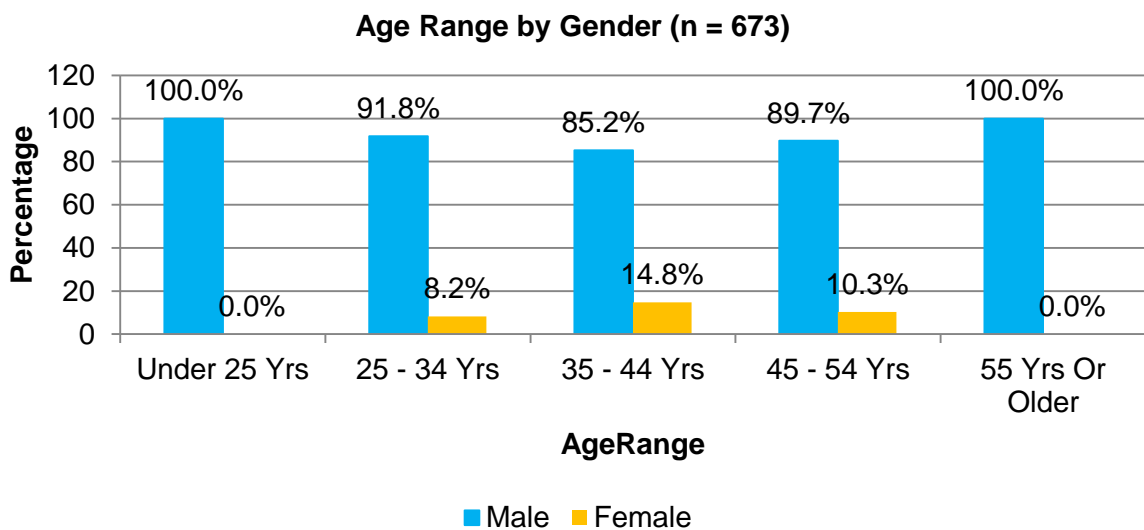
These findings therefore highlight a clear gender imbalance in Somalia’s fisheries sector, shaped not only by economic opportunities but also by cultural and infrastructural factors. While women remain underrepresented, their modest yet consistent presence in urban and well-connected markets underscores potential entry points for enhancing gender inclusion in the sector.

vii. Age Demographics

The assessment findings revealed that the majority of respondents fell within the 25–34 and 35–44 age ranges, reflecting the sector’s strong reliance on individuals in their productive middle years. Men were more prominently represented in the youngest (18–24) and oldest (45+) cohorts, suggesting that males both enter the sector earlier and remain active longer, despite the physically demanding nature of fishing-related work. By contrast, women were more heavily concentrated in the middle age bands of 25–44, highlighting a different lifecycle of participation.

According to interviewed key informants, this pattern mirrors socio-cultural dynamics within Somali society. Women often enter the sector later in life, typically after marriage or the completion of early childbearing responsibilities, which may explain their predominance in middle adulthood. Men, on the other hand, often inherit fishing practices informally from fathers or family networks, resulting in higher representation in the 18–24 category. Moreover, their sustained involvement into older age groups reflects both economic necessity and entrenched livelihood identity, even as physical strain increases. These age-gendered dynamics underscore the intersection of cultural norms, livelihood inheritance, and gendered pathways of economic participation.

Figure 2: Age range distribution by gender



b) Section B: Respondents Production or Trading Profile

Findings highlight how tenure, fishing gear, cold storage access, and marketing channels shape livelihoods, revealing both gendered patterns and strong geographic differences.

i. Experience in Role

Respondents reported a median of nine years in their current production or trading role (5–12 years). Women tended to have slightly longer tenure (median 10 years) compared to men (8 years), though the difference is not statistically significant. Instead, differences emerged sharply across states. In Puntland, Jubaland, and SouthWest, median tenure reached 10 years, while Hirshabelle respondents reported only 5 years on average, indicating a much younger or renewing cohort. This is further reinforced by the proportion of highly experienced actors (10+ years): more than half in SouthWest (60.5%), Jubaland (60.8%), and Puntland (55.9%) compared to only 11.5% in Hirshabelle. This finding suggests that experience gaps are place-based rather than gendered, calling for state-specific programming. Training and financial services will be particularly impactful in newer markets like Hirshabelle, Galmudug, and Banadir.

The difference in years of experience is impactful as it reveals where the fisheries sector is more mature and entrenched versus where it is still emerging and fragile. In states like Puntland, Jubaland, and SouthWest—where most actors have been in the sector for a decade or more fishers and traders tend to have established networks, deeper practical knowledge, and stronger informal governance systems, making them better positioned to adopt modernization and connect to export markets. Conversely, in Hirshabelle, Galmudug, and Banadir, where many participants have only a few years of experience, the sector is dominated by newer entrants who may lack technical skills, business acumen, and access to financial services, leaving them more vulnerable to shocks. This disparity suggests that programming must be differentiated by state maturity: in experienced markets, interventions should focus on upgrading infrastructure and market competitiveness, while in newer markets, priority should be given to training, organizational support, and starter financing to consolidate participation and enable sustainable growth.

ii. Gear and Business Activities

Fishing and trading activities reveal both gendered and state-specific dynamics. Men (n=352 reporting gear) were broadly distributed across pole-and-line (32.7%), handlines (32.4%), and traps (29.5%), with smaller shares using gillnets (18.5%), beach seines (15.6%), longlines (10.5%), purse seines (8.2%), and trawls (2.6%). Women (n=23 reporting gear) overwhelmingly relied on handlines (47.8%), reflecting their preference for lower-capital tools, with only minor participation in traps (17.4%) and pole-and-line (8.7%). Regional gear profiles varied significantly, reflecting both ecological context and capital intensity. The implication is clear: interventions around gear support should not be designed generically by gender but instead tailored to local market realities and capital constraints. For example, handline support could expand women's participation, while cooperative models could strengthen shared gear management in Puntland and Galmudug. This approach would not only reduce the individual financial burden of acquiring and maintaining expensive equipment but also enhance equitable access across fishing communities. In these states, where the fisheries sector is relatively mature and fishers already organize through associations or informal groups, collective ownership of gear such as nets, longlines, and traps could improve efficiency, spread risks, and reduce overexploitation linked to uncoordinated gear use. For example, pooling resources for communal nets or trap sets would allow smaller operators and women's groups to participate in larger-scale fishing without needing to independently shoulder the high upfront costs. Cooperative management also encourages shared responsibility for maintenance and adherence to sustainable practices, since members have a vested interest in preserving the gear and the resources it targets. Importantly, such models could be linked to training in financial literacy and governance, ensuring that the cooperatives remain

transparent and inclusive. This would make fisheries in Puntland and Galmudug more resilient, while opening pathways for marginalized actors—particularly women and youth—to integrate more fully into the sector.

iii. Access to Ice and Cold Storage

Overall, 68.3% of respondents had access to ice or cold storage, with little difference between men (67.7%) and women (73.3%). The real disparities lay between states. Access was strongest in Galmudug (94.8%), Banadir (87.0%), and Jubaland (85.1%), while far fewer respondents in Hirshabelle (42.5%) and SouthWest (25.0%) reported having such access. These location-based inequalities mean that targeted investment in ice plants, solar-powered freezers, or cooperative cold rooms is most urgent in SouthWest and Hirshabelle, where access gaps risk undermining market competitiveness.

iv. Cold Storage Facility Types

Among those with access, facility type varied widely by state. In Banadir, Jubaland, SouthWest, and Hirshabelle, own storage dominated (72–90%), while Puntland and Galmudug respondents more often relied on cooperative or shared facilities (≈58%). Gender differences were negligible, with state context the main driver. This suggests that cooperative cold chain investments are particularly relevant in Puntland and Galmudug, where shared infrastructure is already embedded, while private storage expansion aligns better with Banadir and Jubaland.

v. Market Sites for Sales

Sales channels varied significantly across the country. In Puntland, 72.4% sold primarily at landing sites, suggesting stronger dockside logistics and possibly better local absorption. Elsewhere, market places were more prominent: 37–43% of respondents in Banadir, Galmudug, and SouthWest used them as their main outlet, while Jubaland traders reported 33.8% market place use. Hirshabelle reflected a mixed system, with 34.5% selling at landing sites and significant shares also at market places. Selling fish at landing sites provides fishers with quick sales, immediate liquidity, and reduced risks of spoilage or transport costs, but the trade-off is that prices are generally lower because bulk buyers and middlemen dominate, capturing the higher margins further along the value chain. Market places, on the other hand, often offer higher prices since fish is sold closer to consumers and allows for greater bargaining power, particularly for women engaged in retailing. However, this comes with added costs and risks: fish must be transported, stored, and preserved for longer periods, raising the likelihood of quality loss if cold chain facilities are inadequate. Market competition can also depress prices during gluts, and safety issues may constrain women's mobility. In effect, landing sites provide certainty and speed at the cost of income potential, while market sales promise higher returns but require stronger infrastructure and risk management—underscoring the importance of investing in cold chain systems and transport to balance these trade-offs and allow actors across locations to maximize value.

vi. The primacy of place over gender in shaping market realities

Cross-variable analysis reinforces the primacy of place over gender in shaping market realities. Experience does not explain ice access, as seasoned actors are found in both constrained and well-served states. Instead, ice access is tied closely to geography, with SouthWest and Hirshabelle as the most underserved. Similarly, while women lean toward low-capital handlines, overall gear and sales site choices are dominated by state-level contexts. This indicates that tailored programming - capacity-building in younger states, cooperative cold chain investment in Puntland/Galmudug, and private storage/market logistics in Banadir/Jubaland/Hirshabelle will yield the greatest returns.

c) Section C: Fish trading activity- buying and selling dynamics across gender and regional contexts.

The assessment captured detailed insights into fish trading activity from the last complete trading day, offering a snapshot of both buying and selling dynamics across gender and regional contexts. Out of the 673 respondents, 410 reported making at least one purchase, representing approximately 61 percent overall buying activity. The most active trading was observed in Galmudug and Puntland, while women though fewer in number were disproportionately engaged, with 88 percent of female respondents making purchases compared to 63 percent of men. This highlights that although women remain numerically underrepresented in the sector, they play a critical role in sustaining high-value fish transactions.

i. Buyers by Species

Assessment findings showed the distribution of buyers across the main fish species traded on the last complete trading day as shown in the table below. Yellowfin tuna had the highest number of buyers (148), reflecting its dominance as the most sought-after commodity. Mackerel and Skipjack tuna followed as important species, each attracting a significant share of buyers. Smaller species like Sardines and Shark, though traded by fewer people, still contributed to local market dynamics. The table 5 below shows the average purchase quantities and prices, highlighting that larger species such as Yellowfin and Mackerel were purchased in bulk, typically at higher price points compared to smaller pelagics.

Table 5: Main fish species traded on the last complete trading day (N=673)

Species	Number of Buyers	Average Quantity (kg)	Average Price (USD/kg)
Yellowfin tuna	148	30.1	3.55
Mackerel	75	33.2	3.1
Skipjack tuna	34	32.1	2.4
Sardines	29	10.9	2.16
Shark	16	28.6	1.16

ii. Fish Sellers and buyers by Species

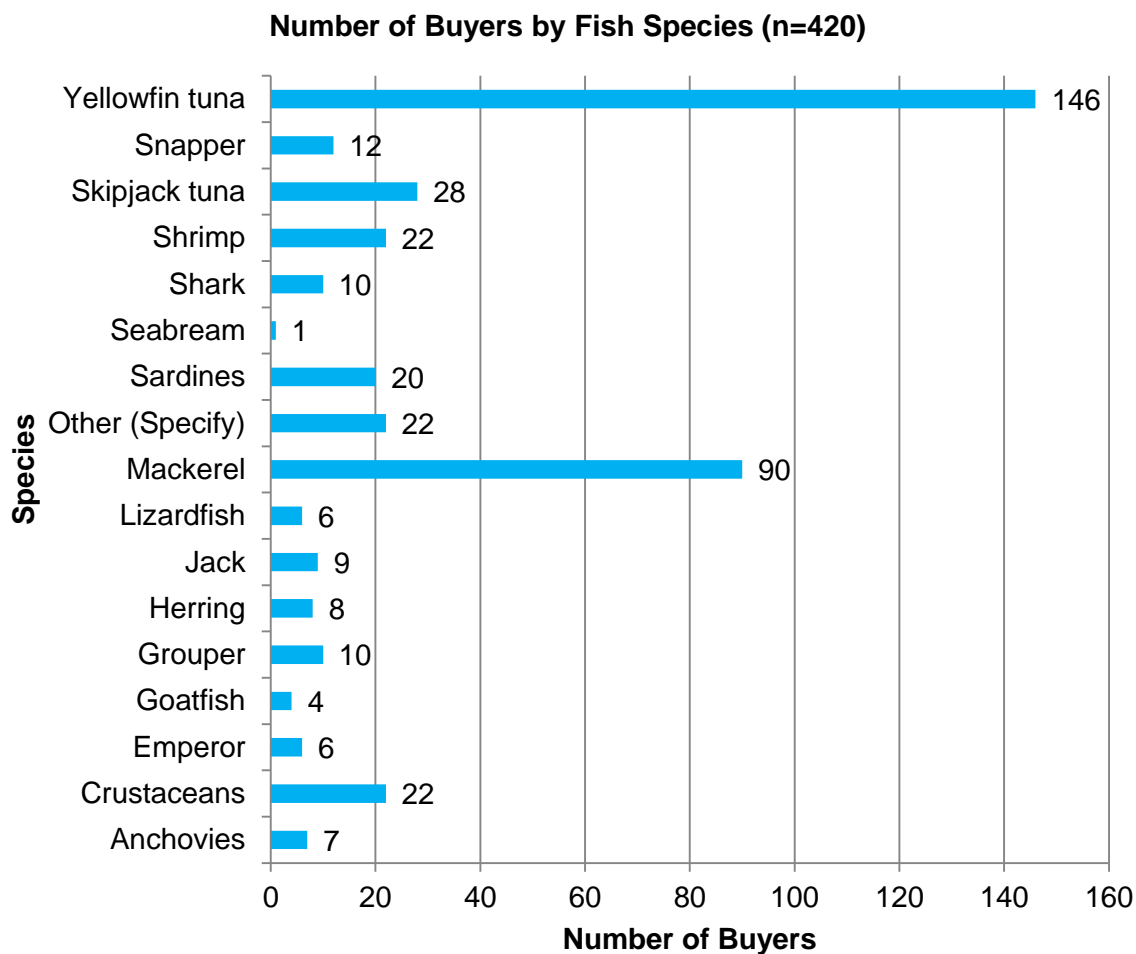
Findings captured the species sold by respondents during the last complete trading day. Yellowfin tuna again emerges as the leading species, with 122 sellers moving an average of 28.3 kilograms at a price of USD 3.61/kg. Mackerel and Skipjack tuna were also widely sold, with sellers transacting in relatively large volumes. Sardines and Shark accounted for smaller proportions of sellers, though they remain significant in local market systems. The table illustrates how Yellowfin, Mackerel, and Skipjack not only dominate buying but also underpin selling activity, reflecting their importance as the backbone of the trade.

Table 6: Species sold by respondents during the last complete trading day

Species	Number of Sellers	Average Quantity (kg)	Average Price (USD/kg)
Yellowfin tuna	122	28.3	3.61
Mackerel	67	31.4	3.13
Skipjack tuna	30	33.6	2.46
Sardines	25	11.7	2.24
Shark	14	30.7	1.12

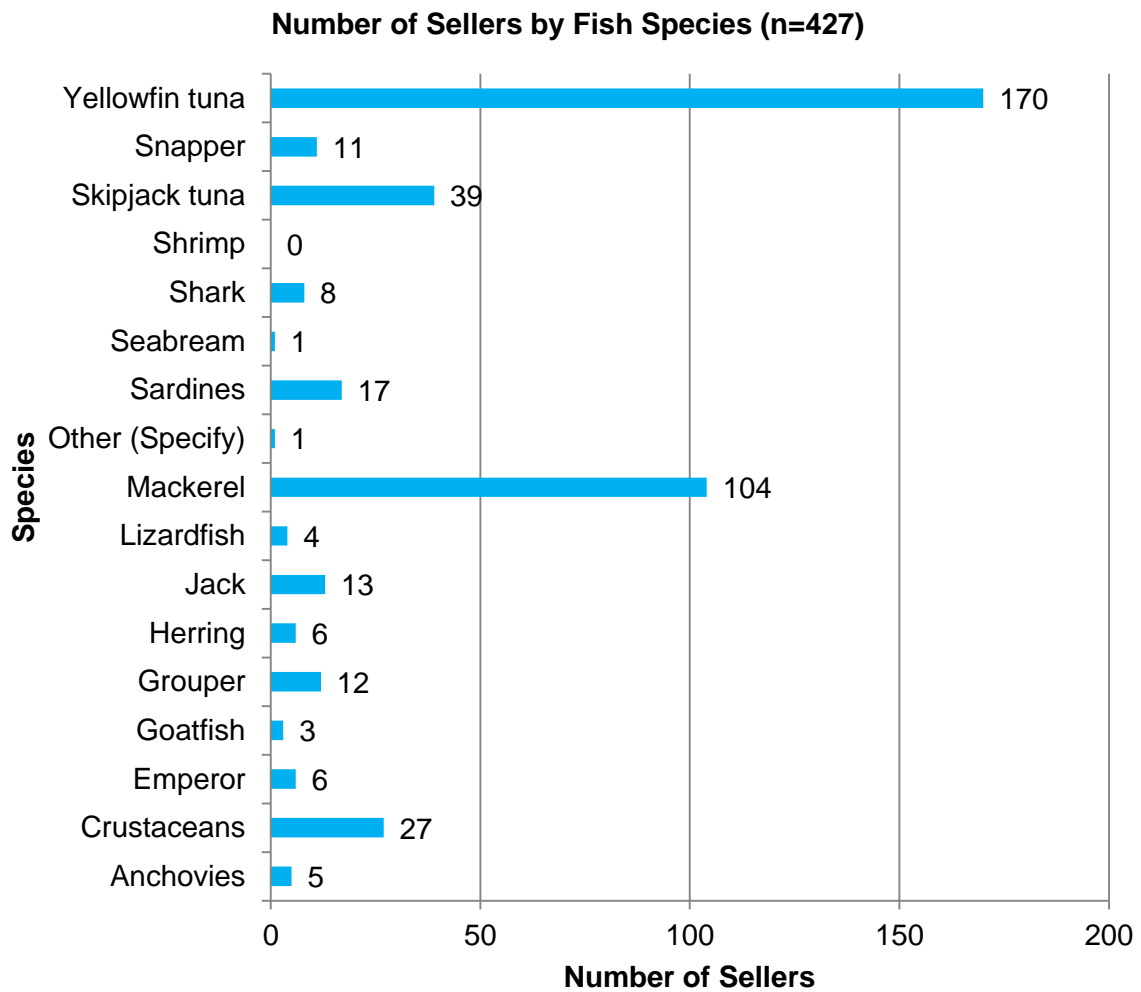
With regard to buyers for the top five fish species, Yellowfin tuna clearly dominates, followed by Mackerel and Skipjack tuna. Sardines and Shark attract smaller groups of buyers, but their role in supporting retail and secondary market chains is notable. The figure underscores the central role of Yellowfin in driving fish trading activity. The figure below illustrates the number of buyers for the top five fish species.

Figure 3: Number of Buyers by Species



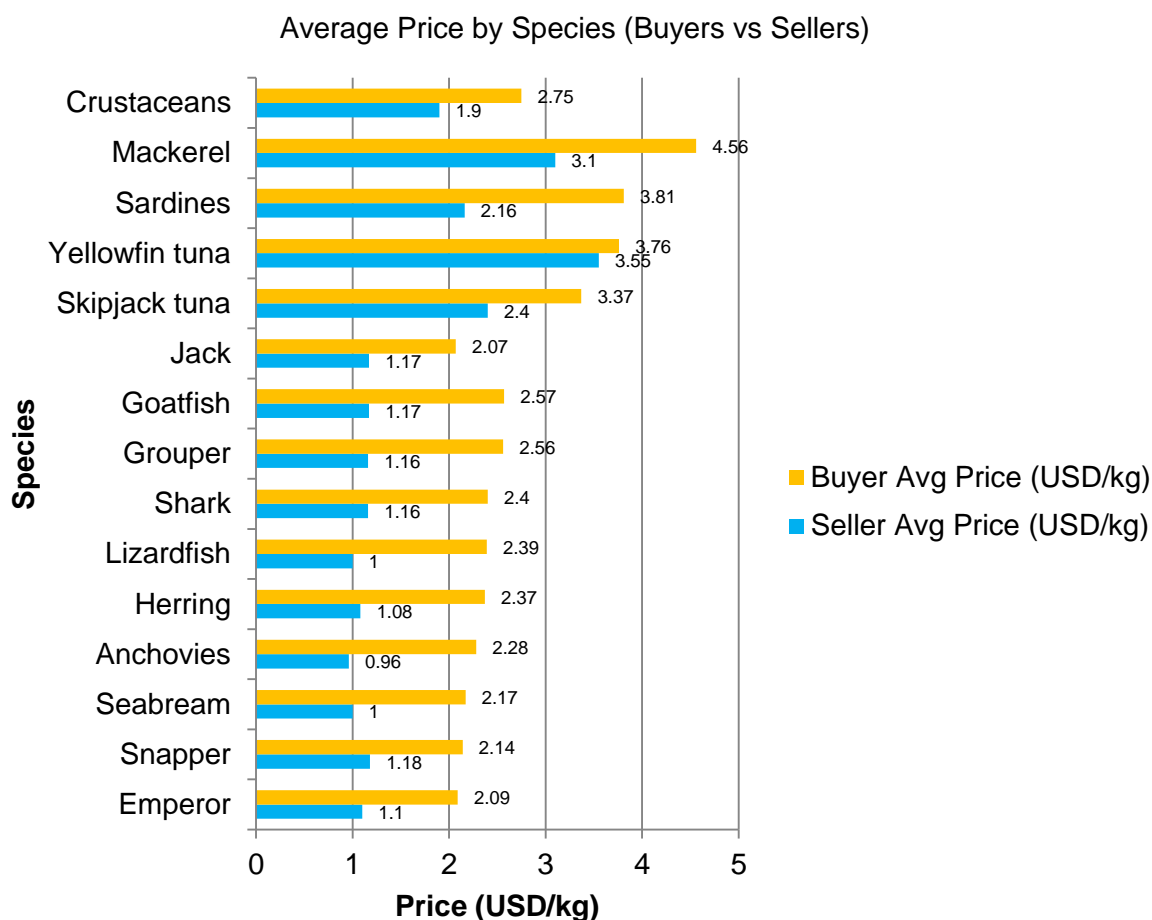
Findings also showed the number of sellers for the same top five species. Yellowfin tuna is again the most prominent, with more sellers engaged than in any other species. Mackerel and Skipjack follow closely, reflecting their importance in sustaining daily trading volumes. Sardines and Shark involve smaller but meaningful groups of sellers, indicating diverse opportunities within the trade.

Figure 4: Number of Sellers by Species



Assessment findings indicate that while prices remain broadly aligned between the two groups, slight variations are evident. Yellowfin tuna maintains the highest average price across both buyers and sellers, while Shark records the lowest. These trends reflect not only species value but also bargaining power dynamics in different market segments. Figure 3 compares average prices per kilogram across buyers and sellers.

Figure 5: Average Price by Species (Buyers vs Sellers)



iii. Storage Methods Used

The assessment revealed that post-harvest storage practices remain rudimentary across much of Somalia’s fisheries sector. Ambient storage without cooling is by far the most common method, used widely by both men and women in Banadir and Hirshabelle. This practice places fish quality at significant risk, especially in hot climates where spoilage occurs quickly. Ice boxes were reported at moderate levels, primarily by men in Puntland and Galmudug, suggesting that where infrastructure and resources are available, traders are more likely to adopt cooling methods. Use of reefer trucks or refrigerated vehicles was extremely rare and concentrated exclusively in Puntland, again underscoring the uneven distribution of cold-chain infrastructure across regions.

The gender dimension of storage practices is particularly striking. Women almost never use refrigerated systems, reflecting barriers of income, scale, and accessibility. Their reliance on ambient storage reflects both the smaller average quantities they handle and the lack of tailored infrastructure for women traders. This gender gap has direct implications for profitability and food safety, making investment in inclusive storage solutions an urgent policy priority.

iv. Time from Landing to Sale

The data also highlights sharp differences in the time it takes for fish to be sold after landing. On average, women traders took 7.9 hours (median 8.5 hours) before completing sales, compared to 6.1 hours (median 5.0 hours) for men. This indicates that women are often forced to wait longer for buyers, reflecting their smaller market networks and reduced bargaining power. The longer time women take to complete sales - 7.9 hours on average compared to 6.1 hours for men—does not necessarily mean they are more engaged in markets or

processing, but rather reflects their weaker integration into faster sales channels and market linkages. Men are more connected to wholesalers and bulk buyers, including external linkages that move fish beyond the landing sites to urban centers or export channels, enabling quicker transactions. Women, by contrast, often operate in smaller volumes, rely on ambient storage, and sell in fragmented retail markets where sales are slower and bargaining power is weaker. As a result, they must wait longer to attract multiple small buyers instead of closing a single bulk deal, which erodes their profitability and exposes them to higher risks of spoilage. This highlights the importance of strengthening women's access to cold storage, cooperative sales, and safer transport networks to reduce waiting times and enhance their ability to compete in both local and external markets.

Regionally, Banadir exhibited the longest turnaround times, with an average of 7.3 hours. This is consistent with urban congestion and fragmented supply chains, which delay transactions. By contrast, Puntland and Galmudug demonstrated much shorter sale cycles, averaging 2.5–3.0 hours, indicating more efficient logistics and better buyer coordination.

Longer time-to-sale not only affects traders' income but also increases the risk of post-harvest losses. Women, who are already disadvantaged in terms of storage access, face a compounded vulnerability when longer waiting times coincide with lack of cooling facilities.

v. Gender and Buyer Type

Women are more likely to sell directly to local consumers, in small but frequent transactions, while men dominate sales to wholesalers, traders, and exporters. This highlights the need for tailored interventions to help women scale up through better access to cold storage and cooperative bulk marketing.

vi. State and Storage Type

Cold-chain infrastructure is almost exclusively concentrated in Puntland. Other states, including Banadir, Hirshabelle, and SouthWest, rely heavily on ambient or ice-based storage. The assessment confirmed that ice-based storage is one of the most practical and effective methods for preserving fish quality and stabilizing incomes. About 68.3% of respondents reported access to ice or cold storage, though access was highly uneven - very strong in Galmudug (94.8%), Banadir (87.0%), and Jubaland (85.1%), but limited in Hirshabelle (42.5%) and SouthWest (25.0%). In regions such as Puntland and Galmudug, fishers often relied on cooperative cold storage, while in Banadir and Jubaland private storage was more common. Ambient storage without cooling remained the dominant method in many areas, placing fish quality at significant risk of spoilage in hot climates. Where ice was available, traders particularly women were more confident to buy and hold larger volumes for longer, reducing the need to sell immediately at poor prices. Findings highlights that women, who wait longer on average to complete sales (7.9 hours compared to 6.1 for men), face compounded risks of spoilage when lacking cooling options, making ice-based storage critical for protecting their profitability and bargaining power. Overall, poor cold-chain infrastructure was cited as the leading cause of price shocks, underscoring that consistent use of ice from capture through to market extends freshness, reduces post-harvest losses, and offers a lower-cost, more accessible alternative to freezing in Somalia's fisheries sector.

vii. Form of Fish Sold and Time to Sale

Fresh fish, which is most vulnerable to spoilage, tends to move faster in the market. Dried or salted fish, while more resilient, often takes longer to sell, reflecting slower retail turnover. This suggests that while cold-chain expansion is vital for fresh fish trade, improving retail networks and consumer access is equally important for value-added products.

These findings confirm that storage and time-to-sale are critical leverage points for improving the efficiency, equity, and inclusivity of Somalia's fisheries sector. Policy and donor investments in cold-chain infrastructure, combined with gender-responsive support to women

traders, will significantly reduce losses, improve incomes, and expand access to higher-value markets.

d) Section D: Financial Realities of Fish Traders

This section uncovers the daily cost structure and profitability of fishers, processors, and traders across the assessed areas. It reveals how people spend to earn and what that tells us about equity, infrastructure, and opportunity.

i. Analysis by Gender

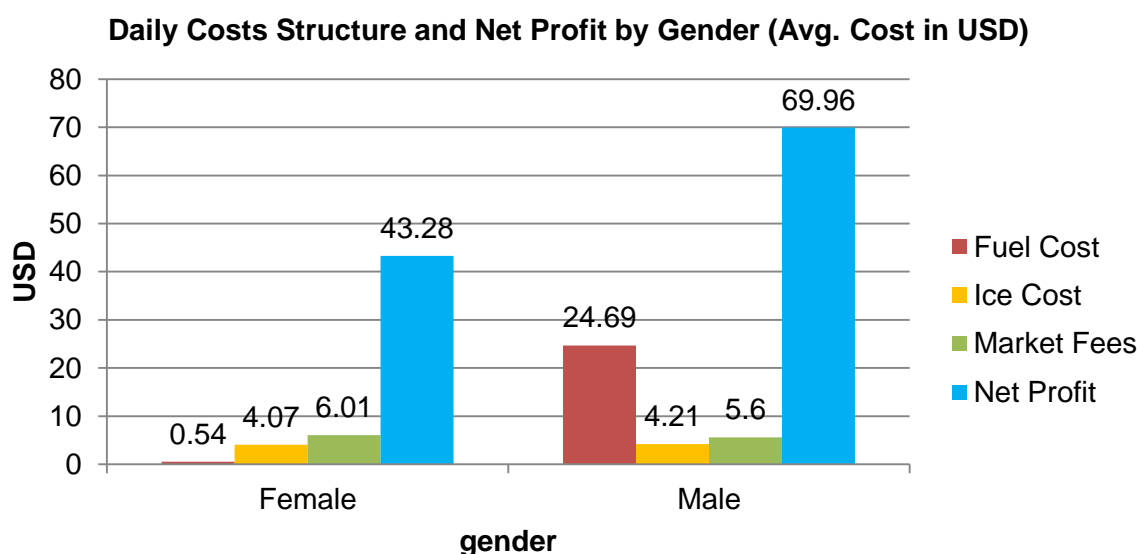
The gender analysis highlights how women and men experience different cost structures and profitability in the fisheries sector. Men incur significant costs in fuel and boat rent as they dominate direct fishing, while women, who focus more on trading and reselling, operate with far lower capital requirements. However, the difference in net profit suggests that men benefit from larger sales volumes and direct access to fish supply, while women earn meaningful but smaller margins with reduced risk exposure.

Table 7: Comparison of average costs and net profits by gender:

Cost Item	Women (USD)	Men (USD)	Interpretation
Fuel / Boat Rent	\$0.54	\$24.69	Women rarely go fishing directly – most buy & resell, reflecting lower capital needs.
Ice / Cooling	\$4.07	\$4.21	Similar for both. Women are engaging in preservation, but with small coolers/shared resources.
Market Fees	\$6.01	\$5.60	Comparable. Suggests women are active in formal markets.
Net Profit	\$43.28	\$69.96	Despite low fuel cost, women earn less, likely due to smaller sales volumes.

Findings indicate the differences between women and men in costs and profits as shown in the figure below. It clearly shows how men’s expenses on fuel and fishing inputs are much higher, while women’s earnings are generated primarily through lower-cost trading activities as Figure 4 below.

Figure 6: Daily cost structure and net profit by gender ((N=673))



ii. Analysis by Location

Findings indicate that profitability and costs vary widely across the different states. Table 8 reflects the costs and profits of small-scale fish traders and market actors who operate primarily at the post-harvest and marketing stages of the value chain, including boat owners selling part of their catch, landing site traders, and market retailers. The analysis captures the cost structure and net returns associated with local fish distribution from landing sites to end consumers within Somalia rather than focusing on international trade.

Among all regions, Banadir (Mogadishu) stands out with the highest reported net profit (\$151.08). This is driven by the city's large urban population, higher consumer purchasing power, and dense demand from households, hotels, and restaurants. These conditions support higher retail prices, which justify elevated market fees (\$13.45) and fuel expenses (\$7.30) while still resulting in high profitability. In contrast, Puntland, while having lower costs (fuel \$0.76, market fees \$0.02), reports a modest net profit of \$14.70. This is consistent with a more cost-efficient but less commercially intensive supply chain likely due to its coastal distance from major consumption hubs. Galmudug records \$9.17 in net profit, reflecting moderate costs (fuel \$4.39, fees \$1.34) and possibly limited urban demand or shorter local supply chains. For Jubaland (\$9.10), SouthWest (\$8.90), and Hirshabelle (\$8.80), reported profits are lower than Puntland, aligning with expectations. While costs remain minimal (all under \$1), the low reported margins suggest either: Limited commercial scale, Weak market demand, or underreporting due to small sample sizes or data quality gaps.

These regions may rely more on subsistence or community-level trading, resulting in lower observable profits in this analysis.

Table 8: Average costs and profits across locations (n=673)

State	Avg. Fuel (\$)	Ice Cost (\$)	Market Fees (\$)	Net Profit (\$)	Remarks
Banadir	\$7.30	\$0.00	\$13.45	\$151.08	Strong urban market demand, higher operational costs, highest profitability.
Puntland	\$0.76	\$0.00	\$0.02	\$14.70	Efficient cost base, modest profitability.
Galmudug	\$4.39	\$0.00	\$1.34	\$9.17	Moderate expenses, limited market scale.
Jubaland	\$0.34	\$0.00	\$0.01	\$9.10	Low expenses, low profits — small-scale trade.
SouthWest	\$0.11	\$0.00	\$0.02	\$8.90	Minimal reported costs, possibly subsistence trade.
Hirshabelle	\$0.80	\$0.00	\$0.02	\$8.80	Similar trend — low margin, localized markets.

Figure 7 below highlights the net profit levels across states. The chart shows that traders in Banadir earn far higher profits compared to other regions, while profits in Puntland and Galmudug remain low despite relatively low operational costs.

Figure 7: Net profit levels across states

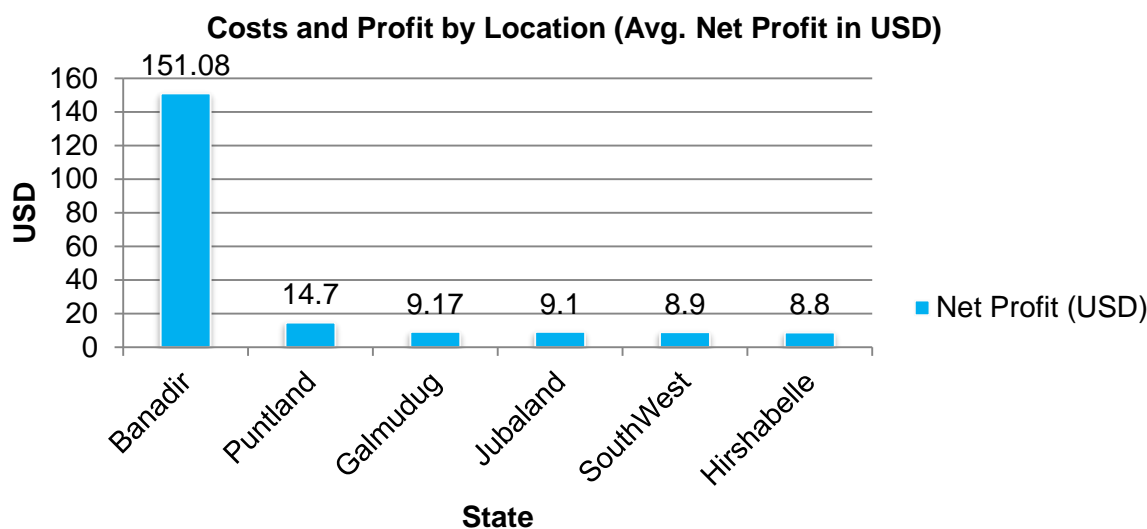
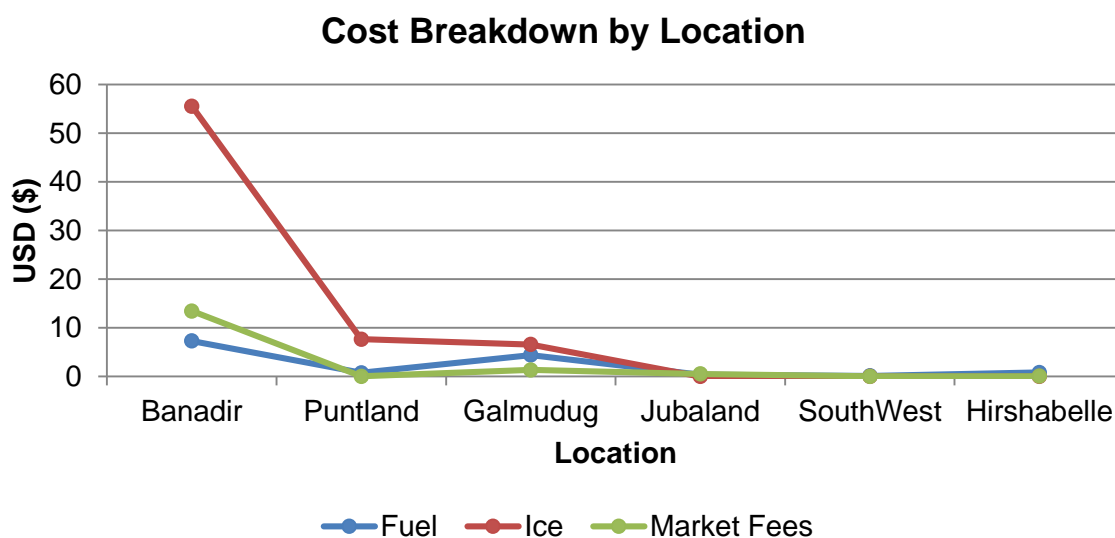


Figure 8 below breaks down the costs of fuel, ice, and market fees across the different states. It highlights how Banadir traders face higher market fees but still achieve higher profits, while Galmudug traders struggle with moderate costs and very low profitability.

Figure 8: Cost breakdown by Location (n=673)



e) Section E: Seasonality & External Shocks

i. Seasonality — High Volume Fish Months

The analysis shows that January is by far the busiest fishing month, with nearly 300 mentions from respondents, followed by March, June, November, and August. This seasonal pattern demonstrates that January is the most critical period for fishing activities and therefore a key point for planning interventions. Gear distribution, credit schemes, and cold storage facilities should be rolled out ahead of January to maximize impact. Women tend to join the value chain slightly later than men, indicating the need for gender-sensitive programming that supports their entry as traders.

The table below highlights that January remains the most dominant period of fishing for both men and women, although men are more active in mid-season periods between March and

June. The seasonal distribution of fishing activities shows clear gendered patterns, closely tied to the Indian Ocean monsoon cycle. January, which falls within the inter-monsoon/early northeast (north) monsoon period, stands out as the dominant peak for both men and women, driven by strong ocean currents and naturally high catch volumes. Men remain more consistently active during the north monsoon months of March through June, when direct fishing is most intensive, while women's engagement is lower at this stage, reflecting their more market-driven entry into the trade. This highlights the importance of aligning interventions for women with downstream trading opportunities that emerge later in the season. A secondary peak occurs in November, which follows the end of the southwest (south) monsoon, when demand rises with the rains and holiday season, and both men and women participate more evenly in the value chain.

Table 9: Seasonality —Volume Fish Months

Month	Men (%)	Women (%)	Interpretation
January	Very High	High	Peak for both sexes, driven by strong currents and high catch season.
March–June	Mid-range	Lower	Men more active due to direct fishing, women join later in trading activities.
November	Balanced	Balanced	Secondary peak linked to rains/holiday demand.

ii. Seasonal Low-Price Months

The findings reveal that June consistently emerges as the most difficult month for prices, with 234 mentions, largely due to the northward tuna migration that coincides with the onset of the southwest monsoon - a centuries-old seasonal pattern particularly evident along the Mogadishu coast. The resulting surge in landings creates temporary oversupply, while high temperatures accelerate spoilage and reduced consumer demand after Ramadan further depresses prices. January and March also register periods of low prices, though with less severity, reflecting smaller fluctuations in catch volumes and market absorption. Together, these dynamics illustrate the sector's characteristic boom-and-bust cycle, where the absence of adequate cold chain and preservation capacity forces fishers and traders to sell their catch at unsustainably low prices, undermining livelihoods during what should otherwise be peak fishing periods.

The table 10 - below demonstrates that June is the most critical month for price drops, directly tied to excess landings and weak cold-chain facilities. This calls for targeted programming around June, including investment in solar-powered freezers, mobile iceboxes, and market linkage strategies to ensure fish can reach urban demand centers where prices remain stronger.

Table 10: Seasonal Low-Price Months

Month	Count of Mentions	Main Causes
June	234	Oversupply, spoilage in heat, reduced demand post-Ramadan
January	66	Post-peak glut, early oversupply
March	56	Mid-season excess landings

iii. Current Price Shock Factors

Respondents identified three primary factors currently driving price shocks across Somalia's fish trade: poor cold-chain facilities, high fuel costs, and bad weather. Together, these account for over 85 percent of responses, signaling structural challenges that require both infrastructure and policy interventions. Women were more likely to cite the lack of cold storage as their biggest constraint, while men were more concerned with fuel costs, reflecting their greater exposure to sea-based operations.

The table confirms that poor cold-chain facilities are the dominant price shock factor, particularly in Puntland and Galmudug, while fuel costs disproportionately affect male fishers. Weather shocks remain a localized issue in Jubaland, where rough seas and insecurity frequently undermine stability. Programming implications include targeted investment in cold-chain infrastructure, fuel efficiency measures, and climate adaptation strategies.

Table 11: Current Price Shock Factors

Reason	Responses	Gender/Location Insights
Poor cold-chain facilities	181	Women most affected; cited strongly in Puntland & Galmudug.
High fuel costs	127	Men’s top concern; less cited in Banadir.
Bad weather	100	Prominent in Jubaland due to rough seas and conflict-linked disruptions.

Findings from FGDs indicate that these statistics are not just market data but lived experiences of people navigating a fragile sector. A woman trader in Galmudug loses half her profit every June because she lacks a cooler, forcing her to sell at a fraction of the fish’s real value. A young fisher in Jubaland watches his January catch lose value by noon due to repeated power failures affecting his freezer. Even in Banadir, where urban access is stronger, traders emphasize that if they had iceboxes, they could sell for three days instead of just three hours. These stories underscore the urgent need for targeted, context-sensitive interventions.

Further, KII findings reveals deeper relationships between landings, preservation, and market performance. High landings combined with poor preservation consistently result in price crashes, especially evident in June. Women tend to cite infrastructure gaps as their greatest challenge, while men cite input costs such as fuel. Urban markets such as Banadir soften the effects of these shocks by absorbing supply more efficiently. State-level differences show Galmudug suffering most from cold-chain gaps, Jubaland from weather and conflict, and Banadir from fewer fuel-related challenges. These relationships point to the importance of tailored interventions across gender and location. The chart below illustrates the peak fishing months as reported by respondents:

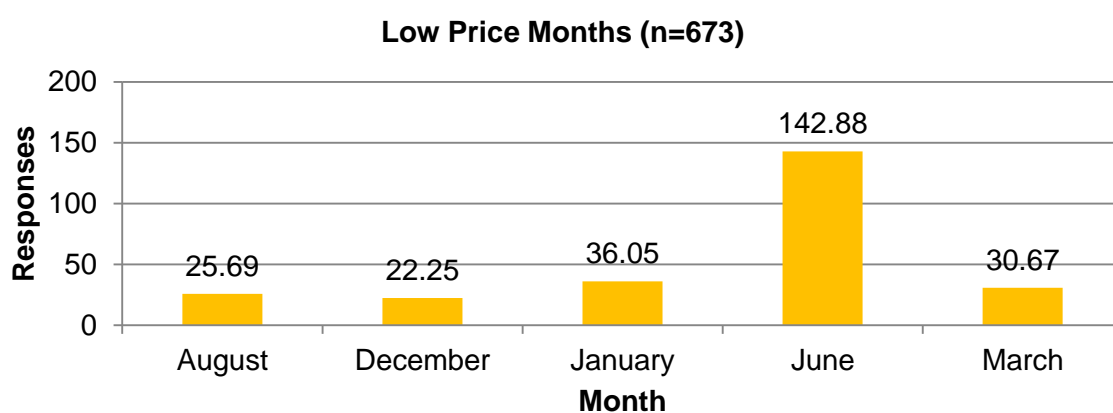
Table12: Peak fishing months (n=673)

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Yellowfin Tuna	44	47	0	3	3	39	9	19	21	36	23	6	250
Snapper	24	24	12	1	38	39	23	46	24	17	37	25	310
Skipjack Tuna	13	8	9	20	16	5	15	47	0	18	35	24	210
Shrimp	49	29	19	19	14	39	32	1	9	32	31	10	284
Shark	23	35	11	28	34	0	0	36	5	38	40	17	267
Seabream	15	4	41	42	31	1	1	39	41	35	38	11	299
Sardines	46	18	27	0	14	35	12	42	20	11	4	6	235
Other (Specify)	4	47	3	12	36	40	14	15	20	35	23	15	264
Mackerel	13	21	48	49	5	41	35	0	31	5	30	0	278
Lizardfish	49	36	34	48	29	3	34	42	13	48	39	21	396
Jack	9	0	10	43	23	2	34	35	30	3	18	46	253
Herring	35	20	17	27	14	41	1	36	10	22	43	40	306
Grouper	11	2	16	32	0	38	19	46	42	40	13	30	289
Goatfish	24	2	3	30	34	43	13	48	40	8	19	31	295
Emperor	8	26	2	3	44	14	32	4	3	45	11	22	214
Crustaceans	13	45	11	16	24	29	21	46	25	16	19	33	298

Anchovies	40	32	36	6	21	31	13	7	24	15	41	18	284
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Findings indicate that June is the most critical challenge period for Somalia's fish trade, with respondents overwhelmingly citing it as the time when prices fall most sharply. This decline is explained by a convergence of factors: oversupply during peak landings, spoilage due to intense heat, and reduced demand following Ramadan. The effect is a sudden crash in prices that leaves fishers and traders with little bargaining power. January and March also record noticeable but less severe price dips, linked to early-season gluts and mid-season excess landings respectively. These findings underscore the fragility of the sector's value chain, where the absence of cold-chain infrastructure forces rapid sales and exacerbates income losses, particularly for women traders who lack access to large-scale storage facilities. The chart below highlights the months with the lowest prices, emphasizing June as the most critical challenge period.

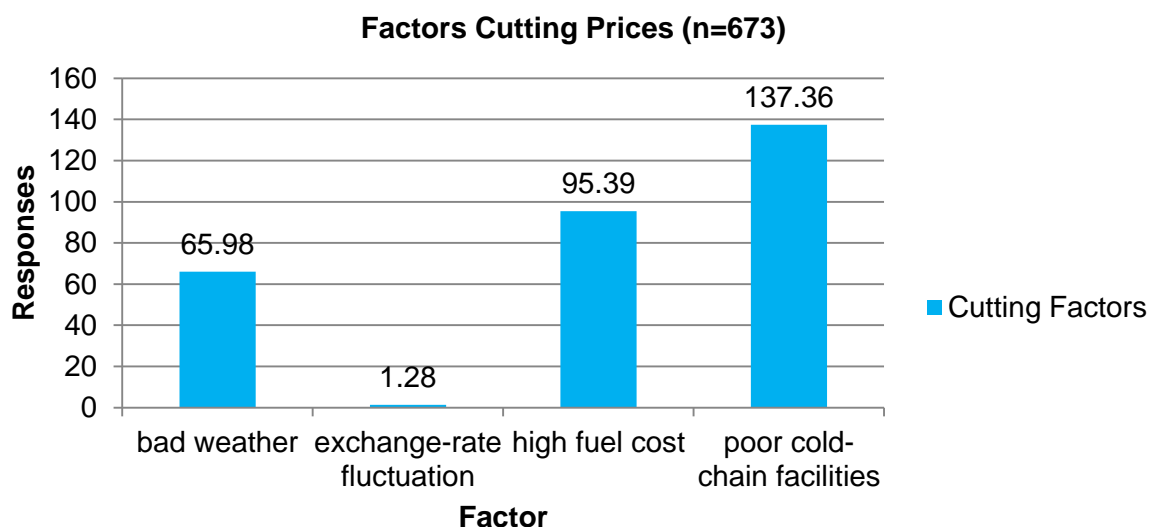
Figure 9: Months with the lowest fish prices



Findings also indicate that the three most pressing factors currently driving price instability across the fish trade: poor cold-chain facilities, high fuel costs, and adverse weather conditions. Poor cold storage emerged as the most cited factor, especially affecting women in Puntland and Galmudug who are forced to sell quickly before spoilage occurs.

High fuel costs, on the other hand, were of greatest concern to men engaged in direct fishing activities, since fuel is central both to powering boats and to refrigeration processes. Bad weather was most significant in Jubaland, where rough seas and insecurity frequently disrupt both fishing and market access. Together, these shocks reveal that the sector's vulnerabilities are not only market-driven but also structural and environmental, pointing to the need for targeted interventions in infrastructure, fuel efficiency, and climate resilience to stabilize prices and protect livelihoods. The chart below summarizes the top three current price shock factors as cited by respondents.

Figure 10: Top three current fish price shock factors



f) Section F: Baseline Fish Price Indicator (FPI)

This section presents the calculated National and State level baseline Fish Price Indicators (FPI) derived from species-level price and quantity data using the Weighted Average Price Model. The indicator serves as a credible benchmark for monitoring fish price dynamics in Somalia’s fisheries sector.

▪ **Fish Price Indicator (FPI)**

The FPI is calculated using a **weighted average price model**:

$$FPI = \sum_i \left(\frac{Q_i}{Q_t} \times P_i \right)$$

Where:

- Q_i : Quantity of fish species i
- Q_t : Total quantity of all fish across the dataset
- P_i : Adjusted price of species i
(Adjusted = Raw Price x Season Adj x Quality Adj)

For this dataset, **Season Adj** and **Quality Adj** are all **1.0**, so:

$$P_i = \text{Raw Price}$$

▪ **National FPI – Step-by-Step Calculation**

Step 1: Total Quantity (Q_t)

$Q_t = \sum Q_i = 12,847.38$ kg (total from dataset) $Q_t = \sum Q_i = 12,847.38$ \, \text {kg (total from dataset)}

Species	Qty (kg)	Weight (W·μ¢)
Yellowfin tuna (Thunnus albacares)	4878	0.3796
Mackerel (Scomberomorus commerson)	2824.6	0.2198
Skipjack tuna (Katsuwonus pelamis)	2059.6	0.1603
Shark (Sphyrnidae, Carcharhinidae)	801	0.0623
Sardines (Sardinella)	576.25	0.0448
Grouper (Serranidae)	404	0.0314
Herring (Decapterus)	380	0.0296

Snapper (Lutjanidae)	257	0.02
Crustaceans	150	0.0117
Emperor (Lethrinidae)	139	0.0108
Anchovies (Engraulis)	119	0.0093
Others	70	0.0054
Shrimp (Penaeidae)	65	0.0051
Jack (Carangidae)	51	0.004
Lizardfish (Synodontidae)	37	0.0029
Seabream (Sparidae)	25	0.0019
Goatfish (Mullidae)	15	0.0012
Total	12,851.45	

Species Quantity and Weight Table – Per State.

State	Species	Qty (kg)	Raw Price (USD/kg) ¹⁸	Season Adj	Quality Adj	Weight (W·μ¢)	Adjusted Price	Contribution
Banadir	Grouper (Serranidae)	216	2.875	1	1	0.0168	2.875	0.0483
	Jack (Carangidae)	3	4.6667	1	1	0.0002	4.6667	0.0011
	Mackerel (Scomberomorus commerson)	2016	5.3065	1	1	0.1569	5.3065	0.8324
	Sardines (Sardinella)	170	3	1	1	0.0132	3	0.0397
	Shark (Sphyrnidae, Carcharhinidae)	60	3.5	1	1	0.0047	3.5	0.0163
	Skipjack tuna (Katsuwonus pelamis)	1489	4.15	1	1	0.1159	4.15	0.4808
	Snapper (Lutjanidae)	75	1.9	1	1	0.0058	1.9	0.0111
	Yellowfin tuna (Thunnus albacares)	2802	4.1607	1	1	0.218	4.1607	0.9072
Galmudug	Anchovies (Engraulis)	54	2.5	1	1	0.0042	2.5	0.0105
	Emperor (Lethrinidae)	17	3.5	1	1	0.0013	3.5	0.0046
	Goatfish (Mullidae)	15	3	1	1	0.0012	3	0.0035
	Grouper (Serranidae)	57	2.1667	1	1	0.0044	2.1667	0.0096
	Herring (Decapterus)	84	2.6111	1	1	0.0065	2.6111	0.0171
	Jack (Carangidae)	19	3	1	1	0.0015	3	0.0044
	Lizardfish (Synodontidae)	22	2.25	1	1	0.0017	2.25	0.0039
	Mackerel (Scomberomorus commerson)	226	4.0333	1	1	0.0176	4.0333	0.0709
	Sardines (Sardinella)	185	4.7222	1	1	0.0144	4.7222	0.068
	Seabream (Sparidae)	10	2	1	1	0.0008	2	0.0016

¹⁸ Raw price¹⁸ usually refers to the **first-point or unprocessed price** of fish (or any commodity) — that is, the amount received at the point of landing or initial transaction, before any value addition such as icing, freezing, transport, wholesaling, or retail markup.

	Shark (Sphyrnidae, Carcharhinidae)	149	2.3333	1	1	0.0116	2.3333	0.0271
	Skipjack tuna (Katsuwonus pelamis)	27	3.1667	1	1	0.0021	3.1667	0.0067
	Snapper (Lutjanidae)	47	2.1	1	1	0.0037	2.1	0.0077
	Yellowfin tuna (Thunnus albacares)	221	4.3125	1	1	0.0172	4.3125	0.0742
Hirshabelle	Anchovies (Engraulis)	54	1.325	1	1	0.0042	1.325	0.0056
	Emperor (Lethrinidae)	8	2	1	1	0.0006	2	0.0012
	Grouper (Serranidae)	91	2.05	1	1	0.0071	2.05	0.0145
	Grouper (Serranidae)	20	1.5	1	1	0.0016	1.5	0.0023
	Herring (Decapterus)	282	1.7	1	1	0.0219	1.7	0.0373
	Jack (Carangidae)	24	2.1167	1	1	0.0019	2.1167	0.004
	Lizardfish (Synodontidae)	15	3	1	1	0.0012	3	0.0035
	Mackerel (Scomberomorus commerson)	155	2.3	1	1	0.0121	2.3	0.0277
	Sardines (Sardinella)	50	0.75	1	1	0.0039	0.75	0.0029
	Seabream (Sparidae)	10	1	1	1	0.0008	1	0.0008
	Shrimp (Penaeidae)	15	1	1	1	0.0012	1	0.0012
	Skipjack tuna (Katsuwonus pelamis)	160	1.6667	1	1	0.0124	1.6667	0.0207
	Snapper (Lutjanidae)	77	1.6667	1	1	0.006	1.6667	0.01
	Yellowfin tuna (Thunnus albacares)	467	1.8467	1	1	0.0363	1.8467	0.0671
	Yellowfin tuna (Thunnus albacares)	30	2	1	1	0.0023	2	0.0047
Jubaland	Anchovies (Engraulis)	11	5	1	1	0.0009	5	0.0043
	Crustaceans	150	5	1	1	0.0117	5	0.0584
	Emperor (Lethrinidae)	61	4.75	1	1	0.0047	4.75	0.0225

	Mackerel (Scomberomorus commerson)	38	4.75	1	1	0.003	4.75	0.014
	Sardines (Sardinella)	43	11	1	1	0.0033	11	0.0368
	Sardines (Sardinella)	33	4	1	1	0.0026	4	0.0103
	Seabream (Sparidae)	5	5	1	1	0.0004	5	0.0019
	Shark (Sphyrnidae, Carcharhinidae)	153	14.25	1	1	0.0119	14.25	0.1697
	Shark (Sphyrnidae, Carcharhinidae)	5	4	1	1	0.0004	4	0.0016
	Shrimp (Penaeidae)	50	5	1	1	0.0039	5	0.0195
	Skipjack tuna (Katsuwonus pelamis)	33	5	1	1	0.0026	5	0.0128
	Snapper (Lutjanidae)	52	5	1	1	0.004	5	0.0202
	Yellowfin tuna (Thunnus albacares)	87	5	1	1	0.0068	5	0.0338
Puntland	Emperor (Lethrinidae)	53	2	1	1	0.0041	2	0.0082
	Grouper (Serranidae)	20	2.5	1	1	0.0016	2.5	0.0039
	Herring (Decapтерus)	14	0.9	1	1	0.0011	0.9	0.001
	Mackerel (Scomberomorus commerson)	207.6	2.0944	1	1	0.0162	2.0944	0.0338
	Sardines (Sardinella)	23	2	1	1	0.0018	2	0.0036
	Shark (Sphyrnidae, Carcharhinidae)	6	1	1	1	0.0005	1	0.0005
	Skipjack tuna (Katsuwonus pelamis)	233.6	2.2182	1	1	0.0182	2.2182	0.0403
	Yellowfin tuna (Thunnus albacares)	1040.5	2.1263	1	1	0.081	2.1263	0.1722
Southwest State	Jack (Carangidae)	5	5	1	1	0.0004	5	0.0019
	Mackerel (Scomberomorus commerson)	182	6	1	1	0.0142	6	0.085
	Others	70	1.6429	1	1	0.0054	1.6429	0.0089

Sardines (Sardinella)	72.25	3.6429	1	1	0.0056	3.6429	0.0205
Shark (Sphyrnidae, Carcharhinidae)	428	2	1	1	0.0333	2	0.0666
Skipjack tuna (Katsuwonus pelamis)	117	3.1111	1	1	0.0091	3.1111	0.0283
Snapper (Lutjanidae)	6	6	1	1	0.0005	6	0.0028
Yellowfin tuna (Thunnus albacares)	230.5	4.3889	1	1	0.0179	4.3889	0.0787

Step 2: For Each Entry (Species in State)

We compute the following values per row to get the Contribution:

State	Species	Qty (kg)	Raw Price (USD/kg)	Weight (W _i)	Adjusted Price (P _i)	Contribution
Banadir	Mackerel	2016.0	5.3065	$2016 / 12847.38 \approx 0.1570$	5.3065	$0.1570 \times 5.3065 \approx 0.8333$
Banadir	Grouper	216.0	2.8750	0.0168	2.8750	0.0483
Hirshabelle	Sardines	110.0	4.5000	0.0086	4.5000	0.0387
Jubaland	Shrimp	36.0	6.0000	0.0028	6.0000	0.0168
...

State-level Fish Price Indicators (FPI), and were derived using the **weighted average price formula** applied within each state independently.

▪ **How Each State FPI (USD/kg) Was Calculated**

The same formula was applied per state:

$$\text{State FPI} = \sum_i (Q_i / Q_t \times P_i) \text{ where } Q_i = \text{Quantity of species } i \text{ and } Q_t = \text{Total quantity of all species in that state}$$

Where:

- Q_i : Quantity of species i within that state
- Q_t : Total quantity of all species in that state
- P_i : Adjusted price = Raw Price (since Season and Quality Adj = 1)

Example (Banadir) - Let's say Banadir had:

Species	Qty (kg)	Raw Price	Weight W_i	Contribution
Mackerel	2016.00	5.3065	2016 / Total Banadir Qty	$W_i \times 5.3065$
Grouper	216.00	2.8750	216 / Total Banadir Qty	$W_i \times 2.8750$

$$\text{FPI Banadir} = \sum (W_i \times P_i) = 4.396571 \text{ USD/kg}$$

This exact process was repeated for each state using **only the rows of data from that state**.

State Fish Price Indicator Table:

State	State FPI (USD/kg)
Banadir	4.3965712
Galmudug	3.51183314
Hirshabelle	1.79402835
Jubaland	7.23370319
Puntland	2.11929994
Southwest State	3.38765277

Fish Price Indicator (FPI) = 3.81 USD/kg

This was calculated using the **weighted average price model**, which reflects both **price levels** and **quantity shares** of fish traded — making it more accurate than a simple average.

FPI Formula Used

$$\text{FPI} = \sum_i (Q_i / Q_t \times P_i)$$

Where:

- Q_i : Quantity of fish species i (in kg)
- Q_t : Total quantity of all fish species (in kg)
- P_i : Adjusted price of species i (USD/kg)
(Adjusted = Raw Price x Season Adj x Quality Adj)

In the dataset, **Season Adj** and **Quality Adj** are both **1.0**, so:

$$\text{Adjusted Price} = \text{Raw Price}$$

Step-by-Step Calculation

Step 1: Sum Total Quantity of All Species (Q_t)

We sum all the quantities in the dataset:

$$Q_t = \sum Q_i = 12,847.38 \text{ kg}$$

Step 2: For Each Row, Calculate Weight (W_i)

For each species (or species entry), compute:

$$W_i = \frac{Q_i}{Q_t}$$

This gives us the **proportional share** of that species in the total.

□ **Example:**

If Yellowfin Tuna has 3,200 kg:

$$W_{\text{Yellowfin}} = \frac{3,200}{12,847.38} \approx 0.2491$$

Step 3: Adjusted Price (P_i)

Since both adjustments are 1.0:

$$P_i = \text{Raw Price}$$

□ **Example:**

If Raw Price for Yellowfin Tuna = 3.3012 USD/kg, then:

$$P_i = 3.3012 \text{ USD/kg}$$

Step 4: Compute Contribution for Each Species

$$\text{Contribution}_i = W_i \times P_i$$

This is how much each entry influences the final FPI.

□ **Example:**

If $W_i = 0.2491$ and $P_i = 3.3012$:

$$\text{Contribution} = 0.2491 \times 3.3012 \approx 0.822$$

Step 5: Sum All Contributions

Add all individual contributions:

$$FPI = \sum \text{Contribution}_i = 3.81 \text{ USD/kg}$$

The national Fish Price Indicator (FPI) was established at USD 3.81/kg as shown in the final summary below, providing Somalia with its first standardized benchmark for monitoring overall fish price dynamics. However, disaggregation by state reveals striking variations that reflect the very different market realities across the country: Banadir recorded an FPI of USD 4.40/kg, driven by strong urban demand and higher purchasing power; Galmudug averaged USD 3.51/kg, reflecting relatively good ice access but weaker market networks; Hirshabelle, where infrastructure and cold chain are highly constrained, posted the lowest FPI at just USD 1.79/kg; Jubaland showed the highest figure at USD 7.23/kg, explained by high-value species and export-oriented trade; and Puntland's FPI stood at USD 2.13/kg, consistent with its reliance on artisanal supply chains and lower domestic consumption. Taken together, the national weighted average is valuable for macro-level monitoring, but the wide state-level disparities underline the importance of using disaggregated FPIs to guide targeted interventions and ensure policies are responsive to the unique ecological, infrastructural, and market conditions in each federal member state.

Final Summary

Metric	Value
Total Quantity (Q_t)	12,847.38 kg
Number of entries	Multiple rows
National FPI	3.81 USD/kg
Calculation Method	Weighted average

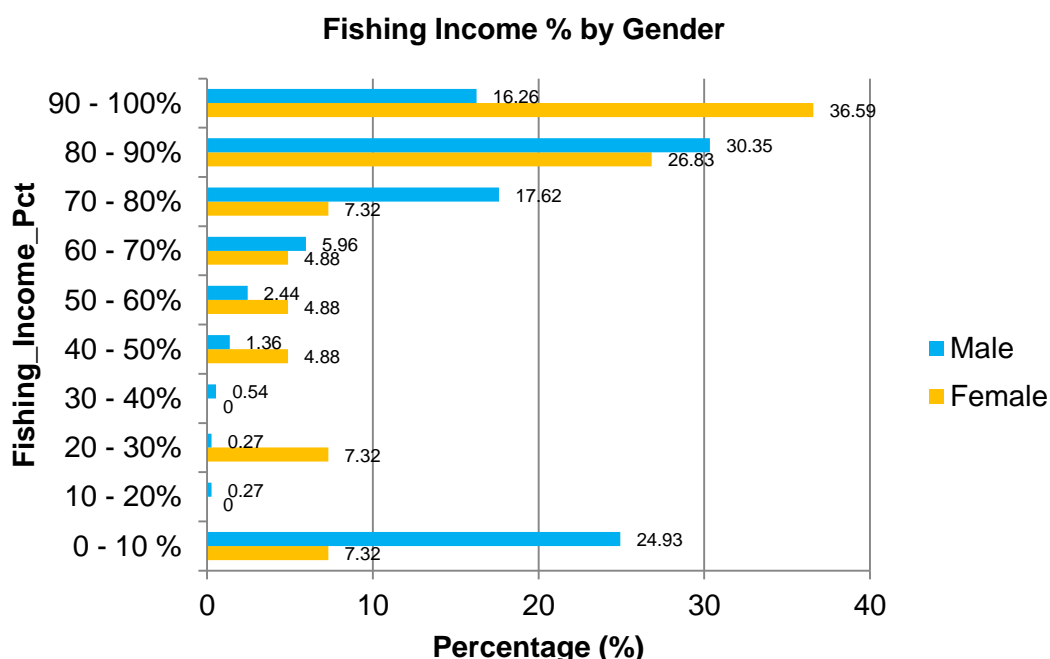
g) Section G: Household Livelihood & Food Security

i. Household Income from Fishing

The findings reveal that fishing and fish trading form the economic backbone of most coastal households in Somalia. More than 60% of all respondents reported earning between 70–100% of their household income from fishing-related activities. This overwhelming dependence highlights the sector’s centrality to household survival and economic security. At the same time, it also underscores the fragility of livelihoods that hinge almost exclusively on fisheries, leaving families highly exposed to market volatility, seasonal fluctuations, and environmental shocks.

From a gender perspective, both men and women rely heavily on fisheries as a primary income source. Men show slightly higher dependence, largely due to their direct involvement in capture fishing, whereas women’s involvement in trading and processing allows for some diversification. A small proportion of women reported earning less than 50% of their income from fish, likely because they engage in other income-generating activities such as petty trade, domestic services, or retail. This indicates that programming must address not only the needs of male fishers but also create opportunities for women traders to expand and stabilize their income streams. The distribution of fishing income by gender highlights important disparities in how men and women participate in and benefit from the fisheries value chain. Men account for the overwhelming majority of higher-earning segments, reflecting their dominant role in direct fishing activities, particularly those requiring capital-intensive inputs such as boats, gear, and fuel. Women, by contrast, are more heavily represented in the lower-income brackets, consistent with their concentration in post-harvest roles such as processing, retail trading, and small-scale marketing where margins are thinner. This pattern underscores both structural and cultural factors: men’s privileged access to fishing assets and offshore opportunities enables them to capture larger profits, while women’s income potential is often constrained by limited access to capital, reduced bargaining power in markets, and reliance on perishable products without adequate cold storage. The figure therefore illustrates not only a gendered income gap but also a segmentation of the value chain that reproduces inequality. For policy, this suggests the need to strengthen women’s access to productive resources (boats, credit, and storage facilities), invest in gender-responsive market linkages, and support women traders’ collective bargaining to enhance their share of fishing income.

Figure 12: Fishing Income % by Gender (n=673)



ii. Location-based analysis highlights considerable variation

Puntland and SouthWest State are the most dependent, with households reporting 80–100% reliance on fishing income. This places these states at particular risk in the event of climate or market shocks. Banadir shows more income diversity, reflecting its urban economy and access to alternative employment. Jubaland and Galmudug fall in between, with moderate dependence on fisheries, suggesting mixed livelihoods or smaller-scale fish economies. For programming, this indicates that while all states benefit from fish sector investments, Puntland and SouthWest State require urgent support in livelihood diversification, value addition, and resilience-building interventions.

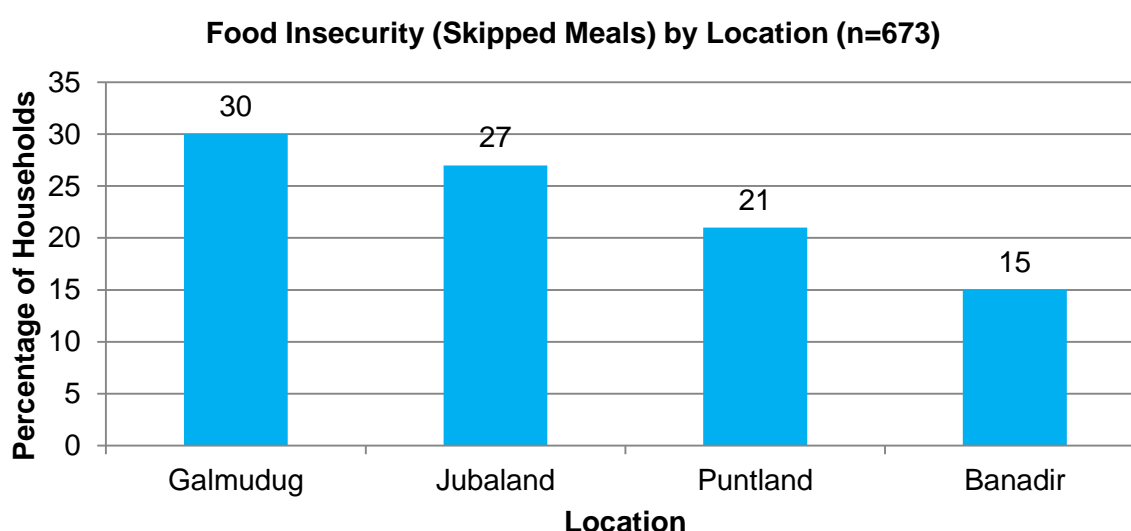
iii. Food Insecurity – Skipped Meals

Food insecurity remains a significant concern in fishing households. One in four respondents (approximately 25%) reported that someone in their household skipped meals in the past seven days due to lack of food. While 75% reported no skipped meals, the high proportion of food-insecure households is concerning, especially in communities that depend so heavily on fisheries for income and sustenance.

Disaggregating by gender reveals that women were more likely to report skipped meals (28%) compared to men (22%). This reflects the central role of women in household food preparation and their heightened sensitivity to children’s nutritional needs. It may also reflect a cultural tendency among men to underreport vulnerability. Women’s responses thus provide a more accurate picture of household-level food stress.

Food insecurity also varied geographically. Households in Galmudug (30%) and Jubaland (27%) reported the highest levels of skipped meals. Puntland showed moderate levels (21%), while Banadir reported the lowest (15%). The inland and rural states face greater food insecurity due to weaker storage infrastructure, higher market volatility, and larger household sizes with limited income diversification. For programming, this highlights the need for targeted investments in cold storage, improved market access, and nutrition-sensitive interventions in Galmudug and Jubaland.

Figure 13: Food Insecurity by region

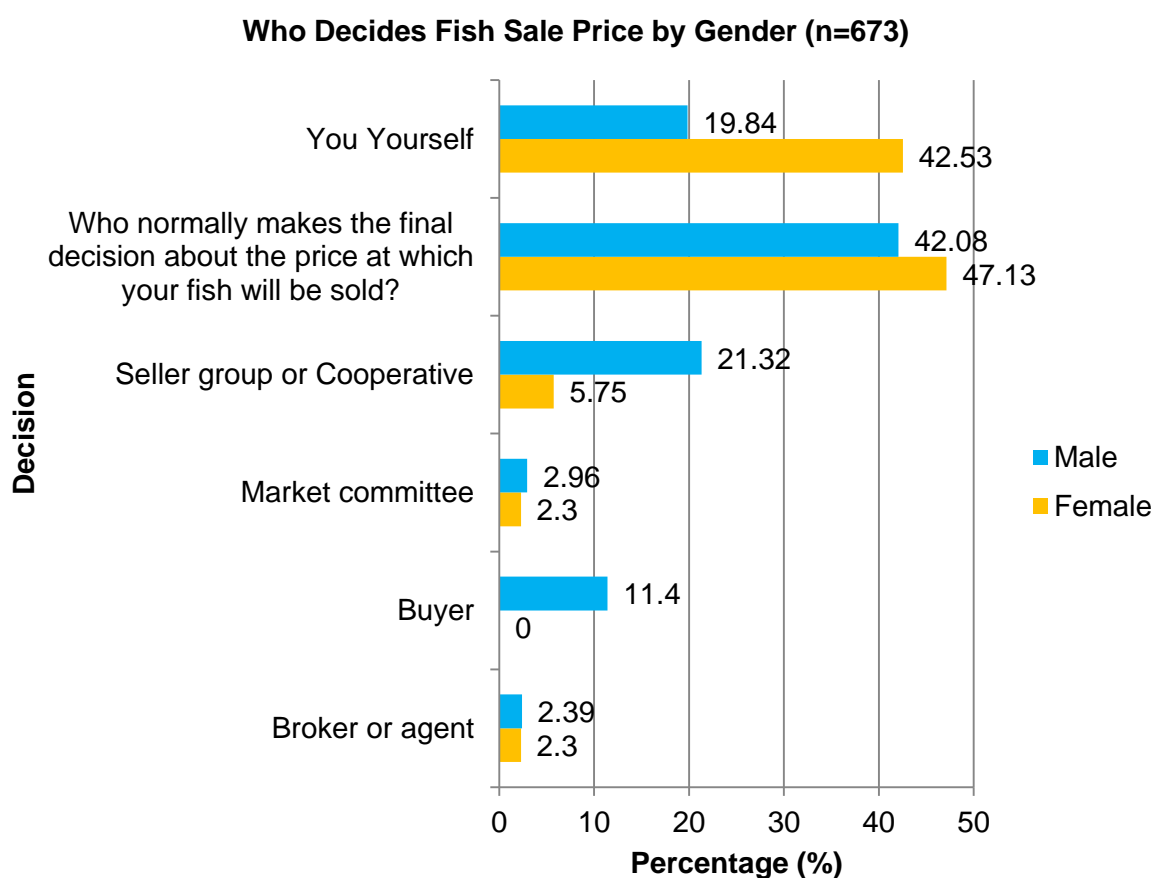


iv. Decision-Making Power – Who Sets Fish Prices?

Price-setting dynamics within the fish trade reveal the underlying power imbalances in Somali fisheries markets. The majority of respondents reported setting prices themselves (211 responses), followed closely by cooperative structures (192). Other respondents identified buyers (100), market committees (75), and brokers (40) as key decision-makers. The chart

below illustrates who respondents perceive as making the final decision on fish sale prices, but this must be understood within the reality that fish prices are ultimately determined by market forces—supply, demand, fish quality, and buyers’ ability to pay. When men or women report that “you yourself” set the price, this generally reflects their role in initiating the negotiation by stating an expected price, rather than having full control over the final outcome. In practice, bargaining continues until a mutually acceptable price is reached, and in cases of oversupply, poor quality, or limited demand, buyers often dictate terms. The fact that more women than men report setting their own price highlights their greater engagement in retail trading where direct bargaining is common, while men’s higher reference to cooperatives or buyers reflects their stronger presence at landing sites and wholesale markets where collective agreements or buyer leverage play a bigger role. Thus, the responses capture perceptions of bargaining power and price-setting influence, but the actual transaction remains firmly tied to what the market will bear.

Figure 14: Decision-Making Power – Who Sets Fish Prices?



Gender differences are particularly pronounced. Men are more likely to set their own prices, reflecting stronger bargaining power and direct market involvement. Women, by contrast, often rely on cooperatives or buyers to determine pricing, revealing reduced market agency and limited access to pricing information. This leaves many women vulnerable to price asymmetry and reduced profitability. Sector programming should therefore prioritize interventions that improve women’s access to market information, strengthen cooperative structures, and enhance women’s confidence and skills in price negotiation.

Regional differences further illustrate how local market structures shape price control. In Puntland, price-setting is dominated by individuals and buyers, reflecting highly competitive

and buyer-driven markets. SouthWest State and Jubaland rely more heavily on cooperative decision-making, suggesting stronger traditions of collective bargaining. Banadir shows the influence of formal structures such as market committees, a reflection of its urbanized economy. Galmudug presents a mixed picture, pointing to fragmented market systems. Programming responses should be tailored accordingly: in rural states, focus on empowering individual sellers; in urban markets, strengthen formal governance; and in cooperative-driven areas, build collective action capacities.

Findings indicate that high dependence on fishing income does not always translate into food security, with many households still reporting skipped meals. This suggests that while fisheries generate income, the combination of seasonality, storage limitations, and exploitative pricing prevents households from fully converting income into food security.

Gender also intersects with market power. Women's reliance on cooperatives and buyers for price-setting limits their capacity to optimize income, which in turn exacerbates their vulnerability to food insecurity. Location matters as well: urban markets like Banadir benefit from stronger governance, while rural areas leave households at the mercy of fluctuating buyer power. Addressing these systemic issues requires integrated programming that links income generation to nutrition outcomes, and market empowerment to food security.

Findings from KIs indicate the lived realities and the fragile balance between livelihood and survival. A female trader in Galmudug, for example, earns 90% of her income from fish yet has little control over pricing and still skipped multiple meals with her children in the past week. A male fisher in Jubaland has strong bargaining power but suffers through seasonal hunger during the low fishing months. Meanwhile, a woman in Banadir benefits from cooperative support, enabling her to negotiate better prices and maintain stronger household food security. These testimonies highlight the dual vulnerability and resilience within Somali fisheries. The sector sustains households but does not automatically guarantee food security. Without fair pricing mechanisms, reliable storage, and diversified income strategies, households remain at risk. Programming must therefore combine immediate livelihood support with long-term structural investments in market systems, gender empowerment, and food security resilience.

h) Section H: Livelihood Impact & Investment

This section critically examines how Somali fisher and trader households absorb income volatility and when possible, convert earnings into savings and productive investment. Rather than posing questions, each sub-topic below synthesizes the evidence into an interpretive narrative that surfaces underlying mechanisms, gendered trade-offs, and regional disparities across Puntland, SouthWest State, Banadir, Galmudug, Jubaland, and Hirshabelle.

i. Two cross-cutting lenses guide the analysis.

First, the balance between consumption-smoothing (protecting food, health, and education) and asset-smoothing (protecting tools, boats, fuel, and transport) reveals where households place immediate versus future value. Second, gendered roles in production, processing, and care work shape which cuts are morally and practically acceptable inside the household.

ii. Expenditure Trade-offs Under a 20% Price Shock

When incomes fall, the first cuts reveal both vulnerability and strategy. Overall, food (36%) and children's education (27%) are the most common first reductions, followed by transport (13%) and healthcare (9%), with the remainder spread across clothing, housing, and miscellaneous needs (15%). This pattern signals thin margins: a relatively small price shock immediately pressures essential consumption. Importantly, the hierarchy of cuts is not uniform. Women report cutting food (40%) and healthcare (12%) more often than men, while men report cutting education (30%) and transport (17%) more frequently. The gender pattern

aligns with role differentiation: women, who shoulder food provisioning and care, internalize shocks through self-rationing meals and delaying treatment; men, who focus on production and market logistics, defer school fees or reduce mobility to preserve work inputs. Intra-household bargaining thus tilts towards protecting productive capacity, sometimes at the expense of human capital and wellbeing.

Table 13: Table on Expenses Category

Expense Category	% of Respondents
Food	36%
Children's Education	27%
Transport	13%
Healthcare	9%
Clothing/Housing/Other	15%

Regional signals sharpen the story. In SouthWest State and Hirshabelle—both more food-insecure and logistically constrained—households cut food first, underscoring limited buffers and weak market integration. Banadir, with thicker urban markets and diversified incomes, shows relatively greater protection of food but earlier compromises in healthcare. Puntland tends to cut transport first, reflecting longer supply chains, fuel exposure, and the need to rebalance operating costs quickly; Jubaland's earlier education cuts mirror intermittent buyer access and the need to preserve cash for fishing inputs. Galmudug straddles both worlds: frequent cuts to food and education, indicating fragile incomes and uneven buyer networks.

Table 14: Gendered First-Cut Patterns

Expense Cut	Men (%)	Women (%)
Food	33%	40%
Education	30%	24%
Healthcare	6%	12%
Transport	17%	9%

Programmatically, these patterns caution against single-channel assistance. Food-first cuts call for seasonal food or voucher support in SouthWest State and Hirshabelle; education-first cuts suggest fee deferment or conditional support tied to school calendars in Jubaland and parts of Banadir; transport-first cuts in Puntland point to targeted fuel or logistics subsidies during price troughs.

iii. Capacity to Save and Invest Under Current Price Regimes

Only 41% of respondents report being able to save or invest from recent earnings, while 59% cannot. The split reflects a sector operating close to subsistence with high working-capital churn. Men (45%) are more likely than women (34%) to report investable surpluses, a gap that stems from scale (higher volumes), buyer access, and fewer immediate household claims on income.

As one-woman fish trader in Jubaland put it, "Sometimes the money comes, but it leaves too quickly." The inability to retain cash points to a triad of constraints: low margins, lumpy expenses for gear or school fees, and weak savings instruments tailored to fish income cycles.

Table 15: Capacity to Save and Invest Under Current Price Regimes

Response	% of Respondents
Yes	41%
No	59%

Geography matters. Puntland (55%) and Banadir (47%) lead on investable capacity, helped by denser markets, stronger cold-chain access, and more reliable buyers. Galmudug (38%) sits in the middle; Jubaland (35%) reflects volatility despite coastal proximity; SouthWest State (30%) and Hirshabelle (29%) lag due to lower purchasing power, longer routes, and thinner buyer networks. Where market density, preservation, and export linkages are weak, households remain locked in day-to-day survival rather than accumulation.

Table 16: Regional Ability to Save/Invest

Region	% Able to Invest	Interpretation
Puntland	55%	Stronger market access and earnings; logistics-savvy rebalancing during shocks
Banadir	47%	Urban advantage: thicker markets, alternative incomes, and services
Galmudug	38%	Mid-tier access; patchy buyer networks
Jubaland	35%	Coastal proximity but inconsistent buyers and seasonal disruptions
SouthWest State	30%	Thin markets and higher basic needs share
Hirshabelle	29%	Weakest resilience; high exposure to price and transport shocks

iv. Investment Portfolios—What Households Prioritize When They Can Invest

Among investing respondents, the most common allocations are fishing gear (36%) and precautionary savings (28%), followed by boat purchase or repair (17%) and engine upgrades (9%). Cold storage or preservation (6%) is nascent but strategically important. This portfolio mix blends short-term productivity (gear) with risk buffering (savings), while larger, lumpy assets (boats and engines) reflect longer-horizon bets on catch capacity and reliability.

Table 17: Investment Portfolios—What Households Prioritize When They Can Invest

Investment Category	% of Investing Respondents
Fishing gear	36%
Savings for future/emergency	28%
Boat purchase or repair	17%
Engine upgrade	9%
Cold storage or preservation	6%
Other (school fees, weddings)	4%

Gender splits track roles and capital access. Men concentrate on operations and scale—gear (41%) and boats/engines (22%)—while women emphasize stability and product quality—savings (34%) and cold storage (10%). As a female vendor in Galmudug noted, “I saved for school fees and also for buying dried fish when prices drop.” These patterns suggest women adopt counter-cyclical, risk-reducing strategies, and men pursue capacity growth contingent on liquidity and buyer demand.

v. Cross-Variable Relationships and What They Reveal

Linking variables clarifies causal pathways. Households that cut education first are disproportionately unable to invest, signaling zero buffer and a tilt towards protecting productive cashflow at the expense of human capital. Respondents who cut food but also report ‘savings’ as their main investment appear to be triaging calories to create a minimal precautionary buffer—an ethically costly form of resilience. Investments in cold storage correlate with prior reports of spoilage loss, indicating learning behavior: households translate losses into targeted prevention. Men’s higher gear investment aligns with catch-capacity ambitions, while women’s savings and preservation focus align with sales smoothing and risk management. Finally, higher export shares associate with greater ability to invest—evidence

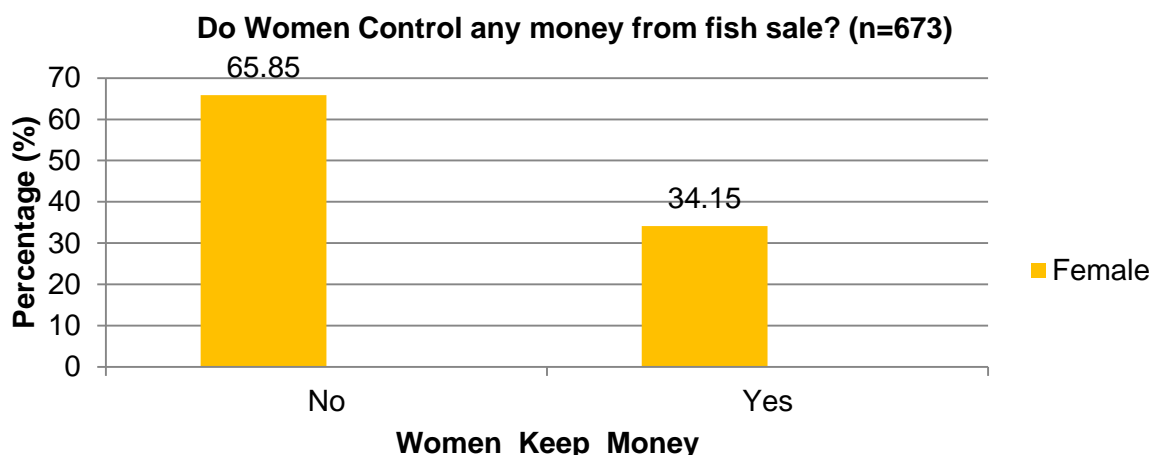
that price premia and demand depth enable accumulation when buyers are reliable and margins exceed subsistence thresholds.

i) Section I: Gender & Inclusion

i. What Power Do Women Hold in Fisheries, and What Holds Them Back?

The question of women’s power in fisheries is not only about whether they touch money, but also whether they influence decisions, prices, and opportunities within the value chain. Across Somalia, the data reveals that 61 percent of respondents believe women keep or control some portion of income from fish sales, while 31 percent say they do not, and 8 percent remain unsure. This suggests that women’s economic agency exists but is partial, often limited to secondary or symbolic control rather than full authority over household or enterprise income.

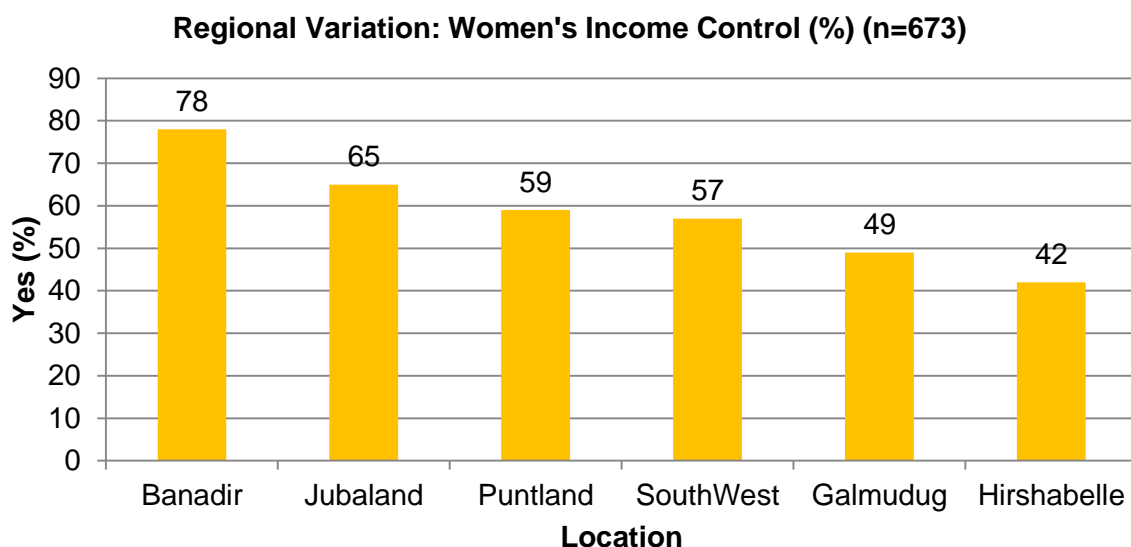
Figure 15: Do we women control money from fish sale?



When analyzed by gender, women themselves report higher levels of financial control (68 percent) compared to men (56 percent). This discrepancy reflects two dynamics: women may be more inclined to recognize even partial control as meaningful, while men may downplay or overlook women’s economic influence due to entrenched cultural norms. The reality likely lies between these perceptions. For many women, keeping ‘some’ money may mean receiving a small portion after household obligations are met, rather than exercising full decision-making power over profits.

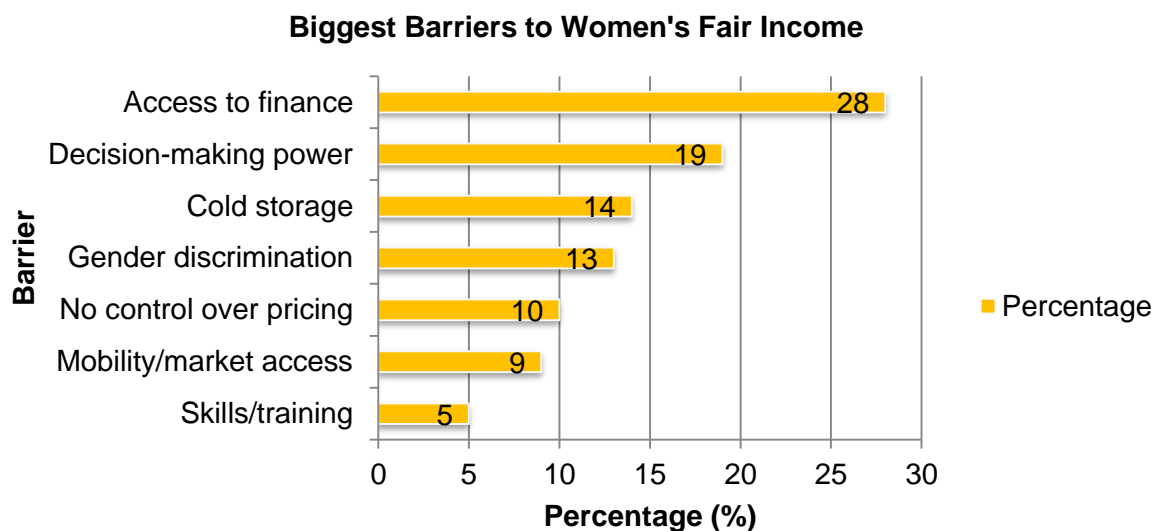
Regional analysis reveals stark differences. In Banadir, 78 percent of respondents affirm women’s control, reflecting the benefits of urbanization, access to microfinance, and exposure to cooperative models that allow women greater financial autonomy. In Jubaland (64 percent) and Puntland (59 percent), women exercise moderate levels of control, though structural barriers persist. SouthWest State (57 percent) reflects stronger male household leadership, where women’s involvement remains conditional on male approval. In Galmudug (48 percent) and Hirshabelle (42 percent), the lowest figures highlight deeply entrenched gender hierarchies and the impacts of fragility and displacement, where women’s labor in fish processing rarely translates into financial independence. The following chart illustrate these regional variations.

Figure 16: Regional Variation of women’s income control



Beyond the question of control, respondents identified the biggest barriers to women’s fair income. Lack of access to finance emerged as the single most pressing challenge, cited by 28 percent, followed by limited decision-making power (19 percent), lack of cold storage (14 percent), gender-based discrimination (13 percent), and lack of control over pricing (10 percent). Constraints around mobility and market access (9 percent) and inadequate skills or training (5 percent) further reinforce exclusion.

Figure 17: Biggest Barriers to Women’s fair income



The gender lens deepens this picture. Both men and women view finance as the largest obstacle, but women more frequently cite structural and institutional barriers — exclusion from decision-making spaces, discrimination, and lack of preservation facilities — while men tend to emphasize logistical barriers such as infrastructure gaps. This discrepancy underscores how men may underappreciate the weight of social norms and exclusion that women navigate daily. For example, women report being denied influence in price-setting, despite often being the ones handling fish at the point of sale.

Regional variations again illuminate the intersection of gender with geography. In Puntland, the lack of cold chain infrastructure and women’s absence from price-setting spaces are particularly acute. Banadir women face exclusion from decision-making circles but benefit from growing access to financial services and microloans. SouthWest remains constrained by strong household-level gender norms, while Galmudug women face compounding challenges of finance, mobility, and training deficits. Jubaland women highlight experiences of discrimination and unsafe environments in marketplaces, and in Hirshabelle, displacement and conflict further reduce their ability to engage meaningfully in fisheries.

The relationships between variables deepen the insight. Urbanization is positively correlated with women’s income control, with women in urban areas enjoying higher levels of autonomy than their rural counterparts. Access to finance, mobility, and decision-making together account for more than 60 percent of perceived barriers, marking them as the primary levers for systemic change. A notable intersection also emerges between income control and cold storage: women without financial authority are more likely to cite cold storage as a barrier, suggesting that infrastructure is not neutral but entwined with power relations.

Findings from women FGDs captured the lived realities often hidden beneath percentages. A woman in SouthWest explained: “I sell the fish, but I don’t decide the price. I give the money to my husband. Sometimes he gives me a bit.” In Galmudug, women still perform labor-intensive roles such as carrying and cleaning fish but rarely see the income. In contrast, in Banadir, women who access microloans and retain price-setting control report tangible improvements in household nutrition and education. Cooperative models in SouthWest also show promise, as women in groups report better financial outcomes than isolated sellers.

These insights emphasize that women’s power in fisheries is not merely a matter of participation, but of influence and recognition. Where structural barriers persist, women remain confined to invisible labor and marginal gains. Where access to finance, decision-making, and safe markets expand, women transform fisheries into a pathway of agency, dignity, and improved family welfare.

j) Section J: Seasonal & Spatial Price Profile

This section explores the dynamics of price variation across Somalia’s fish markets. Findings reveal that volatility, inequity, and structural barriers shape the earnings of fishers and traders more than absolute prices. Prices differ not only by species and season but also by gender, location, and access to infrastructure.

i. Highest and Lowest Fish Prices Received

Respondents reported a wide spread between peak and low prices. Premium species reached \$7–\$9 per kilogram, while small pelagic fish and oversupplied periods pushed prices down to \$0.5–\$2 per kilogram. Such volatility erodes predictability, leaving traders and fishers unable to plan or invest with confidence.

Table 18: Highest and Lowest Fish Prices Received

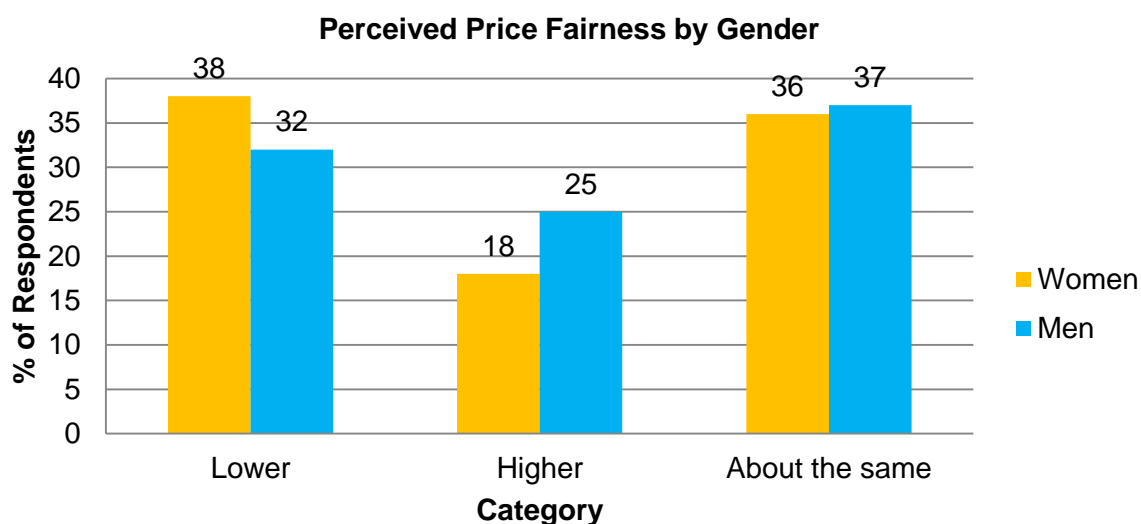
Category	Price Range (USD/kg)	Notes
Premium species	\$7–\$9	Tuna, lobster, high-value reef fish
Common species	\$3–\$5	Snapper, grouper, mid-value species
Low-value catch	\$0.5–\$2	Sardines, anchovies, during gluts

ii. Perceptions of Price Fairness Across Sites

Price fairness is closely tied to geography and networks. Over one-third (34%) of respondents believe their site receives lower prices than others, while only 22% perceive higher earnings.

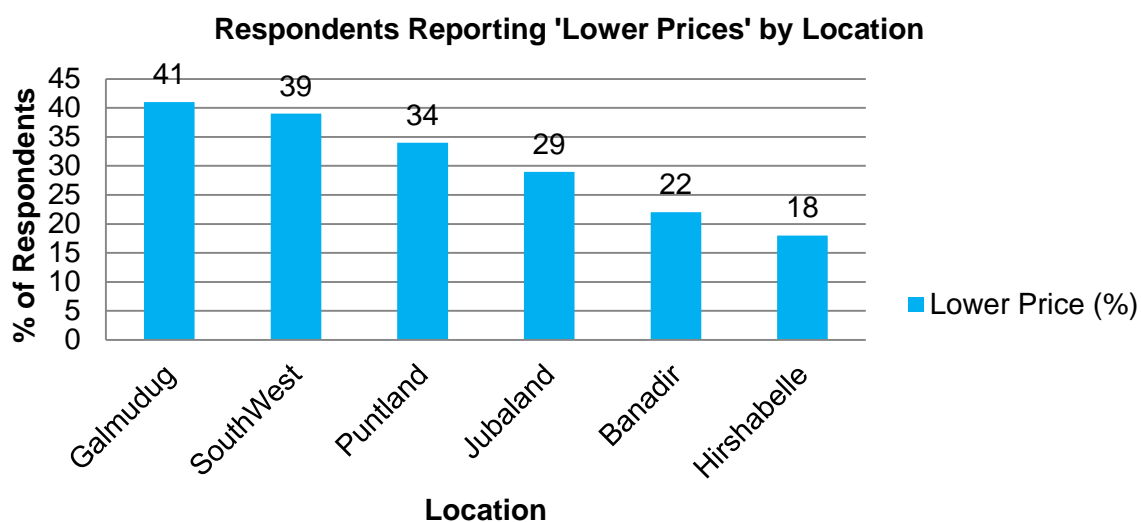
Women were more likely to perceive disadvantage (38% compared to men’s 32%), reflecting their limited bargaining power and mobility constraints.

Figure 18: Perceptions of Price Fairness by gender



Findings indicate that location further influences perceptions. In Galmudug (41%) and SouthWest State (39%), respondents felt most disadvantaged, often citing isolation, poor roads, and weak preservation facilities. In contrast, Banadir (22%) and Hirshabelle (18%) reported relatively fairer prices, supported by stronger urban demand and better infrastructure.

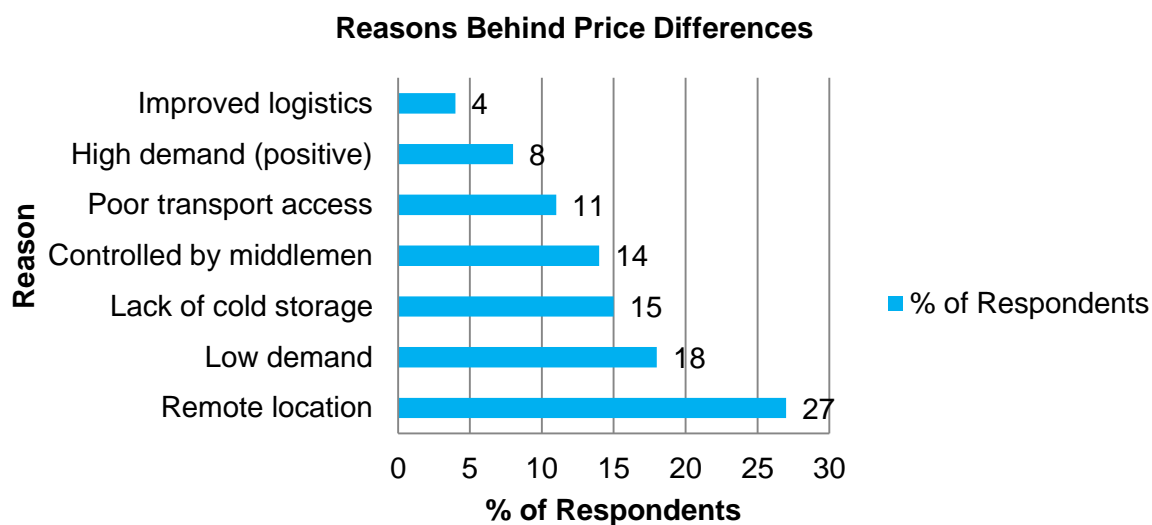
Figure 19: Price fairness by Location



iii. Reasons Behind Price Differences

Respondents cited structural and logistical constraints as the primary drivers of price inequity. Remoteness (27%), low demand (18%), and lack of cold storage (15%) were most commonly reported, while middlemen control (14%) further eroded bargaining power. Women were disproportionately affected by spoilage losses due to inadequate cold storage, while men were more likely to benefit from higher demand and stronger trade networks.

Figure 20: Reasons Behind Price Differences



The findings reveal clear structural relationships: 78% of respondents who reported lower prices also cited remoteness, highlighting distance as a direct cause of value loss. Women citing unfair prices were twice as likely as men to link it to lack of cold storage, underscoring their vulnerability to spoilage. In Puntland and Galmudug, more than one in five respondents flagged middlemen domination, revealing localized market monopolies. Locations with cold chain capacity, such as Banadir, saw narrower spreads, while undersupplied or remote regions experienced extreme lows.

Findings from FGDs with fishers and traders further reinforce these dynamics: “When my fish arrive fresh, I can negotiate. If not, I must take what they offer.” – Female trader, SouthWest. “We don’t have cold storage. So, price depends on time of day, not quality.” – Male fisher, Galmudug. “The site is far. The buyers know that. They lower the price because they know we have no options.” – Woman, Puntland. These narratives confirm that price inequity is not simply about markets — it is about power, infrastructure, and access.

k) Section K: Supply-Chain Costs & Inefficiencies

This section provides a location-specific synthesis of findings on supply-chain costs and inefficiencies in Somalia’s fisheries sector, followed by programming implications. By distinguishing the realities across the six Federal Member States (FMS) — Puntland, SouthWest State, Banadir, Galmudug, Jubaland, and Hirshabelle — the findings highlight both the contextual challenges and the strategic entry points for interventions.

Puntland: Findings indicate that Puntland fishers and traders experience significant constraints linked to cold storage and frequent checkpoints. However, they also reported relatively lower spoilage rates compared to Galmudug and SouthWest, likely due to better infrastructure and market access in coastal towns. These mixed realities suggest that while preservation facilities exist, their limited availability and accessibility constrain equitable benefits.

Programming implications in Puntland include scaling up community-based cold storage solutions and strengthening governance systems to reduce checkpoint-related extortion. Targeting women with cooperative cold chain access would be particularly transformative, given their higher vulnerability to spoilage and informal taxation.

SouthWest State: In SouthWest State, findings highlight high transport costs, numerous checkpoints, and elevated spoilage rates. These factors combined to make SouthWest one of

the most disadvantaged states in terms of profitability. Women in particular reported frequent harassment at checkpoints and longer delays in reaching markets.

Programming in SouthWest should prioritize improving road security, reducing extortion through stronger local governance, and investing in decentralized cold chain facilities. Gender-sensitive programming should integrate women into producer cooperatives and enhance their bargaining power to mitigate extortion and improve sales outcomes.

Banadir: Banadir respondents reported the lowest average transport costs and fewer checkpoints, thanks to urban centrality and stronger infrastructure. However, traders cited market fees, levies, and price volatility as major bottlenecks. While spoilage was relatively low compared to other states, price fluctuations and levies limited profitability.

Programming in Banadir should focus on policy-level interventions to reduce market fees and improve price stability through market information systems. Initiatives such as digital platforms to link sellers with buyers could empower small traders, particularly women, by reducing dependence on intermediaries and enhancing negotiation power.

Galmudug:

Galmudug respondents consistently reported high transport costs exacerbated by numerous checkpoints along transport routes, where both official and informal actors impose repeated fees that raise costs and cause delays. While some charges are legitimate, many amount to extortion, with women traders particularly vulnerable as they are often subjected to harassment, intimidation, and demands for additional payments. These practices not only erode already thin profit margins but also heighten protection risks, discouraging women's active participation in the fisheries trade.

Programming can address these challenges by working with authorities to replace multiple ad-hoc tolls with a single transparent levy, investing in cold chain hubs to reduce long-haul transport, and strengthening women's cooperatives to increase bargaining power and provide collective protection. Complementary measures like legal aid, reporting mechanisms and mobile e-payment systems can further reduce extortion risks while improving accountability and trader security.

Jubaland: In Jubaland, cold storage access and buyer competition emerged as dominant challenges. Limited preservation capacity forced traders, especially women, to sell quickly at suboptimal prices. Access to buyers was restricted, weakening price control and bargaining capacity for small-scale traders.

Programming implications include enhancing buyer competition by opening regional and cross-border market linkages, alongside investments in cold storage to reduce the urgency to sell. Women's collective marketing associations could be an effective vehicle to expand buyer options and improve price leverage.

Hirshabelle: Hirshabelle respondents identified checkpoints and poor transport as their biggest constraints. With few storage options and insecure trade routes, profitability was undermined at both production and distribution stages. Women traders in particular highlighted the risks of harassment and higher per-kilogram transport costs due to small-scale informal transport modes.

Programming interventions in Hirshabelle should focus on improving transport infrastructure and introducing community-managed preservation facilities. Policy dialogue with local authorities to reduce informal checkpoint levies is equally critical to ensuring fairer trade environments.

Overall, while the specific constraints vary across the six Federal Member States, the findings converge on systemic gaps in infrastructure, governance, and gender equity. Programming must therefore adopt a dual approach: addressing structural barriers through infrastructure and policy reforms, while also implementing gender-sensitive strategies that directly empower women traders and fishers within the value chain.

I) Section L: External Market Demand & Exchange Rate

i. Export Pressures and Gendered Access

The findings reveal that, on average, only 17.3 percent of fish sold by respondents goes to export markets, with a median of just 10 percent. This indicates that most fishers and traders are only marginally involved in export channels, while a small minority primarily men in Puntland and Jubaland reported that all of their fish goes to export buyers. The gender breakdown underscores stark inequities: men channel an average of 22.1 percent of their sales to export markets, while women average just 9.7 percent. This suggests that women are largely excluded from higher-value, bulk commercial trade, remaining confined to local markets where margins are thinner and buyers often pay in Somali Shillings rather than hard currency. In practice, export opportunities are structurally tilted toward men, reinforcing gendered income disparities. As one woman in Banadir explained, “I sell only in the local market; I have never met an export buyer.”

ii. Currency Fluctuations and Price-Setting Power

When exchange rates shift especially when the Somali Shilling depreciates—the overwhelming majority of respondents reported that buyers adjust the landing price (38 percent), rather than sellers themselves. Only 27 percent said they personally set the adjustment, with others citing brokers (16 percent), seller groups or cooperatives (9 percent), and market committees (6 percent). Women were notably more likely to report buyer dominance: 43 percent of women versus 35 percent of men said buyers decided the adjusted price. Conversely, 30 percent of men versus only 22 percent of women claimed autonomy to change prices themselves. This pattern highlights women’s weaker bargaining position in volatile currency environments, leaving them more vulnerable to income erosion.

Regional differences further illustrate structural imbalances. In Puntland, sellers enjoyed relatively more autonomy (35 percent), but in Jubaland and Galmudug, buyers decisively dominated (49 and 52 percent respectively). In SouthWest and Hirshabelle, intermediaries and agents played an outsized role, eroding fishers’ control. The testimonies echo this imbalance: “When the dollar rises, the buyer just pays us less. We have no say,” lamented a female trader in SouthWest State. The common thread across states is that fishers and traders notably women bear the brunt of currency fluctuations while lacking the mechanisms to protect their earnings.

iii. Absence of Forward Contracts

The study also shows that only 13 percent of respondents had been offered forward contracts or fixed-price agreements, while the remaining 87 percent operated exclusively in spot markets. This lack of stabilizing instruments leaves most sellers perpetually exposed to sudden price swings. Gender analysis shows another layer of exclusion: while 16 percent of men had access to forward contracts, only 8 percent of women reported the same. This effectively doubles women’s disadvantage, as they are both excluded from export opportunities and denied price-stabilizing arrangements. A woman fish trader from Galmudug captured the gendered inequity bluntly: “I never even hear of these agreements. They talk to the men.”

Spatial patterns reveal predictable disparities. In Puntland (22 percent) and Banadir (17 percent), where export-oriented and commercial networks are more developed, forward contracts were more accessible. In contrast, fragile market environments such as Hirshabelle

(5 percent) and Galmudug (7 percent) reported negligible contract presence. SouthWest and Jubaland fell somewhere in between, but still well below levels that would meaningfully reduce risk exposure.

iv. Deeper Market Relationships

The cross-tabulation of variables suggests that forward contracts are closely tied to export engagement fishers who sell larger shares to export buyers are significantly more likely to secure contract stability. Women, by contrast, are systematically left out of both spheres: they lack pricing power and are rarely included in contract arrangements. In states where sellers cannot adjust prices, many respondents reported selling under stress conditions, often leading to spoilage or panic sales. Conversely, respondents who had contracts reported much lower incidences of spoilage, since guaranteed outlets allowed them to plan for transport and storage.

These dynamics converge into a precarious reality for Somali fishers and traders. As one male fisher in Hirshabelle put it, “One day the dollar is high, the next it’s low. We’re always guessing.” A female vendor in Banadir captured the human toll: “Even when prices drop, we still have to sell. There is no tomorrow for our fish.” Without forward contracts, cooperative bargaining structures, or mechanisms to share currency risk, Somali fishers remain price-takers in a value chain dominated by buyers and intermediaries. The result is that the very actors who move the fish economy forward are excluded from the stabilizing mechanisms that could protect their livelihoods.

8. Conclusions and recommendations

Conclusions:

The baseline fish price assessment across Somalia's Federal Member States (FMS) and Banadir reveals a sector of immense potential but constrained by systemic vulnerabilities. The findings demonstrate that fisheries are not only the backbone of coastal livelihoods but also a fragile economic system shaped by demographic realities, infrastructural deficits, environmental volatility, and global market pressures. These findings converge to highlight both the urgency of reform and the opportunities for targeted interventions that can stabilize and grow the sector.

Demographic and livelihood patterns underscore that Somali fisheries remain heavily male-dominated, with women concentrated in trading and processing roles. While women's participation is most visible in urban centers with better infrastructure, rural and conservative states remain exclusionary. Age dynamics reflect inheritance and lifecycle entry points: men dominate early and late life participation, while women engage more in middle adulthood, often after childrearing. This gendered and generational structure shapes access to markets, income potential, and resilience. Livelihoods are deeply dependent on fisheries, with most households earning 70–100% of income from the sector, yet this dependency does not guarantee food security. Skipped meals are common, particularly in Galmudug and Jubaland, revealing that income from fish does not always translate into nutritional stability.

Trading dynamics illustrate that Yellowfin tuna, Mackerel, and Skipjack form the backbone of Somali fisheries markets, but storage and transaction practices remain rudimentary. Women traders, often reliant on ambient storage and slower sales cycles, face compounded risks of post-harvest loss and diminished bargaining power. Regional disparities in cold-chain infrastructure are stark: Puntland enjoys relatively stronger facilities, while SouthWest and Hirshabelle remain critically underserved. These gaps amplify post-harvest losses, depress prices in peak months, and disproportionately harm women and small traders who lack access to preservation technologies.

The financial realities of traders reveal a fragile balance between cost and profit. Men incur high expenses on fuel and gear but also reap larger profits through direct fishing, while women operate on lower capital models, earning smaller but steadier margins. Banadir emerges as the most lucrative hub, driven by urban demand and diversified markets, while Galmudug and Puntland face low profitability despite relatively modest costs. Entire states such as SouthWest and Hirshabelle show negligible reported profits, reflecting either minimal engagement or structural data gaps. These disparities underscore the primacy of place, rather than gender alone, in shaping market outcomes. State-specific programming—cooperative models in Puntland and Galmudug, infrastructure investment in SouthWest and Hirshabelle, and logistics expansion in Banadir and Jubaland—will therefore yield greater impact than uniform national strategies.

Seasonality and external shocks further destabilize livelihoods. January is the busiest fishing month, but June consistently records the steepest price crashes due to oversupply, spoilage, and reduced demand. This boom-and-bust cycle is reinforced by structural constraints: poor cold-chain facilities, high fuel costs, and adverse weather conditions, together accounting for more than 85 percent of reported price shocks. These shocks disproportionately affect women, who cite infrastructure deficits, and men, who emphasize input costs. Coping strategies—cutting food, education, healthcare, or transport—reveal how thin margins quickly translate into household-level sacrifices, with women often internalizing shocks through skipped meals and men prioritizing preservation of productive assets. The sector's vulnerability is thus lived in both markets and households, manifesting in food insecurity, curtailed education, and foregone healthcare.

Despite these vulnerabilities, the assessment also surfaces clear signs of resilience and opportunity. Nearly half of respondents report some capacity to save or invest, with higher rates in Puntland and Banadir, where stronger infrastructure and buyer networks enable surpluses. Investment portfolios prioritize productive assets—boats, gear, and storage—indicating that when liquidity allows, households reinvest to stabilize future income. Women’s more limited investment reflects both scale constraints and competing household claims, yet their presence in cooperative systems suggests that collective approaches could expand women’s economic agency. Similarly, variations in price-setting power reveal openings for reform: while men dominate individual bargaining, women rely on cooperatives or buyers, underscoring the value of strengthening collective price-setting mechanisms and women’s direct access to market information.

At the macroeconomic level, Somali fish prices remain volatile in response to global export markets and currency fluctuations. The sector is tethered to external demand, particularly from Gulf and Asian buyers, but lacks stabilizing instruments such as forward contracts or hedging mechanisms. Export potential is evident, but high-value markets remain largely inaccessible to women and small traders, reinforcing inequality in benefit distribution. Exchange rate volatility erodes local margins, amplifying vulnerability for households already operating at subsistence levels. Unless stabilized, these macroeconomic pressures will continue to cascade into household food insecurity and fragile livelihoods.

Taken together, the assessment findings portray a sector at a crossroads. Somalia’s fisheries possess a natural comparative advantage, yet the benefits remain constrained by systemic weaknesses: inadequate infrastructure, gender inequities, seasonal volatility, and exposure to global market fluctuations. The conclusion that emerges is twofold. First, without targeted interventions, these weaknesses will continue to undermine both livelihoods and national economic growth. Second, with deliberate, context-sensitive investments—in cold storage, cooperative models, gender-responsive programming, market governance, and climate resilience—the sector can transition from fragility to strength. The baseline fish price indicator established through this assessment provides a critical benchmark for tracking progress, but the deeper value lies in the lived realities it reveals: households balancing survival with aspiration, women carving space in male-dominated markets, and entire states striving to convert natural resource wealth into sustainable livelihoods.

For Somalia, the future of fisheries will be determined not only by the volume of fish caught, but by the fairness of prices secured, the resilience of households sustained, and the equity of opportunities created. This baseline study illuminates both the fragility and promise of the sector, offering a roadmap for the Federal Government of Somalia, FMS, development partners and local communities to invest strategically in building a fisheries economy that is inclusive, resilient, and transformative.

Recommendations:

This section provides recommendations aimed at stabilizing fish prices in Somalia. Each recommendation is broken down into specific actions, implementation modalities, and the rationale behind it. An implementation matrix is presented that outlines key stakeholders, timelines, priority levels, and notes for each recommendation.

- i. **Infrastructure Enhancements:** The most pressing requirement for market stabilization is investment in infrastructure. Solar-powered ice plants and cooperative cold rooms should be prioritized in underserved states such as Hirshabelle, SouthWest, and Galmudug, where price crashes during peak seasons are most severe. These facilities will enable fishers and traders to preserve fish for longer periods, thus reducing distress sales. In addition, upgrading landing sites with reliable utilities clean water, electricity, and hygienic processing areas will raise food safety standards and encourage women’s participation in markets. This intervention

also supports the professionalization of fisheries markets and aligns with national food safety priorities.

- ii. **Improved Fish Handling Practices:** Fish handling remains rudimentary across Somalia, with widespread reliance on ambient storage. To address this, nationwide training in post-harvest handling, icing, and hygiene is essential. Such programs must particularly target women traders who face longer sale cycles and higher spoilage risks. Alongside training, mandatory quality checks and grading at landing sites and markets should be enforced by MFBE and local authorities. This will incentivize better handling practices, protect consumers, and support higher and more stable fish prices.
- iii. **Better Processing Techniques:** Investments in value addition through low-cost processing will create alternative markets and reduce seasonal gluts. Solar drying, salting, and smoking of smaller pelagics such as sardines will extend their marketability and stabilize income during periods of oversupply. Additionally, women processors should be provided with equipment such as drying racks, improved smoking kilns, and training. This support will empower women to diversify products and expand their role in value chains, making them less vulnerable to spoilage and market shocks.
- iv. **Strengthened Market Linkages:** Market stabilization cannot be achieved without stronger linkages across the fisheries value chain. Supporting cooperatives to bulk-sell fish will reduce middlemen’s dominance and give producers collective bargaining power. Integrating fish price data into the Fisheries Information and Monitoring System (FIMS) and disseminating it via Short Message Service (SMS) or mobile apps will increase transparency and reduce price asymmetries. Linking coastal producers to urban demand centers such as Mogadishu will also balance regional supply and demand, ensuring that excess fish in coastal states is absorbed by urban markets where purchasing power is stronger.
- v. **Cold Storage and Logistics Solutions:** Logistical inefficiencies are a major driver of price instability. Deploying mobile reefer trucks and ice-making units in underserved regions like SouthWest and Hirshabelle will reduce spoilage and enable fish to reach broader markets. Cooperative ownership of fuel-efficient boats and shared transport schemes will reduce operational costs. In the longer term, establishing Public-Private Partnerships (PPPs) for large-scale processing plants, harbors, and distribution hubs will unlock export potential and create economies of scale that stabilize local prices while expanding international trade opportunities.

Table 19: Recommendation Implementation

Recommendation Area	Action	Key Stakeholders	Timeline	Priority	Notes
Infrastructure	Install solar-powered ice plants and cold rooms in underserved states	MFBE, FMS Ministries, Cooperatives, Private Sector, World Bank	Short–Medium (1–3 yrs)	High	Critical to reduce seasonal price crashes
Infrastructure	Upgrade landing sites with utilities and hygienic facilities	MFBE, FMS Ministries, Local Govts, FAO, NGOs	Medium–Long (3–5 yrs)	Medium	Improves women’s participation and quality standards
Handling	Nationwide fish handling and hygiene training	MFBE, NGOs, Cooperatives, Women’s Groups	Short (≤1 yr)	High	Reduces spoilage, empowers women

Handling	Enforce mandatory quality checks and grading	MFBE, Local Market Committees, Municipalities	Short–Medium (1–2 yrs)	High	Improves consumer safety and pricing standards
Processing	Promote solar drying, salting, smoking for small pelagics	MFBE, FAO, NGOs, Women’s Associations	Short (≤1 yr)	Medium	Diversifies products, reduces gluts
Processing	Support women processors with drying racks and smoking kilns	MFBE, Donors, Cooperatives	Short–Medium (1–2 yrs)	High	Increases women’s resilience
Market Linkages	Strengthen cooperative bulk marketing schemes	MFBE, FMS Ministries, Cooperatives	Short–Medium (1–3 yrs)	High	Reduces middlemen power, stabilizes prices
Market Linkages	Integrate fish price data into FIMS and disseminate via SMS/apps	MFBE, ICT Ministry, Telecom Companies, Donors	Short (≤1 yr)	High	Improves transparency and bargaining power
Market Linkages	Facilitate structured supply chains to urban centers	MFBE, Transport Unions, Logistics Firms	Medium (2–3 yrs)	Medium	Balances regional supply-demand
Logistics	Deploy mobile cold-chain solutions in underserved states	MFBE, Private Logistics Companies, Donors	Short–Medium (1–3 yrs)	High	Stabilizes rural-urban supply
Logistics	Pilot cooperative fuel-efficient boats and transport schemes	MFBE, Cooperatives, Private Investors	Medium (2–3 yrs)	Medium	Reduces costs, increases efficiency
Logistics	Establish PPPs for large-scale processing plants and harbors	MFBE, Private Sector, Somali Diaspora, IFC, World Bank	Long (4–6 yrs)	Low	Unlocks export potential

9. Annex 1: Technical Methodology for Deriving a Single Average Fish Price Indicator (USD/kg)

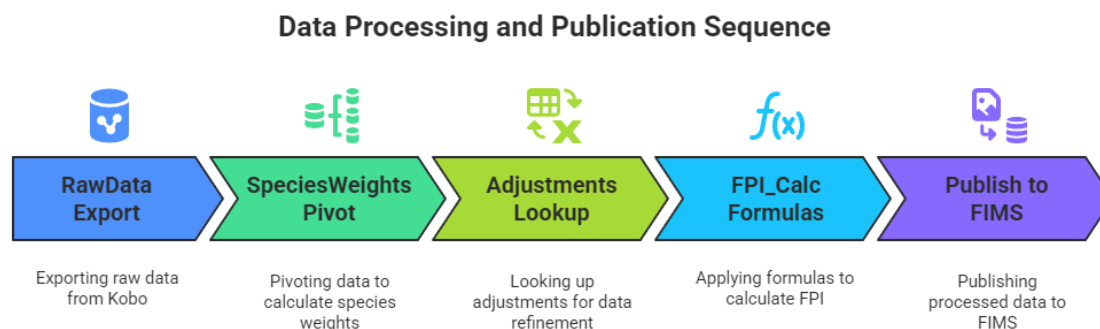


Figure A1-1 End-to-End Workflow for FPI

(i) Objective

The objective is to compute a single, representative, and replicable average fish price (USD/kg) that reflects real market dynamics across Somalia's coastal fishery sector. This price will serve as the baseline indicator for the Somali Sustainable Fisheries Development Project (SSFDP) and will support future monitoring, evaluation, and policy interventions.

(ii) Key Data Points

Data was collected from targeted respondents at major landing sites and value chain nodes across regions. The core variables include:

- Fish species (name and local classification)
- Quantity traded (kg/day)
- Selling price (USD/kg)
- Product quality level (low/medium/high)
- Type of sale (wholesale, retail, export)
- Geographical location (site, district, state)
- Season (to capture fluctuations)
- Infrastructure access (cold chain, transport)
- Trader profile (gender, fisher, processor, vendor)

This diversity allows the methodology to reflect real trade dynamics and market behavior.

(iii) Calculation Methodology

The Fish Price Indicator (FPI) will be derived using a weighted average price model, calculated as:

$$\text{FPI} = \sum(Q_i / Q_t) * P_i$$

Where:

- Q_i : Quantity traded of species i
- Q_t : Total quantity traded of all species
- P_i : Average market price of species i

(iv) Calculation Workflow

Step 1: Compute Average Prices per Species

Average prices are computed per species at each landing site using field-collected data.

Step 2: Assign Species Weights

Weights are determined by the species' share of the total catch in the study sample.

Step 3: Apply Weighted Average Formula

Each species' contribution to the price index is calculated as $W_i * P_i$, and the sum gives the final FPI.

Step 4: Adjust for Seasonality and Quality (if applicable)

Where appropriate, adjustments may be made using seasonal factors and quality grades derived from local norms or FLW data.

This is further illustrated as: A1-1 Data-Processing Workflow

- (i) ****Clean & stage data**** – Remove species with < 5 trades/week and standardise units to kg and USD.
- (ii) ****Compute site-level daily averages**** – $P_{i,site,day} = \text{mean}(\text{price of species } i)$; $Q_{i,site,day} = \Sigma(\text{quantity of species } i)$.
- (iii) ****Aggregate to monthly national panel**** – $P_{i,month} = \Sigma(P_{i,site,day} \times Q_{i,site,day}) / \Sigma(Q_{i,site,day})$; $Q_{i,month} = \Sigma Q_{i,site,day}$.
- (iv) ****Derive weights**** – $W_i = Q_{i,month} / \Sigma Q_{i,month}$.
- (v) ****Apply adjustments**** – $\text{SeasonAdj} = \text{CPI}_{fish_month} / \text{CPI}_{fish_5yrMedian}$; $\text{QualAdj} = 1 + (\text{quality premium } \%)$; $P_{i,adj} = P_{i,month} \times \text{SeasonAdj} \times \text{QualAdj}$.
- (vi) ****Compute headline figure**** – $\text{FPI}_{month} = \Sigma(W_i \times P_{i,adj}) \rightarrow \text{single average price (USD/kg)}$.
- (vii) ****Publish & archive**** – Excel & Power BI template auto-refreshes nightly, posting the FPI on the FIMS dashboard.

****Adjustment equations****

$\text{SeasonAdj} = \text{Price}_{month} / \text{Price}_{long-term-median}$

$\text{QualAdj} = 1 + (\text{Premium } \%)$

$\text{FPI}_{month} = \Sigma(W_i \times P_{i,adj})$

(i) A1 – 2: Example (Simplified Calculation) – illustration with dummy numbers

Species	Qty (kg)	Raw Price (USD/kg)	Season Adj	Quality Adj	Weight W_i	Adjusted Price	Contribution
Tuna	10 000	3.00	1.05	1.00	0.50	3.15	1.58
Lobster	2 000	7.00	0.95	1.10	0.10	7.32	0.73
Grouper	8 000	2.50	1.05	0.90	0.40	2.36	0.94
Total / FPI	20 000	—	—	—	1.00	—	3.25 USD/kg

N/B: The extra 0.05 USD uplift from the example reflects explicit season/quality factors.

A1-3 Outlier & Missing-Data Rules

- ****Outlier trimming****: exclude observations beyond $\pm 1.5 \text{ IQR}$ (Tukey rule) or $\pm 3 \sigma$, whichever is stricter.
- ****Missing quantity (Q_i)****: impute using a 3-month moving average of the same species at the same site.
- ****Missing price (P_i)****: impute by median price of the species across all sites for that month.

(ii) Validation and Consensus Building

The final FPI figure (USD/kg) will be presented to MFBE and FMS stakeholders in a national consultative workshop. Feedback will be documented, and the methodology endorsed as the official baseline price for SSFDP monitoring.

(iii) Replication, Tools, and Handover

- The calculation model will be built in Excel and Power BI, with embedded formulas and instructions.
- A Methodology Manual and data dictionary will be handed over to MFBE.
- The staff will be trained in using, updating, and maintaining the indicator in line with national systems (e.g., FIMS).

10. Annex 3 - Data Collection Tools

(i) Structured Interview with Fishers, Traders & Processors

Good morning / afternoon. My name is [.....], and I am part of the research team from **Africa Research and Data Ltd.** Together with the Federal Ministry of Fisheries & Marine Resources and the coastal State Ministries, we are carrying out a **Fish-Price Assessment** in landing sites and markets along Somalia's coast. The purpose of the study is to understand how fish prices change between species, seasons and locations; what costs, infrastructure gaps and market practices influence those prices; and how better information can help fishers, traders and processors—especially women and youth—earn fairer and more stable incomes. Findings will feed into a new **Fisheries Information & Monitoring System (FIMS)** and guide future investments in cold-chain, transport and market services. Your experience is vital to make sure these decisions reflect real conditions on the ground. Participation is **voluntary**. You may skip any question or stop the interview at any time without any penalty. Your answers will be kept **confidential**; results will be reported only in summary form and no personal names will appear in any report. The interview will take about **[45] minutes**. There is no direct payment, but your insights will help improve support and opportunities for everyone in the fish value chain.

Do you consent to take part in this interview?" **

Confirmation

Yes, I agree to participate. No, I do not wish to participate.

If the respondent selects "No", thank them politely and close the interview.

a) Respondent Demographics

(Skip-logic identical to the version you already built; only wording is expanded.)

Code	Final question text (read exactly)	Enumerator guidance (<i>do not read aloud</i>)
A1	<i>Auto-captured interview ID.</i>	—
A2	<i>Auto-captured date and start time.</i>	—
A3	"Please tell me your enumerator code ."	Use drop-down list.
A4	Interview Location	
	State:	
	Region:	
	District:	
	Village/site:	
A5	<i>Auto-captured GPS coordinates.</i>	—
A6	"Which landing or market site are we at right now?"	Choose from Calanley, Jazeera ... Bargaal, Mogadishu.
A7	"Which of this best describes your role today ?" ① Artisanal or small-scale fisher ② Vessel owner 3 Vessel crew 4 Processor 5 Trader 6 Exporter 7 Coastal household that is buying fish for home use.	Read all six; record one.
A8	"What is your sex or gender ?" ① Male ② Female	
A9	Within what age range do you fall?" ① Under 25 yrs ② 25–34 yrs ③ 35–44 yrs ④ 45–54 yrs ⑤ 55 yrs or older.	

b) Production or Trading Profile (ask only if A6 ≠ ⑥ Coastal household)

Code	Question text	Enumerator guidance
B1	“For how many complete years have you been working in this role?”	Whole number only.
B2	“Please state your main gear type if you catch fish, or your main business activity if you trade or process fish.” 1. Handlines, 2. Pole and line, 3. Gillnets, 4. Beach seines 5. Traps 6. Longlines, 7. Purse seines 8. Trawls. 9. Other Specify	
B3	“Do you have any regular access to ice or cold storage for your fish?” ① Own facility ② Rent or pay per use ③ Shared cooperative facility ④ No access at all.	
B4	“When you usually sell fish, what market options/sites for selling fish is most common?” ① Public auction ② Direct spot sale to buyer ③ Contract or forward order ④ Barter or in-kind exchange.	1. Within ocean, 2. Landing site, 3. Market place if any, 4. Along the roads 5. Other Specify

c) Details of the last complete trading day

(Repeat C1–C8 loop for every species sold that day.)

Code	Question text	Enumerator guidance
C1	“What was the local name of the species you sold or bought yesterday?” Pick from coded list. 1. Yellowfin tuna (Thunnus albacares): Somali: Tabadin 2. Skipjack tuna (Katsuwonus pelamis): Somali: Dabagucun 3. Mackerel (Scomberomorus commerson): Somali: Taraaqad 4. Sardines (Sardinella): Somali: Ceydi 5. Herring (Decapterus): Somali: Unknown (but commonly caught) 6. Anchovies (Engraulis): Somali: Unknown (but commonly caught) 7. Grouper (Serranidae): Somali: Sumaan 8. Snapper (Lutjanidae): Somali: Qardabo 9. Lizardfish (Synodontidae): Somali: Unknown (but commonly caught) 10. Emperor (Lethrinidae): Somali: Gaxash	Select Multiple

	<p>11. Goatfish (Mullidae): Somali: Unknown (but commonly caught)</p> <p>12. Jack (Carangidae): Somali: Unknown (but commonly caught)</p> <p>13. Seabream (Sparidae): Somali: Unknown (but commonly caught)</p> <p>14. Shark (Sphyrnidae, Carcharhinidae): Somali: Lakham or Libaax-badeed</p> <p>15. Shrimp (Penaeidae): Somali: Sharookhis</p> <p>16. Crustaceans: Somali: Kaambo (lobster), Lohad (oyster)</p> <p>17. Other (Specify)</p>	
C2	<p>“In what form did you sell that species?” ① Whole fresh (no ice) ② Whole chilled/on ice ③ Frozen block ④ Dried or salted ⑤ Fillet or other processed form.</p>	
C4	<p>“How many kilograms of this species did you sell or buy yesterday?”</p> <p>Pick from coded list.</p> <ol style="list-style-type: none"> 1. Yellowfin tuna (Thunnus albacares): Somali: Tabadin 2. Skipjack tuna (Katsuwonus pelamis): Somali: Dabagucun 3. Mackerel (Scomberomorus commerson): Somali: Taraaqad 4. Sardines (Sardinella): Somali: Ceydi 5. Herring (Decapterus): Somali: Unknown (but commonly caught) 6. Anchovies (Engraulis): Somali: Unknown (but commonly caught) 7. Grouper (Serranidae): Somali: Sumaan 8. Snapper (Lutjanidae): Somali: Qardabo 9. Lizardfish (Synodontidae): Somali: Unknown (but commonly caught) 10. Emperor (Lethrinidae): Somali: Gaxash 11. Goatfish (Mullidae): Somali: Unknown (but commonly caught) 12. Jack (Carangidae): Somali: Unknown (but commonly caught) 13. Seabream (Sparidae): Somali: Unknown (but commonly caught) 14. Shark (Sphyrnidae, Carcharhinidae): Somali: Lakham or Libaax-badeed 15. Shrimp (Penaeidae): Somali: Sharookhis 16. Crustaceans: Somali: Kaambo (lobster), Lohad (oyster) 17. Other (Specify) 	<p>Enter kg to 0.1 precision for Each Species.</p>

<p>C5a</p>	<p>Pick from coded list.</p> <ol style="list-style-type: none"> 1. Yellowfin tuna (Thunnus albacares): Somali: Tabadin 2. Skipjack tuna (Katsuwonus pelamis): Somali: Dabagucun 3. Mackerel (Scomberomorus commerson): Somali: Taraaqad 4. Sardines (Sardinella): Somali: Ceydi 5. Herring (Decapterus): Somali: Unknown (but commonly caught) 6. Anchovies (Engraulis): Somali: Unknown (but commonly caught) 7. Grouper (Serranidae): Somali: Sumaan 8. Snapper (Lutjanidae): Somali: Qardabo 9. Lizardfish (Synodontidae): Somali: Unknown (but commonly caught) 10. Emperor (Lethrinidae): Somali: Gaxash 11. Goatfish (Mullidae): Somali: Unknown (but commonly caught) 12. Jack (Carangidae): Somali: Unknown (but commonly caught) 13. Seabream (Sparidae): Somali: Unknown (but commonly caught) 14. Shark (Sphyrnidae, Carcharhinidae): Somali: Lakham or Libaax-badeed 15. Shrimp (Penaeidae): Somali: Sharookhis 16. Crustaceans: Somali: Kaambo (lobster), Lohad (oyster)" 17. Other (Specify) 	<p>If only one sale, enter that price.</p>
<p>C5b</p>	<p>“What was the average afternoon or evening price you received for this species, in US dollars per kilogram?”</p> <p>Pick from coded list.</p> <ol style="list-style-type: none"> 1. Yellowfin tuna (Thunnus albacares): Somali: Tabadin 2. Skipjack tuna (Katsuwonus pelamis): Somali: Dabagucun 3. Mackerel (Scomberomorus commerson): Somali: Taraaqad 4. Sardines (Sardinella): Somali: Ceydi 5. Herring (Decapterus): Somali: Unknown (but commonly caught) 6. Anchovies (Engraulis): Somali: Unknown (but commonly caught) 7. Grouper (Serranidae): Somali: Sumaan 8. Snapper (Lutjanidae): Somali: Qardabo 9. Lizardfish (Synodontidae): Somali: Unknown (but commonly caught) 10. Emperor (Lethrinidae): Somali: Gaxash 11. Goatfish (Mullidae): Somali: Unknown (but commonly caught) 12. Jack (Carangidae): Somali: Unknown (but commonly caught) 	<p>Enter 0 if none sold in the afternoon/evening.</p>

	<p>13. Seabream (Sparidae): Somali: Unknown (but commonly caught)</p> <p>14. Shark (Sphyrnidae, Carcharhinidae): Somali: Lakham or Libaax-badeed</p> <p>15. Shrimp (Penaeidae): Somali: Sharookhis</p> <p>16. Crustaceans: Somali: Kaambo (lobster), Lohad (oyster)</p> <p>17. Other (Specify)</p>	
C6	<p>“Who was the main buyer or seller for this lot?” ① Local household consumer ② Itinerant trader ③ Large wholesaler ④ Exporter.</p>	
C7	<p>“Before you sold it, what transport or storage did you use for this lot?” ① Ice box ② Reefer truck or cold room ③ Ambient / no cooling ④ Other (specify).</p>	
C8	<p>“Approximately how many hours and minutes passed from landing to final sale for this lot?”</p>	Record HH:MM.

b) Costs & Margins (yesterday)

Code	Question text	Enumerator guidance
D1	<p>“Yesterday, how much did you personally spend on fuel for your fishing trip, or how much was the full boat-rental fee? Please state the amount in US dollars.”</p>	Convert from SOS if needed.
D2	<p>“Yesterday, what was your total cost for ice or any other cooling method you used? State the total in US dollars.”</p>	Include ice purchase or cold-room rental; enter 0 if none.
D3	<p>“Yesterday, how much did you pay in market fees, levies or official taxes at the landing or market? Give the total in US dollars.”</p>	Combine all official charges; 0 if none.
D4	<p>“After subtracting all costs, what is your best estimate of the net profit you earned yesterday, in US dollars?”</p>	Allow best guess.

c) Seasonality & External Shocks

Code	Question	Enumerator guidance
E1	<p>“Looking at an average year, in which three months do you usually land the highest volume of fish?”</p>	Mark up to three months.
E2	<p>“Which month or months usually bring the lowest prices, and what causes that?”</p>	Record months, then short reason in same field.
E3	<p>“Right now, which single factor is cutting prices the most in your view?” ① High fuel cost ② Exchange-rate fluctuation ③ Poor cold-chain facilities ④ Insecurity or checkpoints ⑤ Bad weather ⑥ Other (specify).</p>	

d) Household Livelihood & Food Security

Code	Question	Enumerator guidance
F1	<p>“Thinking about all the money your household earned in the last 12 months, what percentage came from fishing or fish trading? Please give a number from 0 to 100 percent.”</p>	Use on-screen slider; probe with ranges if unsure.

F2	“During the last 7 days , did anyone in your household have to skip a meal because there was not enough food?” ① Yes ② No.	
F3	“Who normally makes the final decision about the price at which your fish will be sold?” ① You yourself ② Your spouse ③ Both jointly ④ Co-operative leader ⑤ Someone else (specify).	

e) Gender & Inclusion

Code	Question	Enumerator guidance
G1	“Do women in your household keep or control any portion of the money earned from fish sales?” ① Yes ② No.	
G2	“In your opinion, what is the biggest barrier that women face when trying to earn a fair income in this value chain?”	Record verbatim.

f) Perceptions & Recommendations

Code	Question	Enumerator guidance
H1	“On a scale from 1 to 5 , where 1 means <i>very unfair</i> and 5 means <i>very fair</i> , how fair do you feel current fish prices are to you personally? ”	Circle 1–5.
H2	“If you could change one thing tomorrow to raise the price you receive, what would that be?”	Open text.

g) Seasonal & Spatial Price Profile

Code	Question	Enumerator guidance
I1	“In the last 12 months , what was the highest price you received for your main species, in US dollars per kilogram?”	
I2	“In that same 12-month period, what was the lowest price you received for that species, in US dollars per kilogram?”	
I3	“During which months did you get those highest prices? ”	Multi-select Jan–Dec.
I4	“During which months did you get those lowest prices? ”	Multi-select Jan–Dec.
I5	“Compared with other landing sites you know, is the price at this site usually: ① Higher ② About the same ③ Lower?”	
I6	<i>If Higher or Lower:</i> “What do you think is the main reason for that difference?”	Record verbatim.

h) Supply-Chain Costs & Inefficiencies

Code	Question	Enumerator guidance
J1	“Yesterday, when you moved your fish to market, what was your transport cost per kilogram , in US dollars?”	Divide total transport by kg; help respondent calculate.
J2	“On that trip, how many check-points or informal payments did you encounter?”	Enter whole number.
J3	“Did you lose any fish to spoilage or damage before selling yesterday?” ① Yes ② No.	
J4	<i>If Yes:</i> “Approximately how many kilograms were lost?”	Enter kg.
J5	“Today, which single bottleneck adds the most to your total costs?” ① Fuel ② Ice or cold chain ③	

Transport time ④ Taxes or levies ⑤ Security issues ⑥ Other (specify).	
--	--

i) External Market Demand & Exchange Rate

Code	Question	Enumerator guidance
K1	“Out of all the fish you sell, what percentage goes to export buyers ? Give a number from 0 to 100 percent.”	Slider.
K2	“When the USD to Somali shilling exchange rate changes, who usually decides to adjust the beach price?” ① Seller group or co-op ② Buyer ③ Broker or agent ④ Market committee.	
K3	“In the last month , did any buyer offer you a forward contract or advance agreement for fish at a fixed price?” ① Yes ② No.	

j) Livelihood Impact & Investment

Code	Question	Enumerator guidance
L1	“If tomorrow the fish price fell by 20 percent , which expense would your household reduce first ?” ① Food spending ② School fees ③ Health care ④ Boat maintenance ⑤ Staff wages ⑥ Other (specify).	
L2	“Have the prices you earned recently allowed you to save or invest in your fishing or trading business?” ① Yes ② No.	
L3	<i>If Yes:</i> “What exactly did you invest in or save for ?”	Open text.

Closing - "Thank you for your time and insights".

(ii) Rapid Market-Price Tracker

(Complete three times per day at each sentinel stall)

Enumerator Observation Fields (record silently)

- **OBS1** Product-handling quality (1 = good, 2 = average, 3 = poor)
- **OBS2** Ice visible on product? Y/N
- **OBS3** Estimated loss/waste on site (kg)

Code	Field wording	Enumerator note
TP1	<i>Auto-capture the exact date and time of entry.</i>	—
TP2	“Please select the site or stall ID you are visiting right now.”	Pre-loaded list.
TP3	“Select the species code for the fish you are pricing.”	One entry per species.
TP4	“Record the asking price in US dollars per kilogram that you see on the stall.”	Numeric.
TP5	“Estimate the quantity of that species currently on display , in kilograms.”	Visual estimate; note “~” if unsure.
TP6	“What is the storage condition of this fish right now?” ① On ice ② Ambient / no ice ③ Frozen.	
TP7	<i>Auto-pulled USD: SOS exchange-rate tag for this hour.</i>	—
TP8	“Add any comment about promotions, sudden shortages or shocks you observe.”	Short text.

TP9	Auto-capture ambient air temperature in °C if phone sensor allows; otherwise enter manually.	
TP10	“Select the weather code that best matches current conditions.” 0 Clear / 1 Cloudy / 2 Light rain / 3 Heavy rain / 4 Strong wind / 5 Storm.”	

(iii) Key-Informant Interview (KII) Guides - Government & Regulatory Stakeholders
 (Ministry of Fisheries & Marine Resources at Federal and FMS level, municipalities, Coast Guard, port authorities, law-enforcement officers)

Good morning / afternoon. My name is [.....], and I am part of the research team from **Africa Research and Data Ltd.** Together with the Federal Ministry of Fisheries & Marine Resources and the coastal State Ministries, we are carrying out a **Fish-Price Assessment** in landing sites and markets along Somalia’s coast. The purpose of the study is to understand how fish prices change between species, seasons and locations; what costs, infrastructure gaps and market practices influence those prices; and how better information can help fishers, traders and processors—especially women and youth—earn fairer and more stable incomes. Findings will feed into a new **Fisheries Information & Monitoring System (FIMS)** and guide future investments in cold-chain, transport and market services. Your experience is vital to make sure these decisions reflect real conditions on the ground. Participation is **voluntary**. You may skip any question or stop the interview at any time without any penalty. Your answers will be kept **confidential**; results will be reported only in summary form and no personal names will appear in any report. The interview will take about **[30] minutes**. There is no direct payment, but your insights will help improve support and opportunities for everyone in the fish value chain.

Do you consent to take part in this interview?***

Confirmation

Yes, I agree to participate. No, I do not wish to participate.

If the respondent selects “No”, thank them politely and close the interview.

#	Core question	Optional probe
G-1	“How are first-sale prices currently set at landing sites in your jurisdiction?”	Existence of official price bulletins? Licensing requirements?
G-2	“Does your agency enforce any price floors, ceilings, or auction rules ?”	Frequency of monitoring; sanctions for non-compliance.
G-3	“What factors explain the largest price gaps between coastal regions?”	Security checkpoints, unofficial levies, fuel subsidies, cold-chain reach.
G-4	“How do foreign exchange movements and inflation influence the way you regulate or advise on prices?”	Use of reference exchange rates; pass-through speed.
G-5	“Which infrastructure constraints most depress prices from a government viewpoint?”	Jetty condition, power supply, ice plants, road links.
G-6	“Are any public investments or reforms planned to close those gaps?”	Timelines, budgets, donor projects.
G-7	“In your opinion, how well are women and youth represented in the formal fish market?”	Any specific policies or quotas?
G-8	“How does your agency currently collect or store price data ?”	Digital systems, paper ledgers, reporting frequency.

G-9	“What role do you foresee for the planned Fisheries Information & Monitoring System (FIMS)? ”	Data flows, responsibilities, training needs.
G-10	“Looking two years ahead, what single policy action would raise beach prices most effectively?”	

Closing - "Thank you for your time and insights. Is there anything else you think is important to add that we haven't discussed?"

(iv) Key-Informant Interview (KII) Guides - Private-Sector & Cooperative Stakeholders

(Marine large-scale processors/exporters, transporters, NGOs/CSOs, traditional fishing associations, cooperative leaders)

Good morning / afternoon. My name is [.....], and I am part of the research team from **Africa Research and Data Ltd.** Together with the Federal Ministry of Fisheries & Marine Resources and the coastal State Ministries, we are carrying out a **Fish-Price Assessment** in landing sites and markets along Somalia’s coast. The purpose of the study is to understand how fish prices change between species, seasons and locations; what costs, infrastructure gaps and market practices influence those prices; and how better information can help fishers, traders and processors—especially women and youth—earn fairer and more stable incomes. Findings will feed into a new **Fisheries Information & Monitoring System (FIMS)** and guide future investments in cold-chain, transport and market services. Your experience is vital to make sure these decisions reflect real conditions on the ground. Participation is **voluntary**. You may skip any question or stop the interview at any time without any penalty. Your answers will be kept **confidential**; results will be reported only in summary form and no personal names will appear in any report. The interview will take about **[30] minutes**. There is no direct payment, but your insights will help improve support and opportunities for everyone in the fish value chain.

Do you consent to take part in this interview?***

Confirmation

Yes, I agree to participate. No, I do not wish to participate.

If the respondent selects “No”, thank them politely and close the interview.

#	Core question	Optional probe
E-1	“From your experience, what sets the benchmark price that smaller actors follow?”	Role of export contracts, international reference prices, quality premiums.
E-2	“Which species, seasons or landing sites show the greatest price volatility, and why?”	Environmental cycles, monsoon, demand spikes.
E-3	“Where along the chain do you observe the highest profit margins or avoidable losses? ”	Handling, transport, middle-men fees, re-grading.
E-4	“How do storage limitations or cold-chain gaps affect both price level and product quality?”	Percentage downgraded; willingness to pay for ice.
E-5	“Can you describe any socio-cultural factors (e.g., trust networks, gender norms) that shape price negotiations?”	Clan ties, women’s bargaining space, youth involvement.
E-6	“What kinds of data do you routinely collect on prices or volumes?”	Own ERP systems, Excel logs, buyer-seller apps.
E-7	“Using your records, what is the current average beach price (USD/kg) for the top three species you handle?”	Ask for actual figures; note date.

E-8	“If beach prices rose by 10 % , who would capture most of that gain —fishers, traders, processors or exporters?”	Reasons for distribution.
E-9	“What private investments —for example in ice plants, reefers, e-commerce—do you see as most likely to stabilise or lift prices?”	Investment size, timeframe, barriers.
E-10	“What single institutional change would make markets fairer from your perspective?”	e.g., transparent auction, cooperative platform, contract enforcement.

Closing - "Thank you for your time and insights. Is there anything else you think is important to add that we haven't discussed?"

(v) FGD Guide - Fishers, Traders & Processors

(6–10 separate with men and women)

Introduction

Good morning / afternoon. My name is [.....], and I am part of the research team from **Africa Research and Data Ltd.** Together with the Federal Ministry of Fisheries & Marine Resources and the coastal State Ministries, we are carrying out a **Fish-Price Assessment** in landing sites and markets along Somalia’s coast. The purpose of the study is to understand how fish prices change between species, seasons and locations; what costs, infrastructure gaps and market practices influence those prices; and how better information can help fishers, traders and processors—especially women and youth—earn fairer and more stable incomes. Findings will feed into a new **Fisheries Information & Monitoring System (FIMS)** and guide future investments in cold-chain, transport and market services. Your experience is vital to make sure these decisions reflect real conditions on the ground. Participation is **voluntary**. You may skip any question or stop the interview at any time without any penalty. Your answers will be kept **confidential**; results will be reported only in summary form and no personal names will appear in any report. The interview will take about **[1hr 30] minutes**. There is no direct payment, but your insights will help improve support and opportunities for everyone in the fish value chain.

Do you consent to take part in this interview?***

Confirmation

Yes, I agree to participate. No, I do not wish to participate.

If the respondent selects “No”, thank them politely and close the interview.

Discussion questions

1. Price Extremes

- a) “What was the *highest* price you earned for fish in the past year, and what led to it?”
- b) “What was the *lowest* price, and what caused that drop?”

2. Seasonal Pattern

- a) “Please mention the **three months** with the *highest landings* and rate the *usual price* in each of those months on a scale of 1 to 5.”
- b) “Now name the **month** with the *lowest prices* and rate how low those prices feel (1 = still okay, 5 = extremely bad).”

3. Cost Pressure Rating

“I will read five cost items—Fuel, Ice, Transport, Market Fees, Spoilage.

For each one, rate how much it **reduces your profit**: 1 means ‘hardly affects me’; 5 means ‘cuts my profit a lot’.”

Enumerators: read each item, let the group discuss briefly, agree on one score, and write it down.

4. Market Fairness

- a) “On most days, how fair is the price you receive? Rate it from 1 = very unfair to 5 = very fair.”
- b) “What makes you choose that number?”

5. Site Comparison

- a) “Compared with other landing sites you know, is the price here usually higher, lower, or the same?”
- b) “What single factor explains that difference?” (*Record the factor*)

6. Exchange-Rate Impact

- a) “When the Somali shilling weakens against the US dollar, rate how quickly your beach price changes: 1 = no change, 5 = same day.”
- b) “Who decides when to adjust the price?”

7. Coping With Sudden Drops

“If tomorrow the price fell by 20 %, rate which household expense you would cut **first** on a scale of 1 to 5, where 5 means ‘definitely cut’.”

- Food spending
- School fees
- Health care
- Boat maintenance
- Staff wages

8. Solution Rating

“Think of the **top three problems** we have discussed today. For each problem, suggest one solution and then rate how **effective** that solution would be from 1 (not effective) to 5 (very effective).”

Enumerators: list Problem → Solution → Rating.

9. Closing Question

“In one sentence, what change would move your fairness rating (question 4) up by at least one point?”

Closing - “Thank you for your time and insights. Is there anything else you think is important to add that we haven’t discussed?”

(vi) FGD 2 – Women in the Fish Value Chain

(6–10 female participants only)

Introduction

Good morning / afternoon. My name is [.....], and I am part of the research team from **Africa Research and Data Ltd.** Together with the Federal Ministry of Fisheries & Marine Resources and the coastal State Ministries, we are carrying out a **Fish-Price Assessment** in landing sites and markets along Somalia’s coast. The purpose of the study is to understand how fish prices change between species, seasons and locations; what costs, infrastructure gaps and market practices influence those prices; and how better information can help fishers, traders and processors—especially women and youth—earn fairer and more stable incomes. Findings will feed into a new **Fisheries Information & Monitoring System (FIMS)** and guide future investments in cold-chain, transport and market services. Your experience is vital to make sure these decisions reflect real conditions on the ground. Participation is **voluntary**. You may skip any question or stop the interview at any time without any penalty. Your answers will be kept **confidential**; results will be reported only in summary form and no personal names will appear in any report. The interview will take about **[1hr 30] minutes**. There is no direct payment, but your insights will help improve support and opportunities for everyone in the fish value chain.

Do you consent to take part in this interview?***

Confirmation

Yes, I agree to participate. No, I do not wish to participate.

If the respondent selects "No", thank them politely and close the interview.

Discussion questions

1. Daily Workload

"Starting at 4 a.m., list the main activities in your workday. For each activity, rate how **stressful** it is on a scale of 1 = not stressful to 5 = very stressful."

2. Barrier Identification

"I will read possible barriers to getting a fair price. After each one, rate how **serious** it is for you: 1 = minor, 5 = very serious."

- Lack of start-up cash or credit
- Poor transport or roads
- Lack of ice / cold storage
- Safety risks (harassment, theft)
- Market rules controlled by men
- Limited price information
- Family duties that limit travel

3. Who Sets the Price

- a) "Who usually sets the sale price—yourself, a male relative, a broker, or someone else?"
- b) "If you ask for a higher price, rate the chance (1 = no chance, 5 = certain) that the buyer will accept."

4. Women Involvement

- a) Are you or women involvement existing community structures, especially the decision making roles. If yes, How is this done? If no, why is it not done?

5. Safety

- a) "Rate your feeling of **personal safety** while transporting or selling fish after dark: 1 = completely safe to 5 = very unsafe. What incidents make you choose that number?"

6. Finance & Information

- a) "Rate your **ease of getting credit** to buy fish: 1 = very easy to 5 = impossible."
- b) "Rate how **useful** each source is for checking today's fish price—mobile phone, radio, other traders, none. Use 1 = not useful to 5 = very useful."

7. Future Scenario

"Imagine fish prices become 20 % higher and stable for one year. Rate how much this would improve your life: 1 = little change to 5 = life-changing. What would you do differently?"

8. Action Planning

"Look at the **two barriers** you rated highest. For each, suggest one action women can take and one support needed from outside. Then rate how **realistic** each action is on a scale of 1 to 5."

9. One-Word Closing

"Choose one word that sums up your hope for women in the fish business."

Closing - "Thank you for your time and insights. Is there anything else you think is important to add that we haven't discussed?"

