



GHANA AGRIBUSINESS PLAYBOOK SERIES

2026



MARINE FISHERIES

Value Chain Analysis

A mapped breakdown of the value chain, from farmgate to factory, and who captures what along the way.

Center for Entrepreneurship
Ashesi University



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Executive summary

THE THESIS

Ghana's fish chain loses most value where links are missing: there is no grading at the landing, cold storage at artisanal beaches is limited and patchy, and few buyers pay for quality. Post-harvest loss, physical and quality loss together, was 22.5 per cent of total fish production in 2023, worth GH¢2.6 billion. In the 2021 peak season processors and traders earned the most, about GH¢1,800 to GH¢2,200 a month, against GH¢968 for fishmongers and GH¢625 for fishers. The fishmonger's advance is the most widely used credit in the chain, and the woman who gives it buys the catch at her price. She is also the one actor already placed to capture what the chain is losing.

This is the value chain analysis for Ghana's marine capture fishery, and it matches Pillar 6 of the Ghana Marine Fisheries Playbook. It follows the fish from the landing beach to the consumer, sets out what each actor earns, maps every actor by the power it holds against its interest in change, and ranks the openings. Figures are as reported between July and September 2026 and may have changed since.

Ashesi University | Berekuso, Ghana | 2026

¹ Philothea Laurentia Osei-Bonsu, *Current Landing Infrastructure in Ghana Fisheries* (Tangier: Ministerial Conference on Fisheries Cooperation among African States bordering the Atlantic Ocean (COMHAFAT/ATLAFCO), 2026), <https://www.comhafat.org/wp-content/uploads/2026/03/Ghana-REVISED-GHANA-LANDING-BEACH-INFRASTRUCTURE-GHANA.pdf>.

² Fisheries Commission, *2023 Annual Performance Report* (Accra: Fisheries Commission, Ministry of Fisheries and Aquaculture Development, 2024), https://www.mofaq.gov.gh/wp-content/uploads/2025/04/Very-final_2023-APR-FINAL-02082024_Board.pdf.

³ Berchie Asiedu et al., "The People's Fishery in Perspective: Current Analysis of the Small Pelagic Fishery Value Chain of Ghana," *Fisheries Research* 254 (2022): 106426, <https://doi.org/10.1016/j.fishres.2022.106426>.

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Glossary

Canoe frame survey

a periodic count of canoes, fishermen and landing beaches. Ghana's last complete published count was in 2016; a 2022 survey has published only preliminary results.

Overfished / overfishing

overfished means the stock is below the biomass that supports maximum sustainable yield; overfishing means it is still being fished faster than it can replace itself. A stock can be either, both, or neither.

Bait link

the tuna fleet's dependence on live bait, including juvenile round sardinella, drawn from the same collapsing small pelagic stock the domestic fishery depends on for food.

Saiko

the illegal transshipment of fish at sea from industrial trawlers to canoes, which bypasses the licensed catch record.

EEZ

exclusive economic zone, the area of sea over which a coastal state holds rights to fish and other marine resources.

Catch certification / traceability

the paper and data trail proving where an exported fish was caught and by what vessel, required by importing markets such as the European Union.

CPUE

catch per unit effort, the fish landed per trip; a falling CPUE at rising effort is the classic sign of overfishing.

Biomass at maximum sustainable yield (BMSY)

the stock size that produces the largest catch a fishery can take indefinitely without depleting it.

Premix fuel

subsidised fuel sold to registered canoes at a controlled price, distributed through Landing Beach Committees.

IUU fishing

illegal, unreported and unregulated fishing: catch taken outside the law, not reported to the authorities, or both.

MSC certification

third-party certification by the Marine Stewardship Council that a fishery meets a sustainability standard, a requirement for some export markets.

Pole-and-line

a tuna fishing method that catches one fish at a time using live bait, valued for low bycatch but dependent on a reliable bait supply.

GHANA MARINE FISH, BOAT TO PLATE: WHO OPERATES EACH LINK, AND WHERE THE MONEY STOPS

Marine Fisheries Value Chain Analysis

The chain at a glance, and how thin the evidence for it is

Ghana's marine chain is a set of separate transactions tied by credit, the same person often financier, processor, trader and retailer at once, the fish changing hands with no written contract. Value is captured by controlling who buys the fish as it lands.



The chain's economics rest on a small set of field studies: the sardinella supply chain,⁴ the small pelagic value chain,⁵ tuna⁶ and cross-border

trade,⁷ with newer work on post-harvest flows,⁸ post-harvest associations⁹ and consumer preferences.¹⁰



⁴ F. K. E. Nunoo et al., *Sardinella and Other Small Pelagic Value and Supply Chain of the Fishery Sector, Ghana*, GH2014_ACT044_SNV (Narragansett, RI: Coastal Resources Center, Graduate School of Oceanography, University of Rhode Island, and SNV Netherlands Development Organisation, 2015), https://www.crc.uri.edu/download/GH2014_ACT044_SNV_FIN508.pdf.

⁵ Asiedu et al., "The People's Fishery in Perspective"

⁶ E. Drury O'Neill, N. K. Asare, and D. W. Aheto, "Socioeconomic Dynamics of the Ghanaian Tuna Industry: A Value-Chain Approach to Understanding Aspects of Global Fisheries," *African Journal of Marine Science* 40, no. 3 (2018): 303-313, <https://doi.org/10.2989/1814232X.2018.1513866>.

⁷ Raymond K. Ayilu and Richard A. Nyiawung, "Illuminating Informal Cross-Border Trade in Processed Small Pelagic Fish in West Africa," *Maritime Studies* 21, no. 4 (2022): 519-532, <https://doi.org/10.1007/s40152-022-00284-z>.

⁸ Anderson K. Ahwireng et al., "Post-Harvest Travels of Marine Fish: How Small Fish Food Systems Variously Support Food Security and Nutrition in Coastal and Inland Cities in Ghana," *Tijdschrift voor Economische en Sociale Geografie* 115, no. 3 (2024): 418-438, <https://doi.org/10.1111/tesg.12626>.

⁹ Sophie Standen, "Developing the Market, Developing the Fishery? Post-Harvest Associations in the Making of the Fish Market in Ghana," *Marine Policy* 172 (2025): 106536, <https://doi.org/10.1016/j.marpol.2024.106536>.

¹⁰ Rebecca Owusu, John Andoh Micah, and William Ghartey, "Consumption Behavior, Preferences, and Willingness to Pay for Fish Attributes in Ghana," *Discover Food* 5, no. 1 (2025): 149, <https://doi.org/10.1007/s44187-025-00424-4>; Nunoo et al., *Sardinella and Other Small Pelagic*; Asiedu et al., "The People's Fishery in Perspective"; Drury O'Neill, Asare, and Aheto, "Socioeconomic Dynamics of the Ghanaian"; Ayilu and Nyiawung, "Illuminating Informal Cross-Border Trade"

TABLE 1 The marine fish chain from landing to consumer, one row a link

CHAIN LINK	WHO OPERATES IT	THE PRICE OR MARGIN SIGNAL	WHERE VALUE LEAKS	THE OPENING INSIDE THE BREAK
Landing and beach sale	Canoe crew selling to a fishmonger, often the woman who prefinanced the trip	The fishmonger sets the price; the fisher keeps a 7.4 per cent margin	Set by the lender, not the market, so the fisher cannot capture quality	A buyer and a lender who compete with the advance by also guaranteeing the sale
Processing	More than 30,000 women using traditional ovens, mostly smoking small pelagics ¹¹	Processor margin about 45 per cent, far above the fisher's	Fish priced by size, so a better oven that shrinks it earns less	A grade and a premium that pay for quality, which few buyers currently offer
Cold chain and storage	Cold stores at Tema and Takoradi for imports and industrial fish; Elmina and Jamestown harbours and a few beaches with limited cold storage for artisanal fish	Fresh sardinella must sell within 3 to 12 hours	Cold storage at artisanal beaches is limited, so fresh fish travels only short distances	Landing-site chilling that moves fish out of the downgraded grade before value is lost
Domestic and inland trade	Women traders and market queens, moving fish by tricycle, taxi and head porter	Priced by size and by the market queen's daily call	No purpose-built transport and no aggregator to the formal market	Aggregation into a graded, certified line for supermarkets and exporters
Cross-border trade	Women traders across the Togo and Benin borders, with networks reaching Burkina Faso and Cote d'Ivoire	A basket of smoke-dried fish, about 8 kg, at about GH¢130 in 2018	Informal and untaxed, about 6,000 tonnes a year across the Togo and Benin borders in 2018	Formalising a corridor women already run, with grade and traceability attached
Export (tuna)	Three Tema canneries, financed in part by women intermediaries	EU retail could capture about 74 per cent of gross profit a tonne on 2012 to 2013 data	Most of the value added is captured at the European shelf	Holding EU access through certification, which arrived for the tuna fleet in 2026

¹¹ David Youngs, "From Smoke to Safety: How FAO Is Transforming Fish Processing in Ghana," *United Nations in Ghana, Stories*, 7 February 2026, <https://ghana.un.org/en/309659-smoke-safety-how-fao-transforming-fish-processing-ghana>.

Sources: Nunoo et al.,¹² Asiedu et al.,¹³ Drury O'Neill, Asare and Aheto;¹⁴ Owusu;¹⁵ Coastal Resources Center;¹⁶ Taylor;¹⁷ Ayilu and Nyiawung;¹⁸ Osei-Bonsu.¹⁹ Margin and price figures carry their basis in the sections that follow.

Q WHAT THIS MEANS

Read the chain by who controls the transaction as well as who processes. In 2021 processors and traders earned the most, about GH¢1,800 to GH¢2,200 a month, against GH¢968 for fishmongers and GH¢625 for fishers in the peak season, and the fishmonger's credit decides who buys the fish at the landing.²⁰ An entrant who plans to process fish must first secure the right to buy it.

① The landing transaction, and the financier who sets the price ①

The canoe sells to a fishmonger, often the woman who prefinanced the trip, so the first sale is a loan repayment and she dictates the price when the catch lands at odd hours²¹; the fisher "did not have the luxury to dictate their own price"²².

In 2021 the fisher kept the least: a 7.4 per cent margin against the processor's 45 per cent, with about 93 per cent of revenue going back out as operating cost, over half of it fuel.²³ The catch then splits roughly a third to fishmongers supplying processors, a third to processors, the rest to wholesalers and retailers²⁴.



¹² Nunoo et al., *Sardinella and Other Small Pelagic*.

¹³ Asiedu et al., "The People's Fishery in Perspective"

¹⁴ Drury O'Neill, Asare, and Aheto, "Socioeconomic Dynamics of the Ghanaian"

¹⁵ D. Owusu, *Final Report on Ahotor Oven Market Development and Financing: Outcomes and Lessons Learned*, GH2014_ACT242_RESONANCE (Narragansett, RI: Coastal Resources Center, Graduate School of Oceanography, University of Rhode Island, and Resonance Global, 2019), https://www.crc.uri.edu/download/GH2014_ACT242_RESONANCE_FIN508.pdf.

¹⁶ Coastal Resources Center, *Lessons Learned: 2014-2021, Volume 2*, GH2014_PGM355_CRC (Narragansett, RI: Coastal Resources Center, Graduate School of Oceanography, University of Rhode Island, 2021), https://www.crc.uri.edu/download/GH2014_PGM355_CRC_FIN508.pdf.

¹⁷ Josh Taylor, *Ghana Seafood Report*, GH2022-0005 (Accra: United States Department of Agriculture, Foreign Agricultural Service, 2022), https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Ghana+Seafood+Report_Accra_Ghana_GH2022-0005.pdf.

¹⁸ Ayilu and Nyiawung, "Illuminating Informal Cross-Border Trade"

¹⁹ Osei-Bonsu, *Current Landing Infrastructure in Ghana*.

²⁰ Asiedu et al., "The People's Fishery in Perspective"

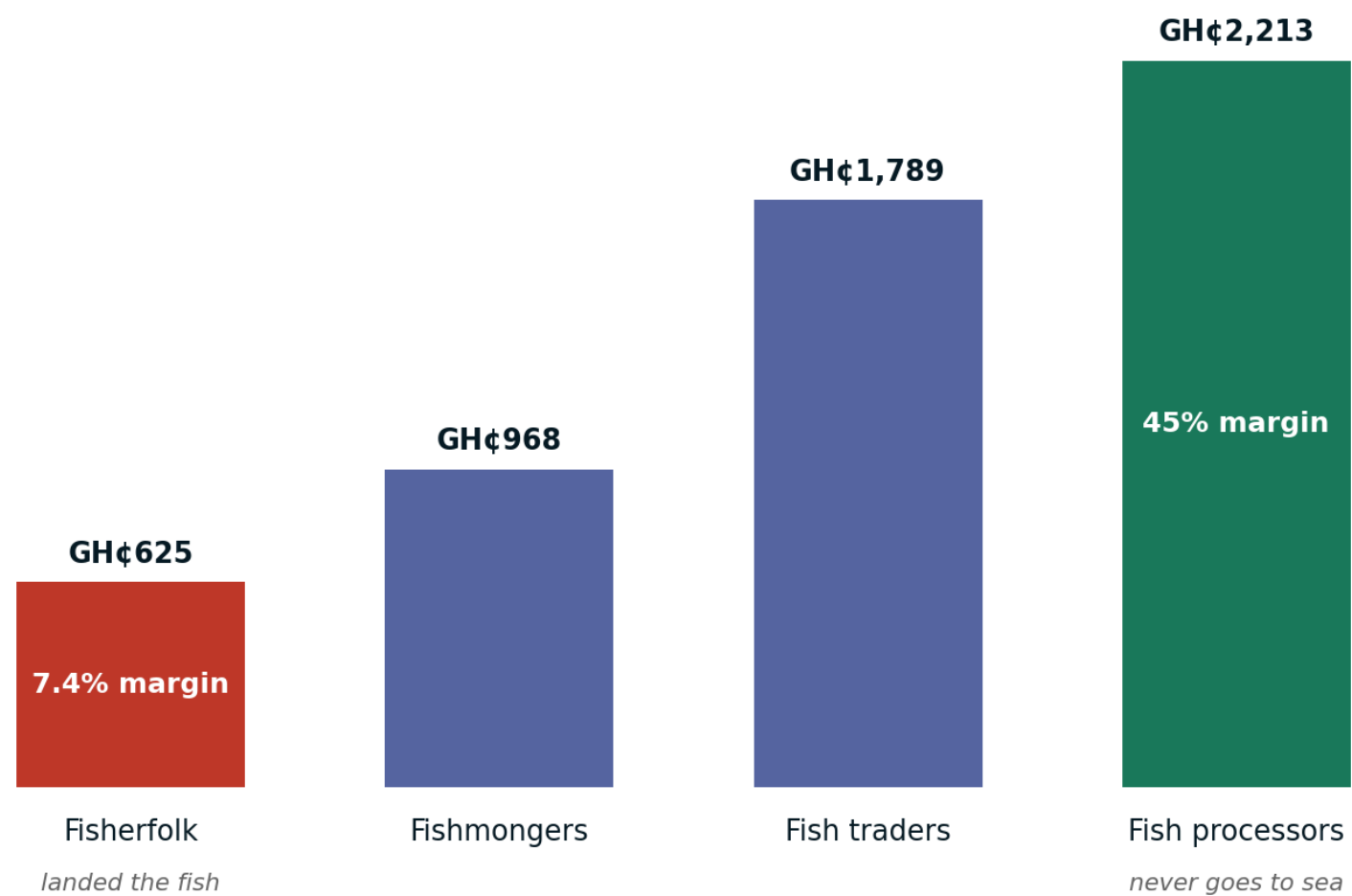
²¹ Nunoo et al., *Sardinella and Other Small Pelagic*.

²² Asiedu et al., "The People's Fishery in Perspective"

²³ Asiedu et al., "The People's Fishery in Perspective"

²⁴ Asiedu et al., "The People's Fishery in Perspective"

What each actor keeps a month, small pelagic chain
Peak season, 2021



Source: Asiedu et al. (2022)

FIGURE 1 Monthly profit by actor along the small pelagic chain in the 2021 peak season

The person who lands the fish keeps the least of it. A 7.4 per cent margin against the processor's 45 per cent is the price of being financed by the buyer, whose advance fixes the margin before the fish is landed. Every value-capture opening sits to the right of the first bar.

The beach price is partly an office: the Konkohemaa, the queen fishmonger, negotiates the day's price alongside the chief fisherman, so it is set by a recognised authority, not open

auction²⁵. That authority is weakening, and it is the layer an entrant would negotiate access through.

WHY THIS LINK MATTERS MOST

The women who finance the trips are among the most powerful actors in this chain. In 2013 the

"Big Mammies" at the Tema cold stores handled up to a quarter of landed tuna, and prefinancing

²⁵ Colette C. C. Wabnitz and Vanessa F. Jaiteh, *Gender and Fisheries: Ghana. Country Fact Sheet* (Ocean Risk and Resilience Action Alliance (ORRAA), 2025), <https://oceanrisk.earth/wp-content/uploads/2025/11/Ghana-fact-sheet.pdf>.

sometimes committed 50 to 100 per cent of an industrial company's landings to them.²⁶ In the

artisanal chain, fishmongers informally contract for the catch and fund the trip.²⁷



THE ONE RELATIONSHIP AN ENTRANT MUST UNDERSTAND FIRST

The prize and the trap are the same actor. The woman who prefinances the trip is the most widely used source of credit in this chain, and she caps the fisher's margin precisely because she also guarantees his sale. Any lender or aggregator entering here must replace both halves of what she provides, the cash and the certain buyer; a loan that leaves the fisher to find his own market replaces only the cheaper half. The advance also sets the price.

Processing: where most of the fish goes, and why the best oven has not paid

Most Ghanaian fish is smoked, where the processor's margin is struck, far above the fisher's: 72 per cent of landed quantity is smoked, 14 per cent frozen, 13 per cent sold fresh and 1 per cent salted²⁸. Packed and stored, smoked fish can keep eight to ten months,²⁹ which is why smoking works as a substitute for cold storage and why the processor captures the value of storage.

One defect in the chain is a missing price signal for quality. The Ahotor oven cuts carcinogenic polycyclic aromatic hydrocarbons in smoked fish

to 10.93 micrograms a kilogram against 84 for the Chorkor, inside the European limit, and burns less wood³⁰, yet processors report its prices do not compensate for the investment and it shrinks a fish sold by size³¹.

Only 76 of 520 Ahotor ovens were built without a subsidy of 88 per cent or more³². Ghana has the beginning of a grade that would change that arithmetic: a Safe Fish Certification and Licensing Scheme certified 159 facilities in 2023³³. What a certified fish sells for against an uncertified one remains unmeasured.

²⁶ Drury O'Neill, Asare, and Aheto, "Socioeconomic Dynamics of the Ghanaian"

²⁷ Asiedu et al., "The People's Fishery in Perspective"; Drury O'Neill, Asare, and Aheto, "Socioeconomic Dynamics of the Ghanaian"

²⁸ Nunoo et al., *Sardinella and Other Small Pelagic*.

²⁹ Nunoo et al., *Sardinella and Other Small Pelagic*.

³⁰ Owusu, *Final Report on Ahotor Oven*.

³¹ Owusu, *Final Report on Ahotor Oven*.

³² Coastal Resources Center, *Lessons Learned 2014-2021 Volume 2*.

³³ Fisheries Commission, *2023 Annual Performance Report*.

🍴 THE GRADE THAT WOULD PAY FOR EVERYTHING ELSE

The missing product in this chain is a grade, and it is cheap to create. The technology to make clean, safe, exportable smoked fish already exists; many subsidised ovens stood idle because processors could not buy enough fish, and the market does not pay extra for quality.³⁴ An entrant who introduces a grading standard, signs an offtaker who pays a premium against it, and finances the oven against that offtake contract, captures the value the Ahotor was meant to release. The 159 facilities certified in 2023 are a ready supply base; FAO is linking processors to institutional buyers such as the Ghana School Feeding Programme,³⁵ but a survey of Cape Coast consumers found them willing to pay more for frozen and imported fish than for smoked.³⁶ The digital form of the same play is the price-and-grade data layer set out in Pillar 7, which makes a grade legible enough to pay for.

🕒 The missing middle: the layer of the chain that has no operator 🕒

Four links a functioning fish chain would carry are weak or absent. Cold storage between beach and market for artisanal fish is limited, so fresh sardinella must sell within three to twelve hours and travels only a few kilometres³⁷. Transport at

the beach is by tricycle, taxi and head porter, and a 2021 survey heard no mention of trucks designed for fish;³⁸ cold vans serve some longer routes.³⁹ There is no grade and no quality-based price, and no aggregator to the formal market.



³⁴ Owusu, *Final Report on Ahotor Oven*.

³⁵ Youngs, "From Smoke to Safety"

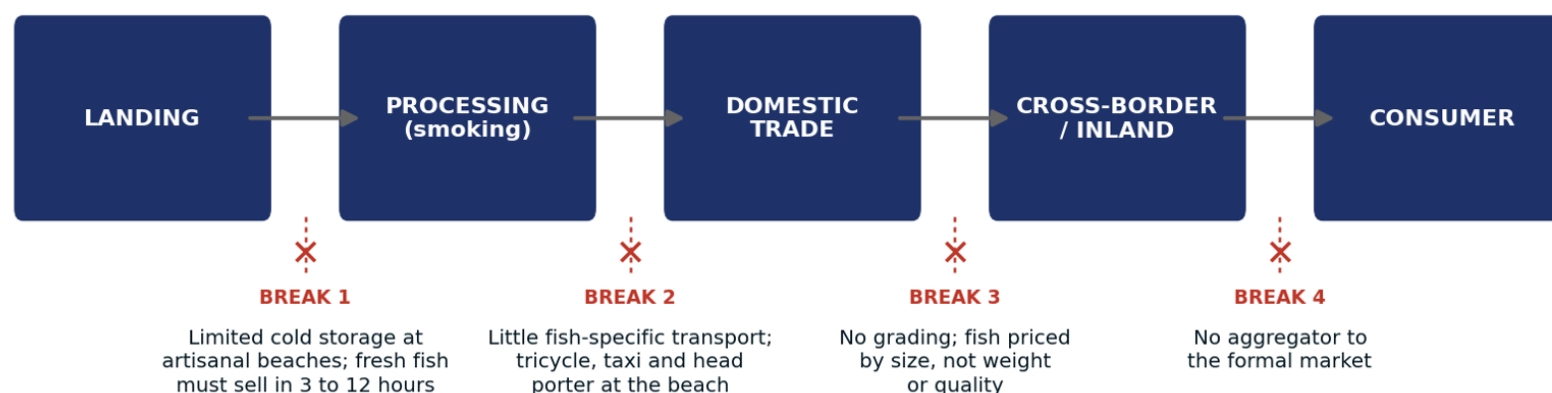
³⁶ Owusu, Micah, and Gharthey, "Consumption Behavior Preferences and Willingness"

³⁷ Nunoo et al., *Sardinella and Other Small Pelagic*.

³⁸ Asiedu et al., "The People's Fishery in Perspective"

³⁹ Asiedu et al., "The People's Fishery in Perspective"

Four weak links in Ghana's fish chain



Source: Asiedu et al. (2022)

FIGURE 2 The four links Ghana's fish chain lacks or has only in part

Value leaks where a link is missing. Because fish is not graded and few buyers pay for quality, processors struggle to justify the equipment that would raise it, which is why the safer oven that shrinks the fish has not paid its way. Fill any one of these four gaps and the fish that is currently downgraded stays in grade; fill none and the loss is structural.

The cold chain that exists runs almost entirely on imports and tuna. Cold storage is concentrated at Tema and Takoradi and serves imported and industrial fish, while artisanal beaches have limited capacity: the Fisheries Commission's 2026 mapping lists moderate capacity at Elmina, small government facilities at Shama, New Takoradi, Half Assini, Kormantse, Nyanyano and Prampram, small private stores at Nungua, Axim and Cape Coast, and a 60-tonne ice plant with a 200-tonne cold store at Jamestown.⁴⁰ The same mapping puts Winneba, Apam, Mumford, Keta, Ada and several Volta beaches in a "little or no cold storage" category⁴¹. Landing site projects

under way at Axim, Dixcove, Winneba, Senya Beraku, Gomoa Fetteh, Moree, Mumford, Teshie and Keta are the next chance to bring ice and chilling to the canoe.⁴²

The chain's largest loss sits here, and it is value more than fish. The national post-harvest loss assessment puts total loss at 22.5 per cent of total fish production, worth GH¢2.6 billion, with the marine sector carrying 95 per cent of the loss⁴³, while the value chain study of the same small pelagics reports less than 5 per cent post-harvest loss, on the reasoning that all landed catch is used, directly by humans and indirectly

⁴⁰ Osei-Bonsu, *Current Landing Infrastructure in Ghana*; Taylor, *Ghana Seafood Report*.

⁴¹ Osei-Bonsu, *Current Landing Infrastructure in Ghana*.

⁴² Osei-Bonsu, *Current Landing Infrastructure in Ghana*.

⁴³ Fisheries Commission, *2023 Annual Performance Report*.

through the poultry and aquaculture sectors⁴⁴. The two use different methods and coverage: the 2023 assessment covers physical and quality loss across marine and inland fish, the 2015 study only discards in the small pelagic chain, and a 2021 survey found up to 5 per cent of

commercial small pelagic catch lost to spoilage.⁴⁵ A business should state which loss it targets; much of the recoverable value is in quality, so a grade and a cold link come before a bigger freezer.

⑤ Domestic and cross-border trade: the corridor women already run ⑤

Once smoked, the fish travels, and the trade is almost entirely women's. The informal cross-border trade in processed small pelagics across the Ghana, Togo and Benin borders was about 6,000 tonnes a year worth around US\$14 million, and the 223 traders surveyed, all women by design, reflect a trade women dominate.⁴⁶ Traders set prices mainly by operating cost, season and species; 17.1 per cent priced by size, 5 per cent by quality and only 0.7 per cent by weight.⁴⁷ A basket of smoke-dried fish, about 8 kg, sold for about GH¢130 in 2018.

That corridor is a formalisation opportunity. Value leaves untaxed through a working, women-run network across Togo, Benin, Burkina Faso and Cote d'Ivoire.⁴⁸ It should not be confused with imported frozen fish transiting Ghana: 63,906 tonnes moved through Tema Port to Burkina

Faso in 2023, re-exported import, not Ghanaian catch⁴⁹. The opening is to attach a grade and traceability to it.

The cheap-fish trade has changed shape. The saiko transshipment trade, about 100,000 tonnes of trawler bycatch landed through canoes in 2017, had all but stopped at sea by 2025, with a few trans-shipments in late 2024 and early 2025, and moved onto the road as "logo fish" trucked from Tema;⁵⁰ the price is the evidence, a box of two slabs now reaching GH¢300 to GH¢600 where a single slab cost GH¢35 to GH¢50 at saiko's peak⁵¹. When cheap undersized fish floods the market, the artisanal fisher cannot command a price for a legal, larger fish, so the sea leak and the on-shore squeeze are one problem seen twice.

⁴⁴ Nunoo et al., *Sardinella and Other Small Pelagic*.

⁴⁵ Asiedu et al., "The People's Fishery in Perspective"

⁴⁶ Ayilu and Nyiawung, "Illuminating Informal Cross-Border Trade"

⁴⁷ Ayilu and Nyiawung, "Illuminating Informal Cross-Border Trade"

⁴⁸ Wabnitz and Jaiteh, *Gender and Fisheries*.

⁴⁹ Fisheries Commission, *2023 Annual Performance Report*.

⁵⁰ Environmental Justice Foundation, *Breaking the Vicious Circle: How the Trade in Illegal Bycatch from Ghana's Industrial Trawl Fleet Is Imperilling the Sustainability of Artisanal Fisheries* (London: Environmental Justice Foundation, 2026), <https://ejfoundation.org/reports/breaking-the-vicious-circle-how-the-trade-in-illegal-bycatch-from-ghanas-industrial-trawl-fleet-is-imperilling-the-sustainability-of-artisanal-fisheries>.

⁵¹ EJF, *Breaking the Vicious Circle*.

⑤ The export leg, and how little of the chain it touches ⑤

Ghana runs a high-value export chain that barely touches the fish most Ghanaians eat. Tuna landings were 121,297 tonnes worth GH¢3.40 billion in 2023,⁵² canned in three Tema factories and sold mostly into Europe; Ghana's prepared fish exports, mainly canned tuna, reached about US\$190 million in 2025.⁵³ On 2012 to 2013 data, the EU retail end could capture about 74 per cent of the gross profit a tonne.⁵⁴ Ghana exports the processed form and imports the raw one, so it already knows how to run the value-added leg, but for one product, tuna, 28.5 per cent of landings by weight but 34.6 per cent by value⁵⁵, and one customer region, Europe.

The export leg is a separate spine: the canneries are vertically integrated and EU-approved, interested in market access, not the domestic chain. The thread tying the two is the women financiers, who in 2013 prefinanced tuna companies and sold up to a quarter of landed tuna into the local market.⁵⁶ EU market access was strengthened in January 2026 with the certification of Ghana's Atlantic skipjack and yellowfin tuna fisheries to the Marine Stewardship Council standard, covering both the purse seine and the pole-and-line fleets⁵⁷. The prize is real, already captured by a handful of firms, and almost closed to a new entrant.

⑤ The retail end, and the real margin strategy of the woman who holds the chain ⑤

Many fishmongers double as processor, trader and retailer at once, taking the profit at every stage⁵⁸. An entrant who occupies one link is out-earned by a woman who occupies four: vertical integration converts control of the first sale into a margin all the way to the plate.

Consumer demand carries the same size-and-quality convention. Premium species such as sea bream, red snapper and croaker go mainly to hotels and restaurants and are now unaffordable for most households, while mackerel and sardines remain in reach⁵⁹. Fish is a staple: households spend about 22 per cent of their food

⁵² Fisheries Commission, *2023 Annual Performance Report*.

⁵³ United Nations Statistics Division, *UN Comtrade Database: Ghana (reporter 288) Fish Imports and Exports, HS 03 and HS 1604, 2023 to 2025* (United Nations, 2026), <https://comtradeplus.un.org/>.

⁵⁴ Drury O'Neill, Asare, and Aheto, "Socioeconomic Dynamics of the Ghanaian"; Fisheries Commission, *2023 Annual Performance Report*.

⁵⁵ Fisheries Commission, *2023 Annual Performance Report*.

⁵⁶ Drury O'Neill, Asare, and Aheto, "Socioeconomic Dynamics of the Ghanaian"

⁵⁷ Marine Stewardship Council, "Ghanaian Atlantic Ocean Skipjack and Yellowfin Tuna Fisheries Meet MSC Sustainability Benchmark," *Press release*, 22 January 2026, <https://www.msc.org/media-centre/press-releases/press-release/ghanaian-atlantic-ocean-skipjack-and-yellowfin-tuna-fisheries-meet-msc-sustainability-benchmark>.

⁵⁸ Nunoo et al., *Sardinella and Other Small Pelagic*.

⁵⁹ Taylor, *Ghana Seafood Report*.

budget on it, poorer households up to 26 per cent.⁶⁰ A premium graded line has two markets already visible, the formal urban retailer and the

diaspora export channel, which the artisanal chain supplies only informally and in small volumes.

⑤ The stakeholder map: who holds power, and who wants the chain to change ⑤

Power over the chain and interest in formalising it split three ways: the state and the European Commission have both; trawl owners, importers

and the big cold-store women have power and little interest in change; and those who most want a graded, financed chain have the least power.



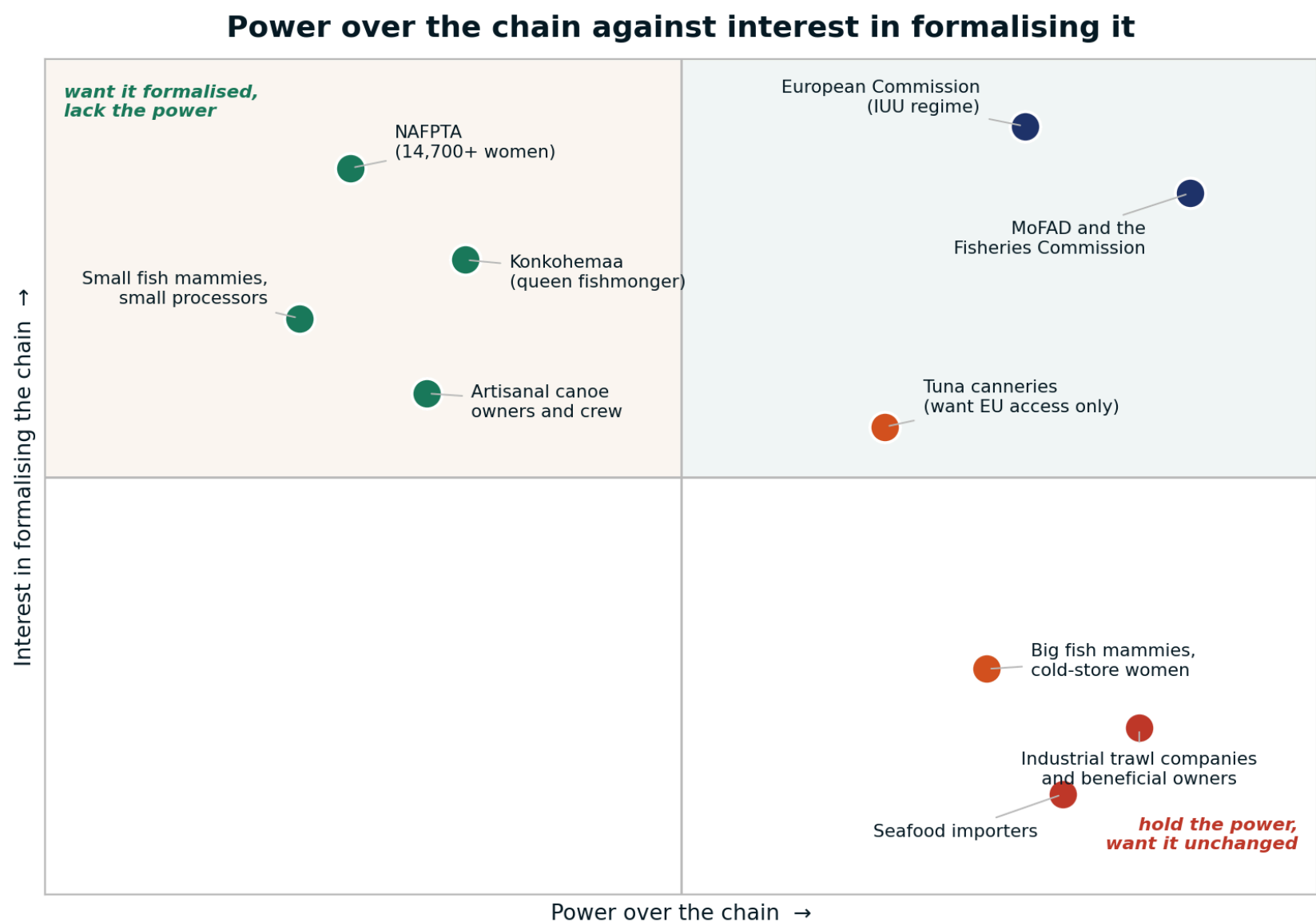
⁶⁰ Wabnitz and Jaiteh, *Gender and Fisheries*.

TABLE 2 Power over the marine fish chain against interest in formalising it

ACTOR	POWER OVER THE CHAIN	INTEREST IN FORMALISING IT	WHAT IT MEANS FOR AN ENTRANT
Trawl companies and their beneficial owners	High	Low	The blocker: profits from the unregulated bycatch trade, so aligns against change
Seafood importers and cold-store owners	High	Low	Own most of the cold storage at Tema and Takoradi; responded to the 2023 levy by routing around it
Big fish mummies and cold-store women	High	Low to medium	Finance the chain and set the price; formalising wage payment has already cut their trade
Tuna canneries and their parents	High	Medium	Already formalised; interested in EU access, not the domestic chain
Ministry and Fisheries Commission	High	High	Runs certification and the closed season; the natural partner for a grading scheme
European Commission, through the IUU regime	High	High	Drives the hygiene and legality standards that a premium chain would be built on
NAFPTA and the women's processor associations	Low to medium	High	Over 14,700 organised members who train processors in improved ovens and hygiene; the entrant's first ally
Konkohemaa and small fish mummies	Low to medium	High	Set the beach price but are losing authority; align early or lose the access point
Artisanal canoe owners and crew	Low	High	Carry the 7.4 per cent margin; will supply a premium chain that pays them for quality

Sources: power and interest are the author's reading of Environmental Justice Foundation and Hen Mpoano,⁶¹ Environmental Justice Foundation⁶² and Environmental Justice Foundation;⁶³ Drury O'Neill et al.;⁶⁴ Taylor;⁶⁵ Ocean Risk and Resilience Action Alliance;⁶⁶ Nunoo et al.;⁶⁷ and Ministry of Fisheries and Aquaculture Development.⁶⁸ Ratings are analytical, not measured.

61 Environmental Justice Foundation and Hen Mpoano, *Stolen at Sea: How Illegal 'saiko' Fishing Is Fuelling the Collapse of Ghana's Fisheries* (London: Environmental Justice Foundation, 2019), <https://ejfoundation.org/reports/stolen-at-sea>.
62 Environmental Justice Foundation, *At What Cost? How Ghana Is Losing Out in Fishing Arrangements with China's Distant Water Fleet* (London: Environmental Justice Foundation, 2021), <https://ejfoundation.org/reports/at-what-cost-how-ghana-is-losing-out-in-fishing-arrangements-with-chinas-distant-water-fleet>.
63 EJF, *Breaking the Vicious Circle*.
64 Drury O'Neill, Asare, and Aheto, "Socioeconomic Dynamics of the Ghanaian"
65 Taylor, *Ghana Seafood Report*.
66 Wabnitz and Jaiteh, *Gender and Fisheries*.
67 Nunoo et al., *Sardinella and Other Small Pelagic*.
68 Fisheries Commission, *2023 Annual Performance Report*.



Source: Author analysis

FIGURE 3 Every named actor placed by power over the chain against interest in formalising it

The trawl owners, importers and big cold-store women hold power and want the chain unchanged; the state and the European Commission hold power and want it formalised; the actors who most want it graded, certified and financed sit in the top-left corner, with the interest but little power. The women financiers are the hinge: they already fund the chain and set the beach price, and any entrant who cannot bring them across cannot move the chain, because the only actors able to block a change are the ones currently capturing the value.

The engagement implication reads off the grid: build from the top-left cluster, which has the interest and not the power, toward the top-right institutions that can lend authority, and not

through the bottom-right actors who hold power and gain nothing from change. Bring the women financiers across and the chain moves; leave them out and it does not.

⑤ The value-capture openings, ranked ⑤

The openings below are ordered by how much of the chain an entrant must control, from least to most.

TABLE 3 The openings inside the chain's breaks, ranked by how little an entrant must control

RANK	THE OPENING	WHY IT IS OPEN	WHAT IT CAPTURES
1	A landing-beach grade and a premium buyer behind it	No grade is used at the landing; price rests on season, species and size, so quality is rarely paid for	The value lost when better fish is sold ungraded, across more than 30,000 women processors
2	Offtake finance against a contract, not against land	The main credit is the fishmonger's advance; women cannot borrow against land they may not own	The fisher and processor margin that the informal advance now caps
3	Landing-site chilling that holds fish in grade	Limited cold storage at artisanal beaches; fresh fish sells within 3 to 12 hours	The share of the GH¢2.6 billion loss of 2023 that chilling can prevent
4	Aggregation into a certified line for the formal market	159 facilities were certified in 2023, with few premium buyers behind them	The gap between an uncertified beach price and a supermarket or export price
5	A formalised cross-border corridor with traceability	About 6,000 tonnes a year moved women-run and untaxed across the Togo and Benin borders in 2018	The recorded, graded value of a trade Ghana currently cannot see or tax

Sources: Owusu;⁶⁹ Coastal Resources Center;⁷⁰ Nunoo et al.;⁷¹ Asiedu et al.;⁷² Ayilu and Nyiawung;⁷³ DAB Consult, as reported by the Fisheries Commission.⁷⁴ The openings are analytical, drawn from the documented breaks in the chain.



69 Owusu, *Final Report on Ahotor Oven*.
70 Coastal Resources Center, *Lessons Learned 2014-2021 Volume 2*.
71 Nunoo et al., *Sardinella and Other Small Pelagic*.
72 Asiedu et al., "The People's Fishery in Perspective"
73 Ayilu and Nyiawung, "Illuminating Informal Cross-Border Trade"
74 Fisheries Commission, *2023 Annual Performance Report*.

⑤ The risks that sit inside the chain ⑤



Competing with the advance that also guarantees the sale

VERY HIGH

WHAT IT IS

The fishmonger's prefinancing is the most common credit in the chain, repaid in a price concession rather than interest, so it rarely appears in a business plan or a lender's model. Together with high fuel costs, it helps hold the fisher's margin to about 7.4 per cent, because the lender also sets the price.

EVIDENCE

The fisher-fishmonger relationship is the most powerful in the chain, the fishmonger informally contracting for the whole catch and funding the trip⁷⁵. Prefinancing sometimes commits 50 to 100 per cent of a tuna company's landings to its women financiers⁷⁶.

WHO IT HITS

Any lender, aggregator or offtaker entering the chain expecting to buy fish on a spot market, and any grant committee funding one.

HOW TO MANAGE IT, AND THE OPENING

Replace both halves of the advance, the cash and the certain buyer, or do not enter; a loan that leaves the fisher to find his own market replaces only the cheaper half. Structure finance to release against a signed offtake that guarantees the sale, routed through the women who already hold the relationship.



A chain with no grade and no quality signal

HIGH

WHAT IT IS

Few along the chain are paid for quality, so few invest in it. Fish is priced by size and not by weight or grade, which is why processors reported that the oven that makes fish safer and exportable did not repay its cost, and why a certification scheme now certifies facilities with no premium buyer behind them.

EVIDENCE

Processors reported that Ahotor prices do not compensate for the oven and that it shrinks a fish sold by size⁷⁷; only 76 of 520 ovens were built without an 88 per cent subsidy⁷⁸; 159 facilities were certified in 2023 with the premium yet to be documented⁷⁹.

WHO IT HITS

Any processing, equipment or certification business assuming that a safer or cleaner product sells itself in this chain.

HOW TO MANAGE IT, AND THE OPENING

Sell the buyer before the processor. Sign an offtaker who pays a measurable premium against a written grade, then finance the equipment against that offtake. The opening is the grade itself, a product still to be built.

⁷⁵ Asiedu et al., "The People's Fishery in Perspective"

⁷⁶ Drury O'Neill, Asare, and Aheto, "Socioeconomic Dynamics of the Ghanaian"

⁷⁷ Owusu, *Final Report on Ahotor Oven*.

⁷⁸ Coastal Resources Center, *Lessons Learned 2014-2021 Volume 2*.

⁷⁹ Fisheries Commission, *2023 Annual Performance Report*.



Formalisation that destroys the actor best placed to capture the value

MEDIUM-HIGH

WHAT IT IS

The women financiers who hold this chain together capture value through informal credit and informal fish, so a reform that formalises payment can strip them out before a replacement exists. This has already happened twice, and each time small women traders lost their place in the chain.

EVIDENCE

After the saiko ban, fish moved to Tema cold stores and prices passed to "big cold store women", so many small fish mammies could no longer afford to buy; and converting industrial wages from carton fish to cash removed the fish that fish mammies used to sell⁸⁰.

WHO IT HITS

Development programmes, lenders and reformers who formalise a link without carrying the informal actors across it, and the women whose livelihoods sit inside the informal step.

HOW TO MANAGE IT, AND THE OPENING

Design any formalisation so the women who currently capture the value keep capturing it, by financing them into the graded, certified chain instead of past it. Avoid a new structure that shuts out the women already doing the job.

KEY TAKEAWAYS

- 1. The chain leaks value where it has no operator. Four links are weak or missing: cold storage at artisanal beaches, transport built for fish, a grade, and an aggregator to the formal market.
- 2. The person who lands the fish keeps a 7.4 per cent margin against the processor's 45 per cent, because the price is set by the woman who prefinanced the trip before the fish is landed.
- 3. The women financiers hold the chain together. They set the beach price with the chief fisherman, work from the Tema cold stores, and in 2013 prefinancing led some tuna companies to sell them 50 to 100 per cent of their landings. Chain reform needs them on side.
- 4. Improved ovens make fish safer, but processors report no price reward for quality and high costs, so fewer than 1 per cent had upgraded by 2026. A written grade with a paying buyer is the missing product.
- 5. The export chain, canned tuna sold mostly to Europe, barely touches the fish Ghanaians eat. The domestic prize is the post-harvest loss, GH¢2.6 billion in 2023 with about 95 per cent of it in marine fish, similar in size to Ghana's annual canned tuna exports.

⁸⁰ Wabnitz and Jaiteh, *Gender and Fisheries*.

⁸¹ Youngs, "From Smoke to Safety"

Practitioner intelligence

FOR STUDENTS

If you are thinking of entering, start with relationships and a grade before buying a canoe or an oven. Start where the chain has no operator: spend a season at one landing site learning how the fish is graded, which is to say learning that it is not, and building the relationship with the women who finance the trips. The asset-light entry here is a grade and a book of buyers. The mistake first-timers make is assuming they can buy fish on the open market and add value by processing it; the fish is already spoken for by whoever financed the trip, and you enter that arrangement through the fish mammy. What you leave with is the relationship and a written grading standard of your own.

FOR ENTREPRENEURS

Sign the premium buyer first. Before any oven, any cold room or any truck, secure an offtaker, a supermarket, an exporter or a diaspora channel, who will pay a stated premium for graded, certified smoked fish, and get the grade written down. Then finance the equipment against that offtake contract, then secure supply through the women financiers rather than around them. The trap this chain punishes hardest is buying the technology first: the Ahotor oven showed that a safer, cleaner product struggles when no buyer pays for quality.



↗ FOR INVESTORS

The thesis: value in this chain is captured by controlling the transaction as well as by processing, so the return sits in creating the grade and offtake the chain currently lacks. Three diligence asks follow. Require any processing or aggregation venture to show a signed offtake with a premium stated against a written grade, because a certified facility with no premium buyer is the 2023 scheme's unsolved problem. Require its supply plan to run through the women financiers, and treat their absence from the cap table as a finding. Require the loss it targets to be named and sized, against the 2023 national estimate of 22.5 per cent of production worth GH¢2.6 billion. Release the cheque against a signed offtake and a measured premium, and lend against the grade.

🔗 FOR ECOSYSTEM ACTORS

The lever is a national fish grading standard tied to the existing Safe Fish certification scheme. Publishing a grade, and a monthly landing-beach price series by species and grade, would let a premium form and move a measurable number: the share of the 22.5 per cent post-harvest value loss that is recovered, and the share of certified facilities that can command a price for being certified, currently unmeasured. Attach finance for the graded chain to the women's associations who already run it. The failure to avoid is the one this sector has repeated: subsidising equipment, the ovens, the cold stores, ahead of the grade and the buyer that would make the equipment pay, which is why ovens bought with 88 per cent subsidies sat unused when processors could not buy enough fish.⁸²



Where this connects. The two fisheries and the bait dependency under the tuna leg are Pillar 1; the trade totals, import flows and export concentration are Pillar 2; the saiko and logo-fish enforcement story and the trawl licence regime that leaks value at sea are Pillar 3; the fleets, crew shares and premix distribution are Pillar 4; the vessel and firm economics, the cost of the fishmonger's advance and the loss-recovery business set out here are Pillar 5; and the finance instruments and statutory reforms that would let an offtake-backed loan replace the advance are Pillar 8.



⁸² Owusu, *Final Report on Ahotor Oven*.



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