

Transformation of the “hidden middle” of aquaculture value chains: fish wholesalers in Bangladesh

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Introduction

Wholesalers in food value chains in developing countries are often criticized as exploitative, offering high output-tied credit to farmers and inefficient with high loss and waste. Recent research highlights their importance as the “hidden middle”, often overlooked in policy debates due to insufficient survey research (Reardon 2015).

Aquaculture has rapidly expanded in Bangladesh in four decades, attributed to aquatic food traders and off-farm businesses. However, little is known about wholesalers behavior and organization within the ‘hidden middle’ of aquatic food value chains, impeding result generalization due to inadequate sampling techniques in previous research. Thus, this study aimed to evaluate structure, technological changes and wholesalers performance, informing policy debates on aquatic food value chains in Bangladesh.

Materials and methods

The study, conducted in seven districts in southern Bangladesh (Figure 1) from January to May 2021, involved data collection from 31 markets through structured questionnaire surveys. A census of all wholesalers and retailers in each market formed the sample frame, stratified by type, ensuring a minimum sample size of 40 and a maximum of 100 per type. Face-to-face interviews with 229 aquatic food wholesalers (50 inter-zone wholesalers, 75 wholesaler-auctioneers, 62 wholesaler - depots, and 42 wholesaler - assemblers) and 100 retailers, along with 31 focus group discussions, were conducted to gather comprehensive data using tablets.



Figure 1: Map of surveyed markets in southern Bangladesh.

Results and discussions

The analysis focused on the structure, conduct, and performance of the wholesaler and retailer segments within the aquatic food products value chains.

Structure

Over 20% of markets date back over a century, with gradual increases since the early-1990s due to aquaculture growth and received various facilities over time (Figure 2). Trading businesses increased by 75% in the last decade (Figure 3), with inter-zone wholesalers experiencing the fastest growth, likely linked to increased aquatic food production and domestic trade. Wholesalers mainly operated from market shops except assemblers, who operated from their own homes. Larger wholesalers improved premises, with depots and auctioneers having tiled floors and stainless-steel tables for hygiene.

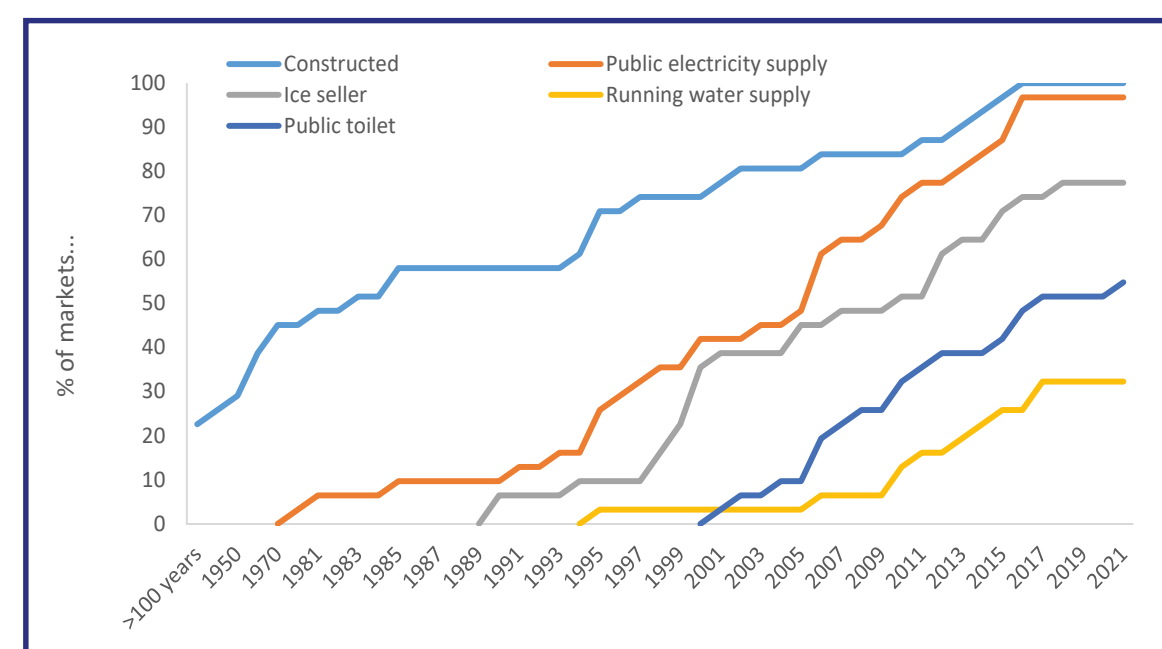


Figure 2: Cumulative % of markets receiving access to facilities, by year of access.

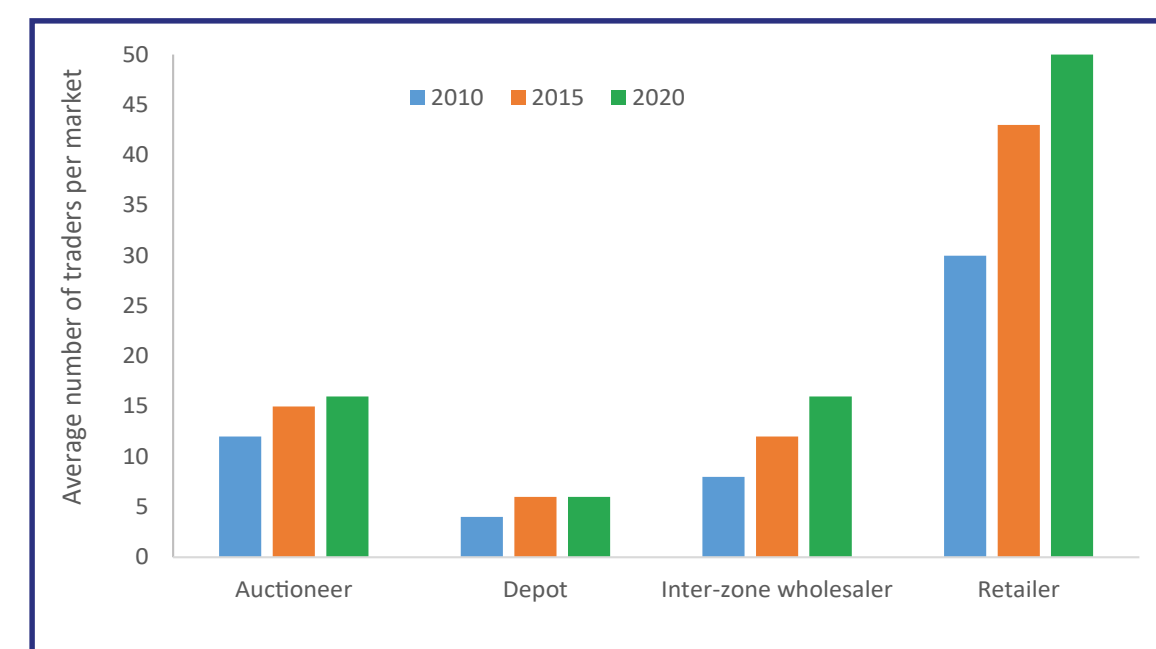


Figure 3: Average number of traders present in surveyed markets in over time.

Conduct

Surveyed markets handle a significant yearly volume of aquatic foods, totaling 219,678 tons (27% of southern production), with fish accounting for 74% (Table 1). Fish trade increased by 272% over the last decade, led by a 294% increase in carp sales, while crustacean share decreased from 35% to 26% due to changing market dynamics.

Table 1: Business characteristics of aquatic food product wholesalers and retailers

| Variables | Wholesaler type | | | | | Retailer |
|---|-----------------|------------|-----------|-----------|---------|----------|
| | Inter-zone | Auctioneer | Depot | Assembler | Overall | |
| Mean volume product traded (t/year) | 496 | 317 | 278 | 24 | 298 | 31 |
| Mean sales value (USD/year) | 1,183,212 | 700,377 | 1,799,846 | 108,634 | 921,330 | 70,367 |
| Fish share in total volume (%) | 88 | 87 | 8 | 39 | 72 | 94 |
| Crustacean share in total volume (%) | 12 | 13 | 92 | 61 | 28 | 6 |
| % of traders providing tied credit | 4.0 | 95 | 76 | 71 | 70 | 0 |
| Tied credit as a share of total value (%) | 0.19 | 1.6 | 1.5 | 1.3 | 1.5 | 0.0 |
| Total FTE jobs created | 9,606 | 15,627 | 4,735 | 2,031 | 31,998 | 9,873 |
| Mean total cost (USD/year) | 50,222 | 4,483 | 18,536 | 992 | 15,605 | 1,255 |
| Mean gross margin (USD/year) | 43,731 | 21,140 | 31,925 | 5,542 | 25,214 | 4,827 |
| Mean net margin (USD/year) | 43,225 | 20,992 | 31,086 | 5,513 | 24,877 | 4,797 |
| Annual net margin (%) | 4.1 | 2.4 | 3.1 | 5.2 | 3.3 | 7.2 |
| Margin on most recent transaction (%) | 4.6 | 2.9 | 4.1 | 4.3 | 3.7 | 13 |
| Discount offered (% of sales value) | n/a | n/a | n/a | n/a | n/a | 16 |
| Fish wasted or lost (% of total sales) | 0 | 0 | 0 | 0 | 0 | 0 |

Figures 4a and 4b depict separate marketing channels for fish and crustaceans, showing their flow from suppliers to wholesalers, retailers, and clients. Fish primarily passes from farmers to auctioneers (44%) and then to inter-zone wholesalers and retailers (49%). Crustacean marketing channels are more complex where depots involves as main aggregators (78%), with exporters (42%) and commission agents (34%) as main clients.

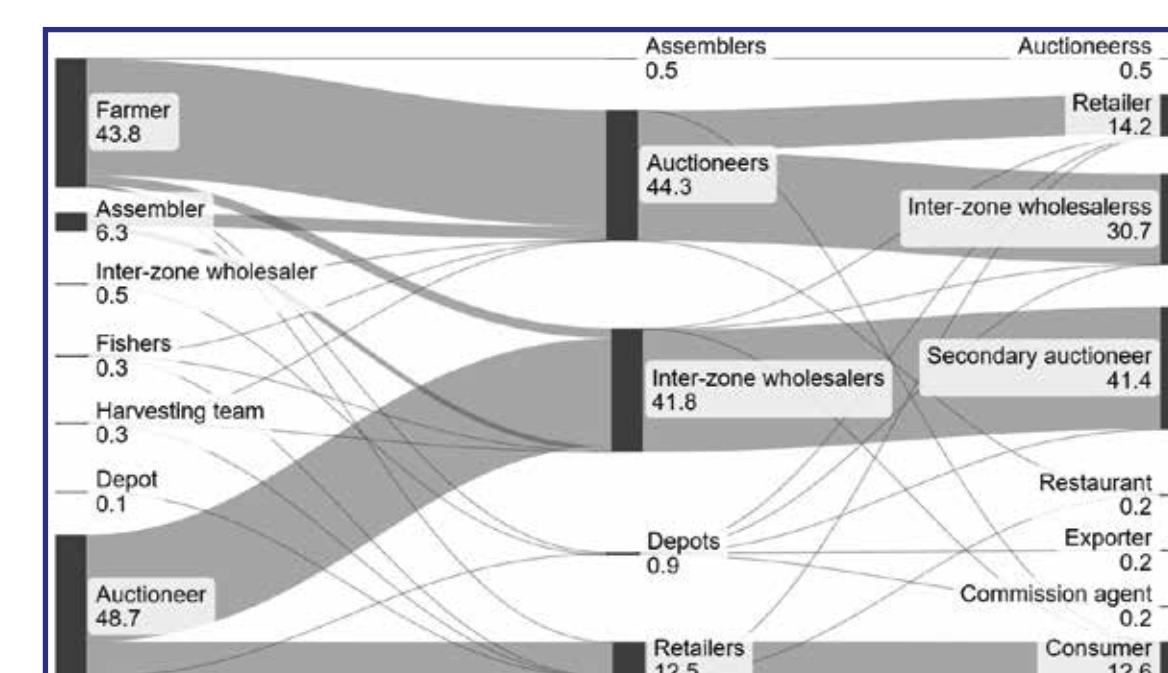


Figure 4a: Share of fish traded (%) by marketing channels.

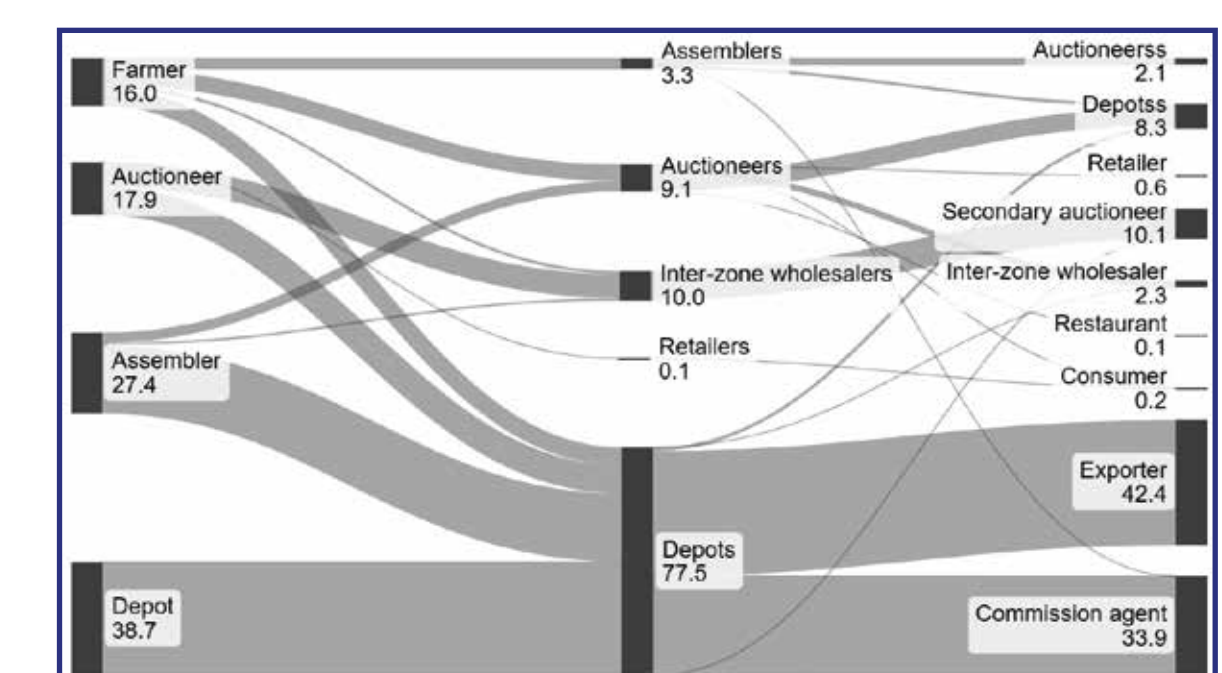


Figure 4b: Share of crustaceans traded (%) by marketing channels.

Wholesalers offered various value additional services, including uploading, sorting, grading, storage in loose ice, transporting, and basic processing (Figure 5). Most wholesalers provided tied credit to regular suppliers, but only 17% of farmers receive advances, consistent with broader agri-food value chains in Bangladesh and Asia (Reardon et al., 2012).



Figure 5: Different types of activities performed by traders: a) unloading; b) sorting; c) auctioning; d) grading; e) icing; f) ready to transport.

Performance

Trading businesses including retailers, mainly family-owned and operated, created around 41,871 full-time equivalent jobs in surveyed seven districts (Table 1), predominantly for men (99%), with 48% family labor and 52% hired labor.

Recent transactions revealed a 3.7% average profit margin, lower than other commodities, while the annual net profit margin averages 3.3%, suggesting fair profit rates in competitive aquatic food trading markets.

Surveyed wholesalers reported no physical loss or waste of aquatic foods in recent transactions, indicating an efficient marketing system. Economic losses are confined to the retail segment, contrasting common perceptions of high waste in aquatic food value chains (FAO, 2020).

Conclusions and policy implications

The study suggests that the wholesalers segment in southern zone is well-developed, dynamic, efficient, and relatively inclusive, contrasting with the negative image of traders in the debate in Bangladesh. This study contributes to a growing international literature underscoring the role of actors in the “hidden middle” of agri-food value chains in bolstering food security.

Acknowledgment

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