An Extensive Survey on Availability of Marine Fish Species in Different Level of Fish Markets in Dhaka City

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Abstract- The research aimed to investigate the current availability of marine fish and identify key factors related to fish market personnel across ten major markets and three departmental stores (Shwapno Super Shop, Meena Bazar, and Agora Super Shop). These markets were classified into wholesale markets (Karwan Bazar, Swarighat, Jatrabari, Gabtoli BGB Market, Mirpur-6 Fish Market, and Kachukhet) and retail markets (Mohammadpur Town Hall, Gulshan-1 DNCC Market, Shepahibag, and New Market Kacha Bazar). Data collection was conducted from December, 2023 to March, 2024. Commonly demanded species such as Kala chanda, Cheowa, baila, sagor koi, koral, ranga choukkha, chhuri, Lakhua, poa, phaisha, surma, pata maach etc. were available across most of the markets due to their popularity and versatility. However, certain markets catering to foreigners and affluent consumers, such as the Gulshan-1 DNCC Market, exclusively offered premium species like bole. Analysis of the age distribution indicated a declining interest in fish marketing among the younger generation, which accounted for only 11.6% of respondents. Notably, just 8.7% of fish traders surveyed were completely illiterate, reflecting a positive trend in educational attainment within this sector. Furthermore, only 1.2% of respondents had more than 20 years of experience, suggesting a relatively recent influx of individuals into the fish trading profession in Dhaka city markets. Findings related to packaging and preservation methods revealed that marine fish are predominantly transported in plastic crates, followed by Styrofoam boxes. The primary preservation technique remained icing, while freezing was mainly practiced in select modern super shops.

Index Terms- Marine fish, fish marketing channel, species composition, packaging and transportation, preservation method.

I. INTRODUCTION

In today's age of globalization, no nation can rely solely on its land-based resources. Therefore, it is imperative, particularly for developing countries such as Bangladesh, to seek alternative resource options (Sharwar et al., 2023). The fisheries industry stands out as a highly productive and vibrant sector with significant potential for future growth within Bangladesh's economy (Shamsuzzaman et al., 2020). It holds the potential to directly generate employment opportunities, serving as a primary source of livelihood for fishermen and related trades. Moreover, this sector presents promising prospects for the economic advancement of the nation (Sathi et al., 2023). Bangladesh possesses abundant and diverse fisheries assets, which can be broadly classified into two categories: inland fisheries and marine fisheries (Shamsuzzaman et al., 2020). The nation boasts a coastal stretch spanning approximately 710 kilometers, with Bangladesh's Exclusive Economic Zone (EEZ) reaching out 200 nautical miles from its baseline. Recent rulings by the International Tribunal for the Law of the Sea (ITLOS) regarding the maritime boundary with Myanmar and India have significantly expanded Bangladesh's EEZ (Alam, 2012). This expansion secures Bangladesh's sovereignty over extensive marine resources in the maritime province, totaling 121,110 square kilometers (Islam et al., 2017).

In Bangladesh, marine fish is highly esteemed as an important protein source due to the diminishing availability of freshwater fish from natural waterbodies (Dey et al., 2022). Bangladesh's coastal and marine fisheries possess a diverse and valuable resource of commercial significance. Fisheries sector contributed 2.53% to national GDP and 22.26% to the agricultural GDP and 0.91% to foreign exchange earnings by exporting fish and fish products in 2023-24. (DOF, 2024). According to research conducted by Hossain et al., there has been a slight rise in fish yield from the Bay of Bengal (BoB) over the past decade. However, its proportionate contribution to overall fish output has decreased. Coastal waters of Bangladesh boast a rich array of fishing resources, encompassing 475 varieties of finfish, which also include cartilaginous species such as sharks, skates, and rays (Islam et al., 2019).

For maintain a healthy smooth marketing system both in internal and export trade, market surveys play a crucial role through evaluating the demand and supply of different products and fisheries products are not an exception (Sultana et al., 2021). Market

surveys are equally important for evaluating the supply chains of marine fisheries. By collecting data on landings at different fish landing centers and wholesale markets, surveys provide insights into the volume and frequency of fish being brought to market. This helps in identifying trends in marine fish availability, seasonal variations, and potential overfishing of certain species (Chandra et al., 2011). If supply is consistently low for particular species, it may indicate ecological stress or poor stock management. In contrast, an oversupply could point to unsustainable fishing practices that may harm long-term productivity. Understanding supply dynamics allows for better resource allocation, investment in cold storage, and planning for value addition (Jahan et al., 20224).

An often overlooked but critical aspect of market surveys is the species composition of marine fish. Bangladesh's marine waters are home to nearly 500 fish species, but only a fraction is regularly marketed and deemed commercially important. Surveys help identify which species dominate market landings and which are becoming rare. This information is vital for biodiversity monitoring, stock assessment, and sustainable fisheries management (Abdullah, et al., 2022). Changes in species composition over time can signal environmental changes, such as pollution, climate change, or habitat degradation (Das et al., 2025). Monitoring these shifts allows timely intervention through regulatory policies such as catch limits or closed seasons. Currently, Dhaka, the capital city of Bangladesh, sustains a population about 20 million residents, with ongoing expansion in both its horizontal and vertical dimensions. This growth is accompanied by a rise in population and income levels, resulting in a 45% and 35% increase in demand for fish over the past decade, respectively (Islam et al., 2004). About 70% of the fish intended for sale is fresh, while approximately 25% consists of dried fish and other locally processed varieties, such as fermented fish. The remaining portion comprises frozen fish and other related products (Dey et al., 2022).

The conventional distribution route tends to be intricate, but shorter distribution channels have emerged as a result of the presence of large production hubs and prosperous outlets, which have been observed to engage in mutually beneficial transactions with ease (Rahman et al., 2017). Typical marketing chain involves various intermediaries like aratdar, wholesalers, and retailers, with aratdars earning commissions for their services. The major markets near the harvesting and landing sites are found to cater a variety of marine species to both local and export markets (Washim et al., 2016). Am earlier investigation on different super shops of Dhaka city revealed that fish were mainly supplied from wholesale markets and fishery zones in nearby districts, with diverse species sourced from different regions. Despite adequate display and sanitation facilities in some super shops, quality deficiencies were noted due to improper handling. Analysis showed that fish prices in super shops were 20-25% higher than general markets. Despite higher costs, super shops yielded higher profits due to better management and product presentation (Rahaman et al., 2017; Azad et al., 2023).

Furthermore, smooth supply marine resources at source is paramount. Recent assessments indicate that globally, between 5-10% of marine fish species face extinction, are endangered, or are vulnerable. Our marine environment is also facing similar challenges. Dey et al. (2022) identified overfishing, habitat loss, pollution, and other stresses are key factors for declining species diversity in Cox’s Bazaar whereas inadequate ice and lack of infrastructural facilities can be attributed to post harvest loss to a large extent. Therefore, these sorts of impediments including imbalanced harvesting in marine sector have not only been impacting market stability negatively but also adversely affect the overall nutritional well-being of countries large section of population (Islam et al., 2019).

Market surveys are indispensable tools for understanding and managing the marine fisheries sector in Bangladesh through mapping the supply chain, identifying the roles of fishers, intermediaries, processors, and retailers. Understanding this chain is crucial for reducing post-harvest losses, ensuring fair pricing, and improving traceability, especially for exports. The specific objectives of this study were to assess the composition of available marine fishes in various markets and super shops in Dhaka city as well to investigate different aspects of marine fish marketing channel including transportation, preservation and status of associated personnel. The outcome of the present piece of survey work will hopefully provide a comprehensive picture of demand, supply, and species trends and thus help to guide in policy making for the betterment of all stakeholders.

II. MATERIALS AND METHODS

Study Area

In this instance, a cross-sectional survey was conducted across 10 pre-determined fish markets within Dhaka. The market under investigation included Karwan bazar, Mohammadpur Town Hall, Swarighat, Zatrabari, Gabtoli BGB market, Mirpur-6 fish market, Kachukhet, Gulshan-1 DNCC market, Shepahibagh, New market Kacha bazar (Figure 1). In addition, three departmental stores including Shwapno and Agora super shop at Shewrapara and Meenabazaar Dhanmondi outlet were also visited. The size and location of the study area are of paramount importance, particularly given the significant influx of marine fish into Dhaka city.

Study period and Data collection

The data collection process spanned from December, 2024 to March, 2025 during which a comprehensive approach was employed. This involved conducting direct field surveys, followed by individual interviews and observations. Questionnaires were meticulously designed to maximize the collection of data pertaining to species availability, while also aiming to capture various aspects of the marine fish marketing channel and the individuals involved in the process.

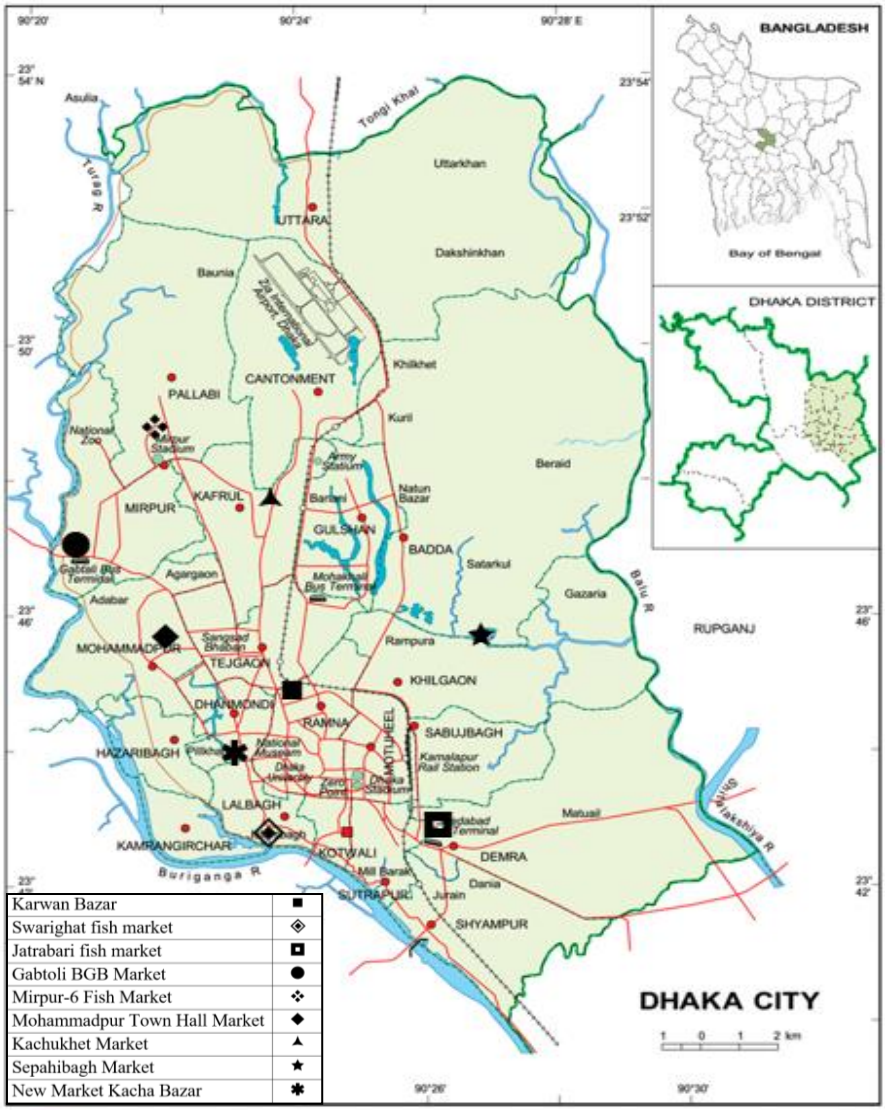

Figure 1: Location of investigated fish markets in Dhaka city

Identification of Marine Species

Marine fish identification was conducted through meticulous field observations and collaboration with knowledgeable personnel from fish markets. Efforts were bolstered by cross-referencing with reputable secondary sources such as the work of Habib and Islam (2020). Additionally, we rigorously verified our findings from the esteemed World Register of Marine Species website.

Ethical Declaration

In conducting the survey, a strong commitment was shown to upholding ethical standards. Informed consent was obtained from all participants, and efforts were made to ensure that the purpose and potential implications of their involvement were understood. All participants were treated with respect, and their autonomy and dignity were valued throughout the research process.

Data Analysis

All the collected data were organized, analyzed by MS–Excel and then presented in tabular and graphical forms to understand the availability of marine fish species in different level fish markets of Dhaka city and factors associated with fish market related personnels.

III. RESULTS AND DISCUSSION

Available marine fish species

During last two decades marine fishes have become increasingly popular among Dhaka city dwellers. To cope with the demand markets among all parts of the city now sells various marine fishes. Species composition varied during different market visit. Marine fish species that were found in the different wholesale and retail markets are presented below in Table 1.

Table 1. Acquaintance of available marine fishes in different fish markets of Dhaka city during study period

SI No	Local Name	English Name	Scientific name	Habitat[a]	IUCN Status[b]	Availability
1.	Aila/ Chompa	Indian Mackerel/ Long jaw Mackerel	*Rastrelliger kanagurta*	M, S	DD	Medium
2.	Faiysha bata/Bata/Parse/Parse bata	Gold spot Mullet	*Chelon parsia*	M, B, F, S	NE	Low
3.	Baila/ Bele	Scribbled Goby	*Awaous guamensis*	M, B, F	LC	High
4.	Ruplai poa	Silver croaker	*Pennahia argentata*	M, S	LC	High
5.	Bhetki/Koral macch	Asian Seabass	*Lates calcarifer*	M, B, F, S	LC	High
6.	Kala chanda/ Hail chanda/Kala pankha	Black pomfret	*Parastromateus niger*	M, B, R, S	LC	High
7.	Champa /Dora maittya/ Bom maitta/ Surma/ Folkhamaitta	Narrow-barred Spanish mackerel/Barred Mackerel/ Commersion's mackerel/ King Mackerel	*Scomberomorus commerson*	M, S	NT	Medium
8.	Chandana ilish/ Kalotip takiya	Blacktip sardinella	*Sardinella melanura*	M, S	LC	High
9.	Pettoli/Colombo	Colombo damsel	Pomacentrus proteus	M, R	NE	Medium
10.	Cheowa/Chiring	Mud Skipper	*Pseudapocryptes elongatus*	M, B, F	LC	High
11.	Sap baila/ Raja ceuya/ Sap baila/ Lal chewa	Rubicusdus eel	*Odontamblyopus rubicundus*	M, B, S	LC	High
12.	Rup chanda/Chinese Rupchanda	Chinese pomfret/ Chinese silver pomfret/ Grey pomfret	*Pampus chinensis*	M, B, S	NE	Medium
13.	Boro cokkha ilish/ Boro choukka/ Choukka mach/ Faissa	Coromandel ilisha/ jewelled shad	*Ilisha filigera*	M, B, F, S	DD	Medium
14.	Chotomatha Churi/ Churi/ Boro churi	Small head hairtail/ Ribbon-Fish	*Eupleurogrammus muticus*	M, B, S	NE	High
15.	Boromatha churi / Chhuri machh / Rupapatia/ Fita machh	Large head hairtail/ Cutlassfish/ Hairtail/ Large-headed Ribbon Fish	*Trichiurus lepturus*	M, B, S	LC	High
16.	Gurjali/Tailla	Four finger threadfins	*Eleutheronema tetradactylum*	M, B, F, S	NE	Low
17.	Bangla datina/ Datina/ Bogni mach/Sagorer Tilapia	Yellowfin seabream/ Bengal yellowfin seabream	*Acanthopagrus datnia*	M, B, F, S	DD	Medium
18.	Lakhua	Indian threadfin	*Leptomelanosoma indicum*	M, B, S	NE	High
19.	Fali Chanda/Sada rupchanda	Silver pomfret	*Pampus argenteus*	M, S	NE	Medium
20.	Gaber Dana/Kata fasha/ Kata Phaysha	Spined anchovy	*Stolephorus tri*	M, B, S	LC	Low
21.	Grouper/Holud fota	Dusky tail grouper	*Epinephelus bleekeri*	M	NT	Medium

SI No	Local Name	English Name	Scientific name	Habitat[a]	IUCN Status[b]	Availability
	bole/Bole macch					
22.	Godda chingri/ Gosa/ Shukna chingri	Spear shrimp	*Mierspenaeopsis hardwickii*	M	NE	Medium
23.	Horina Chingri	Brown shrimp/Speckled shrimp	*Metapenaeus monoceros*	B	NE	Medium
24.	Ilish/Ilisha	Hilsa shad	*Tenualosa ilisha*	M, B, F, S	LC	Medium
25.	Java Koral/Nanchil koral	Indo-Pacific tarpon	*Megalops cyprinoides*	M, B, F, S	DD	Medium
26.	Sobujpith thuitta mach/ Dora Kakila/ Kaikka/ Kakia	Banded needlefish/ Square-tail Alligator Gar	*Strongylura leiura*	M, B, R, S	NE	Low
27.	Somudro koi/ Koi koral	Tripletail	*Lobotes surinamensis*	M, B, S	LC	High
28.	Topshe machh/Taposhi/ Riksa mach	Paradise threadfin	*Polynemus paradiseus*	M, B, F, S	LC	High
29.	Ghora chingri	Coastal mud shrimp	*Solenocera crassicornis*	M	NE	High
30.	Lal koral/ Tondra koral/ Ranga chhoikkha	Yellow streaked snapper/ribboned snapper	*Lutjanus lemniscatus*	M, R	LC	High
31.	Leijja poa/ Payra poa	Pama croaker	*Otolithoides pama*	M, B, F, S	DD	High
32.	Kala Poa/Dhari Poa	Largefin croaker	*Johnius macropterus*	M, S	LC	High
33.	Loitta/ Lotia/ Nehari/ Bummalo	Bombay-duck/Bummalo/ Lizard Fish	*Harpadon nehereus*	M, B, S	NT	Medium
34.	Ram faisha /Kata fesha/Teli phasa	Scaly hairfin anchovy	*Setipinna taty*	M, B, S	LC	Medium
35.	Moyurpongkhi Mach/ Pal mach/ Pakhi mach	Indo-Pacific sailfish/Bill Fish/ Indian Sailfish	*Istiophorus platypterus*	M	LC	Medium
36.	Chitra haush/Bagha shapla pata	Honeycomb stingray	*Himantura uarnak*	M, B, R, S	VU	Low
37.	Pata Surma/Kauwa/ Maitta	Island Mackerel	*Rastrelliger faughni*	M, S	DD	High
38.	Fasha/Faisya	Moustached thryssa	*Thryssa mystax*	M, B	LC	High
39.	Ranga chhoi/ Ranga choukhha /Ranga Koi	Mangrove red snapper/Yellow Snapper	*Lutjanus argentimaculatus*	M, B, F, R	LC	High
40.	Rita	Rita	*Rita rita*	B, F		Medium
41.	Rupbam/Lal mach	Japanese threadfin bream/Pink Perch	*Nemipterus japonicus*	M, S	LC	High
42.	Sada Icha/chaka	Indian white prawn	*Penaeus indicus*	M, B	NE	Medium
43.	Boro tuitta/Kalopith thuitta mach	Hound needlefish/Fork-tail Alligator Gar	*Tylosurus crocodilus*	M, R, S	LC	High
44.	Sea Chapila	Ganges river gizzard shad	*Gonialosa manmina*	B	LC	High
45.	Pata machh	Sole	*Brachirus pan*	M, B, F, S	LC	High
46.	Tulardandi/Hundra	Flathead sillago	*Sillaginopsis panijus*	M, B, F, S	NE	Low

SI No	Local Name	English Name	Scientific name	Habitat[a]	IUCN Status[b]	Availability
	baila/Hundra/ Shundra					
47.	Holud pakhna tuna/ Tuna machh	Yellowfin tuna	*Thunnus albacares*	M, B	NT	Medium
48.	Bagda	Black tiger shrimp	*Penaeus monodon*	M, B	NE	High

[a]M=Marine, B=brackish water, F=freshwater, R=Reef associated) and S=Sundarbans mangrove region
[b]NE= Not Evaluated, NT=Near Threatened, LC=Least Concern, and DD=Data Deficient (Habib and Islam, 2020)

Marketwise availability of marine fish species is presented in Table 2. The market-wise variation of marine fish in Dhaka city is evident across different markets due to differences in location, consumer demand, and supply chains. Karwan Bazar, being one of the largest wholesale markets, offers a wide variety of fresh marine fish at relatively competitive prices, sourced directly from coastal suppliers. Mohammadpur Town Hall Market and Mirpur-6 Fish Market also have good availability but cater more to local demand, offering mid-range pricing and moderate variety. Swarighat Fish Market, located near the river, is known for bulk trading and often has lower prices, though the quality may vary. Jatrabari Fish Market serves the southern part of the city and has a decent selection of marine fish, influenced by regional consumer preferences. Gabtoli BGB Market and Kachukhet Market typically have less variety and slightly higher prices due to transportation costs. Gulshan-1 DNCC Market, serving a more affluent clientele, offers premium quality marine fish at higher prices, often with better packaging and hygiene. Shewrapara and Shepahibagh markets provide limited selections and are more focused on freshwater fish. New Market Kacha Bazar offers a mix of both freshwater and marine fish, with moderate variety and pricing. Overall, market-specific factors significantly influence availability, pricing, and quality of marine fish which is in agreement of previous survey conducted by Jahan et al. (2024).

Table 2. Market wise availability of marine fish species in Dhaka city

Sl. No.	Species	Fish Markets[a]									
		KB	MT	SG	JB	GT	MP	KK	GS	SB	NM
1.	Aila/ Chompa				✓						
2.	Faiysh/Bata/Parse				✓	✓					
3.	Baila/ Bele					✓				✓	
4.	Ruplai poa	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5.	Bhetki/Koral macch	✓	✓	✓	✓	✓	✓		✓		
6.	Kala chanda/ Hail chanda/Kala pankha	✓			✓						
7.	Champa /Dora maittya/ Bom maitta/ Surma/ Folkha maitta	✓		✓	✓	✓	✓	✓	✓	✓	
8.	Chandana ilish/ Kalotip takiya					✓			✓	✓	
9.	Pettoli/Colombo	✓				✓					
10.	Cheowa/Chiring	✓			✓						
11.	Sap baila/ Raja ceuya/ Sap baila/ Lal chewa				✓						
12.	Rup chanda/Chinese Rupchanda	✓		✓	✓						
13.	Boro cokkha ilish/ Boro choukka/ Choukka mach/ Faissa					✓					
14.	Chotomatha Churi/ Churi/ Boro churi	✓		✓		✓			✓		
15.	Boromatha churi / Churi maach / Rupapatia/ Fita machh				✓						
16.	Gurjali/Tailla				✓						
17.	Bangla datina/ Datina/ Bogni mach/Sagorer Tilapia	✓		✓		✓					

Sl. No.	Species	Fish Markets[a]									
		KB	MT	SG	JB	GT	MP	KK	GS	SB	NM
18.	Lakhua	✓				✓					
19.	Fali Chanda	✓		✓			✓	✓	✓		
20.	Gaber Dana/Kata fasha/ Kata Phaysha				✓						
21.	Holud fota bole/Bole macch								✓		
22.	Godda chingri/ Gosa/ Shukna chingri	✓			✓						
23.	Sada rupchanda	✓		✓			✓	✓	✓		
24.	Ilish/Ilisha	✓	✓		✓	✓	✓	✓		✓	✓
25.	Java Koral/Nanchil koral	✓									
26.	Sobujpith thuitta mach/ Dora Kakila/ Kaikka/ Kakia	✓									
27.	Somudro koi/ Koi koral	✓									
28.	Topshe machh/Taposhi/ Riksa mach	✓									
29.	Ghora chingri				✓	✓					
30.	Lal koral/ Tondra koral/ Ranga chhoikkha	✓									
31.	Leijja poa/ Payra poa	✓	✓	✓	✓		✓		✓	✓	
32.	Kala Poa/Dhari Poa	✓			✓	✓					
33.	Loittya/ Lotia/ Nehari/ Bummalo	✓	✓	✓	✓						
34.	Ram faisha /Kata fesha/Teli phasa	✓			✓						
35.	Moyurpongkhi Mach/ Pal mach/ Pakhi mach	✓			✓						
36.	Chitra haush/Bagha shapla pata	✓			✓						
37.	Pata Surma/Kauwa/ Maitta	✓		✓	✓		✓		✓		
38.	Fasha/Faisya				✓						
39.	Ranga chhoi/ Ranga choukhha /Ranga Koi	✓									
40.	Rita	✓			✓	✓	✓				✓
41.	Rupbam/Lal mach	✓			✓						
42.	Sada Icha/chaka				✓						
43.	Boro tuitta/Kalopith thuitta mach	✓			✓						
44.	Sea Chapila	✓			✓	✓					
45.	Pata mach								✓		
46.	Holud pakhna tuna/ Tuna machh	✓	✓	✓				✓	✓	✓	✓
47.	Bagda/ tiger chingri	✓	✓	✓	✓	✓	✓	✓	✓		✓

[a]KB= Karwan Bazar, MT= Mohammadpur town hall market, SG=Swarighat fish market, JB= Jatrabari fish market, GT=Gabtoli BGB Market, MP=Mirpur-6 Fish Market, KK=Kachukhet market, GS= Gulsan-1 DNCC Market, SB= Shepahibagh fish market, NM=New Market Kacha Bazar.

Results of survey in different chain supermarkets in Dhaka city is presented in Table 3. Marine fish availability in Dhaka city's surveyed supermarkets—such as Shwapno, Agora, and Meena Bazar—varied based on supply chain efficiency, storage facilities, and target customers. These supermarkets generally offered a limited but high-quality selection of marine fish, often frozen or pre-

packaged to maintain hygiene and freshness. Prices were typically higher than in traditional markets, reflecting better handling and convenience. Shwapno, with its wide network, tended to offer more consistent availability. Meena Bazar focused on premium customers, often stocking imported or high-demand species. Agora balanced variety and price but occasionally faced stock shortages. Overall, supermarket offerings prioritized quality and convenience over variety (Rahman et al., 2017).

Table 3. Availability of Marine fish species in different chain super markets.

Marine fish species	Super Markets		
	Shwapno Super Shop	Agora Super Shop	Meena Bazar
Baila	✓		
Bhetki	✓	✓	✓
Champa	✓	✓	✓
Fali Chanda	✓		✓
Ilish	✓	✓	✓
Lakhua	✓		✓
Ruplai poa	✓	✓	
Sea Chapila	✓		
Tuna	✓	✓	✓
Bagda		✓	✓
Ranga koi		✓	
Rup Chanda		✓	✓
Churi			✓
Grouper			✓
Horina Chingri			✓
Rita			✓
Tular Dandi			✓

Most of the marine fishes available in these supermarkets come from Chittagong, Barishal, Chandpur, Satkhira, Cox's Bazar and in some cases also from India.

Fish marketing levels

Presence of different level of fish marketing activity was observed in investigated markets (Table 4). In Dhaka city's fish markets, the presence of commission agents, wholesalers, and retailers plays a crucial role in the marine fish supply chain, with noticeable variation across different markets. Karwan Bazar, being one of the largest wholesale markets, hosts a significant number of commission agents who mediate between wholesalers and retailers, ensuring bulk fish supply from coastal regions. Swarighat Fish Market also has a strong presence of wholesalers and commission agents due to its proximity to river routes, facilitating large-scale fish trading. In markets like Mohammadpur Town Hall, Jatrabari, and Gabtoli BGB Market, retailers dominate, although small-scale wholesalers also operate, supplying marine fish based on local demand. Mirpur-6 and Kachukhet markets mostly consist of retailers sourcing fish from larger markets like Karwan Bazar. Gulshan-1 DNCC Market features retailers with premium offerings, often without intermediaries, as supermarkets or organized suppliers manage the supply. These findings also reflets previous survey outcomes of Rahman et al., (2017). Shepahibagh and New Market Kacha Bazar are primarily retail-focused, with minimal wholesale activity. The role of commission agents is less visible in smaller or retail-heavy markets. Overall, larger markets like Karwan Bazar and Swarighat act as central hubs with all three actors—commission agents, wholesalers, and retailers—while smaller markets are more retail-oriented with simplified supply chains.

Figure 2: Some commercially important marine fishes available in different fish markets of Dhaka city

Table 4. Different levels of fish marketing activities in studied market.

Market name	Level of marketing channel		
	Commission Agent (Aratdar)	Wholesaler (Paikar)	Retailer (Khuchra bikreta)
Karwan Bazar	✓	✓	✓
Mohammadpur Town Hall		✓	✓
Swarighat		✓	
Jatrabari	✓	✓	
Gabtoli BGB Market	✓	✓	
Mirpur-6 Fish Market		✓	✓
Kachukhet Market		✓	✓
Sepahibagh Market			✓
New Market			✓

Status of fish traders

The survey showed fish mongers within the age range of 46 to 55 years involved in business in highest number (41.6%) followed by >55 year (19.3%) and 26 to 45years. Combatively younger traders (up to 25 years of age) comprised only (11.6%) indicating declining interest among young generation for this profession (Fig. 3).

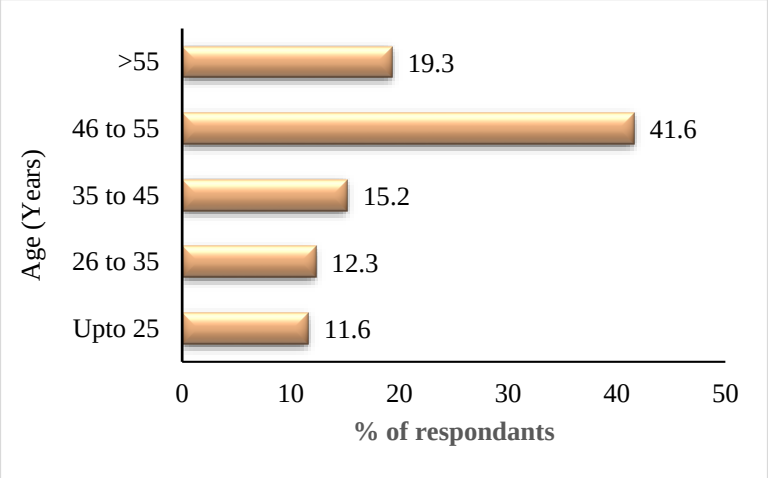

Figure 3: Age group distribution of fish mongers in markets under survey

When examining the educational qualifications of fishmongers (Fig. 4), it was evident that the largest group had attained different stages of secondary-level education. The second-largest group possessed only basic literacy skills, allowing them to sign their names. A comparable proportion of fishmongers in the surveyed markets had completed education up to the SSC level. Completely illiterate fish traders represented the smallest fraction, indicating a rising interest in education among individuals engaged in this profession.

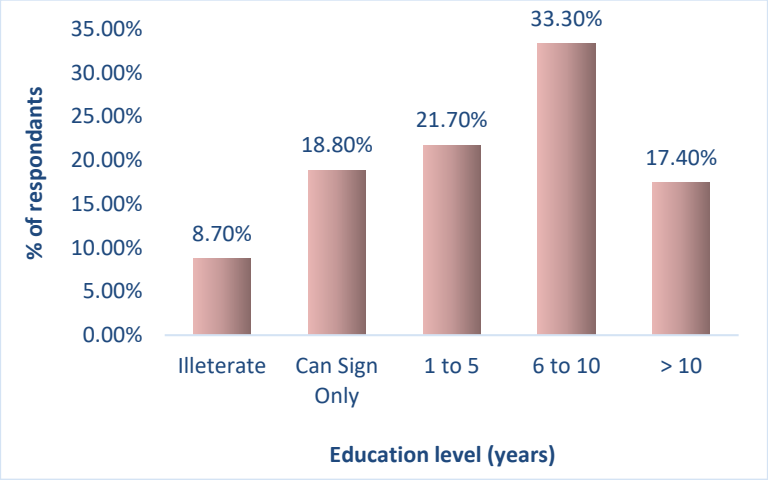

Figure 4: Status of literacy among fish mongers in surveyed markets

The investigation into the professional experience of fishmongers revealed that the largest proportion (37.7%) had been engaged in this trade for a period of 6 to 10 years (Fig. 5). Comparatively, newcomers with 1 to 5 years of experience constituted the second-largest group (27.5%). A drastic fall in experience was observed for over 10 years where those with 11 to 15 years of experience comprise 13.6% and those with 16 to 20 years of experience comprise 11.1% of total respondents. However, only 10.1% of the interviewed fishmongers had been in the profession for more than 20 years, suggesting that the majority of fish traders in Dhaka city markets have entered the business relatively recently.

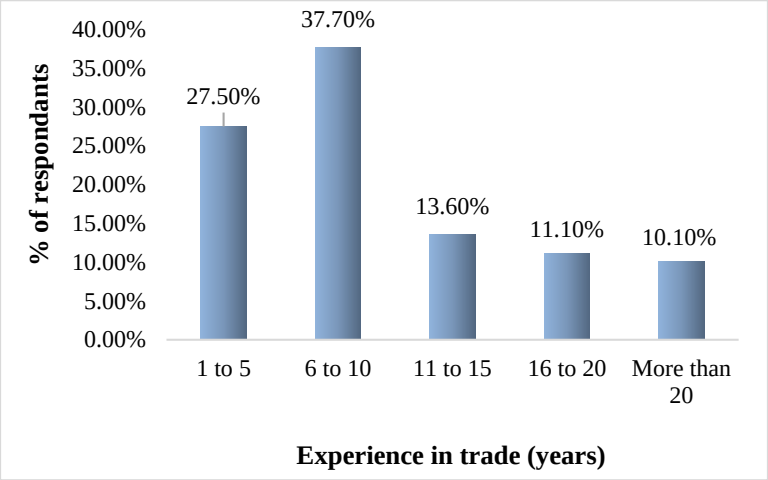

Figure 5: Status of professional experience of the fish mongers in surveyed markets

Packaging and preservation of fish

At the field level in Bangladesh, marine fish preservation primarily relied on traditional and low-cost techniques due to limited access to modern facilities. The most common method was icing, where crushed ice or ice flakes were applied immediately after catch to maintain freshness and reduce bacterial growth. In coastal landing centers, salting, sun drying, and smoking were also practiced, particularly for small-scale fisheries and remote areas without refrigeration (Nowsad, 2016). Fish were often transported in plastic crates or bamboo baskets layered with ice. Despite these efforts, inadequate ice supply, poor handling, and high ambient temperatures frequently compromised fish quality during transportation and marketing.

Findings of investigation on packaging and preservation discovered that most of the marine fishes are being transported in plastic crates followed by Styrofoam box mentioned as box (Fig. 6). One third of the interviewee reported about carrying fish in bamboo basket where only 10.1% of them use drum. None of the fish businessmen were found to use either metallic or wooden box for the fish transport.

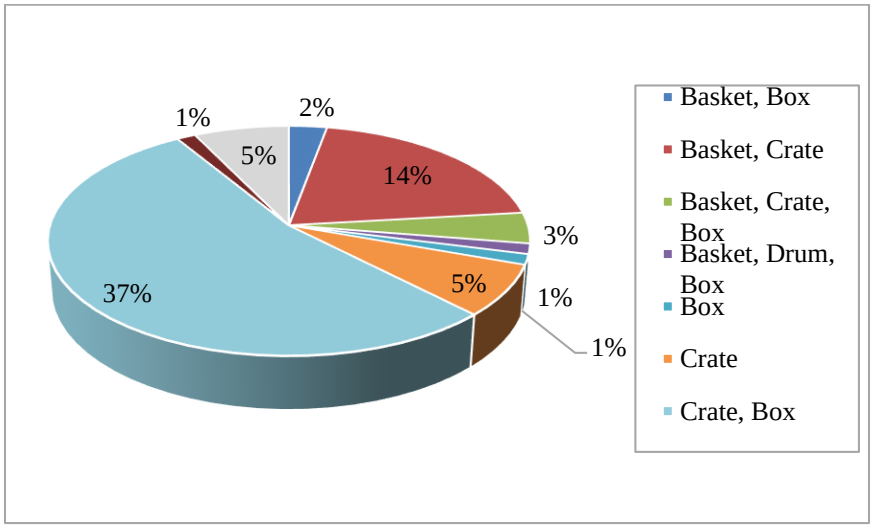

Figure 6: Different packaging method used for transporting marine fish in Dhaka city markets

Fig. 7 showed various types of preservation method generally used for transportation and temporary storage marine fish form landing sources to Dhaka city markets. From the investigation it was evident that icing is still most preferred preservation method followed by refrigeration which was mainly used by some moder super shops. Modified atmospheric packaging and vacuum packaging was found to be used in very handful of cases only comprises 1.4% of total respondents. None of the respondents reported use of salt or any other sorts of preservatives for this purpose.

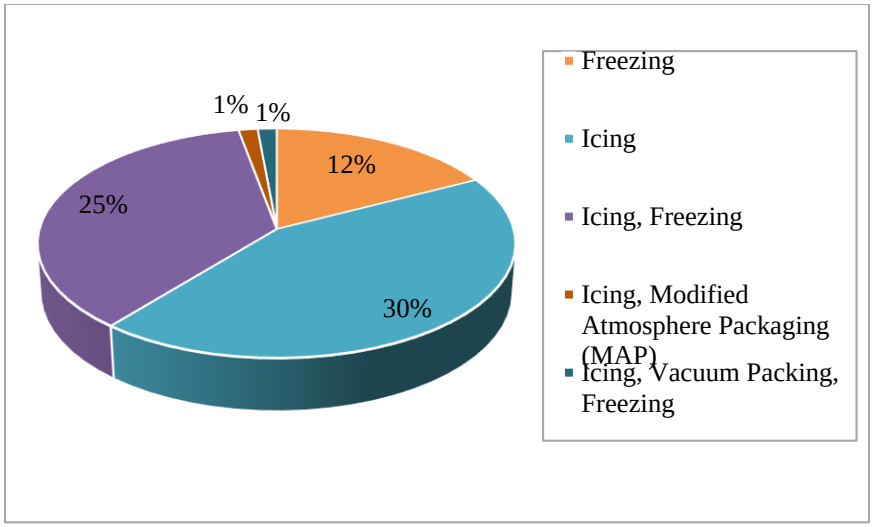

Figure 7: Different preservation method used for transporting marine fish in Dhaka city markets

Major challenges in Marine fish marketing in Dhaka city

Access to fresh marine fish in urban areas, particularly Dhaka City, poses a significant challenge due to various factors affecting its source and availability. Despite being an essential dietary component for a significant portion of the population, the consistent supply of marine fish remains erratic. One of the primary concerns is the distance between Dhaka City and the major marine fish sources, primarily coastal areas like Cox's Bazar, Chittagong etc. This geographical gap contributes to logistical complexities, resulting in delays and increased costs in transporting marine fish to Dhaka City. While, there are also a number of wholesale markets and retail outlets scattered throughout the city, the distribution network often fails to ensure a steady supply of marine fish to meet the demand. Limited infrastructure, inadequate storage facilities, and poor handling practices further contribute to the challenges in maintaining the freshness and quality of marine fish by the time it reaches consumers in Dhaka City. As a result, consumers often encounter difficulties in accessing a diverse range of marine fish species, impacting both their dietary preferences and nutritional intake. Moreover, environmental factors such as overfishing, pollution, and climate change significantly impact the availability of marine fish in Dhaka City. Overfishing in coastal areas not only depletes fish stocks but also disrupts the ecosystem balance, affecting the reproductive cycles and migratory patterns of marine species. Pollution, particularly from industrial and agricultural sources, further

degrades water quality, making marine habitats inhospitable for fish populations. All these factors cumulatively affect marine fish availability in the capital City.

IV. CONCLUSION

This comprehensive survey has elucidated the accessibility of marine fish species across various tiers of fish markets in Dhaka City, encompassing wholesale, retail, and departmental outlets. Employing rigorous methodologies in data collection and analysis, this investigation has revealed pivotal insights concerning the richness and dispersion of marine fish within the urban market landscape of the capital. The study's outcomes underscore the notable presence of a diverse array of marine fish species within Dhaka City's fish markets. Despite encountering challenges stemming from geographical constraints and market dynamics, the availability of marine fish persists significantly across diverse market tiers. This resilience highlights the robustness of the marine fish supply chain and the adaptability of market stakeholders in ensuring a consistent provision of varied fish species to meet consumer demands. Through the promotion of sustainable fishing methodologies and endorsement of conservation initiatives targeting marine resources, stakeholders can effectively contribute to sustaining the long-term viability of the marine fish supply chain.

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