

Hilsa (*Tenualosa Ilisha*), the National Fish, as a Luxury Good for the Common People of Bangladesh: An Economic Analysis

Dey S.

Abstract

Hilsa (Tenualosa Ilisha) is the national fish of Bangladesh, and it holds significant cultural and economic importance. Nowadays, as the price of hilsa fish rises owing to economic concerns, the average people are going to forget its taste and flavor. The study collected secondary data from various authentic sources and analyzed data with descriptive statistical tools. The study found that the limited supply of hilsa resulting from population growth, export to India, smuggling, and depreciation of domestic currency are the crucial reasons for the price hike. Moreover, the declining purchasing power of common people because of inflation, dishonest trading using branding, significant income differences between poor and rich people, social inequality, not true substitutes, debt financing, and the ice market syndicate are all that causes it to turn into a luxury good. Furthermore, the most relevant factor is market intermediaries who exploit fishermen through the illegal 'dadon' system, raising the local market price of hilsa fish. An inefficient supply chain is also responsible for the high cost of hilsa fish to the general public. Because of a lack of adequate cold storage facilities, transportation issues, an insufficient number of boats and ice, poor cleanliness, infrastructure flaws, and political turmoil, hilsa fish loses both quality and quantity, resulting in a price increase. Finally, the study suggests implementing a proper market regulation and monitoring system, controlling inflation and illegal commercial practices, providing access to finance for the fishermen, establishing sustainable fishing and marine and river territory monitoring, overcoming socio-economic challenges, creating an export framework, drone and GPS enforcement, and increasing sufficient cold storage facilities and skill development programs for the fishermen.

Keywords: Economic factors; Price hike; Common people; Unaffordability.

1. Introduction

Hilsa (*Tenualosa Ilisha*) is not only the national fish of Bangladesh but also an inseparable part of Bengali culture, cuisine, emotion, tradition, and diplomacy. It is also known as hilsa shad and is domestically referred to as 'ilish' in Bangladesh. Hilsa can be found in inland, marine, and coastal waters throughout the year in Bangladesh and is the most important and largest single-species open-water fishery in the country.¹ Nowadays, hilsa seems to be a luxury item locked away in the refrigerators of the wealthy people, while for the poor, it remains an elusive dream glimpsed only in television commercials or Facebook posts.² Enjoying the taste of hilsa fish has become a rarity for the common people, as it is now considered a luxury item affordable mainly by the rich. The high market price of hilsa is the principal factor contributing to its unaffordability for the

Department of Economics, Premier University.
Corresponding Email: deysudip9043@gmail.com

general people. For instance, in cities, hilsa weighing around one kilogram is selling for 1,900 to 2,000 taka per kilogram, while those weighing more than one kilogram are priced between 2,200 and 2,300 taka per kilogram.

Hilsa weighing between 800 and 900 grams are being sold for 1,700 to 1,800 takas, those between 700 and 750 grams are priced at 1,550 taka, and smaller hilsa weighing 500 to 600 grams are being sold at 1,400 taka per kilogram.³ For lower-and middle-income families, buying hilsa is no longer an option-merely asking its price in the market feels like an act of courage. Even fish sellers remark, “This fish isn’t for the poor.” Yet, there was a time when hilsa was a staple in every Bengali household. Today’s children of common people only hear stories of the past-how their grandparents enjoyed fried hilsa with rice as part of their daily meals.² On the other hand, for affluent families, hilsa has become a gourmet delicacy. Stocking three to four hilsa fish in a single refrigerator is now seen as a symbol of prestige. Moreover, gifting hilsa, organizing parties featuring hilsa pilaf, and hosting exclusive hilsa feasts have become markers of elite cultural practices. Hilsa festivals are now limited to luxury hotels and upper-class households. The situation has reached a point where, despite being the national fish, hilsa has become a symbol of class inequality. It is no longer the fish of the poor-it has become a delicacy reserved for the rich people.² Although there is no doubt that hilsa fish deserves to be the national fish of Bangladesh, in recent times the important question could be, why should hilsa continue to be regarded as our national fish when most Bangladeshis can no longer enjoy their beloved delicacy? Is it reasonable to designate hilsa as the national fish if the vast majority of the population cannot afford to purchase and consume this fish? It nearly seems to make fun of the social and economic hardships faced by the average person.⁴ To preserve hilsa as the national fish, it should not be restricted to the exclusive domains of the rich. The shimmering aroma of hilsa should also reach the humble homes of the poor.² However, there are several key economic factors behind hilsa becoming a luxury item for the general public, where the main driver is price hike. Limited supply due to population growth and illegal fishing practices, along with issues such as export, cross-border smuggling, inflation, and rising income and social inequality, have all contributed to the price surge. Additionally, the unique taste, high nutritional value, and deep cultural and diplomatic significance of hilsa mean there are few viable substitutes, further pushing up demand and price. The financial burden on fishermen and wholesalers from debt financing, combined with an inefficient supply chain and the dominance of ice market syndicates, also play a role. Notably, a major contributor to the high price is the unholy alliance between market syndicates and extortionist groups, who maintain control over the business.⁴ Since hilsa is a symbol of Bengali identity-deeply embedded in our culture, emotion, and tradition-and is highly valued for its nutritional benefits, it should be affordable for all people of Bangladesh. Therefore, this study is essential for understanding the economic factors contributing to the growing unaffordability of hilsa fish for the general population. By examining these factors, the paper will provide deeper insights into how market intermediaries exploit marginal fishermen, and what measures can be taken to limit their influence on price hikes. It also explores the weaknesses within the supply chain that lead to post-harvest losses, and identifies the economic policies needed to reduce income and social inequality, curb inflation, and improve market efficiency. Furthermore, the findings of this study will assist policymakers, economists, and fisheries sector stakeholders in developing a fair pricing system that ensures hilsa remains accessible to all social classes, while also enhancing the

livelihoods of marginal fishermen. The paper uses secondary data and information from various reliable sources and presents the analysis through graphs and tables. In the paper the economic significance of hilsa and the price trajectory from 2010 to 2024 are respectively illustrated in the second and third sections. The fourth and fifth sections present the literature review and materials and methods, respectively. Finally, the sixth and seventh sections include the findings, discussion, and concluding remarks, respectively.

2. Economic Importance of Hilsa Fish

Hilsa is considered the most economically valuable fish species in Bangladesh, contributing approximately 12% to the country's total fish production, which has a monetary value of approximately 8,125 crore taka and over 1% to the national GDP (gross domestic product). Bangladesh leads the world in hilsa catch, contributing 86% of the global total, while India and Myanmar account for 8% and 4%, respectively.¹ Though hilsa is also collected in Myanmar and India, Bangladesh is the world's greatest producer, with fishermen hauling roughly 600,000 tons of hilsa each year, the majority of which comes from the sea. In 2016, hilsa also received recognition as a geographical indication (GI) product of Bangladesh. Nearly 6 lakh Bangladeshis are directly involved in catching hilsa, while another 20-25 lakh are indirectly involved in transporting, selling, and other operations. In Bangladesh, a total of 145 upazilas (sub-districts) across 40 districts are directly involved in hilsa and jatka (juvenile hilsa) fishing activities. Moreover, a large number of people are also employed in net manufacturing factories, producing boats, nets, ropes, floats, and baskets, as well as working in ice factories and trading these commodities. These hilsa fisheries-related sectors are expected to employ approximately 5-6 million people. It shows that more fishermen are employed in hilsa fishing, as the number of fishermen is directly proportional to fish production and supply.¹ In addition, a large number of people work in other small trades near the hilsa landing centers. Thus, it is projected that the overall hilsa sector employs approximately 10 million people, with fish employing approximately 6.0% of the country's population.¹ A considerable proportion of women are involved in hilsa processing-related activities in the coastal regions of Bangladesh, contributing notably to the local fisheries economy. According to the country's export policy (2015-18), hilsa is an exportable item under certain conditions. Hilsa has recently been a popular export commodity to India before the Durga Puja and Jamai Shasthi festivals. During fiscal 2019-20, when hilsa exports to India began, just 476 tons were exported, generating US \$3.9 million. Bangladesh exported 665 tons of hilsa to India for US \$7.71 million during fiscal year 2023-24. In the preceding fiscal year, 2022-23, the government exported 1,376 tons of hilsa for US \$13.68 million.⁵ Eating hilsa fish has health benefits, as it helps keep the heart healthy, supports blood circulation and arthritis control, prevents night blindness, fights cancer, reduces asthma, relieves depression, improves skin health, and aids in brain development in children. Hilsa serves as an important source of animal protein for the population and accounts for 5.25% of Bangladesh's animal protein intake.¹ Hilsa fish supports a wide range of businesses, including restaurants, superstores, and hotels, due to its consistently high and widespread demand. The government earns a notable amount of both tax and non-tax income from the hilsa trade, including sources like export charges, fishing permits, and fees collected in local markets. During the three years between 2016 and 2019, the total household income of fishermen as well as the income from fishing operations grew by 52% due to the enhanced size and higher output of

hilsa.⁶ Additionally, hilsa has sociocultural, diplomatic, and religious values, and its annual non-consumptive worth is estimated to be at US\$0.36 billion.⁷ Incentives-based co-management interventions for Bangladesh’s hilsa fishery management have produced results that, in general, complement the nation’s several sustainable development goals (SDGs) in different ways.⁸

3. Price Trend of Hilsa Fish

The average price of hilsa (per kilogram) for 500 to 1000 grams has sharply risen between 2010 and 2024. In 2010, the average price was 417 takas (per kilogram), which grew to 1600 taka (per kilogram) in 2024, representing an almost 284% increase (Figure 1).⁹ The most notable annual increases were noted between 2018 and 2024. The highest price was recorded in 2024, and the lowest was in 2010. From 2010 to 2024, we also noticed a growing average price trend in hilsa fish average prices ranging from 1 to 2 kilograms (per kilogram).

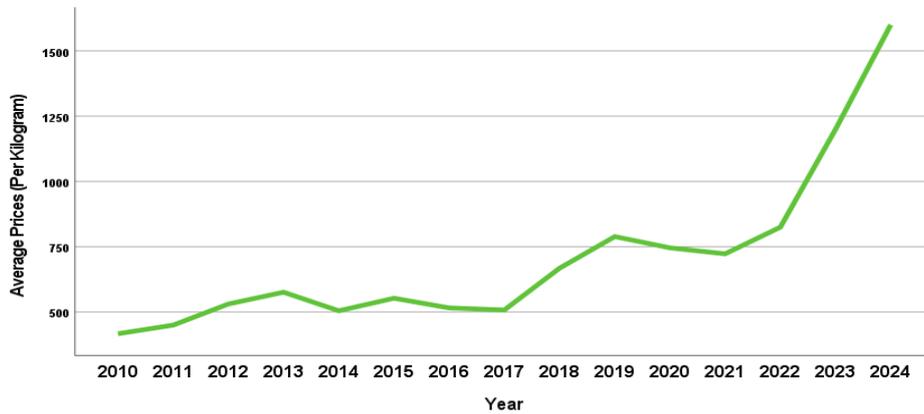


Figure 1: Average price of Hilsa from 2010 to 2024 (Weight: 500 g to 1000 g; Source: CAB).

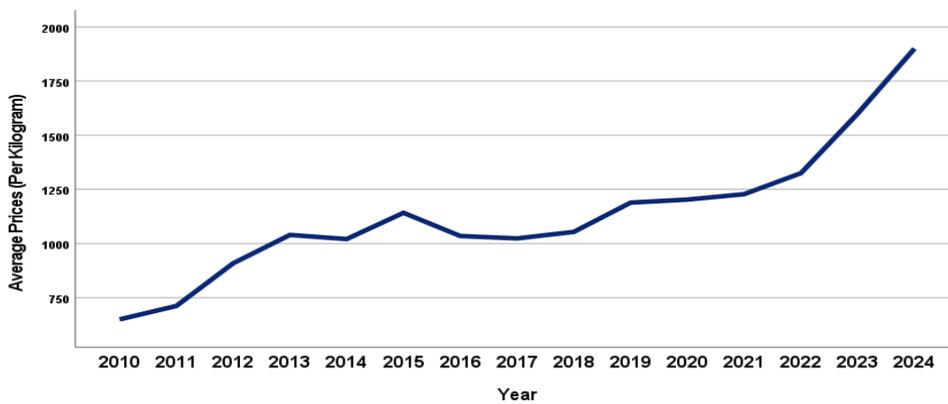


Figure 2: Average price of Hilsa from 2010 to 2024 (Weight: 1K g to 2 Kg; Source: CAB).

Between 2010 and 2024, the average price of hilsa (per kilogram) climbed by 192%, from 650 taka to 1900 taka (per kilogram) (Figure 2). The average price has increased considerably during the last six years. The highest average price was reported in 2024, and the lowest was in 2010.⁹ Although both categories experienced fluctuations, the price gap between them remained evident throughout the years.

4. Literature Review

The following literature review critically examines prior studies, providing a comprehensive understanding of existing knowledge and research gaps. Anthropogenic influences, namely heavy fishing and river obstructions caused by dams and barrages, have caused hilsa to severely decline in aquatic systems throughout South Asian nations. The population decline may also be a result of climate change. Therefore, it is essential that the species be conserved. Furthermore, hilsa is particularly important to the peoples of the Ganga-Brahma-putra-Meghna basin both culturally and economically. As a result, it is in high demand and is becoming more and more expensive, with consumers in Bangladesh and India currently paying an average of about US \$12 per kilogram.¹⁰ Inflation decreases consumers' purchasing power. It reflects how much more expensive the relevant collection of goods and/or services has gotten over a given time period, often a year. As a result, consumers receive fewer items, such as fish and vegetables, than they did previously.¹¹ The gap between supply and demand for fish in markets is widening, owing primarily to population expansion. To narrow the gap, all parts of fish marketing and distribution networks must be improved, in addition to increased production.¹² The relationship between macroeconomic conditions, purchasing power, and social inequality was observed, with a special emphasis on how inflation and wage stagnation affect income distribution and poverty rates. The major goal is to determine how differences in purchasing power mediate the consequences of macroeconomic changes on economic stability and social fairness. The findings show that inflation disproportionately impacts low-income households by reducing their purchasing power, but stagnant wages impede financial mobility, exacerbating income inequality.¹³ The quality of fresh fish in the majority of Asian local markets is poor. Poor onboard procedures, as well as inadequate infrastructure, handling, and storage facilities, contribute to the low quality of fish in many local markets. Poor quality of fish limits their utility for further processing, depriving the producer of the opportunity to generate a higher income; it also limits the export potential of landings.¹⁴ Price fluctuations might be reduced or eliminated by upgrading marketing facilities and removing unneeded, ineffective, and exploitative middlemen from the marketing channel.¹⁵ In Swarighat, practically all fish marketed internally pass through the private sector, where a huge number of persons are involved in the fish distribution and marketing system. The market chain connects producers to retailers via a multitude of middlemen, including traders, brokers, aratdars, wholesalers, mahajans, and dadondars.¹⁶ Marketing organizations, fish freezing and storage facilities, and ice plants should all be included in marketing systems. Furthermore, fish quality control, the role of cooperatives, financing availability, and women's engagement in fish marketing all need to be enhanced.¹⁷ Finally, it is important to note that, to the best of my knowledge, no previous studies have examined the economic factors behind the unaffordability of hilsa fish because of increased market price among the common people of Bangladesh in such a detailed manner.

5. Materials and Methods

The objective of this study is to analyze the economic factors contributing to the unaffordability of hilsa fish for the general population of Bangladesh as a result of rising market prices. To explore the economic factors contributing to the rise in hilsa fish prices, data were collected from various reputable secondary sources, including newspapers, peer-reviewed journal articles, and reports. Annual time series data on hilsa production (in metric tons) were obtained from the Annual Report, Department of Fisheries, Ministry of Fisheries and Livestock, Bangladesh.¹⁸ Information on hilsa exports to India (in tons) was sourced from The Daily Star.¹⁹ Data on inflation and the Gini index were retrieved from the World Bank,^{20, 21} and the Bangladesh Statistical Yearbook,²² respectively. In addition, data on the marketing costs and net marketing margins of intermediaries in Dhaka were adopted from Hoque et al.²³ who originally collected them as primary data. Similarly, data on quality losses in the hilsa distribution channel were sourced from Nowsad,²⁴ which were also originally primary data but used in this study as secondary data. The collected data were analyzed using descriptive statistical tools such as line graphs, bar charts, and tables with Excel and SPSS software (version 27). The study identifies several key economic factors contributing to the price hike of hilsa fish, which in turn has made it unaffordable for the general population. These economic factors are selected based on their theoretical significance and empirical evidence from previous research. Variables such as demand and supply imbalances, exports, exchange rates, inflation, market intermediaries and syndicates, inequality, and an inefficient supply chain have all been identified as key predictors of hilsa fish prices in literature. The factors are illustrated in Figure 3 and include limited supply of hilsa, exports to India, depreciation of the domestic currency, recent inflationary trends and branding, income and social inequality, lack of substitutes for hilsa, the role of market intermediaries and nontransparent pricing, the ice market syndicate, debt financing, and an inefficient supply chain. Subsequently, the study analyzed these economic factors to understand their contribution to the rising market price and resulting unaffordability of hilsa fish of the common people. Finally, the study suggests some recommendations.



Figure 3: Economic Factors for Price Hike of Hilsa.

6. Findings and Discussion

6.1. Limited Supply, Export, and Exchange Rate

According to the law of supply and demand, a high market price for hilsa fish is the consequence of inelastic domestic demand ($E_p < 1$) and a limited domestic supply of the fish, which is brought on by exports, increasing populations, smuggling, and depreciation of the local currency in Bangladesh. Figure 4 shows that in FY 2010-11, hilsa production was 339845 metric tons, and the growth rate was 8.46 percent. Here we can observe a sharp increase in hilsa production from 394951 metric tons to 496417 metric tons between FY2015-16 and FY2016-17. According to the line graph, between 2020 and 2024, Bangladesh's hilsa fish production did not significantly grow. Production was 565,183 metric tons in FY2020-21 and slightly increased to 571,000 metric tons in FY2022-23, but it dramatically declined to 529,000 metric tons in FY2023-24. Additionally, throughout this time, the growth rate significantly decreased from 3.31 percent to -7.35 percent.¹⁸ Although we can observe a sharp increase in hilsa production from FY2017-18 to FY2020-21, in this span of time our population also grew; therefore, domestic demand for hilsa fish remained high. Because of the rising population, an increasing gap exists between hilsa supply and demand in the market in recent times. On the other hand, Bangladesh exports hilsa to global markets, such as India, Malaysia, Saudi Arabia, the United Arab Emirates, etc. Figure 5 indicates that significant amounts of hilsa fish are exported to India from FY2019-20 to FY2023-24. According to figure 5 in FY2019-20 the exported amount of hilsa fish to India was 477 tons, which increased to 1880 tons in FY 2020-21. Moreover, in FY 2021-22, FY 2022-23, and FY 2023-24 the exported amount are 1211 tons, 1376 tons and 665 tons respectively.¹⁹

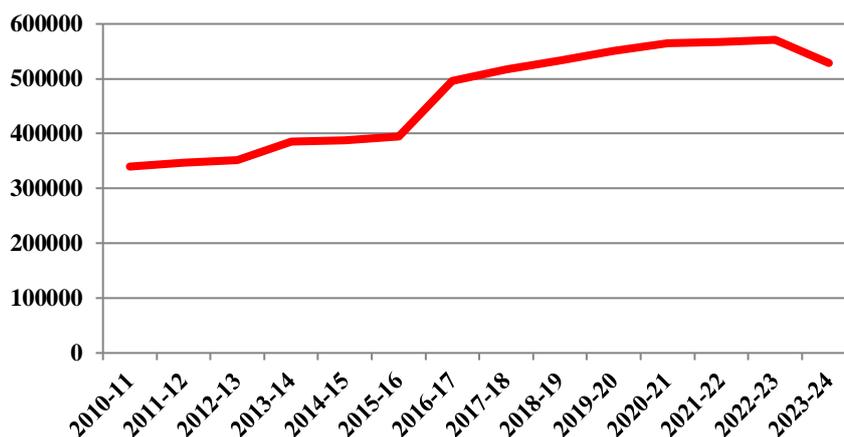


Figure 4: Hilsa Production in MT (Source: Annual Report, 2021-22).

Since the production of hilsa fish has not increased at the desired rate recently, significant amounts are exported, and the population has increased leading to a decreased supply in the domestic market. Especially during festival seasons such as the first day of the Bengali year (Pahela Baishakh), the Eid festival, and the Hindu festival (Durga Puja, Jamai Shasthi), the growing demand from abroad causes a sharp price hike in the local markets, making hilsa unaffordable for the general public. In particular cases, the same

exporters and traders occasionally sell hilsa in India for less than the Bangladeshi market. Traders exported each kilogram of hilsa to India at US \$10, which equals roughly 1,180 takas. In contrast, people in Bangladesh have to pay between 1,600 and 1,800 takas for the same amount. For hilsa weighing one kilogram, buyers are spending as much as 1,900 to 2,000 takas.³

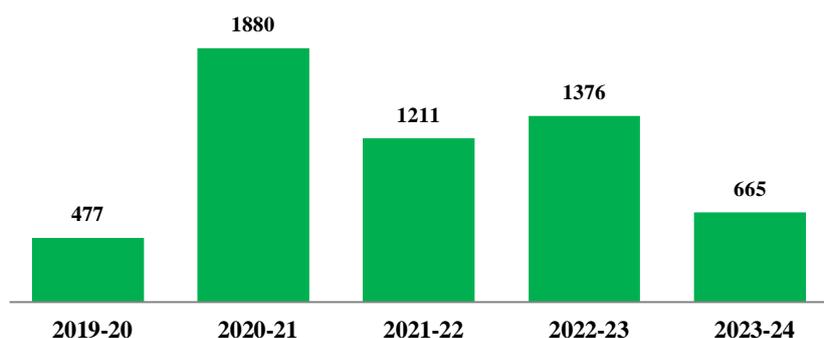


Figure 5: Hilsa Export to India in Tons. (Source: The Daily Star, 2024).

Another possible reason behind the scarcity and rising price of hilsa in the domestic market is its smuggling to India through illegal channels. Due to various legal complications in exporting hilsa through official channels, some dishonest traders smuggle hilsa to India illegally, and some fishermen sell directly to Indian fishermen, which creates a supply crisis in the domestic market.²⁵ In this context, the exchange rate between the Bangladeshi taka and the Indian rupee appears to play a significant role. Recently, the depreciation of the taka and the relative appreciation of the Indian rupee (1 Rupee = 1.44 Taka) have been observed. In pursuit of greater profits, smugglers illegally export hilsa to India, taking advantage of the favorable exchange rate. Due to the imbalance in production and distribution, smuggling through illegal routes, the people of the country are gradually being deprived of this traditional delicacy. Sometimes, it is seen that Indian fishermen illegally enter Bangladesh's marine territory or river territory, especially at night, to catch fish, when the government asks Bangladeshi fishermen to refrain from fishing for a specific period.³ As a result, during the peak season, when our fishermen go fishing, they do not get enough fish, which creates a shortage in the local market. This increases the price of hilsa fish, and the general public is forced to refrain from buying it.

6.2. Inflation and Branding

In recent years, the inflation rate in Bangladesh has risen significantly. In 2015, the inflation rate stood at 6.2%, which surged to 10.5% by 2024.²⁰ As a result, the prices of essential commodities such as rice, lentils, vegetables, and cooking oil have escalated sharply, leading to a decline in the purchasing power of consumers. The erosion of real income, which is the most significant cost of inflation, is the result of the unpredictable

increase in prices, which inevitably reduces the purchasing power of certain customers.¹¹ Although the nominal incomes of the general people have slightly increased nowadays, their real income has remained almost unchanged due to excessive inflation. Consequently, households are prioritizing basic necessities, making the purchase of high-priced items like hilsa fish increasingly unaffordable for many. The cost of one kilogram of hilsa fish is equivalent to the monthly rice or vegetable expenses of certain families. Additionally, in Bangladesh, hilsa is primarily caught by fishermen operating boats or trawlers in rivers such as the Padma and Meghna, as well as in the Bay of Bengal. Rising costs of labor, fuel, gas cylinders, ice, boat, trawler, food, cold storage rent, shop rent, and transportation have further contributed to the increase in hilsa prices. Furthermore, to go to the deep sea, where hilsa are captured more often than in the rivers, fishermen must travel 7 to 10 days in trawlers. In the deep sea, food and clean water are limited, necessitating careful conservation. Ten to twelve fishermen, who receive daily salaries, are transported by each boat or trawler. Diesel is also used by trawlers, which raises expenses even more. Each trip typically costs between 200,000 and 250,000 takas.²⁶ If the fishermen are unable to obtain an adequate quantity of fish, they have to stay at sea for an extended period, which results in an increase in their expenses. Due to inflation, the overall cost of each fishing trip has increased significantly for fishermen. As a result, in order to make a profit, they need to catch higher-value fish. However, since they are no longer able to catch as many fish as before, they tend to set higher prices for the limited catch they do obtain, in an attempt to cover their expenses and still earn a profit. Under the current inflationary pressure and limited supply of hilsa, it has become nearly impossible for middle-income groups to afford this once commonly consumed fish. Moreover, the government designated Chandpur as the “Home of Hilsa” (Ilisher Bari Chandpur) in 2017 because of the delectable flavor of hilsa produced in the Padma-Meghna rivers.²⁷ But some dishonest traders are taking advantage of this branding to raise the price arbitrarily, making the large-size silver hilsa unaffordable for the common people.

6.3. Income and Social Inequality

Inequality in income is another major reason why hilsa fish is unaffordable for the common people of Bangladesh, which has negative impacts on the consumption behavior and purchasing ability of common people. The gap between the wealth of the rich and the poor is growing in our country. The Gini coefficient (Gini index) is a statistical indicator of economic inequality in a country, which lies between 0 and 1.²⁸ The value 0 represents perfect equality, and 1 depicts perfect inequality. The income Gini coefficient was 0.499 at the national level, 0.446 in rural areas, and 0.539 in urban areas, as per the 2022 household income and expenditure survey.²² A Gini coefficient of 0.500 indicates that a country has a high level of income inequality. Bangladesh’s Gini coefficient of 0.499 puts it dangerously close to the zone of high inequality.²⁹ As a result, although some individuals continue to purchase this fish, the majority of people from lower socioeconomic classes never even inquire about the cost of hilsa. The majority of people cannot afford to purchase it, and even in our society, the majority of people in the lower tiers avoid asking how much hilsa prices. A developing country’s income is concentrated in a few people, leaving a vast number of people with less money to spend. As a result, lower-and middle-class people are unable to afford expensive commodities such as hilsa fish. However, certain individuals are easily purchasing these fish. We notice that hilsa is being sold like crazy if we ever visit a high-end supermarket. This

suggests that a particular group has enough money to purchase hilsa, even at excessive prices, a large portion of which was obtained by exploiting and robbing the working class.³⁰ Based on direct market observations in Bangladesh, it is generally observed that high-income individuals tend to purchase hilsa fish in large quantities (10/15 kilograms) at elevated prices, preserve it in their personal refrigerators, and, in most cases, show little concern about the market price. This consumer behavior not only contributes to a shortage in the supply of hilsa in local markets but also limits the accessibility of the fish for the general population, effectively depriving lower-income groups from purchasing it. Moreover, a noticeable price difference for hilsa fish can be observed between rural and urban areas, making it unaffordable for many low-and middle-income households living in urban areas. Furthermore, in our country, fish sellers do not sell hilsa in small quantities like 100 grams or 250 grams-unlike India, where such a system is commonly practiced and accessible to all. This deprives a significant portion of Bangladesh's population from enjoying the taste of the national fish, resulting in social inequality.

6.4. No True Substitute

In Bangladesh, hilsa holds a distinctive place in both cuisine and cultural heritage, making it an essential dish during major occasions such as Eid, Pahela Baishakh (the first day of the Bengali year), and the Hindu festival Durga Puja, Jamai Shasthi, etc. Due to its unparalleled taste, mouthwatering flavor, aroma, oily texture, and health benefits, there exists no comparable alternative, which results in a highly inelastic demand ($E_p < 1$) and a low elasticity of substitution. The fish is known locally as "Macher Raja," which translates to "The king of fish." Four basic tastes-sweet, sour, salty, and bitter-are recognized by the human tongue as sensory reactions in various taste buds.³¹ Hilsa is more exclusive and attractive because it is only available for a few months out of the year. Hilsa fish is a versatile culinary component that can be fried, grilled, smoked, made into mustard-based gravy (Sorisha Ilish), or steamed. Its unusual flavor contributes to its tremendous popularity, which is incomparable with other fishes. Furthermore, the Panta Ilish (fermented rice with hilsa) dish is closely associated with our culture during the Pahela Baishakh celebration. Nutritionists estimate that there are 1,020 kilojoules of energy in 100 grams of hilsa. It contains 10.83% omega-3 in total fatty acids, 18.4 grams of protein, 2.4 milligrams of iron, 22 milligrams of vitamin C, iodine, lipids, minerals, calcium, and 18 to 22 grams of fat. Hilsa is ranked second in terms of omega-3 nutritional value after salmon.³² As a result, hilsa fish is completely unique in terms of nutritional and cultural value. The lack of viable substitutes forces many consumers-particularly rich households to continue buying hilsa even as prices climb. As a result, its exclusive nature leads to ongoing supply constraints and unstable pricing, thereby limiting affordability and accessibility for the marginalized people. Moreover, other fish, such as Rui, Katla, Coral, Laksha, and Shrimp, are brought into Bangladesh from India and Myanmar, but there are not so many options for hilsa, therefore, domestic demand remains unchanged.

6.5. Market Intermediaries and Deceptive Pricing

The most significant reason why middle-and lower-income families in Bangladesh are unable to afford hilsa fish is due to the monopolistic power of market intermediaries, price hikes, and extortion. Several middlemen, such as big traders (mohajons), merchants (baparis), wholesalers (aratdars), intermediary traders (faria), and bulk buyers (paikers), are involved in the hilsa fish supply chain from fishermen to consumers in

Bangladesh.^{16,33} In many cases, unscrupulous aratdars (wholesalers) purchase hilsa from fishermen at low prices and then create market syndicates to artificially create a scarcity in the supply. In some cases, the aratdars (wholesalers) hold auctions among themselves to artificially raise the price of the fish. Additionally, after buying hilsa at auction, the merchants charge exorbitant rates, which ultimately drive-up retail prices. In Dhaka, a survey showed that in the hilsa marketing system, the largest value-added cost per maund of fish sold is incurred by bepari (taka 1210.5), followed by local faria (taka 908.5), fishermen (taka 892.5), aratdar (taka 702.5), and retailers (taka 449.5). The data is displayed in Table 1. Fisherman's net marketing margin is 9107.5 taka, whereas aratdar's is 417.5 taka, Bepari's is 1589.5 taka, Faria's is 1791.5 taka, and the retailer's is 2750.5 taka.²³

TABLE 1: Marketing Cost and Net Marketing Margin of Intermediaries in Dhaka.

Intermediaries	Cost per Maund (Taka)	Net Marketing Margin per Maund (Taka)
Fisherman	892.5	9107.5
Aratdar	702.5	417.5
Bepari	1210.5	1589.5
Faria	908.5	1791.5
Retailer	449.5	2750.5
Total	4163.5	15656.5

Source: Hoque et al. 2017.

Initiatives to monitor the market have been tried, but without success. Without any obstacles, price manipulation is occurring at the wholesale and retail levels. Consequently, the cost of hilsa is increasing daily.³⁰ Moreover, to drive prices higher, the aratdars (wholesalers) often store the fish in cold storage for months. This manipulation becomes particularly frequent before major festivals or events such as Eid, Pahela Baishakh, or Durga Puja. When demand surges during these occasions, they release the stock at inflated prices to earn excessive profits. While wealthy individuals, super shops, hotels, and restaurant owners can still afford to buy hilsa at these elevated prices, it becomes inaccessible to the general public. On the other hand, the '*dadon*' system in the hilsa market has evolved into an unwritten norm over generations. In Bangladesh '*dadon*' is a prevalent but controversial commercial practice in the collection of hilsa fish.²⁵ A study indicated that 51.32% of head mazhi (head fisherman) and 22.61% of crew received '*dadon*' from aratdar / mohajon.¹ This arrangement allows fishermen to obtain advance payments from affluent customers or wholesalers before the fishing season begins. The fishermen become trapped in this illegal '*dadon*' system. In exchange, the fishermen are required to supply fish at a predetermined price, which is sometimes much lower than the current market pricing. This controversial practice demonstrates economic injustice, as fishermen remain in debt while intermediaries receive the majority of the profits. In this illegal commercial practice, the arathars (wholesalers) not only control the supply of hilsa market but also influence the pricing mechanisms by depriving marginal fishermen. They act as both buyers and sellers, and the more capital an aratdar (wholesaler) can provide as '*dadon*', the greater their control over supply and price. A structure has been established where fishermen are often compelled to rely on them, effectively allowing these actors to monopolize the hilsa

market. Aratdars (wholesalers) often sustain an artificial scarcity of hilsa in the market throughout the year by freezing hilsa fish in cold storage, creating the impression for general buyers that there is a supply shortage. Through this tactic, they attempt to keep hilsa prices consistently high. Additionally, the unholy relationship between syndicates and the prevalence of extortionists is another factor contributing to the high prices. It is quite impossible to halt these individuals and put an end to extortion because the majority of these extortionists are backed by influential patrons who embolden them. In many urban fish markets, the lack of strict oversight enables sellers to charge excessively high prices, particularly affecting buyers who depend heavily on local vendors and have limited access to accurate pricing system. The absence of transparent pricing systems and up-to-date market information fosters dishonest behavior and reduces consumers' ability to negotiate fairly. Although the government, in some cases, sets fixed prices for selling hilsa based on weight, the lack of an effective market monitoring system allows many dishonest traders to disregard these regulations and charge significantly higher prices. As a result, even when hilsa fish production levels are adequate, flaws in the handling and distribution processes-from the point of catch to final sale-lead to operational inefficiencies. These issues drive up costs, making hilsa less accessible to lower-and middle-income families.

6.6. Debt Financing

In many coastal fishing communities of Bangladesh, particularly those engaged in hilsa fishing, financial hardship is a common reality. Research indicated that 57% of fishermen were in debt for taka 20,000 on average per family per year.¹ Bangladesh Bank data shows that fisheries loans account for only 8.5% of total agricultural loans, which is insufficient.³⁴ Due to limited access to institutional credit (banks, NGOs, etc.) and strong terms and conditions, fishermen often rely on informal lenders such as mohajons (moneylenders or boat/trawler owners) to finance their fishing trips.^{35, 36} Hilsa fishermen livelihoods depend on seasonal catching, but low catches, fishing bans, and buying equipment for fishing compel them to take loans from mohajons. To repay the loans to mohajons, the fishermen fall into a cycle of poverty, resulting in a generational debt trap.³⁷ In many cases, they are obliged to take loans by mortgaging their belongings or future catch. Therefore, to recover the loan and high interest and ensure profit, the fishermen increase the price of fish in the local and retail markets. As a result, the burden of informal debt financing indirectly raises the price of hilsa, making it increasingly inaccessible for average consumers. The matter can also be observed in the case of wholesalers; sometimes it is seen that large fish wholesalers take loans from banks, NGOs, and other financial institutions and repay those loans using the income generated from their business. Since banks and financial institutions at present impose exorbitant interest rates on loans, these wholesalers have to repay a larger amount of money. To maintain their profit margins, they subsequently impose higher prices, which affect the entire supply chain and contribute to the rise in the market price of hilsa fish.

6.7. Ice Market Syndicate

Ice is essential for preserving hilsa from the time it is caught until it is sold on the local market. Since ice plays as a very important input for hilsa fish, any increase in the price of ice due to syndication affects the entire supply chain. As a result, the traders' expenses go up because of cost-push effects, and subsequently, they impose higher prices on hilsa to recover their profit. However, the illegal ice market syndicate system can be seen in certain of Bangladesh's key hilsa selling zones (Chattogram, Chandpur, Bhola, Barisal,

Barguna, Khulna, etc.) which indirectly raise the market price of hilsa fish. Lack of ice at the right time affected almost 80% of fish sellers in Cox's Bazar. Many fish sellers have closed their businesses due to their inability to handle the loss. Making ice costs 40-42 taka, while the syndicate sells it for 300-400 taka.³⁸ Another instance: in Patharghata, Barguna, fishermen have reported that recurring electricity disruptions significantly hamper local ice production. As a result, a monopolistic group has taken control of the ice supply, creating an artificial price surge. While the regular price of a single can of ice is 80 takas, traders are often forced to purchase it for 150 takas due to limited availability. Ice shortages typically occur 4 to 5 times per month in the region. During these periods, ice must be sourced from Khulna, where the cost-including transportation-can rise as high as 600 taka per can. This inflated cost is then reflected in the market price of hilsa, making the fish even more expensive for low-and middle-income consumers.³⁹

6.8. Inefficient Supply Chain

There is a relationship between the supply chain management of hilsa fish and the increase in its price. Inefficient supply chains result in customers incurring higher costs for nearly all goods.⁴⁰ The supply chain for hilsa includes a number of participants, including transporters, wholesalers, merchants, fishermen, and others. Any disruption or inefficiency in the different stages of this supply chain can directly or indirectly impact the price of hilsa. Fishermen, transporters, wholesalers, and retailers incur shared expenses such as transportation and labor costs, cold storage and shop rental, packaging expenditures, and fish losses from waste, among others. Ultimately, after keeping a portion of the price as profit, these businesses meet consumer demand. When problems occur at any point in this chain, the parties involved sometimes increase their margins to offset expenses and, in certain instances, inflate prices.⁴¹ For instance, problems in supply, insufficient cold storage, the dominance of intermediaries, and market demand can all contribute to price hikes. Due to these problems, a large portion of fish is wasted or delayed in reaching markets, increasing costs. These inefficiencies push up prices as middlemen charge more to cover losses and risks, ultimately making hilsa fish less accessible to low-and middle-income consumers. In Bangladesh, the center struggles to efficiently preserve perishable items due to limited cold storage facilities and insufficient ice supply, poor cleanliness, and infrastructure flaws at landing locations. These flaws contribute to possible losses and inefficiencies across the supply chain.^{42,43,44} Political turmoil, transportation problem, and poor sanitation also affect the fish marketing process. Fish often get damaged during the transportation from landing centers to retail points in Bangladesh,³⁵ which creates a shortage of supply. Additionally, quality control is inconsistent due to a shortage of inspectors and a lack of focus on maintaining standards for domestic markets.⁴⁵ Moreover, a lack of understanding and training in fish preservation and processing processes jeopardizes quality control efforts.^{35,42} Uddin et al⁴⁶ mentioned from Nowsad's²⁴ findings that landing centers and aratders (wholesalers) reported a 2% and 5% loss in hilsa intended for the consumer market as wet fish (Table 2) in Bangladesh. The lack of ice or transportation during glut season may be the cause of this. Significant hilsa loss occurred during the glut period, primarily in August and September. They also mentioned a sufficient number of fishing boats, personnel for handling, icing, iceboxes, and transportation are insufficient to handle these enormous catches. The majority of the hilsa that have degraded in quality at this time are processed

into salting. When they were in the landing center (43%) or fishermen (14%), hilsa, which was used for salting, suffered a significant loss (Table 2).

TABLE 2: Quality Loss of Hilsa Fish (%) in Different Stages of Distribution Channel.

Fish	Month	Distance of Market (km)	Fishermen	Landing Centre	Aratder-1	Transporter (Piker)	Aratder-2 (Processor)	Retailer	Fish Vendor
Hilsa (wet fish)	August-September	400-500	-	2±0.4	5±2	-	7±2	9±2	19±4
Hilsa (for Salting)	September	70-150	14±3	43±5	-	-	61±7	-	-

Source: Nowsad, 2010.

Because of the above discussed inefficient supply chain and infrastructural deficiencies, prices stay high even when catches are abundant, largely due to losses after harvest and the complex web of middlemen. These structural problems reduce earnings for local fishers and drive-up retail prices, limiting affordability for the common people. To ensure the sustainability of hilsa fishing and improve affordability for consumers, the following policy measures are recommended:

- The Ministry of Fisheries and Livestock, Bangladesh, should implement a robust market monitoring system to control price manipulation in hilsa and ice markets and break syndicates among aratdars (wholesalers). Pricing mechanisms should be strictly regulated based on the weight and quality of hilsa fish. A system similar to India's—where fish can be sold in precise quantities such as 100 grams or 250 grams may be introduced to ensure pricing transparency and affordability. Moreover, the government should establish a predictable and regulated export framework for hilsa, which includes a stable trade agreement.
- Financial institutions, including banks and NGOs, should offer fishermen friendly low-interest loans to marginal and small-scale fishermen without any mortgages. This would reduce their dependency on exploitative informal credit systems (mortgage, *dadon*) and enable them to operate more independently. Moreover, the Bangladesh government should be concerned about controlling inflation with tight monetary policy because it declines the purchasing power of the common people.
- The Ministry of Fisheries and Livestock, Bangladesh, must strictly enforce fishing bans during the hilsa breeding season through effective legal and administrative measures to ensure species regeneration and increase hilsa production. Enhanced surveillance of both marine and river territory is essential to prevent illegal fishing activities, particularly those by Indian fishermen. The illegal and controversial

commercial practice 'dadon' must be strictly regulated and eliminated through legal and administrative actions.

- Technology can significantly contribute to the conservation of hilsa. A GPS (Global Positioning System) tracking system can be used to monitor the migration patterns of hilsa and oversee the activities of fishing vessels. Moreover, the use of advanced drone technology can help prevent illegal fishing in sanctuary areas.
- The Ministry of Fisheries and Livestock, Bangladesh, should invest in establishing more cold storage facilities near landing stations to preserve hilsa post-harvest. Effective training programs for fishermen on fish catching, preservation, hygiene, and processing techniques should be introduced to improve product quantity and quality and reduce post-catch losses.
- Sustainable hilsa production requires policies that balance conservation with the livelihood needs of fishing communities. Seasonal restrictions should be combined with timely assistance and more alternative income opportunities to reduce reliance on hilsa alone. Promoting women's participation, empowering community-based fisheries management, and raising awareness through education and media can curb poverty-driven overfishing. Together, these measures will protect livelihoods and ensure the long-term sustainability of hilsa resources.

7. Conclusion

Hilsa (*Tenualosa Ilisha*) is the national fish of Bangladesh and the symbol of our cultural status, cuisine, emotion, and diplomacy. Hilsa also has great contributions to GDP (gross domestic product), employment generation, foreign earnings, animal protein intake, etc. Once this fish was available on the common people's plate, but nowadays, it has become a luxury item for them, and some economic factors have direct and indirect effects behind the price hike and unaffordability for the general people. This study identifies several key contributors to the price hike and reduced affordability of hilsa, including limited supply, increased exports, foreign exchange volatility, inflation, income and social inequality, market intermediaries and syndicates, disguised pricing, inefficient supply chains, lack of viable substitutes, and debt burdens faced by fishermen and wholesalers. The study utilizes secondary data from various authentic sources and analyzes the data with bar charts, line charts, and tables using descriptive statistical tools. Finally, the study recommends implementing a proper market regulation and monitoring system, controlling inflation and illegal commercial practices, providing access to finance for fishermen, establishing sustainable fishing and marine and river territory monitoring, surmounting socio-economic obstacles, creating an export framework, digital surveillance, and increasing adequate cold storage facilities and skill development programs for fishermen.

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