

FROM VOLUME TO VALUE: ASSESSING STRUCTURAL SHIFTS AND COMMODITY COMPETITIVENESS IN TEGAL'S URBAN FISHERIES SECTOR

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Abstract

This study aims to analyze the divergence between production volume and the economic value of capture fisheries commodities in Tegal City from 2019 to 2024. While national fisheries production continues to rise, the sector's contribution to GDP often remains stagnant. To date, most literature has focused on fisheries biology (MSY) and gear efficiency at the macro level, leaving a significant research gap regarding longitudinal analyses that dissect economic value anomalies at the urban-local level during periods of crisis and recovery. Utilizing a descriptive quantitative approach, this research leverages secondary time-series data obtained from the official publications of the Ministry of Marine Affairs and Fisheries. The analytical techniques employed include descriptive statistics, trend analysis, and commodity contribution analysis to map the relationship between physical output and nominal monetary achievements. The findings reveal significant fluctuations over the six-year observation period. The highest production volume was recorded in 2019 at 3,777.54 tons, whereas the peak economic value was achieved in 2023, totaling IDR 76,724 million, confirming a misalignment in trends between quantity and market value. Cumulatively, the Anchovy group (*Teri*) dominated the sector with a total volume of 6,822.18 tons and a value of IDR 108,185 million. However, a critical finding indicates that by 2024, Blue Swimming Crab (*Rajungan biasa*) began to shift the dominance of Anchovies in both volume (551.22 tons) and economic value (IDR 33,087 million). This identifies the Blue Swimming Crab as a strategic commodity with a higher value-to-volume ratio. This study recommends a policy reorientation from merely chasing production targets toward value-based management to enhance the economic welfare of fishers in Tegal City.

Keywords: Urban Fisheries, Leading Commodities, Capture Fisheries, Tegal City, Production Value.

INTRODUCTION

The capture fisheries sector represents a fundamental pillar of the global economic architecture, particularly for developing maritime nations where marine resources serve as a primary engine for food security and macroeconomic stability (FAO, 2022). Beyond its role in providing essential animal protein to over 3.3 billion people worldwide, fisheries support the livelihoods of millions in coastal communities. As the world's second-largest producer of capture fisheries, Indonesia's significance in this sector is paramount. National production volumes have consistently shown an upward trajectory, reaching an estimated peak of 24.74 million tons in 2023 (KKP, 2024). However, beneath these impressive physical output figures lies a burgeoning academic discourse regarding the efficiency of transforming biological extraction into tangible economic value.

A persistent economic paradox often emerges in natural resource management: the "divergence of value." This phenomenon occurs when increases in extraction volume (tonnage) do

not correlate linearly with economic prosperity or Gross Domestic Product (GDP) contributions (World Bank & KKP, 2024). In the Indonesian context, despite massive investments in fleet modernization and gear technology, the fisheries sector's contribution to the national GDP has remained relatively stagnant between 2.7% and 3% over the last decade (BPS, 2024). This stagnation raises a critical question: why has robust production growth failed to catalyze a commensurate acceleration in economic value?

Tegal City, strategically located along the northern coast of Java (Pantura), provides an ideal laboratory for investigating this divergence. Historically recognized as a "Maritime City" (Kota Bahari), Tegal possesses a sophisticated fisheries infrastructure centered around the Tegalsari Fishing Port. The recent elevation of this facility to a National Fishing Port (PPN) status, per Ministerial Decree No. 73 of 2024, underscores Tegal's role as a vital hub for fish landings in Central Java (Ministry of Marine Affairs and Fisheries, 2024). The city's fleet is highly heterogeneous, ranging from small-scale traditional vessels to industrial-scale ships exceeding 30 GT. Nevertheless, the operational dynamics in Tegal during the 2019–2024 period have faced unprecedented socioeconomic shocks.

The 2019–2024 period is a crucial temporal window as it encapsulates three distinct economic phases: pre-pandemic stability, the acute disruption caused by COVID-19, and a complex recovery phase marred by global energy inflation (Boesono, 2024). During the pandemic, fisheries supply chains in Tegal suffered from logistical paralysis, leading to stock accumulation in cold storage and a collapse in ex-vessel prices (Mikuš et al., 2021). Conversely, the post-2022 recovery phase saw a significant spike in industrial fuel prices, drastically increasing the "cost of fishing." This dual pressure created a scenario where fishers were compelled to increase catch volumes simply to reach a break-even point, which ironically often depressed market prices further due to oversupply in specific commodity segments (Alharthi & Hanif, 2020).

Theoretically, the divergence between production volume and economic value in Tegal is driven by several key determinants. First is the "species composition" factor. Production increases are often dominated by high-volume, low-value small pelagic species, while high-value commodities like squid or shrimp face extreme price volatility and overfishing pressures in the Java Sea (WPP 712) (Squires et al., 2021). Second, systemic post-harvest inefficiencies remain a significant barrier. Economic losses due to quality degradation are estimated at 20–30% of potential value, where fish intended for export or high-end processing are frequently downgraded to low-price fishmeal inputs (Bomdzele et al., 2021). Third, the oligopsonistic market structure at landing sites often weakens the bargaining power of fishers during price determination (Surís-Regueiro et al., 2014).

Despite extensive literature on Indonesian fisheries largely focusing on Maximum Sustainable Yield (MSY) and technical gear efficiency (Rehman et al., 2019; Garcia-de-la-Fuente et al., 2016) a significant research gap remains regarding longitudinal comparative analyses of the "Economic Divergence Index" at the urban-local level. Previous studies tend to rely on aggregate national or provincial data (Anggraeni et al., 2020), failing to capture the micro-economic anomalies occurring at specific strategic ports. Furthermore, there is a dearth of empirical evidence evaluating how the transition from input-based to output-based management (Measured Fishing Policy) is influencing local market behaviors in hubs like Tegal (Muawanah et al., 2023).

The urgency of this research lies in the need for a reorientation of Tegal's maritime policy. If local governance focuses solely on production targets without addressing price stability and profit margins, the result may be "immiserizing growth" a state where increased output leads to a decline in the welfare of the producers. Identifying which commodities act as "value drivers" versus mere "volume fillers" is essential for targeted interventions (Sun et al., 2021). Such insights are vital for optimizing infrastructure investments, such as efficient cold storage, digital auction systems, and downstream industrialization.

Consequently, this article aims to analyze the divergence between production volume and economic value for capture fisheries commodities in Tegal City from 2019 to 2024. Utilizing a

quantitative approach that integrates trend analysis, Location Quotient (LQ) for basis commodity determination, and price variation coefficients, this study maps the economic anomalies of the period. This research contributes to the theoretical development of resource economics in tropical regions and provides a framework for policymakers to implement Blue Economy principles that balance physical output with economic resilience and ecosystem health (World Bank & KKP, 2024).

RESEARCH METHODS

This study employs a descriptive quantitative approach utilizing secondary time-series data from 2019 to 2024. The research focuses on capture fisheries commodities in Tegal City, analyzing production volume and production value as the primary metrics for determining leading commodities. The data used is secondary data obtained from the official publications of relevant institutions via www.portaldata.kkp.go.id, which includes information on fish groups, species, business types, production volume, production value, and weighted average prices. As this study aims to describe and compare the positions of leading commodities over a specific period, the research design emphasizes the presentation of empirical conditions and year-to-year data trends rather than testing causal relationships between variables.

The data analysis techniques used include descriptive statistics, trend analysis, and commodity contribution analysis. Descriptive analysis was used to calculate total production volume and value, as well as to identify commodities with the largest output each year. Trend analysis observed the development of fisheries production over the 2019–2024 period, while contribution analysis determined the role of each commodity relative to the total capture fisheries output in Tegal City. The results are presented in tables and narrative descriptions to provide a clear overview of leading commodities based on both quantity and economic value.

RESULTS AND DISCUSSION

Table 1. Summary of Capture Fisheries Data in Tegal City (2019–2024)

Year	Amount Commodity	Total Volume (tons)	Total Production Value (Rp million)	Volume Growth (%)	Growth (%)
2019	32	3,777.54	42,805	-	-
2020	29	2,171.79	24,858	-42.51	-41.93
2021	34	1,565.31	22,306	-27.93	-10.27
2022	40	2,364.11	44,133	51.03	97.85
2023	43	3,439.46	76,724	45.49	73.85
2024	24	1,508.66	45,095	-56.14	-41.22

Source: Processed data, 2026

Table 1 illustrates the development of capture fisheries in Tegal City from 2019 to 2024. Based on the table, the number of recorded commodities fluctuated annually, starting with 32 commodities in 2019, decreasing to 29 in 2020, then increasing significantly to a peak of 43 commodities by 2023, before declining to 24 in 2024.

In terms of production volume, the highest output was achieved in 2019 at 3,777.54 tons, while the lowest occurred in 2024 at 1,508.66 tons. Meanwhile, the highest production value was recorded in 2023, amounting to IDR 76,724 million, whereas the lowest value occurred in 2021 at IDR 22,306 million. These data indicate that capture fisheries in Tegal City were highly volatile during the 2019–2024 period, characterized by a sharp decline in 2020–2021, a strong recovery in 2022–2023, and a subsequent downturn in 2024.

Table 2. Leading Commodities in 2019 Based on Production Volume

Rangking	Comodity	Volume (tons)
1	Flattened anchovies	1,947.91
2	Song	621.15
3	Shrimp grogo	397.66
4	Anchovies and rice	265.83
5	Indigo	102.97

Source: Processed data, 2026

Table 2 presents the five leading capture fisheries commodities in Tegal City in 2019 based on production volume. According to the data, the commodity with the highest volume was flat anchovy, recording 1,947.91 tons. This was followed by fringescale sardine (tembang) at 621.15 tons and "grogo" shrimp at 397.66 tons. Additionally, rice anchovy and tilapia were also ranked among the top five commodities with the highest production volumes.

These findings indicate that in 2019, flat anchovy served as the primary commodity supporting capture fisheries production in Tegal City. The dominance of flat anchovy further underscores its significant role in the structure of fisheries production at the beginning of the research period.

Table 3. Leading Commodities in 2019 Based on Production Value

Rangking	Comodity	Production Value (Rp million)
1	Flat anchovies	17,935
2	Anchovies and rice	12,094
3	Crab	2,476
4	Shrimp grogo	2,174
5	Indigo	1,545

Source: Processed data, 2026

Table 3 presents the five leading capture fisheries commodities in Tegal City in 2019, ranked by production value. Based on the table, flat anchovy held the top position with a production value of IDR 17,935 million, followed by rice anchovy at IDR 12,094 million and blue swimming crab at IDR 2,476 million. "Grogo" shrimp and tilapia were also among the top five commodities with the highest production values.

These results demonstrate that in 2019, flat anchovy was not only dominant in terms of production volume but also served as the commodity with the greatest economic value. However, the emergence of the blue swimming crab in third place by production value indicates that commodities with lower production volumes can still deliver high economic returns, driven by their premium market prices.

Table 4. Leading Commodities in 2020 Based on Production Volume

Rangking	Comodity	Volume (tons)
1	Flat anchovies	17,935
2	Anchovies and rice	12,094
3	Crab	2,476

Rangking	Comodity	Volume (tons)
4	Shrimp grogo	2,174
5	Indigo	1,545

Source: Processed data, 2026

Table 4 presents the top five leading capture fisheries commodities in Tegal City in 2020 based on production volume. According to the data, flat anchovy recorded the highest volume at 1,174.15 tons, followed by fringescale sardine (*tembang*) at 430.56 tons and Grogo shrimp at 242.33 tons. Additionally, tilapia and rice anchovy were ranked among the top five commodities with the highest production volumes. These findings indicate that in 2020, flat anchovy remained the primary commodity in the capture fisheries production structure of Tegal City. Although the production volume of flat anchovy declined compared to 2019, it continued to demonstrate strong dominance over other commodities.

Table 5. Leading Commodities in 2020 Based on Production Value

Rangking	Comodity	Production Value (Rp million)
1	Flat anchovies	11,742
2	Song	4,306
3	Indigo	2,790
4	Shrimp grogo	2,440
5	Anchovies and rice	2,054

Source: Processed data, 2026

Table 5 presents the top five leading capture fisheries commodities in Tegal City in 2020, ranked by production value. Based on the table, flat anchovy held the top position with a production value of IDR 11,742 million, followed by fringescale sardine (*tembang*) at IDR 4,306 million and tilapia at IDR 2,790 million. Grogo shrimp and rice anchovy were also included in the group of the five commodities with the highest production values. These results demonstrate that in 2020, flat anchovy remained the commodity with the highest economic value as well as the highest production volume. Consequently, in 2020, flat anchovy played a dominant role in terms of both production quantity and economic contribution to the capture fisheries sector in Tegal City.

Table 6. Leading Commodities in 2021 Based on Production Volume

Rangking	Comodity	Volume (tons)
1	Flat anchovies	520.06
2	Shrimp grogo	250.27
3	Song	249.36
4	Indigo	178.15
5	Anchovies and rice	165.93

Source: Processed data, 2026

Table 6 illustrates the top five leading capture fisheries commodities in Tegal City in 2021 based on production volume. According to the table, the commodity with the highest volume was flat anchovy at 520.06 tons, followed by grogo shrimp at 250.27 tons and fringescale sardine (*tembang*) at 249.36 tons. Additionally, tilapia and rice anchovy were also ranked among the top five commodities with the highest production volumes. These data indicate that in 2021, flat anchovy remained the primary commodity supporting capture fisheries production in Tegal City.

The dominance of flat anchovy further suggests that this commodity played a vital role in the structure of capture fisheries production during this research period.

Table 7. Leading Commodities in 2021 Based on Production Value

Rangking	Comodity	Production Value (Rp million)
1	Anchovies and rice	9,733
2	Flattened anchovies	5,971
3	Indigo	2,822
4	Shrimp grogo	1,650
5	Mackerel Board	641

Source: Processed data, 2026

Table 7 presents the five leading capture fisheries commodities in Tegal City in 2021, ranked by production value. According to the table, rice anchovy held the top position with a production value of IDR 9,733 million, followed by flat anchovy at IDR 5,971 million and tilapia at IDR 2,822 million. Grogo shrimp and Indo-Pacific king mackerel (*tenggiri papan*) were also included among the top five commodities with the highest production values. These results demonstrate that a high production volume does not always guarantee the highest production value; in 2021, rice anchovy emerged as the commodity with the greatest economic value despite having a lower volume than flat anchovy. Consequently, the economic value of fishery commodities is influenced not only by production quantity but also by the market price of the respective commodities.

Table 8. Leading Commodities in 2022 Based on Production Volume

Rangking	Comodity	Volume (tons)
1	Flat anchovies	1,034.78
2	Song	408.43
3	Anchovies and rice	192.98
4	Indigo	190.80
5	Crab	131.70

Source: Processed data, 2026

Table 8 presents the top five leading capture fisheries commodities in Tegal City in 2022 based on production volume. According to the data, flat anchovy recorded the highest production volume at 1,034.78 tons, significantly surpassing other commodities. This was followed by fringescale sardine (*tembang*) at 408.43 tons, rice anchovy at 192.98 tons, tilapia at 190.80 tons, and blue swimming crab at 131.70 tons. The dominance of flat anchovy in 2022 demonstrates that this commodity remains the primary mainstay of capture fisheries production in Tegal City. Furthermore, the inclusion of blue swimming crab in the top five indicates the growing role of this commodity within the regional fisheries production structure.

Table 9. Leading Commodities in 2022 Based on Production Value

Rangking	Comodity	Production Value (Rp million)
1	Flat anchovies	12,724
2	Anchovies and rice	11,216
3	Crab	10,711
4	Indigo	3,263
5	Song	1,114

Rangking	Comodity	Production Value (Rp million)
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Source: Processed data, 2026

Table 9 presents the five leading capture fisheries commodities in Tegal City in 2022, ranked by production value. Based on the table, flat anchovy held the top position with a production value of IDR 12,724 million, followed by rice anchovy at IDR 11,216 million and blue swimming crab at IDR 10,711 million. Tilapia and fringescale sardine (*tembang*) were also included among the top five commodities with the highest production values. In contrast to 2021, in 2022, flat anchovy was not only dominant in volume but also became the commodity with the highest production value. This indicates that in 2022, flat anchovy provided the most dominant contribution in terms of both quantity and economics, while blue swimming crab began to emerge as a high-value commodity despite having a lower volume compared to anchovies and sardines.

Table 10. Leading Commodities in 2023 Based on Production Volume

Rangking	Comodity	Volume (tons)
1	Flat anchovies	777.40
2	Indigo	617.27
3	Crab	420.80
4	Song	302.10
5	Silver barb	178.47

Source: Processed data, 2026

Table 10 presents the top five leading capture fisheries commodities in Tegal City in 2023 based on production volume. According to the table, the highest volume was still dominated by flat anchovy at 777.40 tons, followed by tilapia at 617.27 tons and blue swimming crab at 420.80 tons. Furthermore, fringescale sardine (*tembang*) and silver barb (*genggehek/tawes*) were also ranked among the top five commodities with the highest production volumes. This table illustrates that in 2023, the capture fisheries production structure in Tegal City became increasingly diverse; in addition to marine commodities such as anchovies and blue swimming crabs, inland water commodities like tilapia and silver barb also provided significant contributions. This condition indicates a diversification of fisheries production sources in Tegal City.

Table 11. Leading Commodities in 2023 Based on Production Value

Rangking	Comodity	Production Value (Rp million)
1	Crab	29,805
2	Indigo	10,499
3	Anchovies and rice	8,600
4	Flattened anchovies	6,486
5	Cork	4,551

Source: Processed data, 2026

Table 11 presents the five leading capture fisheries commodities in Tegal City in 2023, ranked by production value. Based on the table, blue swimming crab (*rajungan*) held the top position with a production value of IDR 29,805 million, significantly higher than other commodities. This was followed by tilapia at IDR 10,499 million, rice anchovy at IDR 8,600 million, flat anchovy at IDR 6,486 million, and snakehead murrel (*gabus*) at IDR 4,551 million. These results indicate a significant shift in 2023, where blue swimming crab emerged as the commodity with the highest economic value

despite having a lower production volume than flat anchovy. This condition underscores that blue swimming crab is a high-value strategic commodity, playing a vital role in generating the economic value of capture fisheries in Tegal City.

Table 12. Leading Commodities in 2024 Based on Production Volume

Rangking	Comodity	Volume (tons)
1	Crab normal	551.22
2	Flat anchovies	423.93
3	Song line yellow	224.56
4	Anchovy rice division	112.33
5	Indigo	84.29

Source: Processed data, 2026

Table 12 presents the top five leading capture fisheries commodities in Tegal City in 2024 based on production volume. According to the table, blue swimming crab (*rajungan biasa*) emerged as the commodity with the highest volume at 551.22 tons, followed by flat anchovy at 423.93 tons and goldstripe sardinella (*tembang garis kuning*) at 224.56 tons. Meanwhile, rice anchovy and tilapia were also ranked among the top five commodities by volume. In contrast to previous years which were dominated by flat anchovy, in 2024, blue swimming crab successfully secured the leading position in terms of production volume. This indicates a shift in the structure of leading commodities, where blue swimming crab is increasingly strengthening its position as a primary commodity in Tegal City's capture fisheries.

Table 13. Commodities Featured 2024 Based on Production Value

Rangking	Comodity	Production Value (Rp million)
1	Crab normal	33,087
2	Anchovy rice division	5.106
3	Flattened anchovies	4,438
4	Indigo	1,011
5	Song line yellow	558

Source: Processed data, 2026

Table 13 presents the five leading capture fisheries commodities in Tegal City in 2024, ranked by production value. Based on the table, blue swimming crab (*rajungan biasa*) held the top position with a production value of IDR 33,087 million, significantly higher than other commodities. Rice anchovy ranked second with IDR 5,106 million, followed by flat anchovy at IDR 4,438 million, tilapia at IDR 1,011 million, and goldstripe sardinella (*tembang garis kuning*) at IDR 558 million. This table illustrates that in 2024, blue swimming crab was not only superior in terms of volume but also highly dominant in terms of economic value. Consequently, it can be concluded that blue swimming crab was the most strategic commodity in Tegal City in 2024.

Table 14. Leading Capture Fisheries Commodities in Tegal City (2019–2024) Based on Total Production Volume

Rangking	Grup/Comodity	Total Volume (tons)
1	Anchovies	6,822.18
2	Lemuru	2,237.14
3	Indigo	1,349.23

Rangking	Grup/Comodity	Total Volume (tons)
4	Shrimp	1,268.98
5	Crab	1,140.98

Source: Processed data, 2026

Table 14 presents the leading capture fisheries commodities in Tegal City during the 2019–2024 period based on total production volume. According to the table, anchovies (*teri*) held the top position with a total volume of 6,822.18 tons, followed by sardinella (*lemuru*) at 2,237.14 tons, tilapia (*nila*) at 1,349.23 tons, shrimp (*udang*) at 1,268.98 tons, and blue swimming crab (*rajungan*) at 1,140.98 tons. These results demonstrate that throughout the six-year observation period, anchovies were the most dominant commodity in terms of production quantity. This dominance underscores that anchovies serve as the primary backbone of capture fisheries production in Tegal City, as their total volume significantly exceeds that of other commodity groups.

Table 15. Commodities Featured Fishery Capture the City of Tegal 2019–2024 Based on Total Production Value

Rangking	Grup/Comodity	Total Production Value (Rp million)
1	Anchovies	108,185
2	Crab	76,079
3	Indigo	21,930
4	Shrimp	12,565
5	Lemuru	8,672

Source: Processed data, 2026

Table 15 presents the leading capture fisheries commodities in Tegal City throughout the 2019–2024 period, ranked by total production value. According to the table, anchovies (*teri*) held the top position with a total production value of IDR 108,185 million, followed by blue swimming crab (*rajungan*) at IDR 76,079 million, tilapia (*nila*) at IDR 21,930 million, shrimp (*udang*) at IDR 12,565 million, and sardinella (*lemuru*) at IDR 8,672 million.

These results demonstrate that over the six-year observation period, anchovies were not only the dominant commodity in terms of production volume but also provided the largest economic contribution to the capture fisheries sector in Tegal City. Nevertheless, blue swimming crab remains a strategic commodity as it secured the second position based on production value. This indicates that the commodity possesses high economic value despite having a lower total volume compared to anchovies.

Table 16. Summary Commodity Featured per Year

Year	Featured By Volume	Featured Based on Production Value
2019	Flat anchovies	Flat anchovies
2020	Flat anchovies	Flat anchovies
2021	Flat anchovies	Anchovies and rice
2022	Flattened anchovies	Flat anchovies
2023	Flat anchovies	Crab
2024	Crab normal	Crab normal

Source: Processed data, 2026

Table 16 provides a summary of the leading commodities per year based on production volume and value during the 2019–2024 period. According to the table, in 2019 and 2020, flat anchovy held the leading position in both production volume and value, indicating its strong dominance at the beginning of the research period. In 2021, flat anchovy remained the leader in terms of volume, while rice anchovy secured the highest position in terms of production value. The year 2022 again showed that flat anchovy was the leading commodity in both volume and value. Furthermore, a shift occurred in 2023, where flat anchovy led in volume, while blue swimming crab became the leading commodity based on production value. By 2024, blue swimming crab emerged as the leading commodity in both volume and value. These findings demonstrate that the structure of leading capture fisheries commodities in Tegal City has undergone a transition from the dominance of flat anchovy toward the strengthening of blue swimming crab, particularly toward the end of the research.

Table 17. Main Findings of the Research

Rangking	Findings	Information
1	Production highest happened in 2019	Total volume reached 3,777.54 tons
2	Production value highest will happen in 2023	Total value production reached Rp. 76,724 million
3	Commodity featured based on volume is anchovies	Total volume reached 6,822.18 tons during 2019–2024
4	Commodity featured based on mark production is anchovies	Total value production reached Rp. 108,185 million during 2019–2024
5	Crab become commodities strategic worth tall	Total value production reached Rp. 76,079 million and strengthened at the end period
6	The year 2024 shows decline	Both volume and mark production decrease compared to 2023

Source: Processed data, 2026

Table 17 summarizes the key findings of the research regarding the leading capture fisheries commodities in Tegal City from 2019 to 2024. Based on the table, the highest production occurred in 2019 with a total volume of 3,777.54 tons, while the peak production value was achieved in 2023 with a total of IDR 76,724 million. Overall, anchovies (*teri*) emerged as the primary leading commodity in terms of both total volume and total production value throughout the research period, recording 6,822.18 tons and IDR 108,185 million, respectively. Nevertheless, blue swimming crab (*rajungan*) remains a high-value strategic commodity, as it recorded a total production value of IDR 76,079 million and showed strengthening growth, particularly toward the end of the research period. These findings suggest that the development of capture fisheries in Tegal City should focus on sustaining high-output commodities such as anchovies while optimizing high-value commodities like blue swimming crabs.

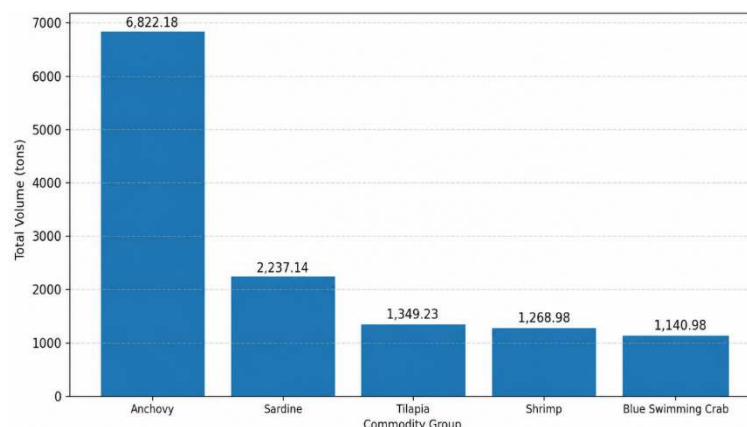


Figure 1. Total Production Volume 2019-2024

Figure 1 illustrates the five leading capture fisheries commodities in Tegal City from 2019 to 2024, ranked by total production volume. The data reveals that anchovies (teri) held the most prominent position with a total output of 6,822.18 tons, significantly outperforming other commodities. This was followed by sardinella (lemuru) at 2,237.14 tons, tilapia (nila) at 1,349.23 tons, shrimp (udang) at 1,268.98 tons, and blue swimming crab (rajungan) at 1,140.98 tons. The overwhelming dominance of the anchovy group underscores its role as the primary backbone of Tegal City's capture fisheries production throughout the research period. Furthermore, the substantial gap between anchovies and other commodities, as shown in the chart, leads to the conclusion that anchovies are the most consistent and dominant commodity in terms of catch quantity.

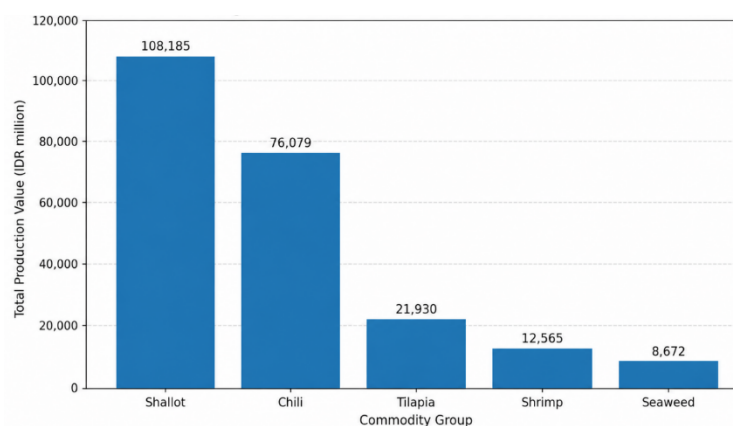


Figure 2. Total Production Value 2019-2024

Figure 2 illustrates the top five capture fisheries commodities in Tegal City from 2019 to 2024, ranked by total production value. The chart indicates that anchovies (teri) held the leading position with a total production value of IDR 108,185 million, followed by blue swimming crab (rajungan) at IDR 76,079 million. Other significant contributors included tilapia (nila) at IDR 21,930 million, shrimp (udang) at IDR 12,565 million, and sardinella (lemuru) at IDR 8,672 million.

These results demonstrate that over the six-year observation period, anchovies provided the most significant economic contribution to Tegal City's capture fisheries sector. Nevertheless, blue swimming crab maintains a highly strategic status, securing the second rank with a substantial production value. This graph underscores that leading commodities are determined not only by the physical volume of the catch but also by the significant economic value generated by each species.

CONCLUSION

Based on the analysis of the 2019–2024 period, anchovies (*teri*) emerged as the leading capture fisheries commodity in Tegal City in terms of total production volume, recording 6,822.18 tons. Similarly, anchovies also held the top position based on total production value, amounting to IDR 108,185 million. These results demonstrate that throughout the six-year observation period, anchovies remained the most dominant commodity, both in terms of production quantity and economic contribution.

Nevertheless, blue swimming crab (*rajungan*) continues to be a high-value strategic commodity, securing the second rank with a total production value of IDR 76,079 million. Consequently, the development of capture fisheries in Tegal City should be directed toward efforts to sustain high-output commodities such as anchovies while simultaneously optimizing high-economic-value commodities like blue swimming crabs.

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