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Trends in Fish Production and Consumption in Nigeria: Implications for Food and Nutrition Security

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Abstract Fish is a vital source of animal protein in Nigeria and offers numerous health benefits. Yet, limited data on fish production and consumption hamper the efforts of policymakers to improve access to protein-rich fish diets in the country. This study examined the recent trends in the country's production and consumption of fishery products using secondary data from FAO FishstatJ. Results revealed that total fish production in Nigeria increased 3.4 times, from 316 thousand metric tons in 1990 to 1.05 million metric tons in 2023. Three-fourths of the total fish production in 2023 was from capture fisheries. Fish consumption in Nigeria has fluctuated over the years. Per capita seafood consumption increased from 10.86 kg in 1990 to 15.07 kg in 2011 and then gradually declined to 6.9 kg in 2023. Increasing fish consumption and reducing malnutrition in Nigeria will depend to a large extent on the sustainable management of fisheries resources and increased aquaculture production.

Keywords Aquaculture; Capture fisheries; Fish; Food security; Nigeria; Nutrition

1 Introduction

Fisheries are a vital source of nutrition and income for billions of people worldwide (Bennett et al., 2018; Adewale and Deb, 2026). The fisheries sector, comprising aquaculture and capture fisheries, has been recognized as a crucial industry in achieving global food security. Aquaculture, which is the controlled process of cultivating aquatic organisms such as fish, crustaceans, mollusks, and aquatic plants, has shown significant growth and accounted for about 49.2% of total global fishery production in 2020 (Chopin and Tacon, 2021). Capture fisheries, which involve harvesting natural fish stocks from marine and inland waters, accounted for the remainder of global production in 2020 (Hilborn et al., 2020). This subsector is critical for the production of major fish species, with production heavily concentrated in specific marine areas that are conducive to large-scale industrial fisheries (Brummett et al., 2008).

Nigeria ranks third worldwide in the number of people who rely on coastal fishing for food and nutrition security. Fisheries and aquaculture contribute significantly to the national economy, providing direct and indirect employment to millions of people (Adewumi, 2015). Nigeria has substantial marine and inland aquatic resources that support domestic fish production (Olaoye and Ojebiyi, 2018; Ogunji and Wuertz, 2023). The country has a vast coastline that extends approximately 853 km along the Atlantic Ocean and an extensive network of inland water bodies (Olaoye and Ojebiyi, 2018). These aquatic resources have historically supported vibrant fishing communities and contributed to the country's food security. Nigeria has a continental shelf spanning approximately 256,000 km², an exclusive economic zone covering an area of 210,900 km², and a marine area of 46,000 km² (Ogunji and Wuertz, 2023). Nigeria has around 14 million hectares of water bodies, including ponds, major rivers, lakes, and reservoirs, which can produce approximately 980,000 metric tonnes of fish annually (Oladimeji, 2017). The total amount of surface water in the area is estimated to be around 286,200 million m³, while the groundwater volume is roughly 87 billion m³. These water sources can be partially utilized for aquaculture and artisanal fishing (Oladimeji, 2017; Talabi, 2018).

The global fisheries sector employs around 60 million people, whereas in Nigeria, around 1.5 million individuals were reported to be involved in the fisheries sector (FAO, 2022). The Nigerian economy greatly benefits from

fisheries output due to its crucial role in ensuring affordable food and nutrition, generating income, and serving as a source of foreign exchange, especially for riverine areas (Ye et al., 2024). The fisheries industry is important in Nigeria's agricultural sector and accounted for 3.5%-4.0% of the country's overall Gross Domestic Product (GDP) between 2008 and 2012 (Oladimeji et al., 2013). In 2020, the fishing sector accounted for 1.09% of the national GDP, while in the third quarter of 2021, it accounted for 0.97% (Odioko and Becer, 2022). The production of fish and fishery products encompasses all the processes involved in cultivating and harvesting fish and other aquatic resources primarily for human consumption (Diana, 2009). However, alternative objectives such as sport or recreational fishing, as well as acquiring ornamental fish or fish products like fish oil, are also feasible (Cooke et al., 2016). Nigeria's fisheries sector is characterized by a diverse array of fish species, harvested through various fishing methods ranging from artisanal practices to industrial-scale operations (Adeyeye, 2016). The country's overall fish production encompasses marine, coastal, and inland fisheries, each contributing uniquely to the overall fish supply chain (Talabi, 2016). Marine catches account for 36 percent of this total, inland waterways contribute 33 percent, and aquaculture makes up the remaining 31 percent (Odioko and Becer, 2022). Marine fisheries exploit the abundant resources of the Atlantic Ocean, while inland fisheries tap into the country's rivers, lakes, and reservoirs, providing opportunities for both small-scale and commercial fishing enterprises (Saba et al., 2024). Fish represents a significant protein source in the Nigerian diet, particularly for coastal and riverine communities, where it often serves as a dietary staple (Fakoya et al., 2021). Moreover, fish consumption is associated with various health benefits, as it is rich in essential nutrients such as omega-3 fatty acids, vitamins, and minerals, contributing to overall well-being and nutritional security (Maulu et al., 2021). Fish also serves as one of the most affordable sources of animal protein for many Nigerians (FAO, 2022). Despite Nigeria's abundant fishing resources, the country nonetheless faces a substantial protein deficiency (Anthony and Richard, 2016). The present protein intake is insufficient, as it fails to satisfy the safe intake level of 0.83 g of protein per kg of body weight per day as jointly established by the WHO/UNU/FAO (WHO and UNU, 2007). There is a higher demand for fish, along with other animal proteins, than what is currently available due to the nation's growing population (Oladimeji et al., 2013). The Nigerian Ministry of Agriculture and Rural Development estimated the country's fish demand at 3.6 million tonnes in 2021. Nevertheless, the country could meet only about 31% of this requirement and therefore depended on imports to bridge the remaining deficit (Imade and Odum, 2024). In 2020, the government spent a total of USD 867.7 million on importing frozen fish, excluding fish fillets and other types of fish. However, the country only earned USD 106,964 through exports (Odioko and Becer, 2022). The fisheries sector faces multifaceted challenges that hinder its full potential to contribute to national development and food security (Sumaila et al., 2016). Overfishing, illegal, unreported, and unregulated (IUU) fishing, habitat degradation, pollution, and inadequate infrastructure are among the key issues confronting the industry (Funge - Smith and Bennett, 2019). These challenges are exacerbated by factors such as population growth, climate change, inadequate regulatory frameworks, and limited access to finance and technology, which further strain the resilience of fisheries ecosystems and the livelihoods dependent on them (Islam et al., 2020).

Several empirical studies have examined the production and consumption of fish and fishery products, including a study by Obiero et al. (2019), who reported that the East African region experienced a shortage of fish supply, resulting in a low per capita consumption of fish. However, the rise in fish imports and the expanding availability of fish from aquaculture are expected to enhance the amount of fish consumed per person. A study by Olaifa et al. (2022) indicated that a 1% increase in overall fish production in Nigeria was associated with a corresponding 655.88% improvement in food security. Similarly, a 1% increase in the number of anglers was associated with a 28.01% gain in food security levels. Akintola et al. (2017) revealed that the fisheries and aquaculture industries in Nigeria suffered from inadequate availability and accessibility of improved agricultural processes and inputs and posited that enhanced technical services and use of up-to-date technologies will lead to a boost in productivity and revenue. According to Akegbejo-Samsons (2022), the per capita fish intake in Nigeria has decreased in the last decade due to population growth and a decrease in the availability of aquatic products in markets. In a study by Temesgen et al. (2019) in Sub-Saharan Africa, it was reported that the contribution of capture fisheries to food and nutrition security and to the economies of impoverished societies is often underestimated because more than 50% of production comes from small-scale artisanal fisheries.

There is a growing body of literature on the production and consumption of fish and fishery products. There is, however, a dearth of knowledge on the recent trends and status in Nigeria. There is still a lack of sufficient information to assist policymakers in implementing evidence-based strategies that can enhance the availability and accessibility of protein-rich diets from fishery products. Therefore, this study aimed to provide a comprehensive analysis of the production and consumption of fish and fishery products in Nigeria, examining recent trends and status, and highlighting their implications for food and nutrition security.

2 Methodology

2.1 Data sources

This study utilized secondary data obtained from the FAO FishStatJ/FishStat database. FishStatJ is a comprehensive fisheries statistics tool developed by the FAO, providing access to global fisheries and aquaculture data collected from national and international sources. The FAO database contains extensive information on fish production, consumption, trade, and other relevant indicators, facilitating the analysis of trends and patterns within the fisheries sector (FAO FishStatJ, 2025). Fish-production data were extracted from the Global Aquaculture Production collection for aquaculture output and the Global Capture Production collection for capture-fisheries landings. These production series were reported in live-weight tonnes and were used to estimate aquaculture production, capture-fisheries production, total fish production, and species-level production trends. Total fish production was calculated as the sum of reported aquaculture and capture-fisheries production for each year. FAO production statistics cover aquatic animals harvested through culture and capture, expressed in live-weight equivalents.

Data on fish availability for human consumption were obtained from the FAO FishStatJ Consumption of Aquatic Products database, also referred to as the fishery food balance sheets/apparent consumption collection. Specifically, the study used the indicators for food supply quantity (kg/capita/year) to measure per capita fish apparent consumption and protein supply quantity (g/capita/day) to measure fish-protein supply and the contribution of fish protein to total animal-protein supply. The consumption series were extracted for total fish and relevant fish-source groups, including freshwater fish, demersal fish, pelagic fish, marine fish, crustaceans, molluscs, and cephalopods, where available. These indicators represent apparent food availability for human consumption rather than directly observed household intake; FAO derives per-capita supply by dividing food supply by population. Annual population data for Nigeria were obtained from the World Bank's World Development Indicators database. Population data were used to describe demographic change alongside fish-production trends and to contextualize changes in per-capita fish availability and protein supply.

2.2 Data analysis

Descriptive trend analysis was conducted using annual time-series data for Nigeria (1990-2023) to examine the historical patterns and trajectories of fish production and consumption in Nigeria. Area graphs were used to show trends in aquaculture production, capture-fisheries production, total fish production, per capita fish consumption, and fish-protein supply, while bar charts were used to describe production by major fish species. Annual growth rates were estimated using a semi-logarithmic time-trend regression model (Equation 1):

$$\ln[\hat{f}_0](Y_t) = \alpha + \beta t + \varepsilon_t \quad (\text{Equation 1})$$

Where Y_t represents the indicator of interest in year t , α is the intercept, β is the time-trend coefficient, and ε_t is the error term. The regressions were estimated for 1991-2023 by fish sources. The annual growth rate was calculated as $[\exp(\beta) - 1] \times 100$. A positive coefficient indicates an average annual increase, whereas a negative coefficient indicates an average annual decline.

3 Results and Discussion

3.1 Trends in aquaculture and capture fisheries production

Nigeria's total fish production increased substantially between 1990 and 2023. Total production rose from 316,000 tonnes in 1990 to 1,058,435 tonnes in 2023, an increase of 230%. Capture-fisheries production increased from

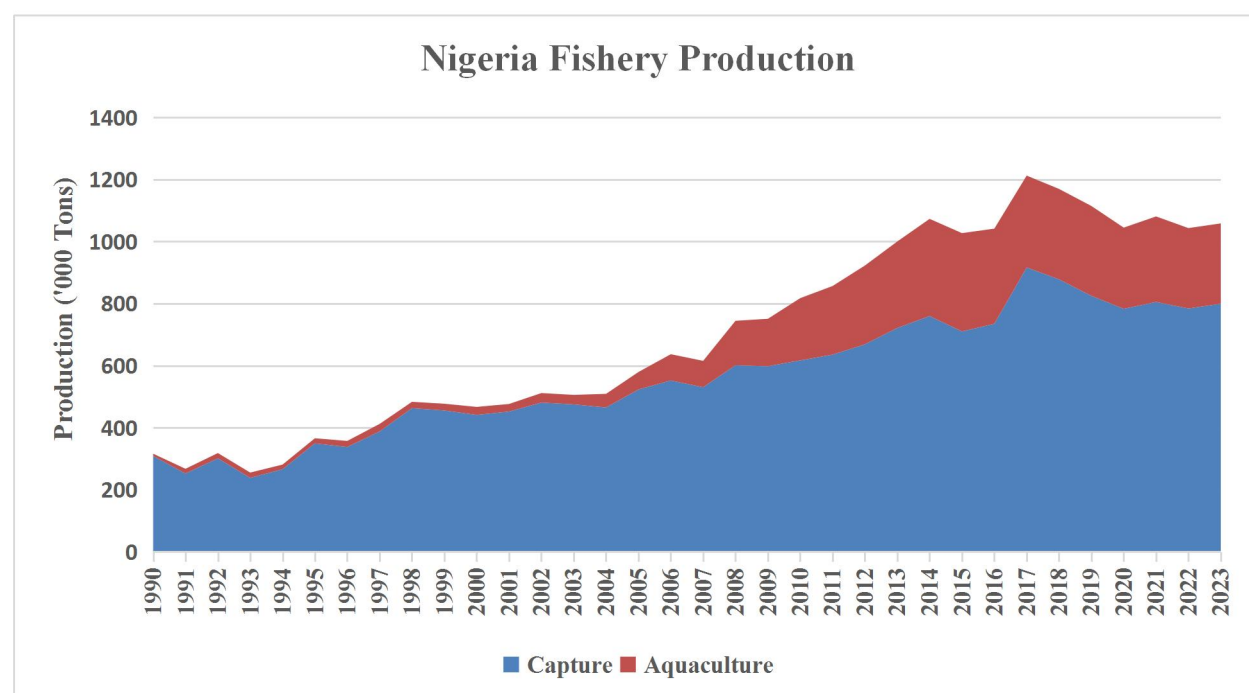
approximately 309,000 tonnes in 1990 to 799,635 tonnes in 2023, an increase of 154% (Figure 1). Over the same period (1990-2023), the estimated annual growth rates were 11.40% for aquaculture, 2.92% for capture fisheries, and 3.73% for total fish production (Table 1). Olaoye and Ojebiyi (2018) reported that the capture-fisheries production constitutes a significant portion of Nigeria's total fish production. Nigeria is the second-largest aquaculture producer in Africa, after Egypt (Walakira et al., 2023). Nigeria ranks first among aquaculture producers in sub-Saharan Africa (SSA), with production rising from roughly 7,347 tonnes in 1990 to approximately 259,000 tonnes in 2023, a 3,425% increase (Figure 1). During the same period, Nigeria's population grew from 95.21 million in 1990 to 227.9 million in 2023, according to the World Bank (2025).

Table 1 Annual growth rates of fish production in Nigeria, 1990-2023

Source	Annual growth rate (%) (1990-2023)
Aquaculture	11.40
Capture fisheries	2.92
Total fish production	3.73

Source: FAO FishStatJ data (2025)

Note: Growth rates were estimated by regressing the natural logarithm of fish production (Y) on time (t)



Source: Prepared by the authors based on FAO FishStatJ data

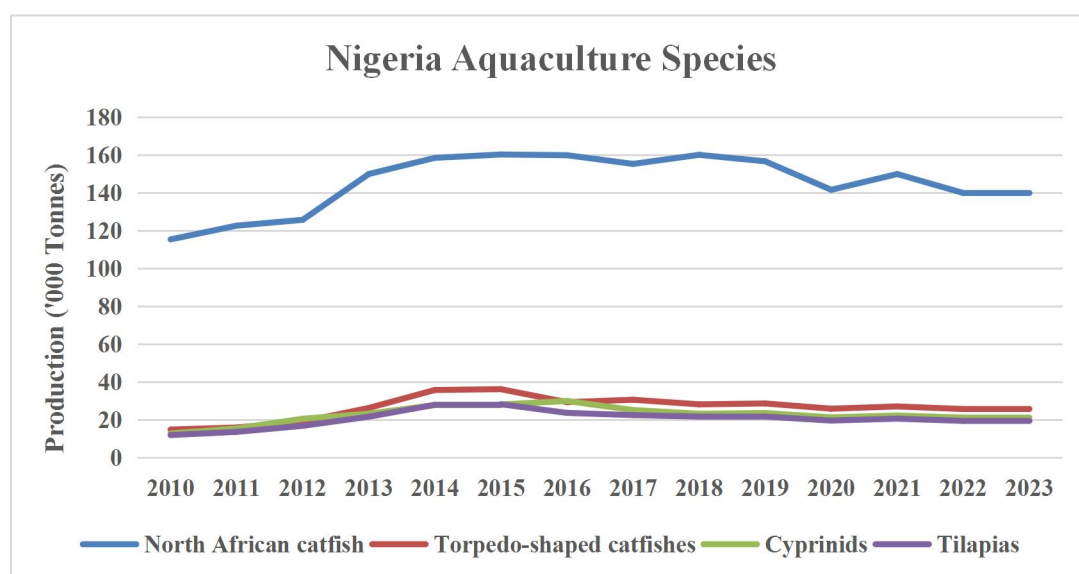
Figure 1 Trends in aquaculture and capture-fisheries production in Nigeria, 1990-2023

Aquaculture production declined after 2015, from 316,727 tonnes in 2015 to 261,710 tonnes in 2020. It increased to 275,645 tonnes in 2021 before declining to 258,800 tonnes in 2023 (Figure 1). Odioko and Becer (2022) reported that the majority (74.09%) of Nigeria's domestic fish production was generated by artisanal small-scale fishers in 2018. These fishers primarily operated in lagoons, creeks of the Niger Delta, inshore regions, lakes, coastal areas, and inland rivers. In 2018, aquaculture and industrial fisheries only contributed 24.91% and 1%, respectively, to the overall fish production (Subasinghe et al., 2021). This pattern indicates that industrial fisheries and aquaculture accounted for a smaller share of reported production than artisanal capture fisheries during the referenced period. There has been some initial advancement in the development of the industrial fishing sector; however, the fleet and infrastructure are ageing and outdated (Irabor et al., 2024). The National Bureau of Statistics 2017 report on Nigeria's fish output reveals that out of the total fish production of 5.79 million tonnes between 2010 and 2015, only 204,403 tonnes were attributed to the industrial production of fish and shrimp (Oluwarore, 2018). The aquaculture industry is largely driven by private enterprises, which supply feed and seed

through private corporations (Emmanuel et al., 2014). Nigeria's position as a leading aquaculture producer in SSA has been reinforced by recent private investment and renewed efforts to promote private-sector involvement in aquaculture development (Ogunji and Wuertz, 2023). Capture-fisheries production began to decline after 2017 (Figure 1). Compared with population growth from 184 million in 2015 to 208.3 million in 2020, the decline in aquaculture production highlights a widening gap between population growth and fish production. Greater aquaculture output is needed to complement wild-caught fish and help meet national fish demand.

3.2 Major cultured and captured fish species

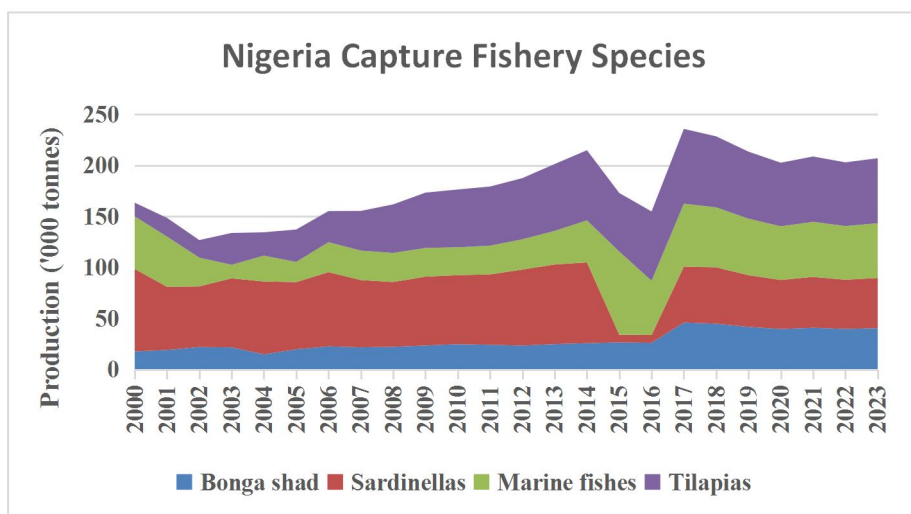
North African catfish (*Clarias gariepinus*) is the most commonly farmed fish species in Nigeria. Since 2010, annual production has exceeded 110,000 tonnes (Figure 2). The species accounted for about 68% of cultured-fish production in 2023 and has represented approximately half of annual farmed-fish production since 2010 (Figure 2). North African catfish dominate aquaculture production because hatchery managers have well-established breeding expertise (FAO, 2022). The next most commonly cultured group was torpedo-shaped catfishes nei, followed by cyprinids (minnows and carps) and tilapias, as shown in Figure 2. In FAO FishStatJ, 'torpedo-shaped catfishes nei' is an aggregated reporting category that includes species not separately identified in the database; in Nigerian aquaculture, it principally represents *Heterobranchus* spp., particularly *Heterobranchus longifilis*, and may also include the hybrid *Heteroclarias* (*Clarias gariepinus* × *Heterobranchus longifilis*). By contrast, tilapia is the most frequently cultured fish species in Uganda, which is the third-largest aquaculture producer in Africa and the second-largest in sub-Saharan Africa, after Nigeria (Obiero et al., 2019). Other farmed fish species in Nigeria include Nile perch, which is not as common as the above-mentioned species. Emmanuel et al. (2014) reported that African catfish species, including *Clarias gariepinus* (formerly *C. lazera*), are resilient, extensively grown fish in Nigeria, making them widely recognized and highly prized.



Source: Prepared by the authors based on FAO FishStatJ data

Figure 2 Aquaculture production by species in Nigeria, 2010-2023

The main FAO FishStatJ capture-production categories reported for Nigeria include tilapias, marine fishes, sardinellas, Nigerian bonga shad, Nigerian freshwater fishes, giant African threadfin, bagrid catfishes, elephantnose fishes, and North African catfish, among others (FAO FishStatJ, 2025). Nigerian freshwater fishes is an aggregated FAO reporting category rather than a single species and should not be assigned one scientific name. Similarly, tilapias represent a broader taxonomic group. Capture-fisheries trends (Figure 3) show that Nigerian tilapias, marine fishes, Nigerian sardinellas, and Nigerian bonga shad were the four most frequently captured groups and accounted for 63,665 tonnes, 53,680 tonnes, 49,160 tonnes, and 40,470 tonnes, respectively, in 2023. Nigerian bonga shad (*Ethmalosa fimbriata*), a small migratory species, is an important target of fishing activities in Nigeria.

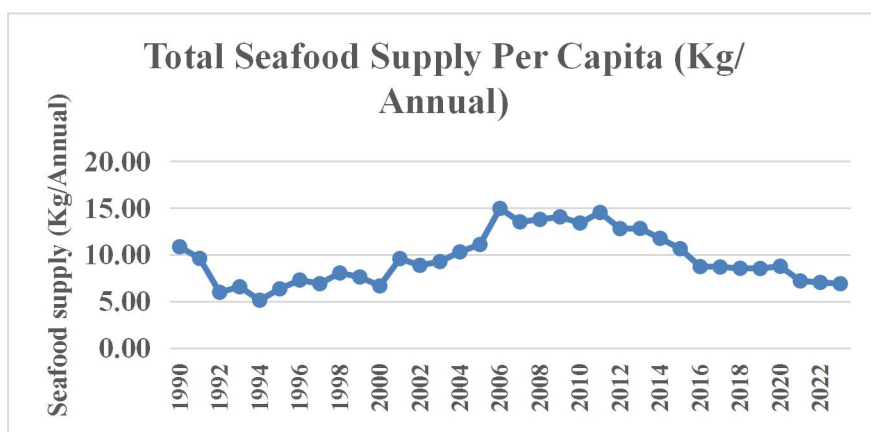


Source: Prepared by the authors based on FAO FishStatJ data

Figure 3 Capture-fisheries production by species in Nigeria, 2000-2023

3.3 Trends in per-capita fish supply and apparent fish consumption

Nigeria relies on substantial frozen-fish imports to supplement domestic supply; in 2020, imports excluding fish fillets and other fish products were valued at USD 867.7 million (Odioko and Becer, 2022). Despite the huge amount spent by the Nigerian government on fishery-product imports, apparent fish consumption in Nigeria decreased from 10.86 kg in 1990 to 6.9 kg in 2023, representing a 36.46% decrease between the two points in time (Figure 4). The decline in fish production in Nigeria may be associated with lower per-capita fish supply in the country (Allison et al., 2009). The trend analysis revealed ups and downs in apparent fish consumption patterns. Since 1990, per-capita fish supply has been fluctuating. It decreased to about 5.14 kg in 1994 and rose to its peak in 2006, accounting for about 14.96 kg before gradually declining (Figure 4). Furthermore, apparent fish consumption in 2023 was 1.99% lower than in the previous year (2022). Additionally, average per-capita annual fish supply declined at an estimated rate of 1.03% during 1991-2023 (Table 2). Furthermore, the analysis of trends in apparent annual fish consumption by fish sources (Table 2) reveals dynamic shifts across various fish sources. Average consumption increased overall, peaking in 2001-2010 before slightly declining in 2011-2023. Pelagic fish consistently dominated consumption but saw a decrease in both absolute terms and share, from 46.9% in 1991-2000 to 34.9% in 2011-2023. Freshwater fish supply, in contrast, significantly increased, becoming more prominent over time. Demersal fish showed fluctuating trends, with a notable decline in recent years. Crustaceans and marine fish maintained lower but relatively stable shares, while molluscs and cephalopods contributed negligibly throughout. These changes may reflect evolving dietary preferences and fish availability.



Source: Prepared by the authors based on FAO FishStatJ data

Figure 4 Per-capita fish consumption (kg/year) in Nigeria, 1990-2023

Table 2 Trends in apparent annual fish consumption by source, 1991-2023

Source of fish	Average fish consumption (kg/capita/year)			Annual growth rate (%)			Share of total consumption (%)		
	1991-2000	2001-2010	2011-2023	1991-2000	2001- 2010	2011- 2023	1991-2000	2001-2010	2011-2023
Cephalopods	0	0	0	0	0	0	0	0	0
Crustaceans	0.17	0.14	0.19	0.54	-13.96	6.13	2.4	1.2	1.9
Demersal fish	1.99	4.04	2.59	-16.38	7.03	-10.11	28.3	33.8	27.2
Freshwater fish	1.23	2.20	3.22	3.30	6.54	-0.12	17.5	18.4	32.1
Marine fish	0.34	0.32	0.38	11.39	-4.28	0.54	4.83	2.68	3.65
Molluscs	0.01	0.02	0.02	0	0	0	0.1	0.2	0.0
Pelagic fish	3.30	5.22	3.36	6.77	0.65	-5.83	46.9	43.7	34.9
Total	7.04	11.94	9.77	-3.59	3.77	-5.18	100	100	100
Per-capita fish consumption (overall)				-1.03					

Source: FAO FishStatJ data (2025)

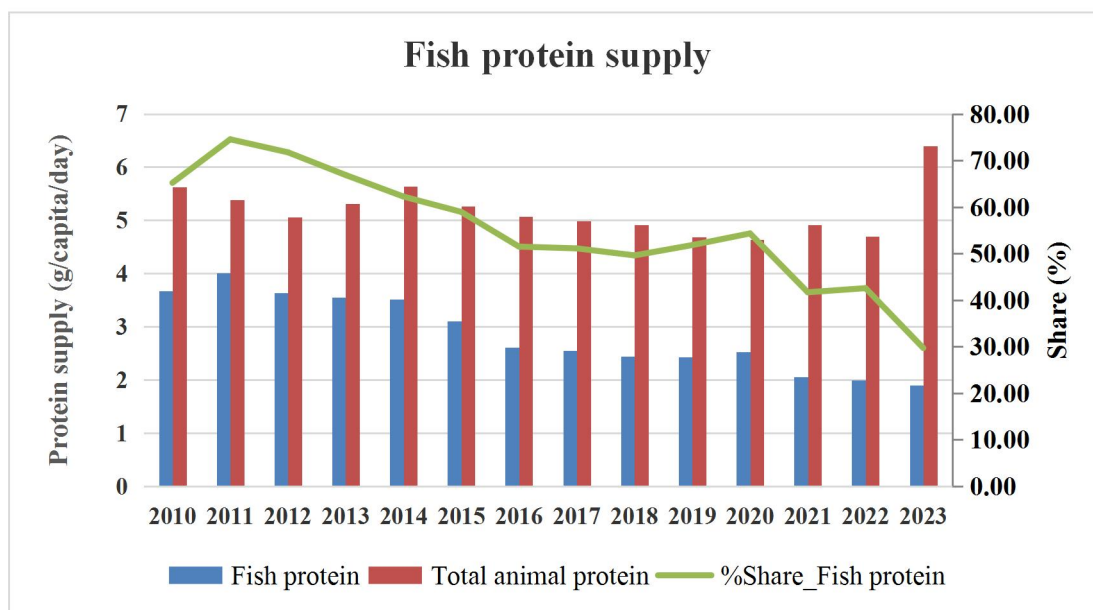
Note: Growth rates were estimated by regressing the natural logarithm of per-capita fish supply (Y) on time (t). Total fish-supply data are available through 2023

3.4 Fish-protein supply in Nigeria

Figure 5 shows that the share of fish-protein supply in Nigeria's total animal protein supply has consistently declined over the observed period. In 2010, fish-protein supply constituted 65% of the total animal protein supply, but this share dropped steadily to 30% by 2023. This decline indicates a reduction in the relative contribution of fish to Nigerians' overall protein diet. The total animal protein supply experienced a decline, although not as sharp as that of fish-protein supply. Starting at 5.63 g in 2010, the total animal protein supply decreased to 4.70 g in 2022. This trend suggests a broader decrease in animal protein supply, which could be due to various factors such as economic conditions, dietary shifts, or changes in food availability. A slight increase in total animal protein supply was observed in 2014 (5.64 g), followed by a steady decline in subsequent years. A sharp increase in total animal protein supply was again observed in 2023 (6.40 g).

Similarly, fish-protein supply saw a small increase in 2011 (4.01 g) before beginning its downward trend (Figure 5). Several factors could explain the declining trend in fish-protein supply. Economic factors such as rising prices of fish, decreased fish availability, and shifts towards other protein sources could play significant roles. Additionally, environmental issues affecting fish populations and supply chains might contribute to reduced apparent fish consumption. Thilsted et al. (2016) reported that the average amount of fish consumed per person worldwide in 2011 was 18.9 kg. In Nigeria, the average was somewhat lower at 15.2 kg. However, by 2018, the global average had climbed to 20.5 kg, while Nigeria's average had decreased to 13 kg (Liverpool-Tasie et al., 2021; Subasinghe et al., 2021).

According to the United Nations (UN), the average amount of fish consumed globally per person has increased from about 9 kg per year to about 20.5 kg per year (Obiero et al., 2019). Fish provide almost 60% of the global animal-protein supply, particularly in underdeveloped nations. Even though fish make up over 30% of Africa's total animal protein, the continent's per capita fish intake is almost half of the world's average. Projections for per capita fish consumption show that, except for Africa, fish consumption is anticipated to rise globally as population growth outpaces fish availability. Fish intake in Africa was projected to decline by 3% from 9.9 kg in 2015-2017 to 9.6 kg in 2027, with SSA experiencing a more significant decline (Muringai et al., 2021). Despite the decline in apparent fish consumption in Nigeria, fish plays a significant role in the diet, providing essential animal protein. Factors such as population growth, urbanization, and income levels influence consumption patterns (Gordon et al., 2013). However, awareness of health benefits and nutritional value has contributed to sustained demand for fishery products in recent years.



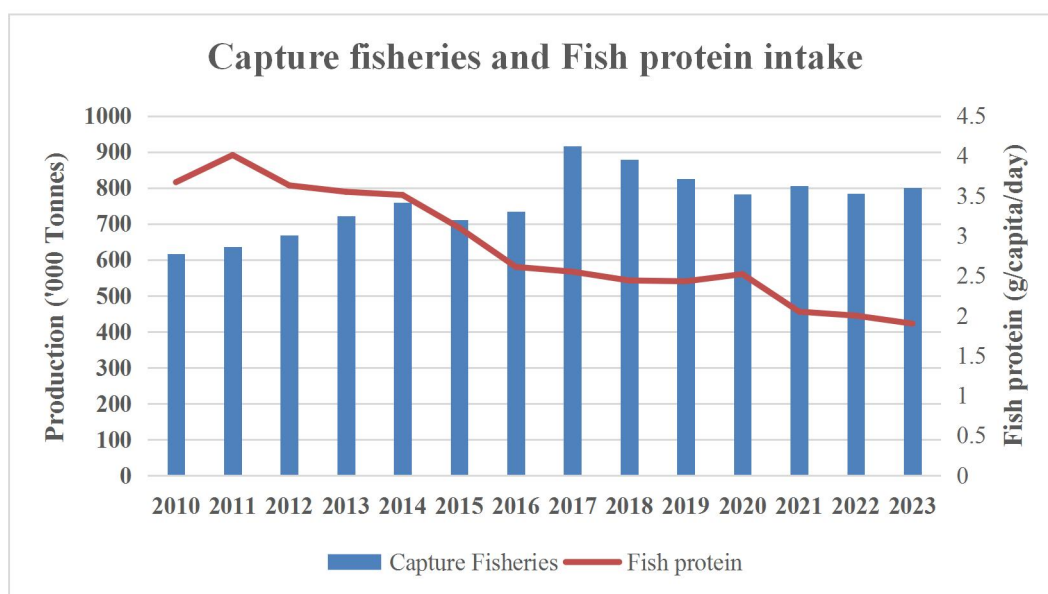
Source: Prepared by the authors based on FAO FishStatJ data

Figure 5 Share of fish-protein supply in total animal-protein supply in Nigeria, 2010-2023

3.5 Dependence on Fish to Meet Dietary Protein Requirements

In Nigeria, fish have traditionally played a significant role in meeting the population's dietary protein requirements. Given the country's extensive coastline and numerous inland water bodies, fish have been a readily available and affordable source of high-quality protein for many communities (FAO, 2022). Dietary protein is essential for muscle growth, tissue repair, and normal physiological function. In Nigeria, where protein deficiency and malnutrition are prevalent, particularly among vulnerable populations, fish consumption is a critical means of addressing food and nutrition insecurity (Fakoya et al., 2021). Fish protein is particularly crucial in a country where other animal protein sources like beef, poultry, and pork might be less accessible or more expensive for a significant portion of the population. Historically, the Nigerian diet has heavily relied on fish to supplement protein intake, making it a staple in many households, particularly in coastal and riverine regions (Akintola and Fakoya, 2017). According to FAO, fish provides approximately 60% of animal protein intake in Nigeria, making it a primary protein source for millions of people (FAO, 2022). The accessibility and affordability of fish make it an indispensable protein source, especially in communities where access to alternative protein-rich foods such as meat and poultry is limited (Mohanty et al., 2019). Furthermore, certain fish species are rich sources of micronutrients such as iron, calcium, and zinc, addressing deficiencies that contribute to anemia, stunting, and other nutritional disorders. Other essential nutrients provided by fishery products include omega-3 fatty acids and vitamins such as vitamin D and B12 (Iannotti et al., 2022). Small pelagic fish, commonly consumed in Nigeria, are particularly abundant in micronutrients, making them valuable contributors to dietary diversity and micronutrient supplementation (Kawarazuka and Béné, 2011).

However, recent trends, as shown in Figures 5 and Figures 6, indicate a diminishing dependence on fish to meet dietary protein needs in Nigeria. There has been a consistent decline in the share of fish-protein supply relative to total animal-protein supply. Several factors could contribute to this decline, including overfishing, environmental degradation, and the impacts of climate change on fish populations (Muringai et al., 2021). Additionally, economic challenges may have increased fish prices, making it less affordable for many Nigerians. Shifts in dietary patterns, influenced by globalization and urbanization, may also lead to a preference for other protein sources such as poultry and legumes, as reported by Fanzo and Davis (2021) in Ghana. Despite these changes, fish remains an important part of the Nigerian diet, but its role in meeting dietary protein requirements appears to be diminishing, necessitating policy interventions to ensure sustainable fish supplies and affordability.



Source: Prepared by the authors based on FAO FishStatJ data

Figure 6 Trends in capture-fisheries production and per-capita fish-protein supply in Nigeria, 2010-2023

3.6 Trends in capture-fisheries production and fish-protein supply

Figure 6 illustrates the trends in capture-fisheries production and per-capita fish-protein supply in Nigeria from 2010 to 2023, revealing an intriguing dynamic. Over this period, capture-fisheries production showed significant fluctuations, starting at 616,981 tonnes in 2010 and peaking at 916,283.97 tonnes in 2017, before declining to 783,101.67 tonnes by 2020 and slightly recovering to 805,210 tonnes in 2021 and reaching 799,635 tonnes in 2023. Despite this overall increase in fish harvests, the share of fish-protein supply in total-animal protein supply consistently declined, from 65% in 2010 to 30% in 2023 (Figure 5). Total fish-protein supply decreased from 3.67 g to 1.9 g in 2023 (Figure 6). The two series show contrasting trends over parts of the study period, suggesting that increased capture fisheries production was not accompanied by a corresponding increase in per-capita fish-protein supply. Possible explanations include fish exports or non-food uses, rising fish prices that limit accessibility, and changes in dietary preferences toward other protein sources. This discrepancy highlights that while fish production has grown, it has not translated into increased domestic consumption of fish protein, indicating the need for policies that improve the distribution, affordability, and accessibility of fish to better meet the dietary protein requirements of the Nigerian population. Boyd et al. (2022) reported that aquaculture and fisheries combined accounted for 17% of total animal-source protein for human consumption.

4 Conclusion

The production and consumption of fish and fishery products in Nigeria are integral components of the nation's economy, contributing significantly to food security, nutrition, livelihoods, and economic development. Nigeria possesses abundant aquatic resources, including marine, coastal, and inland fisheries, which serve as vital sources of protein, essential nutrients, and income for millions of people. However, the fisheries sector is confronted with various challenges, including overfishing, illegal fishing practices, habitat degradation, pollution, inadequate infrastructure, and climate change, which threaten the sustainability and resilience of fish stocks and ecosystems. Moreover, despite the increase in total fish production between 1990 and 2023, per capita fish consumption has declined, indicating that the benefits of increased production are not reaching consumers. The decline in apparent consumption and the decreasing share of fish-protein supply in total animal-protein supply highlight the urgent need for targeted interventions to increase fish availability and affordability, addressing the high prevalence of protein deficiency and malnutrition in the country. Addressing these challenges and harnessing the full potential of Nigeria's fisheries sector requires concerted efforts across multiple fronts, including policy interventions that promote sustainable fishing practices, enhance aquaculture production, and improve post-harvest processing and distribution. It is essential to improve the productivity and sustainability of artisanal fisheries and aquaculture

resources. Increasing sustainable domestic production may help reduce import dependence and could contribute to improved food security, subject to affordability, distribution, and consumer access. The government must invest in research and development that will allow for the creation of locally adapted fish breeds and also promote sustainable practices. Furthermore, capacity building through targeted training programs will equip fish farmers with modern techniques and business skills. Encouraging private sector involvement in aquaculture will further drive investment and innovation, while market development and export promotion efforts will open up new channels for Nigerian aquaculture products both domestically and internationally.

Author Contributions

CA contributed to the conceptualization of the study, data collection, data analysis, manuscript drafting, and manuscript revision. UD contributed to the conceptualization of the study, data analysis, and manuscript review.

Conflict of Interest Disclosure

The authors affirm that this research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

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