Performance of the capture fisheries sub-sector for the welfare of fishermen (a case study in North Kolaka District, Indonesia)

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Abstract. This study aims to determine the composition of capture fisheries production, the welfare level of capture fishermen, and the Fishermen's Exchange Rate (FER). We conducted this study in North Kolaka Regency, Southeast Sulawesi, Indonesia, for three months, from July to September 2023. The study employed a quantitative descriptive approach. The sampling technique in this study was a stratified sample technique, totaling 265 captured fishermen. We collected data using interview, observation, questionnaire, and literature study methods. The FER analysis served as the data analysis method in this study. The results showed that the composition of fish production in the large pelagic, small pelagic, and demersal groups was relatively balanced. Part-time fishermen made up 71% of the total, followed by full-time fishermen at 27% and additional part-time fishermen at 2%. Fishermen have an average exchange rate of more than one, which means that fishermen families in North Kolaka Regency have a level of economic welfare in meeting their subsystem needs and have the potential to consume secondary or tertiary needs or save in the form of investment goods.
Key Words: exchange rate, fishing catch, fishing gear, fish production.

Introduction. Capture fisheries underpin Indonesia's food security and rural livelihoods, contributing protein supply, jobs, and income for coastal households (Putri & Harahap 2024). Fishermen in North Kolaka Regency utilize a variety of fishing gears such as bottom gill nets, surface gill nets, beach seines, bottom longlines, boat lift nets, sero (guilding barrier), anchovy sero (anchovy guilding barrier), purse seines, skipjack trawls, and fishing rods (Bailey et al 1987; World Bank 2022). The fishery targets major species groups typical of Indonesia - large pelagics, small pelagics, and demersal/reef fishes - consistent with national categorization used by government and international assessments (Suharsono et al 2021). In Southeast Sulawesi, where North Kolaka Regency is located, the province's rich marine potential and consistent capture production underline its crucial economic role. In 2022, marine capture fisheries in North Kolaka recorded a production volume of 3,524,474 kg, while inland capture fisheries reached 32,538 kg, reflecting the region's strong dependence on marine resources as the main source of fisheries production (Central Statistics Agency of Southeast Sulawesi Province 2023). Updated statistics indicate that capture fisheries remain vital to livelihoods across North Kolaka's coastal sub-districts.

However, in recent years, there have been various challenges faced by fishermen in North Kolaka Regency. These challenges include climate change that affects water conditions, pressure from excessive fishing activities, and socio-economic problems such as fluctuations in fish prices. This will have an impact on the income of fishermen, which in turn will affect their welfare. According to Sunarti (2012), welfare is a social, material, and spiritual way of life and livelihood that is filled with a sense of safety, morality, and inner peace that allows every citizen to make efforts to fulfill physical, spiritual, and social needs as well as possible for themselves, their households, and the community. The fishermen's exchange rate (FER) is one of the measuring tools or indicators used to

assess the fishing community's welfare (Sunarti 2012; Wijaya 2015; Rana et al 2018). While a low FER reflects the low purchasing power and welfare of fishermen, a high FER indicates that fishermen's income is sufficient to meet their life needs and fishing operations (Wijaya 2015). The comparison between the price index fishermen receive and the price index they pay measures the FER, an indicator of their welfare.

This study aims to analyze the composition of capture fisheries production, fisheries households, and FER in North Kolaka Regency. By analyzing fisheries production, it will provide an overview of the composition of fish production from various ecosystems. In addition, the FER analysis will provide information on fishermen's economic welfare. We expect the results of this study to provide an overview of efforts to increase capture fisheries production and improve the welfare of fishermen in North Kolaka Regency.

Material and Method

Description of the study sites. We conducted this research in North Kolaka Regency, Southeast Sulawesi, from July to September 2023. The study included all capture fisheries households in North Kolaka Regency, totaling 2645 fishing households (FHs). We used the stratified random sampling method to ensure a fair representation of various groups of fishermen. The number of samples taken was 10% of the total population of fishermen, which is 265 FHs spread across all sub-districts of North Kolaka Regency (Figure 1).

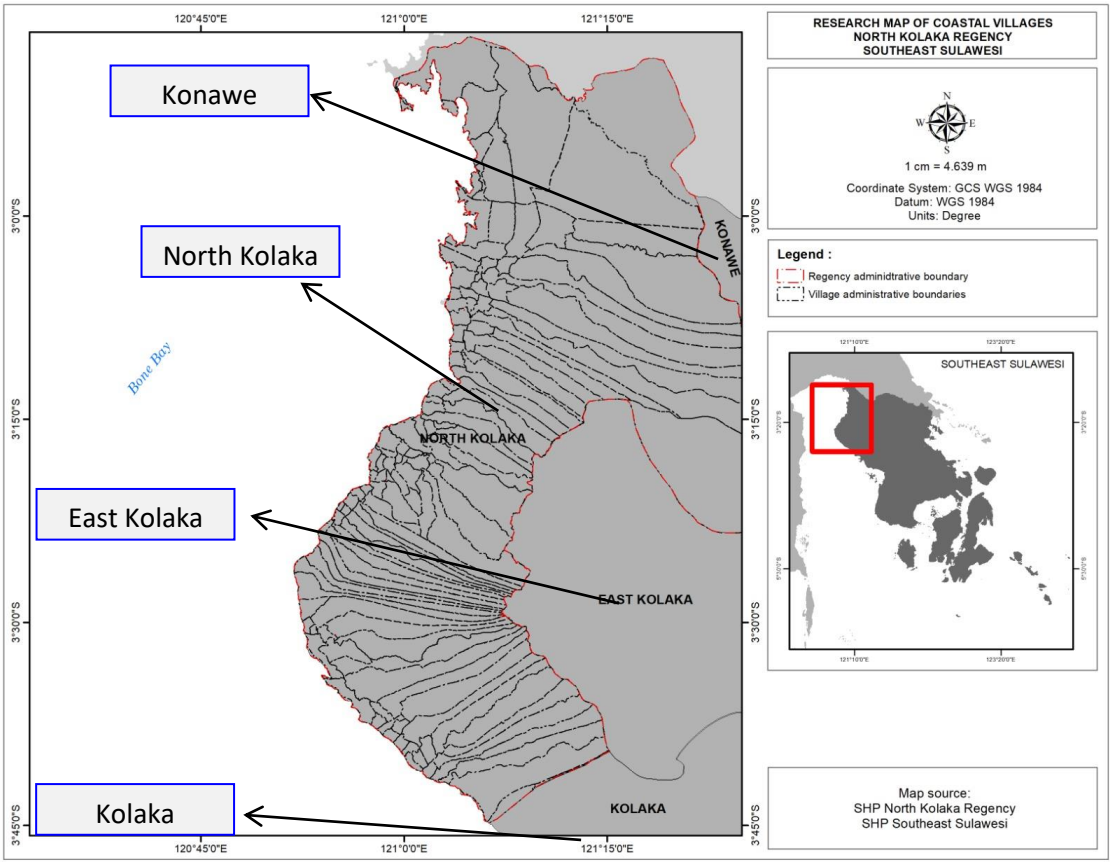

Figure 1. The location of capture fisheries sub-sector at North Kolaka, Southeast Sulawesi.

Survey was conducted by using a structured questionnaire to collect data on selling prices, operational costs, and demographic details of fishermen. We conducted in-depth interviews with several selected fishermen to gain deeper insights into their economic and social conditions. We obtained secondary data from related agencies like the Marine and Fisheries Service and the Central Statistics Agency (2022), along with literature and previous research reports. We inputted and processed the collected data using statistical

software such as SPSS or Excel. This study used a descriptive quantitative approach to measure and analyze FER. The study employed descriptive statistics to depict the traits of fishermen and showcases the outcomes of NTN computations through tables and graphs.

Data analysis. The data analysis used to calculate the FER was based on the method outlined by Basuki et al (2001):

$$FER = \frac{Yt}{Et}$$

$$Yt = YFt + YNFt$$

$$Et = Eft + EKt$$

where: FER = fishermen's exchange rate;
Yt = total income of fishermen's families in period t (current month price);
Et = total expenditure of fishermen's families in period t;
Yft = total income from fishermen and fisheries business (Rp);
YNFt = total income of fishermen from non-fisheries (Rp);
Eft = total expenditure of fishermen for fisheries business (Rp);
Ekt = total expenditure of fishermen for consumption of fishermen's families (Rp);
t = time period (month, year, etc.)

Criteria: if the ratio is > 1, it can be said that the family is economically prosperous; if the value is < 1, then the fishing family is still unable to meet their basic needs or is still classified as poor (Pahlewi et al 2022).

Results. The aquatic habitat characteristics indicate that the waters of North Kolaka have the potential to provide resources in the form of demersal fish/reef fish, small pelagic fish, and even large pelagic fish. These fish inhabit various coastal ecosystems, namely coral reefs, seagrass beds, and mangroves, as well as in open waters. Table 1 displays the production of capture fisheries in North Kolaka Regency for the year 2022.

Table 1
Production of capture fisheries sub-sectors based on fishing gear in North Kolaka Regency

No.	*Types of fishing gear*	*Production (ton)*
1	Boats lift net	171.07
2	Pole and line	16.43
3	Surface Gill net	248.80
4	Bottom Gill net	721.20
5	Pole fishing	77.18
6	Hand line	670.32
7	Skipjack Purse Seines	165.44
8	Beach seines	172.34
9	Rawai bottom	244.50

Sources: North Kolaka Regency Fisheries and Marine Service (2022).

Bottom gill net fishing gear has the highest production at 721.20 tons, while pole and line fishing gear has the lowest production at 16.43 tons year. If we review the distribution of catch based on sub-districts, it is clear that there are several production centers in several sub-districts. Table 2 displays the fish production in each sub-district.

The potential for fish resources in North Kolaka Regency is quite abundant, ranging from demersal fish to pelagic fish, also including shrimp, crabs, and shellfish. Batu White, Pakue North, and Tiwu sub-districts produce the most fishery products, whereas Ranteangin, Wawo, and Pakue Central sub-districts have the lowest production values. Meanwhile, Ngapa and Porehu sub-districts do not have any capture fisheries production because they are not coastal areas (Table 2). The number of fishing gear facilities and the number of fishermen in each sub-district area play a crucial role in determining the efficiency and sustainability of the local fisheries. These factors directly

impact the fishing capacity, resource utilization, and the overall productivity of the fishing community in each sub-district, influencing both the economic well-being of the fishermen and the conservation of marine resources.

In the overall capture fisheries production data in each sub-district (Table 2), there are fishing villages that are fish landing centers. These locations require support for facilities and infrastructure related to landing and handling the catch. These locations also rank high on the priority list for the construction of fish landing bases (PPI). The local authorities can prioritize several sub-districts in one location if they are close together.

Table 2

Production and economic value of marine capture fisheries by sub-district in North Kolaka Regency, 2022

Sub-district	*Marine capture fisheries*	
	Production (ton)	*Price (000 Rp)*
Ranteangin	1 238.00	33 366 012.00
Lambai	1 669.20	34 476 829.00
Wawo	1 450.50	30 336 612.00
Lasusua	1 939.30	40 360 481.00
Katoi	1 625.80	33 724 536.00
Kodeoha	1 911.50	40 141 141.00
Tiwu	2 035.90	53 469 908.00
Ngapa	0.00	0.00
Watunohu	1 562.20	41 749 459.00
Pakue	1 739.00	33 867 474.00
Pakue North	2 149.10	50 961 650.00
Pakue Central	1 487.90	39 406 276.00
Batu White	2 645.20	59 128 940.00
Porehu	0.00	0.00
Tolala	1 963.00	44 765 876.00
Total number	23 416.60	535 755 194.00

Sources: North Kolaka Regency Central Statistics Agency (2022).

Figure 2 presents a comparison of the production composition across different fish resource groups. It shows that the production of large pelagic fish, small pelagic fish, and demersal/reef fish is relatively balanced in this area, indicating that the development potential of these three fish resource groups is of similar importance.

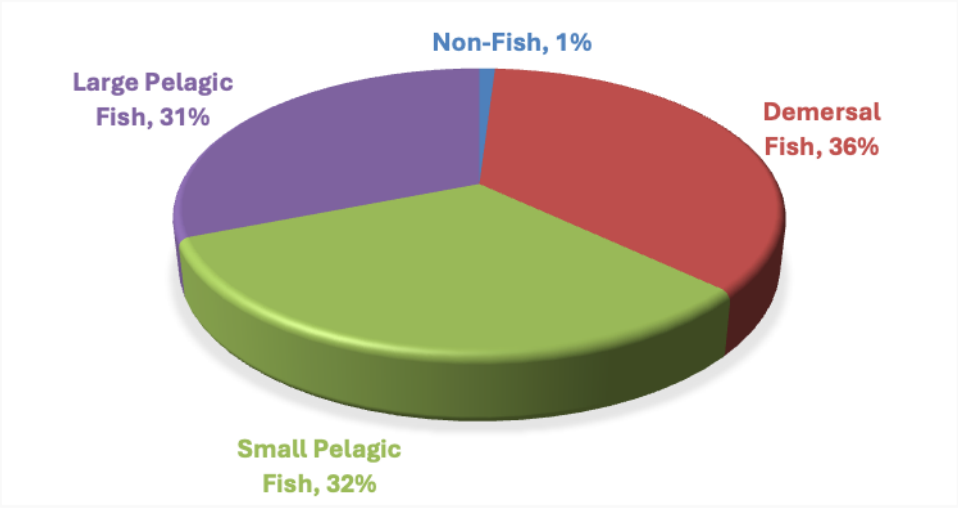

Figure 2. Composition of fish resource group production in North Kolaka Regency, 2023.

Aquatic habitats, characterized by their physical and biological properties, offer resources that support various fish species, including demersal (reef-associated), small pelagic, and large pelagic fish. Demersal fish, such as coral reef fish, rely on the structural complexity of reefs for shelter and feeding (Yudha et al 2019). Small pelagic fish typically inhabit the water column above the thermocline, while large pelagic fish, like tunas and sharks, roam the open ocean, often migrating over large distances (Yudha et al 2019). The primary fishing gear utilized for capturing small pelagic fish includes purse seine, gill net, and boat lift net. Purse seines are extensively used in various regions such as Sibolga Fishing Port and Tumumpa Fishing Port, targeting both small and large pelagic fish (Baihaqi et al 2021; Hutapea et al 2021). Gill nets are employed in Southeast Maluku, with varying production across seasons (Ohoiwutun 2015). Boat lift nets are prevalent in Morodemak coastal fishing port, capturing high-value pelagic fish (Ramadhan et al 2016; Irnawati et al 2021). Irnawati et al (2023), discuss the use and implications of gill net fishing gear in pelagic fish capture, highlighting its contribution to the catch but not quantifying the production. Yulianto et al (2023) indicates that gill nets are used for catching mackerel and that the length of immersion has a significant effect on the catch, which could indirectly affect production volumes. Ohoiwutun (2015) discusses the variability in production volumes of small pelagic fish using gill net fishing gear across different seasons. Kusai et al (2023) measures the welfare of fishermen using gill net fishing gear but does not provide production figures. Solechah et al (2025) identifies gill nets as environmentally friendly fishing gear but does not provide production data. The present research indicates a diverse potential for fish resources, encompassing both demersal and pelagic species, as well as various crustaceans and shellfish. Demersal fish and crustaceans, such as shrimp and crabs, are significant in certain regions, with studies showing changes in community and size structure over time (Wedjatmiko 2010). Pelagic fish are crucial in marine food webs, serving as prey for demersal fish and contributing substantially to human consumption and the production of fishmeal and fish oil (Hilborn et al 2022). Moreover, pelagic fish species are noted for their high omega-3 fatty acid content, which is beneficial for human diets (Wedjatmiko 2010; Simopoulos 2016). The main fishing center area plays a crucial role as the foundation for large pelagic fishing gear operations. This is evidenced by the management actions taken at Nizam Zachman Ocean Fishing Port to regulate fishing vessels and large pelagic purse seine fishing gear, ensuring compliance with safety practices and the sustainability of fishery management (Alfianto et al 2023). Additionally, the fluctuating productivity levels of large pelagic fish at Lempasing Coastal Fishing Port, as well as the seasonal peaks in fishing for various species, underscore the importance of understanding and managing these central areas for effective utilization of large pelagic fishing gear (Agustina et al 2016; Alfianto et al 2023). The production of large pelagic fish, small pelagic fish, and demersal/reef fish varies significantly, with each category exhibiting distinct patterns and challenges. For instance, small pelagic fish are a dominant group in global fish catch, constituting 25% of the total, and their biomass has been relatively stable since 1970 (Hilborn et al 2022). However, in specific regions like the Java Sea, the stock of small pelagic fish species is over-exploited, necessitating management measures such as controlling fishing effort to ensure recovery (Purwanto et al 2014). In contrast, large pelagic fish such as tuna and swordfish show high variability in catch data, influenced by factors like exploitation strategies, population dynamics, and environmental conditions (Corbineau et al 2010; Hilborn et al 2022).

Capture fisheries households. The number of FHs describes the number of fishing families in a given area. The FHs also describes the number of fishing business units in the area, although one FHs can have two or more types of fishing gear operating. According to data from the North Kolaka Regency DKP, the number of FHs is 2,645 FHs, while the number of fishing boats/vessels is 2,695 units. This illustrates that most fishing FHs in North Kolaka Regency have only one type/unit of fishing gear.

Identical to the distribution of fish production, the number of FHs per sub-district (Figure 3) shows that the distribution of FHs is relatively even across the coastal areas. The sub-districts with the most FHs are Tolala, Lasusua, Watunohu, Pakue Central, each

having more than 200 FHs. The lowest number of FHs observed in Figure 3 was in Lambai sub-district, with 122 FHs. And in the subdistricts of Porehu and Ngapa, no one works as a fisherman.

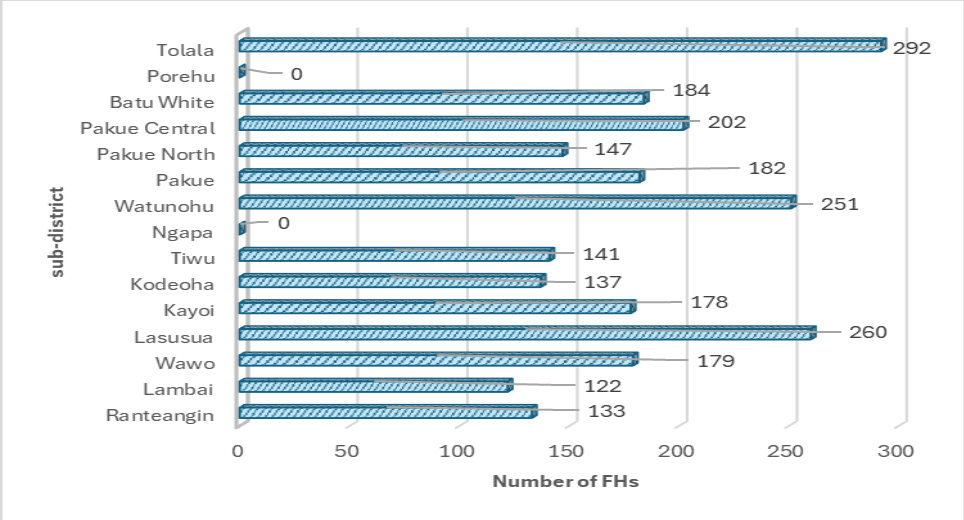

Figure 3. Number of capture fisheries households based on sub-district in North Kolaka Regency, 2023.

Of the total number of fisheries households, 5.139 people are fishermen. When viewed based on sub-districts, the sub-districts with the largest number of fishermen are Tolala, Lasusua, Watunohu, Pakue Central, Batu White, Pakue, Wawo, Katoi Sub-districts. Fishermen's settlements typically cluster in only a few coastal villages within each of these sub-districts. This condition will facilitate their development efforts, such as determining the target of providing supporting facilities and infrastructure for businesses. Based on their work, we can categorize fishermen in North Kolaka Regency into three groups: full-time, part-time, and additional part-time fishermen. Full-time fishermen derive all their income from their work as fishermen, while part-time fishermen rely on their other jobs as their primary source of income, and additional part-time fishermen view their work as a diversion rather than a regular source of income. Figure 4 illustrates the composition of the respondents based on this division.

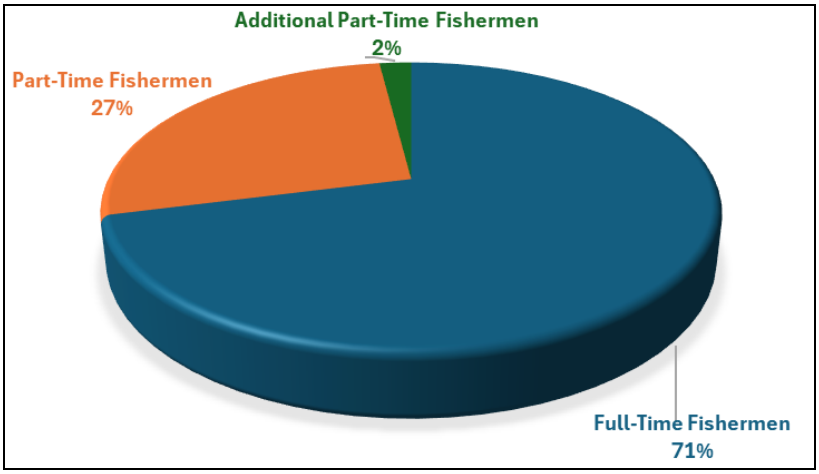

Figure 4. Composition of the number of fishermen based on fisherman category.

Figure 4 demonstrates that full-time fishermen, accounting for 71% of the 5,640 individuals in the North Kolaka Regency, dominate the fishing community, followed by part-time fishermen at 27% and additional part-time fishermen at 2%. This fact illustrates the urgency of programs for fostering and improving the productivity and welfare of fishermen in this region. Approximately 4000 people in North Kolaka rely solely

on fishing activities at sea for their livelihood, requiring prioritization for ongoing development and assistance with business growth. Full-time fishermen usually find it challenging to secure alternative jobs and to accept business innovation without capital and marketing support. When faced with various challenges such as changing seasons, declining fish prices, or restrictive policies, full-time fishermen typically resort to survival strategies. These conditions render them more vulnerable to the impacts of climate change, highlighting the importance of livelihood diversification programs for the North Kolaka fishing community.

The distribution of fish production and the number of fisheries households based on sub-districts is not uniformly detailed across the provided papers. However, Supena (2021) provides specific data on Sei Tualang Raso Subdistrict, indicating that there are 834 FHs incorporated into 3 Joint Business Groups (JBG) with an average catch of 2,100.4 kg month^{-1}. This information suggests a localized approach to fisheries management and production within this sub-district (Supena 2021). The categorization of fishermen into full-time, part-time, and additional part-time can be discerned from the context provided by the papers. Full-time fishermen are those who engage in fishing as their primary occupation and source of income. In Uerhavn, 36 fishermen are registered as full-time, indicating that fishing is their main economic activity (Gezelius 2003). Part-time fishermen, on the other hand, include individuals who fish not as their sole occupation but alongside other jobs or responsibilities. The part-time fishers in Uerhavn are mostly retired full-time fishermen, suggesting that they may engage in fishing to supplement their income or as a form of semi-retirement activity (Gezelius 2003). Additional part-time fishermen could be interpreted as those who fish occasionally or on a seasonal basis, possibly to supplement their primary income during specific times of the year or under certain conditions. This group is not explicitly defined in the provided papers, but it could include individuals like the hilsa fishermen of the river Meghna, who, despite fishing round the year, may engage in other labor on another fisherman's boat, indicating a more flexible or supplementary engagement with fishing (Mardiati & Artono 2021).

The statement that full-time fishermen derive all their income from their work as fishermen, while part-time fishermen rely on their other jobs as their primary source of income, is generally supported by the context provided. In Banyuwangi Regency, the economic behavior of small-scale fishermen households includes off-fishing businesses as a means to supplement their income, indicating that not all income is derived solely from fishing (Widiastuti 2021). Similarly, in Japan, part-time farming, which may include part-time fishing, is characterized by income mainly earned from non-agricultural jobs, suggesting that part-time fishermen may indeed rely on other jobs for their primary source of income (Kitamura 1982). However, the context also reveals complexities in the relationship between primary income sources and part-time work. For instance, part-time work can be a strategic choice influenced by various factors such as family size, health, and previous work experience, as seen in the case of working wives (Long & Jones 1981). Additionally, the earnings gap between full-time and part-time work, particularly in the context of gender, suggests that part-time employment may not always be a voluntary choice but rather a result of labor market dynamics (Main 1988). Furthermore, the quality of work experience, including the proportion of full-time versus part-time work, has implications for earnings, which can affect the reliance on primary income sources (Gullason 1990). The examination of fishermen's welfare has indeed focused significantly on income as a primary indicator. Studies have consistently shown a positive correlation between income levels and welfare among fishing communities (Ode & Hamizar 2024). This relationship is evident in the findings that higher income levels, often above the minimum wage, are associated with better welfare outcomes (Putra et al 2020; Riantini et al 2023; Ode & Hamizar 2024). Additionally, income diversification, such as side jobs, contributes to the prosperity of fishermen households (Riantini et al 2023). However, it is important to note that income is not the sole determinant of welfare. Other factors, such as education, housing, and environmental conditions, also play crucial roles in determining welfare levels (Riantini et al 2023). Moreover, the application of Sharia financial management principles has been associated with successful outcomes in the

welfare of fishermen (Ode & Hamizar 2024), and the fisherman's exchange rate has been used as an indicator of prosperity (Husni et al 2022). The studies also highlight the importance of factors like boat size, seasonality, and access to capital and government support in influencing fishermen's welfare (Putra et al 2020).

Efforts to measure the level of fishermen's welfare have predominantly relied on indicators of changes in fishermen's income. However, Basuki et al (2001) argue that using such indicators to accurately describe improvements in fishermen's welfare is inappropriate and misleading, as they do not account for the expenditure of fishermen on their families' consumption needs. Hutabarat (1995) similarly proposed that a decline in the farmer/fisherman's exchange rate or a decrease in the level of agricultural (fishery) yields relative to the prices of other goods and services can lead to a reduction in real income. Therefore, a more appropriate indicator is the fisherman's exchange rate (FER), which considers all revenues and expenditures of fishermen's families. The concept and method of estimating FER have been very limited, and it was only in 2001 that the General Guidelines and Technical Guidelines for Fishermen's Exchange Rates were successfully compiled and published by the Directorate General of Coasts and Islands, Department of Marine Affairs and Fisheries.

We will apply this concept to gauge the welfare of fishermen in Indonesia, particularly in the Province of Bali. Should the subsequent calculation results reveal a less profitable FER, action must be taken to rebalance it in favor of a higher FER. A low FER can hinder the growth of catch production and cause resources from the fisheries sector to shift to other sectors. This shift would make it difficult to increase the contribution of the fisheries and marine sector to the gross regional domestic product (GRDP). The fisherman's exchange rate is the ratio of total income to total expenditure of fishermen's households during a certain period of time (Basuki et al 2001). It is an indicator to measure the level of fishermen's welfare in fulfilling their subsistence life. The criteria for FER can be lower, the same, or higher than one. If the FER is less than one, it indicates insufficient purchasing power to meet basic needs and potential household budget deficits. If the FER is close to one, it signifies that the fishermen's family can only meet their subsistence needs. Conversely, if the FER is above one, it suggests a fairly good level of welfare, allowing for the fulfillment of secondary or tertiary needs or savings in the form of investment goods.

Table 3 demonstrates that fishermen in North Kolaka Regency use a variety of fishing gears, including bottom gill nets, surface gill nets, beach seines, bottom longlines, boat lift nets, sero, anchovy seines, purse seines, skipjack tuna seines, and fishing rods, with an average value exceeding one. This indicates that the fishing families in North Kolaka Regency are relatively well-off, able to meet their subsistence needs, potentially save for their secondary or tertiary needs, or invest in goods. In accordance with Supriadi et al (2019) if the FER value is more than one, it means that the fishing family has a fairly satisfactory level of welfare. Similarly, Nalarati et al (2016) study results place the welfare level of seaweed farming fishermen in South Konawe, with an FER of 1.07, in the fairly prosperous category, enabling them to save money. Husni et al (2022) discovered that the FER value of crab fishermen in East Lombok was 1.07. The welfare level of Boat Lift Net fishermen can be categorized into two groups based on the FER value. The prosperous category is assigned to Punggawa fishermen with an FER value above 100, while the less prosperous category is assigned to the ABK of Boat Lift Net fishermen, with an FER value below 100.

The variety of fishing gears such as bottom gill nets, surface gill nets, beach seines, anchovy seines, purse seines, skipjack tuna seines, and fishing rods are employed to target different species and sizes of fish, each with its own efficiency and selectivity. Purse seines, for instance, are highly effective for capturing large pelagic fish like skipjack tuna, mackerel tuna, and yellowfin tuna, as evidenced by their dominance at certain fishing ports and their selectivity for small pelagic fish (Baihaqi et al 2021; Chaliluddin et al 2021; Aprilla et al 2022). However, the use of purse seines has implications for the sustainability of fisheries, with variations in sustainability levels depending on whether they are operated inside or outside fish aggregating devices areas (Mallawa et al 2020). The level of fishermen's welfare in fulfilling their subsistence life

can be measured by various indicators, including economic welfare, access to basic needs, and the role of financial intermediaries. Teniwut et al (2019) suggests that the term of trade for fishermen and aquaculture farmers is an indicator of economic welfare, with microeconomic indicators like consumption and macroeconomic factors such as inflation and the consumer price index affecting their purchasing power. Adiba & Shofawati (2017) indicated that the welfare of fishermen is not solely dependent on the role of middlemen but also on other parties assisting in fulfilling basic needs. Zegarra (2021) used a linear programming model to estimate welfare ratios based on the ability to cover basic needs, which could be applied to measure fishermen's welfare in terms of subsistence life.

Table 3

Average fishermen's exchange rate based on fishing gear distribution in North Kolaka Regency

No	*Description*	*Fishing gear*				
		Bottom gill net (Rp)	*Surface gill net (Rp)*	*Beach seine (Rp)*	*Bottom longline (Rp)*	*Boat lift net (Rp)*
A	Fisherman Family Income					
1	Capture fisheries	3.555.119	2.976.388	3.450.000	3.797.275	21.683.333
2	Non Capture fisheries	471.478	1.062.500	1.333.333	27.884	333.333
3	Total	4.026.547	4.038.888	4.783.333	3.825.159	22.016.666
B	Fishermen's Family Expenditure					
1	Capture fisheries	2.146.190	1.062.361	575.000	1.466.570	7.860.666
2	Consumption Family	1.265.714	1.110.858	2.300.000	546.153	753.000
3	Total	3.411.904	2.173.199	2.875.000	2.012.723	8.613.666
C	FER	1.18	1.85	1.66	1.90	2.55

No	*Description*	*Fishing gear*				
		Sero (Rp)	*Anchovy sero (Rp)*	*Purse seines (Rp)*	*Skipjack purse seines (Rp)*	*Pole and line and hand line (Rp)*
A	Fisherman Family Income					
1	Capture fisheries	3.166.666	8.741.666	114.941.666	5.540.776	4.067.009
2	Non Capture fisheries	139.750	1.416.666	0	1.071.500	626.470
3	Total	3.306.416	10.158.332	114.941.666	6.612.276	4.693.479
B	Fishermen's Family Expenditure					
1	Capture fisheries	1.000.000	841.666	40.541.666	2.653.181	2.307.475
2	Consumption Family	1.137.500	1.275.000	1.040.000	935.000	935.000
3	Total	2.137.500	2.116.666	41.581.666	3.588.181	3.242.475
C	FER	1.54	4.79	2.76	1.84	1.44

Conclusions. Fish production is relatively balanced in the large pelagic, small pelagic, and demersal groups. Full-time fishermen account for 71% of the total, followed by part-time fishermen (27%), and additional part-time fishermen (2%). The fishermen's average exchange rate exceeds one, indicating that fishing families in North Kolaka Regency meet the economic criteria for prosperity. They achieve a sufficient level of welfare to fulfill their basic needs, and they have the capacity to fulfill their secondary or tertiary needs or accumulate savings for investment goods.

Conflict of interest. The authors declare that there is no conflict of interest.

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Received: 15 January 2025. Accepted: 24 May 2025. Published online: xx February 2026.
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How to cite this article:
Piliana W. O., Mansyur A., Siang R. D., Azis N., Nur A. I., Kasim M., Intihanah, Mustafa A., 2026 Performance of the capture fisheries sub-sector for the welfare of fishermen (a case study in North Kolaka District, Indonesia). AACL Bioflux 19(1):314-326.