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PROFITABILITY UNDER COST INTENSITY: HOUSEHOLD LIVELIHOODS IN CATFISH FARMING IN PALEMBANG

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ABSTRACT

Catfish (*Clarias gariepinus*) farming is the dominant freshwater aquaculture in Palembang, South Sumatra, serving as both a key livelihood and a major source of local food security. Despite its importance, few studies have examined its economic contribution at the household level. This study analysed the income structure of 60 catfish-farming households in Sukarami, Sematang Borang, Gandus, and Plaju districts, focusing on costs, profitability, and diversification. Data were collected during January–June 2025 through structured interviews, field observations, and official records. Findings show that production is highly operationally intensive, with feed and seed accounting for 94.30 % of total costs. Despite this, catfish farming remains profitable, generating an average net income of IDR 14.14 million per cycle, or IDR 56.54 million annually. The activity accounted for 61.30% of household income, confirming its role as the primary livelihood source. Complementary activities, including *Pangasius* sp. farming (15.50 %) and non-fisheries income (23.20 %), provided diversification that mitigates risks and stabilizes cash flow. Overall, catfish aquaculture sustains household economies in Palembang but remains highly vulnerable to fluctuations in input prices and market instability. However, the sector remains highly susceptible to fluctuations in input prices and market instability. Policy interventions should, therefore, prioritize improvements in feed efficiency, access to quality seed, and cooperative procurement, along with income diversification, to strengthen household resilience and ensure the socio-economic sustainability of small-scale aquaculture.

Keywords: *Clarias gariepinus*; Diversification; Income Structure; Operational Cost; Pond Aquaculture

INTRODUCTION

Aquaculture is increasingly recognized as a major contributor to global food security, providing more than half of the world's fish supply and playing a crucial role in sustaining rural livelihoods. Indonesia is one of the countries with the greatest potential for aquaculture development due to its vast freshwater resources, including141,690 ha of rivers (Sriadi *et al.*, 2023), reservoirs, swamps, and 375,800 ha of ponds (Ningrum *et al.*, 2025). In 2023, Indonesia's total fisheries production amounted to 23.54 million tonnes, consisting of 8.18 million tonnes from capture fisheries and 15.36 million tonnes from aquaculture. The year-on-year increase of only 1.27 % indicates stagnation in national productivity (Merdekawati & Sofyan, 2025).

In the context of this stagnating national productivity, improving production efficiency (Engle *et al.*, 2021) by focusing on the most productive aquaculture systems, particularly pond-based aquaculture (Ibrahim *et al.*, 2023), becomes increasingly important. Freshwater aquaculture in Indonesia is dominated by catfish (*Clarias sp.*), tilapia (*Oreochromis niloticus*), carp (*Cyprinus carpio*), gourami (*Osphronemus goramy*), and pangasius (*Pangasius sp.*), which together account for more than 80 % of total output. Pond-based aquaculture is the most productive system. In 2023, freshwater ponds produced 5.69 million tonnes, while brackish-water ponds yielded 6.60 million tonnes and floating net cages contributed 1.44 million tonnes. These results indicate that pond-based aquaculture, particularly brackish-water ponds, remains the backbone of Indonesia's aquaculture production (BPS, 2023).

At the provincial level, South Sumatra has demonstrated consistent growth in aquaculture. Production rose from 230.45 thousand tonnes in 2020 to 249.38 thousand tonnes in 2021 and 274.05 thousand tonnes in 2022, reaching 298.71 thousand tonnes in 2023 (BPS Sumatera Selatan, 2024). Within this total, catfish dominated with 100.92 million kg, followed by pangasius at 88.43 million kg, tilapia at 68.36 million kg, carp at 23.99 million kg, and gourami at 17.01 million kg. The data clearly show that catfish production significantly outpaces that of other freshwater species.

At the district level, Palembang City is the largest contributor to catfish aquaculture in South Sumatra. In 2023, Palembang produced 41.99 million kg of catfish, which was considerably higher than Musi Rawas at 14.88 million kg, Ogan Komering Ilir at 10.27 million kg, and Musi Banyuasin at 9.86 million kg (BPS Sumatera Selatan, 2025). This gap underscores Palembang's preeminent position as the regional center of catfish aquaculture. Its dominance is reinforced by ecological factors, particularly the Musi River and surrounding swamplands that provide suitable habitats (Supriyadi *et al.*, 2024), and by socio-economic factors, as Palembang functions as a hub for trade, industry, and distribution of fisheries commodities (Septiani *et al.*, 2024).

Catfish farming in Palembang is predominantly practised in earthen ponds equipped with hapa nets (*waring*) (Patriono *et al.*, 2021), which help simplify feeding, monitoring, and harvesting while protectingpredators. This system is low-cost, environmentally adaptive, and widely used by small-scale farmers. Consumer demand for catfish has

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remained stable, as it is one of the most affordable protein sources for local communities. The socio-economic significance of this sector is also reflected in the number of active farmers (Pras *et al.*, 2022). In 2024, Sukarami and Sematang Borang each had 50 active farmers, Gandus and Plaju each had 40, while smaller numbers were recorded in other districts (Dinas Perikanan Kota Palembang, 2024). This distribution indicates that aquaculture is concentrated in specific districts that serve as production clusters.

Despite the strong production growth, most studies on aquaculture in Indonesia have focused on technical and production aspects (Nagel *et al.*, 2024), with limited attention given to household-level socio-economic outcomes (Setyawan *et al.*, 2021). Household income is a critical measure of aquaculture sustainability (Stacey *et al.*, 2021), as it reflects profitability, household welfare, consumption patterns, and reinvestment capacity (Oktopura *et al.*, 2020). However, there remains a gap in research on the income structure of catfish farming households in Palembang, even though the city is the largest production center in South Sumatra.

This study addresses that gap by analyzing the income of catfish farming households in Palembang and examining the share of aquaculture income relative to total household earnings. The research focuses on four districts with the highest concentrations of farmers, Sukarami, Sematang Borang, Gandus, and Plaju. The findings are expected to provide empirical evidence on the economic contribution of aquaculture to household welfare, enrich the literature on aquaculture economics, and inform policies to strengthen the socio-economic sustainability of fish-farming households in urban and peri-urban contexts.

RESEARCH METHODS

Study Site

The research was conducted in Palembang City, South Sumatra Province, Indonesia (2°52′ – 3°5′ S and 104°37′ – 104°52′ E), one of the leading centers of freshwater aquaculture in the region. Palembang has a high concentration of household-based catfish (*Clarias gariepinus*) farming systems, supported by abundant freshwater resources and strong market demand. According to the Provincial Fisheries Statistics (2024), catfish farming accounts for more than 60 % of freshwater aquaculture production in Palembang, making it a strategic location for this study. The study sites were concentrated in the main aquaculture production areas, particularly in Sukarami, Sematang Borang, Gandus and Plaju subdistricts.

Data Collection Methods

This study employed a quantitative descriptive approach to assess household income (Esiobu *et al.*, 2022) and its proportion (Ashley-Dejo & Adelaja, 2022) derived from catfish aquaculture. Data collection was conducted between January and June 2025, spanning the entire production cycle (approximately 3 to 4 months). Primary data were obtained through structured interviews and direct field observations, while secondary data were collected from the Palembang Fisheries Department and related agencies. The structured questionnaires included variables such as pond size (m²), stocking density (fish/m²), feed use (kg), production volume (kg), selling price (IDR/kg), labor allocation (man-days), and household income sources. In this study, labor allocation reffered to hired labor, which was recorded as paid man-days. Family labor was not monetized and therefore was not included in the calculation of variable cost and farm income. This classification ensured that the cost structure and income analysis reflected cash expenditures borne by farmers. During data collection, cost items were recorded separately as fixed costs (FC), which referred to durable production assets such as nets and equipment, and variable costs (VC), which included feed, fingerlings, medicines, electricity, transport, and hired labor.

Sampling Methods and Dataset

The sampling method applied was purposive sampling, selected to ensure that the households included in the study represented the main aquaculture production centers and reflected different levels of cultivation intensity across Palembang. This approach allowed the selection of respondents with the relevant production experience and complete income records. The inclusion criteria consisted of: (i) households engaged in catfish aquaculture for at least one year, (ii) households operating a uniform cultivation system in earthen ponds equipped with hapa nets (*waring*), with measurable production and income records, and (iii) willingness to participate in the survey. A total of 60 catfish-farming households were selected, with the sample distributed proportionally across the four main subdistricts: 17 households from Sukarami, 17 from Sematang Borang, 13 from Gandus, and 13 from Plaju. This distribution was proportional to the population of active catfish farmers in each sub-district, ensuring that the sample accurately reflected the local farming structure. Each household represented one aquaculture production unit, ensuring data comparability across the sample.

Data Analysis Methods

The analysis was conducted using a farm management income model, comprisingcost analysis, revenue analysis, farm income, household income, and income proportion (Mukaila, 2023). The formulas used are as follows:

$$TC = FC + VC \quad (1)$$

where: TC = total cost (IDR); FC = fixed cost (IDR); VC = variable cost (IDR).

Fixed costs (FC) in this study consisted of the depreciation of production tools, namely hapa nets, grading sieves, weighing scales, and plastic basins, which are used repeatedly across culture cycles. Depreciation was calculated using the straight-line method, with the purchase value of each item divided by its estimated useful life to obtain the annual depreciation. The depreciation cost per production cycle was then adjusted to the duration of one culture cycle (3–4 months). Thus, total FC represents the sum of depreciation values for all fixed production tools used by farmers.

$$TR = P \times Q \quad (2)$$

where: TR = total revenue (IDR); P = selling price (IDR/kg); Q = production volume (kg).

FI = TR − TC ....(3)

where: FI = farm income (IDR); TR = total revenue (IDR); TC = total cost (IDR).
HHI = FI_catfish + FI_other + NI_nonfisheries ....(4)

where: HHI = household income (IDR); FI_catfish = income from catfish farming (IDR); FI_other = income from other aquaculture activities (IDR); NI_nonfisheries = income from non-fisheries activities (IDR).

The proportion of income from each source relative to total household income was calculated as follows:

PR = (P*i* / HHI) × 100% ....(5)

Specifically, three types of income proportion were considered:

PR_catfish = (FI_catfish / HHI) × 100%................................(6)

PR_other_aquaculture = (FI_other / HHI) × 100%................(7)

PR_nonfisheries = (NI_nonfisheries / HHI) × 100%.............(8)

where: PR = proportion of income (%); Pi = income from source *i* (IDR); HHI = total household income (IDR);

Household income per capita per month was classified into three categories, referencing BPS Palembang (2024) and the 2025 Minimum Wage (IDR 3,916,635): low income (< IDR 2,000,000), medium income (IDR 2,000,000–5,000,000), and high income (> IDR 5,000,000).

Tools and Test Design

Data tabulation and statistical analysis were performed using Microsoft Excel. Descriptive statistics were applied to summarize cost structures, revenue, and household income patterns, while proportion analysis quantified the contribution of catfish aquaculture relative to other income sources. Triangulation among interview data, field observations, and official statistics was conducted to validate the dataset's accuracy and reliability.

RESULT AND DISCUSSION

Production Costs of Catfish Farming

The cost structure of catfish farming in Palembang shows that the system is heavily dependent on variable expenses. Fixed costs were relatively minor, averaging IDR 0.54 million per cycle (Tabel 1). Nets accounted for the highest share (83.94 %), reflecting their role as essential production infrastructure, while graders, scales, and basins accounted for 7.74 %, 5.84 %, and 2.48 %, respectively. This low level of fixed cost is consistent with the earthen pond system with hapa nets (*waring*) commonly used in Palembang, which requires minimal capital investment and relies primarily on inexpensive, easily replaceable materials. This implies that while low capital costs encourage the participation of small-scale farmers, they also create low barriers to entry (Zollet & Maharjan, 2021), which may result in oversupply and a lack of standardization in production practices (Dhillon & Moncur, 2023). As a result, depreciation costs remain low compared with more capital-intensive aquaculture systems. This indicates that capital depreciation contributes little to the overall production burden.

Tabel 1. Fixed Costs of Catfish Farming in Palembang (IDR/cycle)

Item	Cost (IDR)	Proportion (%)
Hapa Net	450,000.00	83.94
Grading Sieve	41,500.00	7.74
Weighing Scale	31,292.00	5.84
Plastic Basin	13,280.00	2.48
Total	536,072.00	100.00

Variable costs accounted for the bulk of expenditure, averaging IDR 8.87 million per cycle (Tabel 2). Feed was the dominant component (47.74 %), followed by seed (34.52 %). Other expenses such as labor (5.71 %), electricity (4.23 %), and health inputs (3.56 %) were relatively minor. The cost structure in this study differs from that reported in other *Clarias* sp. production centers. Although feed remains the largest cost component (47.74 %), this share is lower than that reported in Riau (78.02 %), where feed dominates production costs and seed costs are relatively small (5.04 %) (Elinur *et al.*, 2022). Similar patterns are observed in studies of *Clarias gariepinus* farming in Nigeria, which report feed costs exceeding 60% of total expenses (Imade & Odum, 2024). In contrast, seed costs in the present study account for 34.52 % of total production costs, indicating a relatively greater role of stocking expenditures under the local production conditions examined. The large share of feed and seed highlights their decisive influence on production efficiency and profitability.

Tabel 2. Variable Costs of Catfish Farming in Palembang (IDR/cycle)

Item	Cost (IDR)	Proportion (%)
Fingerlings	3,063,000.00	34.52
Feed	4,236,400.00	47.74
Medicines and Supplements	316,000.00	3.56
Labor	507,000.00	5.71
Electricity	375,500.00	4.23
Packaging	165,000.00	1.86
Transport	210,500.00	2.38
Total	8,873,400.00	100.00

Combining fixed and variable components, the average total production cost per cycle was IDR 9.41 million, of which 94.30% were variable costs and 5.70 % fixed costs (Tabel 3). This confirms that catfish farming in Palembang is highly operationally intensive, with profitability largely dependent on the management of feed and seed inputs.

Tabel 3. Total Production Costs of Catfish Farming in Palembang (IDR/cycle)

Component	Cost (IDR)	Proportion (%)
Fixed costs	536,072.00	5.70
Variable costs	8,873,400.00	94.30
Total	9,409,472.00	100.00

Gross Revenue and Market Price

Catfish farming generates economic returns through the sale of market-sized fish harvested at the end of each production cycle. Gross revenue is obtained by multiplying the harvested biomass by the prevailing market price, which in this study was determined primarily by local market mechanisms and contractual agreements with traders or intermediaries.

On average, farmers harvested 1,385 kg of catfish per cycle, with a mean selling price of IDR 17,000 per kg. The reported price represents the average farm-gate price across all harvested size grades, as catfish were sold in mixed sizes without price differentiation at the farm level. In comparison, catfish farmers in Banyuasin Regency reported a higher farm-gate price of IDR 19,000 per kg (Wibowo & Iskandar, 2024). The selling price of IDR 17,000 per kg in Palembang reflects the prevailing market structure within the city. Distinct value chain arrangements shape this difference. Banyuasin is characterized by smaller-scale rural production with fewer intermediaries, allowing farmers to capture a greater share of the final price. In contrast, Palembang serves as the main consumption and distribution center in South Sumatra, where a denser network of buyers and higher transaction volumes contribute to price stabilization but reduce producer margins. The established trader relationships and strong urban demand in Palembang support consistent sales at IDR 17,000 per kg. This resulted in an average gross revenue of approximately IDR 23.55 million per production cycle (Tabel 4). Such revenue figures represent gross income before the deduction of production costs, including both fixed and variable components, and therefore provide an initial measure of the economic scale of catfish farming.

Tabel 4. Average Production, Selling Price, and Gross Revenue of Catfish Farming

Variable	Value
Harvest (kg/Cycle)	1,385.00
Selling price (IDR/kg)	17,000.00
Gross revenue (IDR/Cycle)	23,545,000.00

The magnitude of gross revenue highlights the critical importance of production efficiency and market price stability in sustaining farmer profitability. Although revenue levels are relatively high for small-scale aquaculture, actual profitability depends on the extent to which input costs, particularly feed and seed which usually represent the largest proportion of variable expenses, can be managed effectively (Pasch & Palm, 2021). This implies that improvements in input efficiency and stability in output prices would substantially enhance the financial resilience of catfish farming households.

Net Income from Catfish Farming

Net income in catfish farming is derived from the difference between gross revenue and total of production costs incurred during the production cycle (Akoh *et al.*, 2025). In other words, it represents the profit earned after deducting both fixed and variable costs from sales revenue.

On average, farmers earned a gross revenue of IDR 23.55 million per cycle, while total production costs were IDR 9.41 million per cycle. Accordingly, the average net income amounted to IDR 14.14 million per cycle, or approximately IDR 56.54 million per year, given that catfish production in the study area is carried out in four cycles annually (Tabel 5). This level of annual profitability is relatively high when assessed against local income standards. As a benchmark, the Provincial Minimum Wage of South Sumatra for 2025 was set at IDR 3,681,571 per month (Jaya & Nugraha, 2025), equivalent to approximately IDR 44.18 million annually. Compared with this benchmark, the average annual net income from catfish farming (IDR 56.54 million) exceeds the provincial minimum wage level. In addition, the national poverty line is estimated at IDR 536,122 per person per month (approximately IDR 6.43 million annually) (Arifin *et al.*, 2024). These comparisons indicate that catfish farming represents a viable livelihood option relative to local income standards, although actual welfare outcomes depend on household size, income diversification, production scale, and regional cost-of-living conditions. The use of four production cycles per year is based on the typical culture duration in Palembang, where a catfish farming cycle lasts approximately 3 months. Farmers generally allocate a short additional preparation period for pond drying, cleaning, and restocking, allowing the production schedule to fit into four complete cycles within a year. This pattern is consistent with the earthen pond system using hapa nets (*waring*), which enables rapid turnaround and minimal downtime between cycles.

Tabel 5. Average Revenue, Production Cost, and Net Income of Catfish Farming

Variable	Per cycle (IDR)	Per year (IDR)
Gross revenue	23,545,000.00	94,180,000.00
Total production cost	9,409,472.00	37,637,888.00
Net income	14,135,528.00	56,542,113.00

The net income reflects the profitability of small-scale catfish farming under efficient management practices, particularly in controlling variable inputs such as feed and seed which dominate the cost structure. Compared with the findings last in Joho Village, Kediri District, where average farmer income reached IDR 15.93 million per cycle, the present study shows a slightly lower figure (Supriyadi & Efani, 2021). Several contextual factors likely influence this difference. Catfish farming in Kediri reportedly useslarger pond areas and more intensive management practices, which typically enable farmers to achieve higher biomass and greater economies of scale. Selling prices in some parts of East Java are also supported by stronger linkages to urban markets and processing networks, which can elevate farm-gate prices. In contrast, the small-scale earthen pond system with hapa nets (waring) used by farmers in Palembang emphasizes low capital input and operational simplicity, resulting in stable but comparatively lower net income. These structural differences help explain why net income in Kediri appears slightly higher than in the present study. Variations in farm size, production techniques, market access, and institutional support commonly explain such differences across regions.. Farmers operating larger ponds, with greater technical knowledge and stronger market linkages, tend to achieve higher profitability than those facing structural and market constraints (Das and Mandal, 2022).

Additional Income of Catfish Farmers

In addition to catfish farming, households derive income from other economic activities, including aquaculture and non-fishery activities. The main aquaculture diversification is striped catfish (*Pangasius*) farming, while non-fishery activities include wage labor, trading, private employment, contractual work, and transportation services. The main aquaculture diversification is striped catfish (*Pangasius*) farming, which is technically compatible with catfish production. Pangasius can be cultivated in the same earthen pond system using hapa nets (*waring*), either alternated between cycles or stocked after catfish harvest with minimal changes to pond preparation. Its benthic feeding behavior also allows it to utilize residual nutrients in the pond, improving feed efficiency. In addition, Pangasius generally has a more stable selling price in local markets, providing farmers with a complementary income stream that helps buffer price fluctuations in catfish. These additional activities contribute significantly to household income and serve as a strategy to spread production risks and ensure financial stability throughout the year.

On average, striped catfish farming generated IDR 15.05 million annually, equivalent to IDR 3.76 million per cycle, by utilizing the same ponds, water resources, and equipment used for catfish production. This synergy allows farmers to optimize facilities, reduce operational costs, and alternate harvests to accommodate different production cycles.

Non-fishery activities contributed an additional IDR 22.58 million per year, distributed across wage labour, trading, private sector jobs, contractual work, and transportation services. Altogether, additional activities outside catfish farming generated IDR 37.63 million per year (Tabel 6), highlighting the importance of income diversification in enhancing household economic resilience.

Tabel 6. Average Additional Income of Catfish-Farming Households

No.	Source of income	Annual income (IDR)
1	Striped catfish farming	15,054,717.00
	Per cycle	3,763,679.00
2	Non-fishery activities	22,578,947.00
	Wage labour	1,780,000.00
	Trading	1,957,143.00
	Private sector employment	1,966,667.00
	Contractual work	1,887,500.00
	Driver and transport services	1,871,429.00
	Total household additional income	37,633,664.00

Total Household Income of *Clarias gariepinus* Farmers

`The total household income of *Clarias gariepinus* farmers represents the cumulative earnings generated by all household members. It consists of three major components: income from *Clarias gariepinus* farming, income from other aquaculture activities such as *Pangasius hypophthalmus* farming, and non-fisheries income sources. The proportions of each income source reflect their contributions to the household's overall economy (Tabel 7).

Tabel 7. Total Household Income and Proportion of Income Sources

No.	Description	Average Income (IDR/year)	Proportion (%)
1	*Clarias* sp. farming income	56,542,113.00	61.30
2	*Pangasius* sp. farming income	15,054,717.00	15.50
3	Non-fisheries income	22,578,947.00	23.20
Total		94,175,778.00	100.00

The average household income of *Clarias gariepinus* farmers reaches IDR 94.18 million per year. The largest share is derived from *Clarias gariepinus* farming, which contributes IDR 56.54 million annually or approximately 61.30 % of total income, confirming its role as the primary livelihood source. This proportion is slightly lower than the findings in Mojomulyo Village, East Java, where *Clarias gariepinus* farming accounted for 70.56% of total household income (Rahmadani & Putri, 2025). Variations in farm scale, input management, and market access may explain such differences..

In addition to *Clarias gariepinus*, farmers also generate supplementary income from *Pangasius hypophthalmus* farming, which contributes IDR 15.05 million annually or 15.50% of total household income. This diversification strategy allows farmers to optimize the use of ponds and other aquaculture facilities while stabilizing income streams across different production cycles.

Non-fisheries income contributes IDR 22.58 million per year, equivalent to 23.20% of total household earnings. These activities, including wage labor, trade, and employment across various sectors, play an important role in risk mitigation and income security. Collectively, the combination of aquaculture-based and non-aquaculture-based income streams demonstrates the resilience of household economies and the central role of *Clarias gariepinus* farming in supporting rural livelihoods (Moorhouse *et al.*, 2021).

Synthesis of Cost Structure and Household Vulnerability

The predominance of variable costs in catfish farming in Palembang (94.30 % of total production costs), with feed and fingerlings jointly accounting for 82.26 %, highlights the sector's vulnerability to input price fluctuations. This pattern aligns with previous findings that feed costs account for 60–70 % of aquaculture operating expenses across species and systems (Firdaus *et al.*, 2020). As in other contexts, profitability in Palembang is not constrained by capital depreciation, which constitutes only 5.70 % of costs, but rather by operational efficiency. Similar evidence from Kampar Regency shows that shocks in feed and seed markets during the COVID-19 pandemic had a disproportionate effect on catfish farmers' income, underscoring the sensitivity of household earnings to input markets (Rangganis *et al.*, 2023). Thus, interventions targeting feed conversion efficiency, quality seed supply, and cooperative procurement are critical levers for enhancing farmer profitability (Adam and Njogu, 2023). Taken together, these findings synthesize the core economic structure of small-scale aquaculture in Palembang, showing that household welfare is primarily shaped by operational costs and market exposure rather than capital investment.

At the household level, catfish farming accounts for 61.30 % of total income, confirming its role as the primary livelihood pillar in Palembang. However, this dependency also exposes farmers to considerable biological and market risks. The complementary roles of *Pangasius* farming (15.50 %) and non-fishery income sources (23.20 %) demonstrate how diversification reduces vulnerability and stabilizes cash flow across production cycles (Figure 1). Recent studies highlight that diversification into multiple aquaculture species or non-farm employment is a common household strategy to cope with volatility in input prices and environmental uncertainties (Touch *et al.*, 2024). These findings suggest that while aquaculture remains the foundation of income security, its long-term sustainability requires a dual approach: improving operational efficiency in catfish production, particularly through feed and seed management (Jolly *et al.*, 2023), and maintaining diversified income portfolios to buffer households against production and market shocks (Engle *et al.*, 2022).

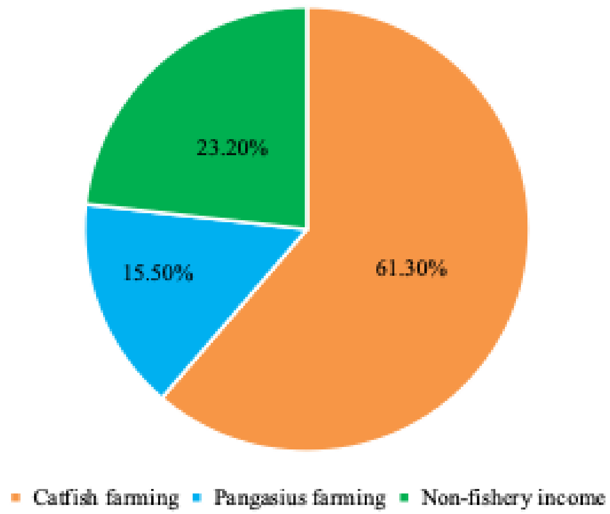

Figure 1. Composition of Household Income Sources of Catfish-Farming Households in Palembang

CONCLUSION

This study shows that small-scale catfish farming in Palembang, while cost-intensive, remains a profitable aquaculture enterprise, with feed and seed accounting for 94.30 % of total production costs. Profitability is highly sensitive to fluctuations in input prices and market conditions, underscoring the need for efficient resource use. On average, farmers earn IDR 14.14 million per production cycle (IDR 56.54 million annually), with catfish farming accounting for 61.30 % of household income, thereby serving as the principal livelihood source. Beyond its economic role, catfish farming supports local food security and rural livelihoods. Policy measures should therefore focus on improving feed efficiency, ensuring reliable access to quality seed, promoting cooperative procurement, and encouraging income diversification to strengthen household resilience against production and market risks.

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