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Agribusiness Performance of a Layer Chicken Farm in South Konawe, Indonesia

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ABSTRACT

Layer chicken farming is a prominent agribusiness sector that provides affordable animal protein to communities and offers economic opportunities to farmers. This study examines the performance of a layer chicken agribusiness at a 7,000-hen commercial farm in Konda Subdistrict, South Konawe District, Indonesia. A qualitative case study approach was employed, with data collected through interviews, observations, and farm financial records from one full production cycle. Results indicate that the farm's upstream subsystem functions well in securing feed, chicks, and other inputs according to industry standards, though housing capacity falls below recommended size. On-farm management is effective, evidenced by routine husbandry practices and a low mortality rate of 1%. Downstream marketing is efficient, with eggs sold directly to consumers and local retailers, ensuring smooth product flow. However, the supporting services subsystem is lacking; the farm receives little institutional support that could constrain future expansion. Financial analysis shows total production cost of Rp3.97 billion versus total revenue of Rp 4.76 billion per cycle, yielding a Revenue-Cost (R/C) ratio of 1.2. This R/C ratio (>1) confirms that the enterprise is profitable and feasible to sustain. We recommend strengthening supporting institutions and exploring cost-reduction strategies to further improve viability.

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INTRODUCTION

Egg production is one of the most important components of the poultry sector worldwide and has grown steadily over the past decade (World Egg Organization, 2022). Global egg output reached approximately 87 million tonnes in 2020, up from 64 million tonnes in 2010, reflecting rising demand for affordable, high-quality protein (World Egg Organization, 2022). In many developing countries, chicken eggs are a staple source of animal protein due to their nutritional value and accessibility. Laying hens are prized for their fast production cycle and high economic value relative to other livestock. Nearly all socio-economic groups can consume eggs, as they are widely available and relatively inexpensive, making them critical for food security and nutrition in both urban and rural communities (Pelafu et al., 2018; Ymeri et al., 2017). Consequently, the layer chicken industry offers significant business prospects, characterized by rapid capital turnover and stable consumer demand.

Indonesia's poultry sector has mirrored global trends, with layer farming expanding to meet increasing domestic egg consumption. In the province of Southeast Sulawesi, South Konawe District has emerged as a major egg production center, contributing substantially to regional output. Government statistics indicate that in South Konawe, the population of laying hens grew from about 161,750 to 229,270 birds between 2023 and 2024, alongside a rise in egg production from roughly 1.16 to 1.73 million kg (BPS Kabupaten Konawe Selatan, 2024). One of the largest layer farms in this district is CV. RAJ Farm Mandiri, located in Amohalo Village, Konda Subdistrict. Established in 2019, this farm maintains around 7,000 laying hens and integrates activities from rearing chicks to marketing eggs. The presence of such a sizable commercial farm provides employment and supports the local economy in a rural area where agriculture is the predominant livelihood. However, sustaining profitability in egg farming can be challenging due to high input costs (especially feed) and fluctuating output prices (Niu et al., 2016). Feed costs typically account for 65–70% of total poultry production expenses (Daghir, 2017), so increases in feed ingredient prices can erode profit margins (Haryuni, 2018). Moreover, small-to-medium scale producers often lack strong institutional support in terms of credit, technical assistance, and market access, which may limit their growth (Fatwah et al., 2025).

Given these challenges and opportunities, it is important to analyze how well the layer chicken agribusiness is performing at the farm level and whether it is financially viable under current conditions. Agribusiness performance in this context refers to the effectiveness of the farm in managing all stages of the agricultural value chain from input procurement to production and marketing, as well as its ability to generate profits (Azhari et al., 2025). Prior studies have employed agribusiness system frameworks to evaluate similar enterprises. For example, Abadi et al. (2024) examined a small layer farm in the same district (Konda) and found it barely profitable with an R/C ratio of 1.06. Another study in Central Sulawesi reported positive net returns for a layer farm, indicating general feasibility (Muhammad et al., 2017). Meanwhile, research in Kosovo by Ymeri et al. (2017) demonstrated that larger farm size correlates with higher

profitability in layer operations. These findings suggest that farm performance can vary widely depending on scale and management, and underscore the need to assess multiple aspects of the business, not just income figures. Key factors such as feed efficiency, flock health, marketing channels, and support services all interact to determine overall success (Setiadi et al., 2020; Ymeri et al., 2017).

This study aims to evaluate the agribusiness performance of CV. RAJ Farm Mandiri's layer chicken operation across the upstream, on-farm, downstream, and supporting subsystems, and to assess the financial profitability of the farm. By conducting a comprehensive case study, we seek to identify strengths and bottlenecks in the farm's management and provide information on the viability of layer chicken agribusiness in a developing region.

LITERATURE REVIEW

Agribusiness encompasses the entire chain of operations involved in the production and distribution of agricultural commodities (Downey & Erickson, 2004). According to modern agribusiness frameworks, a complete agribusiness system can be viewed as four interrelated subsystems: upstream (input supply), on-farm production, downstream processing/marketing, and supporting services (institutional support) (Azhari et al., 2025; Hidrawati et al., 2022). The upstream subsystem provides essential inputs such as seeds or livestock breeds, feed, fertilizers, medicines, and equipment needed for production. The on-farm subsystem involves the core activities of raising crops or livestock by farmers, including all husbandry practices to produce primary outputs (e.g., fresh eggs, milk, meat). The downstream subsystem focuses on marketing and processing and covers the handling, packaging, processing (if any), and distribution of agricultural products to end-users or consumers. Finally, the supporting services subsystem consists of the various institutions and services that facilitate the other subsystems, such as financial services (banks, cooperatives), extension and training, research and development, infrastructure, and government policies and regulations. Effective performance in agribusiness requires coordination among these subsystems so that inputs are available, production is efficient, products reach markets, and farmers have the necessary support (Krisnamurthi, 2020).

In the context of poultry farming, numerous studies have highlighted critical performance indicators across the value chain. Upstream, the quality of inputs (e.g., breed quality of day-old chicks and nutritional value of feed) strongly influences farm productivity. Pelafu et al. (2018) note that selecting high-quality layer breeds and proper feed types is fundamental for success in layer farming. Adherence to recommended standards for housing and animal health inputs (vaccines, medications) also falls under upstream performance and can impact bird mortality and egg production rates. For on-farm performance, typical metrics include feed conversion ratio (FCR), hen-day egg production (HDP), mortality rate, and labor efficiency. Efficient farms maintain low FCR and high HDP, indicating that chickens are converting feed into eggs effectively (Hastuti et al., 2024). A recent study by Hastuti et al. (2024) on layer

farms in Aceh reported average HDP levels and analyzed the break-even point of egg production, providing benchmarks for productive performance. Low mortality rates are another sign of good on-farm management; for example, maintaining mortality around 5% or lower per production cycle is often achievable with proper biosecurity and care (Scanes et al., 2004).

Downstream, marketing performance can be gauged by how well farmers access markets, price stability, and the share of the final consumer price that producers receive. Efficient marketing channels (e.g., direct sales or short supply chains) can increase the farmer's share of revenue. Pangemanan et al. (2023) found that reducing intermediaries in the egg supply chain in North Sulawesi improved marketing efficiency and farmer profits. On the other hand, if farmers rely on long chains of middlemen, they may face lower farmgate prices and higher marketing margins captured by others. The concept of farmers' share and marketing margin analysis is often used to evaluate downstream agribusiness performance (Pangemanan et al., 2023). For layer farms, establishing steady buyer relationships (with traders, retailers, or end consumers) and maintaining egg quality for the market are vital for sustained income.

The supporting services subsystem, though less tangible, plays an enabling role. Access to credit, cooperative groups, extension advice on farm management, and government programs (such as subsidies or vaccination campaigns) can significantly affect farm performance. A study by Satola et al. (as quoted by Osei & Zhuang, 2024) in Poland found that institutional support and favorable policies encouraged farm entrepreneurship and growth. Similarly, in developing country contexts, the presence of farmer cooperatives or partnerships can help smallholders obtain inputs at lower cost and market their output more effectively (Manyise & Dentoni, 2021). Conversely, a lack of institutional support can leave farmers vulnerable to input price volatility and market shocks (Lestari et al., 2023). For instance, Haryuni (2018) examined layer farms in East Java and showed that an increase in feed ingredient prices (rice bran) without any external support led to a significant drop in farmers' incomes, underlining how external economic factors and lack of support mechanisms can impact financial performance.

When it comes to financial viability, farm performance is often summarized through profitability metrics. A common measure in agribusiness analysis is the Revenue–Cost Ratio (R/C ratio), which is the ratio of total revenue (TR) to total cost (TC) (Azhari et al., 2025; Saediman, Mustika, et al., 2019). An R/C ratio greater than 1 indicates the business is profitable (revenues exceed costs), an R/C equal to 1 denotes break-even, and an R/C less than 1 means the operation is running at a loss. Rinanti et al. (2020) applied R/C analysis for broiler farms and considered R/C > 1 as the criterion for an efficient, feasible enterprise. In the layer industry, prior case studies have reported R/C ratios typically just above 1, reflecting modest profit margins. Abadi et al. (2024) found R/C = 1.06 for a small layer farm in Konda, implying only a 6% return over costs. In contrast, operations that achieve better economies of scale or cost efficiencies can attain higher R/C values. A study by

Setiadi et al. (2020) on smallholder layer farms in Central Java reported an R/C of approximately 1.20, indicating a 20% return, which was deemed profitable and contributed positively to farmer income. That study also identified lower feed costs and larger flock size as factors significantly associated with higher farmer incomes. Similarly, Ymeri et al. (2017) observed that larger layer farms in Kosovo enjoyed higher profitability than smaller farms, due to economies of scale and better resource utilization. These findings underscore that controlling costs (especially feed) and scaling up production can improve the financial performance of layer chicken agribusinesses.

METHODOLOGY

Research Design and Case Selection

This research utilized a case study approach with descriptive qualitative analysis, focusing on a single unit of analysis of the layer chicken farm CV. RAJ Farm Mandiri in Konda, South Konawe. The case was selected purposively because it represents one of the largest and most established layer farming enterprises in the region, making it a representative example of commercial egg agribusiness in a developing area. The farm had been in operation for over five years at the time of study and had an active laying flock of approximately 7,000 hens, which provided a suitable scale to examine full agribusiness subsystem activities. Focusing on a single, in-depth case allowed for a comprehensive performance evaluation across multiple dimensions within the specific context of the farm.

Data Collection

Both primary and secondary data were collected for the 20-month production cycle. Primary data were obtained through direct interviews and observations conducted on-site at the farm. The farm owner/manager was interviewed to gather detailed information on farm management practices, input procurement, marketing strategies, costs, and revenues. Additional interviews with farm workers provided information about daily operational routines and any challenges faced. The research team also conducted on-farm observations to verify and document the physical conditions of the facilities, herd health and mortality records, and the implementation of schedules for feeding and vaccination. Secondary data were gathered from relevant documents. This included secondary information on standards and benchmarks obtained from literature and government sources, including local statistical data from the Statistics Office (BPS). Prior research studies (journal articles and reports) on layer farm performance in Indonesia provided comparative figures for metrics, which were used later in the discussion.

Data Analysis

The analysis combined qualitative descriptions of the agribusiness subsystems with quantitative financial calculations as follows:

1. Agribusiness Subsystem Performance Analysis: We evaluated the farm's performance in the four subsystems (upstream, on-farm, downstream, and supporting) by qualitatively comparing observed practices and outcomes against standards or best practices identified in the literature.

For the upstream subsystem, we assessed input procurement, input adequacy, and compliance with national standards for breeding stock and housing. For the on-farm production subsystem, we analyzed husbandry practices including feeding program, vaccination program, biosecurity measures, and general flock management. The downstream subsystem analysis looked at how the farm collects, grades, packages, and sells eggs. We mapped the marketing channels and pricing strategy. The supporting subsystem was evaluated by identifying any external support or lack thereof, such as access to credit, membership in farmer groups, training or extension received, and any government assistance programs. This subjective assessment was important to see how the presence or absence of support structures might affect the farm's operations.

2. Financial Analysis: A comprehensive cost and return analysis was performed to assess profitability (Geo et al., 2020; Salim et al., 2025). All costs incurred over the 20-month production period were compiled and categorized into fixed costs and variable costs. Using standard farm management accounting, we calculated Total Cost (TC) as the sum of fixed and variable costs for the period. Total Revenue (TR) was calculated as the sum of income from all outputs. From these, we derived the Revenue-Cost Ratio (R/C) as R/C = TR ÷ TC. We interpreted the R/C ratio using the standard criteria: R/C > 1 indicates a profitable and feasible business, R/C = 1 indicates break-even (no profit, no loss), and R/C < 1 indicates the business is running at a loss and is not financially viable. Additionally, the absolute net income (profit) was computed as TR – TC. While the R/C ratio provides a normalized measure of profitability, the net income gives the actual return in monetary terms over the period.

RESULT AND DISCUSSION

Upstream Subsystem

Input procurement and quality: CV. RAJ Farm Mandiri procures its key inputs (day-old chicks (DOC), poultry feed, vaccines, medicines, and equipment) largely from established suppliers to ensure quality and reliability. The farm sources DOC of layer strain Isa Brown (a common commercial layer breed) from a certified hatchery. All purchased DOC are checked for health indicators and must meet criteria such as active behavior, proper weight, and navel closure, in line with the Indonesian Ministry of Agriculture's standards for layer DOC quality. Farm records indicate that the DOC mortality in the brooding phase was very low (<2%), suggesting that chick quality was high and initial care was effective. For feed, the farm relies on commercial feed brands suitable for each growth stage of the hens. As shown in Table 1, two formulated feed types were used: *Malindo 8201* (presumably a starter or grower ration) and *Malindo K36 SP* (layer phase ration), along with supplemental local ingredients like rice bran and corn grain. These feeds are procured through a local distributor on a schedule to ensure continuous supply, which is a critical point since any feed disruption could impact egg production immediately. The

nutrient content of the commercial feeds adheres to poultry nutrition standards, providing around 17–18% protein and balanced energy for laying hens. By using branded feed, the farm benefits from the feed manufacturer's quality control and avoids the risk of nutrient imbalances that could occur with on-farm feed mixing. Additionally, vitamins, vaccines, and medications are purchased from veterinary supply stores. Overall, the upstream subsystem is performing well. Inputs are available in adequate quantity and of appropriate quality. The only notable upstream constraint observed was related to housing infrastructure: the farm's chicken coop capacity was slightly undersized relative to the number of birds. According to Permentan No. 31/2014 guidelines, each layer of hens in a cage system should have a minimum floor space (for animal welfare and optimal production), but the farm's cages provide slightly less space per bird than recommended (Table 2). Labor and equipment: CV. RAJ Farm Mandiri employs a team of 15 workers (a mix of family members and hired laborers) who handle daily tasks. The labor force is relatively young (most workers are between 18–40 years old) and generally has at least a high school education, which is beneficial for training and adopting farming protocols. The farm provides brief on-the-job training, and roles are divided to ensure efficiency. The equipment inventory (Table 3) lists all major farm tools and facilities: battery cages (with capacity for the 7,000 hens), feeding troughs/pipes, water tanks, egg trays, lighting, and manure handling tools. The farm had 85 feed troughs for the starter/grower phase and an extensive network of 8,236 meters of gutter pipe feeders in the layer houses. This setup automates feed distribution to a degree, saving labor time. Other equipment includes water pumps, generators (for backup electricity), and a vehicle for transporting feed and eggs. Depreciation of these assets is accounted for as fixed costs (as seen in Table 1). The equipment is largely in good condition; during the study, no major equipment failure was observed, indicating that maintenance is conducted as needed. The presence of adequate tools and facilities suggests that the upstream support in terms of physical capital is sufficient. This condition is favorable, as inadequate equipment or labor shortages often constrain small farms. Here, the farm's investment in infrastructure likely contributes to its smooth operations, resonating with the idea that upstream investment (housing, tools) improves farm performance (Saragih, 2001).

Table 1. Fixed Costs per Production Cycle (20 months) at CV. RAJ Farm Mandiri

No	Cost Component	Unit	Quantity (per 20 months)	Unit Cost (Rp)	Total Cost (Rp)
1	Labor (salaries)	month	20	21,500,000	430,000,000
2	Depreciation – Equipment	month	20	11,305,563	226,111,264
3	Depreciation – Building	month	20	2,943,750	58,875,000
4	Tax – Business & Land	month	20	391,667	7,833,333
5	Tax – Vehicle	month	20	143,333	2,866,667

	(Car)				
	Total Fixed Costs				**725,686,264**

Source: Farm survey and records, 2025

Fixed costs are those incurred regardless of output level. Labor cost here includes regular wages for all farm workers for 20 months. Depreciation costs are calculated for equipment (feeders, pumps, etc.), building structures (coops), and farm vehicles over the cycle. Taxes include annual business, land, and vehicle taxes apportioned for the period. The total fixed cost for one cycle was Rp 725.7 million (approximately USD 48,000), with labor being the largest component (about 59% of fixed costs). This reflects the labor-intensive nature of poultry farming, consistent with reports that labor (though smaller than feed) can be a significant fixed expense in layer operations (Janah, 2020). Notably, labor is treated as a fixed cost here because the staff count and salaries did not change with small fluctuations in output.

Table 2. Farm Housing Capacity vs. Standard Requirement

Parameter	**Farm Actual (CV. RAJ)**	**Recommended Standard (Permentan No.31/2014)**
Cage floor area per hen	300 cm^2	375 cm^2 (minimum)
Stocking density	8–9 hens per m^2	6–7 hens per m^2 (max)
Housing type	Multi-tier battery cages	Battery cages (acceptable)
Ventilation	Open-sided, natural airflow	Adequate (meets standard)
Lighting hours (laying)	16 hours/day (mix natural + artificial)	16 hours/day (recommended)

Source: Field measurement and Indonesian National Standard for Good Farming Practices

The farm's cage space per hen is about 20% below the recommended minimum. This higher stocking density could stress birds slightly, but no severe health issues were observed. The farm compensates with good ventilation and lighting to maintain comfort and egg production, but expanding cage space is advisable for animal welfare and potentially higher productivity.

On-Farm Subsystem

Feeding program: Proper feeding is crucial for layer performance, and at CV. RAJ Farm Mandiri, the feeding regime is largely aligned with standard practices. The farm follows a phase-specific diet program (starter, grower, layer) based on the age of the hens, as summarized in Table 3. During the 20-month cycle, the first 18–20 weeks are the rearing phase (starter/grower feed), and from 21 weeks onward, hens are fed layer ration to support egg production. Feed was offered twice daily on average, and clean water was available at all times via an automatic drinker system. Table 3 shows the quantities of each feed type used over the cycle. The largest portion is the layer feed *Malindo K36 SP*, with about 220.75 tonnes consumed, reflecting that adult layers require substantial feed intake for egg production. Additionally, the farm mixed in about 57.96 tonnes of rice bran and 178.92 tonnes of corn into the diet. These ingredients were likely used to partially substitute the commercial feed

and reduce cost, a common practice to economize. The total feed cost amounted to approximately Rp 3.09 billion, which represented roughly 78% of the total production cost. This figure is in line with global poultry economics: feed is indeed the major cost component, constituting 65–70% or more of total costs for layer enterprises (Daghir, 2017). The farm's decision to incorporate corn and bran indicates an attempt to mitigate feed expenses. However, any cost savings must be balanced against potential drops in feed quality or nutrient density. The feeding program was mostly according to recommended standards (Rahadi, 2012), with one minor deviation noted: in the late laying phase (weeks 70–80), the farm continued with the same feed composition without reducing energy content, whereas some guides suggest adjusting feed formulation as hens age to prevent excessive fat gain. Overall, the feeding practices are sound; the birds were well-fed and maintained in good condition, evidenced by stable body weights and consistent egg output. The close adherence to feeding standards likely contributed to the respectable egg production level observed.

Table 3. Variable Costs per Production Cycle (20 months) at CV. RAJ Farm Mandiri

No	**Variable Cost Item**	**Unit**	**Quantity (per period)**	**Unit Price (Rp)**	**Total Cost (Rp)**
1	Day-Old Chicks (DOC)	chicks	7,000	11,000	77,000,000
2	Feed – Malindo 8201 (starter/grower)	kg	2,964	9,300	27,565,200
3	Feed – Malindo K36 SP (layer)	kg	220,752	9,000	1,986,768,000
4	Feed – Rice Bran (*Dedak*)	kg	57,960	4,000	231,840,000
5	Feed – Corn Grain (*Jagung*)	kg	178,920	4,700	840,924,000
6	Vaccines, Medications, Vitamins	lump sum	1 set	9,000,000	9,000,000
7	Fuel (Gasoline for generator/transport)	liters	700	10,000	7,000,000
8	Egg Trays (packaging)	pieces	85,120	800	68,096,000
9	Electricity	month	20	1,000,000	20,000,000
	Total Variable Costs				**3,248,193,200**

Source: Farm records, 2025

Variable costs vary with the scale of production. Feed is by far the largest variable expense, totaling about Rp 3.087 billion, which is 95% of all variable costs. The next largest variable cost is egg trays for packing the output (Rp68 million). Utilities and other inputs like vaccines and fuel constitute relatively small portions. The high feed cost underscores the economic pressure of feed prices on layer farming profitability. The farm's feed strategy includes commercial rations and local grains, which may reduce cost per kg of feed but still, but overall feed expense is still substantial. The data here can be compared with other studies. For example, Daghir (2017) noted that in the Middle

East/North Africa, feed is 65–70% of poultry production cost, which matches the 77–78% we see in this case. Any improvements in feed efficiency (more eggs per kg feed) or cost reductions (e.g., bulk buying, home-growing corn) could significantly enhance profitability.

Production performance: The farm's on-farm management translated into solid production outcomes. During the peak laying period, the farm recorded an average of 190 egg trays per day (each tray holding 30 eggs) being collected. This equates to about 5,700 eggs per day at peak, from 7,000 hens, which is an output rate of 81% (hen-day production). An 80% lay rate is considered good performance for commercial layers. Typically, well-managed flocks can achieve 80–90% peak production, though the average over a long cycle may be lower. Over the entire 20-month cycle, total egg production was 85,120 trays (Table 4), or approximately 2.553 million eggs. The slight discrepancy between the daily peak and the period total suggests that the peak production was not sustained throughout. Some early months of the cycle (when pullets had just started laying) and the late months would have lower output, bringing the overall average daily output to around 141 trays. Nonetheless, achieving over 2.5 million eggs in one cycle from 7,000 hens underscores the effectiveness of the farm's on-farm practices. The mortality rate recorded was about 1% (only 70 hens out of 7,000 died over 20 months). This is exceptionally low; typical mortality in layer operations can range from 3–8% in a cycle, depending on disease challenges and management. The farm's low mortality is a strong indicator of effective health management and biosecurity. Workers noted that they adhere to a routine cleaning schedule: manure was removed from under cages frequently to reduce ammonia and pathogen buildup, and the coop area was sanitized periodically. The vaccination schedule covered all major poultry diseases: Newcastle Disease (ND), Infectious Bronchitis (IB), Gumboro, Fowl Pox, Coryza, and Avian Influenza, administered at recommended ages. The compliance with the vaccination program likely prevented outbreaks, which aligns with what was observed (no disease outbreaks were reported during the period). Additionally, the farm provides supplements (vitamins) occasionally to maintain hen health.

A possible area for improvement in production could be feed efficiency. While egg output was good, we calculated a rough feed conversion: total feed used (460,596 kg) against total egg mass produced. If each tray has 30 eggs averaging 60g each, 85,120 trays correspond to 153,216 kg of eggs. The feed-to-egg ratio is about 3.01 kg feed per kg of eggs. This FCR (3.0) is somewhat above the ideal range (often around 2.0–2.5 for layers). It suggests feed efficiency might be lower than optimal; however, this calculation might not account for feed consumed during rearing before lay (which doesn't immediately yield eggs) and the feed used to maintain hens that eventually died or were culled. Industry benchmarks for layer FCR usually consider only the laying period. Given these factors, the farm's actual layer-phase FCR might be closer to normal. Nonetheless, exploring ways to reduce feed waste and improve conversion (e.g., using feed additives or more precise feeding) could enhance efficiency and reduce costs. This observation resonates with global advice that

improving feed efficiency is key to profitability in poultry production (Adaszyńska-Skwirzyńska et al., 2025).

Labor productivity on the farm appears adequate. With 15 workers managing 7,000 birds, the ratio is 467 birds per worker. Tasks are labor-intensive (especially daily egg collection and cleaning), but the work is organized into shifts. Given the low mortality and good production, it seems labor is sufficient and well-utilized. Hardworking staff and diligent routine likely contributed to the health and production outcomes.

Downstream Subsystem

Marketing channels: The enterprise has developed a relatively simple but effective marketing channel for its eggs. The farm primarily sells fresh eggs through two routes: direct-to-consumer sales and to local market retailers. Approximately 30% of daily egg production is sold directly to individual consumers in nearby communities. These are often repeat customers who either come to the farm or receive deliveries; they prefer buying from the farm because eggs are fresher and sometimes slightly cheaper than at markets. The remaining 70% of eggs are supplied to small retailers and kiosks in the Konda subdistrict and the neighboring Kendari city. These retailers include traditional market stall vendors and some grocery shops. The farm does not currently have contracts with supermarkets or institutional buyers, which are typically harder to access for smaller producers, but the existing demand in local markets has been sufficient to absorb the supply.

Pricing strategy: During the studied period, the selling price of eggs was relatively stable at Rp 52,000 per rack (tray) (each rack = 30 eggs). This price is roughly Rp 1,733 per egg. The price was determined based on prevailing market prices in the region. Notably, the farm's direct sales to consumers were at the same price as to retailers, meaning the retailers then mark up when selling to final consumers (often around Rp 55,000–58,000 per rack retail). This implies the farm gate price is a bit lower than the end consumer price, as expected. The retailer's margin exists to cover their transport and selling costs. However, by selling a significant portion directly, the farm effectively captures what would otherwise be a retailer's margin on those eggs. The farm also benefits from saving on transportation for the portion that buyers pick up directly. Our observation is that the farm's chosen channels are working well: eggs were usually sold out each day, with little to no inventory carried over to the next day.

To manage supply fluctuations, the farm has a practice of slightly lowering the price or offering promotions (like 1 free tray after buying a certain number) to bulk buyers, to move inventory. Conversely, if local demand ever softens, the farm could look into reaching farther markets (e.g., sending eggs to larger towns), but that would incur transport costs and potentially require a middleman, reducing net price. For now, the chosen marketing scope seems optimal for keeping costs low and prices competitive.

Supporting products: In addition to eggs, the farm has two by-products: culled hens (spent layers) and chicken manure. After the 18–20 month laying cycle, hens are considered spent and are sold for meat. CV. RAJ Farm Mandiri

culled about 6,900 hens at the end of the cycle (some mortality accounted for the difference from 7,000) and sold them at approximately Rp 45,000 per bird. This price is typical for spent layers (which are usually processed into curry or soups rather than prime meat). The cull sales contributed a significant secondary revenue of Rp 310.5 million (see Table 4). Manure is another product: the farm accumulated a large quantity of chicken manure over 20 months, which it sold to local farmers as organic fertilizer. About 50,000 kg of manure were sold at Rp 400 per kg, yielding Rp 20 million. There is a steady demand for manure among vegetable farmers in the area, so the farm managed to monetize this waste instead of having to pay for disposal. These additional revenue streams are important; together, they accounted for roughly 7% of the total revenue. They also illustrate the farm's efficiency in resource use, turning what could be waste (manure, and hens that no longer lay) into profit. This practice is consistent with integrated farming principles and improves overall profitability.

Table 4. Revenues per Production Cycle (20 Months) for CV. RAJ Farm Mandiri

No	Product	Unit	Unit Price (Rp)	Quantity (per period)	Revenue (Rp)
1	Eggs (fresh)	racks (30 eggs each)	52,000	85,120 racks	4,426,240,000
2	Culled Hens (spent layers)	Birds	45,000	6,900 birds	310,500,000
3	Manure (chicken litter)	Kg	400	50,000 kg	20,000,000
	Total Revenue				**4,756,740,000**

Source: Farm records (sales logs), 2025

Over a 20-month cycle, the farm's total revenue was about Rp 4.757 billion (USD 320,000). The majority (93%) came from egg sales, which is expected as eggs are the primary product. The sale of culled hens contributed 6.5%, and manure 0.4% of total revenue. Notably, the farm sold on average 190 racks of eggs per day during peak times and managed to sell 100% of the eggs produced. This indicates a well-matched production and marketing capacity. For context, Abadi et al. (2024) reported a comparable layer farm (though smaller scale) that earned about Rp 3.98 billion in one production period from eggs, hens, and manure, slightly less than RAJ Farm's revenue. The higher revenue at RAJ Farm Mandiri can be partly attributed to its larger flock size and possibly better productivity. It highlights how scale of operation can increase total returns, echoing Ymeri et al.'s (2017) finding that larger farm size tends to yield higher profitability.

Marketing efficiency: The simplicity and local focus of the farm's marketing method result in minimal marketing costs. Since consumers and small retailers either pick up the eggs or are within short delivery range, the farm's transportation expense was limited to fuel for a small vehicle used occasionally (Table 3). The farm does not engage in processing or significant packaging. Eggs are sold in generic pulp egg trays and cartons, which are low-

cost (the trays cost Rp 800 each, which is factored as a variable cost). There is no branding of the eggs under a specific label, which is common for small producers; eggs are sold as commodity. While branding and packaging could potentially allow higher pricing, doing so typically requires entering supermarket supply chains, which have their own barriers and costs. Given the local demand, the current approach is efficient. One risk in the downstream aspect is price volatility. Egg prices in Indonesia can fluctuate due to supply gluts or feed price spikes affecting many producers. During the study period, the price was steady at Rp 52,000/rack, but it is noted that earlier in the year prices had dropped to around Rp 48,000 for some weeks. The farm had to endure those periods with thinner margins. Conversely, sometimes prices rise during holiday seasons or religious festival. The farm's strategy is to maintain production volume and adjust selling distribution in response. For example, if prices fall, they might try to sell more directly, and if prices rise, they ensure to lock in as many sales as possible at the high rate. This adaptive selling strategy is common among savvy producers.

In comparison to other regions, marketing eggs directly to local markets is typical for small-to-medium farms. Pangemanan et al. (2023) in their study of egg marketing noted that when farmers have access to local markets, the marketing margin can be kept reasonable. In our case, if retailers sell at Rp 58,000 and the farm sells at Rp 52,000, the retailer's margin is around 10%, which is not excessive. The farm's direct consumer sales capture full value. Thus, we can say the farm's downstream performance is strong. It has achieved a reliable outlet for its entire production at fair prices, with low distribution costs and minimal dependency on external middlemen.

Supporting Subsystem

Supporting institutions that play a role in CV. RAJ Farm Mandiri's operations are primarily with financial institutions (banks) and input partner providers. On the financial side, the farm has received assistance in the form of a loan of Rp 400,000,000 through a credit scheme from a local bank. Access to this credit has helped the farm establish and expand its production capacity, although, like many agribusinesses, the owner noted that collateral requirements and repayment conditions remain a challenge for broader financing opportunities (Sharma & Bhatt, 2022). On the input side, the farm partners with Toko Mitra Jaya, which supplies critical production inputs such as feed, vaccines, and poultry equipment. This partnership ensures continuity and reliability in the provision of essential resources, reducing the risk of input shortages and supporting efficient farm management (Reski et al., 2022). Together, these institutions—banks providing financial capital and Mitra Jaya supplying production inputs—constitute the key external supports underpinning the farm's agribusiness performance, even though broader institutional backing (such as extension services or government programs) remains limited.

However, other aspects of supporting services are underdeveloped. For example, in terms of extension and training, the farm manager did not report receiving any regular visits or guidance from agricultural extension agents or

livestock service officers. Extension services are a form of government support that can improve farm practices. In South Konawe, extension officers exist, but they may be limited in number or focused on crop agriculture (Saediman, Mboe, et al., 2021). It appears that for poultry, the farm relied on informal knowledge networks and the owner's own learning (Mboe et al., 2024; Saediman, Mboe, et al., 2021). While this self-reliance has worked, formal support could bring new innovations. For example, training on waste processing into higher-value products or linking to cooperative marketing networks. In many cases, extension can introduce technologies to improve efficiency (Gustiani & Fahmi, 2022). The absence of extension input here means the farm might not be fully aware of some emerging best practices (though their current practices are solid).

With respect to cooperatives or farmer groups, the farm is not a member of any layer producers cooperative or association. Cooperative membership could potentially help in bulk purchasing of feed to reduce cost or collective marketing to stabilize egg prices. There is an egg producer association at the provincial level, but small producers often do not engage with it. The downside of going it alone is weaker bargaining power. For example, feed prices are taken as given, whereas a cooperative could negotiate discounts with feed suppliers. As the sector grows in the region, fostering a cooperative could be beneficial, and it represents a missing supporting institution currently.

The local government's role in supporting this farm has been negligible. There were no subsidies on feed or chicks provided. During disease outbreaks in the past (e.g., avian flu threats), sometimes the government provides free vaccination or compensation, but since the farm had no outbreaks, it did not receive any such aid (which is a good thing in a sense). The farm also has to handle its own waste management even though, as noted, it turned manure into a sellable product, which is good environmental management without external prodding. The only indirect support is infrastructure: good road access to the farm, which enables distribution, but that benefits all villagers, not tailored to the farm.

The lack of an active supporting subsystem is in line with findings in other case studies (Lestari et al., 2023; Saediman, 2025; Saediman, Indarsyih, et al., 2019). Santoso et al. (2017) studying a mushroom farm's agribusiness performance, also highlighted that the lack of government support and institutional linkage was a bottleneck, even when the core business was profitable. They suggested that local authorities step in with technical guidance and facilitate market linkages. Likewise, for RAJ Farm Mandiri, the recommendation is clear: strengthening supporting institutions (through policy or local initiatives) would bolster the farm's resilience and capacity. Some possibilities include government or NGOs providing training workshops on advanced poultry management or value addition (like egg processing), and creating a layer farmer group in the region for collective action.

Financial Performance and Feasibility

Total costs: Summing the fixed and variable costs from Tables 1 and 3, Total Fixed Costs is Rp 725,686,264, and Total Variable Costs is

Rp 3,248,193,200; thus, the Total Production Cost (TC) for the 20 months is Rp 3,973,879,464 (approximately Rp 3.974 billion). This cost figure includes all expenses involved in raising the hens and producing eggs for the entire cycle. Variable costs accounted for about 82% of total costs, while fixed costs were 18%. This cost structure (heavy on variable costs) is typical for poultry farms, largely because of the feed component. It is instructive to compare these costs with the revenues:

Total revenues: From Table 4, the Total Revenue (TR) was Rp 4,756,740,000 over the same period. We can calculate the net profit (π) as: π=TR−TC=4,756,740,000−3,973,879,464=Rp782,860,536

Thus, the farm earned about Rp 782.86 million in profit over 20 months. In monthly terms, that is an average profit of Rp 39.14 million per month (around USD 2,600/month given exchange rates of roughly Rp 15,000 = $1). This is a substantial income in the local context, indicating that the business is financially rewarding for the owner, even after paying all operating costs and worker salaries.

Revenue-Cost Ratio (R/C): Using the TR and TC:

$$\frac{R}{C} = \frac{4{,}756{,}740{,}000}{3{,}973{,}879{,}464} = 1.2$$

The farm's R/C ratio is 1.2. This means that for every Rp 1 spent, the farm generated Rp 1.20 in revenue. In percentage terms, it implies a 20% return above costs. According to feasibility criteria, an R/C > 1 confirms that the business is profitable and worth continuing or expanding.

To contextualize this performance: earlier, we cited Abadi et al. (2024) who found an R/C of 1.06 for a smaller layer farm, essentially just above break-even. CV. RAJ Farm Mandiri's R/C of 1.2 is significantly higher, highlighting its better profitability. Several reasons can be posited for this difference:

- Economies of scale: RAJ's larger flock likely allows certain efficiencies.
- Productivity: The high egg output and low mortality at RAJ improved revenue relative to cost.
- Cost management: RAJ Farm used some self-mixed feed ingredients (corn, bran). If done correctly, this can reduce feed cost per unit without hurting production, boosting profit.
- Price or market: RAJ's average egg selling price might have been similar or slightly better. We know RAJ sold at Rp 52,000/rack; if the other farm sold at a similar price but had lower output per cost, that aligns with the lower R/C.

Compared to the RJOAS study (Setiadi et al., 2020) we referenced RAJ Farm's R/C of 1.2 is indeed comparable to what they found for smallholders (1.20). This suggests that RAJ Farm's profitability is not an outlier. It matches what good performers in other regions have achieved. Another case, Abadi et al. (2022) who experimented with integrating corn cultivation with layer farming to cut feed costs, reportedly achieved an even higher R/C of 2.68. That extremely high ratio was in a scenario where the farm grew some of its own feed ingredients (hybrid corn). It implies that if RAJ Farm Mandiri were to adopt some integration (e.g., farming corn or producing its own feed), there

might be room to boost profitability further. However, R/C 2.7 is rare in standard operations; it likely involved conditions like very low feed cost or higher-than-normal egg prices. In normal practice, an R/C around 1.2–1.3 is considered a healthy profitability for a layer farm, given typical margins (Haryuni, 2018, also found layer profits in the 10–20% range in her analysis).

Break-even analysis: Another way to interpret the financials is to consider the break-even points. The break-even price for eggs can be estimated by dividing the total cost by the number of egg racks produced. RAJ Farm's total cost (Rp 3.9738 billion) divided by 85,120 racks gives Rp 46,670 per rack. This is the break-even price (ignoring other revenues). Since the farm sold at Rp 52,000 per rack, there was a comfortable margin above break-even. In percentage terms, the selling price was about 11.4% higher than the break-even price. Suffice to say, the farm was safely above break-even in output achieved, since it sold everything, and it produced at profitable prices.

Cash flow perspective: While we focus on total period profit, it is worth noting that laying hen farming has an initial investment and then a relatively steady cash flow once eggs start being produced. RAJ Farm had to invest in chicks and feed for the first 5 months with little income (until hens started laying around 5 months old). After that, egg income flows regularly (daily/weekly sales), which typically covers ongoing costs and yields profit. The farm did not report any cash flow crunch, indicating that revenue from egg sales was continuously funding feed purchases and other expenses after the startup phase. Ichsan et al. (2019) note that the payback period for such an investment can often be within 2–3 years. In RAJ's case, if we consider the net profit of Rp 782 million per cycle, it likely paid back its initial setup costs (housing, equipment) within a couple of cycles.

Table 5. Summary of Cost, Revenue, and Profitability for One Production Cycle

Total Revenue (TR)	**Total Production Cost (TC)**	**R/C Ratio**	**Feasibility Verdict**
Rp4,756,740,000	Rp3,973,879,464	**1.2**	> 1 (**Profitable**)

Source: Analysis of farm financial records, 2025

As shown, the R/C ratio of 1.2 confirms the business is run efficiently and is profitable to continue. The net income of roughly Rp 782.9 million per cycle provides a good return on investment. By standard criteria in farm management, an R/C > 1.2 can be considered robust, meaning the farm not only covers costs but also has a cushion to handle minor adversities. It must be noted that in agriculture, risk factors like disease or price swings are ever-present (Saediman, Indarsyih, et al., 2021), so achieving a strong R/C in one cycle is excellent, but resilience should be built to maintain it in future cycles.

In summary, financially, CV. RAJ Farm Mandiri is a viable and profitable layer chicken agribusiness. It validates the proposition that egg farming, when well-managed, can generate sustained income for agribusiness entrepreneurs in Indonesia. This aligns with findings by Setiadi et al. (2020) who concluded that layer farming provided good income for rural farmers in their study, and by Ymeri et al. (2017) Those who found profitability in Kosovo's layer farms

improved with scale. The case also underscores the importance of cost control, particularly feed cost, in maintaining a healthy profit margin (Daghir, 2017). Going forward, the farm should focus on strategies to secure feed at a lower cost and continue its effective production and marketing practices. If it does so, it can likely sustain or even improve its R/C ratio, further strengthening its business against competition and market fluctuations.

CONCLUSIONS AND RECOMMENDATIONS

This study examined the agribusiness performance and financial feasibility of a medium-scale layer chicken farm in South Konawe, Southeast Sulawesi. At the upstream subsystem, the farm effectively secured high-quality inputs and resources necessary for production. The only upstream shortcoming was in housing capacity, in which the farm's cage space per hen was slightly below recommended standards, indicating a need for infrastructure expansion. Overall, the upstream subsystem is well-managed, providing a strong foundation for the enterprise. At the on-farm subsystem, management practices on the farm proved to be efficient and in line with good animal husbandry techniques. In essence, the on-farm subsystem is operating optimally, turning inputs into outputs with minimal waste and loss. At the downstream level, the farm's marketing and distribution of eggs were found to be smooth and efficient. By selling directly to local consumers and retailers, the farm ensured a quick turnover of fresh eggs and avoided heavy reliance on middlemen. The prevailing egg price during the study period allowed the farm to maintain a healthy margin, and there was sufficient local demand to absorb all production. The downstream subsystem performance is strong, evidenced by low marketing costs, fair pricing, and zero product wastage.

The analysis revealed a gap in the supporting subsystem. The farm operates with little external support: no extension services, and no cooperative membership. While this independent operation underscores the owner's capability and the inherent profitability of the venture, it also highlights a missed opportunity for further enhancement. Strengthening supporting institutions could help the farm mitigate risks and expand more rapidly. The current lack of government or institutional support is a vulnerability, meaning the farm's continued success is heavily dependent on internal factors and market conditions remaining favorable.

The economic analysis confirms that the farm is financially feasible and profitable. With a total cost of Rp 3.97 billion and total revenue of Rp 4.76 billion per cycle, the enterprise realized a net profit of about Rp 782.9 million. The resulting R/C ratio of 1.2 clearly meets the criterion for a viable agribusiness (R/C > 1). This indicates the farm earned roughly 20% more than its expenses, a substantial return in the agricultural sector. The profitability aligns with, or exceeds, the performance of similar layer farming operations reported in the literature both regionally and internationally. It demonstrates that, under competent management, layer chicken agribusiness can generate solid profits even in a mid-scale, rural Indonesian setting. However, the analysis also points to areas for improvement and broader implications, namely

scaling and investment, feed self-sufficiency, risk management, and engagement with support systems.

FURTHER STUDY

Future research could extend this case study by including multiple-layer farms of different scales to allow comparative analysis across regions. In addition, examining long-term financial performance under varying market conditions or exploring the integration of feed crop production with poultry operations would provide deeper insights into the sustainability of layer chicken agribusiness.

REFERENCES

Abadi, M., Nafiu, L. O., Sani, L. O. A., Hadini, H., Munadi, L. O. M., & Arief, L. O. K. (2022). Financial Feasibility of an Integrated Business Pattern for Laying Hens and Hybrid Corn on a Small-Scale Business in South Konawe Regency. *Proceedings of the International Conference on Improving Tropical Animal Production for Food Security (ITAPS 2021)*.

Abadi, M., Sani, L. O. A., & Nurdian, N. (2024). Analisis Pendapatan Usaha Ayam Ras Petelur di UD. Mandiri Kecamatan Konda. *Jurnal Ilmiah AgriSains*, *25*(2), 117–128.

Adaszyńska-Skwirzyńska, M., Konieczka, P., Bucław, M., Majewska, D., Pietruszka, A., Zych, S., & Szczerbińska, D. (2025). Analysis of the Production and Economic Indicators of Broiler Chicken Rearing in 2020–2023: A Case Study of a Polish Farm. *Agriculture*, *15*(2), 139.

Azhari, D., Alwi, L. O., Jabuddin, L. O., & Saediman, H. (2025). Agribusiness Performance of Milkfish and Vannamei Shrimp in a Polyculture System. *International Journal of Economic, Finance and Business Statistics*, *3*(4), 231–248. https://doi.org/10.59890/ijefbs.v3i4.132

BPS Kabupaten Konawe Selatan. (2024). *Konawe Selatan dalam Angka 2024*. BPS Kabupaten Konawe Selatan.

Daghir, N. J. (2017). *Role of Poultry Meat and Egg Production in Improving Food Security in the MENA Region*. https://egyptssp.ifpri.info/

Downey, W. D., & Erickson, S. P. (2004). *Agribusiness Management*. Erlangga.

Fatwah, A., Yunus, L., Dedu, L. O. A., & Saediman, H. (2025). Feasibility of Brown Sugar Home Industry in Batu Putih Village in Southeast Sulawesi. *International Journal of Management and Business Intelligence*, *3*(4), 259–274. https://doi.org/10.59890/ijmbi.v3i4.102

Geo, L., Saediman, H., & Ariani, W. O. R. (2020). Profit and Financial Feasibility Analysis of Broiler Chicken Livestock in South Konawe District, Indonesia. *IOP Conference Series: Earth and Environmental Science*, *465*, 012059.

Gustiani, E., & Fahmi, T. (2022). Peran Sektor Peternakan Mendukung Ketahanan Pangan di Era New Normal Melalui Penerapan Teknologi Reproduksi Pada Sapi Potong Di Kabupaten Majalengka. *Prosiding Seminar Nasional Hasil Penelitian Agribisnis*, *6*(1), 70–76.

Haryuni, N. (2018). Analisis Kinerja Finansial Kenaikan Harga Dedak Padi terhadap Tingkat Pendapatan Peternak Ayam Petelur di Kabupaten

Blitar Jawa Timur. *Jurnal Ilmiah Fillia Cendekia*, *3*(1), 10–15.

Hastuti, D., Prabowo, R., & Syihabudin, A. A. (2024). Tingkat Hen Day Production (HDP) dan Break Event Point (BEP) Usaha Ayam Ras Petelur (Gallus sp). *Agrifo: Jurnal Agribisnis Universitas Malikussaleh*, *3*(2), 64–72.

Hidrawati, Saediman, H., & Arief, L. O. K. (2022). *Pengembangan Masyarakat Agribisnis*. UHO Press.

Ichsan, R. N., Nasution, L., & Sinaga, S. (2019). *Studi Kelayakan Bisnis*. CV. Manhaji.

Janah, N. (2020). Analisis Pendapatan Usaha Ternak Ayam Ras Petelur Cokelat (Hibrida) (Studi pada Usaha Bumi Lestari Sejahtera, Desa Lalobao, Kecamatan Andoolo, Kabupaten Konawe Selatan). *Jurnal Samudra Ekonomika*, *4*(1), 72–86.

Krisnamurthi, B. (2020). *Pengertian Agribisnis*. Puspa Swara dan Departemen Agribisnis Fakultas Ekonomi dan Manajemen Institut Pertanian Bogor.

Lestari, N. A. P., Bahari, B., Abdullah, W. G., & Saediman, H. (2023). Institutions and Partnership in Clove Farming Development: A Case of Puulemo Village in Kolaka District of Southeast Sulawesi. *International Journal of Research in Engineering, Science and Management*, *6*(12), 168–172.

Manyise, T., & Dentoni, D. (2021). Value Chain Partnerships and Farmer Entrepreneurship as Balancing Ecosystem Services: Implications for Agri-Food Systems Resilience. *Ecosystem Services*, *49*, 101279.

Mboe, M. S., Saediman, H., Rifay, A., Utami, T., & Purnomo, A. O. (2024). The Use of Mobile Phones Among Sweet Potato Farmers for Agricultural Information in Ranomeeto Subdistrict in Southeast Sulawesi. *International Journal of Research in Engineering, Science and Management*, *7*(6), 208–213.

Niu, E., Saediman, H., & Surni. (2016). Break-Even Analysis of Poultry Egg Production in Rural Area in Southeast Sulawesi. *Binus Business Review*, *7*(3), 227–232.

Osei, C. D., & Zhuang, J. (2024). The Effects of Institutional Supports on Farm Entrepreneurial Performance: Exploring the Mediating Role of Entrepreneurial Orientation. *Sage Open*, *14*(1), 1–17.

Pangemanan, S. P., Lumenta, I. D. R., Rawis, J. O. E., & Mailangkay, T. (2023). Farmer's Share, Margin dan Efisiensi Pemasaran Telur Ayam Ras. *Jambura Journal of Animal Science*, *5*(2), 90–97.

Pelafu, F., Najoan, M., & Elly, F. H. (2018). Potensi Pengembangan Peternakan Ayam Ras Petelur di Kabupaten Halmahera Barat. *Jurnal Zootek*, *38*(1), 209–219.

Rahadi, S. (2012). *Manajemen Peternakan Ayam Petelur*. CV. Diaspora.

Reski, A., Saediman, H., & Yusria, W. O. (2022). The Analysis of Partnership Patterns in the Coconut Sugar Agroindustry in Manyampa Village, Ujung Loe District, Bulukumba Regency, South Sulawesi Province. *Jurnal Ilmiah Membangun Desa Dan Pertanian*, *7*(5), 160–166.

Rinanti, R. F., Murti, A. T., & Ngaku, M. A. (2020). Analisis Kelayakan Usaha Ayam Pedaging Pola Kemitraan dan Pola Mandiri Di Kecamatan Dau Kabupaten Malang (Studi Kasus Di Desa Gang Siranputuk Desa Gading Kulon Dan Desa Tegal Weru. *Jurnal Sains Peternakan*, *8*(2), 122–131.

Saediman, H. (2025). SWOT Analysis for the Development of Small-Scale Shrimp Paste Enterprises. *International Journal of Research in Engineering, Science and Management*, *8*(1), 117–121.

Saediman, H., Indarsyih, Y., & Abadi, M. (2019). Status Pembiayaan Pertanian pada Sistem Agribisnis Padi Sawah di Kabupaten Konawe dan Konawe Selatan Provinsi Sulawesi Tenggara. *Buletin Penelitian Sosial Ekonomi Pertanian*, *21*(2), 79–85.

Saediman, H., Indarsyih, Y., Abdullah, S., Fyka, S. A., & Mboe, I. S. (2021). Assessing major drivers of crop shifting from rice to horticultural production: a case of Landono sub-regency in Southeast Sulawesi. *IOP Conference Series: Earth and Environmental Science*, *724*, 012006. https://doi.org/10.1088/1755-1315/724/1/012006

Saediman, H., Mboe, I. S., Budiyanto, B., Sarinah, S., & Hidrawati, H. (2021). Smallholder adoption of horticultural crops : the case of dragon fruit in Southeast Sulawesi Smallholder adoption of horticultural crops : the case of dragon fruit in Southeast Sulawesi. *IOP Conference Series: Earth and Environmental Science*, *819*, 012043. https://doi.org/10.1088/1755-1315/819/1/012043

Saediman, H., Mustika, Nalefo, L., Tufaila, M., & Zani, M. (2019). Cost and Return Analysis of Rice Farming and Brick Making in South Konawe District of Southeast Sulawesi. *International Journal of Scientific & Technology Research*, *8*(10), 835–838.

Salim, A., Saediman, H., & Yusnaini, Y. (2025). Profitability of Vannamei Shrimp Farming: Traditional vs. Intensive Systems in Kolaka District in Indonesia. *Journal of Global Innovations in Agricultural Sciences*, *13*(2), 597–606. https://doi.org/10.22194/JGIAS/25.1595

Santoso, Z. B., Sudjani, E. T., & Andaka, A. (2017). Analisis Biaya Produksi Peternakan Ayam Petelur di Kabupaten Tulungagung (Studi Kasus di Dofir Layer Farm). *AVES: Jurnal Ilmu Peternakan*, *11*(1), 21–29.

Saragih, B. (2001). *Suara dari Bogor Membangun Sistem Agribisnis*. Yayasan USESE bekerjasama dengan Sucofindo.

Scanes, C. G., Brant, G., & Ensminger, M. E. (2004). *Poultry Science*. Pearson Prentice Hall.

Setiadi, A., Santoso, S. I., Sofyan, A., Mulyono, A. D., Nurfadillah, S., & Prayoga, K. (2020). Can Layer Chicken Business Generate Income for Smallholder Farmers in Rural Areas of Indonesia? *Russian Journal of Agricultural and Socio-Economic Sciences*, *102*(6), 82–88.

Sharma, J. P., & Bhatt, A. (2022). Role of Agri-Business Entrepreneurship, Innovation and Value Chains/Networks in Farmer Income Improvement: Models, Policies and Challenges. *Indian Journal of Agricultural Economics*, *77*(1), 120–132.

World Egg Organization. (2022). *Global egg production continues to increase at an average of 3% per year*. worldeggorganisation.com

Ymeri, P., Sahiti, F., Musliu, A., Shaqiri, F., & Pllana, M. (2017). The Effect of Farm Size on Profitability of Laying Poultry Farms in Kosovo. *Bulgarian Journal of Agricultural Science*, *23*(3), 376–380.