



## Income Analysis of Pig Farming Business “Red Pig Farm” in Pangolombian Village, South Tomohon District, Tomohon City

Asri I. Sumule., Ingriet D. R. Lumenta, Jolyanis Lainawa, Sony A. E. Moningkey, Franky N. S. Oroh

Faculty Of Animal Science Sam Ratulangi University, 95115

Correspondence Author: [ingrieltumenta0411@gmail.com](mailto:ingrieltumenta0411@gmail.com)

Jambura  
Journal of  
Animal  
Science, Volume  
:8, Issue:1,  
November 2025

**Keywords:**  
Pig Farming;  
Income;  
RC Ratio

**Abstract:** This study aims to describe and analyze the Red Pig Farm business. This study uses a survey method through a case study approach on Mr. Ferry Wawo's pig farming business. Uses a quantitative descriptive method. The data collection period is from April 2024 - April 2025. The results of this study indicate that the Red Pig Farm has implemented good technical aspects such as feeding, maintenance management, housing, and disease prevention and this pig farming business provides income. Where production costs consist of fixed costs and variable costs as well as total costs, where fixed costs consist of; depreciation costs for cages and equipment, and tax costs for one year amounting to IDR42,897,143, for variable costs IDR244,203,043, the total cost of the Red Pig Farm livestock business for one year amounting to IDR287,100,186. The income of the Red Pig Farm livestock business for one year of production period was obtained from the sale of pigs and livestock that have not been sold (stock) where the number of livestock sold was 64 and livestock that have not been sold was 49 with a total value of IDR 830,350,000. For the income of Red Pig Farm for one year amounting to IDR 543,567,814. For the level of profit or income from the Red Pig Farm livestock business, based on the results of the R/C ratio analysis, the value obtained was 2.90 or RC ratio >1, so the business run by Mr. Ferry Wawo made a profit. The conclusion was that the Red Pig Farm pig farming business in Kelurahan Pangolombian, South Tomohon District, Tomohon City, was able to demonstrate good performance and survive after the ASF virus outbreak, while also generating adequate income and having good prospects for future development.

*Citation APA Style*

Sumule A I, Lumenta I D R, Lainawa J, Moningkey S A E, Oroh F N S. 2025. *Income Analysis of Pig Farming Business “Red Pig Farm” in Pangolombian Village, South Tomohon District, Tomohon City. Jambura Journal of Animal Science, 8 (1) 21-33*  
©-2025. Sumule A I, Lumenta I D R, Lainawa J, Moningkey S A E, Oroh F N S. Under license CC BY NC SA 4.0

## INTRODUCTION

The livestock sector is a crucial sector in meeting human animal protein needs, alongside the fisheries sector. The livestock subsector plays a key role in providing animal protein, providing income, providing employment, and contributing to gross domestic product (GDP). According to the Directorate General of Animal Husbandry and Animal Health (2024), the GDP value of the livestock subsector in 2024 is projected to increase by 0.67 percent from the previous year's value of IDR 74,122.07 billion.

Pigs are a vital livestock commodity that plays a crucial role in meeting the community's animal protein needs. According to data from the Central Statistics Agency (BPS) of North Sulawesi Province in 2023, the pig population in the province reached 397,942, while in Tomohon City it was recorded at 17,609 (BPS Tomohon City, 2023). Tomohon City has significant potential for developing pig farming businesses due to its predominantly Christian population, resulting in relatively high pork consumption. One growing business in this area is the "Red Pig Farm" owned by Mr. Ferry Wawo, located in Pangolombian Village, South Tomohon District. This business, which focuses on fattening livestock, was established in 2018 and is still actively operating.

In mid-2023, an outbreak of African Swine Fever (ASF) struck many pig farms and caused a high mortality rate. The African Swine Fever (ASF) virus first appeared in Indonesia (Sumatra) in 2019 and was officially announced through the Decree of the Minister of Agriculture of 2019 Number 820/KPTS/PK.320/M/12/20019. The potential and pressure on pig farming businesses in North Sulawesi were clearly visible, where before the ASF outbreak, the livestock population reached more than 425,000, but decreased drastically to around 50,000 after the outbreak. This condition shows that the impact of ASF on the decline in the population and activity of pig farming businesses is not only common in North Sulawesi, but is also relevant to the situation experienced by farmers in Tomohon City, marked by many pig farms ceasing operations due to concerns about transmission and economic losses. Based on the results of a survey at the "Red Pig Farm," even though the ASF virus did not directly attack the business, the owner still sold his livestock in April 2024 as a precautionary measure, resulting in a significant reduction in the livestock population. The pig population before the ASF virus (mid-2023 to April 2024) was 140, and in May - August 2024 it was 14 consisting of 1 bull, 3 sows, and 10 fattening pigs. Based on these conditions, it is necessary to analyze the income of the "Red Pig Farm" pig farm in Pangolombian Village, South Tomohon District, Tomohon City to determine the level of income, efficiency, and feasibility of the business being run. The results of this analysis are expected to serve as a basis for evaluating business performance and provide a useful overview for the sustainable development of pig farming in the Tomohon Region.

## MATERIAL AND METHOD

### Research Location and Time

This research was conducted at the Red Pig Farm in Pangolombian Village, South Tomohon District, Tomohon City, owned by Mr. Ferry Wawo. This research was conducted as part of the Independent Campus Research Program from April 22, 2024, to March 23, 2025.

### Method of Collecting Data

This research was conducted using a case study method on the Red Pig Farm pig farming business owned by Mr. Ferry Wawo in Pangolombian Village, South Tomohon District, Tomohon City. The data used in this study are primary and secondary data. Primary data is the result of direct observation and interviews with the owner of the Red Pig Farm pig farming business using a questionnaire that covers the identity of the business owner, the general condition of the farm, maintenance systems, production costs, revenue, income, and RC Ratio. Secondary data was obtained from government agencies/institutions and scientific journal articles related to this research.

## Definition of Concepts, Variables and Measurement

1. Pig herd is the number of pigs raised by Mr. Ferry Wawo in Pangolombian Village, South Tomohon District, Tomohon City, in units of head/year.
2. Production costs are the sum of fixed costs and variable costs (variable costs) incurred in a livestock business, expressed in IDR/year. Fixed costs, a type of static cost that does not change even with changes in business volume, are expressed in IDR/year. Fixed costs consist of: depreciation of pens, taxes. Variable costs are the amount of costs incurred in a pig farm, the amount of which can vary depending on production volume, expressed in IDR/year. Variable costs consist of: feed costs, seed costs, labor costs, costs of medicines, vitamins, and vaccines.
3. Revenue is the cost received from the sale of pigs and unsold pigs, expressed in kg of live weight multiplied by the price per kg, expressed in IDR/year.
4. Income is the result of revenue minus production costs, expressed in IDR/year.
5. RC ratio is the ratio between total revenue and total costs.

## Data Analysis

The data obtained will be analyzed using two approaches: descriptive and mathematical. The descriptive analysis approach describes qualitative and quantitative data in tabular or percentage form, such as the farmer's education level, age, business experience, production costs, and the number of pigs raised by age.

The mathematical analysis approach uses mathematical and statistical principles/formulas. The data analysis model to answer the first objective uses descriptive analysis, while to answer the second objective uses:

### 1. Cost Analysis

According to Suratiyah (2015), total costs are calculated by adding fixed costs (FC) and variable costs (VC). The formula used is:

$$TC = FC + VC$$

TC = Total Cost

FC = Fixed Cost

VC = Variable Cost

### 2. Revenue Analysis

Total revenue (TR) is calculated by multiplying the number of pigs (Y) by the selling price of pigs per head (Py) according to the following formula (Suratiyah 2015):

$$TR = Py \times Y$$

TR = Total Revenue (Penerimaan)

Py = Product price (selling price of pigs)

Y = Production volume (Number of pigs)

### 3. Income Analysis

According to Suratiyah (2015), income is the difference between revenue (TR) and total costs (TC) and is expressed by the formula:

$$I = TR - TC$$

I = Income

TR = Total Revenue

TC = Total Cost

### 4. RC Ratio

RC Ratio is the comparison between revenue and total costs, using the formula according to Suratiyah (2016):

$$\text{RC Ratio} = \text{Total Revenue} / \text{Total Cost}$$

There are three criteria for the RC Ratio:

- 1) If the RC Ratio > 1, then the business is profitable and worth expanding.

- 2) If the RC Ratio  $< 1$ , then the business is experiencing losses and is not worth expanding.
- 3) If the RC Ratio = 1, then the business is at the break-even point, meaning the business is neither profitable nor unprofitable.

## **RESULT AND DISCUSSION**

### ***Red Pig Farm Research Site Overview***

Tomohon City is one of the areas in the North Sulawesi Province. The geographical location of Tomohon City is at an altitude of 750-800 m above sea level, Tomohon City is located in a mountainous region located between the mountainous region located between 01 18'51" North Latitude and 124 49'49'40" East Longitude, has an area of 147.21 km<sup>2</sup> and is at an altitude of 400-1500 meters above sea level with a temperature range of 18 C - 30 C (BPS, 2024).

Tomohon City consists of five sub-districts, one of which is South Tomohon District. South Tomohon District consists of 12 villages, including: Wailan Village, Wailan Satu Village, Wailan Dua Village, Uluindano Village, Lansot Village, Tumatangtang Village, Tumangtangtang Satu Village, Kampug Jawa Village, Pinaras Village, Lahendong Village, Pangolombian Village, Tondangow Village. The location of Red Pig Farm is in Pangolombian Village, South Tomohon District, Tomohon City.

### **Characteristics of Respondents and Red Pig Farm Pig Farming Business in Pangolombian Village, South Tomohon District, Tomohon City**

Red Pig Farm, a pig fattening business, was established in 2018 and remains resilient to this day, despite frequently facing volatile production costs. The business operates under private ownership and is directly managed by its owner, Mr. Ferry Wawo, who is currently 48 years old. With strong experience and commitment, the business continuously strives to improve efficiency and productivity, thus maintaining business sustainability amidst the dynamics of feed prices, maintenance costs, and other challenges in the livestock sector. In line with the opinion of Gura et al. (2020), the more experience and processes a person undergoes, the greater their ability to survive, find solutions, and innovate towards better business development.

Formal education and knowledge of pig farmers are crucial factors in the success of a pig farm. The owner of Red Pig Farm, whose highest education level is a Technical High School (STM), is an asset that can be strengthened by improving technical knowledge, business management, and innovation to optimize the potential for success. Nursida et al. (2019) showed that education level, age, and length of farming experience simultaneously influence pig farmer income; although partially, education is not always significant, it remains part of the set of factors that influence business performance.

In early 2024, the business experienced a drastic decline due to an African Swine Fever (ASF) outbreak, forcing the owner to sell most of his livestock to avoid further losses. This situation aligns with the findings of Primatika et al. (2022) and Bulu et al. (2023), who stated that ASF causes high mortality rates, population declines, and disrupts the sustainability of pig farming. After the situation was brought under control, from April 2024 to March 2025, the livestock population recovered, with the number of sows increasing to 12, 1 buck, and a total population of 113. This demonstrates the business's strong adaptability and recovery after the outbreak.

Table 1. Development of Pig Population at Red Pig Farm (April 2024-March 2025)

No	Phase	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1	Pre-starter			13		14	13	13		12		14	
2	Starter				13		14	13	13		12		14
3	Grower	10				13		14	11	13			
4	Finisher		10						13	14	11	13	
5	Male	1	1	1	1	1	1	1	1	1	1	1	1
6	Female	3	4	6	6	6	6	6	6	12	12	12	12
Total livestock		14	15	20	20	34	34	47	44	52	36	40	27
Livestock sold			10	0	0	0	0	13	13	0	14	13	0
Remaining livestock		14	10	20	20	34	47	34	18	52	10	27	27

The livestock population growth from April 2024 to March 2025 began with the ownership of three females. These females had been mated in the previous period and began to show productivity in June 2024, when one female gave birth to 13 calves. Births from other females occurred gradually in the following months. Overall, the number of births during this period reached 79. However, there was also a reduction in the population due to sales, depreciation, or selection of livestock, so the population did not increase entirely according to the birth rate. This population growth data serves as an important basis for income analysis, as it is closely related to production volume, maintenance costs, and sales potential obtained during the study period.

## Technical Aspects of Red Pig Farm Pig Farming Business

### Types of Pig Farming

The Red Pig Farm pig farm raises Duroc and Landrace pigs, which are known for their excellent growth and reproductive performance. The selection of Duroc and Landrace pigs for Red Pig Farm is considered appropriate because these two breeds have superior growth performance and feed efficiency compared to other breeds. Duroc and Landrace pigs are widely used in the modern livestock industry due to their efficient growth response to feed and good carcass quality. According to Alam et al. (2021), Landrace and Duroc pigs are also known for their high reproductive performance, including high live birth rates and optimal birth weights.

Landrace pigs are widely chosen by breeders due to their rapid growth and good adaptation to the rearing environment. Landrace pigs are a superior breed with superior production performance compared to other breeds. Landrace pigs are considered appropriate for livestock farming because this breed has proven advantages in growth, feed efficiency, and reproductive performance (Zebua et al., 2017; Manampiring et al., 2020).

### Cages and Equipment

Pens are a key component in pig farming because they support maintenance activities, facilitate production management, and maintain livestock health and comfort. Red Pig Farm has shown significant infrastructure development, marked by an increase in the number of pens from 3 to 24. The pens are constructed using brick walls, cement floors, zinc roofs, adequate ventilation, and are equipped with a drainage channel at the rear to maintain cleanliness and sanitation. According to technical standards, the ideal size of pens for pregnant and lactating sows is 2.0–2.5 m × 2.2–2.5 m per head, pens for bulls are 2.5 m × 3.0 m per head, while the ideal size for fattening pens is 1.5–1.8 m<sup>2</sup> per head (Rasyaf, 2016; Sarajar et al., 2019).

Based on observations, Red Pig Farm has met the criteria for good housing and technical standards for livestock farming. The farm is located approximately 200 meters from residential areas, thus meeting biosecurity requirements and not causing environmental disturbances (Rasyaf, 2016). The construction of the housing uses an open house system, which allows for

optimal air circulation and helps maintain a comfortable temperature for the livestock (Sarajar et al., 2019). The layout of the housing is adjusted to the livestock's growth phase, including housing for sows, bulls, and fattening, thus facilitating maintenance management, including feeding, sanitation, and health checks (Suryana, 2020). The housing conditions at Red Pig Farm have met technical requirements, biosecurity, and livestock comfort, which are important factors in supporting the productivity of pig farming businesses.

The equipment owned by the cage includes: wheelbarrow, scales, water tank, drinking place/nipple, bucket, sprayer, hose, broom, shovel, water pump, besides that there is a warehouse that functions as a place to store feed and other equipment.

### **Feed and How to Give It**

The feed ingredients used in the Red Pig Farm pig farm are mostly derived from manufactured feed. The feed is tailored to the livestock's growth phase. Pellet feed is used in the pre-starter phase, while starter-finisher phases, sows and bulls are given a combination of concentrate feed, rice bran, corn bran, minerals, pigmix, and vitamins administered through injection. This feed combination aims to meet the livestock's nutritional needs, both in terms of energy, protein, and minerals to support growth and reproduction. According to Budaarsa et al. (2016), the energy content of the ration significantly influences feed consumption levels. Low energy rations tend to increase feed consumption, while high energy rations tend to decrease feed consumption. This demonstrates that nutritional balance in the ration is a vital factor in supporting pig productivity.

Feed mixing at the Red Pig Farm pig farm is done manually in the warehouse using a shovel, and is done for 3–5 days to ensure feed availability is maintained according to the livestock growth phase. The feed used is mostly from factory feed, with a composition of granular feed for the pre-starter phase, while the starter to finisher phase as well as sows and bulls use concentrate, rice bran, corn bran, minerals, pigmix, and vitamins given by injection. Feeding is done twice a day, namely at 08.00 and 16.00. Based on the results of the study, the average feed consumption for the pre-starter phase (2–4 weeks) is 0.4 kg/head/day, starter (4–8 weeks) 1.5 kg/head/day, grower (8–12 weeks) 3 kg/head/day, finisher 3 kg/head/day, sows 4 kg/head/day, and bulls 3 kg/head/day. According to Budaarsa et al. (2016), the energy content of a ration significantly influences consumption levels, with low energy levels increasing consumption, while high energy levels decrease it. This aligns with pig nutrition guidelines, which state that feed efficiency and growth performance are significantly influenced by the balance of energy and nutrients in the ration (Voergaard, 2023; Masterfeeds, 2019; Jang et al., 2021).

### **Disease Prevention**

Medication and vitamins are administered to pigs at Red Pig Farm regularly based on their age and physiological needs to prevent disease and improve their health. Deworming medication is administered bimonthly to all animals to prevent internal parasite infestations that can interfere with growth and feed efficiency. Medoxy-LA is used as an antibiotic to treat and prevent bacterial infections, such as pneumonia or digestive disorders, and is administered through a single injection according to veterinary medical procedures. Additionally, piglets aged 3–5 days are given La-Ferdex supplements twice, at 3 days and 14 days of age, to support growth, prevent iron deficiency anemia, and reduce the risk of premature death. Vitamin B complex is also administered through injection and is usually mixed with La-Ferdex, especially during the pre-starter phase, to support energy metabolism, the nervous system, and the piglets' immune system. This health program reflects the implementation of good husbandry management to prevent disease and increase livestock productivity.

The implementation of biosecurity at Red Pig Farm is a strategic step to prevent the entry and spread of diseases, especially African Swine Fever (ASF), which was first detected in

Indonesia in 2019 and reported to have occurred in North Sulawesi in 2023. Biosecurity includes controlling the movement of people, animals, and equipment, disinfection, and restricting access to the pen area to reduce the risk of contamination by viruses, bacteria, parasites, and other pathogens. According to Ekakoro et al. (2023), consistently implemented biosecurity can reduce the risk of ASF transmission and increase the resilience of pig farming businesses. This is supported by Kolambani et al. (2022), who stated that ASF has a significant impact on the decline in pig populations and economic losses, making the implementation of biosecurity an urgent need on every farm. In addition, Salindri (2024) emphasized that the implementation of biosecurity at the farmer level, especially small-to-medium scale, is an effective form of risk mitigation in preventing the spread of disease and maintaining business sustainability. The implementation of biosecurity at Red Pig Farm is a preventive measure that not only protects the livestock population from the threat of ASF, but also supports production stability and the sustainability of the pig farming business.

### Labor

The workforce at Red Pig Farm works an average of three hours per day, divided into two shifts: morning and afternoon, with a monthly wage of IDR 2,000,000. Calculated based on working hours, this wage equates to approximately IDR 22,222 per hour. Despite the relatively short working hours, the wage is still considered relevant because it is not solely based on the duration of work, but rather on the responsibility, accuracy, and contribution of the workforce to maintaining production continuity.

In accordance with the Marginal Productivity Theory of Wages, which states that wages are given according to the value of the workforce's contribution to business output, not just based on working hours. Furthermore, the concept of efficiency wages (Efficiency Wage Theory) explains that providing a decent wage can increase employee loyalty, motivation, and work quality. This is important in livestock farming because timely feeding, pen cleanliness, and livestock health significantly determine business productivity. Widayati et al. (2018) also stated that the greater the amount of labor and work time devoted to livestock farming, the higher the production and income. Thus, wages at Red Pig Farm are considered rational and support the sustainability of business operations.

Table 2. Activities and Working Hours of Red Pig Farm

No	Working Hours	Work Activity
1	07.00-08.30	Mixing feed, cleaning pig pens, feeding pigs.
2.	16.00-17.30	Cleaning pens and bathing pigs, feeding pigs

### Electricity and Water

Expenses for electricity and water at Red Pig Farm are considered variable production costs because they fluctuate and are influenced by the number of animals raised and the efficiency of resource use. The power source used has a capacity of 1,000 watts and is used for barn lighting and water pump operation. As the livestock population increases, the need for electricity for lighting and water for barn cleaning and livestock consumption also increases. Variable costs are costs that fluctuate according to production volume or business activity. Electricity and water usage at Red Pig Farm are crucial components of livestock operations that need to be managed efficiently to reduce production costs and increase business profits.

## Production Costs, Revenue and Income of Red Pig Farm Pig Farming Business

### Production Costs

In livestock farming, one of the main aspects that must be considered is production costs. Sembiring and Hartono (2025) explain that costs are the amount of money spent to support business operations. Production costs in the Red Pig Farm pig farming business consist of fixed

costs, variable costs, and total costs. According to Suratiyah (2015), fixed costs are costs whose amount is not affected by fluctuations in production volume, such as depreciation of pens, equipment depreciation, land rent, and taxes. Conversely, variable costs are costs that change in proportion to production volume, for example, the cost of feed, medicines, vitamins, electricity, and water. Total production costs are all costs incurred during a business period, namely the sum of fixed costs and variable costs. Efficient management of the production cost structure is crucial to determining the level of profitability and feasibility of a livestock business.

Fixed costs in the Red Pig Farm pig farm include expenses that remain constant regardless of whether production volume increases or decreases. These fixed costs include depreciation on buildings, equipment, pens, and taxes. Meanwhile, variable costs in this farm include costs that fluctuate depending on production volume and business activity. These variable costs include feed costs, piglet purchases, daily labor costs, electricity costs, and the costs of medicines and vitamins. These two types of costs are crucial in calculating total production costs and analyzing the efficiency of the Red Pig Farm pig farm.

Table 3. Production Costs of Red Pig Farm Pig Farming Business from April 2024 - March 2025

NO	Description	Amount (IDR)
A.	Fixes Cost	
1.	Depreciation of cages and equipment	42.857.143
2.	Tax	40.000
	<b>Total Fixed Cost :</b>	<b>42.897.143</b>
B.	Variable Cost	
1.	Feed Costs	
	• Fase Pre-starter	5.688.000
	• Fase Starter	20.536.433
	• Fase Grower	38.179.935
	• Fase Finisher	39.309.015
	• Sow	76.819.840
	• Male Pig	7.364.820
	<b>Total feed cost</b>	<b>187.898.043</b>
2.	Cost of Piglets	27.000.000
3.	Labor Force	27.000.000
4.	Costs of medicines and vitamins	1.105.000
	<b>Electricity and Water Costs</b>	<b>1.200.000</b>
	<b>Total Variable Costs</b>	<b>244.203.043</b>
	<b>Total Cost (A+B)</b>	<b>287.100.186</b>

Table 3, the cost of seeds used in the Red Pig Farm pig farming business comes from the purchase of livestock from other farmers totaling 11 heads, consisting of 1 sow at a price of IDR7,000,000 and 10 starter phase pigs with a total cost of IDR20,000,000. Labor costs, the farm employs one worker with a fixed salary of IDR2,000,000 per month. In addition, if during the maintenance period a sow gives birth, the worker is given an additional wage of IDR500,000 for each sow that gives birth. During the maintenance period of April 2024 to March 2025, there were 6 sows that gave birth, thus increasing the total labor costs. The largest component is the cost of feed which reached IDR187,898,043 or 65.44 percent of the total production costs. This is in line with the opinion of Sihombing (2015) who stated that feed costs are the largest component in the pig farming business, reaching 65–80 percent of the total production costs. Manampiring et al. (2020) stated that the largest cost of total production is feed costs, at 66.14%. Oroh et al. (2018) stated that the largest cost in pig farming is feed costs, at 83.77%.

### **Red Pig Farm Pig Farming Business Revenue**

Revenue is the result of multiplying the number of pigs (kg) by the selling price of pigs per kg. Revenue in this study is the sale of pigs and unsold pigs. Pigs sold at the Red Pig Farm are those that have reached a live weight of 100 kg at the age of 6 months. For the sale of culled pigs, namely sows (>4 years) and bulls (>5 years), it is calculated based on the prevailing market price. Revenue from pig sales and the selling value of the total stock (unsold) can be seen in Table 4.

Table 4. Red Pig Farm Pig Farming Business Income

No	Description	Amount (head)	Amount(IDR)
1.	Pigs For Sale	64	494.300.000
2	Unsold Pigs	49	336.050.000
Total			830.350.000

Table 4 shows that the Red Pig Farm pig farming business in Pangolombian Village, South Tomohon District, obtained an average income higher than the total production costs during the period April 2024–March 2025, so this business is considered profitable and financially feasible. Based on the business owner's statement, the selling price of live pigs in the study area fluctuates between IDR 63,000–IDR 80,000 per kilogram, so the amount of income is greatly influenced by the selling weight and market price at the time of the transaction. This condition differs from the research of Tarigan et al. (2024) who conducted research in the same location before the ASF outbreak, where the total income was IDR 294,250,000 from the sale of 152 pigs, with a breakdown of 82 starter pigs at IDR 750,000/head and 70 finisher pigs with an average price of IDR 35,000/kg. The results of the current study, when compared with the research of Tarigan et al. (2024), indicate that the income of the Red Pig Farm pig farming business after the ASF outbreak tends to be higher because the selling price per kilogram of live pigs is more competitive and most of the livestock are sold in the fattening phase (finisher) with a larger weight, so that it has a direct impact on increasing total income, profits, and RC Ratio values of more than 1 as an indicator of a feasible and profitable business.

### **Red Pig Farm Pig Farming Business Income**

Income in livestock farming is an important indicator of the amount of profit earned by farmers after subtracting all production costs from the total revenue from livestock sales. According to Suratiyah (2015), income or business profit is calculated as the difference between total revenue (Total Revenue/TR) and total production costs (Total Cost/TC). Income levels are greatly influenced by production volume and cost management efficiency. The greater the production and the more efficient the use of inputs, the higher the income a farmer can earn.

Table 5. Red Pig Farm's Pig Farming Business Income from April 2024 – March 2025

Description	Amount (IDR)
Total Revenue	830.35.000
Total Cost	287.100.186
Total Income	543.567.814

Based on Table 5, the results of the study indicate that the income of the Red Pig Farm pig farming business in one year reached IDR. 543,567,814. The amount of income is obtained from the total revenue of IDR. 830,350,000 minus the total production costs of IDR. 286,782,186. This value reflects that the livestock business is able to generate high profits and is efficient in managing production costs. In contrast, the results of research by Tarigan et al. (2024) show that

the total profit of the pig farming business in 2022 was only IDR. 114,484,984 per year, which came from total revenue of IDR. 147,125,000 and total production costs of IDR. 89,882,508. Comparing these two studies shows that the income of the Red Pig Farm business is much higher, both in terms of revenue and cost management efficiency, thus illustrating that the scale of the business, the number of livestock raised, and the selling price have a significant influence on the amount of profit for farmers.

### Revenue Cost Ratio (R/C)

RC Ratio is the comparison between income (total revenue) and total costs (total cost):

$$RC: 830.350.000/286.782.186 = 2.90$$

The analysis results show that the Red Pig Farm pig farming business has an RC Ratio value of 2.90, which means that every IDR. 1 of expenditure generates IDR. 2.90 in revenue. Thus, farmers obtain a net profit of IDR. 1.90 for every rupiah of costs incurred. This value indicates that the livestock business is in a very feasible, efficient, and high-profit condition, because the RC Ratio value is far above 1. When compared to research by Tarigan et al. (2024), the RC Ratio value of the pig farming business in 2022 only reached 1.64 (revenue of IDR. 147,125,000 and costs of IDR. 89,882,508), which means that every IDR. 1 of costs generates IDR. 1.64 in revenue or IDR. 0.64 in net profit. This shows that Red Pig Farm's financial performance is much better than previous research. The high RC Ratio value at Red Pig Farm not only reflects the efficiency of cost use and high production, but also indicates that this business is still able to survive and generate profits despite fluctuating feed prices and the impact of diseases such as African Swine Fever (ASF) is still a threat, thus, this business can be categorized as very feasible to be developed and has the potential to improve the welfare of farmers. These results are in line with research by Gawang, et al. (2022), where the pig farming business in Alor Regency is financially viable with an R/C value of 3.48.

### CONCLUSION

Based on the research results, it shows that the Red Pig Farm pig farming business in Pangolombian Village, South Tomohon District, Tomohon City is still able to show good performance and is able to survive after the ASF virus outbreak, but also generates adequate income and has good development prospects in the future.

### REFERENCES

- Alam, M., Lee, J., Kim, S., & Park, B. (2021). Genetic analysis of major production and reproduction traits of Korean Duroc, Landrace and Yorkshire pigs. *Asian-Australasian Journal of Animal Sciences*, 34 (3) : 441-450.
- Badan Pusat Statistik Provinsi Sulawesi Utara. (2023). Populasi Ternak Menurut Kabupaten Kota dan Jenis Ternak di Provinsi Sulawesi Utara. BPS Sulut.
- Badan Pusat Statistik Kota Tomohon. (2023). Kota Tomohon Dalam Angka Tahun 2023. BPS Kota Tomohon.
- Budaarsa., & Mahardika, G. (2016). Beberapa Jenis Hijauan Sebagai Pakan Tambahan Pada Babi di Bali. Fakultas Peternakan Universitas Udayana.
- Bulu, P. M., Paga, A., Lasakar, A. S., & Wera, E. (2023). Pig Farm Management and Its Contribution to the African Swine Fever Incidences in Kupang, Indonesia. *Jurnal Medik Veteriner*, 6 (2) : 155-161.

- Direktorat Jendral Peternakan dan Kesehatan Hewan. (2024). Populasi Babi Menurut Provinsi Tahun 2021-2023 Data Statistik Peternakan dan Kesehatan Hewan. Direktorat Jendral Peternakan dan Kesehatan Hewan Kementerian Pertanian Republik Indonesia, Jakarta.
- Ekakoro, J. E., Nawatti, M., Singler, D. F., Ochoa, K., Kizza, R., Ndoboli, D., Ndumu, D. B., Wampande, E. M., & Havas, K. A. (2023). A survey of biosecurity practices of pig farmers in selected districts affected by African swine fever in Uganda. *Frontiers in Veterinary Science*, 10, 1245754.
- Indonesia's updates on African Swine Fever in domestic pigs: ASF Risk Assessment in North Sulawesi. (2024).
- Iyai, D. A., Pakage, S., Murwanto, A. G., Arim, M., Nurhayati, D., Orisu, M. L., & Rumfaan, H. Y. (2020). Pengaruh Tingkat Pendidikan dan Jenis Kelamin Peternak terhadap Tingkat Produksi Babi (Studi Kasus di Manokwari, Papua Barat Indonesia). *Jurnal Ilmu Peternakan Terapan*, 3 (2) : 49-57.
- Jang, K. B., Duarte, M. E., & Purvis, J. M. (2021). Impacts Of Weaning Age On Dietary Needs Of Whey Permeate For Pigs 7 to 11 kg BW. *Journal of Animal Science and Biotechnology*, 12 :111.
- Kolambani, F. U., Sari, D., & Gunawan, C. I. (2022). Impact of African Swine Fever (ASF) on the Pig Population in Indonesia. SSRN.
- Manampiring, S. P., Lumy, T. F. D., Pangemanan, S. P., & Lumenta, I. D. R. (2020). Analisis Finansial Usaha Peternakan Babi CV. Rindrilly Di Desa Tontalet Kecamatan Kema Kabupaten Minahasa Utara. *Journal Zootec*, Vol. 41 No. 2 : 531-541.
- Masterfeeds. (2019). Life Cycle Feeding Guide-Swine. Winnipeg: Masterfeeds LLC.
- Nahak, A. (2022). Pengaruh waktu perkawinan terhadap performa reproduksi babi Landrace. *Jurnal Agriwar*, 11 (2) : 55-61.
- Nursida, A. H. Abdillah., & Timang, A. (2019). Analisis Beberapa Faktor Yang Berpengaruh Terhadap Pendapatan Peternak Babi di Kecamatan Sangata Utara. *Jurnal Pengembangan Penyuluhan Pertanian*, 17 (32) : 184.
- Oroh, F. N. S., Osak, R. E. M. F., & Iroth, F. I. (2023). Gambaran Studi Kasus; Analisis Keuntungan Usaha Ternak Babi di CV Anugerah. *Jambura Journal of Animal Science*, 6 (1) : 57-69.
- Primatika, R. A., Sudarnika, E., Sumiarto, B., & Basri, C. (2022). Estimation of the probability risks of African swine fever outbreaks in North Sumatra Province, Indonesia. *Veterinary World*, 15 (7) : 1814-1820.
- Rahayu, E., & Subiharta. (2020). Performans reproduksi babi Landrace dan Duroc di peternakan rakyat. *Prosiding Seminar Nasional Teknologi Peternakan dan Veteriner*, 267-273.
- Rasyaf, M. (2016). *Beternak Babi Secara Intensif*. Jakarta: Penebar Swadaya.

- Rusdiana, M. M. (2021). Manajemen Pembiayaan Pendidikan: Filosofi, Konsep, dan Aplikasi. Tresna Bhakti Press Bandung.
- Saeri, M. (2018). Usahatani dan Analisisnya. Malang. Unidha Press.
- Salendu, A. H. S., Rundengan, M. L., Elly, F. H., & Lumy, T. F. D. (2021). Manfaat Pengembangan Usaha Ternak Babi Yang Berwawasan Lingkungan. Prosiding Seminar Teknologi dan Agribisnis Peternakan VIII, Fakultas Peternakan Universitas Jenderal Soedirman, 24-25 Mei 2021, 650 – 654.
- Salindri, N. (2024). African Swine Fever in Indonesia: Insights from Southeast Asia. (Analisis tren ASF di Indonesia 2020-2024).
- Sarajar, M. J., Elly, F. H., Wantasen, E., & Umboh, S. J. K. (2019). Analisis Usaha Ternak Babi di Kecamatan Sonder Kabupaten Minahasa. *Jurnal Zootec*, 39 (2) : 276 -283.
- Sarajar, H., Rantung, V., & Manembu, M. (2019). Analisis Konstruksi Kandang Dan Sanitasi Lingkungan Peternakan Babi Rakyat. *Jurnal Zootek*, 39 (2) : 45-53.
- Setiawan, I. K., & Suryani, N. (2019). Pertumbuhan dan konversi pakan babi Duroc dan Landrace pada sistem pemeliharaan semi intensif. *Jurnal Peternakan Indonesia*, 21 (1) : 34-42.
- Sembiring, Vivi Aprilia Tri Amanda Br. & Budi Hartono. (2025). Analisis Usaha Ternak Babi (Studi Kasus Kecamatan Tigabinanga Kabupaten Karo Sumatera Utara). Sarjana thesis, Universitas Brawijaya.
- Sihombing, D. T. H. (2015). Ilmu Ternak Babi. Yogyakarta:Gadjah Mada University Press.
- Simangunsong, M., Pordamantra, W, I., & Daud, W. (2022). Analisis Pendapatan Usaha Ternak Babi (Sus Scrofa) Di Kecamatan Jekan Raya Kota Palangka Raya. *Journal Socio Economics Agricultural*, 17 (2) : 109-116.
- Sinulingga, Y. P., Santa, N. M, Kalangi, L. S., & Manese, M. A. V. (2020). Analisis Pendapatan Usaha Ternak Babi di Kecamatan Tombulu Kabupaten Minahasa. *Jurnal Zootec*, 41 (2) : 471-481.
- Suratiyah, K. (2015). Ilmu Usahatani. Jakarta: Penebar Swadaya.
- Suryana, A. (2020). Manajemen Kandang Dan Lingkungan Terhadap Produktivitas Ternak Babi. *Jurnal Peternakan Nusantara*, 4 (1) : 12-19.
- Voergaard, A. L. (2023). Are growth performance and fecal score in weaning pigs affected by feed intake?. *Animal*, 13 : 10648507.
- Widayati, T. W., Sumpe, I., Irianti, B.W., Iyai, D. A., & Randa, S. Y. (2018). Faktor-faktor yang Mempengaruhi Produksi Usaha Ternak Babi di Teluk Doreri Kabupaten Manokowari. *Jurnal Ilmu-Ilmu Pertanian*. 12 (1) :73-82.
- Welerubun, I., Sairudy, A., Lainsamputty, J. M., & Sirappa, I. P. (2023). Analisis Strategi Pengembangan Usaha Peternakan Babi Di Kabupaten Pania (Studi Kasus Di Desa Itoka Distrik Nakama). *Jurnal Peternakan Sabana*, 2 (3) : 158-169.

Zebua, E., Muladno., & Siagian, R. (2017). Comparative Performance Of Landrace, Yorkshire And Duroc Breeds Of Swine. *Jurnal Ilmu dan Teknologi Peternakan*, 10 (2) : 89-96.