

Feasibility Analysis and Production Increase Strategy for Marine Ornamental Fish Agribusiness

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Abstract: The marine ornamental fish business has experienced significant growth every year in Indonesia. This study aims to conduct feasible business analysis for marine ornamental fish commodities at PT. Indotama Putra Wahana. This study aims to evaluate the financial feasibility and investment in the marine ornamental fish business by achieving maximum sustainable profits. The research was conducted from March to July 2023. Data collection was carried out using primary and secondary data using interview methods and direct field observations (PT. Indotama Putra Wahana, DKI Jakarta). Data were analyzed using NPV (Net Present Value), Payback Period, Profitability Index, IRR (Internal Rate of Return), and BEP (Break Even Point). The results show that the NPV of cash flows for 10 years with a discount rate of 20% has a Profitability Index of 1.2. This indicates that the marine ornamental fish business has promising prospects. Data analysis also shows that the payback period is 3.4 years, the Net Present Value is IDR 9.972.734.254, and the IRR (Internal Rate of Return) is 21.8% which exceeds the interest rate of 11.5%. Break Even Point (BEP) of IDR 1.489.913.724 or 8.343 fish. These values indicate that this marine ornamental fish business generates positive income or profits.

Keywords: Agribusiness; Business prospects; Financial feasibility; Marine ornamental fish; Production

Introduction

Marine ornamental fish has become one of the most attractive commodities in the fishing industry (Kasmi et al., 2022). The ever-increasing demand in both local and international markets has created promising business opportunities in marine ornamental fish agribusiness (Sinansari & Priono, 2019). Along with the increasing public interest in the aquarium hobby and the beauty of ornamental fish, this business has become one of the sectors that have experienced significant growth (Hetami et al., 2023). Marine ornamental fish agribusiness covers a wide range of activities, including cultivation, wild capture, and trading (King, 2019; Pailan et al., 2022). Broad market potential and high economic value make this agribusiness attractive to many business

actors in the fisheries sector (Saleh et al., 2020). However, in developing marine ornamental fish agribusiness, in-depth analysis is required to understand the challenges and opportunities existing and effective strategies to achieve success. The market potential analysis is an important first step in the development of marine ornamental fish agribusiness (Kasmi et al., 2023; Mastuti et al., 2022). A good understanding of market demand, consumer trends, and the needs of marine ornamental fish enthusiasts will help businesses identify the most promising market segments and direct targeted product development efforts (Han et al., 2021; Hetami et al., 2023). In addition, resource analysis is also a key factor in the success of marine ornamental fish agribusiness (Lam et al., 2020). Careful evaluation of available resources, such as land, infrastructure, capital, labour,

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and the availability of quality marine ornamental fish, will assist in designing appropriate development strategies (Stacey et al., 2021).

In several related studies, an analysis of the economic feasibility of marine ornamental fish farming and recirculating aquaculture was carried out (dos Santos Mota et al., 2023) analyze the economic feasibility of cultivating Yellow Neon Goby (*Elacatinus figaro*) marine ornamental fish in urban aquaculture systems. This study evaluates the economic feasibility of producing Yellow Neon Goby in various production scenarios and uses financial indicators such as NPV, IRR, and PP to analyze the economic feasibility. Furthermore, (da Silva et al., 2022) evaluated the economic feasibility of a multitrophic integrated aquaculture involving *Perna perna* mussels, scallops *Nodipecten nodosus*, and seaweed *Kappaphycus alvarezii* on the southeastern coast of Brazil for a small-scale family production system. This study uses financial indicators such as NPV, IRR, and PP to evaluate the economic feasibility of the two production systems being evaluated.

As well as, (Pereira & Henriques, 2019) analyzed the economic feasibility of producing Imperial Zebra pleco marine ornamental fish (*Hypancistrus zebra*) in a recirculating aquaculture system (RAS). This study uses financial indicators such as NPV, IRR, and PP to evaluate the economic feasibility of producing this endangered ornamental fish. Besides that, (Arifa et al., 2022) analyzed the economic feasibility of cultivating Pabda fish (*Ompok pabda*) and Shing fish (*Heteropneustes fossilis*) in a recirculating aquaculture system (RAS) in Bangladesh. This study uses financial indicators such as NPV, IRR, and PP to evaluate the economic feasibility of fish production in the RAS system (Bosma et al., 2017).

Based on this, researchers conducted an in-depth analysis of the market potential for marine ornamental fish agribusiness and available resources. This analysis is based on the latest research, market data, and the experience of practitioners in the industry. It is hoped that this article can provide comprehensive insights for readers who are interested in developing a marine ornamental fish agribusiness, especially for business actors to achieve success in developing a marine ornamental fish business and support the growth of the fishing industry as a whole.

Method

Research Sites

The research was conducted at PT. Indotama Putra Wahana in DKI Jakarta. This company is a collector of marine ornamental fish from fishermen. Data collection was carried out from March to July 2023.

Data Collection

The data consists of primary and secondary data. Primary data sources were obtained from direct interviews with local fishermen, owners, workers in the company and direct field observations. Secondary data is obtained from data owned by the company relating to production operational data, sales data and general description of the company.

Data Analysis

The analytical approach method used for data analysis is as follows: Analysis of Investment Valuation Methods:

Payback Period (PP)

Payback Period (PP) is the time required to return the initial investment in a project based on the cash receipts generated (Song et al., 2021). PP measures the level of liquidity and risk of an investment. The shorter the payback period, the faster the investment can be returned. The formula used (Zativita & Chumaidiyah, 2019) to calculate the Payback Period are as follows:

$$\text{Payback Period} = n + \frac{I_0}{CF} \times 1 \text{ year}$$

Where: n = last year of the amount of cash flow that has not been able to cover the original investment (initial investment), I_0 = Investment Value (Rp), CF = Net Cash Inflow (Rp)

Assessment Criteria

If the payback period is shorter than the maximum payback period, then the investment can be accepted.

Net Present Value (NPV)

Net Present Value, to assess investments that consider the time value of money (Abdelhady, 2021). Therefore, the cash flow used is cash flow that has been discounted on the basis of the company's cost of capital rate of return wanted. NPV is calculated by the following formula:

$$NPV = \frac{CF_1}{(1+i)^1} + \frac{CF_2}{(1+i)^2} + \frac{CF_3}{(1+i)^3} + \frac{CF_n}{(1+i)^n} - OI$$

Or

$$NPV = (\text{Cash Flow} \times \text{Discount factor}) - \text{Original Investment}$$

Where:

CF] _1, CF] _2, CF] _3, CF] _4= cash flow in years 1, 2, 3 to n

i = cash of capital of return

n = the age of the investment project

OI = original investment

Assessment criteria:

If NPV > 0, then the project proposal is accepted

If NPV < 0, then the project proposal is rejected

If NPV = 0, the firm value remains the same even if the project proposal is accepted or rejected.

Internal rate of Return (IRR) Used to find the interest rate that equates the present value of expected future cash flows, or cash receipts, with the initial investment outlay (Jurčević et al., 2022). Meanwhile, the meaning of the Internal Rate of Return (IRR) in a nutshell is the interest rate that produces an NPV equal to zero.

$$\text{The equation used is: } IRR = \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \frac{CF_3}{(1+r)^3} + \dots + \frac{CF_n}{(1+r)^n} - OI$$

Or

$$NPV = (\text{Cash Flow} \times \text{Discount factor}) - \text{Original Investment}$$

Where:

[CF] ₁, [CF] ₂, [CF] ₃, [CF] ₄

= Net Present Value of years 1, 2, 3, up to the nth

i = Discount Rate

n = the age of the investment project

OI = Original investment

Assessment criteria:

IRR > rate of return = decent

IRR < rate of return = not feasible

IRR = 0, the firm value remains even if the project proposal is accepted or rejected.

Profitability Index (PI)

The Profitability Index is used to calculate the comparison between the present value of cash flow and the present value of the initial investment (Duman & Güler, 2020). The equation can be seen below:

$$I = \frac{\text{Present Value Cash Inflow}}{\text{Present Value of Investment}}$$

Assessment criteria:

PI > 0 = feasible

PI < 0 = not feasible

PI = 0, = feasible and not feasible

Break Event Point (BEP)

Break Even Point is a situation where the company's revenue receipts (total revenue) are equal to the costs it bears (total cost). (Esau et al., 2019). A company will only benefit if its production or sales are above the return point. Break Even Point (BEP) or principal return point can be calculated using the following equation:

$$BEP = \frac{\text{Fixed cost}}{\text{Price} - \left(\frac{\text{Variable Cost}}{\text{Results}}\right)}$$

Result and Discussion

Working capital and capital investment are required for business operations (Boisjoly et al., 2020). Fixed assets are the biggest investment for the long term. Estimated up to 10 years. Capital investment for daily operations is identified as variable costs or variable costs. Variable costs vary according to production volume. The greater the volume of production, the greater the costs required. For example raw materials, labor, and other operational costs (Baumers & Holweg, 2019). In this study, companies make investment decisions using screening decisions because the business only involves one type of production. Table 1 below provides details on the amount of investment costs in fixed assets and investment in working capital, operational costs, and the results of the analysis.

Table 1. Details of Investment Costs for Marine Ornamental Fish Production Agribusiness

Description	Amount	Unit Price (Rp)	Mark (IDR)	Depreciation (10 Years)
Investment Cost				
1 UNIT Ship (13 x 4 M)	1	175.000.000	175.000.000	17.500.000
1 unit diving compressor machine	1	15.500.000	15.500.000	1.550.000
Garmin GPS for finding fishing grounds	1	5.200.000	5.200.000	520.000
Oxygen Tube Hose	2	300.000	600.000	60.000
Oxygen tube	2	2.000.000	4.000.000	400.000
Oxygen regulators (2 units)	2	350.000	700.000	70.000
Diving goggles	12	175.000	2.100.000	420.000
Pink (frog boots)	12	150.000	1.800.000	360.000
Cleopatra's gill nets	12	180.000	2.160.000	432.000
Shelter Warehouse (5 X 4 M)	1	5.150.000	5.150.000	515.000
Genset (1000 WATT)	1	3.500.000	3.500.000	350.000
Production Equipment				
Plastic (50 kg)	50	22.500	1.125.000	225.000
Rubber bands (2 kg)	2	15.000	30.000	6.000
Cyanide	5	150.000	750.000	150.000

Description	Amount	Unit Price (Rp)	Mark (IDR)	Depreciation (10 Years)
Square basketball	2	25.000	50.000	10.000
Styrofoam	10	22.500	225.000	45.000
Jiregen Water	4	12.500	50.000	10.000
Boat light	1	35.000	35.000	7.000
Basin	2	12.500	25.000	5.000
Total Investment			218.000.000	22.635.000

The total initial capital of Rp. 1,248,420,500 comes from the total investment and initial working capital costs which are divided over investment in fixed assets of Rp. 218,000,000 with an economic life of 10 years.

Table 2. Operational Costs per Year

Description	Amount
Fixed cost	432.500
Treatment 2.5% x Rp. 17.300,000	2.565.000
Depreciation per year	28.800.000
Employee salary 2 x Rp. 1.200,000 x 12	173.000
Insurance fee 1% x Rp. 17.300,000	31.970.500
Total Fixed Costs	432.500
Variable cost	
Buy angelfish (5.132 @ 175.000)	898.100.000
Yellow medicine	750.000
Daily wages 2 x 26 days x 25.000 x 12	15.600.000
Miscellaneous expense	
Transport	1.200.000
ATK	1.200.000
Telecommunications	1.800.000
BBM (2 x 24 x @. 900,000)	43.200.000
Mold fee	600.000
Consumption (2 x 24x @.750.000)	36.000.000
Total Variable Costs	998.450.000
Total Fixed Costs + Variable Costs	1.030.420.500
Bank interest 17.5% x Rp. 910.000,000	68.250.000

Investment in working capital is intended for fixed operational costs of Rp. 31.970.500 and variable operational costs of Rp. 269.646.688. This investment is financed by a bank loan of Rp. 910.000.000 (70%) with 17.5% interest and the remaining Rp. 390.000.000 (30%) financed by own capital.

Cash Flow

The investment decisions taken by the company are expected to return shortly. Profits are obtained from investment gains (appendix 2). The company's cash flow in the first year experienced a surplus of IDR 540.337.212 until ten years later. That is, the investment made by the company is Rp. 1.248.420.500 has been borne or returned from the 1st to the 10th year of the business cycle.

Production Feasibility Analysis of Injel Ornamental Agribusiness

Business feasibility analysis for marine ornamental fish for PT. Indotama Putra Wahana is measured using several eligibility criteria such as Net Present Value

(NPV), Profitability Index (PI), Internal Rate of Return (IRR), and Payback Period (PP).

Table 3. Criteria for Feasibility Analysis for Marine Ornamental Fish Business

Investment criteria	Eligibility business	Mark
Net Present Value (NPV)	>0	9.972.734.254
Payback Period (year)	Fastest duration	3.40
Internal Rate of Return (IRR)	>DF	21.8%
Profitability Index (PI)	> 1	1.20

Payback Period (PP)

The payback Period (PP) is determined based on the initial investment and cash flow contained in Table 4.

Table 4. Investment Projection and Cash Flow

Initial Investment	1.248.420.500
Net Cash Flow Year I	540.337.212
	708.083.288
Net Cash Flow Year II	1.088.697.392
	380.614.104
Net Cash Flow Year III	1.692.157.220
	2.072.771.324
Net Cash Flow Year IV	2.353.343.650
	4.426.114.973
Net Cash Flow Year V	3.075.017.384
	7.501.132.358
Net Cash Flow Year VI	3.930.121.856
	11.431.254.214

Based on projected investment and cash flow, the payback period can be calculated as follows: $PP = 6 \text{ Years} + \frac{11,431,254,214}{3,930,121,856} \times 1 \text{ Year}$ or 12 Months = 3 Years and 4 months (or 40 months). Thus, it can be said that the Payback Period figure is 3.4 years or 40 months, meaning that the period needed to return the investment value of the marine ornamental fish business by PT. Indotama Putra Wahana of Rp. 1,248,420,500 is 3.4 years (three years and four months). From the Net Cash Flow figures above, it can be seen that during the Payback Period or at that time the invested funds can be received again, and all Net Cash Flows received by the company after that period will become PT. Indotama Putra Wahana. so the marine ornamental fish business development project is quite profitable to develop and implement because the investment can be returned before the end of its economic life.

Net Present Value (NPV)

The calculation of Net Present Value of investment can be seen in Table 4. Based on the Net Present Value (NPV) analysis, the marine ornamental fish business investment project carried out by PT. Indotama Putra

Wahana should be accepted because the Net Present Value is positive. This means that funds amounting to IDR 1.248.420.500 that have been invested in the project can generate a cash flow present value of IDR 11.221.154.754.

Table 5. Calculation of Net Present Value (NPV)

Year	Net Cash Flow (Rp. 000)	Discount Factor 20%	Present Value (Rp. 000)	Discount Factor 23%	Present Value (Rp. 000)
1	540.337.212	0.833	450.100.898	0.813	439.294.153
2	1.088.697.392	0.694	755.555.990	0.661	719.628.976
3	1.692.157.220	0.579	979.759.030	0.537	908.688.427
4	2.353.343.650	0.482	1.134.311.639	0.437	1.028.411.175
5	3.075.017.384	0.402	1.236.156.989	0.355	1.091.631.171
6	3.930.121.856	0.335	1.316.590.822	0.289	1.135.805.216
7	4.840.061.922	0.279	1.350.377.276	0.235	1.137.414.552
8	5.808.023.902	0.233	1.353.269.569	0.191	1.109.332.565
9	6.931.966.133	0.194	1.344.801.430	0.155	1.074.454.751
10	8.026.117.973	0.162	1.300.231.112	0.126	1.011.290.865
			11.221.154.754		9.655.951.851
	Initial Investment		1.248.420.500		1.248.420.500
	Net Present Value		9.972.734.254		8.407.531.351

Source: Data analysis (2023)

Internal Rate of Return (IRR)

Internal Rate of Return (IRR) to find a discount rate that can equate the Present Value of cash flow with the Present Value of investment. Thus, the interval Rate of Return (IRR) is the Discount Rate level that equates the Present Value of Cash Flow with the Present Value of Investment. Based on the NPV in the above calculation of IDR 57.675.510 with a 20% discount rate. Then look for a negative NPV by increasing the Discount Rate by 23%. IRR can be calculated as follows:

$$IRR = 20\% + \frac{9.972.734.254}{(9.972.734.254 + 8.407.531.351)} \times (23 - 20)\% = 21.8\%$$

With the IRR on investment in the ornamental fish business project of PT. Indotama Putra Wahana amounted to Rp. 1.248.420.500, the economic life of the project is ten years with a net cash flow of Rp. 11.221.154.754 and a discount factor of 20%, obtained a total present value of Rp. 11.221.154.754 (greater than the investment value), while with a discount factor of 23%, a total present value of IDR 9.655.951.851 (smaller than the investment value) is obtained. Based on the Internal Rate of Return (IRR) criteria, the ornamental fish business investment project was carried out by PT. Indotama Putra Wahana is acceptable because $IRR >$ the required rate of return. This means that funds amounting to 1.248.420.500 invested in ornamental fish business projects generate 21.8%, greater than the required rate of return (17.5%).

Profitability Index (PI)

Profitability Index (PI) of the ornamental fish business project carried out by PT. Indotama Putra Wahana is:

$$PI = \frac{11.221.154.754}{9.655.951} = 1.20$$

Based on the results of the profit and loss analysis, it can be concluded that PT. Indotama Putra Wahana, which operates marine ornamental fish agribusiness, has experienced an increase in profits from year I to year 10. This shows that the business generates profits and is feasible to develop. The results of the analysis also show that a marine ornamental fish agribusiness has an estimated return on investment of 14.013%, a profitability index (PI) of 3.38 and a Net Present Value of IDR 2.381.531.466. This shows that marine ornamental fish agribusiness has a value greater than zero, so it is feasible to be carried out and developed. In addition, the Break Even Point (BEP) achieved during the projection period is an average of IDR 15.954.667.535 or 550.161 fish. This value indicates that the business is able to break even and generate revenue or profit.

Analysis Break Even Point (BEP)

Based on sales data, fixed costs and variable costs, the Break Even Point can be calculated.

$$BEP = \frac{384.397.741}{1 - \left(\frac{15.912.721.593}{12.641.971.783}\right)} = 1.489.913.724 \text{ atau } 8.514 \text{ ekor} \tag{1}$$

This means that the company's sales of Rp. 1.489.913.724 or 8.514 tails, the company has not made a profit and has not suffered any losses. For the company to make a profit, the company must sell more than 8.514 heads.

Marine Ornamental Fish Agribusiness Business Development Strategy

Internal risk is the risk associated with process or procedure failures found in the industry (Mexmonov, 2020). in this case, is the marine ornamental fish industry. Meanwhile, external risks are risks that arise from activities outside the industry (Biondo & Burki, 2020), but the success or failure of their management greatly influences the success of the surrounding community. Furthermore, the factors that influence the development of the marine ornamental fish industry can be calculated to determine the dominant factors that most influence performance. Analysis to determine the most influential factors processed using Expert Choice 10 and ratings. The process of formulating an

ornamental fish development strategy involves looking at and analyzing the internal and external environment that influences the development of the marine ornamental fish industry, based on a SWOT analysis. Assessment in the SWOT analysis is divided into two groups, namely internal factors (IFAS) consisting of strengths and weaknesses, and external factors (EFAS) consisting of opportunities and threats.

Several factors were identified as the basic determinants of improvement needed for the next development in the planning strategy. Strategy analysis was carried out using SWOT analysis with IFAS and EFAS tools, to evaluate internal factors that will influence the development of the marine ornamental fish industry. This involves internal and external factors from the specified marine ornamental fish business segment. Furthermore, the results of the analysis are processed to determine the strategic position in the marine ornamental fish business. Weighting is done by involving expert respondents and processed using Expert Choice 10 and ratings.

Table 6. Results of the Internal Factor Evaluation Matrix (EFI) for Marine Ornamental Fish

Internal Factors	Weight	Ratings	Score
Strength	a	b	axb
Availability of group forums (Associations)	0.15	4	0.62
Member communication	0.10	4.5	0.46
Adopt innovation	0.05	3.5	0.18
Production of many variations	0.10	5	0.51
Coral reefs are very wide	0.15	4	0.62
Weakness			
High operating costs	0.10	2.5	0.26
Seasonal product	0.10	2	0.21
Relatively low quality	0.05	2	0.10
Low skills	0.10	2	0.21
Fishing gear is not environmentally friendly	0.08	2.5	0.19
Total IFE of Marine Ornamental Fish			3.35

The result of the IFE matrix for the marine ornamental fish industry is 3.35, which indicates that the position of this value is above the weighted average value of 2.5. This value indicates that internally, the current position of the marine ornamental fish agribusiness business is quite good in utilizing strengths and overcoming existing weaknesses. One of the main strengths in the agribusiness of the marine ornamental fish industry is the availability of a group forum (association) as an organization that facilitates relations between business or industry and stakeholders, with a score of 0.62. In addition, other strengths are communication between group members with a score of 0.46, the ability to accept and create innovations with a score of 0.18, production of high-quality marine ornamental fish with variations according to export market demand with a score of 0.51, and the potential

for a high population of coral ornamental fish due to the extent of coral reef resources with a score of 0.62.

Meanwhile, the weak factors that contribute to the development of agribusiness for the marine ornamental fish industry are operational costs which are very high with a score of 0.26, ornamental fish production which still depends on nature with a score of 0.21, the quality of marine ornamental fish which the catch uses a lot of fishing gear that is not environmentally friendly so that the quality decreases with a score of 0.10, the skills of the fishing community in handling post-harsh ornamental fish are lacking with a score of 0.21, and the use of fishing gear for marine ornamental fish which generally uses chemicals (cyanide) or fishing gear capture that is not environmentally friendly so that it has an impact on the quality of ornamental fish production with a score of 0.19. The matrix of external factor evaluation results (EFE) is factors related to the external environment of the

marine ornamental fish agribusiness business, such as government policy, economic, social, and technological

factors, and business competition analysis of the marine ornamental fish agribusiness industry (Aji et al., 2019).

Table 7. Results of the External Factor Evaluation Matrix (EFE) for Marine Ornamental Fish

External Factors	Weight	Ratings	Score
Opportunity			
Market demand is very high	0.14	4.00	0.56
Public attention to environmental damage began to increase	0.09	4.50	0.42
Confidence in the superiority of ornamental fish technology	0.09	3.50	0.33
The sea waters are very wide	0.14	5.00	0.70
There are many NGOs or institutions engaged in fisheries (ornamental fish)	0.05	4.00	0.19
Threats			
Free trade AFTA (Asean Free Trade Association) and WTO	0.14	2.00	0.28
Certification (International quality standard)	0.09	1.00	0.09
Confidence in the superiority of ornamental fish technology	0.09	1.50	0.14
Biotech Technology	0.09	1.50	0.14
Ecolabels	0.07	1.00	0.07
Total IFE of Marine Ornamental Fish			2.35

The results of the analysis of the IFE matrix for the marine ornamental fish agribusiness industry are 2.35. External environmental factors that influence the development of the marine ornamental fish industry are seen from the aspects of opportunities and threats, which consist of ten factors consisting of five opportunity factors and five threat factors. The most influential opportunity factor is the vast ocean waters so the potential for ornamental fish production is very high with a score (of 0.70), there is a very high market demand for marine ornamental fish, especially for export (0.56), public attention to the environment has increased for business continuity with a score of (0.42), the technology used for the ornamental fish industry has increased with a score of (0.33), and a lot of attention Non-governmental organizations (NGOs) are very concerned with the use of marine ornamental fish to be managed sustainably with a score (0.19).

The main threat that exists in the marine ornamental fish industry is AFTA-free trade because there is competition for marine ornamental fish products for export with other countries with a score of (0.28), belief in the superiority of reef ornamental fish technology and biotech technology each with a score of (0.70), international certification as a standard for the feasibility of marine ornamental fish products to be suitable for export (0.09), and ecolabel is one of the means to convince international markets, especially marine ornamental fish products that are environmentally friendly or environmentally friendly with a score of 0.07.

IFAS and EFAS Matrix Analysis

The results of the IFAS and EFAS Matrix Analysis show that the IE Matrix is obtained from the total IFE score and the total EFE score. The IFE matrix value is 3.35 and the EFE is 2.35, which indicates that the company's

position is in category 1. This illustrates that the company has good opportunities and strengths, and can overcome existing weaknesses and threats. The strategy applied is an aggressive strategy by maximizing the strengths and opportunities of the marine ornamental fish industry, as shown in Figure 1.

The results of IFAS and EFAS Matrix Analysis are used to determine internal and external factors related to marine ornamental fish companies or industries. For internal factors, a total IFAS score of 3.35 was obtained, with a strength subtotal score of 2.38 and a weakness subtotal score of 0.98. With a total IFAS score of 2.5, the company can be said to have strong internal factors. Meanwhile, the results of external factors showed a total EFAS score of 2.35, with an opportunity sub-total score of 2.98 and a threat sub-total score of 0.72. According to the opinion of Hacıoglu (2019), a total EFE score of more than 2.700 can be interpreted as a company's ability to take advantage of existing opportunities and overcome threats.

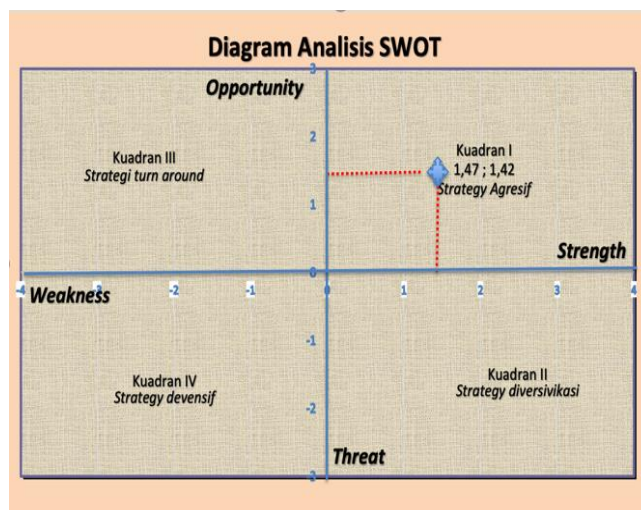


Figure 1. SWOT quadram diagram

The position of the marine ornamental fish agribusiness business can be seen in Figure 1. In quadrant 1, it is in the most profitable situation. The position in quadrant 1 shows that the marine ornamental fish agribusiness industry has opportunities and strengths. The strategy that must be taken under these conditions is to support an aggressive growth policy or a growth-oriented strategy by taking advantage of existing opportunities and the internal strengths of the marine ornamental fish industry (Kisi, 2019). SWOT analysis involves efforts to identify the strengths, weaknesses, opportunities, and threats that determine the performance of agribusiness in the marine ornamental fish industry (Setiyowati et al., 2022). The

development strategy of internal and external factors can be interpreted in the form of a SWOT matrix. The results of the SWOT matrix produce four alternative sets of strategies, namely SO (Strengths-Opportunities), ST (Strengths-Threats), WO (Weaknesses-Opportunities), and WT (Weaknesses-Threats) strategies (Rizki et al., 2021).

Matriks SWOT

Based on the strategy formulation in Table 7, the description of strategic alternatives from the SWOT matrix above, the strategy for developing a marine ornamental fish agribusiness business is described as follows:

Table 8. IFAS and EFAS SWOT Matrix

Internal (IFAS)/ External (EFAS)	Strength	Weakness
	<p>Availability of containers , Member communication, Adopt innovation, and Production of many variations, Coral reefs are vast.</p> <p>SO strategy Improving quality, stock availability, and a large variety of marine ornamental fish species, Expanding the market and simplifying distribution channels, focusing on developing facilities for the continuity of stock availability, Increase promotions by utilizing technological advances.</p>	<p>High operating costs, Seasonal products, Relatively low quality, Low skills, Fishing gear is not environmentally friendly</p> <p>WO strategy Take advantage of existing opportunities to stabilize the company's finances, Strengthen the quality of human resources and personnel management to stabilize the company's performance., Maintain good product quality and quantity, Evaluating and fulfilling the company's marketing system because the company's opportunities are very supportive in the field of marketing.</p>
Threat	<p>Strategy ST Coping well with any changes in government policy to stabilize the company's finances, Controlling raw materials with modern system facilities and making renewable innovations, Increasing promotions, and stabilizing product sales by utilizing digital information systems.</p>	<p>Strategy WT Conduct research and plan the development of integrated management of the company, Take corrective preventive measures to meet the company's unfavorable system.</p>
Free trade AFTA (Asian Free Trade) and WTO, Certification (International Quality Standard), Confidence in the superiority of marine ornamental fish technology, Biotech Technology, Eco labels.		

The results of the SWOT analysis consist of 4 alternative strategies namely SO, ST, WO, and WT. Shows that the IE matrix is derived from the total value of IFE and the total value of EFE. The value of the IFE matrix is 3.35 and EFE is 2.35, indicating the company's position is in cell 1, which describes the company as having good opportunities and strengths and being able to overcome the company's weaknesses and threats. The position of the marine ornamental fish industry in the SWOT quadrant diagram is in quadrant 1 (1.47; 1.42) indicating that the marine ornamental fish industry has opportunities and strengths, so the strategy that must be taken in these conditions is to support aggressive growth policies or growth-oriented strategy by taking advantage of existing opportunities and the internal strength of the marine ornamental fish industry.

Conclusion

Based on the results of the profit and loss analysis, it can be concluded that PT. Indotama Putra Wahana, which operates marine ornamental fish agribusiness, has experienced an increase in profits from year I to year 10. This shows that the business generates profits and is feasible to develop. The results of the analysis also show that a marine ornamental fish agribusiness has an estimated return on investment (IRR) of 14.013%, a profitability index (PI) of 3.38, and a Net Present Value of IDR 2,381,531,466. This shows that marine ornamental fish agribusiness has a value greater than zero, so it is feasible to be carried out and developed. In addition, the Break Even Point (BEP) achieved during the projection period is an average of IDR 15,954,667,535 or 550,161

fish. This value indicates that the business can break even and generate revenue or profit.

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Author Contributions

Conceptualization, M. K, A. A, A. R, S. M, A. A., and A. F. U.; methodology, M. K.; validation, A. A. and A. R.; formal analysis, S. M.; investigation, A. A. and A. F. U.; resources, M. K. and A. A.; data curation, A. R.; writing—original draft preparation, S. M and A. A.; writing—review and editing, A. F. U.; visualization, and M. K and A. A. All authors have read and agreed to the published version of the manuscript.

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Conflicts of Interest

The authors declare no conflict of interest.

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