



Strategy for Developing Assistance of Cultivated Fishery Infrastructure Towards Increasing Income of Fish Farmers in Gorontalo Province

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Abstract. *This research was carried out in districts and cities in Gorontalo Province. The research location was determined by purposive sampling or deliberately with the consideration that the location was the location where the fish farming group was the recipient of fish farming infrastructure assistance. Aquaculture activities begin with capture fisheries activities, an activity that has been going on since the primitive era of humans, namely ancient times. Capture fisheries production is limited by the natural productivity of waters (seas, rivers, lakes and reservoirs). This natural productivity can be increased tens or even thousands of times with fish cultivation activities. Based on the results of the research and discussion in the previous chapter, the following conclusions can be outlined: The effectiveness of the distribution of fish cultivation infrastructure and infrastructure assistance to fish farmers in Gorontalo Province has an average score of 14.95 units which is in the "Fairly Effective" criteria. There is a significant difference between the income and production results of fish cultivation each planting season for fish farmers before and after the distribution of fish cultivation infrastructure and infrastructure assistance in Gorontalo Province.*

Key words: *Fisheries Fish cultivation, development strategy, SWOT*

INTRODUCTION

Aquaculture activities begin with capture fisheries activities, an activity that has been going on since the primitive era of humans, namely ancient times. Capture fisheries production is limited by the natural productivity of waters (seas, rivers, lakes and reservoirs). This natural productivity can be increased tens or even thousands of times with fish cultivation activities.

Fish farming is an effort to utilize existing resources around you to achieve common goals within a group. Cultivation is a form of human intervention in increasing aquatic productivity. This activity is carried out in order to produce fish in a controlled container or media and is profit oriented. This understanding emphasizes the role of humans in producing and increasing aquatic productivity,



especially freshwater fish, and aims to make a profit. The hope is that the product will be produced will multiply and abound. According to Republic of Indonesia Law no. 9/1985 and Republic of Indonesia Law no. 31/2004, activities included in fisheries start from pre-production, production, processing to marketing which are carried out in a fisheries business system. In general, fisheries are intended to provide food for humans. Aquaculture can be carried out on land and at sea, such as beaches, river estuaries, bays, straits, protected shallow waters, coral reefs, even mountains and hills reaching out to the open sea. As long as adequate water resources are available quantitatively and qualitatively, fisheries cultivation activities can take place.

Land and sea zoning is known as inland aquaculture and marine aquaculture (mariculture). Inland aquaculture is fisheries carried out on land using water sources in the form of (springs, rivers, reservoirs, lakes, irrigation canals, rainwater, well water, and other standing water) or brackish water. Mariculture is a fisheries cultivation activity carried out at sea.

The fish cultivation group (Pokdakan) in Gorontalo Province carries out fish cultivation as a home industry or small-scale business with funding from group members. Cultivation businesses look quite promising in the future, but there is also a need for assistance from relevant agencies or institutions so that government assistance programs such as seeds, feed, feed machines and other infrastructure that support fish cultivation business activities can be channeled, whether through APBD financing. (Regional Revenue and Expenditure Budget) or through the APBN budget (National Revenue and Expenditure Budget). Fish cultivation businesses carried out by both individuals and groups, to produce and meet the demand for fishery products as an economic activity and at the same time an integral part of the regional and national business world have a very important and strategic position, potential and role in the fisheries sector in realizing regional development in in general and economic development in particular, encouraging economic growth and economic stability (Zain and Febrianty, 2018)

Development Strategy

Strategy is a long-term plan, followed by actions aimed at achieving a specific goal, which is generally "winning". The origin of the word "strategy" is derived from the Greek word "Strategos". Strategy is a way of doing something to achieve certain goals. It is a plan for an activity. This includes the formulation of objectives and a collection of activity plans. This indicates that there are efforts to strengthen the competitiveness of business work in managing organizations and prevent negative external influences on organizational activities. Strategy is a tool for achieving company goals in relation to long-term goals, follow-up programs and resource allocation priorities. Initially the concept of strategy was defined as a way to achieve goals. This generic concept is especially in accordance with the initial development of the use of strategic concepts used in the military world. Strategy in the military world is the various methods used by warlords to defeat the enemy in a war. Meanwhile, the method used by troops to calm the battle is called tactics. In line with the development of the strategic management concept, strategy is not only defined as a way to achieve goals because strategy in the strategic management concept also includes the determination of various goals themselves which are expected to ensure the maintenance of the company's competitive advantage. In general, we define strategy as a way to achieve goals. Strategy is a long-term plan to achieve goals.



Strategy consists of important activities needed to achieve goals. Strategy is a pattern or plan that integrates the main goals, policies, and series of an organization into one cohesive whole.

Based on the definitions of strategy that have been explained, the researcher concludes that strategy is an effort to achieve a long-term goal in an organization. Organizations have programs or activities so strategies are needed to run well and in accordance with the goals of the organization.

Empowerment activities are one of the cooperative activities that can be developed in the field of fisheries and other agrocomplexes. Community empowerment activities that bring together academics or researchers with those involved in fisheries activities in the field can be used as a means of increasing the productivity of fisheries cultivation activities (Wafi and Ariadi, 2022). It is hoped that from these empowerment activities there will be practical implementation that can be applied by cultivators in the field based on scientific studies by academics and partner practitioners (Ariadi and Abidin, 2019). Furthermore, it was said that several examples of empowerment-based activities include assistance in making fish cultivation models, making feed additives, technical guidance for cultivation and other practical activities.

In implementing marine and fisheries programs, both central and regional governments always support marine and fisheries development to continue to strive to increase the income of fish farming communities, especially with various assistance programs to help increase their income. These efforts have been carried out by rolling out various programs in the form of providing equipment and capital, such as the assistance program to strengthen marine, brackish and freshwater cultivation capital. Programs that are intensively implemented include the independent feed movement, biofloc, cultivation villages and so on.

RESEARCH METHODOLOGY

This research was carried out in districts and cities in Gorontalo Province. The research location was determined by purposive sampling or deliberately with the consideration that the location was the location where the fish farming group was the recipient of fish farming infrastructure assistance. The implementation time is 3 (three) months from August to November 2023. The data used in this research is primary data. Primary data is a source of research data obtained directly from original sources (not through intermediaries) (Rangkuti, 2015). This data is obtained or collected directly from the location or in the field. Data can be obtained through interviews or questionnaires. The type of research used in this research is descriptive research. This type of descriptive research is appropriate to use to reveal a social reality such as the phenomenon of providing assistance to fish farmers, fishermen or fish processors, especially if you want to see the impact of providing assistance on their income. This type of descriptive research is very suitable to be combined with qualitative methods which are capable of producing in-depth data, so that with in-depth data comprehensive information can be found that is useful in formulating recommendations for action or policy. The scale used in taking questionnaires is the "Likert Scale". According to Siregar, 2016, the Likert scale is a scale that functions to measure a person's opinion or perception about a particular event or object. The Likert scale created by R Likert is used to measure the attitudes, opinions and perceptions of a person or group about social phenomena that have been specifically determined by researchers, which are hereinafter referred to as research variables. With a Likert scale, the variables to be measured can be described into indicator variables. The answer to each instrument item using a Likert scale has a gradation from very positive to negative which can be in the form of words including:



No	Information	Statistical Results			Av erage Before	Ave rage After
		tc ount	p- value	tt able		
1	Income	- 11,002	0, 000	1, 986	1,1 64	2,68 9
2	Production yield per Planting Season	- 11,483	0, 000	1, 986	1,4 39	3,09 6
3	Number of Planting Seasons per year	- 1,485	0. 083	1, 986	2,4 78	2,95 7
ns = not significant * = significant at alpha 0.1 ** = significant at alpha 0.05 *** = significant at alpha 0.01						

- a) Strongly agree
- b) Agree
- c) Doubtful
- d) Don't agree
- e) Strongly disagree

RESULTS

The results of the difference test with the Non Parametric Paired samples t test between income, production results per Planting Season, and number of Planting Seasons per year for fish cultivators before and after distribution of fish farming infrastructure and infrastructure assistance in Gorontalo Province using SPSS 21 program assistance are in the following table 4.14 This:

Table 4.14: Hypothesis Testing Results

Source: SPSS Data Processing 21, 2021

Based on the results in the table above, the test results can be described as follows:

5. Comparison of income for fish farmers before and after distribution of fish farming infrastructure and infrastructure assistance in Gorontalo Province

Based on the results of the analysis, the t-calculated value for the difference in income among fish farmers before and after the distribution of fish infrastructure assistance in Gorontalo Province was -11.002 with a sig (2-tailed) value of 0.000. Meanwhile, the ttable value with a significance of 0.05 is 1.986. This tcount value is still greater than the ttable value and this significance value is still smaller than the alpha value used (0.05) so Ha1 is accepted. Thus, it can be concluded that there is a



significant difference between the income of fish farmers before and after the distribution of fish cultivation infrastructure assistance in Gorontalo Province. Based on the average results, it was found that the average income before the distribution of assistance for fish farming infrastructure and facilities in Gorontalo Province was 1,164 units, which then increased after the assistance was provided to 2,689 units.

Meanwhile, to strengthen these results, a comparison of income categories for which data was obtained from respondents is also presented in Table 4.15

Table 4.15: Income comparison results

		Frequency	Percent	Valid Percent	Cumulative Percent
Before	< IDR 1 Million	38	52.05	52.05	52.05
	IDR 1 Million - IDR 2 Million	35	47.95	47.95	100.00
	Total	73	100.00	100.00	
After	< IDR 1 Million	4	5.48	5.48	5.48
	IDR 1 Million - IDR 2 Million	15	20.55	20.55	26.03
	IDR 2 Million - IDR 3 Million	20	27.40	27.40	53.42
	IDR 3 Million - IDR 4 Million	26	35.62	35.62	89.04
	> IDR 5 Million	8	10.96	10.96	100.00
	Total	73	100.00	100.00	

Source: SPSS Data Processing 21, 2021

Based on the table above, it can be seen that the income of fish farmers before being given assistance was dominated by income of less than IDR 1,000,000 for 38 people or 52.05%. Then, after being given assistance by the Gorontalo Provincial government, income increased, where the dominant one was IDR 3,000,000 – IDR 4,000,000 for 26 people or 35.62%, some even had incomes of up to > IDR 5,000,000 for 8 people or 10 people. .96%. So the distribution of fish farming



infrastructure and infrastructure assistance in Gorontalo Province has had a significant positive impact on increasing the income of fish farmers.

6. Comparison of Production Results per Planting Season for fish farmers Before and After Distribution of fish farming infrastructure and infrastructure assistance in Gorontalo Province

Based on the results of the analysis, the calculated value for the difference in production results per planting season for fish farmers before and after the distribution of fish cultivation infrastructure assistance in Gorontalo Province was -12.466 with a sig (2-tailed) value of 0.000. Meanwhile, the ttable value with a significance of 0.05 is 1.996. This tcount value is still greater than the table value and this significance value is still smaller than the alpha value used (0.05) so that H0 is accepted. Thus, it can be concluded that there is a significant difference between production results per MT for fish farmers before and after the distribution of fish cultivation infrastructure and infrastructure assistance in Gorontalo Province. Based on the average results obtained, the average production output per planting season before the distribution of fish farming infrastructure and infrastructure assistance in Gorontalo Province was 1,439 units, which then increased after the assistance was provided to 3,096 units.

Meanwhile, to strengthen these results, a comparison of production categories per Mt is also presented, data obtained from respondents in Table 4.16:

Table 4.16: Comparative results of production results per MT

	Frequency	Percent	Valid Percent	Cumulative Percent
Before	< 20 Kg	28	38.36	38.36
	20-40 Kg	39	53.42	91.78
	40-60 Kg	6	8.22	100.00
	Total	73	100.0	100.00
After	< 20 Kg	4	5.48	5.48
	20-40 Kg	8	10.96	16.44
	40-60 Kg	25	34.25	50.68
	60-80 Kg	28	38.36	89.04
	> 80 Kg	8	10.96	100.00
	Total	73	100.00	100.00

Source: Excell Data Processing, 2023

Based on the table above, it can be seen that the production results per MT before assistance was provided were dominated by production results < 20 kg for 38 people or 55.90%. Then, after being given assistance by the Gorontalo Provincial government, production per MT increased, where the dominant was 20-40 Kg for 20 people or 29.40%, some even had incomes of up to 40-60 Kg and 60-80 for 16 people or 16 people. 23.50%. So that the distribution of fish farming infrastructure and infrastructure assistance in Gorontalo Province has had a significant positive impact on increasing production output per MT carried out by fish farmers.



7. Comparison of the Number of Planting Seasons per Year for fish farmers Before and After Distribution of fish farming infrastructure and infrastructure assistance in Gorontalo Province

Based on the results of the analysis, the t-calculated value for the difference in the number of MT per year among fish farmers before and after the distribution of fish cultivation infrastructure assistance in Gorontalo Province was -1.758 with a sig (2-tailed) value of 0.083. Meanwhile, the ttable value with a significance of 0.05 is 1.986. This tcount value is still smaller than the table value and this significance value is still greater than the alpha value used (0.05) so Ha3 is rejected. Thus, it can be concluded that there is an insignificant difference between the number of planting seasons per year for fish cultivators before and after the distribution of fish cultivation infrastructure assistance in Gorontalo Province. Based on the results on average, it was found that the average yield of fish farming products before the distribution of fish farming infrastructure and infrastructure assistance in Gorontalo Province was 2,478 units, which then increased after the assistance was given to 2,957 units.

Meanwhile, to strengthen these results, a comparison of the number of MT per year for which data was obtained from respondents is also presented in the following table:

Table 4.17: Comparison results of the number of MT per year

		Frequency	Percent	Valid Percent	Cumulative Percent
Before	1 time	11	15.07	15.07	15.07
	2 times	38	52.05	52.05	67.12
	3 times	20	27.40	27.40	94.52
	4 times	4	5.48	5.48	100.00
	5 times	0	0.00	0.00	100.0
	Total	73	100.00	100.00	
After	1 time	4	5.48	5.48	5.48
	2 times	20	27.40	27.40	32.88
	3 times	32	43.84	43.84	76.71
	4 times	12	16.44	16.44	93.15
	5 times	5	6.85	6.85	100.00
	Total	73	100.00	100.00	

Source: SPSS Data Processing 21, 2021

Based on the table above, it can be seen that the number of Planting Seasons per year before assistance was provided was dominated by MT twice a year, amounting to 38 people or 52.05%. Then, after being given assistance by the Gorontalo Provincial government, the number of Planting Seasons per year increased, with the dominant being 2 times, 3 times or even 4 times a year. So the



distribution of fish farming infrastructure and infrastructure assistance in Gorontalo Province has had a positive impact on increasing the number of planting seasons (MT) per year for fish farmers.

8. Results of Strategy Analysis for developing fisheries infrastructure assistance programs for fish cultivation towards increasing the income of fish farmers in Gorontalo Province

Analysis of the strategy for developing fish farming infrastructure and infrastructure assistance programs to increase the income of fish farmers in Gorontalo Province can be described as follows:

A). Identify Internal and External Factors

1) Identify Internal Factors

These internal factors influence the formation of strengths and weaknesses (S and W). Internal analysis consists of 2 types, namely

a) Strength

An organizational strength is the resources and capabilities that can be used as a basis for developing competitive advantage.

b) Weakness

Weakness is something that causes one organization to be unable to compete with other organizations. In some cases, a weakness for one organization may be a strength for another.

The internal strategic factors that are strengths and weaknesses in the strategy for developing fish farming infrastructure and infrastructure assistance programs to increase the income of fish farmers in Gorontalo Province are as follows:



Table 4.18: Internal rating value factors (strengths and weaknesses)

No	Description	Actual Points	Weight	Ratings	Score
1	The potential area for fish farming is very large	0.08	0.08	1	0.08
2	Support for aquaculture programs & activities from the Central Provincial & District/City governments & Stakeholders for group-based businesses is available	0.15	0.15	4	0.62
3	Support from hatchery units and hatcheries, both government and private, is very good	0.12	0.12	2	0.23
4	Availability of technical assistance for cultivation/extension	0.12	0.12	1	0.12
5	Diverse commodity business opportunities	0.08	0.08	1	0.08
Number of Strengths			0.54		1,115
1	Minimal working relationships or working partnerships	0.15	0.15	4	0.62
2	Minimal access to business capital	0.12	0.12	2	0.23
3	Low HR competency	0.08	0.08	3	0.23
4	Low technology transfer	0.12	0.12	1	0.115
Number of Weaknesses			0.46	0.46	
Number of IFAS		15.04	1,000		1,192
IFAS Score					- 0.077

Primary Data Processing Sources, 2023

Based on table 4.18, it can be seen that for internal factors the strength score was 1.115, while the weakness score was 1.192. So that these values can be seen as the difference between the strength and weakness factors, which is negative at -0.077, where the weakness score is greater than the strength, which means that the development of the fish cultivation infrastructure and infrastructure assistance program to increase the income of fish farmers in Gorontalo Province has many weaknesses that must be changed. Existing opportunity factors can be applied to overcome existing weaknesses.



2) Identify External Factors

These external factors influence the formation of opportunities and threats (O and T). External factors are factors from outside to optimize the strategy for developing fishing facilities assistance. External factors consist of 2 aspects, namely:

a) Opportunity

Opportunity is a catalytic factor that comes from outside that can increase the capabilities of an organization. Analysis of the external environment can produce new opportunities for an organization to achieve profit and growth.

b) Threat

Changes in the external environment can also present threats to the organization.

The external strategic factors that become opportunities and threats in the strategy for developing fish cultivation infrastructure and infrastructure assistance programs to increase the income of fish farmers in Gorontalo Province are as follows.

Table 4.19. External rating value factors (opportunities and threats)

No	Description	Actual Points	Weight	Ratings	Score
1	Wide market	3.70	0.14	4	0.545
2	The demand for cultivated fish is quite high	3.89	0.14	4	0.545
3	The existence of Integrated Coldstorage System ICS facilities in the regions	4.48	0.09	3	0.273
4	Seed availability is always there	4.22	0.14	1	0.409
5	High food diversification	4.48	0.09	2	0.182
Number of Opportunities			0.59		1,955
1	Land Use Conflict	4.22	0.091	2	0.182
2	Cultivation business is considered a high risk business	4.48	0.136	3	0.409
3	Seasons/Weather are unpredictable	4.67	0.136	3	0.409
4	Prices fluctuate	3.99	0.045	1	0.045



Number of Threats		0.409		1,045
Number of EFAS	38.12	1		
EFAS Score				0.909

Primary Data Processing Sources, 2023

Table 4.19 shows that the value of the opportunity factor possessed by the strategy for developing fish cultivation infrastructure assistance programs to increase the income of fish farmers in Gorontalo Province is 1.955 and the threat factor is 1.045. So that these values can be seen as the difference between the opportunity and threat factors, which is positive at 0.909. So when compared, the opportunity factor is much greater than the threat score. This shows that there is a high opportunity in developing a fish cultivation infrastructure assistance program to increase the income of fish farmers in Gorontalo Province.

B). SWOT Matrix

The SWOT Matrix is a situation analysis tool with the advantage of being able to provide very diverse results or implementation if applied by one party to another even with the same factors. Apart from that, the SWOT matrix also produces many alternative strategies that are feasible according to internal conditions, can maximize strengths and opportunities, reduce weaknesses and threats, and provide user freedom to integrate various sources of related information.

1) SO Strategy = Quadrant 1

This is the most profitable situation. The organization has opportunities and strengths, so it can take full advantage of opportunities. The strategy that must be implemented in this condition is to support aggressive growth policies (Growth Oriented Strategy).

In this research, the opportunities and strengths that constitute a profitable collaboration are:

- Opportunities for diversification of fishery products through the role of extension workers
- Hatchery Unit support really supports the availability of fish seeds
- Wide market demand can be an alternative for conducting cultivation businesses with various commodities
- The high demand for fish is an excellent business opportunity because the potential area is still available

2) ST Strategy = Quadrant 2

This is a strategy for using the strengths an organization has to overcome threats. This strategy is used to take advantage of long-term opportunities by means of a diversification strategy (product/market). In the ST quadrant the results are described as follows:

- Providing information on land use that is suitable for sustainable cultivation businesses
 - Creating a trusted cultivation business through efforts to increase good productivity with the assistance of extension workers
 - Make efforts to prevent major force risks through government support
- Assistance in opening cultivation land businesses can minimize land use conflicts



3) WO Strategy = Quadrant 3

This strategy is implemented based on exploiting existing opportunities by minimizing existing weaknesses. Organizations face enormous market opportunities, but on the other hand have to face several internal obstacles/weaknesses. An effective way is to review the technology used for or offering new products. From this research, the WO strategy is as follows:

- Increasing the capacity of cultivator human resources in financial management (financial literacy)

- The availability of ICS can open up opportunities to become a partner

- Forming productive institutions so that cultivators can reach wider partnerships and take advantage of a wide market

Carrying out training and technical assistance on how to diversify cultivation production results

4) WT Strategy = Quadrant 4

This strategy is a very unfavorable situation, where the organization has to face various internal threats and weaknesses. This activity is defensive in nature and seeks to minimize existing weaknesses and avoid threats, including those obtained from this research:

- Providing additional knowledge in the form of training to aid recipients on how to process fish cultivation products so that they can have added value through diversification of aquaculture products

- Increase human resource capacity so that they can master various cultivation techniques and can continue to run the business in unstable conditions

Expanding partnership access to reduce price fluctuations.

The results of the alternative strategy for developing a strategy for developing fish cultivation infrastructure and infrastructure assistance programs to increase the income of fish farmers in Gorontalo Province are presented in table 4.20 as follows:

Table 4.20: SWOT Matrix Strategy for developing fish cultivation infrastructure and infrastructure assistance programs to increase the income of fish farmers in Gorontalo Province

	Strengths	Weaknesses
INTERNAL EXTERNAL	The potential area for fish farming is very large	Minimal working relationships or working partnerships
	Support for aquaculture programs & activities from the Central Provincial & District/City governments & Stakeholders for group-based businesses is available	Minimal access to business capital
	Support from hatchery units and hatcheries, both government and private, is very good	Low HR competency



	Availability of technical assistance for cultivation/extension	Low technology transfer
	Commodity business opportunities are diverse	
Opportunities	SO	WO
Wide market	<ul style="list-style-type: none"> - Opportunities for diversification of fishery products through the role of extension workers - Hatchery Unit support really supports the availability of fish seeds - Wide market demand can be an alternative for conducting cultivation businesses with various commodities - The high demand for fish is an excellent business opportunity because the potential area is still available - 	<ul style="list-style-type: none"> - Increasing the capacity of cultivator human resources in financial management (financial literacy) - The availability of ICS can open up opportunities to become a partner - Forming productive institutions so that cultivators can reach wider partnerships and take advantage of a wide market - Carrying out training and technical assistance on how to diversify cultivation production results
The demand for cultivated fish is quite high		
The existence of Integrated Coldstorage System ICS facilities in the regions		
Seed availability is always there		
High food diversification		
Threats	ST	W.T
Land Use Conflict	<ul style="list-style-type: none"> - Providing information on land use that is suitable for sustainable cultivation businesses - Creating a trusted cultivation business through efforts to increase good productivity with the assistance of extension workers - Make efforts to prevent major force risks through government support - Assistance in opening cultivation land businesses can minimize land use conflicts 	<ul style="list-style-type: none"> - Providing additional knowledge in the form of training to aid recipients on how to process fish cultivation products so that they can have added value through diversification of aquaculture products - Increase human resource capacity so that they can master various cultivation techniques and can continue to run the business in unstable conditions - Expanding partnership access to reduce price fluctuations.
Cultivation business is considered a high risk business		
Seasons/Weather are unpredictable		
Prices fluctuate		

Source: Primary Data Processing Source, 2023



Based on table 4.20, it shows 4 (four) alternative strategies that can be implemented by the government strategy in developing fish cultivation infrastructure and infrastructure assistance programs to increase the income of fish farmers in Gorontalo Province, namely the SO (Strength-Opportunities) strategy, the WO (Weaknesses-Opportunities) strategy, the ST (Strength-Threatsh), and WT (Weaknesses-Threatsh) strategies. However, for the development of a fish cultivation infrastructure and infrastructure assistance program to increase the income of fish farmers in Gorontalo Province, it is more ideal to use the WO (Weaknesses-Opportunities) strategy because there are opportunities that can minimize weaknesses in the program which then becomes a driver of success in supporting increased income of fish farmers in the Province. Gorontalo through a fish cultivation infrastructure assistance program distributed by the Gorontalo Provincial government.

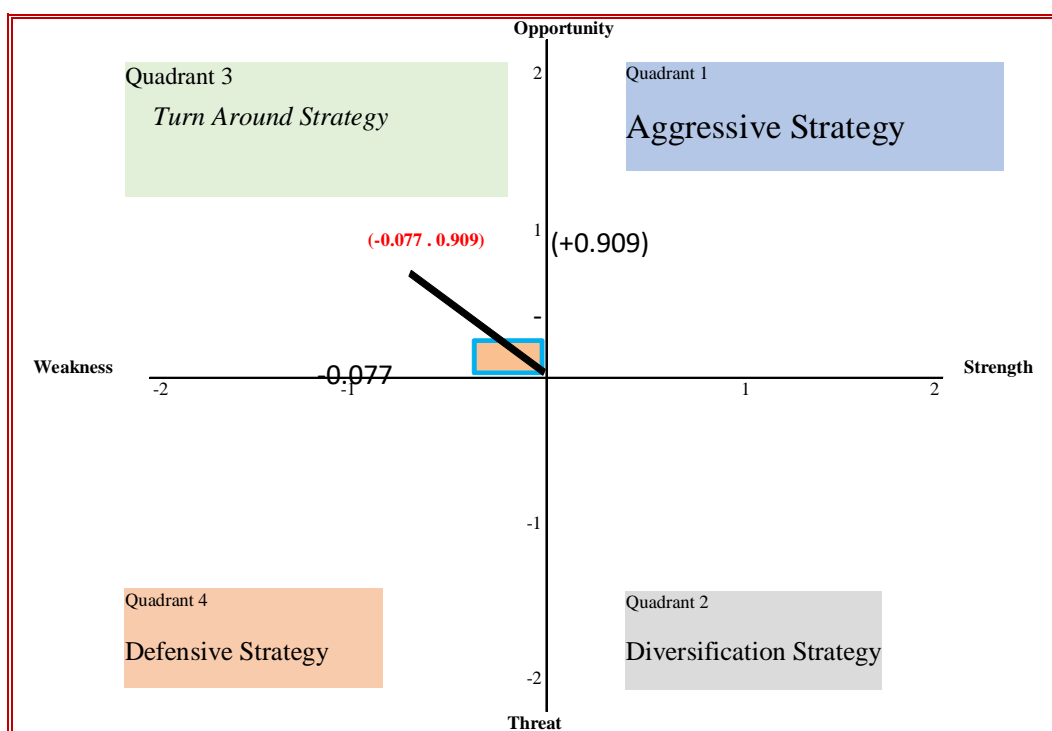
Based on the internal and external factors above, coordinate points can be arranged from the SWOT diagram as in table 4.21:

Table 4.21: External and Internal Analysis Coordinates

No	Description		Score
1	Internal factors		
	a.	Strength	1,115
	b.	Weakness	1,192
	Difference		-0.077
2	External Factors		
	a.	Opportunity	1,955
	b.	Threat	1,045
	Difference		0.909
X,Y Coordinate Point			(-0.077 . 0.909)

Primary Data Processing Sources, 2021

Based on table 4.21, an overview of the location of the strategy quadrants is presented in the following image:



Gambar 4.2. Diagram Analisis SWOT

Figure 4.2 diagram of the results of the SWOT analysis shows that the strategy for developing a fish cultivation infrastructure assistance program to increase the income of fish farmers in Gorontalo Province is in quadrant 3 position, namely the Turn Around strategy. This quadrant position explains that higher opportunities are in external factors while weaknesses are in internal factors, where weaknesses in internal factors are suppressed by pursuing opportunities that exist in external factors. In this strategy, it is emphasized that efforts to improve the strategy for developing fish farming infrastructure and infrastructure assistance programs can be focused on exploiting various opportunities to change the weaknesses of fish cultivators and the government into strengths so that fish cultivators gain large incomes and increase the welfare of fish cultivators in Gorontalo Province.

CONCLUSION

Based on the results of the research and discussion in the previous chapter, the following conclusions can be outlined:

1. The effectiveness of the distribution of fish cultivation infrastructure and infrastructure assistance to fish farmers in Gorontalo Province has an average score of 14.95 units, which is in the "Quite Effective" criteria.
2. There is a significant difference between the income and production results of fish cultivation each planting season for fish farmers before and after the distribution of fish cultivation infrastructure and infrastructure assistance in Gorontalo Province.
3. The strategy for developing a fish cultivation infrastructure assistance program to increase the income of fish farmers is in quadrant 3, namely the Turn Around strategy. This strategy is focused



on the government's efforts by: (a) developing capacity in financial management (financial literacy), (b) monitoring and evaluating the fish farming infrastructure assistance program on a regular basis and (c) forming productive institutions so that cultivators can reach partnerships. wider.