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Comparative Analysis of Seaweed Cultivation Business Income Before and After Getting KUR Financing in Liya Togo Village, Wakatobi Regency

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Abstract

This research aims to (1) determine the amount of seaweed cultivation business income in Liya Togo Village, South Wangi-Wangi District, Wakatobi Regency, (2) analyze the comparison of seaweed cultivation business income before and after obtaining people's business credit (KUR) financing in Liya Village Togo, South Wangi-Wangi District, Wakatobi Regency. The population in the research were all seaweed cultivation business actors in Liya Togo Village, precisely in South Wangi-Wangi District, Wakatobi Regency, who had received 29 people's business credit (KUR) funding. Sampling from the population was carried out using a non-probability sampling method, namely the saturated sampling method (census). So the total population and sample size are 29 people. Research analysis uses income analysis and paired t-test analysis. The results of this research show that there are differences in seaweed farming income in Liya Togo Village before and after the existence of People's Business Credit (KUR). Seaweed farming income is higher after the People's Business Credit (KUR) program. The difference in seaweed farmers' income is due to differences in costs and farmers' income after getting People's Business Credit (KUR). After getting People's Business Credit, the income of seaweed farmers, the capital they get increases.

Keywords: Income comparison, seaweed cultivation, people's business credit.

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INTRODUCTION

Seaweed production in Indonesia in recent years has shown an encouraging increase. Indonesia is one of the main producers of seaweed and is able to meet approximately 60% of the world's needs (Sulistijo, 2012). Seaweed is the main source of agar, alginate and carrageenan which are utilized in the cosmetic, pharmaceutical and other industries (paper, textile, photography, pasta and fish canning industries (Parenreng, *et al.*, 2008). In addition, there are also other advantages, namely that the cultivator does not require certain scientific qualifications so that it can be done by all levels of society. According to Parenrengi, *et al.* (2008), these advantages provide positive indicators in efforts to develop seaweed aquaculture.

Capital is one of the production factors in farming, but it can also be an inhibiting factor in increasing the production and quality of agricultural products if capital is not available in sufficient quantities (Saediman, *et al*., 2019). Mamoto, *et al*. (2021) stated that the source of farm capital consists of own capital, namely capital that independently comes from the farmers concerned and loan capital, namely capital that comes from other parties such as banks / other financial institutions. To strengthen the ability of business capital in the context of implementing policies to accelerate the development of the real sector and empower MSMEs and farming actors, the Indonesian government launched the people's business credit program (KUR) in November 2007 (Coordinating Ministry for Economic Affairs, 2020).

In its development, the KUR program experienced changes in the subsidy scheme. In the first period of KUR distribution, from 2007 to 2014, KUR subsidies were provided using the guarantee fee mechanism (IJP). In 2015, the financing policy committee for MSMEs and agribusinesses evaluated the implementation of the KUR program using the guarantee scheme and decided that the scheme was not on target. It was then decided to implement the KUR program since August 2015 using an interest/margin subsidy scheme. The interest/margin subsidy resulted in interest rates for KUR loans/financing being very low compared to commercial bank loans. The interest rate continues to decline (Coordinating Ministry for Economic Affairs, 2020).

The Marine and Fisheries Service of Southeast Sulawesi Province released the achievement of seaweed aquaculture production in 2017 reaching 1 million tons. The figure increased when compared to the previous year which reached 912,734.84 tons. The real number of seaweed aquaculture production in 2017 reached 1,004,008.32 tons. Furthermore, 80% is seaweed commodities so this field is very promising for fishermen. This condition is supported because almost all regencies and cities in Southeast Sulawesi are seaweed producing areas. From the data obtained, of the 17 districts and cities in Southeast Sulawesi, there is only

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one district that does not have a marine area. Wakatobi Regency is an island regency located in Southeast Sulawesi Province. It has a land area of ± 823 km2 or only about 4.5 percent of the total area of Wakatobi Regency as a whole, the rest is marine waters which cover ± 18,377 km2. It consists of 8 sub-districts, all of which are located in the archipelago (43 islands) (Anonymous, 2009). The area of these waters is a potential resource that is very potential to develop various cultivation activities such as seaweed cultivation in addition to marine tourism that has developed so .

The sub-district of South Wangi-Wangi, has enormous potential for marine natural resources. Among the various fisheries and marine commodities, seaweed farming has become one of the prominent sectors in the sub-district (Hernanto, *et al.*, 2015). Liya Togo village, located in a beautiful archipelago rich in marine biodiversity, has long been known as one of the centers of seaweed farming activities. Deep marine traditions and favorable marine ecosystem conditions have made seaweed farming one of the main economic pillars of the community. In addition to being a source of income, seaweed farming also has social and cultural values that are important to the sustainability and identity of local communities. However, like many fishing and farming communities in different parts of Indonesia, communities often face challenges in terms of access to adequate capital or financing. In order to support economic growth and community empowerment, the Government of Indonesia has introduced the Kredit Usaha Rakyat (KUR) program. This program aims to provide access to financing to the MSME sector, including seaweed farmers.

METHOD

This research will be conducted in Liya Togo Village, South Wangi- Wangi District, Wakatobi Regency, Southeast Sulawesi Province. The population in the study were all seaweed cultivation business actors in Liya Togo Village, precisely in the South Wangi-Wangi District of Wakatobi Regency who had received people's business credit (KUR) funding as many as 29 people. Sampling of the population was carried out using a *non-probability sampling* method, namely the *saturated sampling* method (census). So that the total population as well as the number of samples as many as 29 people.

Data collection techniques in this study include interviews and documentation. Interviews were conducted through questions and answers with respondents using a questionnaire to obtain information related to the research problem. Documentation is done by collecting data in the form of photos, videos, and archives that describe the conditions and

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activities carried out by researchers while in the field. The data analysis used in this research is as follows:

1. To determine the amount of income will use the cost formula, revenue and income formula.

   AC $= \frac{TC}{Q}$

   Description:

   AC = Average total *cost*

   TC = Total Cost

   Q = Output (amount of production)

   TR=P.

   Description

   TR = Revenue (Rp/Kg)

   P =Production Price (Rp)

   Q = Production Quantity (Kg)

   Description:

   Pd = farm income

   TR =total revenue

   TC = total cost

2. To answer the second problem formulation, namely the comparison of income before and after obtaining people's business credit financing (KUR), it is calculated using the paired t-test or paried t-test parametric difference test on two paired data. That is, comparing the mean or average difference of two variables whose data sources come from the same subject (Sujianto, A: 2009). Testing with the mean difference test method for two paired samples (pired sample t-test). According to (Sugiyono, 2016). The formula used in this study is a *separate variant* as follows:

$$t = \frac{\overline{x1} - \overline{x2}}{\sqrt{(s^2(\frac{1}{n1} + \frac{1}{n2}))}}$$

   Where:

   t = t value

   $\overline{x1}$ = average sample before the treatment of people's business credit (KUR)

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$\overline{x2}$ = average sample after people's business credit treatment (KUR)

s^2 = standard error

n1 = number of samples before the people's business credit (KUR) treatment

n2 = number of samples after the people's business credit (KUR) treatment

According to Santoso, S 2014, the decision-making guidelines in the *paired sample t-test* based on the significance value (Sig) of the SPSS output results are as follows:

- If the Sig. (2-tailed) <0.05, which means there is a significant difference in the test results, then the conclusion is H0 is accepted and H1 is rejected.
- Conversely, if the sig. (2-tailed) > 0.05, then H0 is rejected and H1 is accepted, which means there is a significant difference in the test results.

RESULTS AND DISCUSSION

Seaweed Farmer Income

Income is the most important factor for every business because income is very influential for the continuation of a business. The ability of a business to finance all activities that support the sustainability of a business is very influential on how much revenue business gets. Revenue is a form of money from buyers as a result of the sale of goods and services (Madji, *et al*., 2019).

In this study, income indicators consist of production, production costs, revenue, and income. For more details can be seen in the following table;

Table 1 Seaweed Farmer Income

Variables	Description	KUR program	
		Before	After
Production	Total	467,650 (kg)	577,350 (kg)
	Average	16,125.86 (kg)	19,908.62 (kg)
Production Cost (fixed cost)	Total	302,440,000 (Rp.)	478,610,000 (Rp.)
	Average	10,428,965.51 (Rp.)	16,503,793.10 (Rp.)
Production Cost (variable cost)	Total	558,100,000 (Rp.)	659,600,000 (Rp.)
	Average	19,244,827.58 (Rp.)	22,744,827.58 (Rp.)
Total Production Cost	Total	467,650,000 (Rp.)	577,350,000 (Rp.)
	Average	16,125.86 (Rp.)	19,908.62 (Rp.)
Reception	Total	1,870,600,000 (Rp.)	2,309,400,000 (Rp.)
	Average	64,503,448.27 (Rp.)	79,634,482.75 (Rp.)
Revenue	Total	1,010,060,000 (Rp.)	1,171,190,000 (Rp.)

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	Average	3,482,965.51 (Rp.)	4,041,034.48 (Rp.)

Based on the table above, the income of seaweed farmers can be described as follows;

1. Production is the amount of seaweed in the form of dried seaweed produced by seaweed farmers in one production (kg). The amount of production affects the income of seaweed farmers. Based on table 3 above shows the production of sp seaweed obtained by sp seaweed farmers before getting KUR with a total production of sp seaweed of 467,650 Kg, with an average production of 16,125.86 Kg. Shows the total amount of seaweed production after getting KUR of 577,350 Kg, with an average production of 19,908.62 Kg. Liya Togo Village is higher when it is difficult for the People's Business Credit (KUR) progtam than the amount of production produced by seaweed farmers before the People's Business Credit program.
2. Production costs in seaweed farming are costs incurred in farming activities in one production. Production costs greatly affect the farming activities carried out because costs can affect the income earned by seaweed farmers. Production costs can be divided into two types of costs, namely *fixed* costs and *variable* costs. Based on table 3 shows the fixed costs of seaweed farming before getting and KUR obtained the amount of costs as much as Rp302,440,000, with an average fixed cost of Rp10,428,965.51 and after the People's Business Credit (KUR) the amount of fixed costs obtained amounted to Rp478,610,000 with an average fixed cost of Rp16,503,793.10 not far away. The production costs of sp seaweed on farmers in Liya Togo village are higher after getting a People's Business Credit (KUR).
3. Based on table 3 shows the variable costs of seaweed farming before getting KUR funds obtained costs of Rp558,100,000, with an average variable cost of Rp19,244,827.58 and after the People's Business Credit (KUR) obtained variable costs of Rp659,600,000, with an average variable cost of Rp22,744,827.58. Much different as well as variable costs that have been discussed previously. The production costs of sp seaweed on farmers in Liya Togo village are higher after getting a People's Business Credit (KUR).
4. Based on table 3 shows the production of sp seaweed obtained by sp seaweed farmers before getting KUR with a total amount of sp seaweed production of 467,650 Kg, with an average production of 16,125.86 Kg. Shows the total amount of seaweed production after getting KUR of 577,350 Kg, with an average production of 19,908.62 Kg. Liya Togo Village is higher when it is difficult for the People's Business Credit (KUR) progtam than

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the amount of production produced by seaweed farmers before the People's Business Credit program.

5. Farm income is the result of multiplying the amount of production obtained by farmers with the prevailing selling price. If production is high and prices are high, the revenue obtained will be greater and vice versa if production is low and the revenue obtained is also low. Table 3 shows that the average revenue obtained by dry seaweed farms before the existence of the People's Business Credit (KUR) was lower by getting a total revenue of Rp1,870,600,000, with an average total revenue of Rp64,503,448.27. After the existence of the People's Business Credit (KUR) program, the total revenue was Rp2,309,400,000, with an average total revenue of Rp79,634,482.75, with an average total revenue of Rp79,634,482.75 per year. In this case it can be concluded that after the existence of the People's Business Credit (KUR) program, farmers' income increased.
6. Income is the net result obtained after revenue is reduced by production costs expressed in rupiah units. The income referred to in this study is the amount of money received by farmers after revenue is reduced by total expenses (costs) in one harvest season. Table 3 shows that the average income received by farmers before the KUR funds obtained an income of Rp1,010,060,000, with an average income of Rp3,482,965.51. The existence of the People's Business Credit (KUR) program after obtaining KUR funds had a total income of Rp1,171,190,000, with an average income of Rp4,041,034.48 per year. The difference was due to the fact that the income obtained by farmers before the People's Business Credit (KUR) program was lower than the income of farmers after the People's Business Credit (KUR) program.

Analysis of Income Differences of Seaweed Farmers Before and After the Program KUR

The independent sample t test is a statistical method used to test hypotheses regarding differences between two or more populations, where each group of samples is an independent sample from the other group of samples. The data needed to use this test is numerical data in the form of ratios or intervals. (Gani & Amalia, 2018).

Analysis of the second objective on the differences in seaweed farming income before and after the existence of the People's Business Credit (KUR) program can be done through inferential statistical analysis, such as the independent sample t-test, which is a one-way test used to compare two variables in research.

According to Sugiyono (2023) if the significance value of t-count is greater than (α) 5% (0.05) then Ho is accepted or there is no significant difference in the average income of seaweed

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farming before the People's Business Credit (KUR) program and after the People's Business Credit (KUR) program. However, if the significance value is smaller than the value (α) 5% (0.05) then Ha is rejected or there is a difference in seaweed farming income before the People's Business Credit (KUR) program and after the People's Business Credit (KUR) program. The results of the difference test on seaweed farming income before the existence of the People's Business Credit and after the People's Business Credit can be seen as follows:

Table 2 Test Results of Differences in Income of Seaweed Farmers Before and After the existence of People's Business Credit (KUR)

Paired Samples Test									
		Paired Differences					t	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Water 1	BEFORE - AFTER	-39,828	8,414	.419	46.832	32.823	-11.648	8	0.000

Based on table 2 above, based on the results of the t test, the difference in income on seaweed farming for the mean is valued at -39.828 before and after the existence of the People's Business Credit (KUR), it can be seen that the income is significant (*2-tailed)*, which is worth 0.000, it can be said that it is smaller than the aplha value of 0.05 (5%), so Ho is rejected and the Ha value is accepted, namely there is a difference in income before and after the existence of the People's Business Credit (KUR). One of the main benefits of the People's Business Credit (KUR) is to provide access to capital to MSMEs, in this case seaweed farmers who find it difficult to obtain loans from formal financial institutions. People's Business Credit (KUR) funds help MSMEs to start, develop, or expand their businesses. Kredit Usaha Rakyat (KUR) can strengthen local economies by empowering MSMEs to play a role in their regional economy. This reduces dependence on economic sectors dominated by large companies and helps drive local economic growth.

The difference in income of seaweed farmers is due to differences in costs and income of farmers after getting People's Business Credit (KUR). After obtaining a People's Business Credit, the income of seaweed farmers has increased. With more capital, farmers can buy a

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larger number of seeds, agricultural tools, and other costs needed to increase their yields. With KUR funds, seaweed farmers may be able to increase their production. Farmers use the funds to purchase better seeds, fertilizers, or farming equipment needed to increase yields. As a result, farmers' income increases due to larger production volumes. With KUR funds, seaweed farmers develop marketing networks

CONCLUSION

Based on the formulation of the problem, it can be concluded that the results of this study are the amount of income of sp seaweed farmers in the research area before getting KUR averaged - averaged each sp seaweed farmer gets an income of Rp3,482,965.51- per year For after getting an injection of KUR funds, the average sp seaweed farmer gets an income amount of Rp4,041,034.48- per year.

Comparison of income before and after getting and KUR provides an overview that before and after the existence of People's Business Credit (KUR) it can be seen that, income is significant (*2-tailed)*, which is worth 0.000, it can be said that it is smaller than the aplha value of 0.05 (5%), so Ho is rejected and the value of Ha is accepted, namely there is a difference in income before and after the existence of People's Business Credit (KUR). This means that there is a significant comparison between before and after getting KUR funds.

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