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# Factors Influencing Seaweed Supply in Lakudo District, Central Buton Regency

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**ABSTRACT**

*Lakudo District is one of the largest seaweed producing areas in Central Buton District. Based on data from the Fisheries Service of Central Buton Regency (2019) Lakudo District together with East Mawasangka have 1038.63 hectares of effective seaweed land area with a percentage of 38% in Central Buton Regency.This study aims to analyze the factors that influence seaweed supply in Lakudo District, Central Buton Regency. The location selection was carried out purposively with the consideration that this area is one of the central areas for seaweed production in Lakudo District, Central Buton Regency. This research was conducted from September to December 2022 in Lakudo District, Central Buton Regency, Southeast Sulawesi with 61 seaweed farmer respondents. The data analysis used is multiple linear regression analysis. The results showed that the variables that affect the supply of seaweed are the price of seaweed, production costs, number of workers and land area. An increase of IDR 1 in production costs will increase the supply of seaweed by 0 Kg. An increase of 1 worker will increase the supply of seaweed by 13.871 Kg. An increase of 1 Ha of land area will increase the supply of seaweed by 585.838 Kg.*

**Keywords: Supply, Farmers, Seaweed.**

## INTRODUCTION

Seaweed is a very abundant biological resource in Indonesian waters which is a potential aspect to be developed, especially in the food, beverage and cosmetic industry sector. The



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function of seaweed as a raw material for various processed products with high economic value for food and non-food purposes makes seaweed widely cultivated and traded in local and international markets (Luhur, et al., 2012).

Seaweed is one of the pillars of the economy of coastal communities in Southeast Sulawesi. Records of the Directorate General of Treasury (DJPB) show that in 2013 seaweed production in Southeast Sulawesi reached 917,363 tons, which with this result places this province in 4th national ranking. This number increased in 2014 with production of 948,448 tonnes and decreased in 2015 with production of 865,320 tonnes (Nuryadi et al., 2019). Taking into account BPS records for 2020, Southeast Sulawesi seaweed production has decreased significantly in 2019 with only 492,495 tons (Asnani, et al., 2021).

Central Buton is one of the newly expanded districts of Buton Regency, Southeast Sulawesi Province. The strategic location of the region allows it to develop quickly if it is handled properly. Among the potential areas that are very promising to be developed is the territorial waters. This water area has become the economic foundation of some of the people there. It was recorded that there were at least 4,054 heads of households who depended on sea products (BPS Kab. Buton Tengah, 2020).

Water businesses in Central Buton Regency are quite varied. But the most popular is the seaweed cultivation business. This also has an impact on regional development as evidenced by the contribution of Central Buton Regency to the amount of seaweed production in Southeast Sulawesi. In 2019, Central Buton Regency contributed around 28,190 tons of seaweed from 492,494.73 tons of Southeast Sulawesi seaweed production (BPS Province of Southeast Sulawesi, 2019). This also makes Central Buton Regency one of the centers for seaweed production in Southeast Sulawesi.

Based on data from the Central Statistics Agency (BPS) for 2019, seaweed production in Central Buton Regency in 2019 was 28,190 tons. This makes Central Buton Regency one of the largest seaweed producing areas in Southeast Sulawesi Province.

Based on data from the Central Statistics Agency (BPS) it shows that Central Buton seaweed production is ranked 6th as the largest seaweed producer in Southeast Sulawesi Province. With the highest amount of production in Muna District, however, Central Buton District is one of the potential seaweed producing areas in Southeast Sulawesi Province.

Lakudo District is one of the seaweed producing areas in Central Buton Regency. Based on data from the Fisheries Service of Central Buton Regency (2019) Lakudo District together with East Mawasangka own 1038.63 hectares with a percentage of 38% of the effective land area of seaweed in Central Buton Regency. This shows that Lakudo District is one of the largest



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seaweed production areas in Central Buton District. This can be seen from the population, most of whom work as seaweed farmers.

In general, the problems in this study can be formulated as "what factors influence the supply of seaweed in Lakudo District, Central Buton Regency".

**THEORITICAL REVIEW**

Seaweed is a macroalgae belonging to the Thallophyta division, which is a plant that has a body skeleton structure consisting of stems / thalus and does not have leaves and roots. Types of seaweed that are widely found in Indonesian waters are Gracilaria, Gelidium, Eucheuma, Hypnea, Sargasum and Tubrinaria (Directorate General of the Ministry of Trade of the Republic of Indonesia).

Seaweed has been used by humans as food and medicine for about 14,000 years. The growing demand for edible seaweed and the biochemical components of seaweed, especially hydrocolloids such as agar-agar, alginate, and carrageenan, has fueled a large aquaculture industry especially in Asia. Future expansion of seaweed culture will include suitable agricultural locations in offshore areas associated with wind farms. The jobs created by seaweed and other aquaculture guarantee income for millions of people and therefore have high socioeconomic importance (Buchholz, krause and Buck, 2012).

Seaweed is one of the biological resources found in coastal and marine areas. The term "seaweed" is botanically ambiguous because it is used for 2 different groups of "plants". In Indonesian, the term seaweed is used to refer to both sea weeds and seagrasses. Sea weeds are members of a group of vegetation known as algae. These resources can usually be found in waters associated with the existence of coral reef ecosystems. Natural sea weeds can usually live on sand substrates and dead coral. In addition to living freely in nature, several types of sea weeds are also widely cultivated by some coastal communities of Indonesia. Examples of widely cultivated types of sea weeds include *Euchema cottonii* and *Gracilaria spp.*

Seaweed is one of the marine commodities that has a fairly high economic value. This is because the gelatinous content and diversity contained in seaweed is very necessary in the medicine, cosmetics industry or as raw materials for various industries.

As a maritime country, Indonesia has many potential coastal and marine natural resources that can be utilized to improve the socio-economic welfare of people in coastal areas and small islands (Tuwo, et al., 2007). Seaweed commodities are one of the commodities included in the fisheries revitalization program. There are two reasons for choosing a revitalization program. First, the market for seaweed derivative products in the form of food



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grade and non-food grade is very diverse, and world market demand for these products is quite high (Anggadiredja, 2007). Second, mastery of cultivation technology (raft system or long line) is easily adopted by cultivators (Sukadi, 2007).

Indonesian seaweed is known for its good quality and is in great demand by the industry because it contains a high source of fermentation, gelatin and alginate and is suitable for use as raw material for the food industry, flavor softener, prevention of ice cream crystallization and medicine. In addition, seaweed in Indonesia can also be used as raw material for surgical sewing thread (sea cut-gut), porcelain decoration (color binder and plasticizer), fabric industry (color binder), paper industry (lackuer and paper reinforcement and pelican), photography industry (gelatin substitute), medicinal mixture (medicine for disease: goiter / basedow, rheumatic, cancer, chronic bronchitis / emphysema, scrofula, bile / bladder disorders, kidney, peptic ulcer / gastrointestinal tract, blood cholesterol reduction, antihypertensive, weight loss, anti-oxidant), bio fuel fuel and so on (Directorate General of the Ministry of Trade of the Republic of Indonesia).

As one of the important commodities, seaweed or K. alvarezii requires a large amount of cultivated land to increase production through increasing cultivated land, because every year there is always an increase in demand for seaweed. The demand for seaweed in domestic and foreign markets tends to increase.

Supply is the abundance of agricultural commodities that farmers offer. The law of supply basically states the higher the price against the good will increase supply assuming the price of other goods is fixed. The total supply of a good is the sum of all production in one period plus remaining past offers.The Supply Curve illustrates maximum number of goods produced for sale at any time on various levels of price of goods (Bishop and Toussaint, 1986).

Farmers will not carry out expansion or maintain their farming business if they feel unprofitable. One of the beneficial factors is the level of income and price stability of the results of the farm that is managed, farmers really expect a high enough price to pay compensation for costs in cash and the results of efforts spent when producing the results of their farming (Mosher, 1987).

The extent to which the sellers' desire to offer their goods at various price levels is determined by various factors. Among the most important are:

1. The price of the item itself.
2. Prices of other items
3. Production costs, i.e. the cost of obtaining factors of production and raw materials
4. The objectives of the company.



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5. The level of technology used (Sukirno, 2010).

Supply can be defined as the quality of goods that producers want and can offer to the market at various price levels and times. Supply reflects the direct relationship between goods and quantity (the physical amount of goods), the law of supply states that when the price of goods rises, producers want to offer more goods (output) to the market. Demand in economic terminology is the desired amount and can be purchased by consumers and markets at various price levels just as the concept of supply is involved with quality relationships (Downey and Erickson, 1996).

Lipsey (1996) concluded about the factors that determine the amount offered, namely the amount that the company is willing to produce and offer for sale, which is influenced by several factors as follows:

1. The price of the commodity itself.
2. The price of the inputs.
3. Company Objectives.
4. Stages of technological development

The basic economic hypothesis is that for most commodities, the price of the commodity and the quantity or quantity to be supplied are positively related, with all other factors remaining the same, in other words the higher the price of a commodity, the greater the quantity of the commodity to be offered, conversely the lower the price of a commodity, the less the amount of the commodity.

The law of supply is a statement that explains the nature of the relationship between the price of an item and the quantity of that good offered the sellers. In this law it is stated how the wishes of the sellers to offer the goods when the price is high and how desire to offer the goods if the price is low. The law of supply basically states that the higher the price level of an item, the more the amount of the good will be offered by sellers. Conversely, the lower the price of an item, the less the amount of goods offered (Sukirno, 2010).

In the short term, the price of agricultural products tends to experience relatively large ups and downs. The price can reach a high level once at a time, and experience a very bad decline the next. Price instability is caused by inelastic demand and supply for agriculture. This property causes a very large change in the price level when demand or supply changes. Factors that cause short-term agricultural price instability can be distinguished into two sources, (a) fluctuations in demand, and (b) fluctuations in supply (Sukirno, 2010).

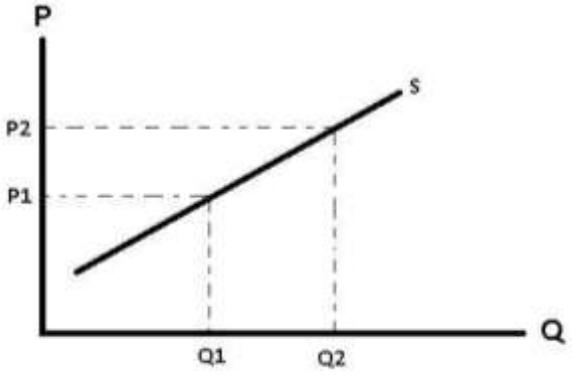
A supply curve is a curve that shows the relationship between the price of a particular good and the quantity of that good. In general, the supply curve rises from the bottom left to



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the top right. This means that the direction of movement is opposite to the direction of the demand curve. Curve shape supply is like that because there is a positive relationship between prices and the number of goods offered, that is, the higher the price, the more amount offered (Sukirno, 2010).

The relationship of price and quantity of goods is reflected directly on the supply, where the law of supply states that in the event of an increase in price it will increase the number of offers by producers, assuming that prices other goods remain (Kadariah, 1994). The Supply Curve can be described in Picture below.




Informatic

Q = Quantity

S = Supply

In the picture above, it can be seen that the balance point will change if it occurs price changes. In this Figure it is explained that the price level will affect the amount of supply of an item, assuming that other factors remain. At first the equilibrium is at point P1, then it moves up to the point of P2 as the price level rises and the supply increases. And so on, because the price level rises, the number of goods offered also increases.

## MATERIALS AND METHODS

The research was conducted in September 2022 December 2022 in Lakudo District, Central Buton Regency, Southeast Sulawesi Province. There were 61 respondents who were determined using the Slovin formula (Abdi and Rianse, 2012). Data collection techniques used are interviews, observation and documentation.

To determine the factors that influence the supply of seaweed in the District of Lakudo used multiple linear regression analysis. The equation for multiple linear regression analysis is as follows:

$$Y = c + a1\ X1 + a2\ X2 + a3\ X3 + a3\ X4 + e$$



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Information:
Y = supply of seaweed (Kg)
X1 = price of seaweed (Rp/kg)
X2 = Cost of production (Rp)
X3 = Labor (People)
X4 = Land area (Ha)
a1, a2, a3 = Estimated parameters
c = Regression constant
e = Error terms

**RESULTS AND DISCUSSION**

The characteristics of the respondents provide an overview of the condition of the respondents studied, which include gender, age, level of education, number of family members, price of seaweed, production costs, number of workers and size of farming land. Respondent characteristics are factors that can influence respondents' decisions in farming. The results showed that most of the respondents were male with a percentage of 95%, the age distribution of the respondents was from 20 years old to the oldest aged 70 years, the average age of the respondents was at the age of 20-40 years with a percentage of 61%. The education of most of the respondents (59%) graduated from elementary school, 5% graduated from junior high school and 36% graduated from high school. Farmers with the highest number of family members are 1-5 as many as 34 respondents with a percentage of 56% and >6 family members as many as 27 respondents with a percentage of 44%.

As many as 56% of research respondents sold seaweed at a price of Rp 13,000 / Kg, as many as 44% sold seaweed at a price of Rp 12,000 / Kg, and as many as 11% sold seaweed at a price of Rp 25,000 / Kg with an average seaweed price of Rp 13,951 / Kg. The most respondents have production costs of Rp 1,000,000 - Rp 2,000,000 as much as 66% followed by the group of respondents who have production costs below Rp 1,000,000 as much as 31% and above Rp 2,000,000 as much as 3%, with an average production cost of Rp 1,334,426. The largest number of research respondents in Lakudo District is 5-8 people with a percentage of 79%, 1-4 workers as many as 11 people with a percentage of 18%, and more than eight workers as many as 2 people with a percentage of 3%, with an average workforce of 6 people and most respondents have a land area of 0.2 - 0.5 Ha as much as 43% followed by the group of respondents who have a land area of 0.6 - 0.9 Ha as much as 34% and more than 1 hectare as much as 23%, with an average land area of 0.67 Ha.


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**Results of Analysis of Factors Influencing Seaweed Supply in Lakudo District, Central Buton Regency**

To determine the effect of the independent variable (X) which consists of seaweed price, production costs, labor, and land area on the dependent variable (Y) of seaweed supply, multiple linear regression analysis was performed. Based on the estimation of the multiple linear regression model, the following equation results are obtained:

$$Y = -35,156 + 0.001\ X1 + 0.000\ X2 + 13,871\ X3 + 585,838\ X4$$

Information:

Y = Supply of Seaweed (Kg)

X1 = Price of Seaweed (Rp/Kg)

X2 = Cost of Production (Rp)

X3 = Labor (People)

X4 = Land Area (Ha)

**Simultaneous Test (Test F)**

The F test is generally used to determine whether all independent variables have the same effect on the dependent variable (Sena, 2011). The F test was conducted to see whether there was a simultaneous effect of the variables of seaweed price, production costs, labor and land area on seaweed supply in Lakudo District, Central Buton Regency. The results of the F test of this study can be seen in Table 4.10.

**Table 1 Simultaneous Test Results (Test F)**

| Model | Sum of Squares | Df | MeanSquare | F | Sig. |
|---|---|---|---|---|---|
| Regression | 6057024,110 | 4 | 1514256,027 | 1570,374 | 0.000b |
| residual | 53998,808 | 56 | 964,264 | | |
| Total | 6111022,918 | 60 | | | |

Based on Table 1 the analysis of the F test carried out can be seen that the calculated F value is equal to1570,374significance level of 5% confidence or α = 0.05 because the Sig value is less than α = 0.05 (0.000 <0.05), it can be interpreted that the price of seaweed (X1), production



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costs (X2), amount of labor (X3), and land area (X4) used in the model simultaneously or together have a significant effect on seaweed supply in Lakudo District, Buton Tengah Regency.

**Partial Test (t test)**

The t test is basically a test used to show how far the influence of one by one independent variable has on the dependent variable. To prove and see, partially the factors of Seaweed Price (X1), Production Costs (X2), Number of Labor (X3), and Land Area (X4) have a significant effect on Seaweed Supply (Y) in Lakudo District, Central Buton Regency. The results of the partial test (t test) in this study can be seen in Table 4.11.

**Table 2. Partial Test Results (t test)**

| Model | Regression Coef | Q | Sig |
|---|---|---|---|
| **(Constant)** | -35,156 | -1.272 | 0.209 |
| **Seaweed Prices** | 0.001 | 1,097 | 0.277 |
| **Production cost** | 0.000 | 2,541 | 0.014 |
| **Labor** | 13,871 | 2.016 | 0.049 |
| **Land area** | 585,838 | 4,265 | 0.000 |

**Seaweed Prices**

From the results of the partial test at the 95% confidence level or 5% significance level (α = 0.05) it can be seen that the Sig value is 0.277 > 0.05. This value explains that partially the seaweed price variable has no effect on the quantity of seaweed supplied. This is because in marketing seaweed farmers are always weak in determining prices, prices are set by collectors. Therefore, as long as seaweed farming is still profitable, farmers will continue to produce whether seaweed prices rise or fall, but farmers will be more enthusiastic when prices rise. Because prices are positively related to farmers' income when prices rise, the profits earned by farmers will increase. This is in line with the results of Nanang (2019) research that price does not have a significant influence on the number of seaweed offers.

**Production cost**

From the results of the partial test at the 95% confidence level or 5% significance level (α = 0.05) it can be seen that the Sig value is 0.014 <0.05, meaning that partially production costs have a significant effect on the quantity of seaweed supplied. Based on the regression analysis



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of the production cost coefficient of 0.000, it indicates that an increase of IDR 1 in production costs will increase the supply of seaweed by 0 Kg. This is in accordance with the results of Ulfa's research (2019) that production costs affect the amount of seaweed produced. In this case production costs affect the amount of seaweed bidders in Lakudo District, Central Buton Regency.

**Total manpower**

The results of the partial test show that the labor variable is at the 95% confidence level or 5% significant level (α = 0.05) with a Sig value (0.049 <0.05), meaning that the labor variable has a significant effect on the seaweed supply variable. Based on the regression analysis, the value of the labor coefficient is 13.871 which indicates that an increase of 1 worker will increase the supply of seaweed by 13.871 Kg. The number of workers is one of the influential factors of production because with a large number of workers, more work can be completed. This is in accordance with the results of research conducted by Takdir (2016) that labor has a significant effect on the amount of seaweed production or supply. In this case, labor has a positive effect on the number of seaweed offerings in Lakudo District, Central Buton Regency.

**Land area**

From the results of the partial test at the 95% confidence level or 5% significance level (α = 0.05) it can be seen that the Sig value is 0.000 <0.05, meaning that partially the variable land area has a significant effect on seaweed supply. Based on the regression analysis the coefficient value of land area is 585.838 which indicates that an increase of 1 Ha of land area will increase the supply of seaweed by 585.838 Kg. With the increasing area of land used by farmers in farming, the higher the level of production that can be obtained so that the level of income obtained is also high. Land area describes the potential for the amount of production that will be produced by a commodity as well as seaweed, so that if the land area is larger, the seaweed produced by farmers will also be more and more.

**CONCLUSION**

Based on the results of the research that has been done, the following conclusions can be drawn:

1. The factors that affect the supply of seaweed in Lakudo District, Central Buton Regency are the price of seaweed, production costs, number of workers and land area. Simultaneously, the price of seaweed, production costs, the number of workers and land area together have



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a significant effect on the quantity of seaweed supplied in Lakudo District, Central Buton Regency.

2. Partially, production costs, labor and land area affect the quantity of seaweed offered. An increase of IDR 1 in production costs will increase the supply of seaweed by 0 Kg. An increase of 1 person of labor will increase the supply of seaweed by 13.871 Kg. An increase of 1 Ha of land area will increase the supply of seaweed by 585.838 Kg.

**SUGGESTION**

Suggestions that can be conveyed by the author based on the results of research conducted by researchers are:

1. For the government, I hope it can provide assistance in the form of seeds for farmers and organize activities that educate farmers about seaweed cultivation.
2. Farmers should increase the number of seeds, increase the number of workers and enlarge the land area to increase the amount of seaweed produced.
3. For future researchers, this research can be used as further material for further studies, because for this seaweed commodity there is still a lot that can be developed, especially from an economic standpoint.

**REFERENCES**

Abdi, Rianse, U. (2012). Social and Economic Research Methodology Theory and Applications. Bandung. Alphabet.

Asnani, A., Wahyuni, S., Astuti, O., Sarinah, S., Riani, I., Effendi, WONA, & Jali, W. (2021). PKM Diversification of Seaweed Processing to Support Improvement of Community Health and Income during the Covid-19 Pandemic in Kendari City, Southeast Sulawesi Province. Abdi Mas Scientific Journal TPB Unram, 3(1).

A Samuelson. Paul & William D Nordhaus. 1997. Microeconomics. Jakarta:Erlangga.

Ariyani, V. T. (2016). Analysis of Large Chili Offerings in Purworejo District. Agribusiness Study Program/Agricultural Faculty of Agriculture.

Ayudhia Faradita, A. (2019). Analysis of Soybean Supply in Indonesia. University of Muhammadiyah Jember.

Bishop, C.E. and W.D. Toussaint, 1986. Introduction to Agricultural Economic Analysis. Translation of Vishnuaji. Second printing. Pearl Source Widya. Jakarta.

BPS Central Buton. 2020. Central Buton Regency in figures for 2020. Central Bureau of Statistics for Central Buton Regency



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Buchholz, C. M., Krause, G., & Buck, B. H. (2012). Seaweed and man. Seaweed biology: Novel insights into ecophysiology, ecology and utilization, 471-493.

Dhaifullah, A. Analysis of demand and supply of cow's milk in Indonesia. Faculty of Science and Technology Syarif Hidayatullah State Islamic University.

Dinar, M., Hasan, M. (2018). Introduction to economics: theory and application. Bekasi: Taman Ilmu Library.

Directorate General of National Export Development. 2013. Indonesian Seaweed. Export News. September 2013 edition. Ministry of Trade. Jakarta

Downey, T, W.D and S.P. Erickson. 1996. Agribusiness Management. Erlangga, Jakarta.

Duarte, C. M., Bruhn, A., &; Krause-Jensen, D. (2022). A seaweed aquaculture imperative to meet global sustainability targets. Nature Sustainability, 5(3), 185-193.

El-Mashaleh, M. S. (2010). Decision to bid or not to bid: a data envelopment analysis approach. Canadian Journal of Civil Engineering, 37(1), 37-44.

Kadariah, 1994. Microeconomic Theory. LPFE UI, Jakarta.

Kotler, P., &; Susanto, A. (2001). Marketing management in Indonesia. Jakarta: Salemba four.

Lipsey. R, G. P. N Cournant, D. Purcis, O. Steiner. 1996. Introduction to microeconomics Volume 1. Wasana and Kibrandoko [translators]. Literacy Architecture. Jakarta

Luhur, E., Witomo, C., &; Firdaus, M. (2012). Analysis of seaweed competitiveness in Indonesia. Journal of Socioeconomics, 7(1), 64-66.

Mulyati, H., &; Geldermann, J. (2017). Managing risks in the Indonesian seaweed supply chain. Clean Technologies and Environmental Policy 19, 175-189.

Nachrowi. D. Nachrowi and Hardius Usman. 2006. Popular and practical approaches to econometrics for economic and financial analysis. Jakarta: Publishing Institute of the Faculty of Economics, University of Indonesia.

Nanang, W. S. (2019). The Effect of Price and Promotion on Seaweed Sales in Riung District, Ngada Regency, East Nusa Tenggara Province.

Nuryadi, A., Sara, L., Rianda, L., Bafadal, A., Husen, SA, & Hamka, E. Selection for Strategic Location of Seaweed Agroindustry In The South East Sulawesi Province. Fisheries Science: Indonesian Journal of Fisheries Science and Technology, 16(4), 278-285.

Sadimantara, FN, & Rianse, IS (2017). Analysis of Factors Influencing the Production and Income of Seaweed Farming in the Minapolitan Area (Case Study in Tinanggea District, Konawe Selatan Regency, Southeast Sulawesi Province). Bulletin of Agricultural Social Economic Research, Faculty of Agriculture, Haluoleo University, 19(37), 275494.

Soekartawi. 1993. Basic Principles of Agricultural Economics: Theory and Application. PT Raja



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Grafindo Persada. Jakarta.

Southeast Sulawesi BPS. 2019. Seaweed Production. Central Bureau of Statistics for Southeast Sulawesi Province.

Sukirno, S. (2010). Microeconomics: Introductory Theory (Jakarta: Rajawali press).

Takdir, N. (2016). The Effect of Business Capital and Labor on Increasing Seaweed Production in Bantaeng Regency.

Tuwo, A., Supriadi, and Amiluddin. 2007. (2007). Optimization of Natural and Marine Resources Utilization in Marine Tourism Development, Agrotourism, and Ecotourism in South Sulawesi.

Ulfa, ES (2019). Analysis of Factors Affecting Seaweed Production in Maccini Village, Labakang District, Pangkep Regency. (Doctoral dissertation, Makassar State University).



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