



Research Paper

## Socio-economic living conditions of seaweed farmers in Laikang Village, Mangarabombang District, Takalar Regency

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**ABSTRACT:** The social condition of a community can be seen from the economic conditions experienced by that community. The socio-economic condition of a society is largely determined by the level of income, type of work, and number of dependents in the family. This research aims to determine the socio-economic conditions of seaweed farmers in Laikang Village, Takalar Regency. This research uses qualitative methods and data collection techniques in the form of observation, interviews, and documentation. Sampling was purposive sampling, and the number of samples was 12 people, with the criteria being seaweed farmers who have their own land. The research results show that the socio-economic conditions of seaweed farmers in Laikang Village, Takalar Regency are in good condition amidst fluctuating seaweed selling prices. This good social condition can be seen from productive age, farming experience, decent living conditions, and good social interaction, but the education of seaweed farmers is still low. Meanwhile, good economic conditions are characterized by the ability of farmers' capital to run their business so that they can generate an income of IDR 26,133,800, the costs that must be incurred are IDR 16,553,110,- so that the seaweed farmer's income is IDR 9,580,690,- in one season. stocking or in one harvest period. Economically, the seaweed business in Laikang village is worth pursuing because the balancing value of revenues and costs is greater than 1, namely 1.58.

**KEYWORDS:** Social, Economic, Seaweed Farmers, Revenues, Costs

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### I. INTRODUCTION

Seaweed is one of Indonesia's mainstay export commodities from the fisheries and marine sectors. The export volume of Indonesian seaweed in 2016 reached 102 371 tonnes with a value of US\$ 124 007 687 [1]. Seaweed production is not only carried out in Indonesia. Seaweed production is also carried out by many countries in the world. This is proven by the large amount of seaweed production in the world, which reaches more than 30 million tons [2]. Indonesia as an archipelagic country has a potential of 26 million hectares of marine and coastal fishing areas, apart from being a fishing ground, coastal waters are also used for marine aquaculture. Seaweed cultivation has become a major industry in Asia [3]. Seaweed has been proven to be a profitable commercial business for coastal areas[4]. Seaweed cultivation is not only a mainstay commodity in Asia but also in Indonesia [5].

South Sulawesi Province is the largest seaweed producer in Indonesia. South Sulawesi contributes around 44.5% of total seaweed production in Indonesia. Based on data from the Ministry of Maritime Affairs and Fisheries, Indonesia's seaweed production in 2021 will be 9.12 million tons. South Sulawesi contributed 44.5% of this amount or the equivalent of 3.79 million tons. The large potential of seaweed can provide opportunities to improve the economic welfare of the community, especially for seaweed farmers [6]. However, in 2022, seaweed production will reach 2.86 million tons, a decrease from the previous year. This number is spread across almost all districts or cities in the South Sulawesi region.

Laikang Village, located in Mangarabombang District, Takalar Regency in South Sulawesi, Indonesia is said to be the largest seaweed cultivation center in the Takalar Regency area. Laikang Village has a potential cultivation area of 10,000 hectares, of which 3,773 hectares have been used as active seaweed cultivation land. Based on data from the South Sulawesi Province Industry and Trade Service,

seaweed cultivation production in Laikang Village in 2021 was 195,399.03 tons or contributed around 32 percent of the total seaweed production in Takalar Regency. Takalar Regency holds a leading position in South Sulawesi as the main producer of *Eucheuma Cottoni* seaweed. Due to its large seaweed production potential, Laikang Village was designated as a seaweed cultivation village by the Ministry of Fisheries and Maritime Affairs.

The residents of Laikang Village rely on marine resources as a source of livelihood, and seaweed is one of their main sources of income. Seaweed has economic significance [7], for the people of Laikang Village which is located on the coast of Manggarabombang District, Takalar Regency. Seaweed cultivation activities are not just activities to utilize aquatic resources, but these activities also cause changes in the social and economic values of society [8]. In this case, the development of seaweed cultivation as a marine resource is seen as an alternative source of income that can play an important role in improving the standard of living of people, especially in coastal areas [9]. The existence of seaweed cultivation will have an impact on the socio-economic conditions of the community.

Much research has been carried out on seaweed, including; [10]; [11]; [12]; [13], this research study discusses the socioeconomic conditions of seaweed farmers in coastal areas. The difference in this research study lies in the respondents, in this case, farmers who only specialize in their main job as seaweed cultivators, and do not double as fishermen. The discussion from an economic perspective is more detailed because it analyzes the income earned by seaweed farmers in one harvest season.

The social conditions of society can be seen from the economic conditions experienced by that society. The socio-economic situation in a society is largely determined by the level of income, type of work, and number of dependents in the family [14]. Income is often used as a benchmark in measuring the level of welfare of a society. The low income of seaweed farmers is one of the factors resulting from the low productivity of seaweed farmers, especially those in Laikang Village, Takalar District. If they don't work, seaweed farmers will not get income to finance their daily living needs and this will result in the level of community welfare decreasing. Increasing a person's social status depends on their economic situation. If someone has a good economic position, it is likely that their social status in society will also increase. Likewise, when a person's economic situation is not good, his social position in society will also decrease. Therefore, this research aims to analyze the socio-economic conditions of seaweed farmers in Laikang Village, Manggarabombang District, Takalar Regency.

## **II. RESEARCH METHODS**

This research was carried out in Laikang Village, Manggarabombang District, Takalar Regency. The location for this research was determined based on the consideration that Laikang village is a coastal area with potential for seaweed production. The research was carried out from May to July 2023. The research was carried out using a qualitative descriptive approach. The focus of the research is the socio-economic conditions of seaweed cultivating communities.

The data collection technique is observation, namely direct observation of the research object and interviews with seaweed farmers and related officials. The data collected in this research is primary data and secondary data. Primary data is data obtained through direct interviews with seaweed farmers using a list of questions/questionnaires. The number of respondents selected by purposive sampling was 12 people, with the condition that the seaweed farmer was the owner and the cultivation location was located in Laikang Village. Secondary data is data obtained from notes or documents related to research from related sources, notes or documents taken from various literature, books, and the internet [15].

The data collected is then tabulated and analyzed using the descriptive method, namely an analysis process by describing or depicting the condition of the subject or object of research based on the facts that appear to be what they are. In this research, descriptive methods are used to analyze social and economic aspects.

## **III. RESULTS AND DISCUSSION**

### **Social Conditions Of Seaweed Farmers**

The term "social" denotes a group of individuals engaged in interactions that foster shared emotions in the context of a collaborative effort. On the other hand, "economic life" refers to the human condition in which basic needs must be met to maintain existence. Increasing social welfare is essentially related to the phenomenon of economic expansion.

Socioeconomic status refers to a combined indicator that includes the economic circumstances and social status of an individual compared to other people in a particular society [16]. Farmers' socioeconomic status refers to their position in society, which is influenced by internal characteristics such as education level,

employment, family responsibilities, and land ownership [17]. There is often a correlation between socioeconomic circumstances and well-being. Achieving a prosperous life depends on fulfilling all the basic needs of life.

Various indicators can be used to assess a person's socioeconomic status. The social indicators of seaweed farmers in Laikang Village, Takalar Regency consist of several key factors, including the farmer's age, educational background, farming experience, living conditions, number of dependents in the family, and social interaction. In economic conditions, the main indicators that cover the economic welfare of seaweed farmers are seaweed production, business costs or production costs, and income.

### 1. Age

Age is an important indicator that has a big influence on determining workability. Individuals in the productive working age group have the ability to increase production from the business they run. However, those in the non-productive age group have prominent characteristics, namely the level of maturity in both thinking and acting [18]. The age classification of seaweed farmers can be seen in table 1

Table 1. Age Classification of Seaweed Farmer Informants in Laikang Village

Number	Age (years)	Amount (person)	Percentage (%)
1	< 30	4	33,3
2	30 - 50	5	41,7
3	> 50	3	25
	Jumlah	12	100

Source: Processed data, 2023

Table 1, shows that age level influences farmer productivity because physically they still have good enough ability to carry out farming activities. Thus, the majority of farmer respondents were of productive age, namely 30 years to 50 years, 5 people or 41.7 percent. In terms of age, it can be concluded that farmers are generally productive, and still have excellent physical and energy in carrying out seaweed farming. Seaweed cultivation is a job that prioritizes physical fitness because the work process is quite time-consuming and the working conditions require being at sea and under the hot sun for quite a long time. As a result, individuals in excellent physical condition tend to show high work productivity as they age. Farmers who are of productive age generally accept new information and innovations more easily and make decisions more quickly in determining the technology to be applied in their farming [19].

### 2. Education level

Basically, education really determines a person's success in pursuing a career, both in formal and informal environments. In general, the level of education a person has can influence a person's social status in society. The education level of seaweed farmers can be seen in the following table.

Table 2. Education Level of Seaweed Farmer Informants in Laikang Village

Number	Education Level	Amount (person)	Percentage (%)
1	Finished elementary school	3	25
2	Completed junior high school	7	58,3
3	Completed high school	2	16,7
	Total	12	100

Source: Processed Data, 2023

Based on Table 2, it can be seen that the formal education level of seaweed farmers in Laikang Village is on average 58.3 percent at junior high school level. Low education will affect farmers' mindset in carrying out farming activities and making decisions. Apart from that, the level of education will also influence farmers in absorbing new information and innovations as well as technology transfer that can be applied in farming activities. Education has an important role in efforts to increase human intelligence and skills, including educating and advancing the socio-economic development of farming communities [20]. The level of education also influences success in managing the business one is involved in. A higher level of education makes farmers more responsive in accepting and implementing new innovations.

### 3. Number of Family Dependents

The large number of family dependents has the potential to influence a person's motivation and work enthusiasm, especially the head of the family, in meeting his family's needs from an economic perspective. The number of family dependents can also indicate the large potential of available family labor that can help the head of the family in his efforts to meet daily living needs. The number of family dependents of seaweed farmers can be seen in the following table

Table 3. Number of Dependents of Seaweed Farming Families in Laikang Village

Number	Number of family dependents	Amount (person)	Percentage (%)
1	< 3	3	25
2	3 - 5	6	50
3	> 5	3	25
	Total	12	100

Source: Processed Data, 2023

Based on table 3, it shows that most informants have 3 to 5 dependents, namely 50% of the total informants or as many as 6 informants. The number of family dependents usually influences farmers as heads of households to be active in farming so they can meet their household needs. So that when the seaweed is harvested it is immediately sold to meet daily needs.

### 4. Farming Experience

The success of seaweed farmers in their business activities is closely related to the competence and experience they have in managing their business [21]. The more experience you have, the more insight you gain. Table 4 below shows that the majority of seaweed farmer informants have 6-10 years of experience with a percentage of 58.3% or 7 informants. The farmers' experience in cultivating seaweed can be seen in the following table.

Table 4. Experience of Seaweed Farming in Laikang Village

Number	Farming Experience (year)	Amount (person)	Percentage(%)
1	< 5	2	16,7
2	6-10	7	58,3
3	>10	3	25
	Total	12	100

Source: Processed Data, 2023

From data from research that has been carried out, seaweed farmers in Laikang Village, Regency have a good level of cultivation experience. Farming experience will have a positive impact on the course of seaweed cultivation because from experience farmers will learn how to cultivate seaweed to produce good harvest productivity, how to choose good seeds, good seaweed cultivation methods, and many more positive things to gain. based on the farmer's length of experience in cultivating seaweed.

### 5. Living Conditions

The living conditions of seaweed farmers in Laikang Village are categorized as being in good and decent condition. All informants have their own place to live, no one lives boarding, rents, or doesn't have a place to live. Of the 12 informants, 83% of them, or 10 people have a residence in the form of a wooden house which is very suitable and good to live in. The majority of people's houses in Laikang Village are wooden houses on stilts, including the houses of seaweed farmers. Seaweed farmers whose living conditions are wooden houses are mostly houses inherited from their parents which have been inherited and have never been renovated since they were inherited. The remaining 2 informants have permanent stone houses which are very suitable compared to wooden houses or houses on stilts.

## 6. Social Interaction

Individuals will consistently engage in social and economic interactions to fulfill their social and economic needs in the context of social existence [22]. This phenomenon can be attributed to the inherent sociability of humans, as they essentially depend on the help and support of others throughout their lives. To foster a positive and cohesive social environment, effective human interaction is essential [23]. In order to create a good and harmonious social life, humans must interact well. When humans fail to interact and communicate well with each other, there is a risk of causing conflict between individuals or between communities.

Social relations, especially interactions between fellow seaweed farmers in Laikang Village and other communities, are going well. Even though they are not related by blood or family, the seaweed farming community in Laikang Village still maintains good relations, this can be seen from the existence of harmonious relationships without any conflict. For example, individuals help each other in their daily routines, especially when they tie seaweed seeds to ropes. Everyone works together so that the work can be completed quickly. The dominant form of social relations among farmers is verbal communication and mutual greetings. Social relations between seaweed farmers are quite good, close, and harmonious, there is no competition between them because all the seaweed farmers in Laikang Village, Takalar Regency treat them like their own family.

Based on the results of interviews with informants, it was revealed that in carrying out social activities, the average social community in the Laikang village area, Mangngarabombang District, Takalar Regency still upholds the values of togetherness that have been passed down from generation to generation. The habit of mutual cooperation is when a household carries out work that is difficult to complete alone, usually, the spontaneity of the surrounding community is high enough to help complete the work without expecting any reward from the person they are helping. Examples of mutual cooperation activities include when a household organizes a marriage for a child or relative, mutual cooperation when building a resident's house, building village environmental facilities/infrastructure and infrastructure, mutual cooperation when a household experiences grief, and many other social relationships that grow and develop in the Laikang village community.

### Economic Conditions of Seaweed Farmers

Economic life refers to the basic needs that individuals must fulfill to maintain their existence. Socioeconomic situations or conditions are usually assessed based on factors such as employment, level of education, and ability to meet household needs [24]. Economic conditions can be measured through initial capital, income, business costs, and profits obtained to meet family needs. This economic condition is also related to social conditions such as the number of family dependents. The income generated by a person is of course used to meet his and his family's needs.

In general, net income is the difference between gross income and total expenditure. According to [25], and [26] farm revenue is the multiplication of production and selling price. Meanwhile, the costs incurred by farmers are fixed costs and variable costs. The sum of fixed costs and variable costs is the total cost. So operating income is the difference between revenue and all costs that are actually incurred by the producer. The level of income is influenced by the selling price and the amount of production. Revenue, costs, and income obtained by seaweed farmers can be seen in Table 5.

Table 5. Average Revenue, Cost, and Income of Seaweed Farming in Laikang Village Takalar District

Number	Description	Value
1	Revenu	
	a. Production (Kg)	1.866,7
	b. Price	14.000
	<b>Total Revenu</b>	<b>26.133.800</b>
	Fixed Cost	
	a. Boat	958.333
	b. Boat Engine	1.437.958
	c. Seaweed drying floor	20.500
	d. Anchor	156.146
2	<b>Total Fixed Cost</b>	<b>2.572.937</b>
	Variable Cost	
	a. Main rope	691.964

	b. Medium rope	1.451786
	c. Seeds	7.833.333
	d. Gasoline	191.667
	e. Plastic bottles/floats	200.000
	f. Labor cost	3.458.333
	g. Tent cover	148.958
	h. Oil	4.132
3	<b>Total Variable Cost</b>	<b>13.980.173</b>
4	<b>Total Cost (2+3)</b>	<b>16.553.110</b>
5	<b>Income (1-4)</b>	<b>9.580.690</b>
6	<b>R/C</b>	<b>1,58</b>

Source : Processed Data, 2023

Income is the amount of income a person earns for their work performance in a certain period, whether daily, weekly, monthly, or annually [27]. The income earned by seaweed farmers depends on the amount of their harvest. The level of income can cause dynamics of social life in the community of a region and is also an indicator to see the socio-economic conditions of the community. The research results show that the average income earned by seaweed farmers is IDR 9,580,690 in one harvest. The lowest income earned by seaweed farmers is IDR 6,000,000 while the highest is IDR 17,000,000.

One informant stated that the amount of income was greatly influenced by three factors, namely the number of stretches of rope, weather conditions, and the selling price of seaweed. The following is an excerpt from an interview with Mr Ahmad Muflih.

*"The number of stretches of rope affects the amount of production. The greater the number of stretches of rope, the more seeds that can be attached to the rope to harvest seaweed. In one rope, which is about 30 meters long, you can harvest 10 kg of seaweed. So the more ropes there are, the more production there will be. Apart from that, natural factors and the selling price of seaweed are very influential. "For last month's harvest, the weather was good, so last month's harvest, the income was in a good category."*

One of the other informants, namely Mr. Lasinrang, said that the most influential thing on the income of seaweed farmers is the selling price of seaweed, as in the following interview:

*"Currently, although income is considered sufficient, it has fallen drastically. Currently the price of seaweed is around IDR 15,000 per kilo, which is very different from last year. Last year the price of seaweed reached IDR 35,000 per kilogram. When compared to my income last year, it is certainly much different. "Last year I was able to earn around IDR 20,000,000 per month, whereas now it's not even IDR 10,000,000."*

It can be concluded that what has the most influence on the income of seaweed farmers is the price of seaweed. The price per kilogram of seaweed has a big influence on income. If the price per kilogram increases or is good then people's income will also be good. The price of seaweed in Laikang Village fluctuates, at the time this research was conducted the average price of seaweed was IDR 15,000 per kilogram, whereas last year the price reached IDR 35,000 per kilogram.

According to Suratiyah [28], R/C Ratio is the comparison between revenue and total costs. To find out the comparison of revenue and total costs for seaweed farmers, an R/C ratio analysis is needed. The research results show that the balance between revenue and costs is 1.58, which is greater than 1, so it can be said that seaweed farming in Laikang village is worth pursuing.

#### IV. CONCLUSION

Based on the research that has been carried out, it can be concluded that the socio-economic living conditions of seaweed farmers in Laikang Village, Takalar Regency are in good condition. In terms of the age of the farmers, most of them are of productive age to run a seaweed cultivation business. Education is said to be sufficient, although the level of education of farmers is still low because they have only completed junior high school. However, the process of seaweed cultivation techniques does not have to be obtained from formal education. The living conditions of the farmers are also in good condition and habitable. Likewise, the relationship between seaweed farmers is well established.

The seaweed cultivation business in Laikang Village also has a positive impact on the economic conditions of the farmers. The income of seaweed farmers in Laikang village is sufficient to meet their living needs and their family's responsibilities. Farmers also have good capital capacity to run their businesses so that the income generated is commensurate with the capital and business costs incurred. The research results show

that the balance between revenue and costs is 1.58, which is greater than 1, so it can be said that seaweed farming in Laikang village is worth pursuing. Income from seaweed cultivation in Laikang Village at the time this research took place could not be said to be large because the price of seaweed was fluctuating and was currently falling.

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