



## The role of women on the level of household welfare of seaweed cultivators in Jeneponto Regency, Indonesia

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### Abstract

In seaweed cultivation, many wives in seaweed farming households also work to help their husbands. Therefore, the role of women is quite crucial for seaweed cultivation. This study aims to analyze the role of women in productive, reproductive, and community management activities and the level of household welfare of seaweed cultivators in Jeneponto Regency, South Sulawesi Province. The method used in this research is descriptive qualitative, and quantitative. Data were analyzed through a correlation test with quantitative data acquisition using a simple random sampling technique. Based on the study results, it is known that women are more dominant in the category of minor role (71.25%). Only about 3.75% of respondents fall into the category of very role. 25% of the awards fall into the category of playing a role. Based on interviews, it is known that women are more involved in productive activities on land. In reproductive activities and management activities, women are included in having a significant role (100% of respondents). Based on the results of statistical analysis, it is known that the relationship between income and the level of household welfare of seaweed cultivators has a substantial correlation coefficient value between the two variables with a significance level of less than 0.01. The value of the correlation coefficient between women and the household income of seaweed cultivators shows a positive relationship between the role of women and the household income of seaweed cultivators. However, the correlation value is weak and has no significant effect.

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### Keyword

Seaweed;  
Household welfare;  
Women;  
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### Introduction

Seaweed is a fishery commodity that has great potential to increase its production, both natural and cultivated. Seaweed production needs to be increased due to the increasing global market demand. According to (Stévant *et al*, 2017), global seaweed production is mainly dominated by Asian countries, one of which comes from Indonesia. Seaweed has many benefits as a food ingredient (either in dry or wet form) or as a follow-up process to make other foods mainly picocoloids such as agar, carrageenan, and alginate. In addition, seaweed is also used for fertilizers, medicines, and cosmetics (Stévant *et al*, 2017) and it has potential as raw material for producing sugar (Zaenab *et al*, 2020).

Coastal communities are very dependent on their geographical conditions, and traditional fishers still dominate many fishery business actors. This condition was caused by

past development politics that were too pro-land, so coastal communities were not given enough attention, and inequality still occurred. The efforts of coastal communities depend on three things, namely environmental conditions, seasons, and markets (Msuya and Hurtado, 2017). Sustainable management principles are very important, especially when linked to the impact of unsustainable management (Hermawan *et al*, 2021). Environmental conditions affect the sustainability of coastal communities' businesses because their geographical conditions facing the sea are very vulnerable to environmental damage such as industrial waste. In addition, the season also has significant implications for the socio-economic needs of coastal communities because it affects the catch of fishers. Coastal communities also depend on the market for their lives, which directly sell their business results to meet their daily needs. Coastal communities who initially worked as fishers began to work as seaweed cultivators and made it the primary source of livelihood for their families. This condition is because seaweed cultivation does not require special skills, a relatively short planting period, and a reasonable selling price even though there are times when seaweed prices fluctuate (Msuya, 2006).

The market demand for seaweed production is increasing (Shechambo *et al*, 1996). The development of seaweed cultivation is very much done because the cultivation has advantages. A short maintenance period, not too large a business cost, does not damage the environment and is accessible to market (Hugh, 2003). Jeneponto Regency is located in South Sulawesi Province. This regency has been producing seaweed since 1987 but has not run optimally due to the 1997 monetary crisis. Seaweed cultivation in Jeneponto was again encouraged because the seaweed was sold at a high price and can help the community's economy. According to BPS data from Jeneponto Regency (BPS, 2021), the production of seaweed in Jeneponto Regency from 2016 has increased from 15,718.68 tons to 27,236.83 tons in 2020. From the production of seaweed which is relatively abundant, it cannot be separated from the role of women. The purpose of this study was to analyze the role of women in productive, reproductive, and community management activities, as well as the level of household welfare of seaweed cultivators in Jeneponto Regency, South Sulawesi Province.

## **Materials and Methods**

### **Data Collection**

The research was conducted in Bontosunggu Village, Tamalatea District, Jeneponto Regency, South Sulawesi Province. The location selection was carried out purposely (deliberately) by considering several factors because Tamalatea District, a sub-district with the most extensive seaweed farmer household (RTP) in Jeneponto Regency.

Based on BPS 2020 Tamalatea District, Jeneponto Regency, has several Fisheries Households (RTP) specifically for seaweed cultivation as many as 2059 RTP. The population in this study was women involved in seaweed cultivation activities in Bontosunggu Village, Tamalatea District, Jeneponto Regency, with about 286 seaweed households. Respondents were given a questionnaire because the answers considered representative of the seaweed farmers, and the respondents only provided information related to themselves.

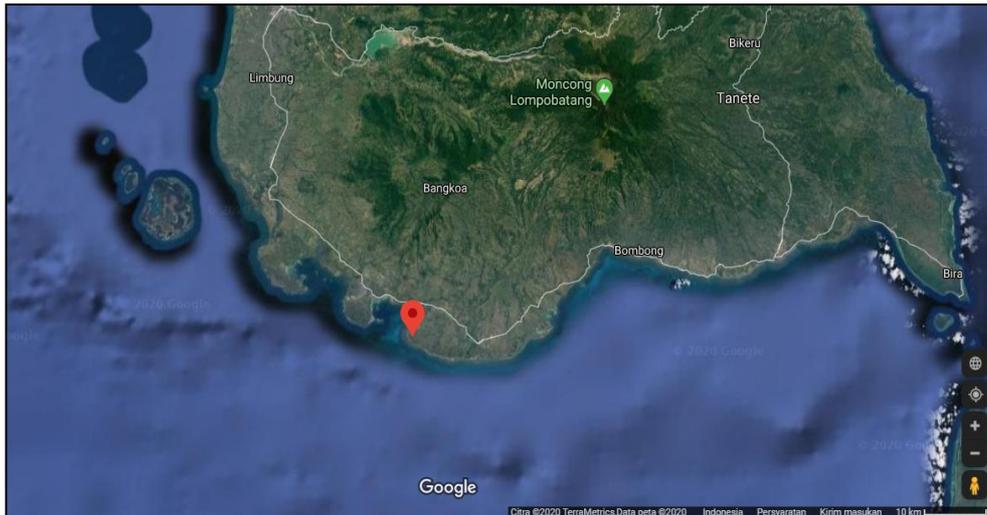


Figure 1. Map of the study area (Red Pin) (Source : <https://www.google.com/maps/place>)

The number of respondents is determined using the following Slavin formula:

$$n = \frac{N}{1 + (Nxe^2)}$$

Where:

- n = number of respondents
- N = total population
- e = error tolerance (0.05)

The Slavin formula is used because the target population is homogeneous, namely seaweed farming households whose husbands and wives cultivate seaweed.

The research method used is based on (Khoirunnisa, 2019) with slight modifications. The types of data collected in this study are primary data and secondary data. Primary data is data obtained directly in the field from respondents and informants. Preliminary data in the form of structured interviews with respondents through questionnaires have been prepared and in-depth interviews with informants. Secondary data is obtained from searching documents or using supporting literature such as the potential and profile of Bontosunggu Village, data from the Central Statistics Agency (BPS), scientific journals, books, and previous/previous research results.

The indicators used to measure the role of women are divided into three major groups (Khoirunnisa, 2019):

1. The role of women in productive activities includes women's contributions, access and control over resources and benefits in seaweed cultivation. Assessment is based on the average value of the percentage obtained. These classifications include:
  - a. Less (< 34.30%)
  - b. Enough (34.30% - 39.26 %)
  - c. Most (> 39.26 %)
2. The role of women in reproductive activities includes women's contributions, access and control over resources and benefits in domestic cultivation. The assessment is based on the average value of the percentage obtained. These classifications include:
  - a. Less (< 48,84 %)
  - b. Enough (48.84% - 52.80 %)
  - c. Most (> 52.80%)

3. The role of women in community management activities includes women's contributions, access and control over resources and benefits in social and political activities. Assessment is based on the average value of the percentage obtained. These classifications include:

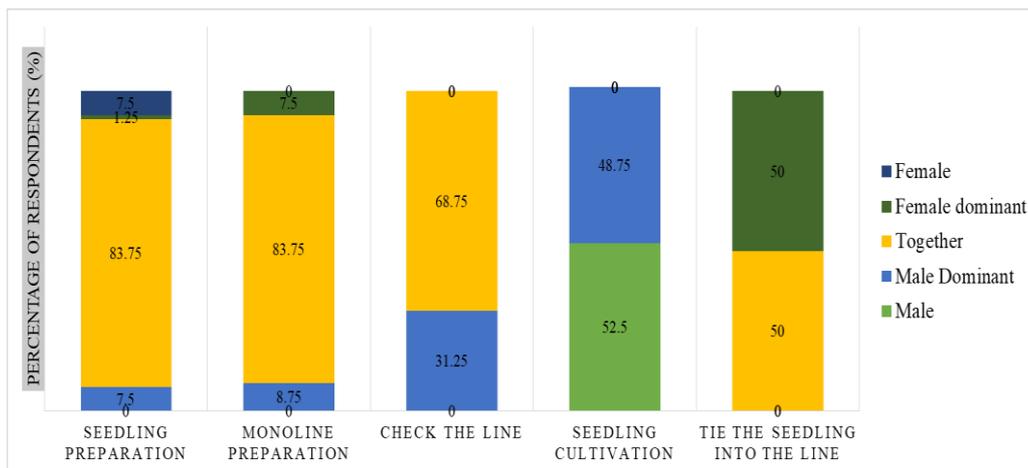
- a. Less (< 20,84 %)
- b. Enough ( 20,84 % - 26,12 % )
- c. Most (> 26.12%)

**Data processing and analysis techniques**

The data obtained from this study are in the form of quantitative and qualitative data. Quantitative data were obtained through questionnaires filled out by respondents, which were then presented in a frequency table. Quantitative data processing was carried out using Microsoft Excel 2013 and IBM SPSS Version 20. Variable testing was tested using the Pearson correlation test to see the actual relationship between variables in ordinal form.

**Results and Discussion**

The role of women in productive, reproductive, and community management activities in seaweed cultivation activities, reproductive activities are divided into three stages: the preparation stages, maintenance stages, and harvest and post-harvest stages.

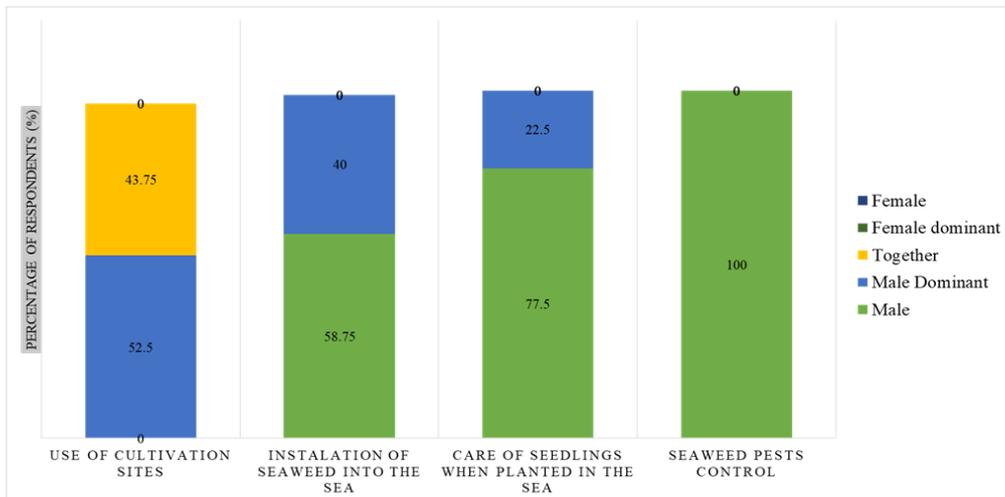


**Figure 2. Percentage of household division of seaweed cultivators in the preparation stage in Bontosunggu Village, Tamalatea District, Jeneponto Regency**

At the preparation stage for seaweed cultivation, seaweed farmers must carry out several steps, including providing seeds, making stretches, justifying stretch ropes, maintaining seeds, and tying seeds on ropes. Based on the results in Figure 2, it is known that the activities in the preparatory stage are dominantly carried out simultaneously between men (husbands) and women (wives), especially during the provision of seeds (83.75%), making stretches (83.75%), and justifying stretch ropes (68.75%). Specifically for installing seedlings on stretched ropes, 50% of respondents explained that women predominantly carried out the activity, the remaining 50% of respondents carried out these activities simultaneously.

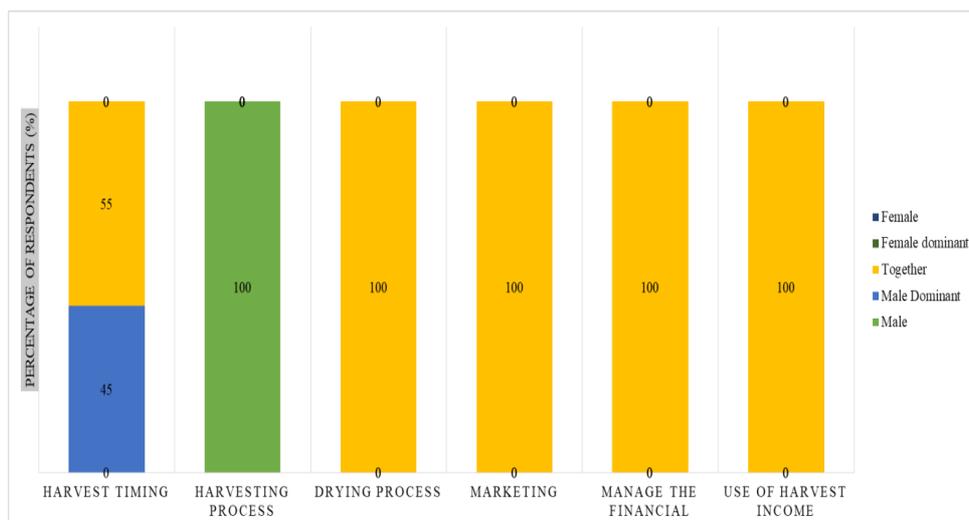
The division of labour in seaweed farming households is divided into three activities: productive activities, reproductive activities, and community management activities. The division of labour is seen from the contribution made and is classified into five groups, namely

done by women only, tends to be women, together, tends to men, and men only (Khoirunnisa, 2019). Productive activities generate salaries or wages from both men and women.



**Figure 3. Percentage of household division of seaweed cultivators at the production stage in Bontosunggu Village, Tamalatea District, Jeneponto Regency**

At the production stage (Figure 3), the dominant activity is carried out by men (husbands). These activities include planting seeds in the sea (58%), caring for seedlings when planted in the ocean (77.5%), and eradicating seaweed pests (100%). Specifically for the use of seaweed cultivation locations, it is intended that how much access to the utilization of these resources is. Based on the interviews, it is known that the use of seaweed cultivation locations is almost balanced between men and women, namely respondents who use it together as much as 43.75%. At the same time, the rest is dominated by men. Based on the results of in-depth interviews with respondents, they generally said that husbands were more likely to allow women to do more activities on land than at sea, only at certain times when women helped with production activities at sea.



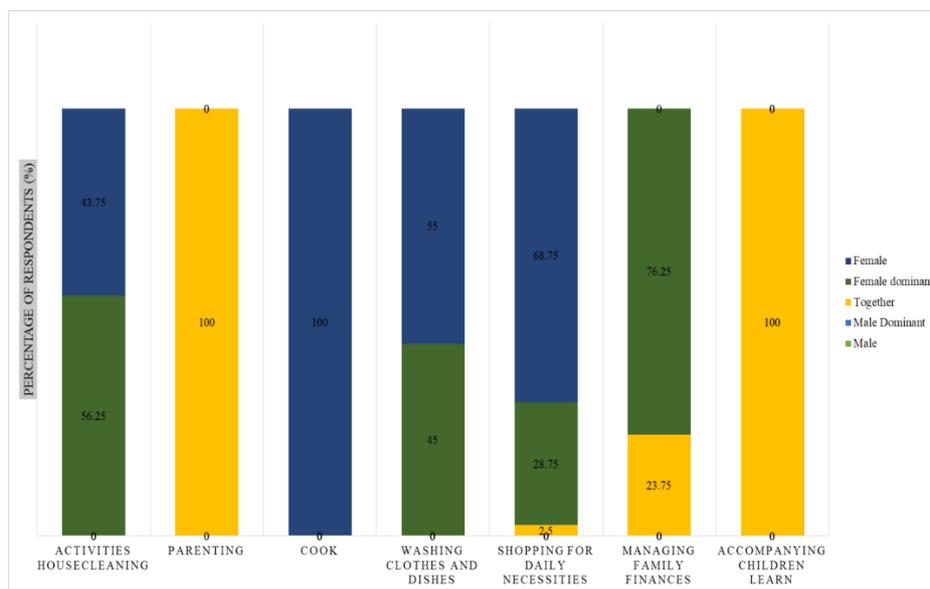
**Figure 4. Percentage of household work division of seaweed cultivators at the harvest and post-harvest stages in Bontosunggu Village, Tamalatea District, Jeneponto Regency**

At the harvest and post-harvest stages, activities are more dominantly carried out jointly between husband and wife. Only during the harvesting process did 100% of

respondents say that the activity was carried out entirely by husbands or men. Activities that are all carried out jointly include:

- a. The drying process
- b. Marketing of the harvest
- c. Setting the money from the sale of seaweed and using the money from seaweed

To determine harvest time, 55% of respondents do it jointly between husband and wife, and men dominantly do the remaining 45%. In reproductive activities, respondents said that women more dominantly carry out this activity. Specifically for cooking activities, 100% of respondents did it themselves without the help of a man or husband (Figure 5). Activities accompanying children to learn and raise children, 100% of respondents admitted that these activities are carried out jointly between husband and wife. Cleaning the house, washing clothes and dishes, shopping for daily needs and managing family finances are dominantly carried out by women.



**Figure 5. Percentage of household work division of seaweed cultivators in reproductive activities in Bontosunggu Village, Tamalatea District, Jeneponto Regency**

In Figure 6, it is show that 100% of respondents said that PKK, social gathering and recitation activities were all carried out by women. Activities to attend invitations, village meetings, mutual assistance, death ceremonies, and the determination of family members to take part in seaweed counselling, 100% of respondents said they were carried out together. The role of women in productive activities is at a moderate level, as evidenced by their contributions to seaweed cultivation, such as tying seeds to ropes, drying seaweed, and marketing the harvest. In reproductive activities, all work is done by women because there is still an assumption that women also have to do housework. In community management activities, the role of women is at a sufficient level. It plays a significant role because there are several activities that women participate in, such as PKK, invitations to celebrations, death to seaweed cultivation counselling. There is a double workload on women in this study because of the two roles they do, namely in productive and reproductive activities.

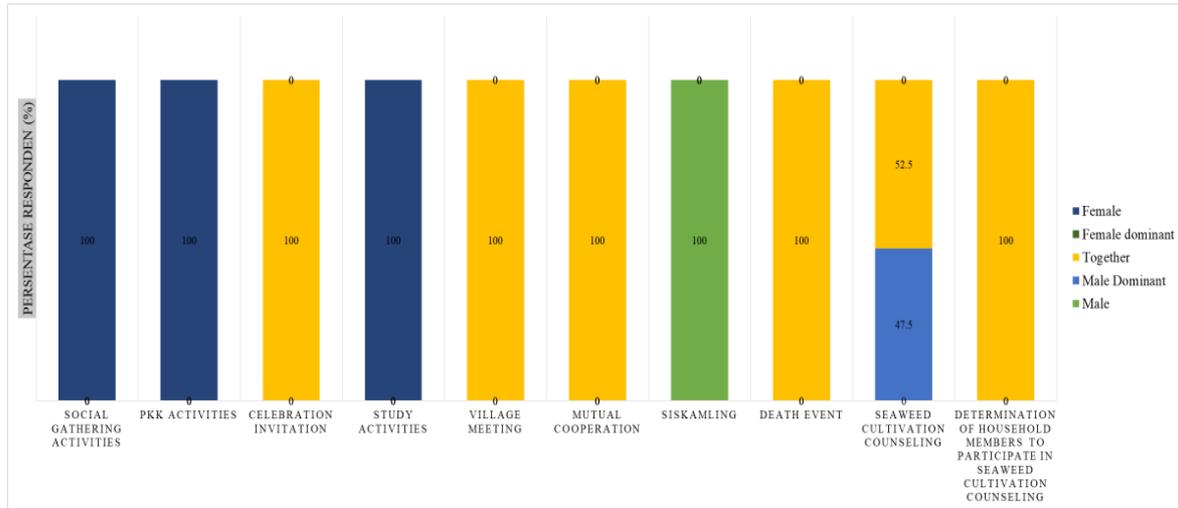


Figure 6. Percentage of household job share of seaweed cultivators in community management activities in Bontosunggu Village, Tamalatea District, Jeneponto Regency

The high role of women is generally carried out by the old age group so that the role of women is not based on age because women with old age have a high part. Furthermore, the elevated position of women is also driven by the household size, which is relatively large. Similar to the size of the household, this condition is carried out to save expenses so that women as unpaid labour can help their husbands in cultivating seaweed without paying wages for workers. Then, the high role of women also comes from households with a high level of welfare. It happens because families with high interest have a large number of stretches. Hence, women play a role in seaweed cultivation to monitor the condition of their cultivation. Based on the research, it is known that the role of women in seaweed cultivation is based on the nature of women who work hard, want to stay involved in the process to ease the burden on their husbands, and reduce expenses to pay for labour. The greater the number of hours worked, the more women participate in forms of work derived from seaweed to earn higher incomes (Eranza *et al*, 2015). There is a double workload on women in this study because of their contribution to two activities, namely productive and reproductive.

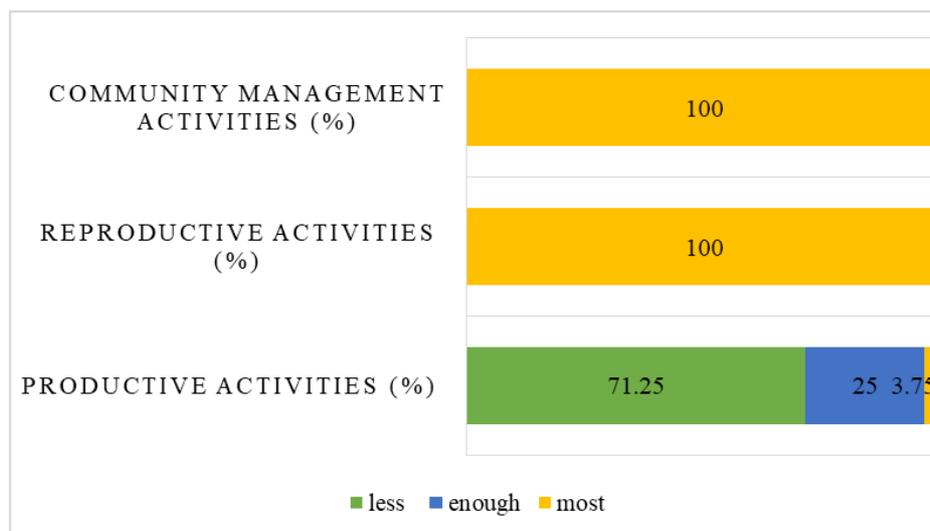


Figure 7. Percentage of women's roles in seaweed cultivating households based on productive, reproductive, and community management activities in Bontosunggu Village, Tamalatea District, Jeneponto Regency

Based on Figure 7, it is known that for productive activities, women are more dominant in the category of minor role (71.25%). Only about 3.75% of respondents fall into the category of every part. The rest, as much as 25%, fall into the category of playing a role. Based on the results of interviews, it is known that women are more involved in productive activities on land. Generally, the work at sea is done by men, and there are only a few female respondents who help their husbands doing activities at sea. In reproductive activities and management activities, women are included in having a significant role (100% of respondents). This is because men are more active in the sea while women are more active on land in helping their husbands in seaweed cultivating households. Based on the results in Table 1, it is known that the correlation coefficient value of women's roles with the household income of seaweed cultivators is 0.076.

The result shows a positive relationship between the role of women and the household income of seaweed cultivators. However, from the correlation results obtained, the correlation value is weak and has no significant effect. It is probably because women's activities are strongly influenced by age and family members (children). Children harm family income. It was further explained that the increase in the number of children owned increases family responsibilities. More time is used to take care of children so that the time to trade is reduced due to reduced income (Mugniesyah, 2007; Msuya, 2011; Aming, 2004).

**Table 1. Relationship between women's roles and income**

		Correlations	
		Women's role	Income
Women's role	Pearson Correlation	1	0.076
	Sig. (2-tailed)		0.506
	N	80	80
Income	Pearson Correlation	0.076	1
	Sig. (2-tailed)	0.506	
	N	80	80

### Conclusion

The role of women in seaweed cultivating households in Jeneponto Regency in productive activities is still minimal, only about 3.75%. In contrast, reproductive activities and community management reaches 100% or plays a significant role in these activities. Women contribute to seaweed cultivation because the number of household members drives them. By reducing the use of workers, income can focus financing on the daily life of the household.

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