International Journal of Technology and Education Research

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E-ISSN: 2986-0733

# Analysis Of The Welfare Levels Of Seaweed (*Eucheuma Cottonii*) Farmers In Bandar Batauga Village, Batauga Subdistrict, South Buton Regency

**Sarlin Sayman[1], Ilma Sarimustaqiyma Rianse[2], Normal Bivariant Padangaran[3]**

[1]Alumnus of Agribusiness, Faculty of Agriculture, Halu Oleo University, Kendari City, Indonesia
[2]Lecturer, Faculty of Agriculture, Halu Oleo University, Kendari City, Indonesia

Corresponding Author: sarlinsayman1@gmail.com

**Abstract**

*This study aims to determine the level of welfare among seaweed farmers in Bandar Batauga Village, Batauga Subdistrict, South Buton Regency. The population in this study consists of seaweed farmers in Bandar Batauga Village, Batauga Subdistrict, South Buton Regency, totaling 135 households (HH). The sample size was determined using the Slovin formula, resulting in a total sample of 57 respondents. Sampling was conducted using simple random sampling. The method employed in this study was quantitative descriptive analysis. This study utilized the BKKBN welfare indicators and analyzed the factors influencing welfare using multinomial logistic regression. The results show that the majority of respondents fall into the Prosperous Family Category III (KS III)—35 people (61.40%)—and the Prosperous Family Category III Plus (KS III Plus)—19 people (33.33%). The results of the simultaneous test indicate that age, educational level, number of family members, number of floating rafts, and income have a significant effect on welfare status. However, the partial test showed that only the income variable had a statistically significant effect (Significant at 0.001). Conversely, age, education, number of family members, and number of floating rafts did not show a significant effect. This indicates that the welfare of seaweed farmers in the study area is strongly driven by the income factor*

**Keywords:** ***BKKBN, Farmers' Welfare, Seaweed, Multinomial Logistic Regression***



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International Journal of Technology and Education Research

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E-ISSN: 2986-0733

## INTRODUCTION

The marine and fisheries sector in Indonesia plays a strategic role in national economic development, particularly in improving the well-being of coastal communities. Indonesia's maritime territory, which covers more than 70% of the country's total area, makes its marine resources extremely abundant. One of the aquaculture subsectors with a significant contribution is seaweed cultivation (KKP, 2024). The Ministry of Marine Affairs and Fisheries (2025) notes that seaweed is a leading national commodity that accounts for approximately 38% of global supply. In addition to supporting the Blue Economy, seaweed plays a vital role in food security, climate change mitigation, and the sustainable management of marine resources. The species Eucheuma cottonii is the most popular for cultivation due to its high economic value as a raw material for the cosmetics, textile, and pharmaceutical industries (Purnamasari et al., 2024).

The development of seaweed cultivation has the potential to boost the empowerment and economic well-being of coastal communities. Improved well-being is reflected in economic stability and an increase in per capita income (Yasa & Arka in Afan, 2024). In this context, improved well-being for farmers is achieved through the optimal utilization of marine resources, which generates real economic benefits. Rosdiana et al. (2020) demonstrated that seaweed cultivation has a positive impact on farmers' well-being, with 83.02% of farmers in Palopo City classified as well-off when their income is compared to the regional minimum wage (UMR).

The Batauga subdistrict in South Buton Regency, Southeast Sulawesi, is one of the centers for Eucheuma cottonii cultivation, supported by calm, clear waters with high salinity (Purnamasari et al., 2024). However, seaweed production in this region has experienced sharp fluctuations in recent years, as shown in Table 1.

**Table 1. Seaweed Production Data for South Buton Regency (2019–2023)**

| No. | Year | Production (Tons) | Production Value (Rupiah) |
|---|---|---|---|
| 1 | 2019 | 3,754 | Rp10,749,775,000 |
| 2 | 2020 | 1,918 | Rp5,754,324,000 |
| 3 | 2021 | 2,286 | Rp6,858,639,000 |
| 4 | 2022 | 1,920 | Rp5,760,000,000 |
| 5 | 2023 | 1,532 | Rp4,596,000,000 |

**Source:** BPS Southeast Sulawesi in Figures (2024)



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International Journal of Technology and Education Research

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E-ISSN: 2986-0733

The data in Table 1 shows a drastic decline in production in 2020 due to supply chain disruptions and export restrictions during the COVID-19 pandemic (KKP, 2020). Although production recovered briefly in 2021 to 2,286 metric tons, it declined again in 2022 (1,920 metric tons) and 2023 (1,532 metric tons). This decline was driven by environmental factors such as eutrophication and disease outbreaks, as well as an oligopsonistic market structure dominated by middlemen, which depresses prices at the farm level (Sari et al., 2022; Wahid, 2023).

Fluctuations and declines in production have a direct impact on the erosion of farmers' income and well-being (Sunaji & Lukas, 2023). In Bandar Batauga Village, farmers recorded an average gross income of Rp7,600,000 per harvest season with production costs of Rp3,812,616, resulting in a net income of only Rp3,787,384 (Purnamasari et al., 2024). This amount is relatively insufficient to cover household living expenses. According to indicators from the National Population and Family Planning Board (BKKBN), well-being is not measured solely by financial aspects but encompasses socioeconomic dimensions, ranging from the fulfillment of basic needs (food, clothing, shelter, health, and education) to social development needs (Basofi, 2017).

Several previous studies have examined the well-being of farmers across various commodities. Salsabilla et al. (2025) analyzed the well-being of rice farmers in Central Lampung using a combination of data from the Central Statistics Agency (BPS), the World Bank, and the Good Service Ratio (GSR). Dini (2021) examined the welfare levels of corn farmers in Malang Regency using BKKBN indicators and multiple linear regression, finding that the non-agricultural sector actually contributed the largest share of income. Meanwhile, Al-Basrah et al. (2024) studied seaweed farmers in Jeneponto Regency using a descriptive qualitative approach and found that marketing constraints and extreme weather hindered farmers from achieving the "Prosperous Family III Plus" status.

Although numerous studies on farmers' welfare have been conducted, this study offers *novelty* and addresses *a research gap* that distinguishes it from previous research. In terms of geography and commodities, the studies by Salsabilla et al. (2025) and Dini (2021) focused more on inland food crops, namely rice and corn, whereas this study examines coastal commodities, specifically *Eucheuma cottonii*. Differences are also evident in terms of methodology. The study by Al-Basrah et al. (2024) employed a descriptive qualitative approach, whereas this study applies a quantitative approach to measure farmers' welfare levels more precisely based on indicators from the National Population and Family Planning Board (BKKBN). This approach was used to obtain a more systematic picture of the welfare conditions of *Eucheuma cottonii* farmers' households, particularly in the face of the ongoing decline in production.

Based on this background, this study aims to quantitatively analyze the level of well-



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being among seaweed-farming households in Bandar Batauga Village, Batauga Subdistrict, South Buton Regency, based on BKKBN indicators. The results of this study are expected to provide an objective scientific overview of the economic implications of seaweed cultivation on the socioeconomic conditions of the local coastal community.

## METHOD

This study was conducted in Bandar Batauga Village, Batauga Subdistrict, South Buton Regency, Southeast Sulawesi Province, from December 2025 to July 2026. The study site was selected purposively, considering that this area is a major center for seaweed (*Eucheuma cottonii*) cultivation and possesses favorable aquatic conditions. The study population comprised all 135 active seaweed farmers in Bandar Batauga Village (Data from the Bandar Batauga Village Office, 2025). Sampling was conducted using *simple random sampling*, with the sample size determined using the Slovin formula at a 10% *margin of error* (Sugiyono, 2022), resulting in a sample size of 58 respondents.

The data used included primary data obtained directly through structured questionnaires and in-depth interviews, as well as secondary data from the South Buton Regency Statistics Agency (BPS), the Fisheries Office, and the Village Office. Before the questionnaire was used for primary data collection, *a pre-test* of the instrument was conducted. Item validity was measured using *Pearson's Product-Moment* correlation by comparing the calculated r value and the table r value at a significance level of alpha = 0.05. Meanwhile, reliability was assessed using *Cronbach's Alpha* coefficient, with the instrument deemed reliable if the alpha value was greater than 0.60.

To measure farmers' well-being (the first objective), quantitative descriptive analysis was used through percentage distribution and cross-tabulation. The measurement was based on 21 BKKBN indicators using the Guttman scale (a score of 1 for "Yes" and a score of 0 for "No"). The total scores ranged from 0 to 21 and were classified into five welfare levels:

- Pre-Prosperous (scores 0–5),
- Prosperous Family I/KS I (scores 6–11),
- Prosperous Family II/KS II (scores 12–17),
- Prosperous Family III/KS III (scores 18–20), and
- Prosperous Family III Plus/KS III+ (score 21).

To analyze the factors influencing the welfare level (the second objective), Multinomial Logistic *Regression* was used because the dependent variable (Y) is a five-level nominal



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categorical variable. The KS III+ category (j = 5) was set as the reference category. The logit equation for category j (j = 1, 2, 3, 4) relative to the reference category is formulated as follows:

$$\ln\left(\frac{P(Y=j)}{P(Y=5)}\right) = \beta_{0j} + \beta_{1j}X_1 + \beta_{2j}X_2 + \beta_{3j}X_3 + \beta_{4j}X_4 + \beta_{5j}X_5$$

Notes:
Variables include Y as the BKKBN well-being level (1 = Pre-Well-Being, 2 = KS I, 3 = KS II, 4 = KS III, 5 = KS III+),
X1 is the farmer's age (years),
X2 is the level of formal education (1 = Elementary School, 2 = Junior High School, 3 = Senior High School/Equivalent),
X3 is the number of family members (persons),
X4 is the number of floating rafts (units),
X5 is household income (Rp/month).

Parameter estimation was performed using the *Maximum Likelihood Estimation* (MLE) method. Model evaluation included simultaneous tests (*Likelihood Ratio* / G-test), partial tests (*Wald Test* with the direction of influence based on the *Odds Ratio* / Exp(β) values), model fit tests (Pearson *Goodness of Fit* / Deviance), and the pseudo- e coefficient (*Pseudo R-squared*) using the *Nagelkerke R-squared* value. All quantitative data were analyzed using IBM SPSS Statistics software.

## RESULTS AND DISCUSSION

### Levels of Seaweed Farmers' Well-being Based on BKKBN Indicators

Well-being in this study was measured based on criteria from the National Population and Family Planning Board (BKKBN) through the fulfillment of 21 indicators covering basic needs, psychological needs, development, and social participation. The measurement was operationalized using a Guttman scale (a score of 1 for "Yes" and 0 for "No"). Theoretically, the BKKBN approach aligns with the concept of multidimensional well-being, which assesses prosperity not only from *the* income perspective but also in terms of the fulfillment of non-material needs and social integration. The distribution of well-being levels among the 57 seaweed farmer respondents in Bandar Batauga Village is presented in Table 2.



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**Table 2. Distribution of Respondents by Well-Being Level (BKKBN)**

| No | Welfare Level | Score Range | Frequency (People) | Percentage (%) |
|---|---|---|---|---|
| 1 | Prosperous Family III+ | 21 | 19 | 33.33 |
| 2 | Prosperous Family III | 18–20 | 35 | 61.40 |
| 3 | Prosperous Family II | 12–17 | 2 | 3.51 |
| 4 | Prosperous Family I | 6–11 | 1 | 1.75 |
| 5 | Pre-Prosperous | 0–5 | 0 | 0.00 |
| Total | | | 57 | 100.00 |

***Source: Processed Primary Data, 2026***

Based on Table 2, the majority of respondents fall into the Prosperous Family III (61.40%) and Prosperous Family III Plus (33.33%) categories. Scores in the range of 18 to 21 indicate that most farmers have been able to meet nearly all BKKBN indicators. This situation signifies a transformation of farming practices from a subsistence system toward a well-established commercial farming system.

The research results show that there were no respondents in the Pre-Prosperous category and very few respondents in Prosperous Family Category I (1.75%) and Prosperous Family Category II (3.51%). The fulfillment of basic *physiological needs*—such as daily food consumption and weekly protein intake—aligns with Maslow's Hierarchy of Needs (Bari, 2022). Access to affordable food and fresh " " is supported by the coastal geographic location, consistent with Von Thünen's Location Theory (Hasnawati, 2022), which states that proximity to resources reduces daily logistics costs. Regarding the shelter indicator, improvements in housing quality reflect *capital* accumulation from harvest profits. Meanwhile, the accessibility of healthcare and family planning programs is explained through Perroux's *Growth Pole Theory* (Emalia, 2018), in which the presence of public facilities in the subdistrict capital creates *a trickle-down effect* for surrounding settlements.

The KS III group is the most dominant (35 households). High levels of *social capital*—manifested in family communication practices, the use of information technology to track market prices, and mutual aid—form a community-based social safety net (*bonding social capital*) (Putnam, in relevant literature). The main reason these 35 respondents did not reach KS III Plus was the absence of family members serving as officers in community organizations. Based on Rational Choice Theory and the concept of the *division of labor*, farmers' time is heavily absorbed by operational activities at sea and drying operations on land; thus, they rationally



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avoid *the opportunity cost* of lost working time that would result from serving as organizational officers.

A total of 19 respondents succeeded in reaching the highest welfare level (KS III+). This achievement was driven by greater *economies of scale* resulting from owning an above-average number of floating raft units. This efficient scale of operations generated a net income surplus that was allocated toward social and religious participation. Based on Elite Theory, this group holds two strategic positions simultaneously: as economic elites (large-scale operations) and social elites (local organizational leaders).

Conversely, the stagnation of three households in the KS I and KS II categories is caused by an inability to save due to a limited number of floating raft units that is disproportionate to the high number of family dependents. This phenomenon reflects Ragnar Nurkse's "*Vicious Circle of* Poverty" theory, in which limited agricultural income is entirely spent on daily consumption (*the propensity to save* is zero), leaving no capital remaining for the expansion of floating rafts.

**Analysis of Factors Affecting Welfare Levels**

An analysis of the factors influencing the level of well-being was conducted using Multinomial Logistic Regression with *the reference category* being " -Prosperous III+" (Y = 5). The evaluation of model fit and the contribution of independent variables is described through the following testing stages.

**Table 3. Model Fitting Information Test Results**

| Model | -2 Log Likelihood | Chi-Square | df | Significance |
|---|---|---|---|---|
| Intercept Only | 97.372 | | | |
| Final | 54,808 | 42,564 | 15 | 0.001 |

***Source: Processed Primary Data, 2026***

Based on Table 3, the simultaneous test yielded a Chi-Square value of 42,564 with a significance level of 0.001 ($p < 0.05$). This indicates that, collectively, the tested independent variables have a significant effect on farmers' welfare levels.

**Table 4. Pseudo R-Square Test Results**

| Method | Value |
|---|---|
| Cox and Snell | 0.526 |
| Nagelkerke | 0.642 |



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| | |
|---|---|
| McFadden | 0.437 |

***Source: Processed Primary Data, 2026***

Table 4 shows a *Nagelkerke R-Square* value of 0.642. This means that 64.2% of the variation in respondents' welfare levels can be explained by the variables of age, education, number of family members, number of floating rafts, and income, while the remaining 35.8% is explained by other variables outside the model.

**Table 5. Prediction Classification Table**

| Observed | Percentage Correct |
|---|---|
| KS I | 100.0% |
| KS II | 100.0% |
| KS III | 94.3% |
| KS III+ | 57.9% |
| Overall Percentage | 82.5% |

***Source: Processed Primary Data, 2026***

The model's overall prediction accuracy (*overall percentage*) reached 82.5% (Table 5), demonstrating that this multinomial logistic regression model has an excellent classification accuracy.

**Table 6. Results of the Likelihood Ratio Tests (Partial Tests)**

| Independent Variables | Chi-Square | df | Significance |
|---|---|---|---|
| Age (X1) | 5.053 | 3 | 0.168 |
| Education (X2) | 2.158 | 3 | 0.540 |
| Family Members (X3) | 2,113 | 3 | 0.549 |
| Total Floating Rafts (X4) | 3,208 | 3 | 0.361 |
| Revenue (X5) | 16,352 | 3 | 0.001 |

***Source: Processed Primary Data, 2026***

The results of the partial tests in Table 6 show that of the five variables tested, only the Income (X5) variable has a significant partial effect on the level of well-being ($p = 0.001 < 0.05$). Meanwhile, the variables of age, education, number of family members, and number of floating rafts did not show a significant partial effect ($p > 0.05$).



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Theoretically, the lack of influence of the age variable (p = 0.168) aligns with the findings of Putri (2022), who stated that in aquaculture, motivation and operational physical strength are more decisive factors than biological age alone. Regarding the education variable (p = 0.540), Latif et al. (2023) explain that aquaculture skills in the informal coastal sector are dominated more by *tacit knowledge* passed down through generations than by formal education levels. Regarding the number of family members variable (p = 0.549), Chayanov (in Ellis, 2020) argues that the impact of family size is twofold; if the majority of family members are of non-productive age, their presence becomes a consumption burden without increasing productivity. The non-significant variable of the number of floating rafts (p = 0.361) reinforces the argument by Rimmer et al. (2021) that expanding production tools without technical management efficiency (high-quality seedlings, control of *ice-ice* disease) will not optimally boost yields. Conversely, the dominance of the income variable (p = 0.001) confirms the theory of Todaro & Smith (2020) that income is the primary determinant that increases *purchasing power* to meet all dimensions of the BKKBN indicators.

**Multinomial Logit Model Parameter Estimation**

Parameter estimation was performed to derive the logit function for each welfare level compared to the reference category (KS III+).

**Table 7. Parameter Estimation of the Multinomial Logistic Model**

| Variable | Logit 1 (KS I vs. KS III+) | Logit 2 (KS II vs. KS III+) | Logit 3 (KS III vs. KS III+) |
|---|---|---|---|
| Constant | -28.657 | -20.044 | -5.619 |
| Age (X1) | -0.321 | 1.501 | 0.093 |
| Education (X2 = 1) | 0 | 0 | 0 |
| Education (X2 = 2) | 12.727 | -12,285 | -1,201 |
| Education (X2 = 3) | 0 | 0 | 0 |
| Family Members (X3) | -0.269 | -4.744 | 0.366 |
| Number of Floating Rafts (X4) | 9.592 | 2.321 | 0.255 |
| Revenue (X5) | 0.000 | 0.000 | 0.000 |

***Source: Processed Primary Data, 2026***



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Based on Table 7, the resulting logit function equation is as follows:

$$L_n\left(\frac{P\,(KS\,I)}{P\,(KS\,III+)}\right) = -28{,}657 - 0{,}321 + 12{,}727 - 0{,}269 + 9.592 + 0.000$$

$$L_n\left(\frac{P\,(KS\,II)}{P\,(KS\,III+)}\right) = -20{,}044 + 1{,}501 - 12{,}285 - 4{,}744 + 2{,}321 + 0.000$$

$$L_n\left(\frac{P\,(KS\,III)}{P\,(KS\,III+)}\right) = -5{,}619 + 0{,}093 - 1{,}201 + 0{,}366 + 0{,}255 + 0.000$$

The finding that income is the most dominant single determinant differs from the research by Bakarbessy (2023) in West Southeast Maluku, which found that all socioeconomic variables (capital, land area, age, and education) had a strong simultaneous and partial effect (99.7%). This difference can be explained by several scientific arguments:

1. *Income-Dominant Effect*: The average income of seaweed farmers in Bandar Batauga Village is relatively high (reaching Rp37,293,024 per growing season). This substantial nominal income directly meets all levels of the BKKBN indicators, thereby statistically masking the influence of other demographic variables such as education and household size.
2. Respondent Homogeneity: Unlike the heterogeneous research site in Bakarbessy, the characteristics of farmers in Bandar Batauga are relatively uniform in terms of educational level and raft size, so their variability is not significant in distinguishing welfare levels in the partial tests.
3. Life Cycle Theory: The age variable in the KS III logit function exhibits a positive coefficient. In accordance with Modigliani's Life Cycle Theory, increasing age in the study area reflects the accumulation of experience and asset ownership, which maintains family stability within the well-off category.
4. Relevance of Quality and Price: The insignificance of the number of floating rafts demonstrates that the quality of the harvest and the stability of the selling price (Rp21,000/kg) in Bandar Batauga are far more decisive in determining welfare status than merely the physical expansion of the number of rafts.

Overall, the improvement in the well-being of seaweed-farming households in Bandar Batauga is *income-driven* (primarily driven by real agricultural income)



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## CONCLUSION

The level of well-being among seaweed-farming households in Bandar Batauga Village is relatively high and is dominated by the Prosperous Family III (61.40%) and Prosperous Family III Plus (33.33%) categories. These results demonstrate that seaweed (*Eucheuma cottonii*) cultivation has been able to meet indicators of basic, psychological, and developmental needs for the majority of the coastal community in the study area. Simultaneously, the factors of age, education level, number of family members, number of floating rafts, and income have a significant effect on the level of well-being. However, when analyzed partially, income ($X_5$) is the single most dominant and significant factor ($p < 0.001$) in determining farmers' well-being (*income-driven*). Furthermore, the age variable ($X_1$) in the KS III group also showed a significant positive effect with an Exp(B) value of 1.098, indicating that the accumulation of farming experience with increasing age helps maintain the stability of a family's well-being status.

Based on these findings, seaweed farmers are advised to optimize the efficiency of their farming operational costs and increase their active participation in local social institutions in order to achieve the highest level of well-being according to BKKBN criteria. Meanwhile, the South Buton Regency Government, through the Fisheries Office, needs to prioritize policies to stabilize seaweed selling prices at the collector level—given that income is the primary determinant of well-being—and provide technical training programs on disease mitigation for farmers of productive age. For future researchers, it is recommended to expand the scope of independent variables by including external aspects such as access to partnerships, climate dynamics, and institutional support to provide a more comprehensive analysis.

## REFERENCE

Afan, Yusuf, S., Mansyur, A., Ruslaini, & Patiung, S. M. (2024). Pengaruh budidaya rumput laut terhadap tingkat kesejahteraan ekonomi masyarakat Desa Wasalabose Kecamatan Kulisusu Kabupaten Buton Utara. *Jurnal Sosial Ekonomi Perikanan*, 9(3), 265–270.

Al-Basrah, M. A. Z., Ibrahim, Dalilul Falihin, Rusdi, & Amirullah. (2024). Analisis tingkat kesejahteraan petani rumput laut di Kelurahan Pabiringa, Kecamatan Binamu, Kabupaten Jeneponto. *UNM Geographic Journal*, 7(1), 33–40.

Badan Kependudukan dan Keluarga Berencana Nasional. (2025). *Indikator kesejahteraan keluarga*. BKKBN. https://www.bkkbn.go.id

Badan Pusat Statistik. (2024). *Laporan indeks kesejahteraan petani 2023 / BPS Sulawesi Tenggara Dalam Angka 2024*. BPS.

Bakarbessy, D. (2023). Socio-Economic Conditions In Relation To Seaweed Farmers' Income And



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Independence. *Interdisciplinary Social Studies*, 2(11).

Bari, A., & Hidayat, R. (2022). Teori Kebutuhan Maslow Terhadap Keputusan Pembelian Merek Gadget. *Jurnal Manajemen dan Bisnis*, 7(1).

Basofi, A. (2017). Analisis Pengukuran Kesejahteraan di Indonesia. *Jurnal Ilmiah Mahasiswa FEB*, 5(2).

Dinas Perikanan Provinsi Sulawesi Tenggara. (2021). *Laporan produksi rumput laut pasca-pandemi*. Dinas Perikanan Sulawesi Tenggara.

Dini, H. F. (2021). *Analisis Tingkat Kesejahteraan Keluarga Petani Jagung (Studi Kasus Di Desa Patokpicis, Kecamatan Wajak, Kabupaten Malang)* [Skripsi]. Universitas Brawijaya, Malang.

Ellis, F. (2020). *Peasant Economics: Farm Households and Agrarian Development*. Cambridge University Press.

Emalia, Z., & Farida, I. (2018). Identifikasi Pusat Pertumbuhan dan Interaksi Spasial di Provinsi Lampung. *Jurnal Ekonomi & Studi Pembangunan*, 19(1), 61–74.

Hasnawati, Manaf, M., & Syafri. (2022). Analisis Faktor Berpengaruh dan Strategi Peningkatan Produktivitas Kawasan Ekonomi Khusus (KEK) Belang-belang Kabupaten Mamuju Provinsi Sulawesi Barat.

Kementerian Kelautan dan Perikanan Republik Indonesia. (2024). *Menteri Trenggono berhasil tingkatkan produksi perikanan budi daya 13,6% di 2024*. KKP RI. https://kkp.go.id

Kementerian Kelautan dan Perikanan. (2025). *Dampak pandemi COVID-19 pada produksi rumput laut*. KKP RI.

Latif, A., Massiseng, A. N. A., Jaya, J., & Sijaya, A. H. (2023). Kajian Faktor Sosial Ekonomi dalam Mempengaruhi Pendapatan Pembudidaya Rumput Laut di Desa Punaga Kecamatan Mangarabombang Kabupaten Takalar. *FISHIANA Journal of Marine and Fisheries*, 2(2).

Purnamasari, W. O. D., Sirza, L. O. M. J., Bone, A. H., Hamar, B., & Sitania, Y. (2024). Analisis Pendapatan Petani Rumput Laut (Eucheuma cottonii) Di Kelurahan Busoa, Kecamatan Batauga, Kabupaten Buton Selatan. *Media Agribisnis*, 8(1), 265–275.

Putri, N. G. H. (2022). *Pengaruh Faktor Sosial Ekonomi Terhadap Pendapatan Nelayan Di Kampung Nelayan Seberang Kelurahan Belawan I* [Skripsi]. Universitas Muhammadiyah Sumatera Utara, Medan.

Rimmer, M. A., Larson, S., Lapong, I., Purnomo, A. H., Pong-Masak, P. R., Swanepoel, L., & Paul, N. A. (2021). Seaweed Aquaculture in Indonesia Contributes to Social and Economic Aspects of Livelihoods and Community Wellbeing. *Sustainability*, 13, 10946. https://doi.org/10.3390/su131910946



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Rosdiana, Leo, M. N. Z., & Abbas, I. (2020). Analisis Tingkat Kesejahteraan Petani Rumput Laut di Kelurahan Songka Kecamatan Wara Selatan Kota Palopo. *UNM Geographic Journal*, 3(2), 01–08.

Salsabilla, C., Zakaria, W. A., & Marlina, L. (2025). Kondisi sosial ekonomi dan tingkat kesejahteraan rumah tangga petani padi di Kecamatan Trimurjo Kabupaten Lampung Tengah. *Jurnal Ilmu-Ilmu Agribisnis*, 13(3), 245–255. https://doi.org/10.23960/jiia.v13i3.10851

Sari. (2022). Faktor lingkungan dan penurunan produksi rumput laut. *Jurnal Perikanan*.

Sugiyono. (2022). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. CV. Alfabeta.

Sunaji, & Lukas, A. Y. H. (2023). Quality management and industrialization of seaweed products as an effort to improve the welfare of coastal communities in the province of East Nusa Tenggara, Indonesia. *AACL Bioflux*, 15(5).

Todaro, M. P., & Smith, S. C. (2020). *Economic Development* (13th Edition). Pearson Education.

Wahid. (2023). Struktur Pasar dan Harga Rumput Laut. *Jurnal Ekonomi Kelautan*, 3(2).

Yasa, I. K. O. A., & Arka, S. (2015). Pengaruh Pertumbuhan Ekonomi dan Disparitas Pendapatan Antardaerah Terhadap Kesejahteraan Masyarakat.



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