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Sustainability of Salt Business Production in Siduwonge Village

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Abstract: The need for special household salt consumption in Gorontalo Province is estimated to be around 2 tons per year, for ice factories around ± 6 tons (DKP Gorontalo Province, 2021) and there is still more consumption for the various food and fish salting industries. This provides quite a big opportunity for salt farmers to increase their production. Geographically, Siduwonge Village is one of the villages in Randangan District, Pohuwato Regency, Gorontalo Province and astronomically is located at 0°29'29" North Latitude and 121^{0} 48'28" East Longitude. The area of Siduwonge Village is 29,430 km² or 16.21% of the area of Randangan District. Siduwonge Village is mostly located in the coastal area with the livelihoods of its residents dominated by farmers (including salt farmers), farm workers, fishermen (including fish farmers) and casual daily laborers. There are 5 (five) hamlets in the village working area, namely Simanagi Hamlet, Bolongga Hamlet, Tolotio Hamlet, South Reset Hamlet and North Reset Hamlet. To see the sustainability of the salt production business in the ecological dimension, the attributes used are those that have a direct or indirect influence, including: (1) Pond bottom, (2) Water height, (3) Storage pond I, (4) Young water reservoir. , (5) Seed ponds and (6) water pH. Results of assessment of attributes on an ordinal scale (scoring).

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INTRODUCTION

Salt is a national strategic commodity and has a position that is no less important than other basic needs. Apart from being a basic necessity for human consumption, salt is also used as an industrial raw material. Daulay, (2019) said that salt is a collection of chemical compounds whose main part is Sodium Chloride (NaCl) which forms other compounds in the form of CaSO4, MgSO4, MgCl2 and others. The nature of salt is hygroscopic, that is, it easily absorbs water and has a density level of 0.8 - 0.9 with a melting point at a temperature of 80 degrees Celsius (Burhanuddin, 2001).

National salt production has not been able to meet the needs of both consumption and industry. From 2014 to 2021, salt production continues to decline, starting from 4.07 million tons/year to 118 thousand tons/year, while demand reaches 2.9 – 3.61 million tons/year (KKP, 2021). The importance of the salt commodity and the high demand for salt have made salt production an important source of income for the Indonesian government and society, as well as in Gorontalo Province, especially in Pohuwato Regency.

In accordance with Presidential Regulation No. 126 of 2022 concerning the acceleration of national salt development which is a reference for increasing domestic salt businesses, Gorontalo Province has been designated as one of the provincial loci that has potential for salt businesses. The only salt centers in Gorontalo Province are in Pohuwato Regency, Siduwonge Village, Randangan District and Londoun Village, East Popayato District. This salt pond area borders directly on the mangrove ecosystem which is also the Tanjung Panjang Nature Reserve area in Pohuwato Regency. The total potential area of salt fields is 250 Ha, consisting of existing producing salt ponds of around ± 97.5 Ha, and 15.30 Ha of integrated land. (DKP Pohuwato Regency, 2021)

The need for special household salt consumption in Gorontalo Province is estimated at around 2 tons per year, for ice factories around ± 6 tons (DKP Gorontalo Province, 2021) and there is still more consumption for the various food and fish salting industries. This provides quite a big opportunity for salt farmers to increase their production.

Salt production in Gorontalo Province is produced by salt farmers in the two villages and have formed 12 (twelve) salt business groups (KUGAR) since 2015. The members of these groups are residents who live in Siduwonge Village and Londoun Village. The various problems that exist in salt cultivation have an impact on salt farmers, especially salt farmers.

The low quality of salt production, the unstable price of salt in the market, price games carried out by collecting traders, climate and weather as well as competition with imported salt which occurs are thought to be due to the lack of availability of facilities and infrastructure needed by farmers such as production roads, water storage ponds. , irrigation canals, salt fields, salt storage areas and salt tables are still lacking. Lack of facilities such as water pumping machines, salt transport, water quality measuring equipment, lack of production facilities (such as salt washing tanks), small-scale salt business actors who live in rural areas are faced with low technological mastery, weak capital ownership, lack of access and information. towards the market, and limited business management skills as well as conventional management patterns are also the causes of the sub-optimal production of people's salt, especially in terms of quality.

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Starting from this idea, it is necessary to develop sustainability and direct it towards creating economic independence in the salt sector as a strategic way to create prosperity for coastal communities. Therefore, researchers are interested in conducting research on "Sustainability of Salt Business Production in Siduwonge Village".

METHOD

The method used in this research is descriptive research with a quantitative and qualitative approach. In this research, researchers describe and analyze several aspects including ecology, economics, socio-culture, technology and institutions in salt cultivation.

Informants were taken using the purposive sampling method, namely a sampling method by determining the subject/object according to the objective with personal considerations in accordance with the research topic (Satori Komariah, 2012). Informants in this research were related institutions such as the Maritime Affairs and Fisheries Service, Trade Service, Central Statistics Agency, Bapppeda and other related agencies, Village Officials, village communities and salt farmers in particular with the number of respondents ranging from 20 to 30 people.

DISCUSSION

Geographically, Siduwonge Village is one of the villages in Randangan District, Pohuwato Regency, Gorontalo Province and astronomically is located at 0°29'29" North Latitude and 121^0 48'28" East Longitude. The area of Siduwonge Village is 29,430 km² or 16.21% of the area of Randangan District. Siduwonge Village is mostly located in the coastal area with the livelihoods of its residents dominated by farmers (including salt farmers), farm workers, fishermen (including fish farmers) and casual daily laborers. There are 5 (five) hamlets in the village working area, namely Simanagi Hamlet, Bolongga Hamlet, Tolotio Hamlet, South Reset Hamlet and North Reset Hamlet. The topographic condition of the Pohuwato Regency area in general has a varied topography, namely 0 - 200 m above sea level spread across the coastal area of Tomini Bay, dominantly covering the Randangan District area. Based on elevation (height above sea level), 76.9% of the plains have an altitude between 101 – 150 meters above sea level, of which 23.1% have an altitude between 151 – 200 meters above sea level.

Soil type and soil porosity are factors that influence salt production. The type of soil in the salt ponds in Siduwonge Village is alluvial soil. The type of soil in the salt area consists of alluvial soil consisting of young alluvium from river deposits and young alluvium from marine deposits. Alluvial soil has special characteristics, including gray from brown to black in color, not sensitive to erosion, comes from river and sea sedimentation. A fine type of clay can be used to hold water. For salt ponds, clay and muddy types of soil are very good for salt ponds because when dry they harden and when wet they have the ability to hold water. (Tambunan, 2012).

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The climate conditions of Pohuwato Regency have a tropical climate with alternating rainy and dry seasons throughout the year. Air temperature is between 28 – 30 °C, while monthly temperature ranges from 25.42 – 26.70 °C, average wind speed is 20 – 25 km/hour, average monthly relative humidity is 75.20 – 85.60 mmHG. Based on the climate map according to Oldeman and Darmiyati's classification, Pohuwato Regency on average has a relatively dry climate.

The average air temperature in Gorontalo Province over the past year ranged from 26 – 28 °C. Meanwhile, the average air humidity in Gorontalo Province ranges from 72.7 – 84.9%.

The results of the leverage analysis presented in Figure 4.3 for the six attributes studied, there are two attributes that are the most sensitive as the main leverage factor or influence the magnitude of the sustainability value, namely the water level with an RMS value of 14.85%, the bottom of the pond at 11.00%. The water level in the salt tables in Siduwonge Village is between 5 - 10 cm. This is appropriate because the water stored in the salt tables is not too high so that the raw water in the salt table can turn into salt before the water becomes salt. too old. The height of the salt table water is an important variable in the production process because it will affect the rate of water evaporation during the salt formation process (Nurfariza, et al, 2021).

The bottom of the pond is also an attribute that plays an important role in the salt production process. The basic substrate in the salt pond area in Siduwonge village is muddy sand. According to Muhlis (2019), the salt ponds in Sidwonge village have hydromorphic alluvial soil, a muddy sand bottom substrate and a distance of 500 m from the beach. The quality of this soil is very suitable to be used as a salt pond area, because according to Acosta (1977) in Ghufron (2011) the soil that is suitable to be used as a salt pond is sandy clay or sandy loam or clay and muddy soil. This type of soil is very hard and will crack when dried, whereas in wet conditions it has a good ability to retain water.

The pH of the water and the water content or saturation level of the raw material in each salt table are also important factors in producing quality and quantity salt. The time required to produce salt depends on the water saturation level of the salt raw material. Based on the results of measuring the pH of the water and the level of saturation of the water, it is in accordance with standard standards in the production process where the pH of the water ranges between 7-8.

The institutional and ecological dimensions have relatively large index values when compared to other dimensions, namely with values of 88, 39 and 75.20 with very sustainable status. The economic and social cultural dimensions are in quite sustainable status with scores of 71.73 and 71.61, while the technological dimension is less sustainable with an index of 49.42. To maintain or improve sustainability status to become highly sustainable, it is necessary to better manage the attributes in each dimension.

Based on the results of the Monte Carlo analysis, the attributes used in each dimension are good enough or the coordination value is quite stable, explaining the level of sustainability of the salt production business in Pohuwato Regency. The stress value produced in each dimension has a value that is smaller than the provisions (<0.25) where the smaller the stress value, the better, while the coefficient of determination (R2) in each dimension is quite high or close to 1.

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Based on the results of the SWOT analysis, the SWOT factors were obtained from the needs in each zone and the existing conditions of the salt pond location in Siduwonge Village. Factors are grouped based on internal factors (Internal Factors Analysis Summary) and external factors (External Factors Analysis Summary). Internal factors (IFAS) are factors within the scope of the salt pond location in Siduwonge Village which have the characteristics of supporting and/or hindering business development in achieving its goals. Meanwhile, external factors (EFAS) are factors outside the business development area which have the nature of providing opportunities and/or posing threats to business development goals. Determination of internal factors and external factors was obtained from primary survey data on existing business development conditions, interview results, and literature related to the profile of Gorontalo Province which discusses salting. The following is a grouping of factors based on categories as internal factors or external factors in the development of the Salt Economic Zone in Gorontalo Province.

CONCLUSION

Based on the results and discussion, the conclusions obtained are as follows:

1. Based on the sustainability index for each dimension of salt business production in Siduwonge Village, Pohuwato Regency, the highest index is the institutional dimension of 88.39 (very sustainable), the ecological dimension of 75.20 (very sustainable), then the economic and social cultural dimensions with a value of 71.73 and 71.61 (fairly sustainable) and the lowest technology sustainability index 49.42 (less sustainable). With the overall index value, the sustainability of salt business production in Siduwonge Village is in the good category, however the technological dimension needs to be emphasized as a concern because it has the potential to be bad for future salt production results.

2. Based on the results of the SWOT Analysis of the Salt Production Business Development Strategy, the results obtained are that the development strategy is in quadrant II based on the SWOT analysis matrix that has been carried out, meaning that the Salt Production Business Development Strategy is in the S-T quadrant where the strategy that must be carried out is to create a strategy that Minimize weaknesses and avoid threats.

SUGGESTION

The recommendations presented are as follows:

1. Based on the analysis of existing conditions in the Siduwonge Village area, there is sustainability for the production of the salt business. Therefore, providing facilities and infrastructure for the needs of the salt industry is the main thing for sustainability in this region.

2. Innovation efforts and technological intensification are the main supports for achieving production targets. The use of biomembranes, the application of tunnel systems (closed systems), the

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application of TUF (Filter Thread Technology) and bastekin systems need to be maximized to increase the quality and quantity of salt

3. The need for local government support in the form of regulations on the salt trading system which can provide benefits to local salt farmers.

4. The development of salt business production cannot be carried out by one party, but must be in synergy between all parties, both internal and external, starting from the central government, regional governments, the private sector as well as salt farmers and business actors.

5. Institutional strengthening is needed to encourage more innovative and creative salt business behavior.

6. It is hoped that government support through empowering salt business groups will be able to play an active role.

REFERENCE

1. Astuti, M. A., Nurmalina, R., & Burhanuddin. (2019, Juni). Analisis Status Keberlanjutan Pengusahaan Garam di Tiga Wilayah Pulau Madura. *Jurnal Agribisnis Indonesia , Vol 7 No 1,*, halaman 13-26.
2. Ahmad, F. (2019). *Tehnik Analisis Keberlanjutan.* Gramedia Pustaka Utama.
3. Anonim. (2011b). *Pedoman Pelaksanaan PNPM Mandiri KP dan PUGAR*. Retrieved from Anonim: http://kkp.go.id
4. Azizi, A., Kurnawan, T., & Manadiyanto. (2011). Analisi Pemasaran Garam Rakyat di Kabupaten Pati Jawa Tengah. *Seminar Nasional Riset dan Kebijakan Sosial Ekonomi Kelautan dan Perikanan*, 541-55.
5. Burhanuddin. (2001). *Strategi Pengembangan Industri Garam di Indonesia, Kanisius,*. Yogyakarta: Kanisius.
6. Dahuri, R. 2004. Pengelolaan Sumberdaya Wilayah Pesisir dan Lautan Secara Terpadu. Jakarta
7. Efendy M, Muhsoni F, Shidiq R, Heyanto A. 2012. Garam Rakyat Potensi dan Permasalahannya. UTM Press. Universitas Trunojoyo Madura
8. Fadila R.W. 2019. Penerapan manajemen Konflik dalam Penyelesaian Sengketa Lahan antara Petani dengan Korporasi Properti di Kabupaten Karawang. Jurnal Kolaborasi Resolusi Konflik. Vol. 1 Hal. 1-70 ISSN 2655-8823 (p).
9. KKP Kementerian Kelautan dan Perikanan. 2017. Neraca Garam Nasional. Jakarta. KKP
10. Kavanagh, P., & Pitcher. (2004). Implementing Microsoft Excel Software for Rapfish: A. *Fisheries Centre Research Reports, 12 (2)*, 275-450.

ISSN 2576-5973 (online), Published by "Global Research Network LLC"
under Volume: 6 Issue: 12 in Dec-2023 https://www.globalresearchnetwork.us/index.php/AJEBM

11. Latjolai M, &Nurul A..2019.Kesesuaian Lahan Tambak Garam Di Desa Siduwonge Kecamatan Randangan Kabupaten Pohuwato. Fisheries Journal. Vol.2 No.1 -2019
12. Magfiroh A.A, Rita N, Burhanuddin. 2019. Analisis Status Keberlanjutan Pengusahaan Garam di Tiga Wilayah Madura. Jurnal Agribisnis Indonesia (Vol 7 No 1 Hal. 13-26
13. Marihati, & Muryati. (2008, Februari). Pemisahan dan Pemamfaatan Bitern Segabai Salah Satu Upaya Peningkatan Pendapatan Petani Garam. *Buletin Penelitian dan Pengembangan Industri*, *II*(2).
14. Moleong, L. J. (2013). *Metodologi Penelitian Kualitatif.* BAndung: PT Remaja Rosdakarya.
15. Mustakim, M. Kasnir, Abdul R. 2019. Status Keberlanjutan Usaha Garam Industri di Wilayah Pesisir Kabpaten Pangkep. J-TropimNar, Vol. 1 No. 1 Hal : 1-15
16. Nanang K.P, Rieny S & Faiza A.D.2015. Analisis Mutu Garam Tradisional di Desa Siduwonge Kecamatan Randagan Kabupaten Pohuwato Provinsi Gorontalo. Jurnal Ilmiah Perikanan dan Kelautan. Vol 3, No. 1.
17. Perikanan, K. d. (2022, Januari). *Satu Data*. Retrieved from New satu data: http://newsatudata.kkp.go.id
18. Pitcher, & Preikshot. (2004). Rapfish: A Rapid Appraisal Technique to Evaluate the Sustainabiliti Status of Fisheries Research. *49 (3)*, 255-270.
19. Purbani, D., 2013. Proses Pembentukan Kristalisasi Garam, http://www.oocities.org/ trisaktigeology84/Garam.pdf (diakses tanggal, 18 Agustus 2021).
20. Rauf, A. 2016. Status Keberlanjutan Usaha Garam Industri Kecamatan Labakkang Kabupaten Pangkep. Prosiding Seminar Nasional Kelautan XI Fakulta Tehnik dan Ilmu Kelautan Universitas Hangtuah Surabaya, 2 Juni 2016 (ISBN:978-062-71063-2-1) hal. D1-11
21. Rochwulaningsih, Y. 2010. Marginalisasi Garam Rakyat, Penerbit: CV Madina Semarang
22. Rokan, M. K. (2012). Hukum Persainagn Usaha : Teori dan Praktiknya di Indonesia. 1-2.
23. Sanusi, A. (2014). *Metodologi Penelitian Bisnis.* Jakarta: Salemba Empat.
24. Sugiyono. (2016). *Metode Penelitian : Kuantitatif, Kualitatif dan R & D.* Bandung: Alfabeta.
25. V, G. (2004). *Teori Produksi*. Retrieved from http://www.artonang.com/2018/05/teori-produksi-theory-of-production.html
26. Widayanti, R., Ratna Damayanti, R., & Marwanti, F. (2017). Pengaruh Financial Literacy Terhadap Keberlangsungan Usaha (Business Sustainability) Pada UMKM Desa Jatisari. *Ilmiah Manajemen & Bisnis , Vol. 18 No. 2*, 153-163.

ISSN 2576-5973 (online), Published by "Global Research Network LLC"
under Volume: 6 Issue: 12 in Dec-2023 https://www.globalresearchnetwork.us/index.php/AJEBM

27. Wikipedia. (2022, Maret Selasa). *Keberlanjutan*. Retrieved from Ensiklopedia Bebas: http://id.wikipedia.org/wiki/Keberlanjutan

28. Yasin. H. Sugito, Moch. Abdul Mukid dan Alan Prahutama. Aplikasi Teknologi Ulir Filter (TUF) dengan Media Geomembran sebagai Upaya Peningkatan Kualitas dan Kuantitas Produksi Garam di Kabupaten Pati Jawa Tengah

ISSN 2576-5973 (online), Published by "Global Research Network LLC"
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