

SOCIO-ECONOMIC AND ABRATION STUDY IN RANGSANG ISLAND, MERANTI REGENCY

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ABSTRACT

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This study discusses the socio-economic status of the people of Rangsang Island, Meranti Islands Regency, Riau Province. The discussion in this study is focused on the District of Rangsang Pesisir. The factors that become the focus of writing are economic and social including changes in social values, livelihoods and people's incomes. The method used is descriptive quantitative method by analyzing primary data and secondary data. The analysis results show that abrasion causes social values to change and affects people's livelihoods.

1. INTRODUCTION

Meranti Islands Regency is a state border area that borders Singapore and Malaysia. Other areas bordering the neighboring country are Dumai City, Bengkalis Regency, Indragiri Hilir Regency, and Rokan Hilir Regency.

The Meranti Islands Regency geographically consists of four large islands and twelve small islands. These conditions provide opportunities as well as threats to regional development. The natural resource potential of the Meranti Islands Regency is very diverse, including oil and gas mining, aquatic resources, plantations, and mangrove resources. The education level of the Meranti community is dominated by SMA/SMK graduates. While the number of poor people is quite high at 48.50 with the percentage of poor people in 2021 of 25.68 percent (BPS, 2022). The level of poverty is quite high, especially in coastal areas such as West Rangsang and Coastal Stimuli Districts.

Gevisioner et al. (2013) and Mahendra (2019) state that the abundant natural resources of the Meranti Islands Regency cannot be managed optimally. There is even a paradox of natural

resource wealth, but the level of poverty in society is still high. Besides that, there is also a lot of environmental damage, especially in coastal areas. Hidayat & Darwin (2017) said that in regional development, the main policy is to maximize the potential of the resources they have. Each region has varied potential, so the dominant economic sector must be determined. Nadek et al.'s (2020) Meranti Islands Regency has potential coastal natural resources (mangrove forests) that have not been optimally managed. However, most have suffered damage due to abrasion.

The coast is a transition area between marine and land ecosystems. According to Dahuri et al. (1996), in Suning (2022), coastal areas are ecologically influenced by marine processes such as tides and seawater interruptions. Coastal changes can be influenced by natural factors such as artificial sediment transport, currents, wind, and waves or human activities that cause soil erosion or abrasion and then deposit it in a certain area on an ongoing basis along the coast (Arif et al. 2011).

According to Santoso (2000) in Rahim and Baderan (2017), many coastal areas are covered with mangrove ecosystems, which are reciprocal

living systems between living things and the environment or between living things themselves. Mangroves are strongly influenced by tides, and besides that, there are also unique tree species that can live in salty or brackish waters. Dahuri et al. (1996) explained that mangroves have economic and ecological functions.

However, due to damage to the mangrove ecosystem, many coastal areas have experienced abrasion. The results of the study by Hakim et al. (2014) showed that the majority of the northern coast of Rangsang Island experienced abrasion. The worst part is the east coast of Rangsang Island. Furthermore, this study explains that over the last 24 years there has been abrasion with an average of 48.41 ha per year, and the magnitude of the sedimentation rate is 10.74 ha per year with an average reduction in the land area of all Rupert islands, namely 37.67 ha per year.

2. METHODS

The method used in this research is a quantitative descriptive method, namely, analyzing quantitative data to analyze problems in research. The data used is secondary data obtained from publications by the Central Bureau of Statistics and the Office of Population and Civil Registration of the Meranti Islands Regency, as well as from books and articles with national and international reputations.

3. RESULTS AND DISCUSSION

Population, Social, and Economic Development of Rangsang Island

Socio-cultural and demographic conditions are important factors in the management and utilization of mangrove ecosystems. The socio-cultural condition of the community can be an illustration of the conditions of education, poverty, welfare, and employment. Stimulation Island consists of three sub-districts, namely Rangsang Barat District, Stimulate Coastal District, and Stimulus District. Here are the socio-cultural conditions of the community. Next is the population by age group and sex on Rangsang Island, namely; Rangsang Subdistrict has a population of 20,123, Rangsang Pesisir District has a population of 17,275 and West OST.

Table 1. Total population according to age group and sex of Rangsang Island in 2020

Number	Subdistrict	Gender		Total
		Male	Female	
1	Rangsang	10.527	9.596	20.123
2	Rangsang Pesisir	8.870	8.405	17.275
3	Rangsang Barat	10.008	9.487	19.488
Total		29.405	27.488	56.886

Source: Central Bureau of Statistics for Meranti Regency (2021)

The population of Stimulus Island, which is divided into three sub-districts, is 59,265 people. Stimulus sub-districts were 20,372, Rangsang Pesisir District 19,121, and Rangsang Barat sub-district 19,772. with a population growth rate of 1.83. Stimulation Island is inhabited by 28.3% of the total population in Meranti Regency, with a population density of 68.28 square kilometers.

Table 2. Total Population of Rangsang Island for 2020-2021

Number	Subdistrict	Resident (Soul)	Growth rate	Percentage (district)	Population density
1	Rangsang	20.372	1,65	9,73	49,55
2	Rangsang Pesisir	19.121	1,90	9,13	51,52
3	Rangsang Barat	19.772	1,95	9,44	151,05
Total		59.265	1,83	28,30	68,28

Source: Central Bureau of Statistics for Meranti Regency (2021)

The education level of the residents of Rangsang Island is a key factor in their capacity for economic and environmental development. The population of the stimulated island is dominated by residents who have graduated from elementary school, with a total of 19,873. Both populations are not attending or have not attended school, with a population of 17,085 people. The three residents with junior high school educations are 7,106 people. And the lowest is the population with a doctoral education level of 5 people. In the field of education, it can be said that the education of the Meranti population is still low. The large number of residents who do not complete nine years of education is certainly an obstacle to development in both the economic and environmental sectors.

Table 3. Education Level of the Population of Rangsang Island in 2022

Number	Level of education	Subdistrict			Total
		Rangsang	Rangsang Pesisir	Rangsang Barat	
1	Not/not yet in school	5.077	7.151	4.857	17.085
2	Not finished elementary school	2.725	2.621	2.341	7.687
3	Graduated from elementary school	7.000	6.417	6.456	19.873
4	junior high school	2.556	1.576	2.738	6870
5	high school	2.633	1.504	2.969	7.106
6	Diploma 1 and 2	135	72	167	374
7	Diploma 3	143	52	144	339
8	bachelor	440	219	524	1183
9	masters	4	0	12	16
10	doctor	1	3	1	5

Source: Population and civil registry office of Meranti Islands Regency (2022)

Socially, the population of the island is dominated by Muslims, namely 54,320 people, 5,542 Buddhists, 616 Christians, 16 Confucianists, and 41 adherents of the belief in God Almighty. Religious harmony and tolerance on Rangsang Island are very good. It has been proven that there has never been a horizontal conflict between religious communities on the island of Stimulus. Cultural communication between tribes is also established; Javanese, Chinese, Batak, Malay, and Minang tribes can live side by side.

Table 4. Number of Religious Adherents on Rangsang Island in 2022

Number	Religion	Subdistrict			Total
		Rangsang	Rangsang Pesisir	Rangsang Barat	
1	Islam	20.040	14.389	19.891	54.320
2	Christian	29	558	29	616
3	Catholic		3		3
4	Hindu				
5	Buddha	645	4.610	287	5.542
6	Confucius		14	2	16
7	Belief in God Almighty		41		41

Source: Population and civil registry office of Meranti Islands Regency (2022)

Socio-Economy and Mangroves on Rangsang Island

The Meranti Islands Regency is expected to become the entry point for Indonesian trade in the western part. Geographically, the strategic location is directly adjacent to Malaysia and Singapore and has direct access to global markets. This location is passed by the Sea Lane of Communication (SLoC), namely the Malacca Strait, which is the world's busiest shipping lane and global container shipping lane (MP3EI 2011–2025). Meranti Regency's natural resources have great potential to realize economic development and community welfare. The potential for plantations, fisheries, gas, and oil are all natural resources that can be developed. However, uncontrolled exploitation of natural resources, on the other hand, will have an impact on environmental damage and also result in a lack of resources for future generations if not managed efficiently. Therefore, it is necessary to innovate environmentally friendly management technology as an effort to manage the environment in a sustainable manner.

Table 5. Contribution of Gross Regional Domestic Product of Meranti Islands Regency at Current Prices by Business Field in 2018-2020

Number	Business field	2018	2019	2020
1	Agriculture, Forestry and Fisheries	35,04	35,67	39,80
2	Mining and excavation	21,58	18,53	13,84
3	Processing industry	23,62	24,63	26,23
4	Procurement of Electricity and Gas	0,04	0,05	0,05
	Water			
5	Procurement, Waste	0,00	0,00	0,00

	Management, Waste and Recycling			
6	Construction	4,67	5,15	5,09
7	Wholesale and Retail Trade; Car and Motorcycle Repair	8,98	9,65	9,51
8	Transportation and Warehousing	2,22	2,33	1,36
9	Provision of Accommodation and Food and Drink	0,29	0,30	0,28
10	Information and Communication	0,53	0,57	0,63
11	Financial Services and Insurance	0,29	0,29	0,31
12	Real Estate	0,42	0,44	0,46
13	Company Services	0,00	0,00	0,00
14	Government Administration, Defense and Compulsory Social Security	1,74	1,78	1,85
15	Education Services	0,22	0,23	0,24
16	Health Services and Social Activities	0,07	0,07	0,08
17	other services	0,28	0,30	0,28
		100,00	100,00	100,00

Source: Central Bureau of Statistics for Meranti Regency (2021)

The agricultural, forestry, and fisheries sectors are still very dominant as sources of the community's economy. These three sectors contributed to 2018 (35.04%), 2019 (35.67%), and 2020 (39.80%). The contribution of the three sectors has increased in the last three years. In

other sectors, the processing industry has also experienced an increase over the last three years. Meanwhile, the mining and quarrying sector experienced a significant decline of 4.69% in 2020.

The forestry, agriculture, and fisheries sectors in the 2018–2020 three-year period contributed to the economic sector of the Meranti Islands Regency. Nine sectors with an economic contribution below 1%, namely: 1) Electricity and Gas Procurement, 2) Water Supply, Waste, Waste and Recycling Management, 3) Accommodation and Food and Drink Provision, 4) Information and Communication, 5) Financial Services and Insurance; 6) Real Estate; 7) Corporate Services; 8) Education Services; 8) Health Services and Social Activities; and 9) Other Services.

Hidayat & Darwin (2017) conducted research on potential sectors in triggering development in the Meranti district and found that four sectors had a high-value trend, namely the agriculture, forestry, and fisheries sectors; the manufacturing sector; the transportation and warehousing sector; and the government administration sector, which includes defense and mandatory social security. This sector is the leading sector of the economy and is also the dominant sector in absorbing employment in Meranti district in 2011-2015.

Data on rubber, areca palm, coconut, and sago farming on Rangsang Island in 2017-2019 can be seen in table 6. Sago farming for three periods experienced a decline, with areca agriculture being the agricultural sector that contributed the least to the increase in the economic sector and the coconut plantation sector contributing the highest among other plantation sectors. It needs more serious management of areca nut plantations in order to increase production.

The price of dry betel nut with good quality (premium) is Rp. 17,000, and standard quality is Rp. 12,000 to Rp. 14,000. The cost of production at the exporter level is IDR 19,000, while the selling price is IDR 20,000/kilogramme (Irawati et al. 2017). Areca nut prices at the international level are also stable. so that this commodity has the potential to be developed in the Meranti Islands Regency.

Table 6. Production of Plantation Plants in the Meranti Islands Regency in 2017-2019.

Number	Subdistrict	Rubber			betel nut			Coconut			Sago		
		2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
1	Rangsang	234	806	806	20	102	102	13509	15807	15807	2357	523	523
2	Rangsang Pesisir	308	871	871	11	21	21	6937	6374	6374	16361	2225	2225
3	Rangsang Barat	751	4006	4006	86	176	176	3107	4100	4100	1594	255	255
Total		1293	5683	5683	117	299	299	23553	26281	26281	20312	3003	3003

Economic Losses and Coastal Abrasion

In addition to the economic potential of mining, fishing, agriculture, and fisheries, the Meranti Islands Regency also has economic potential from mangrove forests. The direct benefits of the mangrove ecosystem are: 1) the utilization of forest products; 2) the utilization of agricultural products; 3) the utilization of animals; and 4) the utilization of pond land. Meanwhile, the utilization of mangrove ecosystems on Rangsang Island is an eco-tourism object; to be precise, in Bokor Village, Rangsang Barat District, mangrove seedling planting is carried out by a coastal area conservation group named Tegas, which also catches shrimp, crabs, and fish.

Nadek et al. (2020) report that there was severe abrasion on Rangsang Island from 1997–2019, which changed the mangrove vegetation. The results of their research revealed that in 1997 the mangrove area was 9,759 ha, then in 2002 it was 9,397 ha, in 2007 it was 8,911 ha, in 2013 it was 8,297 ha, and finally in 2019 it was 7,875 ha. Stimulus Island has decreased every five years for the last 22 years, due to destruction, illegal logging for charcoal raw materials, or natural factors due to waves. Damage to the mangrove ecosystem resulted in beach abrasion on Rangsang Island.

Abrasion not only causes damage to nature but also causes material losses to society. The abrasion that occurs affects the socio-economic conditions of the people of Rangsang Island. Fitri & Geovani (2021) noted that the abrasion that occurred in Rangsang Pesisir District caused a loss of Rp. 8,854,300,000. consisting of shrinkage of land area, death of plants or agricultural crops, loss of buildings (houses and places of worship), and loss of economic resources. If it is not handled, the losses due to abrasion will be even greater.

Abrasion has also removed many productive fields. In Demba Hamlet, abrasion has eroded the land for about two kilometers. As a

result, the residents' settlements, houses, places of worship, community graves, and gardens were lost. Yusri, one of the residents, admitted that he had moved three men to avoid abrasion. His garden and house have been lost due to abrasion. Now he lives on land given by the village head (Suryadi, 2018).

4. CONCLUSION

1. The level of public education in Meranti Islands Regency is dominated by 19,873 people who have graduated from elementary school and 17,085 who have not attended school.
2. There are three economic sectors that dominate in the Meranti Islands Regency, namely Agriculture, Forestry and Fisheries; Mining and excavation; and Processing Industry.
3. The impacts caused by abrasion are changes in mangrove vegetation, loss of land area, death of plants or agricultural crops, loss of buildings (houses and places of worship), and loss of economic resources.

Abrasion in the Meranti Islands Regency must be immediately handled in an integrated manner by involving all stakeholders, be it the community, government, universities, or the private sector. In addition, it is necessary to plant mangroves along the coast and empower the community's economy so that illegal logging of mangroves by the community does not occur.

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