

From Shark Hunter to Seaweed and Sea-Cucumber Cultivator: A Phenomenology Study at Sapeken Islands, Indonesia

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ABSTRACT : Sapeken Islands, Madura, Indonesia belongs to the category of the golden triangle of the Archipelago, because it has the richness of the sea, maritime culture, and ethnic uniqueness. The majority of the population in these islands have livelihoods as fishermen (depending on the sea). This study aims to describe changes in patterns of livelihoods of people in the area over the past few years. The research method used is qualitative with a phenomenological approach. The use of the phenomenological approach aims to describe the process of social and economic development (transformation) that affects the condition of the Sapeken Islands. Data and information were obtained by observing for five years directly looking at and describing what happened in the field, in-depth interviews with the community to explore experiences and observations in the field in accordance with community conditions, documentation, and literature studies. The subject of the study was determined by purposive sampling, namely the researcher determined the sample by certain considerations and was considered to have represented several other samples. The results show that the people on the island have undergone a change towards a better direction, both in terms of knowledge about fishing and utilizing and maximizing the potential of existing seaweed into processed materials that are more valuable. Factors that have a lot of role are law enforcement and the existence of community development programs from a company and mentoring from universities.

KEYWORDS: *Environmentally friendly, fisherman, Sapeken islands, transformation*

I. INTRODUCTION

Sapeken is a sub-district in the Kangean Islands cluster, Sumenep Regency. This region is located at the very end of the Madura Islands, East Java Province, Indonesia. The people in the Sapeken Islands generally speak Sulawesi (Bajau / Bajo / Same, Mandar and a small portion speak Bugis), not in Madura. In its history, sailors from Sulawesi discovered these islands. Likewise, the culture of culture is very different from the culture of Madura, the average tribe in the Sapeken Islands (Sapeken District) Bajau/Bajo, Mandar and Bugis. The Sapeken Islands are located in the north of the island of Bali and Lombok Island.

Sapeken has an area of 201.887245 km² (9.64% of the area of Sumenep Regency), located at an altitude of 1-2 meters above sea level so that it is a lowland. Based on its geographical location, the Sapeken Islands are located at coordinates 115,330-115 South Latitude and 6,280-7,120 East Longitude. North of Sapeken Islands, bordering the Borneo Sea, on the south by the Bali Sea, east of the archipelago borders the Sulawesi Sea. Meanwhile, to the west of the archipelago bordering the Java Sea. Sapeken Islands is one of the districts in the archipelago that has 53 small islands, with 21 inhabited islands (Sapeken Island, Salarangan, Sitabok, Saular, Sadulang Besar, Sadulang Kecil, Bangkau, Saebus, Saur, Pagerungan Besar, Pagerungan Kecil, Sepangkur Besar, Sepangkur Kecil, Sabuntan, Paliat, Sasiil, Saredeng Besar, Saredeng Kecil, Sapinggan, Sepanjang and Sakala) and 32 uninhabited islands. Based on the topography, the overall Sapeken Islands region has a slope of less than 30 percent (including sloping areas). The number of villages in Kecamatan (Kepulauan) Sapeken is 9 villages and 22 hamlets. According to Sumenep data in Figures 2010, the total population in Sapeken Islands is 40,206 people, with a total population of 19,482 men and a population of 20,724 women. Population density in Sapeken is 199 people/km^[1].

Long before 2010 the people of Sapeken Island experienced poverty, even isolated from the reach. Coastal or island communities (fishermen, farmers, or cultivators) tend to experience economic backwardness and various other sectors. They experience poverty culturally and structurally.^{[2][3]} Poverty is experienced internally in the form of mindset / mental / awareness and external in the form of government policies that do not take sides (tend to be top down, make society as an object and not subject) market injustice, greed of capital owners / middlemen, ignorance of intellectuals, and various factors in beyond the control of the community.^{[2][4]} Low productivity, low competitiveness, limited infrastructure, limited access to markets and market information, low understanding of value added and weak access to capital have also become a prolonged problem for farmers so that welfare is still far from expectations.^[5]

In terms of meeting their daily needs they are very dependent on nature, namely the sea. Sea and Bajo people are two things that cannot be separated in Bajo culture. Therefore, there are two main concepts put forward by Tabbu^[6], namely: (1) Sea, is a vast water area and salty water that has various functions. The sea for the Bajo is absolute, because apart from being a place to live, it is also a place to make a living, (2) Bajo people, are a group of sea nomads who live with their families at sea or coast. For decades, the people in this archipelago caught fish and various marine biota to meet the needs of life and economic demands. In fact, most of them catch fish in dangerous ways or devices and threaten the survival of these biota. Many of them use potassium poison, fish bombs, and other techniques that drive extinction. This area is also known as a shark hunter, sea turtle, sea cucumber, and various protected marine products. However, there has been a shift or change in people's lives over the past five years. The pattern of catching or hunting for sporadic marine products has decreased, but such studies have never been conducted. Therefore, this study aims to describe changes in patterns of livelihoods of people in the area over the past few years.

II. METHODS

The research method used in this study uses qualitative methods with a phenomenological approach. Qualitative research according to Raco^[7] is an attempt to collect descriptive data and present it with words instead of numbers. As we know that in applying qualitative research 'model approach' is very important, because at the beginning of the research it will be difficult for a researcher to start his research, without a clear approach model. In this study a phenomenological approach is used which is generally inductive and descriptive. So the Phenomenology Approach according to Pongtiku^[8], is trying to understand the meaning of an event or phenomenon that is mutually influential with humans in certain situations. The aim of phenomenological research is to understand the response to human / community existence, as well as the experiences understood in interacting.

Position Researchers in this study are observers. In addition, researchers must also recognize and understand the context of participant experience, so that interpretation of experience is accurate and can produce new, special and unique nuances and theories. So the researcher can freely and comprehensively in revealing the data in the informant, whatever is seen in the field that becomes the findings and considered interesting and important to be taken and processed into research data.

The use of the phenomenological approach in this study is expected to be able to describe how the process of the development of social and economic life affects the condition of the sapeken island. So that the data and information that will be obtained are more valid based on experience and observations in the field according to the conditions of the community, see firsthand and describe what happened in the field. Sources of data or samples in this study were terminated by purposive sampling, that is, the researcher determines his own desired sample with certain considerations and is considered to have represented several other samples.^[9] Then the sample in this study could be from the community (fishermen), religious leaders, government employees, company employees, capital owners (fisheries entrepreneurs) or could be a condition that is considered representative. Data and information were obtained by observing for five years directly looking at and describing what happened in the field, in-depth interviews with the community to explore experiences and observations in the field in accordance with community conditions, documentation, and literature studies.

III. RESULTS AND DISCUSSION

The majority of the population of Sapeken Islands have the livelihood of capture fishermen. As with the problems of Indonesian fishermen in general, poverty is the main problem in Sapeken. Sapeken Islands actually have a fishery potential that is still open to investment and improve the welfare of its people because it is awarded a very supportive geographical condition in the form of marine culture. The land used is only a small part of the land area of effective marine culture potential (estimated tens of thousands of hectares). Another urgent issue because it affects many things is an increase in the quality of education and awareness through education. As a result of welfare and education problems, the community tends to use non-environmentally friendly methods in capturing marine products.

Fishermen in Sapeken Islands are generally still very traditional both in the manufacture of ships / boats or to catch fish as their daily needs. Even the boat used was very small, while the sea which they found was very wide and the waves were very fierce. However, even though their boats can be said to be smaller than boats that are outside the island, that does not mean they cannot search for fish catches. In fact, they hunt fish which are clearly prohibited by the government because they are sharks and various other fish. In addition, the fishermen in fishing or other marine wealth are very detrimental to nature (the sea) and will even have a negative impact on themselves. They tend to extract the sea / catch sporadically by using fish bombs, potassium, trawlers and nets that can damage coral reefs and encourage the extinction of various marine life.

The results of the studies that have been conducted show that over the past five years there has been a change in the life and mindset of the people in the Sapeken Islands. Based on the results of the analysis, these changes were generally driven by at least four main things (Figure 1), namely law enforcement, the existence of community development programs from a company, mentoring from universities, and improving educational conditions.

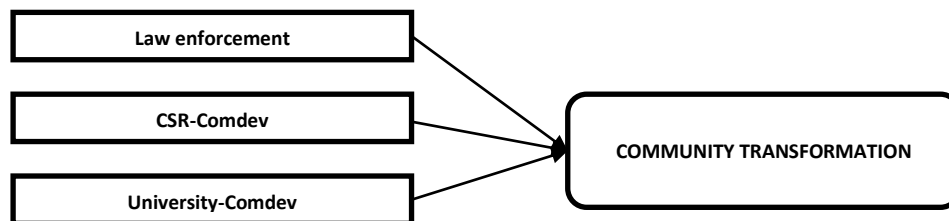


Figure 1. Factors driving changes in the habits of fishing communities

Law enforcement

Fishermen in Sapeken Islands previously caught fish and various marine biota in a way that violated the rules. The types of marine biota captured, time and number of arrests also violate the applicable laws. One of the rules or policies that can emerge, for example, is the Regulation of the Minister of Maritime Affairs No. 2 of 2015 concerning Prohibition of the Use of Trawls and Seine Nets Fishing in the Republic of Indonesia Fisheries Management Area. This is as we know that these methods can destroy existing marine biota. In addition, if the community continues to catch fish in ways that are not good it can threaten the biodiversity as well as the animals in the sea that will become scarce and they will certainly be confused as to whether they should put their lives back. As reported on the pages of the Environmental Rescue Front^[10] it is said that the damage to sea and land ecosystems in Sapeken is getting worse. In fact, there are many fishermen who deal with the law until they are arrested by the police because of their own actions such as the latest cases they carry out customs that are prohibited by national or international governments. They carry out illegal fishing in Australian waters and have to deal with the local police.^[11]

Arrests that are not environmentally friendly include fishing by using fish bombs, potassium, and damaging coral reefs. This certainly certainly will damage the ecosystem and natural resources that exist. Another example is the use of Shrimp Trawling. As we know, this fishing gear can damage the existing marine biota because of the working system of the shrimp trawler by lowering it into the sea in a certain period of time. After that, the trawling was carried out with a diesel engine. At the time of appointment, the marine biota, one of which is the reef that is home to the fish, will be attracted and destroyed.

After the issuance of the Republic of Indonesia Ministry of Maritime Affairs and Fisheries Regulation No. 2 of 2015, the community began to feel that the fish catches were far less than the previous results. Finally, they must think hard in order to meet their daily needs or even improve their economy. According to Aditya and Al-Fatih^[12] Several regulations implicitly contribute to the protection of the presence of sharks, stingrays and other biotasses, namely Law Number 32 of 2014 concerning Marine Affairs, Law Number 5 of 1990 concerning Resource Conservation Biological Nature and Its Ecosystem, Law Number 45 of 2009 concerning Fisheries, Government Regulation Number 60 of 2007 concerning Conservation of Fish Types, and Government Regulation number 7 of 1999 concerning Preservation of Plants and Animals, Decree of the Ministry of Maritime Affairs and Fisheries Number 18 of 2013.

The existence of law enforcement causes people to change their habit patterns in fishing.^[13] The increasing role of government agencies and security forces to the regions related to law enforcement, monitoring illegal activities, raising awareness in key areas in the region, maximizing the effectiveness of monitoring and monitoring illegal activities along the coast, involving various parties can reduce illegal fishing.^[14]

Community Development

In the past ten years, particularly in the last five years, they have finally turned to cultivation. Two prominent forms of cultivation are seaweed and sea cucumber cultivation. Even though there have been additional livelihoods they still cannot improve their welfare. This is due to their knowledge of grass cultivation.

They plant seaweed seeds with the knowledge they know and the result is that the quality of the panin products is far from the expectations of buyers. Finally, the people feel disadvantaged because their harvest can only be sold at the lowest price.

Over time it was discovered that the island was not only rich in the sea, but the island, especially in the village of Pagerungan Besar, contained oil which could be exploited and utilized by the country which was then channeled to the community. After it was discovered that the big pagerungan village on the island of Sapeken around the 1980s, there was an exploitation done by ARCO Bali North Inc. which has now changed its name to Kangean Energy Indonesia (KEI).

Since KEI was present as a public oil mining company slowly its mindset began to change. This is because the presence of KEI in the area does not only exploit oil for personal and corporate interests. However, the company also feels it has an obligation to provide welfare to the community, especially those in ring one. There are many things that KEI has done to the community, namely empowering them to increase their knowledge and quality of life. The empowerment they do through CSR programs that have become corporate programs. This is also in accordance with Sumenep's district vision as well as the KEI vision itself, namely. First Vision (developing a more developed and independent populist economic system, improving the quality of business actors and developing small and medium industries that take into account local needs and be able to compete at the regional and national levels) The focus of appropriate priority programs are: (a) Empowerment of farm laborers, small industrial workers and fishermen workers; (b) Improving the economy of the poor with the provision of social assistance; (c) Development of business and product diversification of SMEs and cooperatives; and (d) Development of Corporate Social Responsibility (CSR) programs from industry. Second Vision (Develop a pattern of natural resource management in order to accelerate efforts to improve the social welfare of the people of Sumenep Regency as a whole), with the focus of the appropriate priority programs are: (a) Industrialization and exploration of natural resources that involve active community roles; (b) Exploration and improvement of the competitiveness of the agricultural and marine sectors. (c) Strengthening plans and efficient spatial planning and ensuring environmental sustainability.

Third Vision (Increased development in the archipelago so that its development will be more balanced with the conditions of the land area), with the focus of the appropriate priority programs are: (a) Improvement of health, education and settlement facilities in the archipelago; (b) Improving infrastructure and institutions for clean water and electricity services in the islands; (c) Improvement of infrastructure and land and sea transportation networks in the islands; and (d) Improving the management of natural resources potential in the islands and ensuring environmental sustainability.

After years of KEI carrying out CSR programs independently, in 2016, 2017 and 2018 KEI collaborated with two universities namely the University of Muhammadiyah Malang and STKIP PGRI Sumenep, East Java Indonesia. The two colleges sent several lecturers to serve the community together with KEI ltd. The service used fund sharing between the Ministry of Research, Technology and Higher Education with the KEI ltd. In addition, it also involved the Sumenep district government as a stakeholder. The implementation of the program uses the company's mainstay, namely CSR.

The Kangean Energy Indonesia CSR implementation system must continue to be implemented to provide maximum benefits in the target community. Therefore, as an effort to maximize and improve the quality of CSR, it is necessary to involve third parties in the form of university involvement. The result of the agreement with 4 parties, namely Sumenep Regency Government, Kangean Energy Indonesia, University of Muhammadiyah Malang, and STKIP PGRI Sumenep is that the activity is focused on fishermen / seaweed farmers. The potential of natural resources in the islands of Sapeken Island is very abundant and has not been fully developed including the potential for marine tourism, one of which is seaweed cultivation. Because it is an archipelago (surrounded by the sea), the potential for seaweed cultivation is tens of thousands of hectares.

Seaweed yields are quite promising. To undergo seaweed cultivation, farmers do not need to spend capital for workers' wages because generally seaweed is done simply by each family. That is, only assisted by the wife or children of seaweed farmers. Because it is very simple and the results are great, it can be said that most of the residents of Sepanjang Island, especially the residents of Tanjung Kiaok Village, cultivate seaweed. This program related to seaweed which is fostered by KEI will be developed to other islands or villages and not limited to cultivation but in an effort to increase yield, increase selling value, diversification, and so on so that the yield of seaweed is not only sold raw but in the form of finished goods (processed various seaweed) which are more valuable. Besides that, the processed goods must have obtained a permit in the form of *P-IRT* issued by the Sumenep District Health Office.^[1]

The interesting thing here is that all the people in the Sapeken archipelago from all the villages that are represented by the PKK group also have an interest in owning and processing their seaweed processing permits as has been done by the Pagerungan Kecil village. They realize that processed seaweed products that they have been producing so far will not be able to be marketed outside the island because they do not have permits. Seeing the desire and high public interest to make their registered number of product (*P-IRT*, in Indonesian)

processed products, KEI then invited the Health Department to the home industry licensing department to provide "Counseling for Empowerment of Home Industry as well as P-IRT Management".^[15]

Of course this is a progress and paradigm change of society that is very advanced from before. As is known that people on the island do not know and do not want to know that they can be pioneers in providing icons to Sumenep Regency. So far there has been no typical snacks that are characteristic of Sumenep district itself.

Currently, the sea cucumber (Holothuroidea) is also starting to bloom. Because the catch of sea cucumber in nature has decreased, it is necessary to cultivate sand sea cucumber naturally by empowering coastal fishing communities. To expand the scope of activities, the team provided assistance to partners, namely integrating seaweed cultivation with duck cultivation (making seaweed waste-based feed and fishery products and providing egg-incubators). The team also provided assistance, so that seaweed cultivation with sea cucumber cultivation. Partners in Pagerungan Kecil Island have tried to cultivate seaweed integrated with sea cucumber cultivation, so that with this technique, the community is expected to have multiple income gains and potential. This activity aims to have an awareness that in order to maintain its existence, institutional/community groups need innovative development so that they can compete in the future. The use of economic institutions from their own communities, then when the fish famine season is expected to provide alternative income for the community so that these activities become one of the fishermen's survival strategies.

IV. CONCLUSION

The Sapeken Archipelago which is a Bajo ethnic group several decades ago (up to ten years ago) tends to catch fish and various other marine biota with dangerous tools and threaten the survival of these biota. Many of them use potassium poison, fish bombs, and other techniques that drive extinction. This area is also known as a shark hunter, sea turtle, sea cucumber, and various protected marine products. However, there has been a shift or change in people's lives over the past five years. The people on the island have undergone a change towards a better direction, both in terms of knowledge about fishing and utilizing the dam to maximize the potential of existing seaweed into processed materials that are more valuable in value and cultivation of sea cucumbers. Factors that have a lot of role are law enforcement and the existence of community development programs from a company and mentoring from universities. This research is still limited, only on the paradigm of service activities that have been carried out for 3 years in the region. Therefore, a more in-depth and comprehensive study needs to be done.

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REFERENCES

- [1] Nurwidodo, N., Rahardjanto, A., Husamah, H., & Mas'odi, M. Pendampingan pembuatan aneka olahan rumput laut sebagai upaya penguatan ekonomi masyarakat Kepulauan Sapeken Sumenep. In *SENASPRO 2* (pp. 700–714), 2017, Malang: DPPM UMM dan UMM Press.
- [2] Agussalim, A. Pemberdayaan, upaya meretas kemiskinan masyarakat nelayan. (Ambon: BPPP Ambon, 2014).
- [3] Cristianawati, C. Tradisi masyarakat nelayan Rawa Pening Kelurahan Bejalen Kecamatan Ambarawa Kabupaten Semarang. *Sabda*, 12(2), 2017, 155–160.
- [4] Hamzah, A. Pemberdayaan ekonomi nelayan oleh PT. Karya Masyarakat Mandiri Dompot Dhuafa di Desa Tanjung Pasir Kabupaten Tangerang. Report. UIN Syarif Hidayatullah, 2015.
- [5] Rosni, R. Analisis tingkat kesejahteraan masyarakat nelayan di Desa Dhari Kecamatan Talawi Kabupaten Butabara. *Jurnal Geografi*, 9(1), 2015, 53–66.
- [6] Tabbu, M. A. S. Sistem Pengetahuan Lokal Masyarakat Nelayan Suku Bajo Kabupaten Bone Terhadap Konservasi Ekosistem Pesisir Dalam Perspektif Etnografi. *Poster SIMPNAS*, 2017, 538-666.
- [7] Raco, R. Metode penelitian kualitatif. (PT Gramedia Widiasarana Indonesia, Jakarta, 2010).
- [8] Pongtiku, A. Metodologi Penelitian Kualitatif Saja. (Nulisbuku.com, 2017).
- [9] Martono, N., Utami, S. P. T., Yuwono, E., & Rahardjo, M. Metode Penelitian Kuantitatif: Analisis Isi dan Analisis Data Sekunder. (RajaGrafindo Persada, 2010).
- [10] DaengSandre, H. A. Front Penyelamat Lingkungan: Juli 2010. Retrieved September 2, 2018, from <http://fplsapeken.blogspot.com/2010/07/>
- [11] Aditya, Z. F. & Al-Fatih, S. Perlindungan Hukum Terhadap Ikan Hiu dan Ikan Pari untuk Menjaga Keseimbangan Ekosistem Laut Indonesia. *Legality*, 24(2), 2017, 224-235.

- [12] Deni Puja Pranata. Dua Kapal Nelayan Tertangkap di Perairan Australia, – Advokasi.co. Retrieved September 2, 2018, from <https://advokasi.co/dua-kapal-nelayan-tertangkap-di-perairan-australia/>.
- [13] Rahayu, R. Dampak Zonasi dan Pariwisata Atraksi Hiu Paus Terhadap Komunitas Kampung Kwatisore. Thesis. Sekolah Pascasarjana.Institut Pertanian Bogor, 2016.
- [14] Nontji, A. Dugong bukan puteri duyung. 2015. (OSEANOGRAFI LIPI, 2016).
- [15] Nurwidodo, N., Rahardjanto, A., Husamah, H., Mas'odi, M., & Mufrihah, A. Potentions, obstacels, and strategy in collaboration based developing seaweed cultivation at Sapeken Islands, Sumenep Regency. PROSIDING SEMINAR NASIONAL III TAHUN 2017, 2017, 350–360.