

## INTEGRATED COMMUNITY EMPOWERMENT: LEARNING FROM THE COMPANY'S EXPERIENCE IN EMPOWERING COMMUNITIES IN COASTAL AREAS

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### Abstract

The vulnerability experienced by the community around the company's offshore operations has prompted PT Pertamina Hulu Energi Offshore North West Java (PHE ONWJ) to develop an empowerment program that focuses on improving community welfare and environmental sustainability. One of them is by tackling the problem of abrasion by developing an integrated community empowerment program or commonly known as the Environmentally Based and Creative Economy-Based Coastal Area Management Program (PASIR BERBISIK) in Pasir Putih Hamlet. Through the PASIR BERBISIK Program, the community is invited, involved, and trained to be able to solve and handle all existing socio-economic and environmental problems by utilizing all the potential and opportunities around them independently. Through the PASIR BERBISIK program, PHE ONWJ integrates coastal area management through various sub-programs, such as Mangrove Ecotourism Area Management, Empowerment of Fishermen's Wives SMEs, Coastal Waste Management, and Environmentally Friendly Crab Catching Education. This journal looks at the impact of an integrated community empowerment program that can be felt both by the community and the environment.

**Keywords:** Integrated Community Empowerment, TJSL, Coastal Areas, Coastal Communities.

### INTRODUCTION

The form of the company's contribution as one part of the entity of a country in creating community welfare is to carry out social responsibility and implement community empowerment programs. This program is designed based on the results of social mapping. Social mapping is important to ensure that the empowerment program developed by the company is to the needs, problems, and potentials faced by the community and the company. In implementing their community empowerment programs, companies usually embrace vulnerable groups. One of the groups that can be empowered is the coastal community group. The importance of empowering coastal communities is due to the neglect of the interests of coastal communities in the development discourse. The lack of attention to the development of coastal communities is due to the uniqueness of different coastal communities so making plans and implementing empowerment on the coast has difficulty.

One company that develops community empowerment programs for coastal community groups is PT Pertamina Hulu Energi Offshore North West Java (PHE ONWJ). PHE ONWJ

developed an integrated community empowerment program in the coastal area of Sukajaya Village, West Java Province, which was named the Environmentally Based and Creative Economy-Based Coastal Area Program (PASIR BERBISIK). By utilizing the potential that exists in coastal areas, PHE ONWJ seeks to integrate empowerment programs that pay attention to environmental balance and can improve the community's economy based on the potential that exists in coastal areas.

According to Noor (2021), community empowerment is an effort to build power by encouraging, motivating, and raising awareness of its potential and trying to develop it. To be able to build community power, empowerment programs are needed that are developed based on the potential, needs, and problems faced by the community. Endah (2020) said that to be able to achieve community welfare there needs to be support for natural communities to cultivate their local potential, both human and natural resources. Endah (2020) added that the natural potential of an area depends on the geographical conditions, climate, and landscapes in the area.

The PASIR BERBISIK program was designed by PHE ONWJ to respond to the vulnerability experienced by the community around the company's area, namely Dusun Pasir Putih, Sukajaya Village, Cilamaya Kulon District, Karawang Regency. This vulnerability is due to the high potential for abrasion in coastal areas. The speed of the abrasion process in Sukajaya village is 10.00 meters/year (Pasaribu, 2019). For this reason, PHE ONWJ together with the local community has developed an integrated community empowerment program or commonly called the PASIR BERBISIK Program by utilizing the potential and opportunities possessed by the community in responding to their vulnerabilities.

This paper seeks to explore PHE ONWJ's experience in developing an integrated community empowerment program through the PASIR BERBISIK Program. The results of this study are expected to be an example of a company's good practice in implementing its corporate social responsibility commitments through an integrated empowerment program in coastal areas.

## **METHODOLOGY**

In research on the development of a sustainable integrated community empowerment program by PHE ONWJ, the research team used a qualitative approach. The use of a qualitative approach provides an opportunity for the research team to explore in depth the social phenomena that are the focus of research. The research process itself is carried out systematically to find out the research facts carefully and critically (Mulyadi, 2011).

To collect the data used in this study, the research team used several data collection techniques such as in-depth interviews, focus group discussions, secondary data, and observations carried out for four months, starting from March to June 2022. Informants in this study were administrators, beneficiaries and assistants of the Environmental and Creative Economy-based Coastal Area Management Program (PASIR BERBISIK). The activities in the Whispering Sands Program are Management of Fishermen's Wives, Management of Coastal Tourism, Waste Management, and Education Programs for Catching Crab.

In-depth interviews were conducted by the research team to collect data related to the planning and implementation process of an integrated community empowerment program and the impact of an integrated sustainable empowerment program on program sustainability. Focus

group discussions were conducted to deepen and classify the data that had been obtained from in-depth interviews. The results of the focus group discussions were used as the basis for the research team to deepen issues that had not been explored previously.

The secondary data used in this research comes from documents owned by the administrators of the groups who are members of the PASIR BERBISIK Program. The following secondary data used in this study:

1. PRPM Mangrove Ecotourism Management Group Profile Document 2019
2. 2021-2022 Program Progress Report Document

From this secondary data, the research team was able to check and add information related to the planning and implementation stages as well as the impact of the PASIR BERBISIK Program on the community, specifically the beneficiaries and the environment.

Observations in this study were carried out by directly visiting locations that became the center of activities of the assisted groups in the PASIR BERBISIK Program such as PRPM Pasir Putih Ecotourism, Fishermen's Wives UKM Group, and Coastal Waste Management Group.

The data that has been collected is then re-read to be coded based on the data categories that have been determined by the research team. The coded data is then analyzed and visualized in the form of descriptive narratives and flowcharts. The use of flowcharts is carried out to emphasize the links between programs that make it a sustainable integrated empowerment program.

## **RESULTS AND DISCUSSION**

### **PHE ONWJ Community Empowerment Concept**

PT Pertamina Hulu Energi Offshore North West Java (PHE ONWJ) conducts oil and gas exploration and production in the ONWJ Working Area (WK) which is located off the coast of West Java which stretches from the Thousand Islands (DKI Jakarta) to the northern part of Cirebon (West Java) with a total area of 8300 km<sup>2</sup>. PHE ONWJ has an average daily production capacity of 27.14 BOPD (barrel oil per day) and gas of 90.31 MMSCFD (Million Metric Standard Cubic Feet per Day).

In carrying out oil and gas operations, PHE ONWJ activities intersect with people's lives in the ring area of one company, which includes coastal areas. PHE ONWJ's intersection with coastal areas is due to the company's operating areas offshore which are directly adjacent to coastal villages.

To be able to contribute to community empowerment in the area around the company, PHE ONWJ developed the Environmental & Creative Economy-Based Coastal Area Management Program (PASIR BERBISIK) in the Dusun Pasir Putih area, Sukajaya Village, Cilamaya Kulon District, Karawang Regency. The choice to make Dusun Pasir Putih a location for the company's community empowerment was due to two factors. The first factor is related to the distance between the company's assets and Dusun Pasir Putih. And the second factor is related to the impact of the company's operations in the waters of Dusun Pasir Putih, such as the limited fishing area for fishermen and the potential for gas oil leaks.

In carrying out its Community Empowerment program, PHE ONWJ has 7 principles that serve as guidelines in determining and implementing the program, namely:

1. Representation

In every context of community development, the company strives to ensure that the community development programs that are carried out are not biased or impartial to one group, but can represent the entire community.

2. Independence

The company ensures that program beneficiaries can apply and develop the knowledge gained during the program. So that when the program is completed, the community can independently run or continue the program without depending on the company.

3. Empowerment

Community development is designed in such a way that a condition called self-reliance can be realized. The community is involved in every stage of the program, from planning, implementation, monitoring, to evaluation.

4. Participatory

The company ensures that community development is carried out jointly with stakeholders through a mechanism for involving all relevant components.

5. Harmony

The community development programs carried out by PHE ONWJ are aligned with existing programs in the community, both formally and informally. This is done to create a harmonious condition between the company, the program beneficiaries, and the wider community.

6. Continuity

The company as much as possible designs community development programs for the long term, not just temporary programs. In addition, existing programs are also designed to be interrelated and integrated.

7. Supporting Government Programs

Support government programs by developing empowerment programs that do not overlap with government programs. Instead, develop programs that go hand in hand with government programs, so that they can achieve common goals between companies, the government, and the community. The community development program must, from time to time, ensure that it is in line with, adapted to, and complements the government's development program in the area of operations of the company.

### **Program Target**

The PASIR BERBISIK program targets vulnerable groups who have direct or indirect contact with company operations. The vulnerable groups in question are fishing communities and coastal communities. Traditional fishermen as the dominant community group in coastal areas have a fairly high level of vulnerability to changes in weather and climate. They are vulnerable to poverty due to weather changes that occur every season.

The terms harvest season and famine season are not only known among farmers but also among fishermen. When the catch is abundant, fishermen become prosperous, but when there is no catch, even if the cost of fishing is greater than the results obtained, then fishermen again become vulnerable. In Sukajaya Village itself, there are vulnerabilities experienced by coastal communities such as decreased income and seasonal unemployment.

The decrease in income occurred due to unfriendly weather, which resulted in fishermen being discouraged from going to sea. During the COVID-19 pandemic, the decline in fishermen's income occurred due to a decrease in demand for marine catches. The price of fish in Sukajaya Village during the COVID-19 pandemic has decreased by up to 40% for all types of fish from the usual price.

Communities in coastal areas themselves are also vulnerable to seasonal unemployment status. The changing fishing seasons currently have an impact on the cycle of economic fluctuations among coastal communities. As a result, there is an increase in the number of seasonal unemployed. For people living in coastal areas, seasonal unemployment occurs when the weather at sea is not friendly to fishermen.

### **Environmental & Creative Economy-Based Coastal Area Management (SAND WASHING)**

The Environmental & Creative Economy-Based Coastal Village Management Program (PASIR BERBISIK) is one of the flagship programs of PHE ONWJ which was carried out in Pasir Putih Hamlet, Sukajaya Village, Cilamaya Wetan District, Karawang Regency. This program is a tangible manifestation of the company's concern in responding to social and environmental problems through corporate social responsibility which is carried out in coastal areas around the company's operational areas.

The PASIR BERBISIK program is a sustainable program, which at every stage always involves community participation from the planning, and implementation, to program monitoring and evaluation stages. This program integrates coastal area management through eco-tourism, education on mangroves & the environment, management of coastal waste, and diversification of processed fishery products.

This program was developed based on the problems, and potentials that exist in the area. First, is the threat of abrasion on the North Coast of Java (Pantura Java). Abrasion is one of the serious problems faced by coastal villages on the northern coast of Java, including the coastal area of the Karawang Regency. The distance between settlements and seawater, which was once far away, is now getting closer. Based on the results of the overlay carried out on the coastline from 1989 to 2018, a shift in the direction of the coastline (abrasion) in Sukajaya village was 290.13 meters with a speed of change of 10.00 m per year while the area of abrasion that occurred was 56.963 ha (Pasaribu, 2019). As a result of the abrasion, as many as 930 families are threatened with losing their homes.

Second, Pasir Putih Village is one of the largest crab-producing areas in West Java. The fishery sector has a strategic role in developing the welfare of coastal communities because this sector can absorb a lot of labor ranging from fishing, cultivation, processing, distribution, and trade. In Sukajaya Village, Karawang Regency, 80% of men of productive age are small crab fishermen, while the other 20% work as baggage fishermen, fishing rods, and other sectors outside the sea. The crab itself is the cultivation of natural resources in the sea which have different characteristics from fish. If the fish farming in the sea is influenced by the west wind and east wind, the crab cultivation is not influenced by the west wind and sea breeze. As a result, crabs can be harvested every day by crab fishermen.

In one month, the catch of crabs by fishermen in Sukajaya Village is 96 tons, and in one day it can reach 4.8 tons. The abundance of crab catches makes Sukajaya Village the largest

crab-producing village in the Karawang Regency area. The crabs produced by fishermen are then taken for meat in mini plans scattered in several locations in Sukajaya Village.

Third, is the abundance of inorganic waste in coastal areas. Coastal waste has become a global problem and is an issue that is being discussed a lot. This is because coastal waste has an impact on the environment, economy, and human health. At least 60-80% of the waste generated in the world is plastic waste, and 10% of the waste is thrown into the high seas and will take a very long time to degrade. (Derraik, 2002).

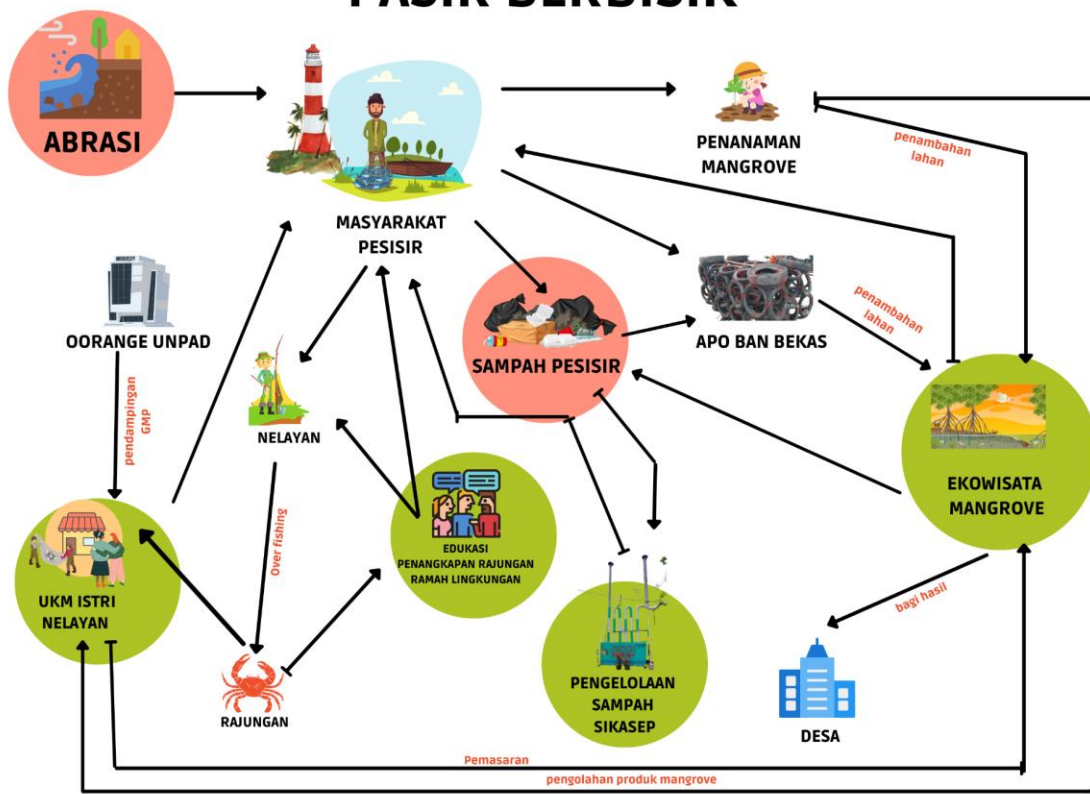
Coastal waste is dominated by plastic waste in its distribution. Plastic is the most widely used material in various industries and has become one of the most widely used materials in everyday life because it is cheap and has high efficiency. However, with these advantages, plastic is also a difficult problem to overcome. The high use of plastic has an impact on the quantity of coastal waste. Plastic can be spread over long distances, before finally becoming sediment (sediment) that will not decompose for hundreds of years. (Kubota, 1993). Plastic waste that is scattered into coastal waste is also a problem for the survival of marine life and ecosystems. Coastal waste in Sukajaya Village comes from households and fishermen. Most fishermen still use single-use plastic for packing fish at sea. When they arrived on land, the plastics were simply thrown into the mouth of the river.

Based on the above background, PHE ONWJ together with the community formulated the WASHING PASS program which integrates the handling of abrasion problems, coastal waste management, and also diversification of processed fishery products in the form of crabs in a sustainable manner. The activities developed in the PASIR BERBISIK Program are Mangrove Ecotourism Development, Empowerment of Fishermen's Wives Based on GMP, and Coastal Waste Management.

### **Implementation of the Integrated Coastal Community Empowerment Program**

In implementing the PASIR BERBISIK Program, PHE ONWJ integrates four programs into one big umbrella program. This integration is carried out to optimize potential, suppress problems, and respond to community needs more inclusively and holistically. These programs include the Mangrove Ecotourism Management Program, the Fishermen's Wives SMEs Empowerment Program, the Coastal Waste Management Program, and the Environmentally Friendly Crab Catching Education Program. From the observations, the research team found that the integration of empowerment programs in the PASIR BERBISIK Program was carried out by utilizing the proximity of the activity location to the activity as well as the residence of the beneficiary.

# PASIR BERBISIK



Source: Processed by researchers, 2022

## a. Mangrove Ecotourism Management Program

Since 2018, PHE ONWJ has started to foster fishing groups in Pasir Putih to improve environmental quality to prevent abrasion. The group consists of about 15 former fishermen. Until now, the land that has been planted with mangroves is 20 hectares. Until now, mangrove plants continue to grow, and this area has become an ecotourism area that is quite crowded with tourists. The concept of this program is getting more and more developed. From what initially only focused on planting mangroves for abrasion prevention, now it has developed into an ecotourism area that has a focus on developing environmental education.

The spirit built by the current management group is to provide understanding and understanding of the dangers of abrasion and environmental education to the surrounding community and visitors. Not only that, but the group also continues to innovate so that the program continues to grow. One innovation that is quite effective and quite successful is by making Abrasion Retainers through the Utilization of Used Tires along 500 meters on the shoreline.

The idea was born based on the concerns of community groups over the high rate of abrasion that occurred on the coast of Kab. Karawang, one of which is in the White Sand. The group then made an innovation to stop/slow the rate of abrasion by using used tires. Used tires are purchased by the group from workshops around the Karawang Regency area for approximately IDR 4000 to IDR 5000 per item. Used tires are arranged in such a way, that to be used as a barrier to ocean waves.

Besides being able to reduce the rate of abrasion, this program has also had other positive impacts on the environment. This breakwater made from used tires can also be a barrier to garbage from the sea, become a home for fish, and create new sedimentation on the coast along 100 meters.

b. Fishermen's Wives SME Empowerment Program

The White Sands region is the largest producer of crabs in the Karawang Regency. In 1 month, the catch of crab fishermen can reach 96 tons. The abundance of crab catches has not been processed directly by the community to be used as special food or souvenirs typical of the Karawang Regency. The crab catches are all sold to the mini plan to separate the meat from the shell, and then sold to a cannery in Jakarta.

Based on this, PHE ONWJ collaborated with the Padjadjaran University Education Institute and initiated a program for Empowering Fishermen's Wives Based on Good Manufacturing Practices (GMP). Through this program, fishermen's wives are given skills training to process fishery products, business management training, production training, marketing, mentoring, to making production rooms.

Until now, there have been 2 groups of SMEs from Pasir Putih that produce processed crab products in the form of crab crackers and crab pempek. The birth of this SME has been able to generate IDR 75,000,000 in 1 year and can create jobs for more than 20 fishermen's wives who were previously unemployed.

c. Program Pengelolaan Sampah Pesisir

Lack of public awareness in disposing of the waste is a major problem in almost all coastal areas. The abundance of household waste and plastic waste from fishing boats worsens the environmental quality on the coast. Based on this, PHE ONWJ together with the local community initiated the establishment of the Coastal Waste Management program.

The program begins with a comparative study in one of the coastal areas in Indramayu Regency which has almost the same problems as the Pasir Putih area. From the results of the discussion after conducting a comparative study with the community, 2 groups of waste management were formed. Furthermore, the group collaborates with Ecotourism managers to invite and socialize waste care to visitors. The group also created an incinerator that can turn plastic waste into a liquid pest and insect repellent.

Until now, there are two incinerator machines in Dusun Pasir Putih which are used to process inorganic waste into liquid smoke. The liquid smoke produced from the processing of the waste can be used as an insect repellent and plant fertilizer. However, for now, the liquid smoke produced is still in the laboratory testing stage so it cannot be marketed. The incinerator machine can process 15 kg of inorganic waste per day.

d. Environmentally Friendly Crab Catching Education Program.

Based on statistical data compiled by the Ministry of Maritime Affairs and Fisheries, the contribution of crab commodities in the State Fisheries Management Area of the Republic of Indonesia (WPP-NRI) in the Java Sea is 46.6 percent of the national need. This shows that the Java Sea WPP-NPRI is the largest producer of crabs in Indonesia.



Crab is also an important commodity with the third largest export value of fishery products in Indonesia, but the higher demand for crabs has led to a decline in crab stocks in nature. For this reason, local community awareness is needed to carry out sustainable management of crab fisheries so that the resources remain sustainable.

One of the efforts made by PHE ONWJ to achieve the sustainability of the crab ecosystem and reduce the impact of overfishing of the crab is through massive education to the fishing community in Dusun Pasir Putih. This education is carried out through open socialization media to fishermen by inviting resource persons who are competent in their fields, through print media in the form of posters and/or banners about the call for catching crabs by the rules set by the government.

Through these educational activities, it is hoped that fishermen's awareness of the conservation of the crab ecosystem can increase. Conditions are very important for the survival of the fishermen in the Dusun Pasir Putih. Therefore, the process of sustainable crab catching needs to be managed as wisely as possible by the fishermen.

## **CONCLUSION**

Some people who live in coastal areas can be classified as vulnerable groups. This is because the coastal area is prone to abrasion. Abrasion that occurs can be caused by several things, including natural conditions in the form of rising sea currents and waves; and accelerating the development of coastal areas that do not pay attention to the sustainability of the surrounding ecosystem. Handling the problem of abrasion in coastal areas is the task of all elements, both the government, companies and the community.

PHE ONWJ is one of the national upstream oil and gas companies operating off the coast of northern West Java which has a commitment and concern for the welfare of the community around its operational area. One of the efforts made by the company to overcome the problem of abrasion on the coast is through the development of the Environmental-Based Management of Coastal Areas and Creative Economy (PASIR BERBISIK) programs in the Dusun Pasir Putih. Communities are invited, involved, and trained to be able to resolve and handle any social or economic, or environmental problems they face by utilizing all the potential and resources in the environment independently.

In the PASIR BERBISIK program, PHE ONWJ integrates coastal area management through various sub-programs, such as Management of Mangrove Ecotourism Areas, Empowerment of Fishermen's Wives SMEs, Coastal Waste Management, and Environmentally Friendly Crab Catching Education. The impacts resulting from the program include 1) improving coastal ecosystems through mangrove planting, 2) increasing the income of fishing communities, 3) opening up jobs for fishermen's wives, 4) adding 100 meters of coastal sedimentation due to the presence of breakwaters from used tires, 5) increasing public awareness about waste management & prevention of abrasion, and 6) increasing awareness of fishermen regarding environmentally friendly crab catching.

## REFERENCES

- Agus, F., Soeprijadi, L., & Pasaribu, R. P. 2020. Kajian Hidro-Oseanografi di Perairan Kabupaten Karawang. PELAGICUS
- Derraik, J. B. 2002. The Pollution of The Marine Environment by Plastic. Debris: A Review. Direktorat Pendayagunaan Pesisir Dan Pulau-Pulau Kecil. Direktorat Jenderal Pengelolaan Ruang Laut. <https://kkp.go.id/djprl/p4k/page/4270-jumlah-pulau>
- Endah, Kiki. 2020. Pemberdayaan Masyarakat : Menggali Potensi Lokal Desa. Universitas Galuh. Ciamis. Jurnal MODERAT, Vol 6, No 1
- Gunawan Widjaja & Yeremia Ardi Pratama. 2008 Risiko Hukum & Bisnis Perusahaan Tanpa CSR, Jakarta. Forum Sahabat. cet. 1
- Iriadenta, Eka. 2015. Nipah Indikator Degradasi Kawasan Pesisir. UNLAM PRESS.
- Hyakumachi, M., & M. Kubota. 2003. Fungi as Plant Growth Promoter and Disease Suppressor. In: Fungal Biotechnology in Agricultural, Food and Environmental Application. Arora D. K. (ed) Marcel Dekker.
- Kusnadi. 2002. Konflik Sosial Nelayan Kemiskinan dan Perebutan Sumber Daya Perikanan, Yogyakarta. LKiS.
- Laporan Akuntabilitas Kinerja Instansi Pemerintah (LAKIP) Tahun 2017, Dinas Perikanan Kabupaten Karawang
- Mulyadi, Mohammad. 2011. Penelitian Kuantitatif dan Kualitatif serta Pemikiran Dasar Menggabungkannya. Jurnal Studi Komunikasi dan Media
- Munawar Noor. 2011 Pemberdayaan Masyarakat
- Nikijuluw, Victor P.H . 2001. Populasi dan Sosial Ekonomi Masyarakat Pesisir serta Strategi Pemberdayaan Mereka dalam Konteks Pengelolaan Sumberdaya Pesisir Secara Terpadu. Makalah.
- Noor, Syamsudin. 2014. Penerapan Analisis SWOT Dalam Menentukan Strategi Pemasaran Daihatsu Luxio Di Malang (Studi Kasus Pada PT. Astra Internasional Tbk. – Daihatsu Malang). Jurnal INTEKNA.
- Pasaribu, Roberto. 2019. Kajian Abrasi dan Sedimentasi dengan Teknologi Remote Sensing di Pantai Karawang Study of Abrasion and Sedimentation by Remote Sensing Technology at Karawang Beach. Jurnal Airaha, Vol. VIII No. 2
- “PASIR BERBISIK” Upaya Mitigasi dan Adaptasi Perubahan Iklim di Pesisir Kabupaten Karawang. [REG2JAWA-Program-Pasir-Berbisik-PHE-ONWJ.pdf \(bestcsr.id\)](#)
- PHE ONWJ. 2021. Bangkit Bersama Rissing Up : Laporan Keberlanjutan. Jakarta.
- Politeknik Kp Karawang Badan Riset Dan Sdm Kelautan Dan Perikanan. 2019. Menko Maritim Luncurkan Data Rujukan Wilayah Kelautan Indonesia. <https://kkp.go.id/brsdm/poltekkarawang/artikel/14863-menko-maritim-luncurkan-data-rujukan-wilayah-kelautan-indonesia>
- Rizki, Aprilian Wijaya. (2012). Materi kuliah Materi kuliah Penelitian Sosial Ekonomi Masyarakat Pesisir “Sebuah Pengantar Diskusi Persiapan Ekspedisi Zooxanthellae XII Kabupaten Sambas, Kalimantan Barat, Tahun 2012” oleh FDC.XXIII.11 Balai Besar Penelitian Sosial Ekonomi Kelautan dan Perikanan (BBPSEKP), Badan Penelitian dan Pengembangan Kelautan dan Perikanan (Balitbang-KP). Accessed from [https://fdcipb.wordpress.com/2012/06/02/masyarakat\\_pesisir/](https://fdcipb.wordpress.com/2012/06/02/masyarakat_pesisir/)

- Salmawati. 2016. Modernisasi Perikanan dan Perubahan Sosial Komunitas Nelayan Suku Bajo di Kecamatan Pasimarannu Kabupaten Kepulauan Selayar. Universitas Muhammadiyah Makassar
- Widianto, Ery. 2020. Penerapan Teknologi Crusher Dalam Pengolahan Limbah Cangkang Rajungan Di Tpi Pasir Putih, Desa Sukajaya, Cilamaya Kulon - Karawang *Dinamika Journal*, Vol. 2 No. 2