JOURNAL OF MARITIME RESEARCH

Vol XXI. No. III (2024) pp 143–149

ISSN: 1697-4840, www.jmr.unican.es

Analysis of Facilities and Infrastructure, Supporting Facilities in the Air Bangis West Pasaman Fisheries Area

Dr. Deltri Apriyeni[1,*], Dr. Lisa Nesti[2], Dr. Heryanto Heryanto[3]

ARTICLE INFO

Article history:
Received 11 Mar 2024;
in revised from 17 Apr 2024;
accepted 05 Jun 2024.

Keywords:
Regional economy, center of economic growth, dried fish, infrastructure, regional supporting facilities.

ABSTRACT

Productive economic areas are centers of growth that become regional economic strengths. The superior commodities found in the region are the locomotive that drives other economic sectors. The role of facilities and infrastructure and supporting facilities is a crucial issue for *effi*cient and highly competitive regional development. This research analyzes the facilities and infrastructure, supporting facilities in the Air Bangis Production Center Area, Pasaman Regency. The research design is analytical and descriptive. The data used is primary data and secondary data. Data collection techniques through; interviews, observations, and documentation studies. Data analysis was carried out qualitatively. The research results showed that there were limited facilities and infrastructure available in production center areas. Existing facilities in the area need maintenance and repair of damaged facilities immediately to ensure that activities in the fish market continue to run and save (*efficiency*) in activities at the port. Fish processing carried out by the community does not have good technology and is not supported by adequate facilities. Meanwhile, processed dried fish products are very popular with consumers and prices tend to be stable.

1. Introduction.

Regional economic progress is closely related to the comparative advantages possessed by the region. Factors that also influence are the specific natural conditions in the area itself. Di*ff*erent natural conditions provide di*ff*erent commodities which can be an advantage possessed by certain regions and not found in other regions. Superior commodities are developed to improve the community's economy. The various commodities produced complement the needs of society as a whole. Some examples of coastal areas with marine products, such as fish, shrimp, squid, seaweed, crabs, algae, etc. Inland fisheries areas such as; fish from lakes, ponds, ponds and rivers. Agricultural area with agricultural products such as; rice, vegetables, horticulture, secondary crops, fruit, etc. Plantation areas, with results in the form of; palm oil, rubber, teak wood, coconut, etc.

Commodities found in this area are an important part of the region's assets to prosper the economy of the people within the region and outside the region. Superior commodities give the region a comparative and competitive advantage. This will pro- vide various benefits for economic activities in the area. Apriyeni & Wati, (2022) explain that a solid area will provide agglom- eration benefits for business people. Meanwhile, Alfiyah & Syafriyani, (2020) explained that; The formation of a regional economy improves people's welfare. Based on this explana- tion, areas that have the potential to continue to develop are; West Pasaman Regency. This area has several production cen- ters based on superior commodities including; capture fisheries and freshwater aquaculture, oil palm plantations, rubber, or- anges, etc. Existing commodities have become a locomotive for the regional economy as a whole.

The development of an area cannot be separated from the

[1]Master of Management, Sekolah Tinggi Ilmu Ekonomi KBP. E-mail Address: deltri.apri@gmail.com.
[2]Agro Industry Logistics Management, ATI Padang Polytechnic. E-mail Address: Lisanesti16@gmail.com.
[3]Master of Management, Sekolah Tinggi Ilmu Ekonomi KBP. E-mail Address: heryanto@akbpstie.ac.id.
[*]Corresponding author: Deltri Apriyeni. E-mail Address: deltri.apri@gmail.com.

completeness of the facilities and infrastructure needed to carry out daily activities. As stated by (Sam'un, 2020) ; (Nugraha, Komala Dewi, and Sunaryadi, 2011) ; (Hardjanto, 2020) ; (Jamilah and Mawardati, 2019) ; (Teguh et al., 2018) and (Budiani et al., 2020) that adequate facilities and infrastructure are needed in the area. Furthermore, Maulana & Albahriesy, (2017) explained that minimal facilities and infrastructure can limit the use of existing resources. Then Edrus, (2015) ; (Pantouw, Ngangi, and Lolowang, 2017) explained that the development of infrastructure and facilities is the main factor in the area, then Jahid (2011) explained the convenience obtained through existing facilities and infrastructure. This is very important to support the success of the goal of establishing a region that will lead to economic activity actors in the region and outside the region.

As a Minapolitan area in West Sumatra, Minapolitan Air Bangis is one of the fish production centers that contributes to the supply of fish needs. Both for the needs of West Sumatra and the needs of neighboring neighboring provinces, it is also exported outside the island and can even reach Japan and Korea. According to (Morra and Ghalidza, 2020), biological marine resources that are cultivated by following the *blue economy concept* are an e*ffi*cient breakthrough in the region. The uniqueness of this Minapolitan area is; Quality fish that is in high demand for export abroad, in the form of tuna caught from local fishermen. Apart from being a landing place for fishing boats, the Air Bangis coastal port also functions as a port for transporting goods and services within the country and abroad. According to Aboul-Dahab, (2023), ports play an important role in international trade and have an impact on commodities by reducing the costs of transporting commodities and people. For this reason, it is necessary to build the concept of cooperative cooperation, technological innovation, environmental protection, energy conservation, and the use of information technology.

Therefore, management in the area requires very important support so that fish production and fish supplies to other areas can run smoothly. And it can stimulate the regional economy which leads to the welfare of the entire community. According to Duc et al., (2023), the development of the marine economic sector will provide benefits to society. Industrial development in the maritime sector needs to apply modern technology to improve productivity, management, infrastructure, and services.

Apart from producing fresh fish, the Minapolitan area also produces processed fish in the form of salted dried fish. This salted fish market, especially in West Sumatra province itself and neighboring provinces. Riau Province, Jambi, is the recipient of the community's processed fish supply. Communities as salted fish processors depend for their livelihood on processed fish products. Drying techniques are still very traditional, relying on sunlight as a drying tool. When the weather is humid or rainy season, the drying process will be slow. The resulting production target was not achieved. It can even stop due to drying sources that have no other alternative. Apart from that, the process of making salted fish only relies on the home yard without any technology or supporting facilities to increase production. Based on studies conducted in the Air Bangis Minapolitan area, various facilities and infrastructure that are important to be repaired and equipped can be summarized. This aims to ensure that the area's function as a production center for producing and processing fishermen's catch products develops rapidly.

2. Research Methodology.

This research was designed with a descriptive-analytical model that focuses analysis on the availability of facilities and infras- tructure, supporting facilities for fishing activities, and other re- lated economic activities in the fisheries production center area in the Air Bangis area, Pasaman Regency. This research ex- plains the findings in the field as they are. Then it is analyzed and the results are presented according to the facts that oc- curred. The data used is primary data and secondary data. Data collection techniques are based on observations in the area, in- terviews with *stakeholders* who understand the field of fish- eries and capture fisheries production center areas, and litera- ture studies to enrich documentation related to the problems in the research. Presentation of data in the form of tables, pictures, graphs, and statements from sources in the research. Data anal- ysis was carried out qualitatively.

3. Results and Discussion.

3.1. Condition of the Fish Market in the Minapolitan Air Bangis Area.

As a center for producing fishermen's catches, the Minapolitan area needs to be supported with adequate equipment to carry out daily operational activities. One important aspect is; the market as a container for fishermen's catch. Where in this market transactions occur, meetings between sellers and buyers. Packaging of fish to be sent is done at this market. Market conditions must be conducive to facilitating the activities of traders, fishermen, and buyers who come directly to the fish market.

Figure 1: The Fishmarket Atmosphere in the Air Bangis Minapolitan Area.

Source: Authors.

Based on the findings in the field, the market where fish is sold is not neatly arranged. The fishy smell mixed with other unpleasant odors is felt when we enter the market. Flies nest and fly in the puddles of water that have accumulated around the market. After conducting interviews with key informants and other *stakeholders*, information was obtained that there were no sources of clean water around the fish market. Fishermen and traders use water sources that come from traders who sell water around. One water jerry can with a capacity of 25 liters is

sold for IDR. 5,000.00 (five thousand rupiah) by a water seller. Automatically, the costs incurred by fishermen and traders become large just to obtain clean water. According to (Kurniasari, Rosyidah, and Mei Dwi Erlina, 2018), water sources and water quality play an important and main role in fish processing. From this fact, it can be concluded that there is no available water source in the fish market, so this causes the condition of the fish market to become unclean and smelly. If the situation is allowed to continue, it will disrupt the progress of trading businesses and cause high economic costs. And this will lead to regional progress, which will be slow due to limited water resources which are very important.

Figure 2: Water jerry cans as a source of water supply at the fish market.

Source: Authors.

Based on observations made at the fish market, it is clear that the water supply for activities at the market is purchased from water sellers. Every day the need for water for activities at the fish market is very necessary. This problem must be considered as the best solution for activities in the fish market in a sustainable manner. Considering that water has a vital function in the activities of fishermen and traders in the fish market area.

3.2. Efforts Have Been Made to Obtain Clean Water Sources at Fish Markets.

The availability of water sources in the activities carried out at the fish market is very important and the central position it holds cannot be ignored. The need for a lot of water and continuous *supply cannot be relied on in shallow wells with a depth of 8 meters.* Because when a large water demand is sucked continuously, what happens is that the well dries up. Meanwhile, the water discharge is only around 0.5 to 4.5 / second, which cannot meet needs. Shallow wells have various limitations and are only intended for households, not for industries and businesses that require large amounts of water use. For this reason, the choice that must be taken is to build a deep well so that the water source can be maintained.

In overcoming the problem of clean water at the fish market location, UPTD PPW II PPI Air Bangis has made efforts to dig deep wells, with a target water source at a depth of 120 meters. This effort is hampered because, at a depth of 56 meters, it can no longer be penetrated after all there is hard rock that cannot be penetrated if drilling is carried out. This effort has cost Rp. 700,000,000.00 (seven hundred million rupiah). At a depth of 56 meters, water has been found, but it cannot be used. This is because the water is salty. Bearing in mind that the digging of the well was carried out not far from the beach, which caused the absorption of seawater to enter the land. At this depth, it is still classified as a shallow well where water absorption from around the well still has an effect. That is what causes the water to be still salty because it was done near the beach.

Figure 3: UPTD PPW II PPI Air Bangis.

Source: Authors.

From the phenomena that occur in the Minapolitan area, the existence of clean water sources must remain a very important consideration to continue to follow up. Remember that clean water is the main key in the business of selling and processing fish and other marine products. The availability of clean water must be continuous and can be used ad *libitum*. Due to the nature of this marine product, it rots quickly and environmental cleanliness must be maintained properly. And the supply of fish that comes from fishermen cannot be scheduled in time because it depends on natural conditions.

Figure 4: Packing Activities at the Fish Market.

Source: Authors.

In Figure 4, it can be seen that activities in the fish market cannot be separated from the availability of clean water. Water jerry cans were seen being purchased from water traders as a source of water supply. The limited availability of water means that the use of water for cleaning in the market area is also limited, which is what causes the unpleasant odor to be smelled in the market location. Furthermore, to support fish sales activities in the market, fish shipments must be accompanied by ice cubes as a material to preserve the fish until it reaches its destination. This fish market is equipped with a supply of ice blocks that have been crushed beforehand.

3.3. Block Ice Factory as a Means of Preserving Fresh Fish.

The seafood commodities caught by fishermen are products that have high protein which are easily contaminated by bacteria so they quickly become rotten. Therefore, freshness must be maintained from the fishing boat to the consumer's hands. Good and correct handling will maintain product quality and

vice versa. To overcome this, preservation is needed from the capture process until distribution to consumers. Natural and risk-free preservation is to use ice blocks crushed with an ice *block crusher* for the distribution process on land. Meanwhile, during the fishing process at sea, the fishing boat fleet has *cold storage* which can maintain the freshness of fish and other commodities until they reach the port. In Figure 5, you can see the process of crushing ice cubes in the Air Bangis fish market area as follows;

Figure 5: Process of Breaking Ice Blocks for Preserving Fish.

Source: Authors.

Based on Figure 5, you can see the activity of crushing blocks using an ice crusher machine into ice pellets. The strength of this ice can last for two days in cooling fish that have been packed in fiber. This is important considering that the use of chemical preservatives will have an impact on consumer health. The issue of the use of formalin which has gone viral in recent years has put consumers at risk of consuming fish caught by fishermen.

As a means of supporting the activities of fishermen and business actors in the fish sales market at Air Bangis port, a factory for making ice blocks for preserving fish is needed. The Air Bangis production center area already has an ice block factory which is still operating and managed by the private sector. Meanwhile, the ice factory belonging to UPTD PPW II PPI which is located in the fish market is no longer operating because it is damaged. In addition, the absence of clean water sources makes production impossible. Because clean water is the main raw material for producing ice cubes. If clean water is available, the damaged ice-making machine will be repaired, of course, this will help in the production of block ice because it can be purchased directly at the market location without any transportation costs and this will save production costs and efficiency in the distribution of fish and other sea products. In Table 1, the ownership of block ice factories in the production center area can be seen.

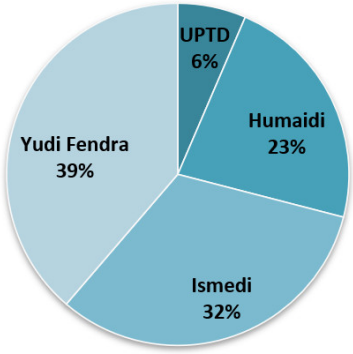
Based on data from Table 1, it can be seen that privately managed ice factory owners play a role in contributing to supplying ice needs in regional locations. Even though there is a difference in distance between factories, it does not cause a price difference. Because if there is a price difference, of course, there are factories that have fewer buyers compared to other factories. Like the factory owned by Humaidi, even though it is further away with less capacity, it can reduce selling prices so that there is healthy business competition in the market. Meanwhile, the government's ice factory is not operating at all because it is damaged. If we observe based on distance, the factory is located near the fish market area which can reduce transportation costs when producing so that operational costs are reduced and their production is efficient. In line with what was stated (Apriyeni, 2019) low transportation costs will lead to agglomeration benefits in the area and the linkage of various businesses that support each other.

Table 1: Block Ice Factory in the Air Bangis Production Center Area.

No	Name of the owner	Production Capacity (Tons)	Percentage (%)	Distance (Km)	Ownership status	Information
1	UPTD PPW II PPI	10	6	0	Government	Damaged
2	Humaidi	35	23	5	Private	Active
3	Ismedi	50	32	2	Private	Active
4	Yudi Fendra	60	39	2	Private	Active

Source: Primary Data, 2023.

Figure 6: Block Ice Production (Tons).



Source: Primary Data, 2023.

3.4. Fresh Fish Processing in the Minapolitan Air Bangis Area.

Apart from being directly sold fresh, fishermen's catches are also processed into dried fish, or what is called salted fish. When there is excess production, fresh fish is made into salted fish by fish processors in the area. Various large and small fish can be processed into salted fish. This processed fresh fish product is in great demand by people, especially outside the Minapolitan area. Based on observations and interviews conducted with fish processors and traders who buy fish to market in other areas, it was found that;

1. The community carries out processing activities at their respective locations. Generally, the location is near the yard of the house where there is still a large area to be used as a location for drying fish.
2. Drying is done simply only without using technology in the process. Drying only expects hot sunlight during the day.
3. Certain types of fish are soaked directly in salt without having to boil it first. Meanwhile, for other types of

fish, the technique of directly boiling them in salt water is used.

4. Dried fish processors supply fish to several areas within West Sumatra and outside West Sumatra. Traders immediately come to buy at the fish processing location. Without making it difficult for fish processors to market their products. Because this processed fish is very popular with consumers in the market.

Figure 7: Dried Fish Processing Locations in the Air Bangis Minapolitan Area.

Source: Authors.

In Figure 7, it can be seen that the location for processing dried fish is around the yards of people's houses. There is no special location provided for processing this fish. There is no warehouse to store undried fish when the weather is bad, such as storms or rain. The fish is only covered with waperproof plastic so that it doesn't get wet in the rain. The negative effects that occur are; that flies come to lay eggs on the fish because of the fishy smell of the fish due to the rainy season. Based on information obtained in the field, to maintain the quality of fish so that it does not rot and become contaminated by bacteria and flies, fish processors use insecticides that are sprayed on the fish. Insecticides used include Baygon, Hit, grass poison, pest killer, and Blau to whiten clothes.

From this phenomenon, it can be concluded that technology for preserving fish that does not endanger health has not been discovered by the dried fish processing community. Dried fish processors tend to think practically and take shortcuts so as not to suffer losses if the quality of the fish decreases due to humid weather. This will certainly have an impact and be detrimental to consumers as consumers of dried fish. Various diseases can attack the body because of the residue in dried fish. As stated by; (Tobarasi and Tomalili, 2019) the importance of skills development and counseling for fishing communities. The ability to process fresh fish is a diversification that can increase superior commodities and provide added value (Akliyah et al., 2010).

Based on observations and interviews conducted with fish processing communities, it can be explained that; Wet fish that are processed to make dry fish are not the same size. This condition is largely determined by the existing fish supply from fishermen. In Figure 8, it can be seen that the sizes of the fish are different, some are small and medium and some are very large.

Large fish require a long time to dry, considering the thick flesh of the fish which requires longer sunlight for drying. If drying technology is used without expecting sunlight, it will

Figure 8: Size of Dried Fish in the Air Bangis Minapolitan Area.

Source: Authors.

shorten drying time and increase productivity. Based on the technology in processing dried fish, there needs to be a comparison between the Air Bangis production center area and the production center area in Pasia Nan Tigo, Padang City as a consideration in using the facilities and infrastructure to support these activities. So that a complete picture can be obtained regarding the processing of salted fish in these two regions and a good model can be adopted for implementation. This is a comparative study of two salted fish processing areas.

3.5. Fresh Fish Processing in the Advanced Fisherman's Area (Kalaju) Pasia nan Tigo, Padang City.

As an area stretching along the Indian Ocean, the livelihood of coastal communities cannot be separated from the fishing sector. This includes the Pasia Nan Tigo fishing area, Padang City, which is around 255 km from the Air Bangis fisheries production center area. In this area, people, especially women, carry out economic activities by processing wet fish into dry fish such as salted fish which is carried out in the Air Bangis production center area. These women form groups that are chaired by one of the group members. The formation of this group was also explained by (Simanullang and Eriyanti, 2019) that the fishing community had formed groups in the activities carried out. The existence of groups can improve welfare (Efani et al., 2021) And groups are the main support in activities (Arif and Pradini, 2019). The existence of groups is an important factor and society must be guided (Edrus, 2015). This activity was carried out at the Marine and Fisheries Service UPTD, Sea Fish Processing Center, in Pasia Nan Tigo. The following is an overview of the location of fish processing activities in Pasia Nan Tigo, Padang City, as seen in Figure 9.

In contrast to the conditions in the Air Bangis production center area, in the Pasia Nan Tigo Advanced Fishermen's Area (Kalaju) the activities were carried out at the location of the fish processing center belonging to the UPTD of the Padang City Fisheries Service. The facilities provided by the govern-

Figure 9: Pasia Nan Tigo Fish Processing UPTD, Padang City.

Source: Authors.

ment are used by residents to carry out dried fish processing activities. Starting from cleaning the fish, boiling, drying, or drying the fish to selling the produce, is done at this location. All necessary facilities are provided by UPTD, the women's fish processing group ensures that the facilities provided are not damaged and are well maintained. Existing facilities include a place to clean fish waste, a source of clean water, a stove for boiling fish with LPG gas, a container for boiling fish, a para-para for drying fish, an open space for drying, a greenhouse, a fish storage room that is still in use. wet, dried fish storage warehouses, production facilities storage rooms such as; salt, buckets, baskets, fiber, etc. Below in Figure 10, you can see the UPTD fish processing facilities in Pasia Nan Tigo, Padang City.

Figure 10: UPTD Pasia Nan Tigo Fish Processing Facilities.

Source: Authors.

In the UPTD Pasia Nan Tigo fish processing production center area, groups of women fish processors can carry out their activities every day. Regardless of whether the weather is hot or not. Because the available greenhouse ensures business continuity because drying fish continues without worrying about rain and damp weather. If the weather is hot, drying is done outdoors or in an open field, whereas, during the rainy season, drying is done indoors in a greenhouse. Processed fish does not worry about being exposed to rain and moisture which will cause the growth of fungus and bacteria in the fish. There is no use of any preservatives apart from salt to create flavor.

Clean water sources are available at all times because the arrival of fish from fishing boats for processing is timeless. As expressed by (Fahmi, 2016) fishermen do not have regular working hours because they depend on the season and weather. So cleaning these fish cannot be delayed. It must be done immediately so that it doesn't rot. The amount of water required is quite large considering that the fish to be processed must be clean so that the quality of the dried fish produced must be maintained. Negligence in processing fish will result in losses for the business owner. For this reason, the availability of various supporting facilities helps the continuity of this business. When compared to the facilities provided by UPTD, this group of women processing dried fish felt very helpful because previously they only relied on their home gardens for this business, and cleanliness was not guaranteed because there were no adequate facilities. This is in line with the statement by Arif & Pradini, (2019) that; Supporting facilities are a medium for increasing fishermen's income.

Marketing of this salted fish, both in the Air Bangis production center area and in Pasia Nan Tigo, is equally smooth and there are no significant problems. Consumer interest in consuming salted fish is quite high. According to Irwandi and Imtihan, (2021), quality processed salted fish at an appropriate price is the reason consumers make repeat purchases. Furthermore, Zahara and Rosdiana, (2016) explained that in the production area, marketing and production of processed fish are quite effective and efficient. In marketing, traders come directly to the location to buy this processed fish. Payments received by fish processors are also in cash. Even in the Pasia Nan Tigo area, traders are willing to pay first before getting dried fish. Because if this is not the case, the trader will not get the fish he wants to buy because it has already been bought by another trader. This means that the demand for dried fish is very high so the price offered remains stable.

Conclusions.

Based on the results of research conducted and observations of the phenomena that occur, the following conclusions can be drawn:

1. Fish sales activities at the fish market in the Air Bangis production center area have been running even though there are still deficiencies in several necessary supporting facilities. Such as the absence of clean water sources around the fish market location. The ice block factory available at the fish market is not operating due to damage that has not been repaired.
2. The processing of wet fish into dry fish is still running using simple technology without occupying a special location for processing. Even though the production amount can meet the needs of people inside and outside the region. Limited facilities have forced fish processing communities to choose shortcuts by using ingredients that pose a risk to the health of people who consume fish. This aims to minimize the risk of loss due to bacterial and fungal contamination if the fish is not dried quickly during the rainy season.
3. Marketing of fish products, both wet and dry fish, has been running well without any significant obstacles. The

price of dried fish tends to be stable because demand on the market has not decreased.

Suggestion.

1. Business activities in fisheries production center areas require the availability of various supporting facilities and infrastructure. Especially providing clean water, and reactivation of damaged facilities so they can be used as an inseparable part of activities in production center areas. This aims to create efficiency in production save existing resources and create products that have high competitiveness. Therefore, it is necessary to provide facilities that are not yet available in production center areas, especially at the Air Bangis fish market. Especially wells as a source of clean water are not yet available.
2. For further development in fish processing activities, it is necessary to concentrate and create better facilities so that fish processing can be carried out at any time and the quality produced can be improved. So processed fish products are friendly to the health of consumers who consume them. The development model needs to be taken into consideration by parties who are competent in the field.

References.

Aboul-Dahab, KMA (2023) 'The Effectiveness Of The Smart Sea Ports Operations Within Smart Cities', xx(Iii), Pp. 81-87.

Akliyah, LS Et Al. (2010) 'Identification of Leading Capture Fisheries Commodities in the Minapolitan Area, Indramayu Regency', Pp. 23-30.

Alfiyah, N. And Syafriyani, I. (2020) 'Effectiveness of Minapolitan Area Development in Saronggi, Sumenep Regency, Public Administration Study Program, Faculty of Social and Political Sciences, Wiraraja University', 5(2), Pp. 88-99.

Apriyeni, D. (2019) 'The Effect Of Agglomeration On Profits And Price Efficiency In Laying Chicken Farming Enterprises In Payakumbuh Production Central Area Of Fifty Kota Regency, West Sumatra, Indonesia', Agricultural Extension. Issn(E) ; 24086851, Issn (Print) ; 1119944x. 23(2), Pp. 58-65.

Apriyeni, D. And Wati, W. (2022) 'The Role of Cold Storage in the Development of the Minapolitan Capture Fisheries Area in Pasir Jambak, Padang City.', Kkp Bulletin , 8(1), Pp. 59-72.

Arif, H. And Pradini, UR (2019) 'Analysis of Stakeholder Roles in Fisheries Institutional Arrangement and Fisheries Development Strategy in Dumai City, Riau Province', 9(1), Pp. 1-17.

Budiani, SR Et Al. (2020) 'Analysis of the Minapolitan Impact on Community Welfare in Muncar Subdistrict, Banyuwangi Regency (Case Study: Walling Village and Kedungrejo) Analysis of Minapolitan Impact on the Community Welfare in Muncar Subdistrict Banyuwangi Regency (Case', Pp. 47-56.

Duc, N.C. Et Al. (2023) 'Aspects Affecting Total Factor Productivity In The Maritime Economic Sector: Analysis From A Long Coastline Nation', xx(II), Pp. 6-12.

Edrus, IN (2015) 'Analysis of the Development of the Minapolitan Area of Bengkulu City Key Policies of the Area Development for Pond Culture Based- Minapolitan of Bengkulu City', Pp. 79-92.

Efani, A., Manzilati, A. And Rahman, S. (2021) 'Fishermen's Adoption Of Small-Scale Financial Credit Fishermen' S Adoption Of Small-Scale Credit', Pp. 97-102.

Fahmi, I. (2016) 'Traditional Fishermen's Poverty Alleviation Strategy', Perspective , 1(2), Pp. 61-70. Doi: 10.31289/Perspeksi.V1i2.88.

Hardjanto, K. (2020) 'Tourism Based Urban Fisheries Development: Mina Wisata Tidar Dudan Urban Fisheries Development Based On Tourism: Tidar Dudan Fisheries Tourism', 12(November), Pp. 75-85.

Irwandi And Imtihan (2021) 'The Effect Of Product Quality, Price And Brand Image Towards The'.

Jahid, J. (2011) 'Study of Development of Mattiro Sompe District as a Minapolitan Area in Pinrang Regency', Pp. 40-49.

Jamilah And Mawardati (2019) 'The Relationship between Poverty Levels and the Utilization of Capture Fisheries Resources in the Minapolitan Area', 3, Pp. 336-347.

Kurniasari, N., Rosyidah, L. And Mei Dwi Erlina (2018) 'In Sabang City Strategy For Development Of Marine And Fisheries Sector In Sabang City', (021).

Maulana, R. And Albahriesy, E. (2017) 'Fishermen and Politics: Study of the Implementation of Fisherman Welfare Empowerment Policy in Sedati District, Sidoarjo Regency'.

Morra, N. And Ghalidza, B. (2020) 'The Concept of Blue Economy on Economic Development in Indonesia', 22(1), Pp. 27-31. Nugraha, G., Komala Dewi, I. And Sunaryadi, A. (2011) 'Identification of Potentials and Constraints in the Palabuhanratu Minapolitan Area'.

Pantouw, S., Ngangi, CR And Lolowang, TF (2017) 'Evaluation of the Implementation of the Minapolitan Area Development Program Using the Cipp Model (Context, Input, Process, Product) in Bitung City.', 13(November), Pp. 95-118.

Sam'un, M. (2020) 'Strategy Analysis for Effective Development of Minapolitan Capture Fisheries PPI Karangsong', Mina Sains Journal, 6(2), P. 104. Doi: 10.30997/Jmss.V6i2.3301.

Simanullang, JHP And Eriyanti, F. (2019) 'Empowerment of Fishing Fishing Communities by Padang City Dkp in Increasing Income (Study of Pasie Nan Tigo Village, Koto Tangah District, Padang City)', Ranah Research Journal of Multidisciplinary Research And Development , 1(2) , Pp. 253-263.

Teguh, D. Et Al. (2018) 'Perspective Study of Regional Development of Rote Ndao Regency as a Special Economic Zone', 3(1), Pp. 8-18. Tobarasi, I. And Tomalili, R. (2019) 'Analysis of Fisheries Policy Alternatives in Increasing Fishermen's Income in Konawe Regency', 2(2).

Zahara, A. And Weni, R. (2016) 'Evaluation of the Capture Fisheries Minapolitan Area Development Program (Study of Processing and Marketing Packages in Brondong Village, Brondong District, Lamongan Regency)', 4(1), Pp. 1-23.