Jurnal Ilmiah Ilmu Administrasi Publik: Jurnal Pemikiran dan Penelitian Administrasi Publik
Volume 12 Number 1, January-June 2022. Page 49-60
p-ISSN: 2086-6364, e-ISSN: 2549-7499
Homepage: http://ojs.unm.ac.id/iap

Economic Analysis of Sustainable Admission Business in Development Area Tanete Riattang East Bone

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ABSTRACT

The results of this study aim to determine the pattern of business activities and application of pond cultivation technology and the level of feasibility per unit of pond land. Starting from January - July, 2020, in Tanete Riattang Timur District. The pond business patterns are grouped into milkfish monoculture (Chanos chanos fork), milkfish polyculture (Chanos chanos fork) and seaweed (Gracillaria verrucosa), milkfish (Chanos chanos fork) and shrimp (Litopenaeus vannamei) polycultures with narrow (< 2 hectares), medium (2-5 hectares) and broad (> 5 hectares) scales. The results of the study show that almost all of the ponds in the Tanete Riattang Timur sub-district have entisol soil types. The soil texture is fine and coarse, the slope of the pond land is 1-9%. The appropriate distance for aquaculture is 50 – 500 meters from the river bank, water pH ranges from 7.5 – 8, salinity ranges from 15 – 29 ppt, water temperature ranges from 29 – 32 0C. GIS analysis of total pond area ±817.015 Ha. Respondents were 59 Fishery Households (RTP). The financial feasibility of monoculture milkfish (Chanos chanos fork) DF 12%, the highest is the NPV of Rp. 57,267,164. Net B/C ratio 1.77; IRR of 29.03%. The financial feasibility of milkfish (Chanos chanos fork)-shrimp polyculture where the highest DF 12% is the NPV of Rp. 88,857,765, Net B/C ratio of 2,099; IRR of 35.48%. The financial feasibility of polyculture of milkfish (Chanos chanos fork) seaweed (Gracillaria verrucosa) where the DF is 12% with the highest value, namely NPVRp. 90,665,055; Net B/C ratio of 2,099; IRR is 33.67%. The conclusion is that the land suitability category in Tanete Riattang Timur District consists of very suitable.

Keywords: Economic Analysis, Aquaculture.

INTRODUCTION

Bone Regency is located on the east coast of South Sulawesi. The area is 4,559 km2 with a built area of 2,747.36 km, a population of ± 751,026 people, and a distance of about 174 km from the city of Makassar. Bone Regency is bordered by Wajo and Soppeng Regencies in the North, Bone Bay in the East, Sinjai and Gowa Regencies in the South and Maros, Pangkep and Barru Regencies in the West (Badan Pusat Statistik, 2018). In Bone Regency, there is an area that is quite potential for aquaculture development, namely the Tanete Riattang Timur District. This area has a beach length of about 10.80 km (Dinas Perikanan dan Kelautan Kabupaten Bone, 2018).

The total area of mangrove forests in Bone Regency is 1,565.80 hectares, in Tanete Riattang Timur District is 83.24 hectares, the condition of mangrove forests consists of 20.25 hectares damaged, 51.94 hectares moderately damaged, and 11.05 hectares good (Dinas Perikanan dan Kelautan Kabupaten Bone, 2018) . The total area of Tanete Riattang Timur District is 48.88 km2 (1.07%), and the population is 45,631 people, and the growth rate is

0.90% per year (Badan Pusat Statistik, 2020). Tanete Riattang Timur Subdistrict has a potential coastal area of 1,247 hectares, of which 810.26 hectares have been realized for new aquaculture (Dinas Perikanan dan Kelautan Kabupaten Bone, 2020).

The large population growth has an impact on increasing the need for food, housing for the people of the East Tanete Riatang sub-district, Bone Regency. This causes the need for land and jobs to increase. This increase directly impacts the clearing of mangrove forest land to be converted into ponds. Dimensions in food security include availability, utilization, socio-cultural economic access, and access to infrastructure (Rivani, 2012). According to (Ridwan, 2009), the increasing population will also increase the need for land.

As we know that most of the Indonesian population earn a living in agriculture, the arable land is getting narrower because it has been converted into residential land, roads, industries and others. The development and increase in the area of aquaculture ponds is an opportunity and can also bring obstacles to the management of coastal natural resources. Opportunities to increase the productivity of aquaculture business exist in the coastal area of Tanete Riattang Timur District which is directly adjacent to the mangrove forest. Of the several types of business carried out by pond cultivators in the Tanete Riattang Timur District, it is necessary to conduct an economic analysis of each type of business according to the level of production and the condition of the character of the region.

Utilization of pond land by applying appropriate cultivation business patterns and pond cultivation technology by taking into account environmental aspects that are suitable for aquaculture, so as to create an alternative livelihood for the community as a result, the community does not encroach on the existing mangrove forest area. The reduction in the area of mangrove forests as a result of conversion to aquaculture areas such as vannamei shrimp (Litopenaus vannamei) and milkfish (Chanos chanos fork) polyculture ±175,015 hectares, milkfish (Chanos chanos fork) and seaweed (Gracillaria verrucosa) polyculture ± 434 hectares, shrimp monoculture vannamei (Litopenaus vannamei), milkfish monoculture (Chanos chanos fork) respectively ± 78 hectares, 130 hectares (Dinas Perikanan dan Kelautan Kabupaten Bone, 2020).

This triggers a very important problem, and also urgently needs to be resolved. In addition, based on the available coastal land area, there are still opportunities to increase pond production through increasing productivity and optimal and sustainable use of coastal land so that planning for sustainable coastal area management will determine the sustainability of aquaculture in the area. Based on research on seaweed (Gracillaria verrucosa) cultivation in Bone Regency, it has three factors, namely age, education level and intensity of counseling which have a significant effect. Several other influential factors, namely land area, number of dependents and experience in farming have no significant effect on the level of participation of respondent farmers on the application of technological innovation in the development of cultivation farming (Gracillaria verrucosa) in Waetuo Village, Tanete Riattang Timur District, Bone Regency (Usman, 2017).

This problem tends to increase along with the increase in pond cultivators. If this happens continuously, it will damage the mangrove forest area as a natural resource and preserve the function of the coastal environment in Bone Regency, Tanete Riattang Timur District. The

clearing of new land for aquaculture areas continuously will cause a process of decreasing productivity in coastal areas. The decline in productivity can be seen by the lack of number and diversity of biota, in addition, the loss of certain types of biota. This causes changes in habitat and environmental damage.

These activities cause damage to mangrove forests. Therefore, efforts are needed to determine the management factors that affect the productivity of ponds which are expected to be taken into consideration in efforts to increase pond productivity (Mustafa & Ratnawati, 2007). Therefore, it is necessary to develop aquaculture business patterns and the application of environmentally sound aquaculture technology levels, so that activities in the aquaculture area will be sustainable and sustainable and have a positive impact on efforts to develop mangrove forest areas in Tanete Riattang Timur District.

This very dynamic coastal area management plan requires an analytical tool that is able to accommodate appropriate changes, one of which is by using land suitability analysis for aquaculture development areas. Other analyzes such as analysis of the potential level of aquaculture technology, and patterns of aquaculture business, and analysis of aquaculture development in order to obtain the right pond cultivation business pattern and aquaculture technology at the appropriate location to be used as aquaculture area. Based on this thought, it is necessary to conduct research in order to determine the pattern of pond cultivation business and the appropriate level of technology for pond cultivation in accordance with environmental aspects in the context of developing sustainable and sustainable aquaculture areas in the aquaculture development area in Tanete Riattang Timur District, Bone Regency.

This is a very important information material in the context of optimal and sustainable utilization of the coastal area of Bone Regency, especially in East Riattang Tanete District. The destruction of the mangrove forest ecosystem will affect the destruction of the nursery ground, the habitat for shelter and foraging for aquatic biota, as well as the non-functioning of spawning grounds for many estuarine biota such as fish shrimp and other biota that have high economic value (Purwoko, 2005). The reduction and shrinking of mangrove forests have a negative impact, resulting in the degradation of fishery resources. So that the conversion of mangrove forests into aquaculture areas must be carried out rationally with an environmental perspective.

Aquaculture is a bio-industry that is closely related to the environment, if the environmental balance is disturbed, there will be many problems with pond cultivation activities such as the inhibition of organism growth, and widespread disease outbreaks in the aquaculture area which will cause huge losses for pond cultivators. Other impacts that occur on the environment are environmental pollution, namely reducing the productivity of cultivated land, changes to sea water such as itching and odor and air pollution, changes in the air being no longer fresh (Hidayatillah, 2017).

The principle of sustainable development in mangrove forest management is development to meet the needs of today's life without destroying or reducing the ability of future generations to meet their needs. Therefore, the management and utilization of the Bone Regency mangrove forest is directed at the principles of sustainable and community-based development (Afriani, 2018). The principle of Community-Based Management (PBM) is a natural resource processing where the community participates in the processing. The characteristics of community-based management include preparation, planning and monitoring by the community, commitment and a sense of belonging from the community (Afriani, 2018).

The advantages of Community-Based Management (PBM) are the comprehensive management of coastal resources, the reflection of the specific needs of local communities, the increase in local uses for all members of the community, an increase in economic and ecological efficiency, responsiveness and adaptation to variations in the social and social environment, local communities are encouraged to manage resources in a sustainable manner (Afriani, 2018). Seaweed cultivation is a type of cultivation that is environmentally friendly, because there is no feed supply that can cause pollution of organic matter in the waters. On the other hand, seaweed can absorb organic nutrients such as nitrogen and dissolved phosphorus from the waters and use it for growth.

In addition, seaweed also absorbs dissolved CO_2 from the waters, known as blue carbon, which is used in the photosynthesis process (Erlania et al., 2013). The applied agribusiness system includes good subsystems that will optimize the fish farming business so that when production is continuous, the need for fish for households will be guaranteed (Bokings et al., 2017). Business in the fisheries sector is a very promising business. Apart from the very high demand for food supply, business in the fisheries sector is also developing well in line with changes in people's mindsets to be healthier (Puspita & Wiyono, 2014).

Agribusiness in general includes all activities ranging from the procurement of agricultural production facilities (farm supplies) to the trading system of fishery products produced by farming or their processed products. All activities ranging from procurement, processing, distribution to marketing products produced by a farm or agro-industry that are interrelated with each other are defined as agribusiness (Maulidah, 2012). The processes that occur in agribusiness activities are not limited to cultivation and biological processes of organic matter, but also pre-production, production, post-harvest, processing and trading processes which are structurally necessary to strengthen the bargaining position in transactions in the market.

The functional relationship between pre-production, production, post-harvest activities, processing, preservation and quality control (quality) as well as trade needs to be organized in an integrated manner in an agribusiness system that is synchronized to ensure the performance of each sub-process provides added value that benefits itself. and others. The production of milkfish in monoculture and polyculture is influenced by the selling price of the cultivated commodity. In addition, the distance between the pond and the coast also affects the production obtained. Another factor that affects the production of milkfish aquaculture is the disease that attacks the cultivated commodities (Huniyah et al., 2015).

Pond production will be influenced by several management methods such as fertilizer dosage, disinfectant dosage, stocking density/m2, and existing pond land conditions (Asaf et al., 2013). Fertilizer or disinfectant application will affect pond production if the application exceeds the specified dose. . In addition, the amount of stocking density must also be taken into account with the fertility conditions of the pond land, and environmental conditions around the pond area. These things affect the level of pond productivity(Asaf et al., 2013).

In general, the limiting factor for the growth of organisms in ponds is the low mineral content in low salinity waters compared to waters with normal salinity. Physiological processes that take place normally are influenced by the availability of certain anions (carbonate, chloride,

bicarbonate and sulfate) and cations (potassium, sodium, calcium and magnesium) (Kaligis.E.Y, 2010). The opinion that the quality of feed with a nutritional composition that is not in accordance with the needs of the organisms in the pond will affect the growth of the cultured organisms inhibited.

METHOD

The method used is a survey method, where data is taken from a sample to collect data. The data contains questions that are in accordance with the required data. Quantitative data is obtained from values in the form of categories and numbers. Sampling was carried out in two sub-districts, namely Pallete and Waetuo villages as many as 59 heads of fishery households (RTP) or approximately 30.8% of the population of 191 fisheries households (RTP). Sampling of pond farmers from each strata was carried out at simple randomness.

In accordance with the results of previous studies that have been carried out, the number of respondents for each stratum can be determined as follows: narrow strata (< 2 hectares) as many as 26 respondents representing 85 RTP, medium strata (2-5 hectares) as many as 24 respondents representing 78 RTP, wide strata (> 5 hectares) as many as 9 respondents representing 28 RTP, so a total of 59 respondents representing 191 respondents. This study uses a non-random sampling method. Non-random sampling is a sampling technique not all sample members are given the opportunity to be selected as sample members (Sugiyono, 2012).

RESULTS AND DISCUSSION

Land Use

Information related to land use needs to be known to analyze the suitability of the land that you want to become pond land, because not all land can be converted into pond land. From the results of field observations, it was found that almost all of the ponds in the Tanete Riattang Timur District are designated for ponds. Some of the ponds scattered in the sub-district started as land for mangrove forests which were later converted into ponds. If referring to the table of pond land suitability, almost all of the land use in the Tanete Riattang Timur sub-district is categorized as very suitable. In maintaining productive pond land functions and to prevent other impacts of pond land conversion, criteria for sustainable land use control are needed. So that later the land control criteria can be used in formulating directions that can limit land conversion in the pond area (Herdiansa & Suprihardjo, 2014).

The pond cultivation model in the research area of Tanete Riattang Timur District, Bone Regency is generally managed extensively (traditionally) which will lead to technological improvements such as semi-intensive because they have implemented advanced technological methods such as using inputs (fertilizer, pest eradication, preparation of ponds, and seed dispersal). The difference from traditional, semi-intensive, and intensive methods is only the use of different inputs such as the number of feedings, stocking density and very intensive management methods.

That the aquaculture business is a fishery cultivation business that uses and utilizes coastal areas whose irrigation uses brackish water. The technology commonly used in

aquaculture cultivation is divided into extensive (traditional), semi-intensive, and intensive cultivation. 1) Traditional technology is a pond cultivation system by utilizing 100% natural feed without providing artificial feed with pond improvements such as land preparation, pest eradication, low seed stocking, water exchange with tidal energy. The capital used in traditional technology is own capital because there is no access to borrow at the bank.

The operational costs required are not too large for traditional farmers. 2) semi-intensive ponds are technologies that are used a level more advanced than traditional technologies such as higher stocking densities, feeding and higher costs when compared to traditional ponds. 3) Intensive technology is a technology that is quite advanced and has very large operational costs as well as a large activity risk and will produce extraordinary waste from feed in the form of organic waste so that it will affect the aquatic environment.

Soil Quality

The quality of the soil in question is the type and texture of the soil for ponds. Observation results show that almost all ponds in Tanete Riattang Timur District have entisol soil types which are composed of remnants of marine activity. According to the Soil Survey Staff, this type of soil was formed by subrecent/subrecent deposits resulting from marine activities, in a salty and brackish environment with a fine texture. The results of the observations showed that the soil texture of the ponds in Tanete Riattang Timur District was divided into two types, namely smooth and fine and coarse.

For fine soil texture, it is found more in locations far from the shoreline. However, fine and coarse soil textures are mostly found in areas near the coastline. It is suspected that the soil texture in the area is mixed with sand originating from the remnants of marine activity. In contrast to the fine soil texture which is close to the river flow which has a fine texture that comes from river deposits. If you refer to the table of pond land suitability, the type of pond soil in Tanete Riattang Timur District is classified into the appropriate category.

Pond cultivators were taken as respondents as many as 59 Fishery Households (RTP) which was the result of sampling from 2 (two) kelurahan namely Pallete Village and Waetuo Village in Tanete Riattang Timur District, Bone Regency. , education level of pond cultivators, experience of farming, number of family members as pond workers. According to (Mustafa & Ratnawati, 2017), the factors that can significantly affect productivity are the age of pond cultivators, the number of workers needed in pond cultivation, legality of pond ownership, and the number of dependents of pond cultivators.

Slope of Land

In general, land for aquaculture requires flat land and should be able to be flooded directly by water at high tide. Topography that is too high or too low will affect water management. Land that is too high cannot be drained enough water, while if it is too low it is difficult to drain. The results of the observations showed that the slope of the ponds in the Tanete Riattang Timur District was 1-9%. The average slope increases with the distance of the pond location from the shoreline. The age of pond cultivators will physically affect the pond

cultivators in working and thinking. In general, young and healthy pond cultivators will have stronger physical abilities than older pond cultivators.

Usually the younger pond cultivators think rationally so that if there are new things in pond technology, they respond quickly. This is because they have not focused on pond cultivation and are still helping in the work of their parents' ponds, while pond cultivators aged between 40 and 60 years dominate the age of pond cultivators. Age between 50-59 years (the average of most of the pond cultivators on a narrow business scale (<2 hectares) is 40.1% with the average age of pond cultivators is 54 years, and the average age of pond cultivators is 44 years. Most of them are on a medium scale (2-5 hectares) with a percentage of 37.3%. This is because the pond cultivators of this age are very productive.

Distance from the Shoreline

Seawater is needed to regulate the salinity of water in ponds. Therefore, like the distance from the river to the pond, the distance from the coast to the pond also needs to be taken into account so that ponds will find it easier to obtain seawater. In general, the location of the pond from the beach that is still suitable is 300 – 4000 meters. This is in accordance with the opinion (Syaugy et al., 2012) that at a distance of 300 – 4000 m, the location of the pond is still covered by the tides so that the salinity of the pond can be increased. At this interval, the pond is still covered by the tides so that the pond manager will easily get salt water to increase the salinity of the pond. In addition, ponds that are too close to the coast will have high salinity and are difficult to lower because they are inundated with seawater at high tide.

The measurement results show that the distance of the pond from the shoreline at the research location varies greatly. The closest recorded distance to the pond from the shoreline is 20 m, which is located in the Bajoe village. Meanwhile, the farthest distance from the shoreline is 1662 m in Pallete village. The success rate of pond business management can be determined from the level of education of the pond cultivator itself. The level of education of each person will be able to influence the mindset of how to manage aquaculture business, the higher a person's level of education, the wider the insight into knowledge about the development and technology of aquaculture management (Saragih, 2010).

Distance from River

Ponds certainly require large amounts of water for the living medium of shrimp to be cultivated. In order to facilitate the process of filling ponds, ponds must be located close to water sources, both fresh water and salt water. This causes the distance of the pond from the water source to be very important as one of the parameters of the suitability of the pond land. The level of experience of pond cultivators with small-scale milkfish (Chanos chanos fork) and vannamei (Litopenaeus vannamei) polyculture businesses (<2 hectares) is 14 years on average, the level of experience of pond cultivators with polyculture business of milkfish (Chanos chanos fork) and vannamei shrimp (Chanos chanos fork) Litopenaeus vannamei). Medium scale (2-5 hectares) average 16.2 years, level of experience of pond cultivators with polyculture business of milkfish (Chanos chanos fork) and vannamei shrimp (Litopenaeus vannamei).

Large scale (>5 hectares) an average of 8.3 years. The level of experience of pond cultivators with medium-scale milkfish (Chanos chanos fork) monoculture (2-5 hectares) is 18.7 years in average, average level of experience of milkfish (Chanos chanos fork) monoculture

business (>5 hectares) is average 19.3 years. The best distance for a pond to build a pond is 50-500 m from the river bank. This close enough distance will make it easier to fill fresh water for ponds. While the distance of 500 – 1500 m from the river is still possible to get fresh water, but it must be supported by technology, so it will require additional production costs.

pH

The acidity condition of the pond is strongly influenced by the condition of the pond soil. Pond land converted from mangrove land usually has a low degree of acidity (Kordi & Tancung, 2007). According to (Mustafa, 2012) and (Mahfud, 2016) the pH value of water suitable for several aquaculture commodities such as vannamei shrimp (Litopenaeus vannamei), milkfish (Chanos chanos fork), and seaweed (Gracillaria verrucosa) is in the range of 7.3 – 8 ,7. The results of observations of water pH carried out in 5 villages in Tanete Riattang Timur District were relatively the same, ranging from 7.5 to 8. The pH value of 8 dominated each pH sampling at data collection points.

Pond cultivators at the research location in their aquaculture business there are several types of business patterns, namely milkfish monoculture (Chanos chanos fork), milkfish polyculture (Chanos chanos fork) and seaweed (Gracillaria verrucosa), milkfish polyculture (Chanos chanos fork) and vannamei shrimp (Litopenaeus vannamei).), and there is also a monoculture of vannamei shrimp (Litopenaeus vannamei). Most of the pond cultivators carry out pond cultivation using a polyculture system, namely between milkfish (Chanos chanos fork) and vannamei shrimp (Litopenaeus vannamei) and between milkfish (Chanos chanos fork) and seaweed (Gracillaria verrucosa) by 88%, while the monoculture of milkfish (Chanos) chanos fork) only 12%.

When viewed from the land area and stocking area for each business pattern, the largest milkfish (Chanos chanos fork) and seaweed (Gracillaria verrucosa) polyculture business pattern is 47.6% (83.66 hectares) followed by milkfish (Chanos chanos) polyculture. fork) and shrimp by 37.2% (65.23 hectares) and milkfish monoculture (Chanos chanos fork) at least 15% (26.5 hectares). There are several advantages that can be seen, especially the environmental conditions of the pond, when cultivating the traditional (extensive) system, which is more friendly to the pond aquatic environment, so that the cultivation of this system can be sustainable, due to the use of chemicals such as medicines, feed, and others. can be minimized.

That polyculture of tiger prawns, tilapia srikandi, and seaweed can increase pond productivity with tiger shrimp production of 118-280.6 kg/ha/season from the existing conditions of 50-80 kg/ha/year of production. tiger prawns in East Luwu district. Polyculture of tiger prawns, milkfish, tilapia srikandi, and seaweed in East Luwu district reached Rp. 14,373,400/ha/season (1 year = 2 seasons) or Rp. 28,747,600/ha/year, with an R/C ratio reaching 1.55, if the cultivator works the land himself. Some pond cultivation activities that use labor include pond land preparation, pond maintenance and harvesting. Workers from outside the family are usually used for pond preparation and harvesting because pond land preparation and harvesting require more labor.

Salinity and Temperature

In general, water salinity values that are suitable for several aquaculture commodities such as white shrimp (Litopenaeus vannamei), milkfish (Chanos chanos fork), and seaweed (Gracillaria verrucosa) are in the range of 10 – 35 ppt (Mahfud, 2016; Mustafa, 2012). From the results of measurements in the field, the salinity range values varied from 15 to 29 ppt. The lowest salinity values were found in the pond area located in Pallete and Waetuo villages. Meanwhile, the highest salinity value was found in the pond area in Toro village. Pond water temperature is also an important factor in influencing pond conditions.

According to (Kelabora, 2010), the higher the temperature, the lower the solubility of oxygen in the water, while the need for oxygen for fish increases with increasing metabolism. According to (Mahfud, 2016; Mustafa, 2012) suitable water for several aquaculture commodities such as vannamei shrimp (Litopenaeus vannamei), milkfish (Chanos chanos fork), and seaweed (Gracillaria verrucosa) is in the range of 20 – 32^0C. Based on the measurement results, the value of the temperature range of pond water in Tanete Riattang Timur District ranges from 29 to 32^OC.

Suitability of Pond Land

In this research location, in general, the ponds in the Tanete Riattang Timur sub-district that have been operating are managed privately. From the results of scoring and weighting of land use parameters, soil texture, soil type, salinity, pH, distance from shorelines and rivers, and slope, the level of land suitability for ponds can be identified and presented in the form of thematic maps.

Based on the results of GIS analysis, the total area of ponds in Tanete Riattang Timur District is ± 817,015 hectares spread over 5 villages. If referring to the suitability matrix of pond land, the land suitability category in Tanete Riattang Timur District is divided into two categories, namely very suitable and suitable. Waetuo is an area that has the highest pond area compared to other urban villages. The area of the pond in Waetuo Village is 343,288 hectares with details of the very appropriate category 297.303 hectares and the appropriate category 45.985 hectares. Meanwhile, for the area with the lowest pond area in Bajoe Village, namely 57,036 hectares with details on the land suitability category, 35,958 hectares are very suitable and 21,078 hectares are suitable.

CONCLUSION

Based on the results of GIS analysis, the total area of ponds in Tanete Riattang Timur District is ± 817,015 hectares spread over 5 urban villages that have been operating and managed privately. The area of the largest pond is in Waetuo Village of 343.288 hectares. The area of the narrowest pond is in Bajoe Village of 57,036 hectares. From the results of the scoring and weighting of land use parameters, soil texture, soil type, salinity, pH, distance from shorelines and rivers, and slopes, the land suitability category in Tanete Riattang Timur District is divided into into two categories, namely very appropriate (score 4) and appropriate (score 3). The three farming patterns are milkfish monoculture (Chanos chanos fork), milkfish polyculture (Chanos chanos fork) and seaweed (Gracillaria verrucosa).

Milkfish (Chanos chanos fork) and vannamei (Litopenaeus vannamei) polycultures seen from the feasibility analysis of Net Present Value > 0, Internal Rate of Return > 1 and Net Benefit Cost ratio > 1 are included in the feasible category to continue. The feasibility of monoculture milkfish (Chanos chanos fork) farming is the highest, which is large scale (> 5 hectares) with an NPV value of Rp. 57.267,164, Net B/C ratio of 1.77 and IRR 29.03%. The feasibility of farming polyculture milkfish (Chanos chanos fork) vannamei shrimp (Litopenaeus vannamei) is highest on a large scale (5 hectares) with an NPV value of Rp. 88,857,765, Net B/C ratio of 2,099, IRR of 35,48 %. The feasibility of polyculture farming of milkfish (Chanos chanos fork) seaweed (Gracillaria verrucosa) is highest on a large-scale business (> 5 hectares) with an NPV of Rp. 90,665,055, Net B/C ratio of 2,009 and IRR of 33.67%.

REFERENCES

Afriani, A. (2018). Pengelolaan Ekosistem Mangrove Melalui Pemberdayaan Masyarakat Pesisir. *Widyasiwara BPPP Tegal*.

Asaf, R., Athira, H., & Ratnawati, E. (2013). Faktor Pengolahan Tambak Yang Mempengaruhi Produktifitas Tambak di Kabupaten Indramayu. *Prosiding Forum Inovasi Teknologi Akuakultur*, 1091 – 1099.

Badan Pusat Statistik. (2018). *Badan Pusat Statistik Dalam Angka 2018 Kabuapten Bone. Watampone: BPS Bone*.

Badan Pusat Statistik. (2020). *Badan Pusat Statistik Dalam Angka 2020 Kabuapten Bone. Watampone: BPS Bone*.

Bokings, L. U., Yuniarti, K., & Juliana. (2017). Pertumbuhan dan Kelangsungan Hidup Benih Ikan Patin Siam (Pangasius Hypophalmus) yang Diberi Pakan Buatan, Cacing Sutra (Tubifex Sp.) dan Kombinasi Keduanya. *Jurnal Ilmiah Perikanan Dan Kelautan*, *5*(3), 82–89.

Dinas Perikanan dan Kelautan Kabupaten Bone. (2018). *Dinas Perikanan dan Kelautan Kabupaten Bone 2018, Laporan Tahunan Dinas Kelautan dan Perikanan Kabupaten Bone*.

Dinas Perikanan dan Kelautan Kabupaten Bone. (2020). *Dinas Perikanan dan Kelautan Kabupaten Bone 2020, Laporan Tahunan Dinas Kelautan dan Perikanan Kabupaten Bone*.

Erlania, Nirmala, K., & Soelistyowati, D. . (2013). Penyerapan karbon pada budidaya rumput laut Kappaphycus alvarezii dan Gracilaria gigas di perairan Teluk Gerupuk, Lombok Tengah, Nusa Tenggara Barat. *Jurnal Riset:Akuakultur*, *8*(2), 287 – 297.

Herdiansa, M., & Suprihardjo, R. (2014). Merumuskan kriteria pengendalian lahan di area tambak kecamatan Mansyar. Kabupaten Gersik. *Jurnal Teknik Pomits*, *3*(2).

Hidayatillah, Y. (2017). Dampak Ssosial industrilisasi tambak udang terhadap lingkungan di

Desa Anduang Kabupaten Sumenep. *Jurnal Teori Dan Praksis Pembelajaran IPS*, *2*(2), 21–26.

Huniyah, A., Amin, M. A., & Pursetyo, K. . (2015). Analisis finansial pembesaran ikan bandeng (Chanos chanos) pada tambak tradisional dengan sistem monokultur dan polikultur di kecamatan Mulyorejo, Surabaya, Jawa Timur. *Jurnal Ilmiah Perikanan Dan Kelautan*, *7*(2), 169–175.

Kaligis.E.Y. (2010). Laju pertumbuhan, efisiensi pemanfaatan pakan, Kandungan Potasium Tubuh, Dan Gradien Osmotik Postlarva Vannamei (Litopenaeus Vannamei, Boone) Pada Potasium Media Berbeda. Unsrat Manado. *Jurnal Perikanan Dan Kelautan Tropis*, *6*(2).

Kelabora, D. M. (2010). Pengaruh suhu terhadap kelangsungan hidup dan pertumbuhan larva ikan mas (Cyprinus carpio). *Jurnal Beranda Perikanan Trubux*, *38*(1), 71 – 81.

Kordi, M. G. H., & Tancung, A. B. (2007). *Pengelolaan Kualitas Air dalam Budidaya Perairan*. Rineka Cipta.

Mahfud, C. R. (2016). *Analisis Kesesuaian Lahan Budidaya Rumput Laut di Perairan Pulau Karampuang, Kabupaten Mamuju, Sulawesi Barat. Makassar*. Sekolah Pascasarjana Universitas Hasanuddin.

Maulidah, S. (2012). *Sistem Agribisnis*. Brawijaya University.

Mustafa, A. (2012). Kriteria kesesuaian lahan untuk berbagai komoditas di tambak. *Media Akuakultur*, *7*(2).

Mustafa, A., & Ratnawati, E. (2007). Faktor-Faktor dominan yang mempengaruhi produktifitas tambak di kabupaten Pinrang Sulawesi selatan. *Jurnal RIS Akuakultur*, *2*(1), 117–133.

Mustafa, A., & Ratnawati, E. (2017). Faktor-Faktor dominan yang mempengaruhi produktifitas tambak di kabupaten Pinrang Sulawesi selatan. *Jurnal RIS Akuakultur*, *2*(1), 117–133.

Purwoko, A. (2005). *Dampak kerusakan ekosistem hutan bakau (Mangrove) terhadap pendapatan masyarakat pantai di kecamatan Secanggang, kabupaten Langkat*. Sekolah Pascasarjana (USU).

Puspita, R. M., & Wiyono, A. (2014). *Budidaya Ikan Patin Cepat Panen*. PT. Infra Pustaka.

Ridwan. (2009). Peningkatan Produktivitas Sawah Dengan Perbaikan Teknologi Budidaya. *Jurnal Akta Agrosia*, *12*(2), 212–218.

Rivani, E. (2012). Penentuan Dimensi Serta Indkator Ketahanan Pangan Di Indonesia, Kaji Ualang Metode Dewan Ketahanan Pangan. *Jurnal Widyariset*, *14*(1), 151–162.

Saragih, B. (2010). Agribisnis Paradigma Baru Pembangunan Ekonomi Berbasis Pertanian. *IPBpress*.

Sugiyono. (2012). Metode Penelitian Administrasi Dilengkapi dengan Metode R&D. In *Bandung: Alfabeta*. https://doi.org/10.1007/s11116-011-9347-8

Syaugy, A., Vincentius, S. ., & Arhatin, R. E. (2012). Evaluasi kesesuaian lahan tambak udang di kecamatan Cijulang dan Parigi, Ciamis, Jawa Barat. *Jurnal Teknologi Perikanan Dan Kelautan*, *2*(3).

Usman, Z. (2017). Tingkat Partisipasi Petani Tambak Terhadap Inovasi Teknologi Pada Pengembangan Usahatani Budidaya Rumput Laut (Gracillaria Sp) di Tambak Kelurahan Waetuo. *Journal Article Agrominansia*, *2*(2), 183–197.