



Fishermen's Perception of the Existence of Mangrove Forest on Fish Catches in Margasari Village Labuhan Maringgai Subdistrict

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Abstract

The purpose of research on fishermen's perception of the existence of mangrove forests to fish catches in Margasari Village, Labuhan Maringgai Subdistrict is to know the level of public perception and know the factors related to the level of public perception. This study was conducted in July - December 2021 with a sample of 30 respondents to Margasari Village fishermen related to mangrove presence and fishing. Data collection is conducted using interviews, observations, and literature studies, which are analyzed with a qualitative descriptive approach. The results of this study suggest that the perception of fishing communities is in the high category, especially in the dependence of the community on mangrove ecosystems, while factors related to fishermen's perceptions are education level, age, work experience, business ownership, and frequency of fishing.

Keywords: *Perception; Fishermen; Mangroves*

1. Introduction

Mangrove forests are one of the unique natural ecosystems with high ecological and economic value. Mangrove forests contribute greatly to organic detritus (Supardjo, 2007). Mangrove ecosystems are also useful in the form of quite important ecological functions (Bengen, 2000). Mangrove leaves are nutrients for organisms in the water such as plankton and crustaceans (Irwanto, 2006). Currently began to see various forms of mangrove destruction, including the conversion of mangrove forests as farmland, buildings and so on (Bengen, 2000). Mangrove forest ecosystems in Way Kambas are located around the coast where there is a change / salination between salt water and fresh on a regular basis. Generally located along the east coast of the TNWK area. These ecosystems have a real role or benefit in supporting human sources of life. As a place to live and breed for the types of fish and sea shrimp. Thus maintaining the level of availability of fish and other biota supplies. Around TNWK Beach has stood hundreds of charts used to catch squid, the installation of nets to catch fish around the beach, thus it is a sign that with the TNWK provides a good marine environment so that marine life can live well.

Mangroves have an ecological function, namely as a source of organic matter, as an area of care, foraging, and spawning areas of various types of marine and coastal biota (Kordi, 2012). The higher the value of mangrove forest density, the number of seresah which is the source of nutrients Portunidae will be higher. The waste generated from the fall of mangrove vegetation leaves will be decomposed by bacteria and fungi around the environment as mangrove forests are increasingly rich in nutrient organic substances that are very beneficial for the survival of Portunidae and other aquatic organisms around mangrove forests. In addition to shelter, food sources such as bentos and litter are sufficiently available for the survival of Portunidae.

Given the importance of the value of mangrove ecosystems in supporting the sustainability of coastal resources, as well as threats to their sustainability, studies need to be conducted to look at perceptions of mangrove ecosystems. Mangrove management affects the perception of people in the region itself which includes knowledge, attitudes, and behavior of the community.

Theoretical Review

Perception

Perception is a process of understanding or giving meaning to information to a stimulus. Stimulus is derived from the process of sensing objects, events, or relationships between symptoms that are further processed by the brain.² The term Perception is usually used to express the experience of an object or an event experienced. Perception is a process that combines and organizes our sensory data to be developed in such a way that we can be aware of our surroundings, including being aware of ourselves.³ Perception takes place when a person receives a stimulus from the outside world captured by his or her auxiliary organs that then enter the brain. In it there is a thought process that is ultimately realized in an understanding.

Types of Perceptions

Perception is divided into two, namely: perception of objects (physical environment) and perception of humans or social. Perception of humans is more difficult and complex because humans are dynamic. These two types of perception have differences, namely: (1) perception of objects through physical symbols, while against humans through verbal and nonverbal symbols. Humans are more effective than most objects and harder to predict. (2) perception of objects responds to external traits, while human beings respond to external and inner traits (feelings, motives, expectations, and so on). (3) Objects do not react, whereas humans react. In other words, objects are static, while humans are dynamic. Therefore, perceptions of humans can change over time, faster than perceptions of objects.

Charectiristics of Perceptions

In order to produce a meaningful sensing, there are certain general characteristics in perception, the characteristics are as follows: a. Modalities: The stimulation received must correspond to the modality of each sense, i.e. the basic sensory properties and each sense (light for sight; smell for smell; temperature for taste; sound to hearing; surface properties for touch and so on). b. Dimensions of space: perception has the nature of space (dimensions of space); We can say upper down, high low, narrow area, foreground background, etc. c. Time dimension: perception has a dimension of time, such as fast slow, young old, etc. d. The structure of context, the whole that is fused: objects or symptoms in the world of observation have structures that are fused with the context. This structure and context is a unified whole.

Mangrove

Mangroves have an ecological function, namely as a source of organic matter, as an area of care, foraging, and spawning areas of various types of marine and coastal biota (Kordi, 2012). The higher the value of mangrove forest density, the number of seresah which is the source of nutrients Portunidae will be higher. The waste generated from the fall of mangrove vegetation leaves will be decomposed by bacteria and fungi around the environment as mangrove forests are increasingly rich in nutrient organic substances that are very beneficial for the survival of Portunidae and other aquatic organisms around mangrove forests. In addition to shelter, food sources such as bentos and litter are sufficiently available for the survival of Portunidae.

Mangrove terms from Portuguese and English. One type of mangrove tree called by the Portuguese is "mangue" and the English term "grove" is combined which means "mangrove" or "mangrove". Mangroves are a community of trees that live between the sea and land with the influence of the tides of the sea. Mangrove habitats can usually be found in suangai, estuaries, and the sea as land protectors from large waves of seawater (Irwanto, 2006).

Mangroves can be referred to as coastal forests or mangrove forests. Coastal forests are trees that live around the coastal area (coastal) mangroves can be affected by the tides of sea water or influenced by coastal ecosystems on land. Mangrove forests are one of the unique natural ecosystems with high ecological and economic value. Mangrove forests contribute greatly to organic detritus (Supardjo, 2007). Mangrove ecosystems are also useful in the form of quite important ecological functions (Bengen, 2000). Mangrove leaves are nutrients for organisms in the water such as plankton and crustaceans (Irwanto, 2006). Currently began to see various forms of mangrove destruction, including the conversion of mangrove forests as farmland, buildings and so on (Bengen, 2000).

Factors Related to Perception

The process of perception, many stimuli that enter the five senses but not all stimuli have the same attraction. According to Rhenal Kasali, perception is determined by factors including: (1) Cultural background, perception is related by culture. Related to meaning a message, object or environment depends on the value system we embrace. (2) Past experiences of the audience or audience, generally have a certain experience of the object being discussed. The more intensive the relationship between the object and the audience, the more experience the audience has. As long as the audience is in a relationship with the object, it will conduct an assessment. In certain products, usually the experience and relationship is not only experienced by one person, but a group of people at once. This past experience is usually reinforced by other information, such as news and events that hit the object. (3) The values embraced are evaluative components of the beliefs that include usability, kindness, aesthetics, and satisfaction. Values are normative, telling a member of culture what is good and bad, right and wrong, what to fight for, and so on. Values are derived from larger philosophical issues that are part of the cultural environment, therefore values are stable and difficult to change. (4) News that develops is news about the product both through mass media and information from others that can affect a person's perception. News that develops is a form of stimulation that attracts the attention of the audience. Through news that develops in the community can affect the formation of perception in the minds of the audience.

2. Methodology

To investigate the objective among the chosen sample, the study was based on the following research design framework, which included a suitable data collection method and mode of analysis.

2.1 Fieldwork Location and Duration

This study took the population from all interested parties both directly and indirectly related to rajungan fisheries in the Margasari Village area with data retrieval methods selected accidentally and the research time was conducted July - December 2021.

2.2 Sample Size, Composition, and Selection

The study sample of 30 fishermen of Margasari Village. Fishermen selected as samples are people who are competent in their fields so as not to refract the results of the study. Determination of samples taken by purposive sampling.

2.2 Research Methodology – Data Collection and Analysis

The methods of data collection in this study are used as follows: (1) Interview. This method is by way of requesting information through questions orally to stakeholders as the subject of study. Researchers' questions and fishermen's answers are submitted in writing through a questionnaire using a list of questions that are closed (close question) that the answer questionnaire has been available and fishermen just choose some alternatives from the answer options that have been provided. Fishermen of this study are fishermen / middlemen and Key-person (Academics as lecturers of fisheries, Government and Business rajungan). (2) Observation. Researchers made observations to obtain a profile of fishing and mangrove fisheries in East Lampung Regency, where researchers made observations more than once. (3) Literature Studies. Researchers studied literature related to the topic of study, among others: books, journal reports from related institutions such as the central statistics agency, the Marine and Fisheries Service, PPP Labuhan Maringgai, TNWK Hall and other materials related to this study.

Data analysis is used qualitatively and, the formulation is as follows:

1. Average Skors

$$\bar{x} = \sum \left(\frac{Sk}{n} \right) \frac{\text{Question Skor} \times \text{Frequency of Skor}}{n}$$

2. Scale Range

Information:

$$R_s = \frac{(m - 1)}{m}$$

n = number of samples

m = number of alternative answers per item

Step 1:

Determine the range of scale, namely:

$$R_s = \frac{(m - 1)}{m}$$

$$R_s = \frac{(5 - 1)}{5} R_s = \frac{(4 - 1)}{5} = 0,8$$

Step 2:

The position of the assessment decision is:

Tabel 1. Average score of people's perception assessments

Average Score	Information
1,0 – 1,8	Strongly Disagree
1,8 – 2,6	Disagree
2,6 – 3,4	Nervous
3,4 – 4,2	Agree
4,2 – 5,0	Agrees Strongly

There are ten assessment criteria used to analyze people's perception of mangrove area management. These criteria are as follows: (a) Mangrove areas today need / important to be managed in order to be sustainable (P1). (b) The form of mangrove area management carried out must involve all local residents (P2). (c) There needs to be cooperation between the government and local residents in mangrove area management activities (P3). (d) There needs to be rules in the management of mangrove areas (P4). (e) Violations of mangrove area management rules need to be sanctioned or punished (P5). (f) This form of management does not have to be in accordance with local wisdom (customs / culture) owned by local residents (P6). (g) The management of mangrove areas will hinder the development of coastal and marine areas. For example: the construction of residential residents and agricultural land will be hampered (P7). (h) Mangrove area management will limit local residents to utilizing mangroves and resources contained in it (P8). (i) Only some local residents or the government will benefit from the management of mangrove areas (P9).

3. Results and Discussion

3.1 People's Perception of Mangrove Forests

People living in coastal areas should feel responsible for maintaining sustainable resource sustainability (Dian, A. N., and Trisnani D. H., 2012). To achieve this goal, coastal communities need support for the quality of human resources as subjects in the management of coastal areas. There are ten assessment criteria used to analyze people's perception of mangrove area management.

The criteria are as follows: (a) Mangrove areas currently need / important to be managed in order to be sustainable (P1). (b) The form of mangrove area management carried out must involve all local residents (P2). (c) There needs to be cooperation between the government and local residents in mangrove area management activities (P3). (d) There needs to be rules in the management of mangrove areas (P4). (e) Violations of mangrove area management rules need to be sanctioned or punished (P5). (f) The form of management does not have to be in accordance with local wisdom (customs / culture) owned by local residents (P6). (g) The management of mangrove areas will hinder the development of coastal and marine areas. For example: the construction of residential residents and agricultural land will be hampered (P7). (h) Mangrove area management will limit local residents to utilize mangroves and resources in it (P8). (i) Only some local residents or the government will benefit from the management of mangrove areas (P9). (j) Immigrant communities do not need to obey the rules in the management of mangrove areas (P10).

3.2 Hypothesis

Based on the results of research related factors include: education, age, experience, business ownership, and frequency of arrest with the level of perception of the people of Margasari Labuhan Maringgai Village, East Lampung Regency described in the following hypothetical testing. The temporary hypothesis contained in the formulation of the research problem, because in the formulation of

the problem has been stated in a question sentence with answers that are expressed temporarily only because it is in accordance with existing theories but not based on facts contained in the collection of data in the field (Sugiyono, 2010). Results test the relationship between variable X and Variable Y in the following Table.

Table 2. Recapitulation of Variable X and Variable Y Test Results

No	Variable X	Variable Y	Correlation Coefficient	Sig (2-tailed)
1	Education	The Level of Perception of Margasari Village Community	0,469**	0,009
2	Age		0,517**	0,003
3	Experience		0,427*	0,019
4	Business Ownership		0,389*	0,030
5	Frequency of Arrests		0,406*	0,026

Information :

Rs : Rank Spearman

* : Real at the level of trust 95% (0,05)

** : Real at the level of trust 99% (0,01)

3.3 The Relationship Between The Level of Education and The Level of Perception of The People in Margasari Village East Lampung Regency

Statistical testing with spearman rank correlation test obtained a correlation coefficient value (rs) of 0.469 with a significance level obtained of 0.009 smaller than α (0.01) with the decision that can be taken that receives H1, meaning that the level of education is related to the level of perception of the people of Margasari Village. The level of education in Margasari Village is mostly at the junior high school level, so the knowledge possessed by the Margasari community is limited due to the level of education that is sufficient in receiving new knowledge. Public knowledge so far is very lacking about the existence of rules and sanctions in the management of mangrove areas. Through this study, the community agrees if the government sanctions violators of the rules in managing mangroves. The most widely pursued level of education for rajungan fishermen is junior high school (junior high school), this condition is due to low economy and environmental conditions that are quite difficult to obtain higher education. But with the education of fishermen at the junior high level, at least they can read and write, so that it becomes their capital in receiving knowledge and able to do knitting business activities. With low formal education level conditions, it takes non-formal education such as training and extension activities in the management of knitting businesses, so as to support business sustainability.

One of the efforts to increase public knowledge related to the rules violated for mangrove areas can be done with counseling to the community. In addition, there is a perception in the community that says that the management of mangrove areas will hinder the development of coastal and marine areas. For example: the construction of residential residents and agricultural land will be hampered. This is because the government prohibits people from entering or disturbing mangrove areas including mangrove logging for settlement or agricultural land clearing. Until now the community assumes that the existence of mangroves does not have a major impact on the economy of the community, especially for fishermen. People assume that the existence of mangroves has no influence on the rajungan population, and does not make the catch of knitting abundant. The existence of mangroves does not make the economic value of the community high. This shows that the level of public knowledge is still low, so people do not consider that the existence of mangroves is important.

3.4 The Relationship Between The Age of Respondents And The Level of Public Perception in Margasari Village

Statistical testing with sperman rank correlation test obtained a correlation coefficient value (rs) of 0.517 with the level of significance obtained of 0.003 smaller than α (0.01) thus can be taken the decision to accept H1 means that age is in real contact with the level of perception of the people of Margasari Village. The age of the Margasari community is on average in the productive age of 15-65 years. Productive age is someone who is able to have a high spirit in doing work as a knitting fisherman, fishermen in Margasari Village have a mindset and fishing power that is quite good in finding ideas to get ways to increase high knitting results, in addition fishermen are also looking for solutions so that their catch exceeds maximum value.

A person in the age range of 36 to 53 years has optimal abilities both physical and knowledge. According to categorization Havighurst (1974) fish processors in middle age of adulthood have a strong physique so that they can carry out every stage of the work. And the age condition of knitting fishermen belongs to the productive age group, meaning it is still very potential to develop the business, and still be able to receive knowledge related to new technologies. Fishermen in Margasari Village are quite lacking about the knowledge of caring for mangrove ecosystems that will help in the production of rajungan, there are fishermen who care for mangrove ecosystems and there are also fishermen who do not care about mangrove ecosystems because fishermen assume that mangrove forests have no effect on their catch. The same thing is also said by Notoadmojo (2003) mentioned that the mindset and fishing power are influenced by age then the level of knowledge gained more and more if a person gets older.

3.5 The Relationship Between Experience and The Level of Perception of The Community in Margasari Village

Spearman Rank correlation statistical testing obtained a correlation coefficient value of 0.427 with the level of significance obtained of 0.019 smaller than α (0.05) thus can be taken the decision to receive H1, meaning the experience is in real contact with the level of perception of the people in Margasari Village. Rajungan fishermen who have 1-10 years of work experience amounted to 19 people or 32 percent, 11 - 20 years amounted to 20 people or by 33 percent, 21- 30 years amounted to 11 people or 18 percent, and 31- 40 years amounted to 10 people or 17 percent. The experience of respondents as a knitting fisherman is quite high, meaning that fishermen already have a lot of knowledge about knitting business and problems contained in knitting business, so that fishermen have quality and productivity in work that is high in the experience gained.

Margasari Village community has very long experience in being a knitting fisherman and has passed all the problems faced starting production (knitting catch) in Labuhan Maringgai District which is erratic and dependent on the season causing the level of acceptance of fishermen obtained less than the maximum. The price level that fishermen receive also depends heavily on the erratic rate of knitting catches. If the yield rate is high it will cause the price of knitting to be low otherwise if the fishermen's offer will be low then the price of knitting will tend to be high. While the catch of fishermen's rajungan depends heavily on the natural conditions and habitat of the rajungan. In addition, the catch of knitting tends to be low also due to the presence of modern ships (trolls) that interfere with breeding, habitat and survival of knitting in nature, because trolls can net all existing knitting both small and adult this is very detrimental to traditional knitting fishermen in Labuhan Maringgai.

3.6 The Relationship Between Business Ownership to The Level of Perception of Margasari Village Community

Statistical testing with sperman rank correlation test obtained a correlation coefficient value (rs) of 0.398 with a significance level obtained of 0.030 smaller than α (0.05). Decision making accepts H1, meaning business ownership (X4) is related to the level of perception of the people of Margasari Village (Y). Margasari's fishing business ownership mostly belongs to others but fishermen become laborers which means the income obtained is divided with boat owners. Usually the distribution of results by way of two to the fishermen's catch, there is also a share of the proceeds that are directly tattooed directly with money and other boat maintenance is borne directly with fishermen, this shows that the boat rental in Margasari Village wants to ask for a share of the net proceeds only but for the improvement of ship facilities borne by fishermen workers.

Labor fishermen are fishermen who work with someone who is considered as a superior and as a source of labor fishermen's capital, ranging from nets, fuel engines (BBM), and so on. For labor fishermen, the price for the catch will be cut to restore the capital of the business owner issued in meeting the necessary means of fishing. As many as 67 percent of fishermen who become fishermen with their own capital and count as business owners. Fishermen with their own business ownership will bear the cost of ships, nets, fuel, and so on based on their capital.

3.7 The Relationship Between The Frequency of Arrests and The Level of Perception of Margasari Village People

Statistical testing with sperman rank correlation test obtained a correlation coefficient value (rs) of 0.406 with a significance level obtained of 0.026 smaller than α (0.05). Decision making accepts H1, meaning that the frequency of arrests (X5) is in real contact with the level of perception of margasari village people. The frequency of rajungan fishing using motor boats and engine boats with a time of 5-20 hours at sea with fishing gear such as: gill net, trammel net, rawai (long line), ring trawler (purse seine), cantrang (trawling) and fish trap / bubu. These fishing gears in the process of operation can be damaged or lost. Nets and strings that are the main ingredient in API have the risk of getting caught on coral reefs and disconnected due to strong currents. THE API used is sometimes also thrown at sea by fishermen when it is tangled or unused. APIs left behind or wasted in the sea will then pose a risk of ghost fishing.

Ghost fishing is a phenomenon of fish and other marine fauna, such as seabirds and turtles, due to fishing gear lost and wasted in the sea. Api that is stuck and washed away this resulted in entanglement of fish and lowered the fish stocks that became the target catch or not. Entangled fish will die and invite the arrival of predatory fish that will then become entangled and die. This phenomenon is a serious issue, because ghost fishing is a derivative impact due to unsustainable fishing and can reduce fish stocks that have now also been exploited excessively.

Conclusion

The perception of margasari village community is high, this shows that the community is very dependent on mangrove ecosystems that can sustain the economic life of the community with a good understanding in maintaining the sustainability of mangrove ecosystem biological resources. The perception of high society caused by the high exploitation of mangroves is getting higher, so it can provide benefits in a sustainable manner. Factors related to the level of public perception in Margasari Village are education level of 46.9 percent, age by 51.7 percent, work experience by 42.7 percent, business ownership by 39.8 percent, and frequency of arrests by 40.6 percent.

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