PUBLIC PERCEPTION OF THE EXISTENCE OF CORAL REEF AND FISHERMEN'S CATCH ON SAUGI ISLAND OF PANGKEP REGENCY IN SOUTH SULAWESI

[1]SUTINAH MADE, [2]HAMZAH, [3]HERDI

[1,2]Faculty Member at Socio-economics of Fisheries, Faculty of Marine Science and Fisheries, Hasanuddin University
[3]Alumnus of Socio-economics of Fisheries, Faculty of Marine Science and Fisheries, Hasanuddin University
E-mail: [1]smade_icmi@yahoo.co.id

Abstract- The purposes of the current research were to understand: 1) public perception of the existence of coral reef, and 2) the relationship between public perception of the existence of coral reef and fishermen's catch.This research was conducted from June to July 2014 in Saugi Island of Pangkep Regency in South Sulawesi. The study location was purposively chosen due to the large number of the island's inhabitantfish in the coral reef area surrounding the island. Both quantitative and qualitative data were collected in this study. The total number of respondents used was 19 fishermen which was also the whole population of the island. Descriptive analysis was used in this research for the purpose of explaining in depth the actual data obtained regarding public perception of the existence of coral reefs in association with the fishermen's catch. Furthermore,Likert scale was used to measure manner, opinions, and perception of the respondents. For the purposes of quantitative analysis, the obtained data were given scores ranging from 1 to 4 where higher scores indicate a more positive perception of the sample population. The results showed that: 1) the society ofSaugi Island, particularly those who do long-line fishing, has a positive view on the existence of coral reefs; and 2) there was a strong relationship between public perception of the existence of the coral reef and the fishermen's catch, with a correlation coefficient of 0.91 and determinant factor of 83%.

Key Words- Perception, Coral Reefs, Catch, Fishermen

I. INTRODUCTION

The Spermonde Archipelago is the center of the Coral Triangle which has a high diversity of ecosystems and marine species. Pangkep Regency is one of the islands of the Spermonde Archipelago characterized by its spacious marine waters with 117 different islands and 80 of those islands are inhabited. PangkajeneKepulauan (Pangkep) has the largest area of all other regencies/cities included within the Spermonde Archipelago, with its water area seventeen times larger than its land space.

The total land area including mountains and islands cover 1,112 km^2 while its waters make up 17,100 km^2. Pangkep Regency's marine waters are an ecosystem of rich in biodiversity, specifically in areas occupied by coral reefs located near smaller islands. The coast and seas are distinguished by their highly productive ecosystem so as to support economic activity. The main coastal ecosystem of Pangkep Regency consists of coral reefs, mangroves, and sea grasses (Megawanto, 2010).

Oftentimes the inhabitants of these islands catch fish with methods they consider simple either directly or indirectly. The main concern that arises from their methods of fishing is the coral reefs ecosystems continue to sustain pressure. This is a direct threat to the preservation of this area's resources when management is not done in accordance to planning and principles of environmental sustainability (Haruddin, 2011).

II. OBJECTIVE

From the background explained above, this research serves to:
1. Determine public perception towards the existence of coral reefs ofSaugi Island.
2. Analyze the relationship between public perception of the existence of coral reefs and fishermen's catch on Saugi Island, Pangkep Regency.

III. METHOD

A. Location and Time

This study was conducted from June to July 2014 on Saugi Island, PangkajeneKepulauan (Pangkep) Regency, South Sulawesi Province, Indonesia.

B. Research Types and Method

The types of research used were quantitative and qualitative. This research was expected to describe in depth the relationship between perception of the existence of coral reefs and the fishermen's catch on Saugi Island.

C. Population and Sample

The population used in this study consists of fishermen living on Saugi Island who frequent coral reef areas doing long-line fishing. The total number of fishermen on Saugi Island who use this method is 19. According to Suslistyo-Basuki (2006), population is the whole object(s) to be studied. A sample is a part of a population which may be considered as a representative of the population. To determine the size of the sample, according to Arikunto (2002), if

the total population is less than 100 then it is ideal to use the whole population as the object of research. In cases where the population is greater than 100 then a sample size of 10-15 percent or 20-25 percent should be used. Ultimately, the whole population size was used for the purpose of this research due to there were only 19 fishermen in the island.

IV. ANALYSIS AND DISCUSSION

A. Marine Ecosystem Conditions

Saugi Island is an island with a relatively flat seabed on all sides with an underlying sand/mud layer. In general, the condition of coral reefs and the abundance and diversity levels of the reef fish is average.

A marine survey was conducted by PPTK Unhas to determine the coverage percentages of living and dead corals of Saugi Island. In the reef top areas, round tippesseagrass covered 9 percent of the substrate bordering coastal areas. Seagrass was seen to intersperse with sea sponges and algae with each covering 5 percent. On reefs with less visible seagrass, it was found that corals had a coverage rate of 10 percent by rubble, 1 percent of dead corals, 8 percent of dead corals surrounded by algae, and 1 percent ofliving corals. The living corals belong to massive coral species that survive in murky waters. Coral genera dominant in these areas are Pectinia, Merulina, Porites, and Acropora. Meanwhile in shallow reef edges, several corals were found with a coverage level of about 21 percent (PTTK Unhas, 2006).

B. Respondent Characteristics

1. Age

The productivity of an individual can be viewed from several factors such as age which directly affects physical capabilities, and mental and spiritual well-being when carrying out tasks. A younger person tends to be more accepting when encountering new things and behaves in a more dynamic manner compared with older people. In general, younger fishermen are in their physical prime; quite different from their older counterparts who are limited physically but are rich in wisdom and experience as fishermen. However, the success in undergoing a task is not solely reliant on a person's age.

Based on the context of employment, a person whose age ranges from 15 to 64 years is part of the productive age category. This productive people tend to work more effectively in both formal and informal work environments. People aged over 64 are categorized in the non-productive age group (Siagian as mentioned by Waty, 2007).

2. Educational Level

Other than age, education also plays a role in people's productivity. Respondents who received some form of formal education tend to be more dynamic and active in seeking information about technology and market trends. According to Salamba inPolhaupessy (2004), education also functions as a tool for preparing quality workers in the production process that can work effectively and productively.

Educational levels of the respondents in Saugi Island is still quite low: 12 respondents (about 63.16 percent) are elementary school educated, six respondents (31.58 percent) are junior high school educated, and only one respondent (5.26 percent) is a graduate ofsenior high school. One main cause of the low education levels of these respondents is due to the lack of educational facilities. There is only one elementary school for the whole Saugi Island. In order to continue their educational process, they must attend schools located outside of the island such as in Pangkep City and Makassar.

3. Family Dependents

According to Darmawanty in Hamzah (2005), one aspect that influences welfare levels of these fishermen is the number of dependents of each household.

Table 3. Respondent characteristic based on the number of dependents in Saugi Island DesaMattiroBaji, LiukangTupabbiring District, Pangkep Regency

No.	Dependent Range	Total (respondents)	Percentage
1	1-3	5	26.32
2	4-6	12	63.16
3	7-10	2	10.52
Total		19	100

Source: Secondary Data

Table 3 shows the largest number of dependents is the 4-6 dependent range with 12 respondents (63.16 percent), followed by the 1-3 dependent range with five respondents (26.32 percent), then the 7-10 dependent range with 2 respondents (10.52 percent).

C. Public Perception of the Existence of Coral Reefs

Perception as described by Walgito (2004) is a process which is preceded by the sensing process. Human perception and standpoints differ due to different sensing processes. Some may perceive something as good or positive, but negative perception will influence visible or real action.

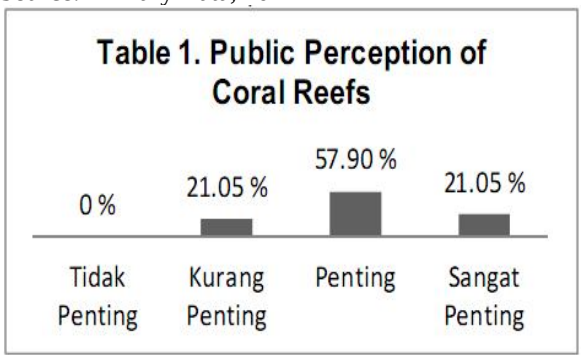
Analysis of the public perception of coral reefs in this study was divided by the perception variables as follows:

1. Public Perception of Coral Reefs

Public perception of the coralreefs in Suagi Island can be explained by the results of community feedback submitted through structured answers to questions in the questionnaire distributed in Saugi Island. Questions regarding perceptions of the coral reefs include how they perceive the existence of the SaugiIsland's coral reefs. Afterwards they were asked about how important conserving coral reefs are inSaugi Island, and asked concerning the condition of coral reefs in Saugi Island.

The answers of the questions about public perception of the existence of coral reefs can be seen in the following table:

Source: Primary Data, 2014

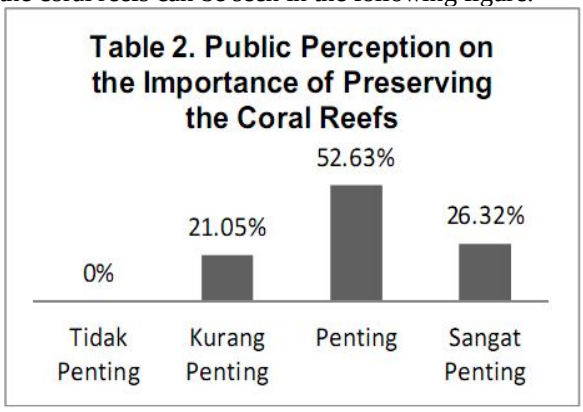


Source: Primary Data, 2014

From the results shown, the overall public perception of the existence of coral reefs score 57.9 and fall into the "important" category to the fishing community in Saugi Island.

A total of eleven(57.9 percent of respondents) said the coral reef is important to the fishing communities of Saugi Island. Four people (21.05 percen of the respondents) said that coral is very important for the fishing community. Similarly, there arefour people (21.05 percent) who claim that the coral reefs are not very important to the community. No respondents believe that the corals do not serve any purpose.

The answers to how important preserving the coral reefs can be seen in the following figure.

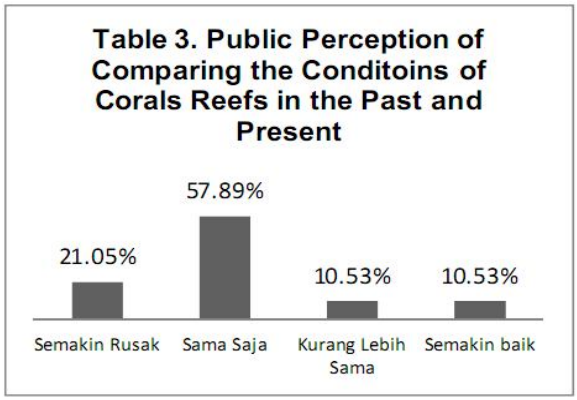


Source: Primary Data, 2014

These results show that, overall, the public perception of the importance of conserving coral reefs scored 58 and where the category "important" was the chosen by the majority of the respondents.

Ten of therespondents (52.63 percent) believe that it is important to preserve the coral reefs. Four people (21.05 percent of the respondents) feel that preservation of the reefs is not very important for the community of Saugi Island. Five respondents (26.32 percent) say that the preserving the coral reefs of the island is very important to the community. None of the respondents claim that the reefs are unimportant.

Furthermore, the answers tocomparing the condition of coral reefs in the past and present can be seen in the table below:



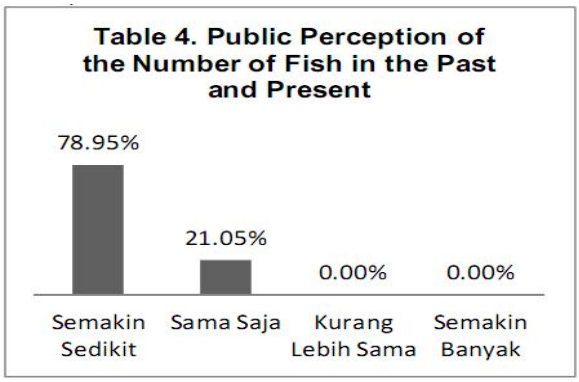
Source: Primary Data, 2014

From the results above, the overall perception of the public about the condition of coral reefs comparing the past with the present states is at a value of 40, meaning the public considers that the coral reef conditionhas not changed since the past. A total of eleven respondents (57.89 percent) believe that the coral reefs have not changed when asked to compare the condition between the past and present. Four people (21.05 percent) feel that the condition of the coral reefs has worsened. Two of them (10.53 percent) responded that the reefs have not faced any significant changes. Another two of the respondents (10.53 percent) believe that the condition has become better.

2. Public Perception of Fishing

Public perceptionofthe fishing activities in Saugi Island can be seen from the results of community feedback submitted through structured answers to questions in the form of a questionnaire distributed throughout Saugi Island. Questions include people's perceptions of fishing activities comparing the number of fish in the past and the present, the ratio of the number of fish in the past and present, and whether the ratio of the number and size of the fish has an effect on the preservation of coral reefs. In addition, they were also asked about how they perceive of the use of fishing gear that damages the coral reefs.

The answers to the questions regarding the ratio of the number of fish in the past and the present can be seen in the table as follows:Source: Primary Data, 2014

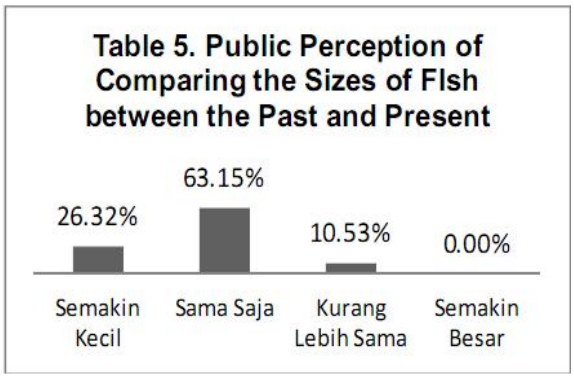


Source: Primary Data, 2014

The table above shows the overall public perception of comparing between the number of fish in the past and the present is at a value of 23, meaning the fishermenstrongly believe that the number of fish in the present is less than in the past.

Fifteen of the respondents (78.95 percent) believe that the fish population has substantially decreased overtime. Four of the repospondents (21.05 percent) say that the number of fish has not decreased at all. None of the respondents claim the fish population is just about the same or has increased in number.

The answers to the question comparing the size of fish in the past and in the present are shown in the table as follows:

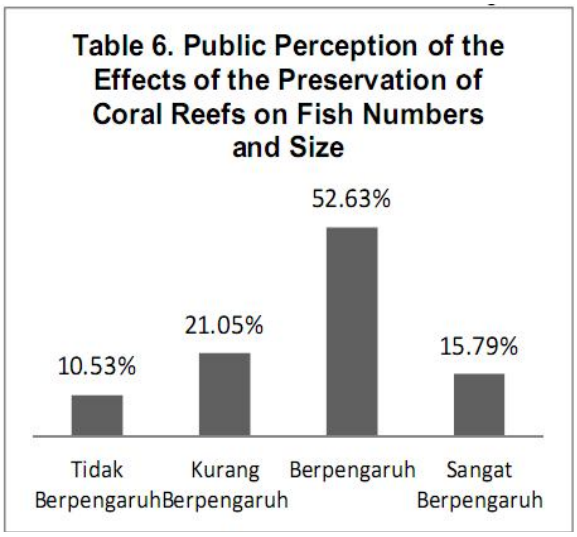


Source: Primary Data, 2014

The results show that overall public perception of the comparative sizes of the fish in the past with the present is valued at 35, so that the citizens consider the sizes of fish in the past with the present in Saugi Island to be the same size.

A total of twelve people (63.15 percent) feel that the size of the fish caught has not increased or decreased in size at all. Five of the respondents (26.32 percent) believe that the fish they catch have become smaller now than before. Two people (10.53 percent) claim that the size of fishes in the Island have not had any significant changes. None of the respondents say that the fish have become larger.

The answers regarding how the preservation of coral reefs affects the number and size of fish can be seen in the following table:

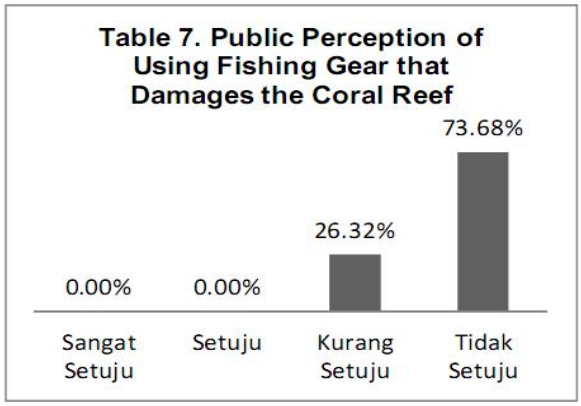


Source: Primary Data, 2014

The results showthat the overall perception of the effects of preserving the coral reefs on the number and size of fish are valued at 52 so that the public considers the preservation of coral reefs significantly affect the number and size of fish that now exists on the island.

Ten of the respondents (52.63 percent) perceive that preservation will affect fish size and population. Four people (21.05 percent) believe preserving the reefs will not have a significant impact on fish size and population. Three respondents (15.79 percent) say that the impacts of preserving the coral reefs will be significant on the number of fish and their size. Two of them (10.53 percent) feel that preserving the coral reefs will not give any impact on fish size and numbers.

Answers to the question regarding how using fishing gear that damages the reefs can be seen in the table below:



Source: Primary Data, 2014

The results show that overall public perception of the use of destructive fishing gear on coral reefs are at valued at 71 so that the community shows its strong disapproval of the use of destructive fishing coral reefs inSaugi Island.

Fourteen of the respondents (73.68 percent) believe that fishing gear that harms the coral reefs

should not be banned. Five of them (26.32 percent) say they are somewhat disapproving of the use of this type of fishing methods and tools. None of the respondents showed any signs of approval of using gear that can destroy the coral reefs in any way.

CONCLUSION

Based on the research that has been done on Saugi Island, BajiMattiro Village, LiukangTupabbiring District, Pangkep, South Sulawesi, it can be concluded that:

1. The community on Saugi Island, especially long-line fishermen, has a positive perception of the existence of coral reefs.
2. Public perception of the existence of coral reefs have a very strong relationship with the catch of long-line fishing in SaugiIsland with a correlation coefficient of 0.91 and a determinant factor of 83%.

REFERENCESE

[1]. [1]Consultant, Dwi. 2011. http://duwiconsultant.blogspot.com/2011/11/analisis-regresi-linier-berganda.html. [online]. diakses 22 Mei 2014.

[2]. [2]DepartemenKelautandanPerikanan. 2003. PedomanPenetapanKawasanKonservasiLaut Daerah. DirektoratKonservasidan Taman LautDirektoratJenderalPesisirdanPulau-pulau Kecil. Jakarta.

[3]. [3]Hamzah.2005.AnalisisPenilaianManfaatEkonomiEkosistemTerumbuKarangPerairanPulauBarangLompo Makassar.Tesispada PPs Unhas Makassar.

[4]. [4]Haruddin, dkk.2011. DampakKerusakanEkosistemTerumbuKarangTerhadapHasilPenangkapanIkanOlehNelayanSecaraTradisional.UniversitasSebelasMaret. Surakarta.

[5]. [5]Megawanto, Rony. 2010. http://romeo90245.wordpress.com/2010/01/25/profil-kawasan-konservasi-laut-daerah-kkld-kabupaten-pangkep/. [online]. Diakses 19 Mei 2014.

[6]. [6]PPTK Unhas. 2006. LaporanAkhirKegiatanInti Daerah AnalisaZonaPemanfaatandanPotensiPengembangan Wilayah Laut, PesisirdanPulau-pulau Kecil. MitraBaharidanDivisiKelautan PKP Unhas.Makassar.

[7]. [7]Riduwan, M.B.A. 2003. Dasar-dasarstatistika.Alfabeta. Bandung.

[8]. [8]Walgito, Bimo. 2004. PengantarPsikologiUmum. Andi Offset. Yogyakarta.

[9]. [9]Waty,K..2007.ValuasiEkonomiSumberdayaTerumbuKarangPerairanPulauSalemoKabupatenPangkep.Skripsi.JurusanPerikanan. FakultasIlmuKelautandanPerikanan.Universitas Hasanuddin. Makassar.

★★★