Typology Analysis of Sharks Fisheries Landed at Karangsong Fish Auction, Indramayu

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Abstract:- This research was carried out at the fish auction Karangsong, Indramayu Regency, West Java. The study was conducted from March 2018 to December 2018. The analysis of the typology of shark fishermen aims to find out technical, social and economic typologies in order to provide information to the public and the government. The method used in this research is the survey method at the fish auction Karangsong by interviewing respondents through questionnaires for 60 respondents. The sampling method was done by accidental sampling and the data were analyzed by descriptive qualitative. The research shows that commercial fishermen are the main occupation, including labourers, on average fishermen go to sea more than one day. In general, the age of shark fishermen is between 35-40 years with elementary education level, and have working experience for 10-15 years. Shark fishing is carried out using vessels with a size of 25 GT, with a trip (year) the most 150 times the size of a 3 GT ship. With shark fishing areas obtained in WPPN-RI 711 and WPPN-RI 712 covering the Java Sea and the northern coastal waters of Indramayu. Generally, there are three types of sharks, including Hammerheads (Sphyrna zyghaena) and Lanyam Sharks with two species of Carcharhinus falciformis and Carcharhinus amblyrhynchos). The biggest production in 2017 was 30,023 kg catched using 43 GT vessels and the highest production value in 2017 was Rp 360,276.00.

Keywords:- Typology; Shark Fish; Indramayu.

I. INTRODUCTION

Indonesian sea which has a large diversity of biodiversity and types of sharks. However, most of the existing shark species are included in endangered species. Based on IUCN (International Union for Conservation of Nature) data, four species of shark in Indonesia has been categorized as critically endangered, five species which are endangered, 23 species are vulnerable, and 35 types of sharks included in the near threatened category (Fahmi and Dharmadi 2013). This status is given to animals that have the potential for extinction in the near future or at a certain time.

There are five species of sharks in Indonesia that have been threatened with extinction according to CITES data. In March 2013 "the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) at the Convention of Parties (CoP16)" stated that there were one species of shark Koboy (Carcharhinuslongimanus), and three species of hammerhead sharks (Sphyrna lewini, Sphyrna mokarran, Sphyrna zygaena) are officially included in CITES Appendix II. With this decision, the types of sharks receive special attention from the government and all authorities, both in terms of protection and conservation and trade from inside to abroad (Pratiwi 2017).

Although the government has confirmed that sharks are prohibited from being catched, Indonesian fishermen still capture and utilize almost all parts of their bodies, such as meat, fins, skin, liver and bones to sell because almost all parts of the shark's body are of economic value. The exploitation of sharks in Indonesian waters includes various types of fish (multi-species) and various fishing (multi-gears). Shark fisheries production in Indonesia has increased in the past two decades. The high market demand has caused shark fishing activities carried out by Indonesian fishermen to improve in the conditions of shark fishing which is prohibited, causing the selling value to be higher.

One of the ports that have landed many sharks is the port of Karangsong, the fishermen who landed sharks in the port of Karangsong have a basis for social and economic factors, so fishing is prohibited. The decision of fishermen to catch sharks certainly influences the survival of sharks in Indonesian waters. The high catch of sharks results in a decline in the population of sharks in the waters so that it will disturb the stability of the marine ecosystem. Though sharks have an important role in the fishery production chain if the reduction of sharks in the waters can cause a decrease in fishermen's catch, towards other types of fish because sharks in the food chain have a peak position, where sharks generally eat smaller fish.

Based on initial communication with local fishermen in Karangsong, they indicated that the place of the fish auction Karangsong, Indramayu was one of the large shark fishing areas in West Java, catching sharks were considered bycatch.
Therefore, this research was conducted to look at the general typology of shark fishing in Karangsong, Indramayu Regency as information and input material for policymakers.

II. METHODS

A. Research Sites and Times

This research was carried out at Karangsong at the place of the fish auction, Indramayu Regency, West Java in March 2018 until December 2018. Collection of data and other information related to activities this research was conducted by observation and interview directly using questionnaires to fishermen who caught sharks.

B. The Method Research

Method used in this research is the survey method, which is a research method using questionnaires as an instrument for data collection. The goal is to obtain information about the respondents that is considered to represent a particular population "(Kriyantono 2008).

C. Data Collection Method

The method used in this research was conducted in three ways, namely interviews with questionnaires to fishermen who caught sharks, direct observation, and study of literature or documents.

D. Respondent's Data Collection Techniques

Determination of samples using Accidental Sampling to anyone who happens to meet the researcher can be selected as a sample if it is deemed suitable and meets the criteria as a source of data (Sugiyono 2010). Criteria for respondents to be interviewed and given questionnaires, respondents who catch sharks and landed in the place of the fish auction Karangsong.

E. Data Analysis Methods

Methods of data analysis used in this research is descriptive qualitative analysis. The analysis of the descriptive method is a method to determine the variables independently (Sugiyono 2012). Descriptive methods are general descriptions of fishermen's perception of catching sharks. The analysis method is qualitative method that emphasizes more on the aspects of the measurement objective to the phenomenal social (Sumanto 1995).

III. RESULTS AND DISCUSSION

❖ *Social Data of Fishermen Catching Shark*

A. Typology of Fishermen Shark Catchers

Typology is the characteristic science of how humans in groups according to their individual character. based on the group including based on background, type of business, ownership status of fishing gear and length of sea, as for this typology analysis as follows.

➢ Based on the background of fishing, background of shark fishermen landed at the fish auction Karangsong, the majority of them have a background in fishing commercially using Gill net as a search for fish in the sea.

➢ Based on the type of fishing business, the shark-fishing fishermen landed at the fish auction Karangsong based on the type of fishing business, the majority of fishermen catching fish as their main job, because the fishermen who landed sharks in the fish auction Karangsong have no land to paddy.

➢ Based on the ownership status of fishing gear, fishermen catching sharks landed in the fish auction Karangsong are labor fishermen. Labor fishermen namely fishermen do not have their own fishing gear and labor fishermen can only contribute their labor services in fishing activities.

➢ Based on the length of time, the Fishermen catching sharks landed at the auction Karangsong took a long time to sail more than one day. because fishermen use ships with a size of 25 GT and 43 GT so that the distance to the fishing area is longer, even if it takes a long time to sail for one day with a value of 3% because fishermen use vessels with a size of 3 GT so that fishermen only go 3 miles away

B. Age Level

The results of direct observation with interview methods and questionnaires with shark-catching fishermen. The age level of shark-catching fishermen in the fish auction Karangsong who are still in productive age, the highest age group of shark fishing fishermen is 35-40 years with a percentage of 22%, and the lowest percentage is 23-28 years with a percentage of 12% . It can be concluded that the age of shark fishing fishermen can influence the level of experience of fishermen in carrying out shark fishing activities.
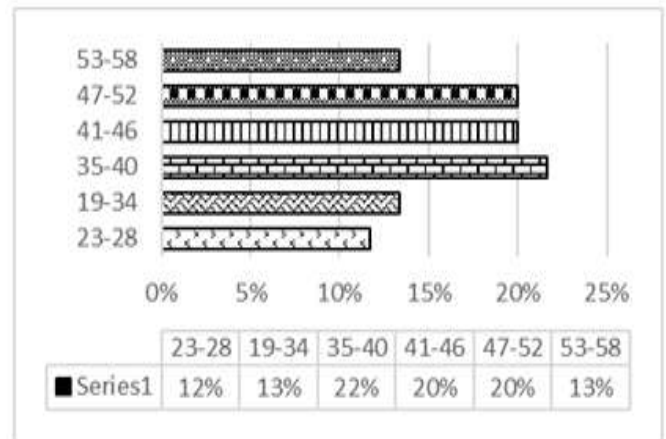

	23-28	19-34	35-40	41-46	47-52	53-58
■Series1	12%	13%	22%	20%	20%	13%

Fig 1:-Graph of AgeSharks Catchers
(Data Source: Processed Data)

C. Levels for Educational

The level of education of fishermen who catching sharks, the majority of educators were the last primary school with a percentage of 63%. From the interview results, it was found that fishermen's awareness of the importance of education was very low, shark-catching fishermen were not too concerned with education but were more interested in working directly than having to go to school, so this is one

factor fishermen do not know that sharks play an important role in the waters and sharks shouldn't be in consumption because their flesh contains mercury in.
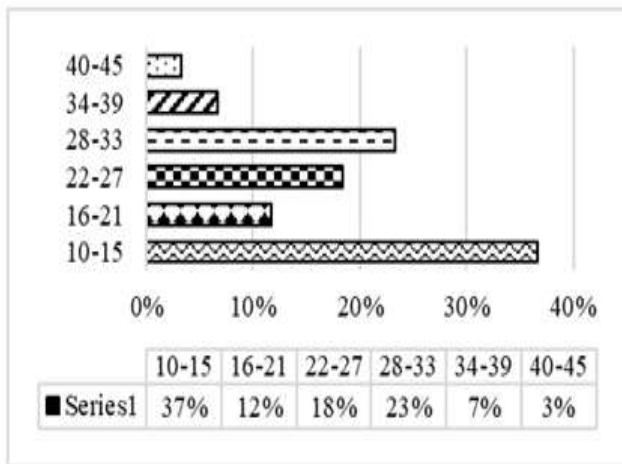

Fig 2:-Graph of Education Levels on Sharks Catchers.
(Data Source: Processed Data)

D. Level of Work Experience

Level of work experience, shark-catching fishermen in Karangsong have the highest percentage of vulnerable 10-15 years ago for the lowest in vulnerable 40-45 years. This fisherman's experience can influence decision making when determining fishing grounds in the sea. From the interviews, the experience influences the reading of navigation at sea.
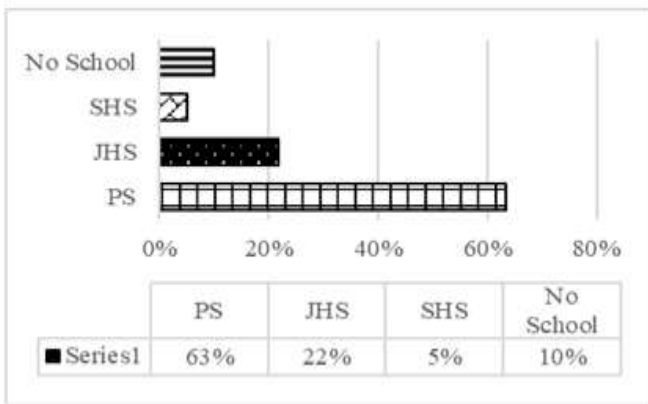

Fig 3:-Level of Experience of Fishermen in Sharks
(Data Source: Processed Data)

❖ *Technical Data of Fishermen Catching Shark*

A. Data of Sharks Catchers Fishing Gear

Gear that often gets the catch of sharks is gillnet (Millenium nets and rampant nets). Sharks are the catch of fishermen who are not the target of the catch (bycatch), in data obtained from 2008 to 2017 millennium and rampant fishing gears experience fluctuating increases and decreases.
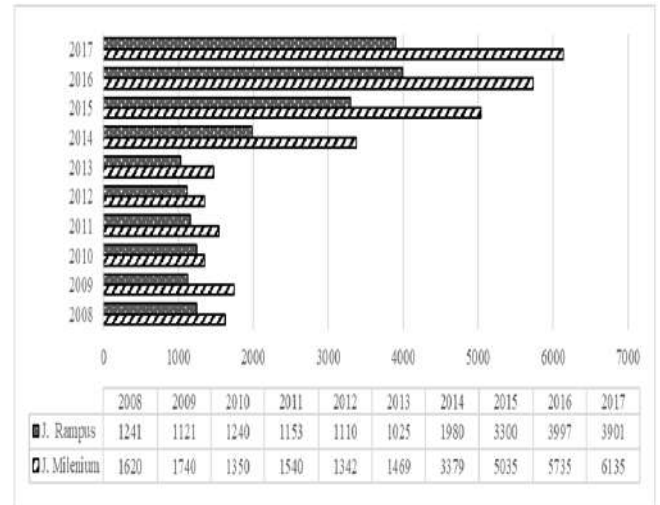

Fig 4:-Histogram of the development of shark fishing gear
(Data Source: Processed Data)

B. Level of Ship Size

Graph results at the size of the ship indicate that shark fishermen in the fish auction Karangsong, Indramayu, the dominant fishermen use GT 25 and 43 for large vessel sizes while for the small dominant vessel size they use GT 3. Fishermen who use vessels with a size of 25 GT will get more catches because fishing distances will be farther than on boats with a size of 3 GT and ships with a size of 25 GT once a trip yearas many as 11 times, more than ships with a size of 43 GT only 5 times in one trip per year, so that more landings to the auction Karangsong
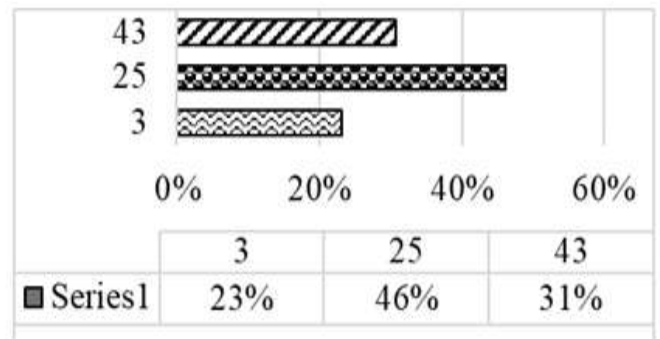

Fig 5:-Levels of GT Size of Ships for Fishing Sharks
Catchers
(Data Source: Processed Data)

C. Number of Trips (year)

In catching sharks the number of trips (years) has a large influence on the results of the conversation, the results of graphil show that the largest number of trips (year) is 3 GT with 48 times trip(year) while trip the smallest(year) is obtained by a vessel with a size of 43 GT with 5 trips (years), the bigger the trip , the fishermen will go to the auction more often to take part in the fish auction
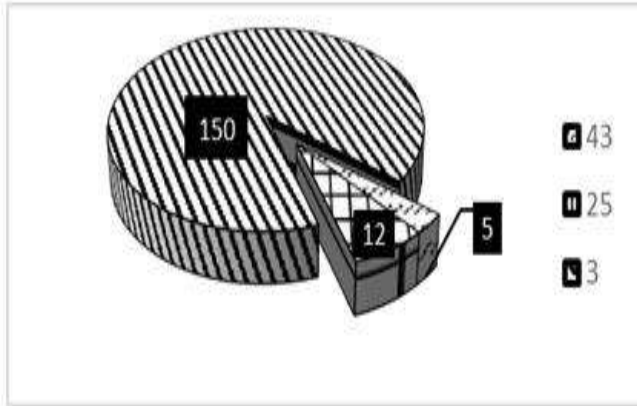
Fig 6:-Number of Trips (year) in Sharks
(Data Source: Processed Data)

D. Catching Fish for Catching Sharks

The shark catching area landed in the fish auction Karangsong, originated from 3 (WPPN-RI), namely for vessels with size 3 GT fishing in the waters of the northern coast of Indramayu. Whereas for vessels with a size of 43 GT fishing in the southern China Sea, Natuna Sea and Karimata Strait with WPPN-RI 711 and for vessels with a size of 25 GT making arrests in the Java Sea with WPPN-RI 712. Information on fishing areas (IDPI) This can make it easier for fishermen to determine fishing locations so that expenditure costs will be more efficient.

Fig 7:- Location of Sharks Catching Area
(Data Source: Processed Data)

E. Composition of Sharks at the Auction Karangsong, Indramayu

Sharks landed in at the auction Karangsong, Indramayu there are two types of sharks, including Hammerheads (Sphyrna zyghaena) and Lanyam Sharks with 2 species of Carcharhinus faiciformis and Carcharhinus ambiynchos). The

most dominant shark appears is the shark lanyam with the species Carcharhinus falciformis as much as 40% than other sharks. Carcharhinus falciformis into CITES II appendix. This species is considered extinct, but if the trade continues massively, the possibility of extinction can occur. IUCN status, which is Near Threatened, is close to being threatened with extinction, even though it does not enter into threatened status (BPSPLPadang 2017).
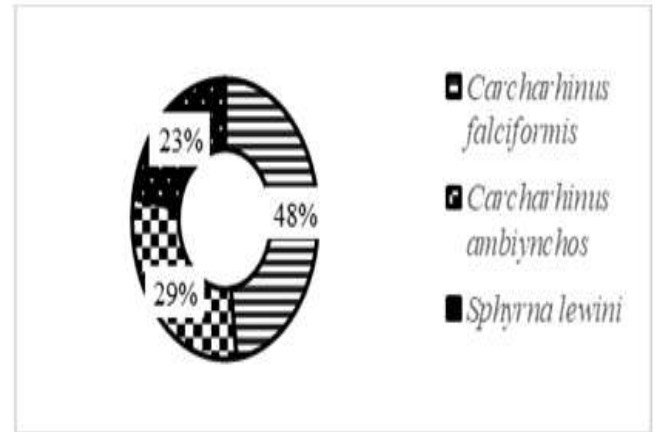

Fig 8:-Composition of Sharks Landed in the auction Karangsong
(Data Source: Processed Data)

❖ *Economic Data Of Shark Fishing Fishers*

A. Production of Sharks the Auction Karangsong, Indramayu

Fishing activities are by-products of catches which are not uncommon for fishermen. Most of the sharks caught by the activities of fishing vessels that carry out fishing operations without determining which fish are the main catches and only chasing fishes (schooling). Shark production for 5 years (2013-2017), it can be said that there is instability in shark production every year landed at TPI Karangsong, from 2015 to 2017 on 3 GT and 25 and 43 GT vessels, on boats measuring 43 GT the highest production of sharks occurred in 2017 amounting to 30,023 kg, then the lowest shark production in 2014 amounted to 23,604 kg. The highest size of 25 GT shark production in 2013 was 1,050 kg, then the lowest shark production in 2014 was 723 kg and the highest 3 GT size of shark production occurred in 2017 at 893 kg, then the lowest shark production in 2015 was 439 kg, from the results of interviews in the field with fishermen the condition of the increase in shark production was due to the growing number of fishing fleet units to operate and market demand in the event that the decline in catch was caused by the presence of fish that was more difficult to find and whether the auction at TPI.
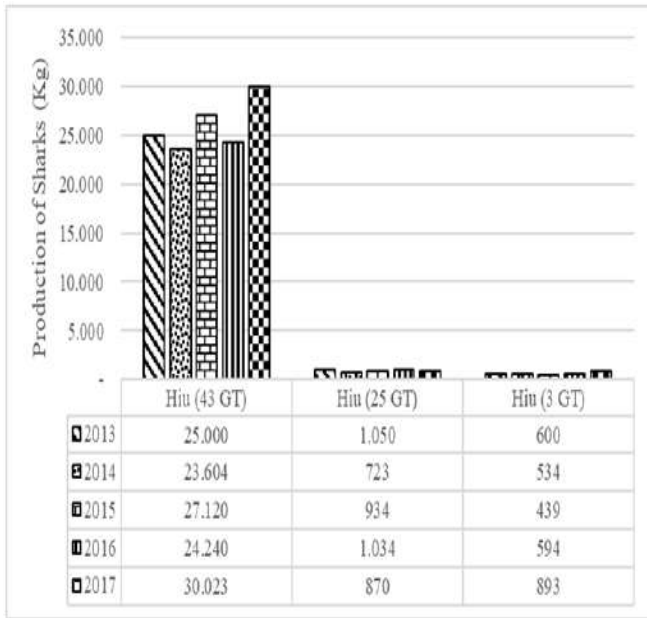
Fig 9:- Production of Sharks (kg) of the auction Karangsong
2013-2017
(Data Source: Processed Data)

The comparison of production data from monthly and yearly, presented in the table of shark production at the auction Karangsong, is presented in Table 1.

GT	Mmonthly Pproduction (kg)	Annual Production (ton)
3	5.102	25.230
25	50	612
43	110	1501

Table 1:- Comparison of shark production
(Data Source: Processed Data)

Results from comparison of shark production can be concluded that the highest production of sharks in GT 43 for months to yearly production because GT 43 conducts fishing in the southern China Sea, Natuna Sea and Karimata Strait so that more catches and consumer demand continue to increase so that fishermen remain catch sharks. From the interview results, the price of sharks per one kg is Rp. 15,000 to Rp. 18,000. The price of this shark will continue to increase if you ask for a high market. production will decline if the weather in the sea is not good so it can disrupt activities.

B. Production Value Of Sharks The Auction Karangsong, Indramayu

The highest production value for ships with GT 3 occurred in 2013, amounting to Rp. 10,716,000, then on ships with the largest size of 25 GT in 2017 amounting to 12,600,000 and on vessels with GT size 43 in 2017 which amounted to Rp 360,276,000 according to Purnomo and

Apriliani (2007) the production of sharks and rays contributes significantly to the income of fishermen, both those who catch sharks as the main target or by-products.
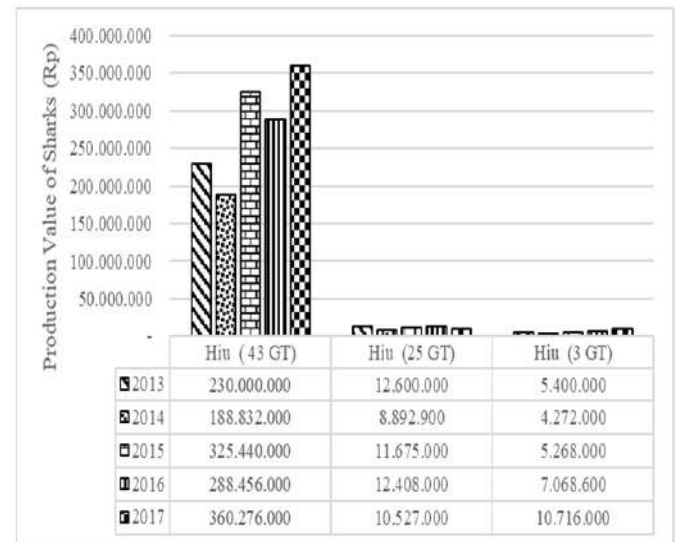

Fig 10:-Production Value of Sharks (Rp) of Karangsong TPI
in 2013-2017
(Data Source: Processed Data)

IV. CONCLUSIONS AND SUGGESTIONS

A. Conclusions

Based on the results of research on typology analysis of shark fishing fishermen landed in the fish auction Karangsong, Indramayu, it was concluded that the social analysis of shark fishing fishermen in the auction Karangsong, Indramayu shows that commercial fishermen are the main occupation, including laborers on average fishermen go to sea more than one day. In general, the age of shark fishermen is between 35-40 years with elementary education level which has working experience for 10-15 years.

The technical analysis of shark-catching fishermen at the auction Karangsong, Indramayu, shows that fishing was carried out using vessels with a size of 25 GT with trips (years) for 150 trips per year. With shark fishing areas obtained in WPPN-RI 711 and WPPN-RI 712 covering the Java Sea and the northern coastal waters of Indramayu. In general there are two types of sharks, including Hammerheads (Sphyrna zyghaena and Lanyam Sharks with 2 species of Carcharhinus faiciformis and Carcharhinus ambiynchos).

The economic analysis of shark-catching fishermen in the auction Karangsong, Indramayu, has the largest shark production in 2017, which is 30,023 kg, catches using 43 GT vessels and the highest production value in 2017 is Rp 360,276.00.

B. Suggestions

Suggestions given by the author while conducting research at the fish auction Karangsong, Indramayu are that fishermen need to be given continuous information on the importance of sharks in the waters to minimize overfishing and about the dangers of consuming sharks for humans and further observations with several research objects namely fishermen with different fishing equipment and research locations in future studies to find out more about sharks.

Research is needed with several research objects, namely fishermen with fishing gear and different research locations in future studies to find out more about sharks.

ACKNOWLEDGMENT

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