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Autoethnographic Studies on Traditional Knowledge of Fishermen Communities on Mandangin Island, Indonesia

Kajian Autoetnografi atas Pengetahuan Tradisional Masyarakat Nelayan di Pulau Mandangin, Indonesia

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Abstrak

Studi mengenai pengetahuan lokal, saat ini marak seiring dengan kesadaran masyarakat mengenai pentingnya penggalian dan pelestarian lokalitas. Penelitian ini bertujuan menggali pengetahuan tradisional masyarakat nelayan Pulau Mandangin, Indonesia. Pulau Mandangin merupakan salah satu pulau kecil di wilayah Indonesia. Penelitian ini menggunakan metode kualitatif dengan pendekatan autoetnografi. Teknik pengumpulan data dilakukan dengan wawancara, pencatatan, dan observasi autoetnografi. Adapun teknik penentuan informan mengacu pada Spradley, yaitu (1) pemahaman budaya, (2) pemahaman budaya yang tidak diketahui, (3) pemahaman non-analitis-interpretatif, (4) ketersediaan penuh waktu, dan (5) masyarakat adat. Hasil penelitian menunjukkan bahwa masyarakat nelayan Pulau Mandangin menganut pengetahuan tradisional terkait pembuatan rumah tadah hujan, pembuatan sumur tradisional, pembuatan perahu tradisional, dan penangkapan ikan secara tradisional.

Kata kunci: autoetnografi, Mandangin, masyarakat nelayan, pengetahuan tradisional

Abstract

The study of local knowledge is currently rising along with public awareness of the importance of extracting and preserving locality. This study aims to explore the traditional knowledge of the fishing community of Mandangin Island, Indonesia. Mandangin Island is one of the small islands in the archipelago territory of Indonesia. This study employed a qualitative method with an autoethnographic approach. Data collection procedures were carried out by interviewing, recording, recording, and autoethnographic observation. To determine the informants, Spradley was referred to by involving the aspects of (1) cultural understanding, (2) unknown cultural understanding, (3) non-analytical-interpretive understanding, (4) full-time availability, and (5) indigenous peoples. The results show that the fishing community of Mandangin Island is adhered strictly to traditional knowledge related to building traditional houses, making traditional wells and boats, and fishing.

Keywords: autoethnography, fishing communities, Mandangin, traditional knowledge

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1. Introduction

In the last five years, studies on local/traditional/indigenous, such as traditional knowledge, have attracted the attention of researchers. Research on traditional knowledge can be related to traditional medicine (Chakravarty & Mahajan, 2010), conservation (Popova, 2013), and legal protection related to traditional knowledge (Martin, Cahill, Wright, dan Stoianoff, 2019). The study of traditional knowledge was not only carried out by western researchers, but also by researchers from the east. This shows that

the awareness to raise local elements in indigenous communities is starting to get the attention of eastern researchers.

With regard to traditional knowledge, Indonesia is a country rich in these things/ Indonesia is an archipelago because it has more than 17,000 islands (Tumonggor, et al., 2013) spread from the Sabang region to Merauke. The many islands in Indonesia have led to diversity in various fields. That is why Indonesia has more than 300 ethnic groups living on various islands (Göltenboth, 2006).The number of ethnics which is more than 300 causes Indonesia to have many indigenous (Michalopoulos, 2012) and traditional knowledge. Not only that, Indonesia is also rich in various species that live on various islands (Lohman, et al., 2011; Nalau, Becken, Noakes, & Mackey, 2017). Traditional knowledge in the community is very important because it can improve the level of development of people's lives (Daigger, 2009; Gómez-Baggethun, Corbera, and Reyes-García, n.d.). Therefore, the traditional knowledge needs to be documented so that it is not extinct and lost in time (Zhang, et al., 2016) both now and in the future.

The study of traditional knowledge is indeed not new. Some research shows that traditional knowledge is related to the problem of protecting traditional knowledge in Bangladesh (Rahaman, 2015); traditional knowledge about ethnobotany in the Yangzhou area, China; traditional knowledge about agriculture in Iran (Ardakani and Emadi, 2008); As a study, traditional knowledge has a close relationship with ecology and anthropology (Ahmadi and Yulianto, 2019). Related to traditional knowledge, in this study aims to explore and explore the Traditional Knowledge of Fishermen Communities on Mandangin Island, Indonesia: Perspectives on Autoethnography. The fishing community of Mandangin Island is known as a community that still maintains local traditions and passed on to their children and grandchildren. The area of the island is small because it is only the size of a village. Most of the people live as traditional fishermen (Aung Si, n.d.; Phillips, 2016) who fish in the sea using traditional boats. Their daily life is also a traditional model. Research on traditional knowledge, whether in the form of tangible or intangible, needs to be preserved because it is a community heritage. If left unchecked, it will eventually disappear and perish (Ahmadi, 2015). Therefore, research and documentation efforts are needed regarding matters related to local wisdom, local knowledge, and traditional knowledge so that the local identity of the community does not fade (Anoegrajekti, et al., 2020) because modernism is indeed slowly eroding traditional knowledge.

Relating to this phenomenon in this study aims to explore the traditional knowledge of Fishermen Communities on Mandangin Island, Indonesia: An Autoethnographic

Perspective. Previously, researchers conducted a study on the island of Mandangin related to the cultural context (Ahmadi, 2011) and ethics of Muslim women (Ahmadi, 2021). Researchers focus on the traditional knowledge of fishing communities on Mandangin Island because until now no one has explored and explored traditional knowledge on the island. In fact, the traditional knowledge of fishing communities on Mandangin Island is very interesting to study, especially in terms of traditional knowledge of lifestyles, local psychology, and traditional medicine.

Traditional knowledge is a scientific discipline that is related to traditionalism, uniqueness, uniqueness, and locality (Sengupta, 2019). Traditional knowledge as a study is essentially related to tradition, uniqueness, uniqueness, traditionalism that is found in an area which is passed down from generation to generation (Latulippe, 2015). Traditional knowledge can appear in two categories. First, traditional knowledge in the form of thoughts/ideas related to local knowledge, local psychology, local philosophy, local medicine, and/or local religion. In connection with this, local forms, for example religion or psychology, each region has a difference as a characteristic form. Second, traditional knowledge in the form of cultural artifacts, for example traditional sculptures, traditional house buildings, or equipment for traditional livelihoods: boats, wagons, and arrows.

Traditional knowledge can also appear in the form of regional literature, namely folk tales, myths, or legends as well as regional languages (Menzies, 2006; Hansen and Van Fleet, 2003). This traditional knowledge is not only found in traditional societies, but also in modern societies that still maintain traditional values which are indeed passed down from generation to generation. Traditional knowledge has been maintained by the supporting community until now because it is considered a cultural heritage, both material and intangible. The term traditional knowledge is actually almost the same as local knowledge (Geertz, 2003), both of which are related to the locality and uniqueness contained in it.

2. Methods

The location of this research is focused on Mandangin Island, Madura, Indonesia (figure 1: Mandangin Island). The focus is directed at the traditional knowledge of the fishing communities found on the island. The study was conducted in three villages in Mandangin Island, namely Candhin, Kramat, and Timur. As a small island, this region is indeed rich in marine resources in the form of fish, crabs, and shrimp. Therefore, 80% of the people on Mandangin Island are fishermen, while a small number work as farmers,

laborers, or employees (Ahmadi, 2011). The economic and social life of the people on the island is not yet so strong due to three main things, namely electricity that is not yet optimal because it relies on generator power so that electricity is only turned on in the afternoon. In the morning until noon, there is no electricity supply on the island and the area is too small, while the population is already dense; and (3) transportation facilities rely more on sea transportation (there are only 06.00 and 14.00).

The research method used is qualitative because the data presented are more dominant in the form of empirical data in the form of narration, description, and interpretation of data (Creswell & Creswell, 2020). In relation to data collection techniques, researchers use the autoethnography research model. Autoethnographic research is very appropriate for field research because a researcher, in this case, acts as a researcher as well as a key instrument. In autoethnography, researchers narrate their individual experiences while in the field as material/research data (Cann & DeMeulenaere, 2012; Clandinin & Connely, 1994; Decuypere, 2020; Wall, 2006). The data retrieval is not necessarily considered as the data used as research material, but it is first identified, classified, and reduced so as to produce scientific and scientifically justifiable data.

Autoethnographic data collection techniques in this study include interviews, recording research data, recording, and observation. For interviews with informants, a dialogue technique that is 'close' and 'sincere'. Interviews were conducted using the reflective-narrative-dialogic style so that the informants did not feel interrogated. As for observations in the field, researchers asked for help from informants to become guides so that researchers could get clearer information about the location of Mandangin Island. The data obtained were recorded and recorded by researchers.

In order to obtain informants that are in accordance with the wishes of researchers and in accordance with the focus of the study, researchers determine the criteria for informants selectively. Through determining the right informant criteria, it is hoped that the data obtained will be data that can be scientifically justified. As for the technique of determining informants, the following criteria are used, namely (1) understanding of culture, (2) understanding of culture that is not known, (3) understanding non-analytical-interpretative, (4) full-time availability, and (5) indigenous people (Spradley, 1979). Determination techniques the informants in this study were not completely rigid and had to meet all four criteria because to get the ideal informant and in accordance with the wishes of the researcher was indeed not easy. For this reason, researchers are more reflective in determining informants. With regard to informants, the researcher chose two main

informants, namely as follows. First, Hafi (45 years), a native of Mandangin, who owns the ship. Second, Mulkal (39 years old), a native of Mandangin, works as a fisherman. In relation to data collection, researchers also look for fish in the oceans to deepen the research description.

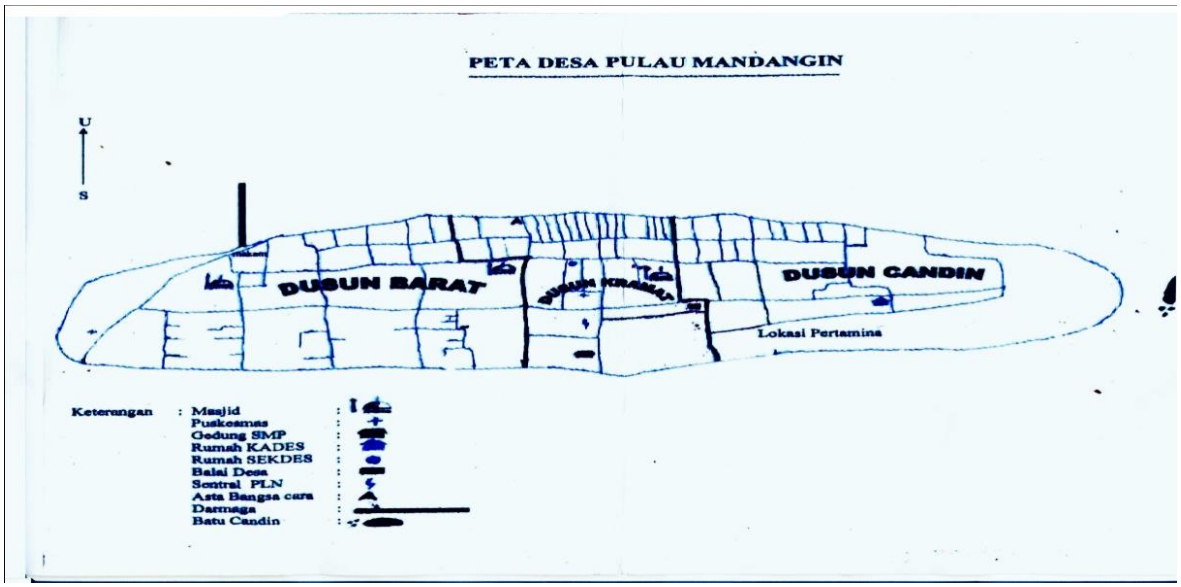

Figure 1. Map of Mandangin Island, Madura, Indonesia
Source: *Monographs of Pulau Mandangin Village* (2006)

In collecting data, researchers asked permission in advance from the village head of Mandangin Island. After that, the researcher was assisted by a research assistant team to meet with the informant. In order to avoid misunderstandings in the interview, the researcher asked for approval from the informant regarding the information to be given to the researcher. Based on the results of the informant selection survey, 11 informants were obtained who were willing to be interviewed and asked for information related to the traditional knowledge of the fishing community of Mandangin Island. They are aged between 20-80 years old, both women and men who are fishermen families. They are the local people of the island. The data analysis technique was carried out through three stages, namely identification of data obtained from the field (based on information from informants), reduction of data obtained from the field and selecting the main data, and exposure of data using an autoethnographic perspective.

3. Result and Discussion

3.1 Traditional Knowledge in Making Rainfed Homes

One of the unique features of the Mandangin Island community is the rain-fed house. Rainfed house is a house construction that is used as a rainwater reservoir. This happened because all the wells in Mandangin Island were salt water so they could not be used for drinking water. To get around this, the fishing community of Mandangin Island built rain-fed houses.

The technique of making a rainfed house is as follows. The roof of the house is given a pipe for drains that lead down. The plumbing can be sized 2 dm or 4 dm depending on the owner of the house. Pipes that are channeled down are directed to a large reservoir located next to the house, usually on the right or left side of the house. The water reservoir has a capacity of 2 to 5 cubic that can hold 2000 to 5000 liters of rainwater. The reservoir is made with sand, brick, and cement. For people who do have a lot of money, the reservoir they make is stained so that the water reservoir doesn't leak easily. In addition, water is also cleaner and healthier. In the rainy season, water that drops from the roof of the house will immediately flow into the reservoir that has been prepared.

To maintain the quality of the cleanliness of rain water, in the first rain until the third rain, water is not included in the water reservoir because the roof of the house is still dirty with dust and other impurities. It was only the fourth rain, water from the roof was channeled directly into the water reservoir that had been prepared. The stored reservoir water can be used for one semester. In fact, according to the local community the reservoir water that comes from rain water tastes fresher and more delicious when compared to mineral water sold in stores. They feel very comfortable with rain-fed water which is used as daily drinking water. Making a rainfed house cost a lot of money, especially for ordinary people. Therefore, those who have rainfed homes with a reservoir capacity of up to 5 cubic are rich people. As for the ordinary category of fishing communities, they use water reservoirs, for example, bathtubs, reservoirs purchased with a capacity of 500 liters. In relation to community solidarity, those who have large reservoirs, usually distribute the water to the local people who really need it.

3.2 Traditional Knowledge How to Make a Well

Mandangin Island fishing community, when viewed in terms of life, is still traditional. For washing, bathing, they use well water. As for drinking water, they do not use well water because there is no freshwater in Mandangin Island, everything is salty

because Mandangin Island is categorized as an island whose land surface is rather low with sea level so that seawater enters groundwater. They make a well which is next to the house. Making Sumut is a traditional knowledge of the Mandangin Island fishing community because the way to make the well is passed down from generation to generation. Parents inherit how to make a well to their children. The wells made by the fishing community of Mandangin Island are categorized into three models.

First, the wells were dug with a depth of about 10-15 meters with a diameter of 1 meter to two meters. The well was dug by using a scope. Usually, there are two to three workers and a day is finished. If the digger digs up to 15 meters and the water does not come out, he will dig until there is water. For fishing communities whose economic life is mediocre, they make wells without cemented or use circular concrete with a diameter of 1 to 2 meters. This well has a weakness because over time the wall of the well that is not cemented will slowly erupt little by little because it is eroded by well water. This model well is the well most used by the fishing community of Mandangin Island. Wells with a depth of 10-15 meters are wells categorized as shallow wells. This category of well is not very good because the source of water used is not a source of water from deep soil but from surface soil. Land that is on the surface is usually not good and much contaminated with groundwater pollution.

Second, for the middle-class fishing communities, they make wells by cementing them. The well does look better and cleaner. However, the price of making wells is far more expensive compared to traditional wells that are only dug, without cement. This category of wells ranks second when viewed in terms of numbers. For this category of wells, the depth is also almost the same, which is 10 to 15 meters. However, if the owner wants his water source to be clearer and better, he will dig deeper to 20 and 25 meters. This category of wells is a well whose depth is a good category because it will bring up clean and clear water sources because the source water that appears is not contaminated by groundwater pollution. However, still, even though it was excavated to a depth of 25 meters, the well water in Mandangin Island remained as deep as 10 to 15 meters, the water remained salty and could not be used for drinking water.

Third, for the upper class fishing communities, usually the boat owners or fishermen who are also merchants. They make wells well. The wells they made use cement concrete with a diameter of 1 to 2 meters. Thus, the well really looks clean and hygienic. This category of wells ranks the least because they cost more to make. This well has a very clean water source because it uses concrete so that the source water that emerges from the

well comes from the bottom of the well, not from water infiltration that appears on the well wall.

3.3 Traditional Knowledge How to Look for Fish

The Mandangin community is almost the same as the Madurese community in general. They are very familiar with the sea. Because of that, the saying, abental ombhe 'smoke' wind (padded waves, rolling wind). Since childhood, the children of the fishermen have become young fishermen. They, the child, invited to go out to sea to find fish. They were taught how to wrestle with the sea.

When July-August, the community, especially the fishermen, were very aware that the month would bring big winds. Therefore, in the fishing community, it is also called a period of calm. At this time, they did not go out to sea, but at home to repair damaged fishing nets. In addition, they also make improvements to the boat / ship and paint it. After that, in September, they began to sea again. When going to sea, the price of fish on Mandangin Island is very cheap because the majority of Mandangin people are fishermen. However, during a period of heavy wind, around July-August, the price of fish crawls up.

The fishermen on Mandangin Island are traditional fishermen. Therefore, the equipment installed on their ships is a traditional facility. Because of this, fishing vessels rarely have a compass. Even without a compass, they can already understand the flow of the sea and they have never been lost in the ocean. In sailing, they use sailor instinct. Thus, when the ship's direction is somewhat wrong, their instincts will show that the ship's direction is not on the desired track.

As a fishing community, knowledge about fish is needed. Therefore, understanding the character of fish in the ocean. For bloated fish, usually a lot in waters close to river mouths. Therefore, to find mackerel in abundant quantities, fishermen must find fish in waters close to the river mouth. For the species of fish, usually a lot of breed in coral / coral growing areas. Therefore, if you want to find abundant kerapoh fish, fishermen must look for waters with many coral reefs. For lobster, usually a lot of underwater reefs. That way, lobster search fishermen must look for waters that have a lot of underwater coral. When the 15th of the month, the brightest time of the month (slag of the moon), many fish fishermen go to sea especially sleret fishermen. They look for fish during moonlight because at that time a lot of fish appear and it is said that the moonlight is the mating period. Because of this, many fish in the sea come to the surface. That way, the fishermen will find it easier to capture them.

In Mandangin there are two types of fishermen. First, the tenant's servants, are fishermen who do not have their own boat. Therefore, he rented a boat to the skipper boat in Mandangin Island. Second, fishermen who have their own boat. Thus, he does not need to rent a boat to someone else. For string fishermen (catching fish but not far from shore), they usually make their own boat. The wood used is usually wood found around their yards or bought wood found in other people's yards. In the process they need about three months plus painting.

According to the village chief of Pulau Mandangin village, nearly 80 percent of the people of Pulau Mandangin work as fishermen. Types of fish fishermen there are divided into three. First, string fishermen, these fishermen are small fishermen and use small boats. The string fishermen only consist of two or three people, one ship owner and its leader and two crew members. They use a net measuring 1000 meters and made of strings. They go to sea in the morning around 04.00 or after dawn prayer. Supplies that are usually brought to sea are food, knives, nets, and fish containers.

Stringed fishermen look for fish not far from the sea of Mandangin Island. The net is spread only once. After stocking, they are pulled out again and then they go home. Therefore, around 08.00 they returned home with small or medium-sized fish. Thus, if calculated, their work time is around 4 hours or even less. Their income per sea is around 200 thousand (gross income). In the past, string fishermen per sea could get around 500-1000,000. However, now, just getting 500 thousand is already difficult. This is caused by the following factors. First, the number of string fishermen is increasing from year to year. In fact, the daily supply of fish is taken continuously. The increase in the number of string fishermen is due to people who have money preferring to buy a canoe that they use themselves to find fish. This was done in relation to their work status. If they work with people, it's definitely not very good. However, if you have your own canoe and manage it yourself, it is definitely more fun and the results obtained do not need to be shared with others. Usually, string fishermen, owners, invite their relatives or children to become assistants when looking for fish in the sea. Thus, they are not so shy about sharing the results because they are still their own families. The price of a canoe for strings is not too expensive when compared to the price of nok-renok ships and strings. The price of a stringed boat is around 10-12 million.

Secondly, at present, many coral reefs have been damaged by the local community. The destruction is in order to make a house (take a rock) or because of being hit by

potassium/poison of fish so that the coral reef dies/damaged. Thus, the growth of coral reefs is inhibited.

In addition to string fishermen who use small canoes, there are also crab and crab fishermen. The type of canoe used is the same as the type of canoe. Crab or crab fishermen usually leave after dawn and set traps. Crab and crab traps are usually small fish, for example mackerel. After the traps are scattered around the coast but rather to the middle, after an hour or two, the traps are pulled. Usually, the process of searching for rajugan and crabs ends until dhuhur. So, the total sea time to look for crabs is about 7 hours.

The second type of fisherman who fishes is nok-renok. Nok-renok fishermen are fishermen who are looking for rather large fish. Usually, what is sought is the type of tuna fish. The search model for nok-renok fishermen is somewhat different from that of string fishermen. If the stringed fishermen leave at dawn and return around 8:00, the nok-renok fishermen leave at dawn and return at 12.00. The difference is due to the net being spread by nok-renok fishermen 25-30 times, while the sleret fishermen only scatter once. The number of nok-renok fishermen in one boat is around 10-12 people. Therefore, the ship used is also quite large when compared to the stringed sampans.

The third type of fisherman who fishes is sleret. Sleret fishermen use large vessels and number around 15-30 or more. This boat is looking for medium and large fish. Therefore, it requires a large net too. If the fishermen are stringed and the nok-renok nets are pulled by hand normally, the sleret fishing nets are pulled by a machine. Income at sea around 10-20 million per day. However, now many fishermen are complaining because the number of fish is decreasing and many ships from outside Mandangin Island use trawlers. In fact, fishing boats using trawlers are prohibited. However, until now masah many people who use trawlers to find fish.

Figure 2. The boat is used for fishing

Sources: Anas Ahmadi

3.4 Traditional Knowledge How to Make a Boat

Mandangin Island fishing communities fishing using traditional boats. The boat is made of wood. The process of making a traditional boat is divided into three main parts.

First, the design and selection of materials. The making of traditional boats for fishing is based on orders. If there is no order, the boat maker will not make a boat. When there is a customer, the boat maker deals with the price of the boat and also the material desired by the customer. For boats that are of good quality and use teak wood (quality wood for this type of boat and the price is more expensive than other wood) the price is around 80-100 million. If the customer and the boat maker has made a price agreement, then the boat is done. Usually, the boat maker asks for an advance of around 20-30 percent of the agreed boat price.

For ordinary quality boats, the price is around 40-50 million because the material used is not teak but ordinary wood, such as sengon or meranti wood.

After a payment agreement is made, the boat maker makes a boat design to be made. He will show the boat's design to the buyer of the boat. The buyer of the boat can also order the boat model to the boat maker. Thus, the design of the boat in accordance with the wishes of the buyer. In this case, the design / design of the boat is twofold, namely the design that is indeed the standard of the boat maker. This design is a design commonly used by fishermen and the design is in accordance with the customer's wishes. Designs that

are in accordance with the wishes of the customer will usually be subject to additional prices because usually the material used will increase.

Second, the boat construction process. The boat construction process usually takes around four to five months. In the first month they usually choose and order materials from wood sellers used for boat materials. If materials for making wood have arrived and are already complete, in the second to third month, the boat maker is usually assisted by five or six boat makers. Workers who make the boat are usually fishermen who happen to not sail to find fish or neighbors who are in a situation that is loose and not working. The workers have their own fields in boat work, ranging from cutting wood, straightening wood, installing iron for pins, gluing, burning wood (if wood is not straight). They all work from morning to evening. Boat work is usually done on the beach because it makes it easier if the boat is finished. The length of the boat is usually 10-15 meters with a width of about four meters.

At this stage, the boat design from the frame to the body is complete, but still in raw condition. That is, the boat is still not suitable for use because it is still not glued and has not been painted. At this stage also, the boat maker will check the feasibility of the boat. If the boat is deemed appropriate, he will notify the buyer of the boat to check the boat. If the buyer has seen the boat and agrees with the boat that is being made, the shipbuilder asks for additional money for the usual operational costs, 70 percent of the agreed boat price.

Third, finalization. At this stage, usually done in the fifth month. At this stage, workers who make boats make patches on parts of wood that still have holes or on parts of wood that are wooden joints, gluing done on important parts, especially the meeting between wood and wood so that the boat does not leak, rubbing wood which is still rough so that the surface of the wood found on the ship becomes smooth. If the stage is complete, only the painting stage remains. Painting stages are carried out twice. The first stage, painting is done is basic painting. The initial painting is to cover parts of the ship that are less smooth or patches. Therefore, the initial stage painting is usually still not good. Only in the second stage will the final painting be carried out. At the final painting, the paint quality is optimized so that boat paint gets better and better. The painting function is not only to beautify the boat but also to anticipate a thin leak in the hull of the boat.

4. Conclusions

The fishing community of Mandangin Island lives in traditional ways. Therefore, they still maintain, pass down, and care for traditional knowledge in their area. Traditional knowledge in the Mandangin Island fishing community is indeed a characteristic that is unique compared to other fishing communities. One unique traditional knowledge is the rainfed home. Rainfed houses are unique traditional knowledge because they are not owned by other island fishing communities. rainfed houses appear because they do not have a stock of clean and non-salty water. The other traditional knowledge is the making of traditional wells, boat making, and the type of boat that seeks fish in the sea. All of them are traditional knowledge which until now is still maintained and held firmly by the fishing community of Mandangin Island.

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