

## THE ROLE OF “IKAN MAKAN” AND “IKAN TACUCU” TO OVERCOME THE FINANCIAL INSECURITY OF PURSE SEINE CREWS HOUSEHOLDS IN MALUKU

### PERAN “IKAN MAKAN” DAN “IKAN TACUCU” DALAM MENGATASI KERAWANAN FINANSIAL RUMAH TANGGA NELAYAN BURUH PURSE SEINE DI MALUKU

Yolanda Marla Tania Nangkah Apituley<sup>1)</sup>, Hendri D Hahury<sup>2)</sup>, Billy J Camerling<sup>3)</sup>, Max Robinson Wenno<sup>1)</sup>,  
and Dionisius Bawole<sup>1)</sup>

<sup>1)</sup> Faculty of Fisheries and Marine Science, Pattimura University

<sup>2)</sup> Faculty of Economics and Business, Pattimura University

<sup>3)</sup> Faculty of Engineering, Pattimura University

Received: November 11, 2022 / Accepted: October 19, 2023

#### ABSTRACT

“Ikan makan” and “ikan tacucu” are the terms found in purse seine fishing systems in Maluku, which is one of the crucial sources for the economic sustainability of fishermen's households. This study aims to: 1) Describe the meaning and function of “ikan makan” and “ikan tacucu” in the context of purse seine fisheries in Maluku; 2) Analyze the importance of “ikan makan” and “ikan tacucu” in improving the economy of purse seine crew households; and 3) Analyze the importance of “ikan makan” and “ikan tacucu” in overcoming the financial insecurity for purse seine crew households. This research was conducted using a survey method. The data were analyzed using qualitative and quantitative descriptive analysis. The results show that there are two patterns of distribution of “ikan makan”; first, share the fish equally among the entire crew, and then each of them is responsible for it; second, sell all the “ikan makan”, and the money will be divided equally among all crew members. The crew's income from the sale of “ikan makan” in fish season is IDR 69,000–166,000/trip, and in no fish season is IDR 44,000–111,000/trip. Income from the sale of “ikan makan” during the fish season and no fish season is not able to overcome household financial insecurity and is only used to reduce or suppress it.

Keywords: “ikan makan”, “ikan tacucu”, purse seine, financial insecurity, Maluku.

#### ABSTRAK

“Ikan makan” dan “ikan tacucu” adalah istilah yang biasanya ditemukan dalam sistem penangkapan ikan dengan alat tangkap purse seine di Maluku yang menjadi salah satu sumber penting dalam keberlanjutan ekonomi rumah tangga nelayan ABK. Penelitian ini bertujuan untuk 1). Mendeskripsikan pengertian dan fungsi “ikan makan” dan “ikan tacucu” dalam konteks perikanan purse seine di Maluku, dan 2). Menganalisis pentingnya “ikan makan” dan “ikan tacucu” dalam meningkatkan ekonomi rumah tangga nelayan ABK purse seine. 3). Menganalisis pentingnya “ikan makan” dan “ikan tacucu” dalam mengatasi kerawanan finansial rumah tangga nelayan ABK purse seine. Penelitian ini dilakukan dengan menggunakan metode survei. Data dianalisis menggunakan metode deskriptif kualitatif dan kuantitatif. Hasil penelitian menunjukkan bahwa terdapat dua pola pembagian “ikan makan”, pertama membagi “ikan makan” dan selanjutnya masing-masing ABK bertanggung dengannya; kedua, menjual seluruh “ikan makan” dan hasilnya dibagi rata ke seluruh ABK. Pendapatan nelayan ABK dari hasil penjualan “ikan makan” pada musim ikan sebesar Rp 69.000 – Rp 166.000/trip dan pada bukan musim ikan sebesar Rp 44.000-111.000/trip. Pendapatan dari penjualan “ikan makan” pada musim ikan maupun bukan musim ikan belum dapat mengatasi kerawanan finansial rumah tangga nelayan, namun hanya dapat mengurangi atau menekannya.

Kata kunci: “ikan makan”, “ikan tacucu”, purse seine, kerawanan finansial, Maluku.

\* Corresponding author: Yolanda Marla Tania Nangkah Apituley, [yolanda.apituley@fpik.unpatti.ac.id](mailto:yolanda.apituley@fpik.unpatti.ac.id)  
Institution and its address: Faculty of Fisheries and Marine Science, Pattimura University.

## INTRODUCTION

The potential of fisheries resources in Maluku is 4,669,030 tons, or 1/3 of the fisheries potential in Indonesia, recorded at 12,541,438 tons per year (KepMen KP No. 19 of 2022). Maluku's fisheries potential, which is spread across the three State Fisheries Management Areas of the Republic of Indonesia (WPP-RI) 714, 715, and 718, should make a significant contribution not only to the regional economy and the people of Maluku but also to the economy of the country and Indonesian society as a whole. Even though the potential for fisheries resources in Maluku is significant, according to BPS (2021), Maluku is listed as the fourth poorest province in Indonesia.

Fishermen utilize various fishing tools in Maluku, including purse seines, or what the Maluku people know better as *jaring bobo*. Purse Seine (*jaring bobo*) is a very productive fishing tool (Polhaupessy et al., 2019; Picaulima et al., 2022) and is found in almost every area in Maluku. The operation of this fishing gear is generally carried out by fishermen in Maluku using fish aggregating devices (FAD) as fishing aids. According to Bawole et al. (2016), there were 78 purse seines in Ambon in 2016, spread across 5 sub-districts, namely Sirimau (10 units), South Leitimur (10 units), Teluk Ambon (23 units), Teluk Ambon Baguala (7 units), and Nusaniwe (28 units). These numbers do not include those in Central Maluku Regency, which, according to BPS (2021), is the largest producer of pelagic fish in Maluku, as well as other districts and cities in Maluku Province.

In general, the targets for catching with purse seine fishing gear in FADs are small pelagic fish (Tsagarakis, 2012), such as flying fish (Widiyastuti and Zamroni, 2017), trevally and tuna (Keffi et al., 2013), skipjack, tuna, and neritic tuna (Baihaqi et al., 2016), bonito (*Sarda sarda*), Atlantic small tuna (*Euthynnus alletteratus*), and bullet tuna (*Auxis rochei*) (Adamidou, 2007). The highest productivity of purse seine fisheries on Ambon Island, which is one of the islands in Maluku, during the fishing season and non-fishing season is 638 kg/trip and 288.6 kg/trip, respectively, while the productivity and number of crew members at both times is 36.1 kg/ABK and 16.6 kg/ABK (Polhaupessy et al., 2019). The average number of crew members who usually participate in fishing operations using purse seine fishing gear is 16–18 people (Picaulima et al., 2022), with different duties and responsibilities. The distribution of results in this business is usually carried out based on the fishermen's duties and responsibilities.

Several studies on the socio-economic life of fishing communities show that the majority are classified as labor fishermen or small-scale fishermen who live in poverty. According to Anwar and Wahyuni (2019), the ability of these fishermen to fulfill basic, or at least daily, needs is very limited. For them, food needs are the most important among some basic life needs. The availability of guarantees to fulfill their daily food needs plays a significant role in maintaining their survival (Kusnadi, 2002). So far, fishermen have been identified as a social group or community marginalized socially, economically, and politically. Apart from farmers, fishermen are also referred to as the poorest of the poor because they are identified as poor and receive low income. Around 90% of the 16.2 million fishermen in Indonesia, including fishermen in Maluku, are economically and politically powerless and are below the poverty line (Anwar and Wahyuni, 2019).

There are two categories of fishermen in the purse seine fishing business in Maluku, namely, boat owner fishermen and worker fishermen or crew members. Boat owner fishermen own fishing businesses and are responsible for financing fishing operations. Several fishermen who own purse seine fishing equipment in this area also participate in fishing operations and act as boat leaders, fishing masters, or *Tanase*. Fisherman workers (*ABK/masnait*) provide labor to directly carry out fishing by dividing their duties as either ship leader or fishing master, lightman, engineer, and net spreader (Polhaupessy *et al.*, 2019).

Distribution of fishing profits in purse seine fishing businesses is generally not carried out every time (trip) after the fish have been sold, but at certain times based on an agreement between the crew and the owner. Some carry out the distribution after a week of fishing, a month, three months, or even over a more extended period, such as six months. Profit sharing is carried out after several operational costs have been incurred, such as transportation costs, FADs, auctions, etc. Because of the homogeneous work schedule and reliance on a single source of income that supports this type of profit-sharing system, purse seine crew households frequently experience financial instability at certain times. In fishing operations using purse seine, the terms “ikan makan” and “ikan tacucu” are known. When the fishing gear owner (skipper) agrees with the crew to share the fishing profits not every day or every fishing trip but at a specific time, then “ikan makan” and “ikan tacucu” will determine the amount of the crew's income on each fishing trip. This research aims to: 1) Describe the meaning of “ikan makan” and “ikan tacucu” in the context of purse seine fisheries in Maluku, 2) Analyze the importance of “ikan makan” and “ikan tacucu” in improving the household economy of fishermen with crew members from purse seine, and 3) Analyzing the importance of “ikan makan” and “ikan tacucu” in overcoming the financial insecurity of purse seine crew fishermen's households.

## RESEARCH METHODS

This research was conducted in May–August 2022 in Namlea Village, Namlea Regency, Laha and Latuhalat Villages in Ambon City, and Waai Village in Central Maluku Regency by using a survey method. According to Sugiyono (2018), a survey is a method for obtaining data that occurred in the past or currently about beliefs, opinions, characteristics, behavior, and variable relationships and to test several hypotheses about sociological and psychological variables from samples taken from a particular population. The data needed is primary and secondary data. Primary data was collected through in-depth interviews based on a questionnaire that had been prepared, with most of the questions being open-ended, focus group discussions, and observations of several purse seine owners and crew members in several villages that were research locations. Secondary data, or supporting data, was obtained from scientific articles and other literature relevant to this research. Respondents were drawn using simple random sampling because the sample is considered homogeneous, and each member of the population has the same opportunity to be selected as a respondent (Arieska and Herdiani, 2018). This research was conducted on 42 respondents with the following details: six purse seine owners consisting of one owner in Namlea Village, two owners in

Waai Village, two owners in Latuhalat Village, and one owner in Laha Village. From each purse seine business, six crew members were taken, consisting of one Tanase, or ship leader, and five workers or crew members. The data that has been obtained is then analyzed descriptively, qualitatively, and quantitatively. Nazir (2017) said that the descriptive research method aims to create systematic, factual, and accurate descriptions of the facts, characteristics, and relationships between the investigated phenomena. Descriptive analysis aims to carefully describe the characteristics of the facts currently occurring (Arikunto, 2019). In this research, qualitative descriptive analysis is used to describe the meaning of “ikan makan” and “ikan tacucu” in the context of purse seine fisheries in Maluku. In contrast, quantitative descriptive analysis is used to analyze the importance of “ikan makan” and “ikan tacucu” in improving the economy and overcoming the financial insecurity of the households of purse seine crew members. Quantitative analysis is used to obtain data in numbers or summarize qualitative data (Sugiyono, 2018). The following formula is used to calculate the income of each crew member:

$$TR = Y \times Py \quad (1)$$

where: TR = Total Revenue (IDR/Trip)  
Y = Number of fish sold (Pan/Trip)  
Py = Fish prices (IDR/pan)

Next, to calculate the income of each crew member participating in fishing operations at that time, use:

$$I = TR / \text{number of crew members} \quad (2)$$

where: I = Income of each crew member (IDR/Trip)  
TR = Total Revenue (IDR/Trip)

The income earned by purse seine crew members per trip is then converted per month and compared with the Maluku UMP (Provincial Minimum Wage) in 2022, the year in which this research was conducted.

## RESULTS AND DISCUSSION

The lives of fishing and farming communities in rural areas are very dependent on the generosity of nature. Reality shows that livelihoods as fishermen and farmers are very vulnerable to uncertainty in the results obtained, which can impact the sustainability of their households (Hahury et al., 2019). Fishermen continue to make various efforts so that their lives can be guaranteed and sustainable from time to time, including fishing using purse seines or *jaring bobo*.

Fishermen usually use purse seines to catch fish on *rumpon* or Fish Aggregating Devices (FADs). According to the Regulation of the Minister of Maritime Affairs and Fisheries of the Republic

of Indonesia Number 2, Article 19, of 2011, FAD is a tool for collecting fish by using various shapes and types of lures or attractors made from solid objects that function to attract fish to gather. In dividing the proceeds from fishing, the share of the FAD is also taken into account, so generally, after the fish caught is sold, the money from the sale will be divided into three parts, namely the owner of the purse seine, the FAD, and the crews. As mentioned previously, the catch share will be stored and divided after a certain period, according to the agreement between the owner and the crews. In order to meet the daily needs of fishermen and their families, purse seine owners usually distribute "ikan makan" to each crew member taking part in fishing operations at that time.

### **Understanding “Ikan Makan” and “Ikan Tacucu” in the Context of the Purse Seine Fishery in Maluku**

In fishing operations with purse seines, owners and fisherman crews are familiar with the terms “Ikan Makan” and “Ikan Tacucu.” When the fishing season is underway, purse seine fishermen in Maluku can catch 50 to 100 pans of fish per trip or even more. Usually, the owner will give 5 to 10 pans of fish to the crew members to divide evenly among those who are taking part in the fishing at that time. When it is a non-fishing season, and fishermen only get 10-15 pans, the owner usually gives 1-2 pans to the crew to share. After the fish are set aside to be shared among all the crew members, the other fish will be sold.

When fishing and the fishermen only get 1 pan or less, the fish will not be sold but shared among the entire crew. For the purse seine fishermen, this kind of fish is known as “Ikan Makan”, the purpose of which is to be consumed by all crew members and their families. Because the quantity is too much for the whole family to consume, the crew members will only take 5-8 fish of their portion to consume with the family that day, and the rest will be sold at the market.



(a) “Ikan Makan”



(b) “Ikan Makan” which is ready to be sold to the market



(c) Fishermen are cleaning the net while taking the "ikan tacucu" in the net



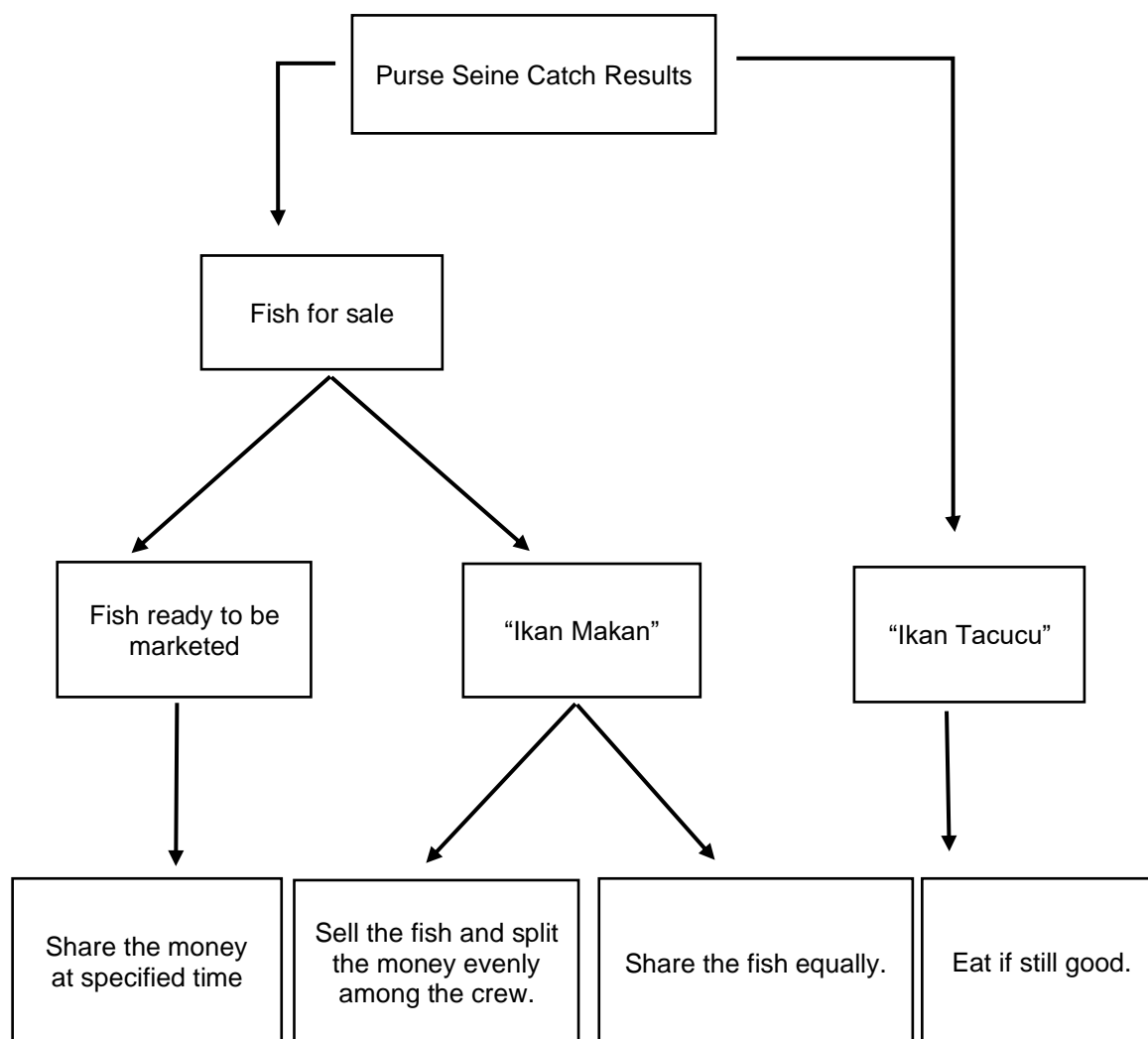
(d) Some of the "ikan tacucu". fishermen have released from net

Source: Personal Documentation (2022)

**Figure 1. "Ikan Makan" and "Ikan Tacucu" in Purse Seine Fishing**

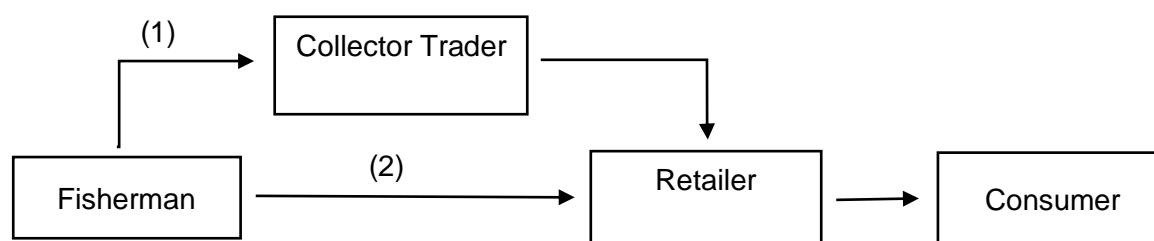
Figure 1 (a) shows some "ikan makan" determined by the Tanase or Fishing Master to be sold to the market. The proceeds from the sale of the fish will later be divided evenly among all crew members. Figure 1 (b) explains that before being brought to the market, the "ikan makan" is sprinkled with ice so that its quality can be maintained and the price remains high. Fresh fish is very easily damaged and rotten compared to other foods. Sogn-Grundvåg et al. (2021) stated that proper harvest and post-harvest handling are crucial to "lock in" the quality and nutritional attributes of the fish and reduce waste. When fishermen arrive back at the coast after finishing fishing, some of them will take care of the catch to be taken to market (Figure 1b), and others will clean the nets (Figure 1c). Dirt, such as wooden twigs caught in the mesh, is cleaned so the net can be used for fishing the next day. Some fish caught in the nets, known to fishermen as "ikan tacucu" are also released, and if they are still in good condition (Figure 1d), the fishermen will take them home to consume with their families on that day.

In addition to "ikan makan", "ikan tacucu" is another phrase used in purse seine fishing operations. Fish get entangled when using purse seine fishing gear because it surrounds and blocks swimming fish (Rusmilyansari and Aminah, 2012). As a result, the fish frequently twist in the net and struggle to get free. The fish eventually became too tired to survive and was entangled in the net. The reason this fish is impaled on the net mesh and unable to escape is why fishermen refer to it as "ikan tacucu". After fishing, fisherman frequently gathers these fish while tidying and setting up their nets. The fisherman will bring the "ikan tacucu", which is still fit for eating, home to share with the family after all the "ikan makan" have been sold to cover the family's daily expenses. The roles of "ikan makan" and "ikan tacucu" in purse seine fishermen's captures are depicted in Figure 2.



**Figure 2. Position of “Ikan Makan” and “Ikan Tacucu” in Purse Seine Catch Results**

The distribution of "ikan makan" to crew members is usually done in two ways, namely: (1) selling all the "ikan makan" and then the money from the sale is divided evenly among all crew members and (2) dividing all the "ikan makan" equally among all crew members and they responsible for it. Figure 3 below explains the supply chain for "ikan makan" of the purse seine crew. When the first method is used, the fish will usually be brought to the market by collectors, and upon arrival at the market, all the fish will be sold to retailers. Sometimes, only some are sold to retailers; collectors will sell others. When all the "ikan makan" is distributed equally among the crew members, the fishermen's wives, generally retailers, will take it to the market to sell. "Ikan makan" can be a fisherman's real income per trip because the profits from fishing are usually not distributed at that time but are collected and divided at a time determined and agreed upon by the purse seine owner and the crew.



**Figure 3. Supply Chain of “Ikan Makan” for Ship Crew Purse Seine Fishermen**

### The Importance of "Ikan Makan" and "Ikan Tacucu" to Improve the Household Economy of Purse Seine Ship Crew Fishermen

The number of "ikan makan" taken by fishermen to sell as income per trip is determined by Tanase or the boat leader (Fishing Master) by looking at the catch that day. Tanase or Fishing Master can be the purse seine owner or someone else highly trusted by the purse seine owner. Table 1 describes the income earned by fishermen from the sale of "ikan makan" in the fishing season and non-fishing season.

**Table 1. Ship Crew Income from Sales of "Eat Fish" in Fish Season and Non-Fish Season**

Season	Quantity Sold (Pan/Trip)	Price (IDR/Pan/Trip)	Total Revenue (IDR/Trip)	Revenue (IDR/Crew/Trip)	Income (IDR/Crew/Month)
Fishing Season	5 - 10	250,000 – 300,000	1,250,000 - 3,000,000	69,000 – 166,000	1,380,000- 3,320,000
Non-Fishing Season	1 - 2	800,000- 1,000,000	800,000 - 2,000,000	44,000 – 111,000	528,000- 1,332,000,-

Source: Analysis Results (2022)

Based on Table 1, it can be seen that pelagic fish in the market are usually sold in pan sizes, which, if converted into kilograms, usually measure 30–32 kg. After being purchased by a retailer, the number of fish will be counted and sold in batches. In fish season, a pile usually ranges from 1.5–2 kg, and conversely, when in non-fishing season, a pile ranges from 0.8–1 kg. The average crew member who takes part in purse seine operations is 16–18 people, depending on the size of the ship and the purse seine used. The income of each crew member from selling "ikan makan" during the fishing season ranges from IDR 69,000 to IDR 166,000 per trip, and in the non-fishing season, ranges from IDR 44,000 to 111,000 per trip. The more crew members who participate, the less income they will earn. The money obtained from the sale of "ikan makan" is usually used for the daily needs of fishermen's families.

In sharing the results of “ikan makan”, there is no portion that must be paid to cover operational costs spent in the fishing process. All the results of the “ikan makan” were distributed to the crew members who took part in the fishing process at that time without paying attention to their roles and responsibilities. Operational costs are generally the responsibility of the business owner and are taken from the share of fishing profits according to the agreement between the owner and the crew. The distribution of fishing proceeds to crew members is usually done based on roles and responsibilities.



Purse seine fishing operations are generally performed five times a week or twenty times a month. In villages where the population is mainly Christian, usually on Saturdays, fishermen will not go to sea. On the other hand, in villages where the population is generally Muslim, on Thursday, fishermen do not carry out fishing operations. It is also common for fishing operations to be carried out less than 20 times a month due to difficulties obtaining fuel or rough sea conditions, so fishermen cannot go to sea. During the non-fishing season, fishermen generally only go to sea 12 times a month. Thus, the income of each crew member from selling "ikan makan" during the fish season is around IDR 1,380,000–IDR 3,320,000/month, and in the non-fish season is around IDR 528,000–IDR 1,332,000/month. The average interval between the highest and lowest income in the fishing season shows that crew fishermen earn IDR 2,360,000/month, and during the non-fishing season, IDR 930,000/month. When compared to the Maluku Provincial Minimum Wage (UMP) in 2022, which is IDR 2,619,312,-/month (Patty, 2021), the contribution of "ikan makan" to the household economy of purse seine crew fishermen in the fishing season is 90% and in the non-fishing season is only 35.5%. These numbers follow the research results of Polhaupessy et al. (2019), who found that the productivity of purse seine fishing gear in the fishing season is two to three times higher than in the non-fishing season. Even though the contribution of crew member fishermen's income from "ikan makan" in the fishing and non-fishing seasons is below the UMP, its existence has been able to help fishermen overcome household economic difficulties at these times.

"Ikan Tacucu" that are still in good condition and not destroyed are usually taken home and consumed by fishermen and their families. By consuming "ikan tacucu", at least fishermen's wives can save on daily expenses and save them for other, more essential needs. If the "ikan tacucu" is in a state of destruction, fishermen will still take it home and use it as pet food or bait for fishing in their spare time. The number of "ikan tacucu" caught in the net is not large and is usually not shared among the crew. The crew members who collect "ikan tacucu" are usually those assigned to take care of and clean the nets for use in fishing activities the next day.

### **The Importance of "Ikan Makan" and "Ikan Tacucu" in Overcoming the Financial Insecurity of Purse Seine Fisherman Households**

Fishermen are part of a community group that is very vulnerable to poverty (Jentoft, 2010). The seasonal characteristics of fisheries resources (Prabhakar et al., 2020; FAO, 2020) and their highly perishable nature (Apituley et al., 2018), coupled with limited post-harvest and marketing infrastructure, further worsen the situation of fishermen, so that it is common for households to experience financial insecurity. According to BPS (2021), Maluku occupies the fourth position as the poorest province in Indonesia. The fisheries resources in this province should be utilized for the welfare of the people, especially the fishing community, which is always struggling in the middle of the sea so that the nutritional needs of the people are always met.

Fish caught by fishermen is one of the most widely eaten foods and traded commodities in the world, making it a significant contribution to supporting livelihoods, food security, and health (Béné

et al., 2016; Loring et al., 2019). Increasing public awareness of healthy and nutritious food, as well as increasing people's incomes, have also influenced the increase in global demand for fish and other fishery products (Béné and Heck, 2005). Even though fish and fishery products significantly contribute to nutritional needs, food security, and poverty alleviation, fishing households often experience food and financial insecurity (Martuscelli, 2022). Jentoft (2010) states that fishermen have limitations in pursuing alternative or additional sources of livelihood, and this causes fishermen and their households to tend to resign themselves to facing vulnerable conditions like this.

The above conditions are also experienced by crewed purse seine fishermen in Maluku, who often experience financial insecurity (Apituley et al., 2023). The profit-sharing system, which is generally not carried out immediately after the fish is sold, but at certain times, according to the owner's agreement with the crew and the limited employment alternatives, has resulted in the existence of "ikan makan" and "ikan tacucu" being very important in overcoming financial insecurity in their household at that time. Compared with the Maluku UMP, the income of crew fishermen from selling "ikan makan" during the fishing season contributes 90% to the fishermen's household economy. However, in the non-fishing season, the income earned by fishermen from selling "ikan makan" is around 35.5%.

The Minimum Wage Policy is implemented to ensure that the minimum living needs of workers and their families can be met. Thus, the minimum wage policy is to (a) guarantee workers' income so that it is not lower than a certain level, (b) increase worker productivity, and (c) develop and improve companies with more efficient production methods (Pratomo and Saputra, 2011). Suppose a person's income is below the minimum wage set, and he has no other alternative income; it is certain that the person will experience financial insecurity and ultimately have difficulty living.

The proceeds from the sale of "ikan makan" is the real income of fishermen for each fishing trip during the fishing season, IDR 2,360,000/month, and during the non-fishing season, IDR 930,000/month. This figure shows that the income from the sale of "ikan makan" has yet to overcome the financial insecurity in the households of purse seine crew fishermen because it is still below the Maluku UMP. However, "ikan makan" can help fishermen reduce financial insecurity in their households. Wives and other family members of fishermen also generally work to help fishermen overcome household financial insecurity.

Fishermen's income from selling "ikan makan" is usually used to finance household needs and children's education, while "ikan tacucu" is usually taken home to be consumed by the family. In this way, the costs required by households to consume food, especially side dishes, can be diverted to finance other needs so that financial insecurity in the households of purse seine crew fishermen can be minimized or suppressed.

## CONCLUSION AND SUGGESTION

### Conclusion

When compared with the Minimum Wage for Maluku Province, the contribution of "ikan makan" to the household economy of crew member fishermen in both fishing season and non-fishing season helps reduce or minimize financial insecurity. The money obtained from the sale of "ikan makan" is used for the daily needs of fishermen's families. If the condition of the "ikan tacucu" is still suitable for consumption, fishermen often take it home to consume with their families.

### Suggestion

The application of the distribution system of "ikan makan" and "ikan tacucu" to overcome financial insecurity in the households of purse seine crews must continue to be carried out, bearing in mind that this system of sharing the results of fishing businesses is not carried out immediately after the fish is sold but at certain times according to the agreement of the business owner and crew members. The time for distributing the proceeds from selling caught fish should be shortened or given immediately so fishermen can manage their household finances well.

## ACKNOWLEDGMENT

The authors would like to thank the Regional Planning and Development Agency of Maluku Province for financial support so that this research could be carried out and the article could be published.

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