



Income Contribution of the Fisherman wife Fishing Business Nike (Ophieleotris Aporos) Lake Tondano in increasing Household Income in Kaima Village, Remboken District, Minahasa Regency

Jeannette F. Pangemanan*, Diane J. Kusen, Olie V. Kotambunan

Department Faculty of Fisheries and Marine Sciences Sam Ratulangi University Manado. Indonesia

*Corresponding Author

Received: 10 Sep 2021; Received in revised form: 08 Oct 2021; Accepted: 16 Oct 2021; Available online: 24 Oct 2021

©2021 The Author(s). Published by Infogain Publication. This is an open access article under the CC BY license

(<https://creativecommons.org/licenses/by/4.0/>).

Abstract— The contribution of the wife of a nika fisherman (*Ophioletris aporos*) is triggered by increased household needs, while the husband's income as a nika fisherman (*O. aporos*), seems to be inseparable from the inadequacy. This is also experienced by Nika fishermen in the Lake Tondano area in general and in Kaima Village in particular. Their low income requires the wife to contribute in meeting household needs. The purpose of this research is to find out and learn what are the contributions of the wife of the nika fisherman (*O. aporos*) in Kaima Village, Remboken District, Minahasa Regency. and knowing how much the wife of the nika (*O. aporos*) fisherman contributes to improving the welfare and quality of life of the Nika (*O. aporos*) fisherman's household, so it is necessary to realize effective management as a way of sustaining their life. The method used in this research is purposive sampling, data sources are primary and secondary data, data analysis using qualitative descriptive analysis and qualitative descriptive analysis. The results of this study are the wives of fishermen who catch Nika Lake Tondano in Kaima Village, Remboken District, have a high contribution to the household economy. The contribution given by the wife of a fisherman who catches Nika Lake Tondano in Kaima Village, Remboken District is 50.7%.

Keywords—Contribution, Fisherman's Wife, Nika Fish, Kaima Village.

I. INTRODUCTION

Women especially as wives are citizens who have the same opportunities as men in all fields of fisheries development in addition to their duties and responsibilities as well as their roles to foster healthy, strong future generations in the context of full human development, women's abilities need to be improved in balancing additional tasks. and obligations as a wife or mother imposed on him. This is a national development activity including fisheries management where women as mothers or wives have skills, so they are able to participate in all fields (Suwondo, 1990).

In line with the increasingly complex life and the increasingly heavy burden of the family's economy, the duties and roles of women, especially wives in the family

and society, are increasingly needed. The contribution of women today is not only in activities within the family sphere, but many areas of life in society require a woman's touch in handling them, so that every activity carried out is increasingly evident in supporting family life (Murawaro, 2007).

Women as wives of fishermen who catch fish are generally involved in activities to earn a living for their families (Soenarno, 2006). The family or household is one of the smallest social units consisting of father, mother and children (Diknas, 1997). Furthermore, Mantjoro et al. (2003), stated that the family is the smallest economic institution, where one of its functions is as a unit of production and consumption.

The contribution of women fishing in the family refers more to the role of a wife/housewife or daughter in doing productive work that generates income and work that does not directly generate money, but can allow other members of the family to take advantage of opportunities to work. Resusun, 1985).

The role of women in supporting the family economy has been going on since the emergence of the family institution itself. The division of tasks between family members, including women in the context of carrying out household life, is basically an economic activity (Munaroh, 2007).

It is the family's economic limitations that require women as Nike fish catchers' wives to work, because women's fish farming activities as wives play a very strategic role, especially in post-harvest and marketing of fishery products. According to Sutadi (2006), the contribution of women as wives of Nike fishermen to household income can reach half of the husband's income. The results of a study by Widaningroem et al., (1999) on the South coast of Yogyakarta showed that although the reproductive contribution made by women, it turned out to reach 80% of the time allocation each day, when they carried out productive activities at home, and the contribution was temporarily abandoned and handed over to the community. their child or mother/ grandmother.

Payangka fish *Ophioleotris aporos* is the most abundant type of fish that lives in the waters of Lake Tondano (Makmur et al., 2015). In 1980, payangka production accounted for about 35% of all fish production and dominated the catch in Lake Tondano. The young payangka fish referred to are payangka fish, which are popularly called Nike fish, measuring 9.5-27.4 mm and weighing 0.004-> 0.183 mg (Susanto, 2016). The large population of Nike and Payangka fish must be supported by successful reproduction and adequate food in the lake. One of the reproductive factors that support the size of the Nike population is fecundity. According to Bataragoa and Tamananpo (2009), the fecundity of payangka fish in Lake Tondano with a size of 12.5-15.6 cm which is around 30,000-127,000 eggs, according to (Taupetel, 2004) the fecundity of payangka fish with a size of 9.0-16.4 cm ranges from 12,000-46,000, and According to Soeroto (1988) the fecundity of payangka fish with a size of 8.6-20.5cm ranges from 30,000-60,000 eggs.

II. MATERIALS AND MEHODS

This type of research is descriptive research and uses the research base, namely survey. A survey is a research conducted by collecting data, investigating and interpreting data in general as available in the field (Cresswell, 2009).

Data collection is done by observation or direct observation. The population in this study is the wife of the fisherman of the catcher. Nike fish numbered 80 people,

The sample to be taken is 10 - 20% of the total population of Nike (*O. aporos*) fishing wives in Kaima Village, Remboken District, Minahasa Regency. Sampling is done by purposive sampling or sample purpose. According to Sugiyono (2016) the notion of purposive sampling is a sampling technique with certain considerations.

Data analysis of research results was carried out in two ways, namely quantitative descriptive analysis and qualitative descriptive analysis. The data that has been analyzed is then interpreted as the result of research and discussed or phrased according to field facts, with reference to research journals related to this research (Sugiyono, 2010).

To find out the contribution of women as wives of fishermen fishing Nike to household income can be calculated by the formula (Soekartawai, 1993), namely:

Contribution (%)=(Total income of women)/(income of fishing family) X 100%

Meanwhile, net income for fishing families is calculated from the total household income minus the total household expenditure.

III. RESULTS AND DISCUSSION

1. General Condition of Research Site

Minahasa Regency is located at the northeastern tip of North Sulawesi and Remboken District is one of the sub-districts within it. Kaima Village is included in the Remboken District which is one of the villages in Minahasa Regency. The distance from the center of the sub-district is 15 km and the distance from the center of the capital city of North Sulawesi Province is 42 km.

The lake area is a characteristic of Kaima Village which is the source of livelihood for most of the population. One of the villages located on the shores of Lake Tondano, where the residents have been familiar with fishing activities in the effort to catch fish have been going on for a long time. Residents have carried out fishing activities such as catching Nike fish (*Ophioleotris aporos*), with or without using a boat. In addition, there are also several fishermen who are active in cultivating fish in Lake Tondano using the Karamba Net Cap system.

Types of fish caught vary, namely: tilapia fish, tilapia that grows outside the cage and more and more in the lake, payangka fish, snakehead fish and the research is specifically Nike fish (*Ophioleotris aporos*). The catch and the results of fish cultivation are other than for the family's

daily food, and especially for marketing, in increasing the family's income to support daily needs.

2. Productive Contribution of Fishermen's Wives

The wife plays a productive role as a manifestation of how much she contributes as a Fisher Mother/Wife, according to Astuti and Alghaasyiyah (2014), a basic role that a wife has due to work to increase the needs for her household. This is a big contribution because it is undergoing a transition period in increasing family income. Productive contribution is an award that is valued in money or goods that can generate income in the form of services and materials related to economic activities.

The results of the research on the activities of Fishermen's Wives who do work in helping their household lives include fish sellers in the market (retail traders), collectors traders (petibo), Staff/kiosk traders, selling cakes and food, housemaids, etc. The productive contribution of the wife of a fisherman who catches Nike Lake Tondano in Kaima Village, as a fish seller in the market (retail trader) is closely related to the state of Nike fishing, because Kaima Village is one of the villages on the coast of Lake Tondano as a supplier of Nike fish (*Ophileotris aporos*) biggest.

Kaima Village Fishermen who go down to Lake Tondano to catch Nike Fish and other types of fish, do not use additional labor. Every time fishermen land their caught fish, their wives from several fishermen take part in landing the fish. Because the fisherman's wife was so alert to help her husband in removing the fish from the boat, then the Nike fish were put in a bucket and carried ashore.

The habit of the Fisherman's Wives is that every fish that is landed is immediately brought into the building which is an auction building or selling fish. The fish are then weighed and separated according to type and placed on concrete tables and that's when the selling process begins. For Nike Lake Tondano Fish, they are no longer weighed like other types of fish, because the fish are directly sold based on the existing buckets. The selling price of Nike Fish during the fish season ranges from Rp. 100,000 to Rp. 200,000 while Nike's fish sales when it is not fish season, the price increases from Rp. 300,000 to even Rp. 700,000. During the study in April the price of fish when it was not fish season was Rp. 450,000.

The process of selling Nike fish was fast because the fish were sold by the fishermen's wife as retailers and there were also collectors, so they did not last long at the Kaima Village auction place. By the Fisherman's Wife Nike fish is sold to the Remboken market which is only 1 Km from Kaima Village. So since 06.00 the fish have moved, except for other types of fish, sometimes sales are from 06.00 - 3.00 WITA. Fishermen's wives as traders, buy fish from

fishermen and then take them outside Remboken markets such as: Tomohon Market, Kawangkoan market, Langowan market, even Manado Market. Nike Fish Sales sometimes there are consumers who come from other villages, namely Talikuran Village, because the distance is close to the blades, they are reached by motorbikes or pick up cars, these consumers come to buy fish at a cheaper price per bucket, which is only Rp. 100,000 per bucket. The weight of 1 bucket of Nike Fish is 10 Kg, so for 1 Kg of Nike fish it costs Rp. 10,000, this price is cheaper than the selling price of Nike fish in Remboken Market.

2.1. Nike Fish Production (*Ophileotris aporos*) Lake Tondano

Lake Tondano Nike (*O. aporos*) fish, one of which comes from Kaima Village, is very popular as a fish that tastes good and has high nutritional content. No wonder that big restaurants in Manado City provide food that comes from Nike Fish. The catch of fishermen in Kaima Village, is not always the same, usually changes in a month, meaning that the catch depends on the availability of fish, especially if the people of Kaima Village call it the month of death, then the catch is minimum. Dead moon is synonymous with no fishing season according to Lake Tondano coastal fishermen. For a clearer view of Nike's fish catch, see Table 1 below.

Table 1. Production of Nike Lake Tondano fish in Kaima Village

No	Production (Kg)	Fish Season		Not Fish Season	
		Total	Percentage (%)	Total	Percentage (%)
1.	10 - 100	0	0	10	100
2.	101 - 200	0	0	0	0
3.	201 - 300	7	70	0	0
4.	301 - 400	2	20	0	0
5.	> 400	1	10	0	0
Total		10	100	10	100

Source: Research data, April 2021

The research data in Table 1 shows that the results of catching Nike Lake Tondano Fish are very different, during the fishing season 70% of fishermen can produce 300 kg of fish per month, the remaining 20% of their production varies from 390 - 400 kg even 10% of fishermen can result in more than 400 Kg/month of fishing, this is the highest number of all observed respondents. The results of the interview with the fisherman were because the time spent was higher than other fishermen, for the production of Nike Lake Tondano

Fish carried out by the fishermen of Kaima Village, during the non-fishing season (Dead month), it turned out that 100% of the fishermen who caught fish could only produce 45Kg up to 75 kg of fish. In this situation, fishermen cannot do anything because when the moon is dead, this Nike fish will not appear on the surface, because by its nature this fish likes light. To catch this fish, fishermen must prepare tools that are designed in such a way that they can produce light. Materials and tools prepared to assist fishing by means of electric lamp lighting made by the fishermen themselves (Figure 1).



Fig.1: Tools and Materials used to catch Nike Fish

The price of Nike Fish sold by the Fisherman himself and the Fisherman's Wife, because most of the pricing and sales are carried out by the Fisherman's Wife. Observations turned out that there were also some fishermen who directly sold them to retailers who were already at the sales location, because sales were usually made at the landing site as well as the fish auction place in Kaima Village.

2.2. Fisherman Income Level

Carrying out fishing activities such as catching Nike Lake Tondano fish, as the Head of the Household, it is an obligation to play a role to support his family. Family needs, whether as husband or wife, especially children have different needs. Husbands and wives as parents are supposed to work in meeting every need that is needed by their family members. Her husband as a fisherman who works catching fish, especially catching Nike Fish in Lake Tondano, has an income, this result can be seen in Table 2 below.

Table 2. Income Level of Nike Fishing Fishermen per Month.

No	Income Level (Rp)	Fish Season		Not Fish Season	
		Total (org)	Percentage (%)	Total (org)	Percentage (%)
1.	1.000.000 – 2.000.000	0	0	0	0
2.	2.025.000 – 3.000.000	0	0	6	60
3.	3.025.000 – 4.000.000	2	20	4	40
4.	4.025.000 – 5.000.000	6	60	0	0
5.	> 5.000.000	2	20	0	0
Total		10	100	10	100

Source: Research data, April 2021

The results of the study in Table 2 show that for the fishing season 60% of fishermen have an income of between Rp. 4,025,000 - Rp. 5,000,000, this is the fisherman with this income usually catching in the same area so that all the catches regardless of the results. will be divided equally, so that their income amounts to the same. The lowest 20% of income is IDR 3,025,000 – IDR 4,000,000 only doing activities based on whether or not they want to catch or not, while the highest 20% of income is due to the addition of fishing days than what fishermen usually do in Kaima Village. For non-season fish, the income does not vary much, because when catching fish, fishermen just surrender to the situation, because this season, Nike fish are difficult to catch.

2.3. Fisherman's Wife's Income

Fishing activities carried out by husbands who do not meet household needs, ultimately encourage other family members, such as wives, to carry out activities to support the family's economic life. The Fisherman's Wife contribution is very helpful in terms of house date income. This can be seen in the activities of Fishermen's Wives in the fishery business and outside the fishery business in Table 3 below.

Table 3. Income Level of Fishermen's Wives per Month.

No	Income Level (Rp)	Fishery Business		Not Fishery Business	
		Total (Person)	Percentage (%)	Total (Person)	Percentage (%)
1.	≤1.000.000	-	-	3	30
2.	1.100.000 – 1.500.000	4	40	4	40
3.	> 1.500.000	3	30	3	30
Total		7	70	10	100

Source: Research data, April 2021

The results of the study on the income level of the wife of a fisherman who catches Nike Lake Tondano in Kaima Village as Table 3 shows that in the fishing business there are only 70% who carry out activities in terms of increasing the income of another 30%. take care of grandchildren at home. The results of observations of wives who do not carry out activities in the field of fishery business, they do not carry out activities in the field of fishery business.

Fishermen's wives who work in non-fishing businesses (30%) actually work to help neighboring families take care of children, cook family meals and other household chores, because these families work as civil servants or private employees. There is also a fisherman's wife who only works for another neighbor and does this work twice, so that the result of her work, the fisherman's wife receives wages every week as additional family income.

Income between IDR 1,000,000 - 1,500,000 is obtained from selling food such as Manado Porridge (Tinutuan), Skipjack noodle soup and Skipjack fried noodles and mixed rice where a plate of rice plus side dishes costs IDR 12,500. Another fisherman's wife (30%) opens a shop at her house by selling various ingredients and cooking spices as well as other basic needs such as sugar, coffee, tea and children's snacks.

2.4. Nike Fisherman's Household Expenditure Rate

The expenditures for the Nike Lake Tondano fisherman in Kaima Village, Remboken District, include basic household needs, there are also expenditures for children's education, expenditures for health, if a family member is sick. Usually the illness suffered by the Head of the Family is gout and for other family members such as

influenza, fever, and others. To make it clearer how much each respondent of the Nike fishing household spends, it can be seen in Table 4 below.

Table 4. The level of expenditure per month of the Nike Lake Tondano fisherman household in Kaima Village

No	Expenditure Rate (Rp)	Amount Household	Percentage (%)
1.	300.000 – 600.000	5	50
2.	601.000 – 900.000	2	20
3.	901.000 – 1.200.000	2	20
4.	> 1.200.000	1	10
Total		10	100

Source: Research data, April 2021

The results of the study in Table 4 can be seen that there are 50% of fishing households that catch Nike Lake Tondano, spending the lowest cost, which is Rp. 600,000 per month. This expenditure is only to buy medicine for fever and other costs to buy basic commodities such as rice, cooking oil, sugar, coffee, tea. The fish dishes are readily available and other kitchen spices are not purchased because they are available in the yard, only occasionally they buy cooking spices to the market if they are pressed for a family event at their house. Table 4 above also shows that 1 household (10%) spends the highest cost, which is above IDR 1,200,000 per month. It is known that the highest expenditure of the fishermen's household is the total expenditure of Rp. 1,765,000 per month and this includes the cost of education because it pays for children who are already studying at the University.

2.5 Net Income of Fisherman's Household

The net income of the Nike Lake Tondano fisherman's household in Kaima Village can be calculated by subtracting the total income of all family members by the total expenditure of the fishermen's household. The net income found in the fishermen's household in Kaima Village, turns out to be only from the income of the wife and the husband's income, because of all respondents from other family members, namely children who have not earned because they are still small and young people who are still in school, there is one family whose son is married. So it can be calculated in net income.

Fishermen's total income is Rp.36,737,500 per month multiplied by 10 months, the result is Rp.367,375,000, the average per fisherman is Rp.367,375,000 divided by 10, the result is Rp.36,737,500 per year per fisherman.

The total income of the Fisherman's Wife is Rp. 25,520,000 per month multiplied by 10 months (1 year)

the result is Rp. 255,200,000 per year per person, with an average yield of Rp. person.

The total household expenditure is Rp. 11,965,000 per month multiplied by 10 months (1 year) the result is Rp.119,650,000 per year, the average for 1 household is Rp.119,650,000: 10 people the result is Rp.11,965,000 per year per family.

The net income of the Fisherman household per year is:

The total income of the fishermen's household is reduced by the total expenditure with the result (per year):

$\text{Rp.}25,520,000 + \text{Rp.}36,737,000 = \text{Rp.}62,257,000$

$\text{Rp.}62,257,000 - \text{Rp.}11,965,000 = \text{Rp.}50,292,000$

3. Income Contribution of Fisherman's Wife

The contribution given by the wife of a fisherman who catches Nike Lake Tondano in Kaima Village, Remboken District can be calculated from the total family income multiplied by 100%, so the results are:

$(\text{Rp } 25,520,000)/(\text{Rp } 50,292,000) \times 100\% = 50.7\%$

The results of the calculation of the results of the study to determine the contribution of the wives of fishermen to Nike Lake Tondano's fisherman's income turned out to be 50.7%. This shows that as a wife has a large income contribution to family income because it illustrates that the wife has a high contribution to the household economy.

IV. CONCLUSION

1. The contribution given by the wife of the fisherman who catches Nike Lake Tondano in Kaima Village, Remboken District is 50.7%
2. The wife of a fisherman who catches Nike Lake Tondano in Kaima Village, Remboken District, has a high contribution to the household economy.

REFERENCES

- [1] Anonimous. 2003. Dinas Kelautan dan Perikanan Provinsi Sulawesi Utara.
- [2] Soenarno. 2006. Adi Soenarno. 2006, Front Office Management, Andi Yogyakarta
- [3] Mantjoro, dkk. 2003. Sosiologi Pedesaan Nelayan. Seri Dokumentasi dan Publikasi Ilmiah. Sosial Ekonomi Perikanan. Universitas Sam Ratulangi. Manado.
- [4] Resusun. 1985. Determinan-Determinan Peranan Wanita Nelayan Dalam Meningkatkan Kesejahteraan Rumah Tangga. Fakultas Pasca Sarjana IPB. Bogor.
- [5] Munaroh, 2007. Wanita Nelayan di Kecamatan Kedung Jepara.
http://alugofron.multiplex.com/journal/item/155/wanitanela_yandikecamatanjepara.
- [6] Widaningroem, Retno, Hery Saksiono, dan Sri Kanoni. 1999. "Strategi Wanita dalam Mata Rantai Perdagangan Hasil Perikanan di Daerah Istimewa Yogyakarta". Dalam Jurnal Gender. Vol. 1, No. 1, Juli.
- [7] Makmur., S, Subagdja, Makri, Sudrajat., A, Irawan., B, Bataragoa., N. E. (2015). Karakteristik Lingkungan, Keanekaragaman Jenis Ikan dan Aktivitas Penangkapan Sumberdaya Ikan Danau Tondano Sulawesi Utara.
- [8] Bataragoa N. E. Dan Tamanampo J. F. W. S., 2009. Potensi Reproduksi Ikan Payangka (*Ophieleotris aporos*) dari Danau dan Sungai. Pacific Journal. April 2009. Vol 3(3) : 442-446
- [9] Soeroto, B., Budiarmo., B. Dundu., Alamsyah., A. Sinurat dan J. B. Marangkey. 1988. Makanan dan Reproduksi Ikan Payangka (*Ophieleotris aporos* Bleeker) di Danau Tondano. Disertasi. Fakultas Perikanan Institut Pertanian Bogor. 201 hal.
- [10] Creswell, J. 2009. Research Design Pendekatan Kualitatif, Kuantitatif, dan Mixed. Yogyakarta. Pustaka Belajar.
- [11] Sugiyoni. 2016. Metode Penelitian Kuantitatif, Kualitatif dan R&D. Bandung: PT Alfabet.
- [12] Sugiyono. 2010. Memahami Penelitian Kualitatif. Bandung: Alfabeta.
- [13] Soekartawi. 1993. Manajemen Pemasaran Dalam Bisnis Modern, Pustaka Harapan, Jakarta.
- [14] Alghaansyiyah dan Astuti. 2014. Kontribusi Perempuan Pemulung dalam Mendukung Perekonomian Keluarga. Skripsi, Universitas Bengkulu, Bengkulu.
- [15] Harijanis, D.R. 2001. Etos Kerja Perempuan Desa. Yogyakarta, Filosofi Press.
- [16] Wulansari. 2011. Sosiologi (Konsep dan Teori) Bandung: PT. Refhika Aditama