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PRICE TRANSMISSION OF FARMED TILAPIA FISH (OREOCHROMIS NILOTICUS) IN THE SOUTH KALIMANTAN PROVINCE, INDONESIA

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ABSTRACT
This study aims to determine the price transmission elasticity of farmed tilapia in South Kalimantan Province. The data used are primary data and secondary data, while data collection uses observation, interview and documentation methods. The method of farmers sampling uses the simple random sampling method, while the marketing institution sample uses the snowball sampling method. The data analysis used is (a) marketing channel analysis and (b) price transmission elasticity analysis. The results of the analysis show that (a) the marketing channels of freshwater farmed tilapia in South Kalimantan Province consist of 3 patterns, namely: (1) producers sell fish to wholesalers to then be forwarded to retailers to be sold to consumers, (2) producers sell to retailers to be resold to consumers and (3) producers sell directly to consumers, and (b) the value of price transmission elasticity is -0.149. The value of η <1 explains that a 1% price change at the consumer level will result in a price change of less than 1% at the producer level, this indicates that the marketing system is still inefficient.

KEY WORDS
Tilapia fish, marketing, channels, price, transmission elasticity.

Freshwater aquaculture is crucial for supplying fish for local consumption, given that the potential of aquaculture has not been fully realized (Sunarno & Marson, 2012). Freshwater aquaculture does not only depend on the potential of existing conventional land, but can also utilize land that has so far been considered not ideal for aquaculture (Efendi, I., 2004). Several methods such as the use of tarpaulin ponds, drums, and biofloc for fish farming in narrow, arid and barren lands are smart innovations in freshwater aquaculture (Cahyono, B. 2001). Freshwater fish have relatively affordable prices for the community and are expected to replace the role of catches (Zilyan, G et al, 2018).

Freshwater fish farming in South Kalimantan is developing rapidly, along with the development of technology which also continues to increase (Adibrata, S., 2021). The development of freshwater fish farming has promising prospects in terms of meeting the domestic market demand in South Kalimantan, this can be seen from the increase in production from year to year so that the development of this business can increase the income of fish farmers and marketing institutions involved in it (Lilimantik and Mailita, 2021). A viable option to meet community fish consumption is to enhance aquaculture production like fish farming. The rise in output within the aquaculture sector is a crucial factor as it is linked to its contribution to food supply support, reducing the burden on marine resources, being able to increase income and employment and even generating state revenues from exports (Aziz, M.V., 2014).

Tilapia is a fish that is extensively farmed in South Kalimantan, possessing several benefits, including its relatively rapid growth, shorter harvest period, and a quite high selling price or value (Vinasyiam A et al, 2022). The relatively high cost of tilapia draws producers and traders to market fish in key locations throughout South Kalimantan, facilitating the swift transfer of tilapia from production zones to consumption regions. Elevated prices at the producer level will yield a beneficial effect, as the profits acquired by producers will rise, motivating them to boost production levels, and conversely (Lilimantik, 2019).

MATERIALS AND METHODS OF RESEARCH

The study took place over 6 months, from April to September 2024, with the sample area chosen through purposive sampling, taking into account the high presence of tilapia fish farmers in the region. Banjar Regency is an area in South Kalimantan used as a research location. After determining the research location, the next step is to collect data directly in the field which includes data from institutions involved in the marketing system accompanied by documentation of activities, while other supporting data is taken from agencies related to the research, journals, books or alternative sources of information pertinent to the research being carried out.

The selection of farmers was conducted through simple random sampling, whereas the sample from the marketing institution was obtained using the snowball sampling technique.. The sample of farmers in this study consisted of 40 people from several villages in the research area such as Mali-mali, Sungai Alang, Karang Intan and Lihung villages, while the marketing institution sample consisted of 8 wholesalers who mostly came from the cultivation area and 40 retailers who came from several different areas, namely Pleihari Market, Gambut Market, Martapura Market, Banjarbaru Market and Binuang Market.

Data analysis using (a) Analyzing marketing channels to observe the marketing trends of tilapia through qualitative descriptive techniques and (b) examining price transmission elasticity, which elucidates the connection between price fluctuations at both the retailer and producer levels. Price transmission elasticity is determined using the Simple Linear Regression method with the formula: $Y= \alpha+\beta x+e$. Y = dependent variable, X = independent variable, α = intercept, β = slope and e = error (Sugiyono, 2017). After obtaining the value of β, the β is entered into the following formula (George and King, 1971): $\eta = \beta$. Pr/Pf, where η = price transmission elasticity, Pr = price at the consumer level, and Pf = price at the producer level. Price transmission elasticity criteria (George and King, 1971): η = the market is running efficiently, while $\eta>1$ or $\eta<1$, then the market is not efficient.

RESULTS AND DISCUSSION

Tilapia that consumers are interested in is around 250 gr - 300 gr (1 kilogram usually contains 3 to 4 fish) and is harvested at an age of around 3.5 to 4 months, the retail selling price of tilapia ranges from Rp. 35,000 to Rp. 39,000 per 1 kilogram. Tilapia is available in traditional retail markets from 07.30 am to 16.00 pm. In the morning, wholesalers usually deliver fishery products to the retail market and at that time transactions occur between wholesalers and retailers who are already their customers, while the payment system depends on the agreement of both parties. In addition, in the fish retail market there are also retail trader activities that bring fishery products that they buy directly from producers, but the amount is not much. Usually, retail traders in traditional markets have small stalls as a place to sell.

The marketing channels for freshwater tilapia fish from cultivation in the research area consist of 3 patterns, namely: (1) producers sell directly to consumers, (2) producers sell fish to wholesalers who then pass it on to retailers and (3) producers sell directly to retailers, as shown in Figure 1.

The fisheries marketing channel is the process of distributing fishery products from producers to consumers. Figure 1 explains that the tilapia marketing channel consists of 3 patterns, where channel 1 and channel 2 are indirect distribution channels because there are marketing institutions located between producers and consumers, while channel 3 is a direct distribution channel, namely from fish producers directly sold to end consumers.

Channel 1, producers (60% or 24 persons of producers) sell tilapia to wholesalers (8 persons), then resell it to retailers (26 persons) to be distributed to consumers. Channel 2, producers (35% or 14 persons of producers) sell tilapia directly to retailers (11 persons) to be distributed to consumers, while in Channel 3, producers (5% or 2 persons of producers) sell tilapia directly to consumers (3 persons).

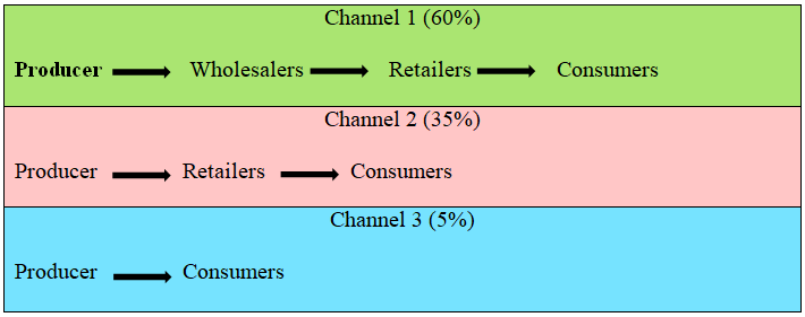

Figure 1 – Marketing channel of tilapia fish (Source: Data by authors through interviews, 2024)

Channel 1 is the most widely used channel, because (a) the harvest is absorbed so that producers have no risk, because wholesalers usually buy fish in large quantities (Amalo, P., 2005), (b) wholesalers come directly to the producer's place at harvest time, so that producers do not need to spend marketing costs (Meldasari et al, 2018), (c) wholesalers usually have ties with producers, for example providing capital for producers so that they will sell their harvest to collectors (Pranata, S.A & Musnaini., 2022), (d) the payment method has been mutually agreed upon (Hanafiah & Saefuddin, 2010) and (e) wholesalers already have cooperation with retailers so that fish can be immediately sent to retail areas according to market demand (Abidin, Z et al, 2017).

The regression analysis comparing prices at the farmer's market to those at retail indicates how closely related these two markets are. The outcomes of the straightforward linear regression analysis regarding prices at the farmer's level and prices at the retail level obtained an α value of 48.833 and β value of -0.198, while the regression equation model is: $Y = 48.833 - 0.198\ \beta + e$.

According to the findings, it is understood that the price transmission elasticity value is -0.149 ($\eta < 1$), indicating that a 1% change in consumer prices will lead to a price change of under 1% for producers, or it can be understood that the low price transmission elasticity suggests that if consumer prices rise, for example because there is an increase in demand among consumers, then the producer does not have enough information or is slow to receive information, so that the producer cannot immediately enjoy the price increase.

The value of $\eta < 1$ suggests that the marketing system remains ineffective, this is due to (a) aquaculture products are generally produced in large quantities and homogeneously, so that if a producer increases the price it will cause consumers to switch to consuming commodities produced by other producers (Pranata, S.A & Musnaini., 2022), (b) the commodities produced are easily damaged so they must be sold quickly, this causes producers to only be able to act as price takers (Joskow P, 2005) (c) fish distribution is controlled by wholesalers, because they have good market information (Rapsomanikis G et al., 2004), (d) wholesalers lend quite a large amount of capital to finance tilapia cultivation efforts from the beginning of seed distribution to harvest and it is binding (Yıldırım B.R. & Akyol O., 2012).

CONCLUSION

Marketing channel of tilapia fish involves three channels and two marketing agencies (wholesalers and retailers). The right marketing process and flow will have an impact on additional profits for producers and marketing institutions. Nonetheless, the pace of price fluctuation at the consumer level exceeds the pace of price fluctuation at the producer level. This illustrates that the marketing of tilapia fish in the research area is not efficient.

REFERENCES

1. Abidin, Z., Harahab, N., & Asmarawati, L. (2017). Pemasaran Hasil Perikanan. In Universitas Brawijaya Press, Malang. UB Press.

2. Adibrata, S., Gustomi, A., & Syarif, A. F. (2021). Pola Pertumbuhan Ikan Nila (Orechromis niloticus) pada Keramba Jaring Tancap Kolam Tanah dengan Pemberian Pakan berupa Pellet di Desa Balunijuk, Bangka Belitung. Pelagicus, 2(3), 157-166.
3. Amalo, P. (2005). Analisa Efisiensi Sistem Pemasaran Ikan Di Kawasan Pangkalan Pendaratan Ikan Muara Baru - Jakarta.
4. Aziz, M.V., 2014. Peningkatan Perekonomian Masyarakat Melalui Budidaya Air Tawar. Universitas Islam Negeri Sunan Kalijaga. Yogyakarta.
5. Cahyono, B., 2001. Budi Daya Ikan di Perairan Umum. Kanisius. Yogyakarta.
6. Efendi, I. 2004. Pengantar Akuakultur. Jakarta: Penebar Swadaya.
7. George P.S & King. 1971. Consumer Demand for Food Commodities In the. United State With Project For 1980. Gianini Foundation Monograph No. 26, March 1971. 4 p
8. Haji J, 2014. Module on Agricultural Marketing and Price Analysis. School of Agricultural Economics and Agribusiness, Haramaya University. Oromia, Ethiopia.
9. Hanafiah, A& Saefuddin, A., 2010. Tata Niaga Hasil Perikanan (A. Warsito (Ed.); 1st ed.). UI-Press.
10. Lilimantik, E. 2019. Fishery Product Marketing. Global Science Publisher, Malang. 93P
11. Lilimantik, E., Mailita. 2021. Market Integration of Tilapia Fish (Oreochromis niloticus) From Freshwater Cultivation In South Kalimantan Province of Indonesia. Russian Journal of Agricultural and Socio-Economic Sciences (RJOAS), 9(117):125-131.
12. Mas B. Syamsunarno M.B., & Mas TD. Sunarno, 2016. Budidaya Ikan Air Tawar Ramah Lingkungan Untuk Mendukung Keberlanjutan Penyediaan Ikan Bagi Masyarakat. Seminar Nasional Perikanan & Kelautan: Pembangunan Perikanan & Kelautan dalam Mendukung Kedaulatan Pangan Nasional. Bandar Lampung, 17 Mei 2016.
13. Meldasari, Suhaimi, A., & Fitrianoor, R. (2018). Analisis Efisiensi Saluran Pemasaran Ikan Nila di Desa Kupang Kecamatan Lampihong Kabupaten Balangan (Studi Kasus Pada Kelompok Perikanan Kupang Maju). Rawa Sains, 8(1), 601–609.
14. Pranata, S.A & Musnaini., 2022. Efisiensi Pemasaran Ikan Nila (Oreochromis niloticus) Keramba Jaring Apung Sungai Batanghari Kabupaten Muaro Jambi. Jurnal Manajemen Terapan & Keuangan (Mankeu), 11(03), 554-568.
15. Sugiyono, 2017. Metode Penelitian Kuantitatif, Kualitatif, & R&D. Penerbit CV. Alfabeta. Bandung.
16. Sunarno, M.T.D., & Marson. 2012. Swampy area for development of patin culture, p:57-63. Proceeding International Conference on Indonesia Inland Waters III. Research Institute for Inland Fisheries, Palembang, Indonesia.
17. Vinasyiam A, Hadiroseyani Y & Agustiyana C., 2022. Aspek teknis Budidaya & Profitabilitas Pendederan ikan nila merah (Oreochromis niloticus) studi kasus di Turbo Farm, Kota Bogor Jawa Barat. Jurnal Akuakultur Sungai & Danau, 7(2), pp 61-67.
18. Yıldırım B.R., Akyol O., 2012 Izmir Wholesale Fish Market: Current Status, Fish Amounts (2007–2011) and Problems. Ege Journal of Fisheries and Aquatic Sciences. 29(4):151-155.
19. Zilyan, G. W., Suparmin;, & Siddik, M., 2018. Analisis Saluran & Efisiensi Pemasaran Ikan Nila Di Kecamatan Jonggat Kabupaten Lombok Tengah.