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Multiplier Effects of Striped Catfish Cultivation Business on the Community's Economy in Kuok Village, Kampar District, Riau Province

Multiplier Effect Usaha Budidaya Ikan Patin terhadap Perekonomian Masyarakat di Desa Kuok Kabupaten Kampar Provinsi Riau

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Abstract

This research was conducted in June 2022 in Kuok Village, Kuok District, Kampar Regency, Riau Province. The purpose of the study was to describe the businesses that emerged as having an impact on the existence of the striped catfish farming business and analyze the multiplier effect of the existence of the striped catfish farming business in Kuok Village, Kampar Regency, Riau Province. The survey method was used, and the respondents were determined by purposive sampling. The results showed that economic activities impacting striped catfish farming consisted of fish farming activities, hatchery business units, feed sales business units, and some as workers at CV. Patin Prima can be called labor. The Income Multiplier Ratio, type II, produces a value of 1.01, meaning it economically impacts the community in Kuok Village.

Keywords: *Pangasius sutchi*, Multiplayer Effect, Cultivation Business

Abstrak

PPenelitian ini dilaksanakan pada Bulan Juni 2022 di Desa Kuok Kecamatan Kuok Kabupaten Kampar Provinsi Riau. Tujuan penelitian untuk mendeskripsikan usaha-usaha yang muncul sebagai dampak keberadaan usaha budidaya ikan Patin dan menganalisis *multiplier effect* keberadaan usaha budidaya ikan Patin di Desa Kuok Kabupaten Kampar Provinsi Riau. Metode yang digunakan yaitu metode survei dan penentuan responden ditentukan secara *purposive sampling*. Hasil penelitian menunjukkan bahwa kegiatan ekonomi sebagai dampak usaha budidaya ikan Patin terdiri dari kegiatan budidaya ikan, unit usaha pembenihan, unit usaha penjualan pakan, dan ada yang sebagai pekerja di CV. Patin Prima ataupun bisa disebut dengan tenaga kerja. *Ratio Income Multiplier*, tipe II menghasilkan nilai sebesar 1,01 artinya memberikan dampak ekonomi terhadap masyarakat di Desa Kuok.

Kata kunci: *Pangasius sutchi*, *Multiplayer Effect*, Usaha Budidaya

1. Introduction

Aquaculture is the effort to raise fish that previously lived wild in nature into fish that are kept/cultivated. In a broad sense, all businesses raise and obtain fish, both of which still live in the wild and have been cultivated separately with human intervention. Aquaculture has several advantages compared to capture fisheries, where aquaculture is one way to maintain the availability of fish stocks, not by hunting / gathering. Aquaculture is one of the subjects expected in the mission of marine and fisheries community welfare (Hermawan, 2017).

Kampar Regency is one of the regencies in Riau Province, with an area of 27,908.32 km^2 and a reasonably high potential for freshwater fisheries. Total fisheries production in Kampar Regency was 29,296 tons, with 784 tons (3.34%) of capture fisheries and 28,512 tons (96.66%) of aquaculture (DJPB, 2013). The fisheries business being developed in Kampar Regency is the cultivation of freshwater catfish and catfish cages (Liana, 2015).

An area that has successfully developed its superior potential is Kuok Village. One fish farming business with high potential in Kuok Village is the striped catfish (*Pangasius sutchi*) farming business. Striped catfish is a type of freshwater fish that is one of the commodities with high prospects because it has a high selling price. This causes striped catfish to receive attention and is in great demand by entrepreneurs to cultivate it (Kurniawan, 2018). Striped catfish is a specialist freshwater fish from the Pangasidae species which has general characteristics without scales, does not have many spines, relatively fast growth, high fecundity, and survival, can be mass-produced, and has the opportunity for industrial-scale development. The advantages contained in this fish become one of the fishery commodities with high economic value, both in the hatchery and learning businesses. Striped catfish is classified as a superior fish because it is easy to maintain, resistant to disease attacks, responsive to artificial feed, and easy to cultivate; within six months, it can be harvested (Minggawati & Saptono, 2012; Susanto, 2009).

Striped catfish is one type of freshwater fish. Striped catfish has excellent potential as an exploratory commodity because it has white meat that consumers highly prefer (Sari, 2017). Striped catfish have an elongated white body like silver with a bluish back. Its body length can reach 120 cm, which is quite large for domestic freshwater fish. The striped catfish head is relatively small, with the mouth at the tip of the head slightly below. This is characteristic of the catfish group. At the corners of its mouth are two pairs of short whiskers that function as feelers (Amri, 2007).

The economic development of Kuok Village is not only in the striped catfish cultivation sector but also in other sectors related to striped catfish cultivation and other supporting sectors. Striped catfish cultivation, in addition to generating various processing economic activities, also generates multiple economic activities, including the procurement of fish feed, meaning that the striped catfish cultivation business, in addition to improving the economy of the fish farmers themselves, also as a base economy, encourages the opening of other economic activity businesses in the form of the striped catfish processing industry, Striped catfish feed processing business, sales of factory fish feed, striped catfish hatcheries including marketing activities as non-base economic activities (Fernanda, 2019). A sector is classified as an economic base sector in a region. The sector can be self-sufficient in meeting regional consumption needs and generating surpluses for exports out of the area. Its growth creates a multiplier effect, increasing overall regional income and spurring the development of other sectors (Tibrani, 2018).

The development of the sector has linkages between production sectors, which in turn has a multiplier effect from the striped catfish cultivation sector on other sectors related to striped catfish cultivation, both direct linkages and indirect linkages, which ultimately improve community welfare (Zulkarnaen, 2019). The multiplier effect is a direct and indirect linkage that encourages development activities caused by activities in specific fields, both positive and negative, which encourage activities in other fields (Lestari, 2015).

With this multiplier, the community will experience an increase in the economy, such as increased income, employment, and business opportunities (Ramli, 2021). Aquaculture businesses that develop in the community, either as a primary livelihood or a side livelihood, require outside labor, especially if the ponds owned are many and extensive. The difference in the pond size owned by Striped Catfish farmers will result in differences in pond management, so the more comprehensive the pond, the more labor the farmers need (Febrianty, 2020). According to the terminology (Belinda, 2013), there are three multiplier effects: direct, indirect, and induced. These three effects are used to calculate the economic value and then estimate the economic impact at the local level. These three effects are used to calculate the economic value and then estimate the economic impact at the local level.

The multiplier measure is an additional spending effect introduced in economics. It includes a measure of the average port. In related research, the expenditure of business owners in a region can take any form (META in Prasetyo, 2010), including 1) expenditures incurred by business owners on goods and services, 2) outside investment, and 3) government spending, e.g., infrastructure.

This research is supported by previous research, such as that conducted by Diasto & Anggraeni (2013) entitled Analysis of Maritime Tourism's Economic Impact on Tidung Island's Community Income. This tourism activity financially impacts the community through increased revenue, employment, and business opportunities. This study aimed to analyze the economic impact of tourism activities on community income on Tidung Island using Keynesian Income Multiplier by looking at the direct, indirect, and further effects. The analysis results show that

tourism on Tidung Island has had an economic impact on the local economy, although the effects are still relatively small. This is evident from the Kelynelsian Income Multiplier value of 0.28, the rational income multiplier type I value of 1.35, and the sensible income multiplier type II value of 1.59.

The research was also supported by Hidayat's (2015) research on the multiplier effect of smoked fish processing in Wonosari Village, Bonang, Demak District. The objectives of this study are as follows: 1) Analyze the production level of superior fish cultivation and smoking products in Wonosari Village, Bonang, Demak District; 2) Analyze the multiplier effect of catfish cultivation and smoking income in the same area. The results showed that the superior commodities of Wonosari Village, Bonang District, and Demak Regency are Smoked Fish and Catfish Cultivation. The smoking income multiplier is 0.486, more significant than the fish farming income multiplier of 0.263. The fish smoking income multiplier of 0.486 means that every capital spent of Rp1,000,000 will generate a potential profit of IDR 486,000. The multiplier value of fish farming of 0.263 implies that every capital of IDR 1,000,000 will generate a potential profit of IDR 263,000. Based on the income multiplier, the fish-smoking business is more profitable than catfish farming. This study aims to describe the companies that have emerged as having an impact on the striped catfish farming business and analyze the multiplier effect of the existence of the striped catfish farming business in Kuok Village, Kampar Regency, Riau Province.

2. Material and Method

2.1. Time and Place

This research was conducted in June 2022 in Kuok Village, Kuok District, Kampar Regency, Riau Province.

2.2. Methods

The method used in this research is the survey method, namely direct observation of objects in the field and obtaining information collected from respondents through personal and direct interviews with business actors from the striped catfish cultivation business, guided by the questionnaire provided. Sugiyono (2018) states that the research method is a scientific way of obtaining data for specific purposes and uses. Scientific means research activities based on scientific characteristics, namely rational, empirical, and systematic, as traced in the philosophy of science.

2.3. Procedures

2.3.1. Determination of Respondents

Respondents in this study were determined by purposive sampling. According to Kurniawan & Puspitaningtyas (2016), purposive sampling is a sampling technique based on specific criteria (considerations) of population members. The number of respondents taken represents the research interests, and the respondents know the problem being studied. The respondents were striped catfish farmers, seed sellers, feed sellers, and laborers.

2.3.2. Data Collection

The primary and secondary data collected in this study are primary and secondary. Primary data is obtained from direct interviews with respondents, namely striped catfish farming business owners and other business actors such as fish hatchery, feed manufacturing business actors, and labor guided by the questionnaire provided. Secondary data was obtained from the village office and other agencies related to the research. Secondary data includes geographical conditions, area, land area, and population based on (age group, livelihood, and education level).

2.4. Data Analysis

2.4.1. Descriptive Analysis

The first research objective is to identify economic activities that impact the existence of the striped catfish aquaculture business in Kuok Village, Kuok District, Kampar Regency, Riau Province. Then, the descriptive analysis method is used. Nazir (2013) explains that descriptive analysis is an analysis to describe systematically and accurately the facts and also the characteristics of recognizing populations or activities carried out in specific fields that make the subject of research based on data from variables obtained from the group of subjects studied and facts that occur in the field.

2.4.2. Multiplier Effect Analysis.

The multiplier effect analysis method is used to achieve the second research objective: to determine the multiplier effect of the Striped Catfish farming business's existence on the community's Kuok Village economy. In measuring the economic impact of an activity on the local community economy, the income multiplier ratio type (Van Holven, 2005) is used, which is a value that shows how much the direct impact of the business owner's expenditure impacts the local economy. Mathematically formulated:

$$\text{Rational Income Multiplier, type II} = \frac{D+N+U}{D}$$

Description:
D : Local revenue earned directly (IDR)
N : Local income obtained indirectly (IDR)
U : Induced local income (IDR)

The criteria for the results obtained are as follows: 1) If the values are less than or equal to zero (≤ 0), then the location cannot teach economic impacts; 2) If the values are between zero and one (0 < x < 1), then the location of the striped catfish cultivation business activity still has a low economic impact value; 3) If the values are more significant than one (> 1), then the location of the striped catfish fish farming business has been able to teach economic impact.

3. Result and Discussion

3.1. General Description of the Research Area

Kuok Village is in the Kuok District of Kampar Regency, Riau Province. Geographically, it is located at coordinates 100.943 N / L / U 0.322 East / B / B with an area of 6000 hectares, which is divided into 2,280 ha of plantation land, 800 hectares of paddy fields, 90 hectares of field land, and 2,830 ha of other land. Kuok village consists of 6 hamlets, namely Koto Menampung Hamlet, Pl. Bellimbing DI, Pl. Bellimbing II, Koto Semiri Hamlet, Sei Maki Hamlet, and Bukit Agung Hamlet.

3.2. Businesses that arise as a result of the Existence of the Striped Catfish Cultivation Business

The businesses arising from the striped catfish farming business in Kuok Village are striped catfish farming activities, hatchery business units, feed sales business units, and some as workers at CV. Patin Prima can be called labor. CV. Prima Patin is a company engaged in developing business partners in the Kampar Regency, which acts as an investigator of seeds and feed and accommodates harvested fish from community cultivation activities.

Striped catfish farming is one of the activities Kuok Village's people carry out to meet their daily economic needs. This activity includes pond preparation, stocking catfish seeds, feeding catfish, checking for pests and diseases, harvesting, producing, and marketing catfish. Qomariyah & Indra (2009) explain that striped catfish is a unique fish because, in addition to being a consumption fish that is classified as a luxury, striped catfish is also used as an ornamental fish when it is still small (5-12 cm), Patin fish are widely kept as ornamental fish. Furthermore, Hernowo (2001) explains that striped catfish has a high economic value; its meat is low in sodium, so it is suitable for people on a salt diet, easily digested by the intestines and contains calcium, and contains iron and minerals that are very good for health.

In striped catfish farming activities, the cultivators have the same pond size of 20 m^3 with a different number of columns, including those who have one striped catfish farming pond with an average production of 11,200 kg/harvest, then striped catfish farmers who have two ponds with an average production of 19,200 kg/harvest and striped catfish farmers who have three columns with a production of 28,000 kg/harvest. The selling price of harvested catfish is IDR 17,000/kg, and the fish is sold fresh to CV. Patin Prima. The income of one pond cultivator amounts to IDR 190,400,000.00/panel, the revenue of 2 column cultivators amounts to IDR 326,400,000.00 / harvest, and the income of three pond cultivators amounts to IDR 489,600,000.00/harvest. At the same time, expenses in one harvest for eight months in 1 year are the purchase of striped catfish seeds and the purchase of feed. Striped catfish seeds are for cultivation from CV. Patin Prima is IDR 160.00/head, and the feed given to the striped catfish comes from CV. Patin Prima for IDR 300,000.00/sack. Expenditures of cultivators of 1 pond for the purchase of Striped Catfish seeds and feed as much as IDR 92,800,000.00 / harvest, expenditures of cultivators of 2 ponds for the buying of striped catfish seeds and feed as much as IDR 184,800,000.00 / harvest, and expenditures of cultivators of 3 ponds for the buying of striped catfish seeds and feed as much as IDR 277,200,000.00/harvest.

The more columns there are, the more expenses and income the striped catfish farming community generates. So after being analyzed through the calculation between the income and expenditure of Striped Catfish farmers, the profit or revenue received net by the cultivator of 1 pond is IDR 97,600,000.00 / harvest, the profit or revenue received net by the cultivator of 2 columns is IDR 141,600,000.00 / harvest, the profit or revenue received net by the cultivator of 3 columns is IDR 212,400,000.00 / harvest. The Directorate General of Aquaculture continuously makes efforts to increase aquaculture production. One of them is monitoring the increase in aquaculture production through the aquaculture industrialization program. Furthermore, the DJPB (2013) said that striped catfish is one of the primary commodities that are encouraged to increase production. Ramli (2009) explained that striped catfish production in the Kampar Sub-district is marketed in local markets in the sub-district and district and markets outside the district.

Striped catfish seeding business unit: The development of the striped catfish farming business is highly dependent on the hatchery activities carried out, such as such as CV. Patin Prima is a place that divides the cultivator community. The community purchases Striped Catfish seeds for CV. Patin Prima with a seed price of IDR 160.00/fish. Production of striped catfish seeds produced by CV. Patin Prima as much as 28,000 fish/month using tarpaulin ponds and also concrete ponds, and production that is sold every month averages 1,000 Striped Catfish seeds, so the income from the striped catfish hatchery business is IDR 160,000.00 / month; the area where striped catfish seeds are marketed is in Kuok Village and surrounding areas. The expenses incurred from striped catfish hatchery business activities include purchasing feed of as much as 30 kg/month for IDR 5,000.00 / kg. Expenses in one month amounted to IDR 150,000.00 / month, and the net profit or revenue received was IDR10,000.00 / month. According to Suhara (2019), the hatchery business is significant in the aquaculture sector because in cultivating the seed investigation factor is absolute, the development of aquaculture is highly dependent on seed procurement, which means that the increasing cultivation business, the demand for seeds will also increase.

In the feed sales business unit in Striped Catfish farming activities, the cultivator community purchases feed from CV. Patin Prima, which comes from CV. Patin Prima from Medan will be sold to the Kuok Village cultivators, and fish feed will be marketed to surrounding communities. Patin Prima makes it easier for farmers to purchase feed for cultivated striped catfish. The price of fish feed sold by CV. Patin Prima is Rp for the fish farming community IDR 300,000.00/sack of feed sold by CV. Patin Prima has as many as 1,800 sacks / per month. CV income. Patin Prima as much as IDR 540,000,000.00 / month. According to Kurnia et al. (2017), feed is one of the determining factors for the success of Striped Catfish farming; optimal feed learning will produce excellent growth.

Laborers or laborers receive wages from what has been done with others, such as workers or local laborers, in their CVs. Patin Prima consists of 1 worker in the feed store who has worked for about five years with a labor wage of IDR 2,800,000.00 / month, one person who works as an accounting with a length of work of about two years with a labor wage of IDR 2,500,000.00 / month, so the number of workers is taken as many as two people who are considered to represent other workers. Prasetyo (2010) argues that labor wages are one of the elements used to flex the cost of goods in the company because inaccuracy in flexing the amount of salary will be very detrimental to the company.

3.3. Multiple Impact Analysis

Multiple impact analysis (multiplier effect) is an effort to see the widespread influence caused by an economic activity, where an increase in national spending will influence income and consumption. Ismayanti (2010) said that the multiplier effect process is a process that shows the extent to which national income will change as a result of changes in aggregate expenditure. The multiplier aims to explain the effect of an increase or decrease in aggregate spending on the equilibrium level, especially on the national income level. Furthermore, Belinda (2013) demdemonstrated that the impacts of various economic activities can be grouped into three categories: direct, indirect, and induced. Impact analysis will be carried out on each community business group in Kuok Village related to Striped Catfish cultivation activities carried out by the cultivating community.

Table 1. Direct economic impact

No	Component	Income (Per/Month)
1	SellerFeed	540,000,000.00
2	Seller Seed	3,920,000.00
3	Respondent1Pool	97,600,000.00
4	Respondent2 Pools	141,600,000.00
5	Respondent3 Pools	212,400,000.00
	Total Income	995,520,000.00

The direct economic impact has an average income of IDR 995,520,000.00/month. Prananda et al. (2017) explain that the financial implications refer to changes in marketing, income, employment, and other business activities. There is an indirect economic impact on the local workforce at CV. Patin Prima consists of 1 person who works in the feed shop and has worked for around five years with a labor wage of IDR 2,800,000.00/month, one person who works as an accountant with a work experience of around two years with a labor wage of IDR 2,500,000, 00/month, so the number of workers is taken as two people who are considered to represent the other workers. The total labor wages of 2 people considered representatives is IDR 5,300,000.00/month. According to Zulkarnaen (2019), the indirect economic impact can be calculated through the income earned by local workers.

Table 2. Economic impact

No	Expenditure	Amount (IDR/Month)
1	Household	1,909,090.91
2	WagesPower Work	5,300,000.00
Total IDR/Month)		7,209,090.91

Table 2 shows the further economic impact that must be observed from Striped Catfish cultivators' household expenditure and labor wages each month. In contrast, the total household expenditure and expenditure on labor wages amounts to IDR7,209,090.91/month. Belinda (2013) explains that induced economic impacts are changes in economic activity resulting from household expenditure from income obtained directly or indirectly from the business being run.RIM (Rational Income Multiplier), type II produces a value of 1.01, meaning it reduces the economic impact on the community in Kuok Village according to the criteria explained by Van Hoeven (2005).

4. Conclusions

Based on the research results, businesses that emerged from the striped catfish cultivation business consisted of fish cultivation activities, hatchery business units, and feed sales business units; some were CV workers. Patin Prima is what can be called a workforce. Rational Income Multiplier, type II produces a value of 1.01, meaning it economically impacts the community in Kuok Village.

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