

Competitiveness Analysis of Tilapia Commodity in North Konawe, Indonesia

Laode Geo

Agribusiness Department, Faculty of Agriculture, Halu Oleo University, 93232 Kendari, Indonesia

Abstract: This Study aimed to analyze the competitiveness tilapia commodity in North Konawe. The Population of this study was 173 tilapia businessmen in north Konawe. Samples determination used Cluster Random Sampling method and taken randomly by Simple Random Sampling method. Amount of samples determined by slovin formula while get 121 samples. Then proportional sampling was taken to determined amount of samples from each villages. The study used primary data and secondary data. Data collection techniques by direct interview with respondents and literature study. Data analyze used Policy Analysis Matrix (PAM). The research result show the tilapia bussinese in North Konawe has high competitiveness. It was indicated by private cost ratio and domestic resource cost ratio in north Konawe was less than one.

Keywords: Competitiveness, Tilapia, PAM, North Konawe.

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I. Introduction

Fishery is one of important sector for improving household economy. Economy activity should get more attention from government. Improving fishery economy sector can improve regional economy development. Base on activity area, fishery such as marine fisheries and freshwater fisheries. North Konawe has freshwater fisheries activity which have potency as one of region who has large river flow. This indicate by tilapia business.

Tilapia is freshwater fish species which has fast growth 4.1 grams per day. From economy site, tilapia price is high (Rp. 30,000- Rp. 45,000 per kilograms). Business prospects has high potency because fisheries product consumption needs have not been met. Fisheries business development will affect to income, employment opportunities and to support others fieldsdevelopment. Fisheries production give contribute for society and region's income. Fisheries production in north Konawe on 2019 especially aquaculture was 600.37 ton, while capture fisheries was 4,936.79 ton (Maritime and Fishier Service North Konawe, 2019).

For past five years, growth average in all fishier commodity production in north Konawe increased become 39.59%. while fishier commodity production in south east Sulawesi increased 6.52%. The data was indicate growth average fishier production in north Konawe was higher then another region in southeast Sulawesi. Until 2018 fishier commodity contribution average in north Konawe was 17.60%.

Fishier in north konawe is activity related to exploit freshwater fish resources. One of species cultivated is tilapia. Efforts than can be developed tilapia business is competitiveness tilapia in north Konawe and other region base on competitive advantage and comparative advantage by private cost approach or prices applicable at studysite.

II. Materials and Methods

Samples determination used Cluster Random Sampling method and taken randomly by Simple Random Sampling method. Amount of samples determined by slovin formula while get 121 samples. Then proportional sampling was taken to determined amount of samples from each villages. The study used primary data and secondary data. Data collection techniques by direct interview with respondents and literature study. Variable research included reception, input tradable, input non tradable, production and privates cost and social cost. Data analyze used Policy Analysis Matrix (PAM) (Pearson *et al.*, 2005).

Table 1. Construction *Policy Analysis Matrix* models

Description	Reception	Cost		Profit
		Input Tradable	Input Non Tradable	
Private Cost	A	B	C	D
Social Cost	E	F	G	H
Divergence Effect	I	J	K	L

Note:

- A : Reception on Private cost
- B : *Input Tradable Cost* on Private cost
- C : *Input Non Tradable Cost* on Private cost
- D : Profit on Private cost
- E : Reception on Social cost
- F : *Input Tradable Cost* on Social cost
- G : *Input Non Tradable Cost* on Social cost
- H : Profit on Social cost
- I : *Transfer Output*
- J : *Transfer Input Tradable*
- K : *Transfer Factor*
- L : Net profit

Competitive Advantage

Competitive advantage tilapia business in North Konawe with *Private Cost Ratio* (PCR).

$$PCR = \frac{C}{A - B}$$

Where:

- PCR : *Private Cost Ratio*
- A : Reception on Private cost
- B : *Input Tradable Cost* on Private cost
- C : *Input Non Tradable Cost* on Private cost

Comparative Advantage

Comparative advantage tilapia business analyze by *Domestic Resource Cost Ratio* (DRCR)

$$DRCR = \frac{G}{E - F}$$

Where:

- DRCR = *Domestic Resources Cost Ratio*
- E = Reception on Social cost
- F = *Input Tradable Cost* on social cost
- G = *Input Non Tradable Cost* on Social cost

III. Results and Discussions

Shadow Output Price

The shadow output price approach was determined based on prices in other regions times with shadow exchange rate, its cause tilapia has export potential. Tilapia FOB price was 3 US Dollar per kilograms while shadow exchange rate was Rp. 11,269 per US Dollar, so tilapia shadow output price was Rp. 30,872 per kilograms.

Shadow Input Price

Input Price in tilapia business consist of input tradable and input non tradable. Input price type tilapia business in north Konawe show in Table 2.

Table 2. Shadow Input Price Tilapia Business In North Konawe 2019

No.	Input	Unit	Shadow Price
1	Boat engine	Rp/Unit	4,518,950
2	Fuel	Rp/Liter	5,522
3	Knife	Rp/Buah	100,000
4	Seine fishing	Rp/Unit	85,000
5	Boat	Rp/Unit	7,194,444
6	Rang	Rp/Unit	250,000

Source: Secondary Data, 2019.

Table 2 shows that shadow input price divided into input tradable (boat engine and fuel) were calculated by Cost Insurance and Freight, and then times with shadow exchange rate. So, shadow price for Boat engine Rp. 4,518,950 per unit, and Rp. 5,522 per liters for fuel shadow price. While input non tradable approach (knife, seine fishing, boat and rang) were same with local price.

Policy Analysis Matrix (PAM)

Tilapia is widely used for sufficient needs and increasing family economy. Policy Analysis Matrix used to know competitiveness tilapia business and able to compete other commodity in other region, if tilapia has high competitiveness so it can oriented to become export commodity. Table 3 show data Policy Analysis Matrix in tilapia business.

Table 3. Policy Analysis Matrix on Tilapia Business in North Konawe 2019

Description	Reception (Rp/Season)	Cost (Rp/Season)		Profit (Rp/Season)
		Input Tradable	Input Non Tradable	
Private Cost	19,395,833	4,283,333	2,224,696	12,887,804
Social Cost	23,951,527	2,753,945	2,224,696	18,972,886
Divergence Effect	- 4,555,693	1,529,389	0	- 6,085,082

Source: Primary Data, 2019.

Based on Table 3, Policy Analysis Matrix method show that, in generally tilapia business was profitable economically and financially. It can be seen by profit value from private cost and social cost. Tilapia business development need to be done for regional development because it has broad market prospect in southeast Sulawesi and other regional.

Reception compound on Policy Analysis Matrix method show negative divergence. It cause shadow price was higher (Rp.30,872 per kilograms) than private cost (Rp. 25,000 per kilograms). Negative divergency show distortion of government policy and market failure. Distortive policy is government intervention that cause market price to differ from their efficiency price, such as tax, subsidies, trade barriers, market availability, or price regulation. Market failure due to monopsonistic which supply was higher than demand. That condition cause tilapia business lost the opportunity to obtain Rp. 4,555,693.

Positive input tradable cost mean there was government intervention to affect high input cost especially input tradable as boat engine. Government policy impact to high production cost as goods procurement tax. It made high input cost in tilapia business in north Konawe. While input non tradable did not indicate existence divergency effect. This due to social input non tradable cost same with private cost.

Policy Analysis Matrix result show that tilapia business profit in north Konawe in a row was Rp. 12,887,804 and Rp. 18,972,886. This condition show tilapia businessmen lost profit Rp 6,085,082 because private cost Rp. 25,000 per kilograms. If tilapia businessmen can sell their fishes in out of north Konawe they can get profit Rp. 6,085,082 per year. Base on Policy Analysis Matrix, profit consists of two indicators, private profit on actual cost and social cost. Private profit was obtained from subtraction between reception private cost Rp. 19,395,833 per year with input tradable cost Rp. 4,283,333 per year and input non tradable cost Rp. 2,224,696 per year. Social profit in tilapia business Rp. 18,972,886, this was obtained from subtraction between reception social cost Rp. 23,951,527 per year with input tradable cost Rp. 2,753,945 per year and input non tradable cost Rp. 2,224,696 per year. Base on PAM analysis show private profit value Rp. 12,887,804 was higher than zero, and social profit value Rp. 18,972,886 was higher than zero. The data indicated tilapia business in north Konawe deserve to be developed. Private profit can reflect government policy influence the value such as procurement of equipment and production facilities for tilapia. The number of private cost and social cost can describe tilapia business was efficient financially and have competitive advantage. Base on that condition tilapia business have opportunity to develop regional.

Competitiveness Analysis Tilapia Business

Competitiveness tilapia business analyzed by two indicators, they was competitive advantage which used private cost and cooperative advantage which used social cost. Table 4 show Competitiveness parameter tilapia business

Table 4. Parameter Value Competitive Advantage and Comparative Advantage Tilapia Business in 2019

No.	Parameter	Value
1.	Competitive advantage (PCR)	0.15
2.	Comparative advantage (DRCR)	0.10

Source: Primary Data, 2019.

Tilapia business activity had competitive advantage. It was seen by private cost ratio value (PCR) and domestic resource cost ratio value were lower than one. Private cost ratio value on tilapia business in north Konawe was 0.15. It was mean to get value added output amounting to one unit private cost, we need additional fee domestic factor 0.15. Base PCR value, tilapia business have competitive advantage. Private advantage value

tilapia was Rp. 12,887,804 per year so that tilapia business was financially profitable and able to compete in private cost level.

Comparative advantage was one of indicators to assess tilapia business competitiveness, have ability to improve without government help and have export opportunities. Ratio value of Domestic resource cost in north Konawe was 0.10. It was indicated to get value added output amounting to one unit social cost, we need we need additional domestic factor 0.10. Tilapia business need Domestic resource cost 10% to import cost. So, tilapia business was economically efficient and have comparative advantage, DRCR value was lower than one.

IV. Conclusion

Tilapia business in north Konawe have competitiveness, Private cost ratio and domestic resource cost were more than one.

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