

Original Research Article

Economic Characteristics of Fishing Society of Cangkol Village, Cirebon, Indonesia

ABSTRACT

This research aims to map economic characteristics, as well as to analyze the driving and inhibiting factors of the fishing community in Cangkol Village. The research was carried out in April–June 2023. The average income of skipper fishermen was Rp. 3,288,195.83, while the average wage for crew members was Rp. 1,183,250.00/month. The fishing community in Cangkol Village are fishermen with a traditional fishing unit with a 3 GT boat, hand line fishing gear, and a one-day fishing system. The fish caught by fishermen from Cangkol Village are demersal fish in the form of talang-talang, coral grouper, red snapper, balloon snapper, jenaha, and other fish. The caught fish market is a monopoly. Marketing of catches through two channels, namely through middlemen or directly to consumers with a door-to-door promotion system.

Keywords: Fishing technology, fisherman's income, marketing mix

1. INTRODUCTION

Regional Governments (Pemda) in this era of decentralization are the authorities in managing regional issues starting from the process of formulation, and implementation, to the evaluation of development policies or programs aimed at supporting regional development programs[1]. Growth, equity, and sustainability are needed in an effort to achieve the development goals of a region [2]. The success of the development of a region can be seen from various perspectives ranging from social, economic, cultural, and legal, to security aspects[2].

The fisheries sector is a sector that requires linkages between various components so that the development efforts carried out run optimally[3]. One of the various components needed is the community component[3]. Empowerment of fishing communities is a paradigm that was built after long neglect of the development of coastal areas in Indonesia [4]. In order for the process of formulating a policy to take place optimally, it is necessary to do brainstorming through the process of mapping the economic characteristics of the people within it[1].

KampungCangkol is part of a fishing village located in Lemahwungkuk Village, Cirebon, Indonesia. The results of previous research stated that fishing communities in the city of Cirebon live with concern, judging from their dirty and materially unprosperous living environment[5]. This shows that the development has not been optimal. An understanding of the characteristics of the people within it is needed so that regional management is carried out optimally[6]. Therefore, it is necessary to know the economic characteristics of the fishing community in KampungCangkol.

Comment [s1]: The abstract is unclear and too few. Results and conclusions are not written down and the research objectives are unclear.

Comment [s2]: Introduction is too little and not clear. Add new references and what is the latest in this research, and explain the economic characteristics of fishing communities.

2. METHODOLOGY

The research was conducted in Cangkol Village, Lemahwungkuk Village, Lemahwungkuk District, Cirebon City, West Java, in April–June 2023. The method used in this research was a survey method, by asking several respondents about beliefs, opinions, characteristics, and behaviors that have occurred or are currently occurring [7]. The data used in this research are primary and secondary data. The main data in the form of primary data was obtained through interviews with respondents using a questionnaire regarding the economic characteristics of the fishing community in Cangkol Village. Secondary data includes data on the general condition of the Cangkol Village fishery area and sector. These data were obtained from a literature study.

Respondents were taken using the purposive sampling method. In order to support research objectives, then Respondents were taken based on the following criteria:

- a. Respondents work as full-time fishermen or main part-time fishermen;
- b. Respondents are members of fishermen groups;
- c. Respondents are residents of Cangkol Village;
- d. Respondents are willing to be interviewed.

Relevant stakeholders, namely Cirebon City Food Security, Agriculture, and Fisheries Service (DKP3) officials, and community leaders in Cangkol Village act as triangulators for the data collected.

3. RESULTS AND DISCUSSION

3.1 Description of Cangkol Village Fishermen's Catching Business

The capture fisheries business in the fishing community of KampungCangkol is a type of fishing business that is still simple in terms of its constituent components. The fishing community in Cangkol Village operates using a one-day fishing system. In the Cangkol fishing community, fishing activities are divided into three stages, namely the pre-capture, capture, and post-capture stages:

- a. Pre-capture
The preparation stage for fishing activities begins at around 21.00 WIB. At this stage, fishermen will ensure that all their needs when going to sea have been met. The preparatory phase includes activities to check ships, engines, fishing gear, and diesel fuel, while the fishermen's wives prepare provisions for going to sea;
- b. Capture
When hand line operations are carried out, fishermen will leave at 01.00 WIB and return at 13.00 WIB. The fishing area of the fishing community in KampungCangkol is on average about 40–60 km from the coast;
- c. Post-capture
In the post-capture stage, the catch is immediately weighed by collectors and selected based on size. The size of fish that pass the selection of collectors is fish measuring ≥ 5 ounces. Smaller-sized fish will be brought home to be sold by the fishermen's wives.

3.2 Cangkol Village Fishermen's Catching Technology

The observation results show that fishermen in Cangkol Village are traditional fishermen. One of the criteria for fishermen who are classified as traditional fishermen is that fishermen still use traditional equipment [8]. This was found in the fishing effort of the fishing

Comment [s3]: Material and methods are not clear. What material is in the research and what methods are used, the way the research works is not written down, and the data analysis and experimental design used are not written down.

Comment [s4]: Add new references to the discussion.

community in Cangkol Village. The specifications for fishing units for fishermen in Cangkol Village are shown in Table 1.

Table 1. Specifications for fishing units in Cangkol Village fishermen

Specification	Information
Fisherman	
Mileage	40-60 km
long journey	3-6 hours
Number of crew	1 person
Fishing Rod	
String length	100m
String material	Polyamide (PA)
String size	40 lbs
Hook size	no. 10
Ballast material	Tin
Boat	
Material	Fiber plywood
Length (LOA)	8-10m
Wide	2.5-3m
Tall	0.85-1.25m
Drafts	0.75-1.25m
Machine	20-25 PK

In carrying out fishing operations, fishermen in Cangkol Village use assistive devices in the form of FADs. FADs act as a place for fish to gather. The FADs used by fishermen from KampungCangkol are made from a collection of pyramid-shaped used tires made from plastic rope. FADs are operated by drowning at various fishing points. These points are then marked by fishermen on their GPS. When fishermen are going to catch fish, fishermen will follow the path that has been marked on the GPS. The operating depth of FADs varies between 5–50 m. Fishermen make FADs together on days when they are not going to sea, especially during the west and transition seasons. On top of the FADs are placed strands of coconut leaves as a fish attractor. Fish will be attracted by the smell of coconut leaves and then enter the FADs [9].

Referring to the definition of modern fishermen by [9], it can be seen that the fishing community in Cangkol Village belongs to the traditional fishermen group. This can be seen from the level of fishing technology used by fishermen from KampungCangkol, namely the fishing system is still one-day fishing, fishing is still done using hand lines, and the boats used are only 3 GT in capacity. The comparison between traditional fishermen and modern fishermen is shown in Table 2.

Table 2. Comparison of Cangkol Village fishermen's technology with the definition of modern fishermen[9]

Comment [s5]: Add new references to the discussion.

Comment [s6]: Add new references to the discussion.

Fishermen of Cangkol Village	Modern Fisherman (Tambunan 2020)
Maximum capacity of 3 GT	Maximum capacity of 200 GT
A simple fishing tool is a handline	Massive fishing gear such as trawler, seiner, longliner, dredger
One day fishing system	The capture lasted for days
A simple cooler, in the form of Styrofoam	Adequate cooling

3.3 Costs for the Fishing Business of KampungCangkol Fishermen

A fishing business has components in the form of infrastructure to support the running of the business including fishing gear, fishing vessels, and other aids [10]. The average total investment capital for fishermen's fishing business in Cangkol Village is IDR 30,063,000.00. The average total operational costs incurred by Cangkol Village fishermen in one trip is Rp. 37,200,000.00/year. The average total fixed costs incurred by Cangkol Village fishermen for the fishing business is IDR 806,388.89/month. The costs incurred in the fishing effort of Cangkol Village fishermen are shown in Table 3.

Table 3. Costs in the fishing business of Cangkol Village fishermen

Cost	Amount
Investment capital	IDR 30,063,000.00
Expenses/year	IDR 37,200,000.00
Fixed Cost/year	IDR 9,676,666.67

The average wage for crew members is 25% of the fishermen's income minus the capital spent, so the skipper's income is Rp. 1,488,195.83 and if added by side income, the total income is Rp. 3,288,195.83 and the total income for crew members is Rp. 1,183,250.00. The side income of skipper fishermen and crew members of Cangkol Village is obtained from fishing tour guide businesses. The income of skipper fishermen and crew members is shown in Table 4.

Table 4. Total income of fishermen of Cangkol Village fishermen

Income	Skipper	crew
Main	IDR 1,488,195.83	IDR 583,250.00
aside	IDR 1,800,000.00	IDR 600,000.00
	IDR 3,288,195.83	IDR 1,183,250.00

3.4 The Marketing Mix of Cangkol Village Fishermen's Catch

The marketing mix is defined as a marketing tool used by a company to pursue its goals, so the marketing mix is a marketing tool consisting of product, price, promotion, and distribution [11].

Comment [s7]: Add new references to the discussion.

Comment [s8]: Add new references to the discussion.

3.4.1 Products

The fish caught are demersal fish, namely fish that live on the bottom of sandy or muddy waters [12]. This is in accordance with the characteristics of Cangkol waters which are sand mixed with mud [13]. The highest type of catch was *Lutjanusrussellii* (jenaha fish), as much as 104.529 kg or 30% of the catch. 25.2% of the Cangkol Village fishermen's catch was in the form of *Diagrammamelanacrum* (balong snapper) and 1.1% below that was *Lutjanusbitaeniatus* (red snapper) as much as 24.1%. 15.3% of the catch is *Cephalopholisboenack* (coral grouper). The fewest catches were *Scombroidestala* (talang-talang) and other fish, respectively 5.4% and 0.1%. Fish caught by fishermen from Cangkol Village are shown in Figure 1.

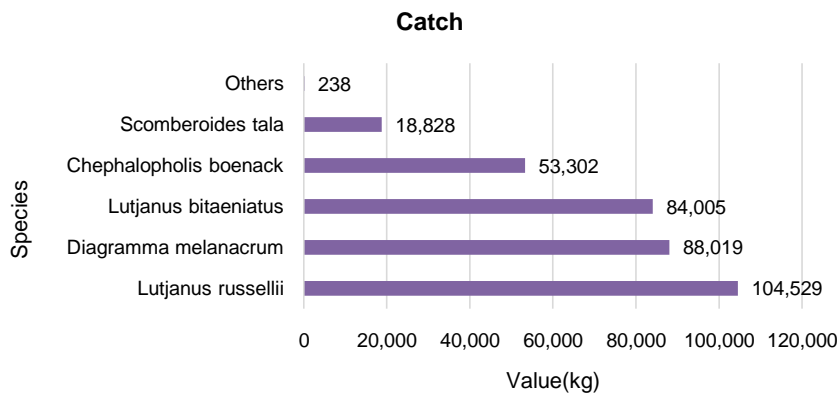


Figure 1. Cangkol Village fishermen's catch

3.4.2 Prices

The price of fish is determined by the middleman. The fish with the highest price is jenaha fish for IDR 50,000.00 while the lowest price for fish is talang-talang fish for IDR 27,000.00. The price of the fish caught is determined by the middleman. Middlemen are determinants of market prices in the fishing business of the fishing community of Cangkol Village. The price of fish caught by fishermen from Cangkol Village is shown in Table 5.

Table 5. Prices of fish caught

Species	Selling price (kg)
Jenaha (<i>Lutjanusrussellii</i>)	IDR 50,000.00
Sea bass (<i>Diagrammamelanacrum</i>)	IDR 50,000.00
Red snapper (<i>Lutjanusbitaeniatus</i>)	IDR 45,000.00
Coral grouper (<i>Cephalophalisboenack</i>)	IDR 45,000.00
Gutters (<i>Scombroidestala</i>)	IDR 27,000.00

Comment [s9]: Add new references to the discussion.

Comment [s10]: Add new references to the discussion.

3.4.3 Promotion

Promotion is a form of communication that aims to convince potential buyers of the products offered [14]. The sales of fishermen's catch in Cangkol Village are promoted door to door by middlemen. There are no other promotional strategies used by middlemen to sell fish catches.

Comment [s11]: Add new references to the discussion.

3.4.4 Distribution

The sale of the catch is carried out using the direct selling method. Direct selling is a method of selling products from the seller directly to the buyer [15]. Middlemen find buyers through word of mouth. There are two distribution channels for fish catches in the fishing community of Cangkol Village. The distribution channel for fish caught is shown in Figure 2. In the main channel or channel I, fishermen sell their catch to middlemen. Fish caught that pass the selection of middlemen are fish weighing ≥ 5 ounces. Kolbak cars come to KampungCangkol every 2–3 days to buy their catch. In channel II, fish that do not pass the selection will be brought home by fishermen and arranged in a basin. The fishermen's wives then sell the fish by going around Cangkol Village.

Comment [s12]: Add new references to the discussion.

Channel I



Channel II



Figure 2. Catch marketing channels

4. CONCLUSION

The average income of skipper fishermen is IDR 3,288,195.83/month, while the average wage for crew members is IDR 1,183,250.00/month. The technology used is still simple with a one-day fishing operating system, fishing gear in the form of hand lines, and ships with a maximum capacity of 3 GT. The market structure in the fishing business of Cangkol Village fishermen is in the form of a monopoly. There are two marketing channels, namely from fishermen through middlemen, to suppliers and consumers, and from fishermen directly to consumers.

CONSENT (WHERE EVER APPLICABLE)

As per international or university standards, the respondents' written consent has been collected and preserved by the author.

REFERENCES

- [1] R. Nuryati, S. Lies, S. Iwan, and I. N. Trisna, "Community Social Mapping in Efforts to Support the Development of Integrated Plantation Polyculture Farming (UTPPT)," *JURNAL AGRISTAN*, vol. 2, no. 1, 2020.
- [2] K. Kusdiantoro, F. Achmad, H. W. Sugeng, and J. Bambang, "Capture Fisheries in Indonesia: Portraits of Challenges and Sustainability," *Journal of Socio-Economics of Maritime Affairs and Fisheries*, vol. 14, no. 2, p. 145, Dec. 2019, document: 10.15578/jsekp.v14i2.8056.
- [3] M. Yaskun and S. Edie, "The Potential of Marine Fisheries Products on the Welfare of Fishermen and Communities in Lamongan Regency," *Journal of Management and Business Studies*, vol. 4, no. 1, pp. 257–264, 2017.
- [4] L. Wijayanti and Ihsannudin, "Strategy for Increasing the Welfare of Fishermen Communities in Pademawu District, Pamekasan Regency," *Agrieconomics*, vol. 2, no. 2, pp. 139–152, 2013.
- [5] R. Widagdo, "The Role of Kejawanan VAT in the Economic Empowerment of Cirebon City Coastal Communities," *Al-Musthafa: Journal of Islamic Economic Law Research*, vol. 3, no. 1, pp. 44–62, 2016, [Online]. Available: <http://www.fahmina.or.id/artikel-a>
- [6] N. Suharti, O. Alda, P. A. Tarisha, W. Riana, and P. F. T. Hana, "Social Mapping in Pesanggrahan District as the Foundation for Sustainable Community Empowerment Planning," 2022.
- [7] F. C. S. Adiyanta, "Law and Empirical Research Studies: Use of Survey Methods as Empirical Legal Research Instruments," *Administrative Law and Governance Journal*, vol. 2, no. 4, pp. 697–709, 2019, doi: 10.14710/alj.v2i4.697-709.
- [8] M. Hidayat, "Internal Problems of Traditional Fishermen in the City of Padang: Study of Socio-Cultural Factors that Cause Poverty," *Socius Journal: Journal of Sociology Research and Education*, vol. 4, no. 1, p. 31, Mar. 2018, doi: 10.24036/scs.v4i1.15.
- [9] D. A. Tambunan, "Analysis and Resolution of Fishermen's Conflict in Bengkulu Waters (Case Study of Fisherman Clashes Due to Illegal Fishing and Use of Trawling in 2019)," 2020.
- [10] S. H. Suryawati, R. Andrian, Z. Achmad, and H. P. Agus, "Anticipatory Policies in Facing the Dynamics of Fuel Prices in Capture Fisheries Business," *J. Social Security Policy KP*, vol. 3, no. 2, pp. 189–205, 2013.
- [11] C. A. D. Hose, "Marketing Mix (Marketing Mix) Effect on Consumer Loyalty at Fresh Mart Bahu Mall Manado," *EMBA Journal*, vol. 1, no. 3, pp. 71–80, 2013.
- [12] I. G. Yudha, "Diversity of Types and Characteristics of Fish in the Waters of Way TulangBawang, TulangBawang Regency," in *Proceedings of the Seminar on Research Results & Community Service*, 2011, pp. 1–11. [On line]. Available: <http://lemlit.unila.ac.id>
- [13] R. Oktafiani, Asriyanto, and Pramonowibowo, "The Effect of Differences in Fishing Line Construction and Bait Type on Red Snapper (*Lutjanusargentimaculatus*) Catches and Hand Lines in Cirebon Cangkol Waters, West Java," *Journal of Fisheries Resources*

Comment [s13]: Add new references that are appropriate for this research

Utilization Management and Technology, vol. 2, no. 2, pp. 113–123, 2013.

[14] N. S. Beu, M. Silcyljeova, and L. S. Reitty, "Analysis of Marketing Mix Strategies for Sales of Dried Fish at SMEs Toko 48 Bersehati Manado," EMBA Journal, vol. 9, no. 3, pp. 1530–1538, 2021.

[15] F. Karnudu and I. M. Fitri, "Marketing Strategy Mix Skipjack Asar," Tahkim, vol. XII, no. 1, pp. 89–100, 2016.

UNDER PEER REVIEW