

## Original Research Article

# Economic mapping of fish farming communities in Cikancung Village, Cikancung District, Bandung Regency

### ABSTRACT

This research aims to compile economic mapping of fish farming communities and the economic factors that influence fisheries development in Cikancung Village, Cikancung District, Bandung Regency. This research method is a survey method. This research was carried out from July 2023 – Aug 2023 in Cikancung Village. The data required is qualitative data, namely primary data and secondary data. Primary data was obtained through interviews and questionnaires to fish cultivators in Cikancung Village, while secondary data was obtained through documents from the Cikancung Village Government and the Food Security and Fisheries Office of Bandung Regency, West Java. The sampling technique used was purposive sampling. The data analysis method in this study is a qualitative descriptive analysis. The results showed that the economic conditions of most cultivators had income in the low category, namely less than IDR 5,000,000 per month. The average value of the productivity of fish farming is 0.6 kg/year/m<sup>2</sup>. The economic factors that hinder cultivators are the lack of capital and the reduced area of cultivator land.

*Keywords*: : Cikancung village, economic mapping, fish cultivators, survey

### 1. INTRODUCTION

Economic potential mapping aims to determine the potential that exists in an area and the human resources it has. By knowing local potential, economic and human resources can be maximized to improve the regional economy. The purpose of knowing local economic potential is to identify sectoral economic potential, so that it can be easily utilized in the development of each sector.

Economic mapping can be carried out on a micro scale, namely at the Village level with the aim of understanding the characteristics of a Village, potential and problems, efforts to overcome problems that have been carried out and action plans that must be carried out (Meilantina 2013). In specific research in coastal areas, mapping is used to assist spatial management planning for coastal environments that are prone to use conflicts (Moore et al., 2016). Community development programs that need to be carried out in this research are community-based mangrove rehabilitation, development of environmentally friendly ponds, planting vegetation along the watershed, and planting mangroves in new sediment areas (Fahrudin et al., 2015). The program design can overcome environmental damage and be useful for the sustainability of cultivation which will have an impact on the community's economy in the future.

Cikancung District is one of the sub-districts in Bandung Regency which has potential in the field of fish cultivation, such as cultivating goldfish, catfish, tilapia and other types of fish. Data from the Bandung Regency Food Security and Fisheries Service in 2023, Bandung Regency has fish production of 8049.82 tons/year from a total of 31 sub-districts.

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Cikancung District is one of the many sub-districts in Bandung Regency that supports fisheries activities by contributing 74.99 tons/year to still water pond cultivation. From these data it can be concluded that Cikancung District is one of the potential fish cultivation centers in Bandung Regency. Cikancung District itself has quite a lot of Enlargement RTPs spread across several villages. Cikancung Village is one of the villages in the Cikancung District area where the majority of the population are fish farmers, both small-scale fish farmers and large-scale fish farmers. Based on production data obtained from the Bandung Regency food security and fisheries service, it was found that there were 81 Cultivator RTPs in Cikancung Village, Cikancung District, Bandung Regency. These data show that Cikancung Village has the potential for developing fish farming businesses. The Cikancung Village community has been doing fish farming for a long time, but there has been no research on the economic mapping of the fish cultivating community there. Therefore it is important to do the economic mapping of the fish cultivating community in Cikancung Village, Cikancung District, Bandung Regency to understand the description of the characteristics and economic conditions of the community, as well as to know the economic factors that influence fisheries development and can also become material for regional development planning.

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## 2. MATERIAL AND METHODS

### Location and Time of Research

Social Mapping Research The fish farming community is located in Cikancung Village, Cikancung District, Bandung Regency, West Java Province. Time This research was carried out in July 2023 – Aug 2023. The location was chosen with the aim of knowing the socio-economic conditions of fish farmers and what existing fisheries development exists in Cikancung Village, Cikancung District, Bandung Regency.

### Method Of Collecting Data

The method used in this research was a survey method. The survey method is a form of research approach activity with respondents to obtain some data, not in the form of the author's opinion but natural data (Sugiyono 2017). The data collection technique in this research used a questionnaire. Questionnaire is a data collection technique that is carried out by giving a set of written questions to respondents to answer (Sugiyono, 2015). The types of data used in this research are secondary data and primary data. Primary data is collected by researchers to answer research questions. The primary data in this research is the fish cultivating community in Cikancung Village, Cikancung District, which has links in social mapping activities as a source of information in the form of interviews and observation notes. Interviews were conducted with fish cultivators spread across the research area randomly using a list of questions or (questionnaire) that had been prepared beforehand. Observations in this research were carried out by observing the behavior of the fish cultivating community in Cikancung Village, Cikancung District and documenting matters related to fish farming business activities in Cikancung Village, Cikancung District. The primary data that will be obtained later is in the form of respondent identity, cultivator characteristics, social and institutional conditions, gender roles, and kinship. Secondary data is data that does not directly provide data to data collectors or in other words is a source of data or documents obtained indirectly by researchers. Secondary data in this study were taken from the Cikancung Village Government in the form of Village monograph data which included information on population data and population numbers, as well as data taken from the Bandung Regency Food and Fisheries Service in the form of data on the number of RTP cultivators and fish production data in the sub-districts of Bandung Regency. The respondent collection technique used in this research was a purposive sampling technique with a total of 30 cultivator respondents with certain criteria such as (1) Fish farming community living in Cikancung Village, Cikancung District (2) Fish cultivating communities with at least 5 years of business experience (3) Group of fish cultivators who are willing to be interviewed.

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### **Data analysis method**

The data analysis method used in this research uses a qualitative descriptive analysis method. According to Yuliani (2018) descriptive qualitative is a simple qualitative approach method using an inductive flow. Inductive flow is defined as the implementation of research methods starting with a process or event which can ultimately be generalized into a conclusion. The images obtained include social conditions, community culture, social stratification, culture, ecosystem, natural resources and development. The results of the answers to the questionnaire were then tested using validity and reliability tests. The validity test in this study applied the concept of credibility (internal validity) with the aim of obtaining a level of confidence in the suitability between data and facts in the field. While the reliability test according to Ghazali (2009) states that reliability is a tool for measuring a questionnaire which is an indicator of a variable or construct. A questionnaire is said to be reliable or reliable if a person's answers to statements are consistent or stable over time.

## **3. RESULTS AND DISCUSSION**

### **General Condition Of The Research Location**

#### **Description of research location**

Cikancung Village is a village in Cikancung District, Bandung Regency which has been established since 1908, initially as a result of the expansion of Cicalengka Village. Cikancung village comes from the word Ci which means water and kancung comes from the word nyuncung which means sharp or sharp, so the village means the village where the water is pointed or pointed under the sirah sand of Cikancung.

#### **Geographical and Administrative Conditions of Cikancung Village**

Geographically, the area of Cikancung Village ranges from 491 hectares at an altitude of 690-1080 m below sea level. The average temperature of Cikancung Village ranges from 22oC-24oC with an area covering lowlands and highlands in the form of mountains. The entire population of Cikancung Village is grouped into 10 Neighborhood Units (RW) and 40 Neighborhood Units (RT). Administratively, Cikancung Village is divided into five leadership areas including:

- a) The Kadus 1 leadership area is divided into RW 01 and RW 09
- b) The Kadus 2 leadership area is divided into RW 03 and RW 04
- c) The Kadus 3 leadership area is divided into RW 06 and RW 07
- d) The Kadus 4 leadership area is divided into RW 05 and RW 08
- e) The Kadus 5 leadership area is divided into RW 02 and RW 10

The boundaries of Cikancung Village are as follows:

- a. The northern part is bordered by Mandalasari Village.
- b. The southern part is bordered by Cihanyir Village.
- c. The eastern part is bordered by Mekarlaksana Village
- d. The western part is bordered by Mandalasari Village.

The distance from Cikancung Village to the sub-district is 1.5 Km which can be reached on foot or by motorized vehicle for about ± 5 minutes. Meanwhile, the distance from Cikancung Village to Bandung Regency or the city center is 40 Km and can be reached in ± 1 hour by motorized vehicle.

The area in Cikancung Village is used for the area of rice fields, field area, plantation area, cemetery area, residential area, park area, offices and so on. The condition of the land in Cikancung Village is quite fertile soil so it is suitable for use as agricultural land. The soil conditions consist of paddy fields, dry land, wet land, plantation land, public facilities land, and forest land. The climate in Cikancung Village, like other villages in Indonesia, has a tropical climate which is influenced by two seasons, namely the rainy season and the dry season. This has a direct influence on cropping patterns on plantation and agricultural land in Cikancung Village.

#### **Cikancung Village Demographic Data**

Population or demography is a science that studies the dynamics of human population. Demography includes the size, structure and distribution of the population, as well as how the population changes over time due to births, deaths, migration and aging. According to Rusli (2012), the main sources of population or demographic data are the census, vital events registration system, population registration system, and limited surveys or sample surveys. Another additional source that is often useful is government agency records and documents. The data on the total population of Cikancung Village is 8,356 people consisting of 2,536 heads of families (KK). The composition of the population can be seen in table 1 below.

Table 1. Composition of Cikancung Village Population in 2023

No	Hamlet	Man	Woman	Number of People	Number of Heads of Families
1.	Hamlet 1	782	722	1504	486
2.	Hamlet 2	986	893	1879	552
3.	Hamlet 3	785	720	1505	520
4.	Hamlet 4	936	896	1832	521
5.	Hamlet 5	872	764	1636	457
Total		4361	3995	8356	2536

Data source: Cikancung Village Profile Report Data for 2022

Data on the population of a village is important to know because it is one of the main factors that determines the quality of human resource development in society. The population can be used as a measure of the success of development in population development in an area.

#### Local wisdom

Local wisdom is basic and distinctive knowledge about how to achieve a balance of life between humans and the environment that has been accumulated from the past, and has been practiced by the community for generations (Mungmachon 2012). Local wisdom emerges as a result of people's interpretation of how an environment or natural resource will benefit them. So, it is this interpretation that gives rise to public knowledge in how to protect the environment. Local wisdom plays a role in managing natural resources and the environment. However, local wisdom cannot be separated from various challenges such as the continued increase in population, modern technology and culture, large capital as well as poverty and inequality.

The local wisdom of the fish farming community in Cikancung Village is in the form of local wisdom in preserving springs. Most of the fish cultivating communities in Cikancung Village rarely experience water shortages, this can be seen by the existence of springs with large and steady discharges which are sustainably maintained by the existence of local wisdom owned by the local community. In the perspective of sustainable development, local wisdom which has been proven to be effective in preventing damage to environmental functions, needs to be continuously explored, studied and developed.

The Cikancung Village community has implemented spring management by perceiving the existing springs as a gift from God that is beneficial for people's lives. Both water and local wisdom are very valuable assets and need to be preserved. Moreover, there is a tendency for water availability to decrease and water demand to increase.

The existing norms are in the form of recommendations from the people of Cikancung Village regarding the existing springs, namely by maintaining the cleanliness of the spring environment, and leaving the condition of the springs as they are and remaining sustainable. Meanwhile, the existing prohibitive norms are in the form of a prohibition on throwing rubbish around the spring, and not making any changes that could damage or have a bad effect on the spring. Local wisdom in Cikancung Village has proven effective in

preventing damage to the environmental function of springs in a sustainable manner, so it must be maintained and preserved.

### **Economic Institutions**

Economic institutions are social institutions that deal with material welfare issues, namely regulating activities or methods of production, distribution and use (consumption) of goods and services necessary for the survival of society. The economic institutions of a nation require a pattern of management of available economic resources in a directed and integrated manner and used to improve the welfare of society. Economic institutions are expected to work together to manage and move the wheels of the economy.

The economic institutions in Cikancung Village are BUMDes Langgeng Jaya and Cikancung Village Cooperative.

#### **a. BUMDes Cikancung**

A Village-Owned Enterprise, often referred to as BUMDes or BUM Desa, is a village business institution managed by the village government and village community with the aim of strengthening the village economy and is formed based on the needs and potential that exist in the village. (Ridlwan 2014). The Cikancung Village BUM economic institution has been running since 2016 until now and has become a priority institution for village economic development. The aim of BUMDes Cikancung is to improve the economy and community businesses in managing the economic potential in the Cikancung area. Activities that have been carried out and are still ongoing today are 3 Kg LPG gas business activities, pick-up car rental business, trading business stalls for rent in RTH, and computer courses.

Once a month the administrators of the Cikancung BUMDes hold a regular meeting agenda between the management and the sub-units to report on the progress of each existing sub-unit. As for the management of the BUM in Cikancung Village, it consists of three people including the Chair, Secretary and Treasurer, and each sub-unit consists of four members. The birth of BUM Desa is expected to be able to move the economic engine in the countryside to move forward together with business units owned by existing and new residents. An important indicator of the success of the BUM Desa is its ability to move and dynamize the wheels of the economy in the village, so that it can increase the economic capacity of its citizens, therefore the business units that are built by the BUMDes should pay more attention to the value chain and supply chain which are more optimal in providing benefits for local residents. The BUM Desa business process needs to be more directed at increasing added value for village residents at every stage of the production process. Business units built through BUM Desa should be directed to optimize local resources, by involving as much regional potential as possible, including business people (HR) from local residents.

#### **b. Cikancung Village Cooperative.**

A cooperative is an economic association or organization consisting of people or bodies that provide freedom of entry and exit as members according to existing regulations, by working together in a family manner to run a business, with the aim of improving the physical welfare of its members (Sudarsono 2017). As for the process of establishing the Cikancung Village cooperative economic institution, it has not been counted for a long time, so that until now its development has not been significant. The activity that has been running from this economic institution is the Savings and Loans Cooperative. Savings and loan cooperatives are cooperatives whose goal is to provide assistance to MSME actors to help develop MSME businesses in Cikancung Village.

Although savings and loan cooperatives have a strategic role for the development of MSMEs, in running their business they have not achieved the success that other business entities have done. This is in accordance with the opinion of Subandi (2007) which states that the factors that influence the not optimal role of cooperatives include, among other things, some cooperative managers do not yet have a sense of business. In addition, the not optimal savings and loan cooperatives in the village can also be caused by limited capital.

The scarcity of capital in savings and loan cooperatives has been a factor causing the weakness of cooperatives in Indonesia so far (Pandji and Widiyanti 2007).

#### **Facilities and infrastructure**

Facilities and infrastructure are the physical basic equipment of a residential environment that meets certain standards for the need for a decent, healthy, safe and comfortable place to live that functions to support the implementation of culture and economy. The availability of facilities and infrastructure in each region cannot be said to be adequate because it is still rare to evaluate facilities and infrastructure in that area. The rural facilities and infrastructure in Cikancung Village include:

##### **1. Road infrastructure for population mobility**

The existence of road infrastructure in Cikancung Village is an asset of the Bandung Regency Government and West Java Provincial Government with details:

- a. Length of village road: 8 Km
- b. Length of District road: 1 Km
- c. Regency road length: 6 Km
- d. Length of environmental roads: 9 km
- e. Length of trail: 5 Km

Most of the roads in Cikancung Village are in good condition and are paved which can be traversed by public vehicles such as cars, motorcycles, pedicabs, and other means of transportation. The road infrastructure has a very big role in human life in the economy and development. Transportation between regions in Cikancung Village is quite smooth, this is because Cikancung Village connects between hamlets and between other villages. Mobilization activity in Cikancung Village is quite high, especially the mobilization of transportation of agricultural products and other sources of economic activity.

##### **2. Clean Water Infrastructure**

Clean water is water that is used for daily needs and the quality meets the health requirements of clean water in accordance with applicable laws and regulations and can be drunk when cooked. The provision of clean water for the community has a very important role in improving environmental or community health, namely playing a role in reducing the number of people with diseases, especially those related to water, and playing a role in increasing the standard of living of the community. The clean water infrastructure used in Cikancung Village is in the form of dug wells and pump wells.

##### **3. Garbage Disposal Facilities**

The infrastructure that is used as a garbage disposal in Cikancung Village is the existence of trash bin infrastructure. The existence of rubbish bin infrastructure in Cikancung Village aims to make it easier for people to dispose of rubbish and to reduce costs and resources to overcome the problem of carelessly thrown rubbish. The existence of this garbage bin infrastructure is intended so that people do not throw garbage in the area around the settlement to the river flow.

##### **4. Shopping Facilities**

Shopping facilities are facilities used by village communities in carrying out buying and selling activities. The shopping facilities in Cikancung Village include shops, cooperative kiosks, and individual kiosks.

##### **5. Security Facilities**

The security facilities in Cikancung Village are the Village Security Post. The Environmental Security Post, commonly known as Poskamling, is one of the facilities in the community environment, which aims to maintain the security of the surrounding environment.

The existence of these security facilities can create a sense of security and order in social life which will create a harmonious life among the community, and can increase the level of community welfare in carrying out daily activities. On the other hand, if society is faced with unsafe conditions, it will have an impact on disrupting the order of social life. The existence of this environmental security system is an effort to maintain village security and

order with the participation of all residents (Prahati et al., 2017). The environmental security system is a form of independence which is an integration of interdependent and interrelated components that provide a sense of security in society.

The security post facilities in Cikancung Village generally function as a security post which is used at night, but outside of security hours, the security post is often left unused. Therefore, it is necessary to utilize these security posts for other purposes.

#### 6. Health Infrastructure

The health infrastructure in Cikancung Village is a Posyandu. Posyandu is a form of Community-Based Health Efforts (UKBM) which is managed from, by, for and with the community, in order to empower the community and provide convenience to the community in obtaining basic health services (Ministry of Health RI 2012). Posyandu as a center for community activities in the health sector provides family planning, nutrition, immunization, diarrhea management and MCH services. This effort to integrate services is one way to increase the reach of health services to the community. Based on this, the purpose of establishing Posyandu is to reduce infant and toddler mortality rates, birth rates in order to create happy and prosperous small families. Thus Posyandu is a basic health activity organized by the community and for the community assisted by health workers (Saepudin et al. 2017).

#### 7. Formal Education Infrastructure

Formal education is an institution called a school which is part of a tiered and continuous education (Sagala 2008). Formal education infrastructure in Cikancung Village includes SD, MI, SMP, MTS, and SMA. The existence of educational infrastructure can certainly improve the quality of human resources which will ultimately foster development awareness. The higher the level of education that the community has, the more information and understanding about development. Conversely, if a low level of education is generally coupled with limited information and understanding, thus opportunities are also limited (Widyaningsih 2013).

#### Overview of Fisheries

Cikancung Village is one of the villages in Cikancung District which has a very significant area. This can be seen from the residents' quite spacious yards. Most of the people in Cikancung Village make their living as rice farmers. However, the rice fields in Cikancung Village are rain-fed, so people can only plant rice once a year. When the rice fields are dry and cannot be planted with rice, people use their free time to grow vegetables and there are also those who use their free time to cultivate freshwater fish using their home gardens. However, freshwater fish cultivators in Cikancung Village have difficulty getting fish food because of the high price, lack of capital and lack of knowledge and skills of cultivators in marketing, causing the majority of freshwater fish cultivators in Cikancung Village to decide not to continue this business. and make it a side business. However, for some respondents who have sufficient capital and adequate knowledge and skills, the fish farming business continues to this day.

The general condition of fisheries in Cikancung Village is that the majority of fish farming communities carry out fisheries activities in the grow-out stage. The fish cultivating community in Cikancung Village buys fish seeds from cultivators in other areas such as in the Ibun, Pacet and Majalaya areas, there are also those who get seeds from the Fish Seed Center in the Ciparay area and there are also those who get seeds from the Fish Farming Unit. People's Nursery in the Cicalengka area.

The seeds that have been obtained are then spread and kept in traditional ponds that the cultivating community owns for several months until they reach consumption size at harvest time. After harvesting, most of the fish produced is sold and the rest is used for family consumption. Fish sales carried out by fish cultivating communities are mostly aimed at local communities, and some are sold through dealers or collectors and then resold at the Parakan Muncang fish market and Cicalengka fish market.

## Economic Overview of Fish Farmers Overview of Fish Farming Business

### 1. Technical Aspect

Cultivation efforts at the research location are carried out traditionally, namely in permanent ponds. Based on the results of interviews and observations of the technical aspects of traditional fish rearing cultivation in permanent ponds which include pond preparation, fish rearing and rearing, and fish harvesting. Preparing a pond for fish rearing is using a permanent pond with an earthen bottom and four sides made of concrete. Pond preparation includes drying, liming and irrigating. The pool was dried for 7 days until the soil appeared cracked. After drying, liming is carried out using dolomite lime which is spread all over the bottom of the pond. After the liming process, then fill with water with a height of about 30-40 cm, and leave it for about 7 days so that natural food can grow. Maintenance and enlargement begins with sowing seeds. Tilapia seeds stocked in grow-out ponds measure around 5-7 cm. The number of seed stockings in Cikancung Village for each pond ranges from 50-100 individuals/m<sup>2</sup>. Seed distribution is usually done in the morning or evening.

### 2. Economic Aspect

Enlargement activities certainly have economic aspects that support the running of the business. An overview of the economic aspects of the fish rearing business in Cikancung Village can be seen in the following table 2 below.

Table 2. Description of the Economic Aspects of Fish Growing Business in Cikancung Village

No	Characteristics	Category	Number of people	Percentage (%)
1.	Total area of the pool owned (m <sup>2</sup> )	Micro (<1.000)	22	73,3
		Small (1.000-5.000)	7	23,3
		Intermediate (>5.000 - 10.000)	0	0
		Big (>10.000)	1	3,3
		Total	30	100 %
2.	Number of Pools owned (Plots)	1-5	28	93
		6-10	0	0
		>10	2	7
		Total	30	100 %
3.	Number of Production Per Cycle/Plot	<100 Kg	22	73,3
		100-200 Kg	5	16,7
		>200 Kg	3	10
		Total	30	100 %
4.	Cultivator's monthly income	<5.000.000	28	93 %
		p 5.000.000-9.000.000	0	0
		>Rp 9.000.000	2	7 %
		Total	30	100 %
5.	Source of feed obtained	Factory/agent	20	67
		Shop	10	33
		Total	30	100 %
6.	Transaction used	Pay Cash	30	100

	to Purchase Feed	Credit/ Borrowing	0	0
	Total		30	100 %
7.	Source of feed obtained	Factory/agent	20	100
		Shop	10	0
	Total		30	100 %
8.	Transactions used Purchase Seeds	Pay Cash	30	100
		Credit/Loan	0	0
	Jumlah		30	100 %
9.	Main Purpose of Marketing	City/Collectors	2	7 %
		Consumers/Residents	28	93 %
	Total		30	100 %

Based on table 2 above, the majority of fish farming respondents in Cikancung Village with a percentage of 73.3% have a pond area of less than 1000 m<sup>2</sup>. Cultivation land area <1000 m<sup>2</sup> is included in the micro category (Hermawan 2017). The wider the pond cultivated, the greater the income earned by the cultivator, this is because the fish seeds put into the pond depend on the size of the cultivator's pond. If the size of the pond If the area of the cultivator pond is small, fish seeds are put into the pond in small quantities (Rahmatunisa 2021). The ponds owned by most respondents are 1-5 plots with different sizes of pond plots, Meanwhile, there are only a few who have pools of more than ten plots, namely only two people.

Fish production in this research is the harvest in one rearing cycle for 4 months in one pond plot. A total of 22 people with a percentage of 73.3% produced fish production of 100–200 Kg, 5 people with a percentage of 16.7% produced fish production of <100 Kg, and 3 people with a percentage of 10% produced a production of >200 Kg. The average production produced by fish farmers in Cikancung Village is 285 kg.

The income of fish cultivators in Cikancung Village is in the low category, namely less than IDR 5,000,000 per month, amounting to 28 people or 93%, there are no fish cultivator respondents in Cikancung Village who are in the medium category, namely with income between IDR 5,000,000 and IDR 9. 000,000 per month and the income of fish farmers who are in the high category with income of more than IDR 9,000,000 per month is 2 people or 7%. In general, their income per month is not fixed. The income earned by fish cultivators in Cikancung Village is relatively low, because the majority of respondents are side fish cultivators, most of their income does not come from fish farming but from their main jobs, namely farmers, traders and village government employees. Respondents with incomes in the high category are primary cultivators, that is, most or all of their income comes from aquaculture businesses.

The ever-increasing price of feed is one of the main obstacles faced by farmers, because the increasing price of feed is not commensurate with the selling price of fish. When unable to buy pelleted feed, cultivators only use natural feed from plants or are not given feed. This has an impact on production results, the fish produced will have large heads with small bodies so the selling price is cheap. Farmers usually buy feed in the form of pellets from agents or dealers by paying in cash. The price of pellets also differs depending on the protein content in them, the higher the protein content, the more expensive the feed will be. As for cultivators who cannot afford to buy feed per sack, they usually buy retail feed in shops or kiosks, namely Hi Pro-Vite 781 brand feed at a price of Rp. 14,000 per kilogram which has been ground and has a protein content of 31%-33%, fat 3-5 %, 11-13% moisture content, 4-6% fiber, and 10-13% ash content.

Most of the cultivators buy seeds from other cultivators in the Ibun, Pacet and Majalaya areas. Meanwhile, several other respondents were obtained from the Bandung Regency Fish Seed Center in the Ciparay area, namely at a price of Rp. 30,000 per kilogram with a content of around 100 -150 tilapia fish seeds, and for catfish seeds measuring 5-6 cm with a content of around 300 tail and 7-9 cm in size with a content of about 400 tails. Apart from that, there were also fish cultivator respondents in Cikancung Village who received seeds from the People's Hatchery Unit located in the Ciseureuh area, Margaasih Village, Cicalengka District, Bandung Regency. All cultivator respondents made transactions to buy seeds in cash.

The main marketing objectives of the fish cultivator respondents in Cikancung Village were mostly aimed at the consumers of the Cikancung Village community itself, only a few respondents whose marketing objectives were aimed at dealers/collectors because they were considered more practical even though price fluctuations were often complained by the cultivators. Food-sized fish are sold at prices ranging from IDR 18,000-30,000 per kilogram depending on the type of fish sold. The dealers/collectors then sell the fish to the wholesalers at the Parakan Muncang Fish Market, the Cicalengka Fish Market then sell the fish to consumers.

### **Marketing**

Marketing is the flow of goods from producers to consumers. This activity is an important factor that will determine the success of a business that is owned. The business owned must be able to produce quality products, set the right price, and carry out effective promotions. The success of a business really depends on the entrepreneur's expertise in determining the elements in the marketing mix which include product, price, promotion and distribution. Marketing activities can be carried out using very simple marketing, namely by selling the harvest to fish auction places both within and outside the region. Apart from that, marketing is also carried out by word of mouth communication or word of mouth marketing.

Most of the respondents from the fish cultivating community in Cikancung Village, when the harvest time arrives, the cultivators only do word of mouth marketing because this is the only strategy that is most effective and can be used by cultivators for their fish farming business. Only a few respondents market through dealers/collectors, as a result the consumers of most of the businesses carried out by fish farmers are only the same people and their closest neighbors. Apart from that, the marketing problem experienced by the fish farming community in Cikancung Village is the uncertain selling price of fish on the market. This was caused by harvesting at the same time as the other cultivators. To overcome this, of course, a marketing strategy is needed. Swasta (2018) said marketing strategy can be defined as a grand design that describes how a company must operate to achieve its goals.

The marketing strategy used by fish cultivators in Cikancung Village is by implementing 4 (four) marketing tools in the marketing mix that have been conceptualized by Kotler and Armstrong (2014), or what is known as the 4P, namely product, price, place or distribution channel, and promotion.

#### **1. Product Marketing Strategy**

Products are an important part of the marketing mix. The determination of consumers in making purchases of the products we sell is by looking at the quality of the products we have. Good and quality products will support business success in selling fish. Besides that good product quality will of course provide high satisfaction from consumers. The strategy used by most of the fish cultivator respondents in Cikancung Village to maintain product quality so that it is suitable for sale is to pay attention to the feed and seeds they have. To get the feed and seeds they have, fish cultivators in Cikancung Village work together by establishing partnerships among group members or the community which can be useful in strengthening solidarity and showing a level of mutual concern among fellow fish cultivators. The partnership that occurred in the fish cultivating community in Cikancung Village can be seen from the presence of several respondents who purchased fish seeds

from other cultivators as well as the cooperation between fellow fish cultivators in Cikancung Village regarding fish feed.

Apart from that, another strategy carried out by the fish cultivating community is by holding gatherings and discussions once a month with other members and also with fisheries extension officers to predict and discuss regarding seeds, feed used and any obstacles that occur in the fish farming they use. do that can hinder in producing quality fish products.

#### 2. Pricing Strategy in Marketing

Price is one element of the marketing mix that generates revenue. Price is the easiest element in a marketing program to adjust. Apart from that, price is also the most flexible marketing mix. Entrepreneurs can make price changes quickly to respond to changes that occur in the market. Most fish cultivator respondents in Cikancung Village determine the price per kilo of fish by looking at market conditions. If the price on the market is cheap, then the price of the fish is sold cheaply, and vice versa. But fish farmers can see and compare the selling prices of their fish from several agents who usually buy their fish. After knowing the prices from several agents, fish farmers can sell their fish to the agent who can give the most expensive price so that they can make more profits.

#### 3. Place Strategy in Marketing

Place or distribution relates to the transfer of product ownership from producers to consumers. Strategic places and locations have a big influence on sales. A place that is easy to find and not far from the market center is one thing that can support the buying and selling process and increase sales because people can know the presence of fish traders around the location. For the majority of fish farming communities in Cikancung Village, the place they use to sell fish is at home. Most consumers who buy fish always come to the fish cultivator's house, but there are also those who sell through dealers/collectors who are then resold by the dealers/collectors at the Parakan Muncang Fish Market and Cicalengka Fish Market. This depends on how many relationships they have, the more relationships the easier it will be to sell fish.

#### 4. Promotional Strategy in Marketing

Promotion has two objectives, namely informing consumers about the product they have and persuading them to buy our product. Promotion can be done in various ways, directly or indirectly, for example by placing banners where we sell. Moreover, with advances in technology that make things easier for humans, promotions can also be done by utilizing the internet and social media which can be done anytime and anywhere. For the majority of fish cultivating community respondents in Cikancung Village, the promotional technique used was word of mouth marketing, namely by communicating directly with neighbors and surrounding communities about the fish produced, and after that the community would recommend to other residents about fish produced so that marketing is increasingly growing.

#### **Fish Farming Productivity**

Productivity is one measure of the level of economic well-being of society. The higher the level of pond productivity, the higher the level of welfare. Productivity is also the ratio between the total expenditure at a certain time divided by the total input for that period. Productivity is the ratio of output to input resources used (Sulaeman 2014). By definition of work, productivity is the ratio between the results achieved (output) with the overall resources (input) which are calculated in units of time. Increased productivity will make a positive contribution to economic improvement. Productivity is not the same as production, but productivity is a combination of effectiveness and efficiency. Productivity can be expressed as the ratio between output and input. (Isyanto 2012).

The productivity of fish farming businesses in Cikancung Village is in the following table.

Table 3. Average Productivity of Fish Cultivation Businesses in Cikancung Village

Description		Mark
Average	Production per	285,53

Maintenance Season (Kg)	
Average Total Production per Year (Kg/year)	856,6
Average Land Area (m <sup>2</sup> )	1183,13
Average Productivity per Unit Area (Kg/yr/m <sup>2</sup> )	0,6

Source: Primary Data (processed) 2023

Based on table 3, it shows that the average production value per maintenance season is 285.53 Kg. The average total annual production is 856.6 Kg/year. The average land area is 1183.13 m<sup>2</sup>. The average value of productivity per unit area obtained is 0.6 Kg/yr/m<sup>2</sup>. This can be interpreted that cultivating fish rearing businesses in still water ponds in Cikancung Village will get 0.6 kg/m<sup>2</sup>/year of total harvest from every 1 m<sup>2</sup> of pond area it has.

These results are in accordance with research results from Laksmidevi and Purwohandoyo (2018), which stated that pond area has a significant and inverse (negative) influence on the productivity of cultivation ponds. This is because the pond area is a divider of the total production resulting from a cultivation business, so that when the pond area increases, the productivity value will be reduced or reduced. The research results of Laksmidevi and Purwohandoyo (2018) can be supported by the research of Mustafa and Ratnawati (2007) which explains that increasing the area of cultivation ponds can reduce the productivity of these cultivation activities. This is caused by the reduced ability of cultivators to manage the business due to limited time and energy and funds.

Increasing productivity can be done by continuously improving the quality of seeds and feed. Improving seed quality can be done by developing new strains of cultivated fish. Increasing feed quality can be done by increasing the feed conversion ratio to fish weight (Suryana et al., 2014). This will be in accordance with the amount of feed given to the needs of the fish being cultivated. One way to regulate the amount of feed given is to implement feeding management (Sari et al., 2017). Feed management methods can avoid wasting feed in vain. So that feeding based on a certain frequency or dosage can help prevent losses for fish farmers. Based on these factors, it is hoped that the productivity of the land owned can be optimized to increase the amount of fish production in Cikancung Village.

#### **Economic Factors that Influence Fish Cultivation Business**

##### **Economic Factors that Increase Fish Cultivation Business**

###### 1. Fish Farming Infrastructure Assistance Program

The assistance program for fish farming facilities and infrastructure can motivate farmers to carry out cultivation businesses. This assistance can help increase fish production for cultivators in Cikancung Village who are members of the fish cultivator group.

###### 2. Increasing Public Purchasing Power and Consumption of Fish

The increase in people's purchasing power and consumption of fish is caused by income level, number of family members and the price of fish as well as people's tastes in consuming fish. The increase in consumer purchasing power for fish sold by the cultivating community in Cikancung Village is proven by the increase in income owned by cultivators from their previous income.

##### **Economic Factors that Hamper Fish Farming Business**

###### 1. Lack of Business Capital

The lack of business capital owned by the majority of fish cultivating communities in Cikancung Village is one of the economic factors that can hamper fish cultivation businesses. This can be seen from the use of feed and the technology used is still simple, causing fish farming activities in Cikancung Village to not run optimally.

###### 2. The price of feed is quite expensive

The increasingly high price of feed is also one of the main obstacles that can hinder cultivation businesses. The increasing price of feed is not commensurate with the selling price of fish. When unable to buy pelleted feed, cultivators only use natural feed from plants or are not given feed. This has an impact on production results, the fish produced will have large heads with small bodies so the selling price is cheap. Cultivators need to be guided by the relevant government to make alternative feed independently by utilizing local raw materials which are processed into pellets to reduce production costs.

### 3. Reduced land area owned by fish farmers

The land area owned by fish farmers in Cikancung Village has decreased. This is due to land conversion. Land that was originally used as fish farming ponds was converted into other land such as residential land, business land for sales and so on. The reduction in land for fish cultivation can certainly affect the income of fish cultivators in Cikancung Village, because the wider the pond cultivated, the greater the income earned by the cultivator, this is because the fish seeds put into the pond depend on the size of the cultivator's pond. . If the pond area is large, fish seeds are put in large quantities, whereas if the area of the cultivator's pond is small, fish seeds are put into the pond in small quantities (Rahmatunisa 2021).

## 4. CONCLUSION

The economic condition of most cultivators has an income in the low category, namely less than IDR 5,000,000 per month. Economic factors that hinder cultivators are lack of capital, the price of feed is quite expensive and the reduction in land area owned by cultivators.

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**Comment [SC5]:** Include your salient outcomes along with recommendations from the study

**Comment [SC6]:** Include the future scope and limitations of the study

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**Comment [SC7]:** Maintain the journal formatting reference style

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