



Analysis of the Economic Potential of the Fisheries Sector as a Basic Sector in Cianjur Regency West Java Province

**Dewi Adawiyah ^{a*}, Atikah Nurhayati ^a, Ine Maulina ^a
and Asep Agus Handaka ^a**

^a *Faculty of Fisheries and Marine Sciences, Universitas Padjajaran, Bandung, Sumedang, Km 21, Jatinangor 45363, Indonesia.*

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJFAR/2023/v24i4641

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/104050>

Original Research Article

Received: 29/05/2023
Accepted: 04/08/2023
Published: 16/08/2023

ABSTRACT

This research aims to analyze the economic potential of the fisheries sector, whether it is a basic or non-basic sector in Cianjur Regency, West Java Province. This research was conducted in Cianjur Regency, West Java Province. The time of the research was carried out in January-April 2023. This research used data on the Gross Regional Domestic Product (GRDP) of Cianjur Regency and West Java Province on the basis of 2010 constant prices according to business field 2016-2021. GRDP is the total value added to goods and services produced by all business units in a certain area. The method for determining the basic and non-basic sectors uses *Location Quotion* (LQ) analysis by comparing the regency fishery sector with the fishery sector of West Java Province. *Location Quotion* analysis is a calculation technique to be able to find out the basic or non-basic sector by comparing the percentage of the contribution of the fisheries sector. Based on the calculation results of the *Location Quotion* (LQ) analysis of the fisheries sector in Cianjur Regency, it was found that in 2016-2021 it had an average LQ value of 5.506 (> 1), in which case

*Corresponding author: Email: dewiadw1304@gmail.com, dewi18005@mail.unpad.ac.id;

the Cianjur Regency fisheries sector is the basic sector. This shows that each year has a comparative advantage, meaning that the production of the Cianjur Regency fishery sector can meet the needs of the community in its own region and is able to meet demand from other regions.

Keywords: Basic sector; potency; fishery sector; location question.

1. INTRODUCTION

Cianjur Regency is one of the regencies in West Java Province, Indonesia. Cianjur Regency has the potential of the fisheries sector, namely capture fisheries and aquaculture [1]. Cianjur Regency has the potential to develop freshwater and marine fisheries, several supporting factors, namely the availability of land for cultivating freshwater fish and marine fish and a relatively large population [2]. Fisheries are all types of activities related to the utilization and management of fish resources and their environment starting from pre-production, production, management to marketing processes carried out in a fishery business system, this is explained in Law No. 45 of 2009 Article 1.

Economic potential is a resource capability produced by an area or area that needs to be improved and developed to provide added value for further economic development [3]. The potential of biological natural resources is the potential that must be developed in increasing regional development. Regional development is the implementation of national development in a region. Activities in regional development are expected to increase regional income and the level of welfare of the population [4].

Based on Regional Regulation No. 17 of 2012 Article 37 concerning Spatial and Regional Planning, that Cianjur Regency Based on fishery areas is divided into three, namely (1) capture fishery areas, (2) aquaculture fishery areas, (3) capture fisheries and aquaculture facilities and infrastructure. Capture fisheries areas in coastal and marine areas are located in three districts, namely Sindangbarang, Agrabinta and Cidaun. Aquaculture area consisting of fresh water pond cultivation, brackish pond cultivation or ponds and floating net pond cultivation. Cultivation of fresh water ponds with an area of approximately 1,751 hectares spread over each district. The cultivation of brackish water ponds or ponds is located in a coastal area with a potential area of approximately 21 hectares located in Sindangbarang and Cidaun Districts. The cultivation of floating net ponds is located in the Cirata Reservoir area with a potential area of approximately 2,932 hectares located in the

Districts of Mande, Cikalongkulon and Ciranjang [1].

Facilities are all types of equipment that are generally used directly to achieve a goal, while infrastructure is a facility that indirectly supports the course of activities [5]. Fishery facilities and infrastructure in Cianjur Regency consist of (1) Jayanti Fish Landing Basic (PPI) in Cidaun and Sindangbarang Districts; (2) Jayanti's Fish Auction Place (TPI) is in Cidaun District, Apra's TPI is in Sindangbarang District, and Cikakap's TPI is in Agrabinta District; (3) Fish Seed Center located in Karangtengah District; (4) Fish Seed Center (BBI) in Bojongpicung District; (5) People's Hatchery Units with an area of approximately 283 hectares located in seven sub-districts, namely Cianjur, Ciranjang, Sukaluyu, Cikalongkulon, Mande, Cilaku and Cugenang sub-districts; (6) A storage facility for fresh and frozen fish with an installed capacity of 100 tonnes is located in Cilaku District [1]. Based on the Maritime Affairs, Fisheries and Animal Husbandry Office of Cianjur Regency, Cianjur Regency has a strategic impact on the marketing of fishery products. In addition to consumption fish cultivation, which is a potential and is expected to become one of the businesses that can be developed in Cianjur Regency in the future, namely ornamental fish cultivation. The ornamental fish promotion center is located in Cugenang District [1].

Gross Regional Domestic Product (GRDP) is an indicator that can describe the level of development progress and social welfare in a region. Gross Regional Domestic Product (GRDP) is the total value added to goods and services produced by all business units in a certain area [6]. The Gross Regional Domestic Product (GRDP) of Cianjur Regency, Based on constant 2010 prices, will increase in 2021, reaching 32.90 trillion rupiahs, while in 2020 it will reach 31.79 trillion rupiahs [7]. Fisheries in Cianjur Regency in 2019 contributed to the formation of added value, namely 15.83 percent, while in 2020 it was 15.84 percent [7].

Fish catches in Cianjur Regency in 2021 have decreased, reaching 1,906 tons, while in 2020 fish catches have reached 1,992 tons [1]. The

thing that caused a decrease from the previous year was due to the Covid-19 pandemic, bad weather which resulted in fishermen not being able to operate and the fishing infrastructure owned by fishermen in Cianjur Regency was still below 5 GT. The total aquaculture production in 2021 in Cianjur Regency has increased, reaching 134,743 tons from the target of 110,682 tons. In 2020 aquaculture production will reach 130,025 tons [1].

Analyzing the fisheries sector as a basic sector uses an economic basis theory approach. The economic basic theory assumes that the local economic approach is divided into the basic sector and the non-basic sector. The basic sector is an activity to produce goods and services needed by the people in the area concerned as well as the needs of other regions. The non-basic sector is an activity that produces goods and services for the region concerned and is unable to meet the needs of other regions [8].

2. METHODOLOGY

2.1 Time and Place

The time of this research was carried out from January to April 2023. This research was carried out in Cianjur Regency, West Java Province, Indonesia.

2.2 Types and Sources of Data

The type of data used in this research is quantitative data. Quantitative data, namely data expressed in the form of numbers or amounts and can be measured in size and is objective so that it can be interpreted the same by other people [9]. Quantitative data in this study were obtained through data related to the fisheries sector in institutions or agencies in Cianjur Regency, West Java Province, such as the Central Statistics Agency for Cianjur Regency, the Central Statistics Agency for West Java Province, the Maritime Affairs and Fisheries Service Cianjur Regency, Maritime Affairs and Fisheries Office of West Java Province and other agencies or institutions in Cianjur Regency.

Source of data in this research is secondary data. Secondary data is collected from various sources that have been processed from the original source and has been presented in a certain form. Secondary data sources come from the Gross Regional Domestic Product (GRDP) of Cianjur Regency and the Gross Regional

Domestic Product (GRDP) of West Java Province at Constant Prices according to business fields and other agencies or institutions in Cianjur Regency.

2.3 Data Collection Methods

This type of research is quantitative, namely taking from second parties or secondary data in the form of time series data for five years from 2016 to 2021. The data collection method in this study was carried out by Library Research, namely library research carried out by collecting literature which has to do with the subject matter with the aim of obtaining a theoretical basis and analytical techniques in solving problems [10]. This research uses quantitative methods. The quantitative method is the use of data in the form of numbers and then analyzed using statistics. The statistics used are descriptive statistics to analyze data by describing the data that has been collected.

2.4 Data Analysis

Data analysis used in this research is descriptive analysis. Descriptive analysis is used to provide an overview of conditions related to the fisheries sector in Cianjur Regency, West Java Province. Data analysis is a simplification process in the form of tables, graphs, diagrams or other so that data is easier to read and interpret. There are several methods of data analysis related to research on the analysis of the economic potential of the fisheries sector in regional development in Cianjur Regency, West Java Province.

2.4.1 Location question analysis

To analyze the economic potential of the fisheries sector as a basic or non-basic sector in Cianjur Regency, West Java Province, *Location Question* analysis is used. *Location Question* analysis is a calculation technique to be able to find out the basic or non-basic sector by comparing the percentage of the fishery sector's contribution [11]. The formula for the *Location Question* is:

$$LQ = \frac{X_{IJ} / X_I}{X_J / X_{..}}$$

Information:

LQ :Sector LQ value in Cianjur Regency
 X_{IJ} :GRDP sector in Cianjur Regency

X_I. :GRDP of all sectors in Cianjur Regency
X_J. :GRDP sector in West Java Province
X_{..} :GRDP of all sectors in West Java Province

Description of the results of the *Location Quotion* (LQ), namely:

LQ>1, meaning that the sector concerned has a comparative advantage which is more average (basic).

LQ<1, meaning that the sector concerned does not have a comparative advantage (non-basic).

LQ =1, meaning that the sector concerned has the same comparative advantage as the average for all regions [12].

3. RESULTS AND DISCUSSION

3.1 Overview of Research Locations

3.1.1 Geographical and topographical conditions

Cianjur Regency is one of the regencies located in West Java Province. Cianjur Regency has a strategic location because it is passed by a regional route that connects the capital city of Jakarta and the capital city of West Java province, namely Bandung. The Cianjur Regency area consists of 32 Districts and 360 Villages/Kelurahan, with an area of 361,434.98 ha [6].

Cianjur Regency is geographically located between 106°42'- 107°33' East Longitude and 6°21'- 7°25' South Latitude, this position places Cianjur Regency in the middle of West Java Province which extends from North to South [6]. Based on its geographical position, Cianjur Regency has regional boundaries, namely:

- 1) North side is bordered by Bogor Regency and Purwakarta Regency
- 2) South District is bordered by the Indian Ocean
- 3) West side is bordered by Sukabumi Regency and Bogor Regency
- 4) To the east it is bordered by Purwakarta Regency, Bandung Regency, West Bandung Regency and Garut Regency

Cianjur Regency has a topography consisting of plain hills with smooth relief, moderate relief, slightly rough relief hills and hills with rough

relief. Based on geohydrology, water sources in Cianjur Regency are surface water (in the form of rivers), springs, and ground water. The water source is used to meet the needs of industry, agriculture and others. The altitude of the Cianjur Regency area ranges from 7 - 2,962 meters above sea level and has a slope of 0-40%. The areas that have the highest elevation are Cipanas and Pacet Districts, which range from 1,080 - 2,962 meters above sea level. The Cianjur Regency area is divided into 3 parts, namely:

1) North Cianjur region, is a plateau located at the foot of Mount Gede with an altitude of around 2,962 m above sea level. Its territory includes the Puncak area with an altitude of about 1,450 m, the City of Cipanas (District of Cipanas and Pacet) with an altitude of about 1,110 m. and Cianjur City with a height of about 450 m above sea level. This region is a mountainous plateau and partly rice fields and plantations.

2) The Central Cianjur region is hilly but there are also lowland rice fields, plantations surrounded by scattered small hills.

3) South Cianjur region, is a lowland consisting of small hills and interspersed with mountains. The lowland south of Cianjur has a height of about 7 m above sea level.

3.1.2 Population and workforce

The total population in Cianjur Regency in 2021 is 2,437,838 people consisting of 1,249,754 men and 1,188,084 women with a population density of 693.54 people/km². The largest population in Cianjur Regency is in Cianjur District with 175,023 people while the smallest population is Campakamulya District with 23,508 people [13]. The population growth rate for Cianjur Regency in 2020 to 2021 will reach 1.81%. The population growth rate for Cianjur Regency in 2020 to 2021 will reach 1.81%.

Residents are all people who are domiciled in an area for six months or more or who are domiciled for less than six months but with the intention of staying. Population is a regional asset because it is also a subject as well as an object of development. The workforce is residents who have entered working age, either already working or looking for work, and those who are still willing or able to do work. In general, a large population and high population growth represent a great potential for the development of a region.

Table 1. Number of population aged 15 years and over by type of activity during the past week and gender in cianjur regency, 2021

Main Activities	Gender		
	Male	Female	Total
Workforce	757.842	418.043	1.175.885
Work	681.448	384.875	1.066.323
Open unemployment	76.394	33.168	109.562
Not the Labor Force	133.619	420.309	553.928
Total	891.461	838.352	1.729.813

Source: BPS Cianjur Regency (2022)

Table 2. Population aged 15 years and over who worked during the past week according to main employment status and gender in cianjur regency, 2021

Main Employment Status	Male	Female	Total
Try yourself	131.842	63.829	195.671
Trying to be assisted by non-permanent workers/unpaid workers	128.796	48.748	177.544
Trying to be assisted by permanent workers/paid workers	46.072	5.952	52.024
Laborer/Employee/Employee	171.170	96.069	267.239
Free labor on the farm	75.698	49.590	125.288
Freelance workers in non-agriculture	87.695	14.106	101.801
Family/unpaid worker	40.175	106.581	146.756
Total	681.448	384.875	1.066.323

Sumber: BPS Cianjur Regency (2022)

The labor force is the population who have entered working age, whether they are already working, not yet working, or looking for work. Based on the provisions of the Indonesian government, residents who have entered working age are those aged at least 15 years to 65 years. The workforce in Cianjur Regency in 2021 is 1,175,885 people consisting of 757,842 men and 418,043 women. The population working in Cianjur Regency in 2021 is 1,066,323 people consisting of 681,448 men and 384,875 women.

Open unemployment in Cianjur Regency in 2021 is 109,562 people consisting of 76,394 men and 33,168 women. The open unemployed are those who do not have a job and are looking for work and preparing for a business or not looking for work because they feel it is impossible to get a job. Non-labor force in Cianjur Regency in 2021 there are 553,928 people consisting of 133,619 male souls and 420,309 female souls.

The most main employment status in Cianjur Regency in 2021 is those who work as employees/laborers/employees with a total of 267,239 people consisting of men and women. Meanwhile, the least number of them are trying to be assisted by permanent workers/paid workers, namely 52,024 people consisting of men and women. There will be 125,288 workers in the agricultural sector in Cianjur Regency in 2021.

3.1.3 Economic conditions

Gross Regional Domestic Product (GRDP) can be interpreted as a macro indicator that is used to view economic growth in an area in addition to other micro indicators such as employment opportunities and price stability. Development performance can be driven by several factors, namely first, resource potential which includes natural resources (especially the position of natural resources that can be utilized both directly and indirectly as well as stock availability) and potential human resources (work force). Second, economic conditions, this aspect greatly influences the size of the investment invested. The influencing economic factors are interest rates, the contribution of economic sectors, market demand, availability of infrastructure and level of technology. Third, government policy, this aspect relates to the regulations applied [14].

The economic development of Cianjur Regency can be measured by economic indicators, one of which is the Gross Regional Domestic Product (GRDP) of Cianjur Regency, which is able to provide hope for investment opportunities as well as provide added value to the community's economy. The development of the GRDP of Cianjur Regency by Business Field from 2016 to 2021 can be seen in Table 3 as follows:

Table 3. Development of GRDP in Cianjur Regency for 2016-2021 (Million Rupiah)

Year	Gross Regional Domestic Product (Million Rupiah)	
	On the basis of current prices	On the basis of constant prices
2016	35.386.457,7	26.981.369,2
2017	38.575.001,4	28.538.993,6
2018	42.971.245,40	30.320.205,6
2019	46.956.052,39	32.039.593,4
2020	47.523.488,6	31.789.057,6
2021	50.137.644,6	32.897.727,0

Source: BPS Cianjur Regency (2021b)

Table 4. GRDP growth rate of cianjur regency by business field 2016-2021 (Percent)

Year	GRDP Growth Rate 2016-2021 (Percent)
2016	6,43
2017	5,77
2018	6,24
2019	5,67
2020	-0,78
2021	3,48

Source: BPS Cianjur Regency (2021b)

Total GRDP is the result of the sum of all economic activities in a region in a certain period which is calculated on the basis of current prices and constant prices. GRDP growth and development at current prices from 2016 to 2021 has experienced growth. Gross Regional Domestic Product (GRDP) at constant prices in 2016 to 2019 has experienced growth, but in 2020 it has decreased. The growth rate of the Cianjur Regency Gross Regional Domestic Product (GRDP) for the last 6 years, namely 2016-2021 can be seen in Table 4 as follows:

In 2020, the decline in the value of GRDP at constant prices was lower by -0.78 percent, which means that the decline in real production was quite high. The decline in the rate of economic growth in 2019 to 2020 was due to the Covid-19 pandemic. The GRDP growth rate at constant prices in 2020 was greatly affected by the Covid-19 pandemic, including seven sectors that experienced negative growth, namely the Construction Sector -0.58 percent, the Wholesale and Retail trade sector; Car and Motorcycle Repairs by -1.28 percent, the Transportation and Warehousing Sector grew -0.22 percent; The Accommodation and Food and Drink Provision Sector grew -0.19 percent, the Corporate Services Sector grew -0.12 percent, the Government Administration, Defense and Compulsory Social Security Sector grew -0.04

percent, and other Service Sectors grew -0.09 percent [7].

Meanwhile, the ten categories that grew positively were the Agriculture, Forestry and Fisheries Sector, which increased by 0.50 percent. Mining and Quarrying Sector by 0.00 percent, Manufacturing Industry Sector grew 0.05 percent, Electricity and Gas Procurement Sector grew 0.00 percent, Water Supply, Waste Management, Waste and Recycling Sector grew 0.01 percent, Information and Communication Sector grew 0.97 percent, Financial Services and Insurance Sector grew 0.02 percent, Real Estate Sector grew 0.00 percent, Education Services Sector grew 0.20 percent, Health Services and Social Activities Sector grew 0.02 percent [7].

3.2 Location Quetion Analysis Calculation Results

Analyzing the economic potential of the fisheries sector as a basic or non-basic sector in Cianjur Regency, West Java Province using *Location Quetion* analysis. *Location Quetion* analysis is a calculation technique to be able to find out the basic or non-basic sector by comparing the percentage of the fishery sector's contribution [12]. The *Location Quetion* (LQ) method is used to study economic conditions which lead to the identification of specializations in economic activity, so that the LQ value which is often used to determine leading sectors can be said to be sectors that will encourage the growth or development of other sectors and have an impact on job creation.

Based on the calculation results of the LQ analysis of the fisheries sector in Cianjur Regency, it was found that in 2016 - 2021 it had an average LQ value of 5.506 (>1), in which case the Cianjur Regency fisheries sector is the basic sector. An LQ value of more than one means that the ten sectors in Cianjur Regency have a bigger role compared to the role of the same sector in

West Java Province. An LQ value of less than 1 means that the sector in Cianjur Regency has a smaller role compared to the role of the same sector in West Java Province.

Table 5. Location quotient calculation of GRDP on the basis of 2010 constant prices for the fishery sector of Cianjur regency, West Java Province, 2016-2021

Year	LQ value	Information
2016	5,207	Basic sektor
2017	5,548	Basic sektor
2018	5,701	Basic sektor
2019	5,448	Basic sektor
2020	5,403	Basic sektor
2021	5,728	Basic sektor
Average	5,506	Basic sektor

The fisheries sector in Cianjur Regency is a basic sector with a value ($LQ > 1$) which has experienced steady growth from 2016-2021. This shows that each year has a comparative advantage. The production of the Cianjur Regency fishery sector can meet the needs of the community in its own region and is able to meet demand from other regions. Regional development in Cianjur Regency can be increased by increasing development in the fisheries sector as the basis sector by making the fisheries sector one of the investment priorities for regional development because the fisheries sector in Cianjur Regency has an LQ value of greater than one each year [11].

Based on previous similar research, namely Wijaya's research in 2019 in West Coast District, Indonesia. The Location Question (LQ) value of Pesisir Barat Regency during 2013 -2017 in the regional economy with an average LQ value of 1.0516 is because the fisheries sector is able to meet local needs and is able to export to other areas. That means the fisheries sector in Pesisir Barat Regency is the leading sector or the base sector [15]. In line with the results of the LQ research in Cianjur Regency in 2016-2021, which shows that every year the fisheries sector in Cianjur Regency in that year is a base sector, this means that this fishery sector is able to meet local needs and is able to export to other regions [16-19].

4. CONCLUSION

The *Location Quotient* (LQ) calculation shows an average LQ value of 5.506 (> 1) in the Cianjur Regency fishery sector, so the Cianjur Regency

fishery sector is included in the basic sector because the production of the Cianjur Regency fishery sector can meet the needs of the community in its territory and is able to meet the needs other area requests.

CONSENT

According to international standards or university standards, the written consent of the respondents has been collected and kept by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. DKPP Cianjur Regency, Government Agency Performance Accountability Report, No. 0273; 2021. Accessed 14 March 2022. Available: <https://web.cianjurkab.go.id>
2. Mayangsari N, Rizal A, Supriadi D, Suryana AAH. Analysis of society's fish consumption in Cilaku Cianjur District Area. *Asian J. Fish. Aquat.* 2021;11(4): 43–50.
3. Yudithia. Determination of strategic economic sector in Lampung province. Thesis. Lampung University. Lampung; 2000.
4. Siregar RN. The economic impact of the food crops sub-sector in preparing for regional autonomy. Thesis. Bogor: Bogor Agricultural Institute; 2001.
5. Moenir US. Public service management in Indonesia. Jakarta: Earth Script; 2006.
6. BPS Cianjur Regency, Cianjur Regency in Figures 2021. Cianjur Regency: BPS Cianjur; 2021. Accessed 20 March 2022. Available: <https://cianjurkab.bps.go.id>
7. BPS Cianjur Regency. Gross regional domestic product of cianjur regency by business field 2016-2020. Central Bureau of Statistics for Cianjur Regency; 2021. Accessed 20 March 2022. Available: <https://cianjurkab.bps.go.id>
8. Ridwan. Regional Economic Development. Yogyakarta: Poetry Library; 2016.
9. Aditya, Dodiet. Data and Research Data Collection Methods. Surakarta: Ministry of Health Surakarta Polytechnic; 2013.
10. Syahputra R. Analysis of factors affecting economic growth in Indonesia. 2017; 1(2):183–191.

11. Rizal A, Rostini I, Handaka AA, Maharani HS. Economic typology of fishery commodities and status of the fisheries sector in regional development in West Bandung Regency. Indonesian Journal of Aquatics. 2017;2(2):109–119.
12. Rizal A. Disparity in coastal area development (Case Study of Tasikmalaya Regency). Journal Akuatika Indonesia. 2013;4(2).
13. BPS Cianjur Regency, Cianjur Regency in Figures 2022. Cianjur Regency: Central Bureau of Statistics for Cianjur Regency; 2022.
Accessed 21 March 2022.
Available: <https://cianjurkab.bps.go.id>
14. Budiharsono S. Regional development planning. bogor: Postgraduate faculty of IPB; 1996.
15. Wijaya A. Analysis of the role of fisheries and marine sector on the development of the region within islamic economic perspective (study in pesisir barat regency). Thesis; 2019.
16. West Java BPS, Regency/City Gross Regional Domestic Product in West Java Province According to Expenditures 2016-2020. 2021;14(1).
Accessed 21 March 2022.
Available:<https://jabar.bps.go.id>
17. Law of the Republic of Indonesia Number 45 of 2009. Concerning Amendments to Law of the Republic of Indonesia Number 31 of 2004 concerning Fisheries.
18. Cianjur Regency Regional Regulation Number 17 of 2012. Concerning the Cianjur Regency Spatial Plan for 2011-2031.
19. West Java BPS. Regency/City Gross Regional Domestic Product in West Java Province According to 2016-2020 Expenditures. In Central Bureau of Statistics. 2021;14(1).

© 2023 Adawiyah et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

*The peer review history for this paper can be accessed here:
<https://www.sdiarticle5.com/review-history/104050>*