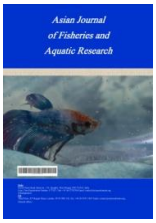

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The Contribution of Fisheries Sector in Regional Development of Cirebon Regency of West Java Province, Indonesia

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Authors' contributions

This work was carried out in collaboration between all authors. Author FH designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors AR and MLS managed the analyses of the study. Author AAHS managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

This research aims to analyze the contribution of the fisheries sector to Gross Regional Domestic Product (GRDP), analyze the extent to which market demand is related to fishery sector products, and analyze the strength of the fisheries sector base and non-base sectors in regional development in Cirebon Regency. The method used in this research is quantitative method using secondary time series data, which is then analyzed using descriptive statistics, as well as qualitative methods using primary data obtained through direct interviews with parties involved in the fisheries sector and distributing questionnaires via google form. to the people of Cirebon Regency. The data analysis used is growth index analysis, Shift Share (SS) analysis, Trade Area Capture (TAC) analysis, Pull Factor (PF) analysis, and Location Quotient (LQ) analysis. The results of the growth index analysis show that the GRDP of the fisheries sector in Cirebon Regency has increased by 77.22% in the 2013-2019 periods. The results of the Shift Share (SS) analysis show that the contribution of the fisheries sector to the GRDP of Cirebon Regency is 10.02%. The

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results of the 2013-2019 TAC analysis show that the value of TAC > total population means that Cirebon Regency can capture trade opportunities in fishery products from other regions. The PF value of the fisheries sector in Cirebon Regency is > 1, which means that Cirebon Regency can attract customers from other regions and has a specialization in the fishery product market. And the results of the Location Quotient (LQ) analysis show a value of 2.75 (> 1), which means that the Cirebon Regency fishery sector is an economic base sector that can meet the needs of fishery products in its region and can export out of other regions. Regional development in Cirebon Regency can be maximized by increasing development in the fisheries sector as a base sector by making the fisheries sector one of the priorities for regional development investment.

Keywords: Economy growth; regional development; fisheries sector contribution; shift share, location quotient.

1. INTRODUCTION

Indonesia is a country that has abundant marine resource potential. The prospect of marine resources in Indonesia really needs to be developed optimally in enhancing regional development. Regional development is intended to advance economic growth and regional competitiveness, as well as reduce inequality between regions and develop people's lives [1]. In looking at regional development, one of the indicators that can be measured is the Gross Regional Domestic Product (GRDP). Gross Regional Domestic Product (GRDP) is an indicator to describe the level of development progress and community welfare in an area.

The maritime and fisheries sector in several District have been developing intensively through appropriate measures. This sector will fabricate a large production value and can be utilized for the economic progress of the community in District development in Indonesia. Large production values can be used to make maximum contributions to regional development [2]. The fishery sector in Cirebon Regency has sufficient potential resources to be developed, both from natural resources (SDA), human resources (HR), facilities and infrastructure. The fisheries sector is divided into several categories including capture fisheries, aquaculture and fisheries product processing. Some of these fishery categories in Cirebon Regency have not been managed properly for regional development. This should be seriously considered and managed in order to make a major contribution to regional economic development [3].

Cirebon Regency has an area of 990.36 km2 and is part of the West Java Province which is located in the eastern part. Based on its geographical location, Cirebon Regency is in the position of 108 ° 40 '- 108 ° 48' East Longitude and 6 ° 30 '- 7 ° 00' LS. Typologically, Cirebon Regency is located at an altitude of 0 - 130 km of sea level and lowland datasets, located along the North Coast of Java which has a large potential for fish resources. The potential of fishery resources in Cirebon Regency shows a very possible condition to be developed in the context of economic development in Cirebon Regency [4].

The economic growth of Cirebon Regency in 2014 - 2018 experienced a fluctuating growth where in 2014 the economic growth rate was 5.07%; 2015 amounted to 4.88%; 2016 amounted to 5.63%; 2017 amounted to 5.06%; and in 2018 amounted to 5.02%. The economic growth of Cirebon Regency in 2014 - 2018 as a whole shows fluctuating growth [5-6]. The main sectors was agriculture and forestry sector experienced an increase from 2014 - 2016, then in 2017 experienced a decline again, while in 2018 the growth rate increased again by 2.25% [5-7].

The large marine and fishery potentials of Cirebon Regency should be a leading sector capable of boosting the regional economy. The contribution of the fisheries sector to regional development is one of the objects of research that will be examined to become the basis for knowing how much the fisheries sector contributes to regional development. Demand for fishery products in Cirebon Regency is one of the important things in knowing the level of demand for fishery products in Cirebon Regency which will show whether the fisheries sector is a sector on an economic basis or a non-economic basis.

2. METHODS

This research was conducted from October 2020 to May 2021 in Cirebon Regency. The research method used is qualitative and quantitative

methods. Qualitative methods are used to explain the situation in depth by collecting data which is then analyzed to obtain research conclusions. The quantitative method uses data in the form of numbers which are then analyzed using statistics. Quantitative research can also be interpreted as a method for examining certain samples, sampling techniques are generally carried out randomly, data collection using research instruments, quantitative or statistical data analysis with the aim of testing predetermined hypotheses [8].

2.1 Data Analysis

Analysis of the data used in the study uses an approach to economic growth in a region, including:

2.1.1 Analysis of growth indices

Growth Indices analysis is used to see the GRDP growth of fisheries in a certain time period. To calculate the growth index, the following formula is used [9]:

$$GI_i = \left(\frac{Y_{it}}{Y_{i.base}}\right) x\ 100$$

Where.
GI_i = The ratio of economic variables to be measured in a certain time period divided by the same variables in the base year
Y_{it} = Economic variables that will be measured in a certain period
$Y_{i.base}$ = The same economic variables in the base year

2.1.2 Analysis of shift share

Shift Share (SS) analysis is used to see the contribution of the fisheries sector to GRDP. According to [10] the mathematical model in calculating the contribution is as follows:

$$Ki = \frac{Vi}{Pi}\ x\ 100\%$$

Where.
Ki = The amount of contribution in year i
Vi = GRDP of the fisheries sector in year i
Pi = Total GRDP in year i

Shift Share (SS) analysis is a method that compares sectors in the region to the national territory [3]. The ratio of production in the fisheries sector in a certain area is divided into ri, Ri, and Ra.

a. ri

$$ri = \frac{Y'ij - Yij}{Yij}$$

Where.
Y'ij = Production from the provincial fishery sector at the end of the analysis
Yij = Production from the fisheries sector in the district in the year of analysis

b. Ri

$$Ri = \frac{Y'i - Yi}{Yi}$$

Keterangan:
Y'i = Production from the provincial fishery sector at the end of the analysis
Yi = Production from the fisheries sector in the province in the base year of the analysis

c. Ra

$$Ra = \frac{Y'... - Y...}{Y...}$$

Where.
Y'... = Provincial production in the final year of the analysis
Y... = Provincial production in the base year of the analysis

The calculation of the production ratio in the fisheries sector is then continued with the calculation of the provincial growth component (KPP), the proportional growth component (PP) and the regional share growth component (PPW) [3].

a. Provincial growth component (PGC)

$$KPPij = (Ra)Yij$$

Where.
KPPij = Provincial growth component in the fisheries sector for the region
Yij = Production from the fisheries sector for the region in the base year of analysis
Ra = Provincial production ratio

b. Proportional growth component (PG)

$$PPij = (Ri - Ra)Yij$$

Where.
PPij = The proportional growth component of the regional fisheries sector
Yij = Production from the fisheries sector for the region in the base year of the analysis
Ra = Provincial production ratio

Ri = Provincial production ratio from fishery sector

If Ppij <0, it indicates that the fisheries sector in region j has slow growth. Ppij> 0, indicating that the fisheries sector in the region is growing fast.

c. Regional share growth component (RSG)

$$PPWij = (ri - Ra)Yij$$

Where.

PPWij = The growth component of the share of the fisheries sector in the region in the base year of the analysis

Yij = Production / employment opportunities from the fisheries sector in the area in the base year of the analysis

Ri = The ratio of production / employment in the fisheries sector in the region

Ra = Production / job opportunity ratio (province) of the fisheries sector

If PPWij> 0, it means that sector j region has good competitiveness compared to other sectors / regions for sector i, PPWij <0, it means that sector / region j does not have good competitiveness compared to other sectors / regions.

2.1.3 Analysis of trade area capture (TAC)

Trade Area Capture (TAC) analysis is used to measure the market strength of fishery commodities as well as its relationship with community socio-economic indicators such as income and purchasing power of the community. This TAC can be calculated by the formula [9]:

$$TAC_a = \frac{AS_a}{PCS_{base}\left(\frac{PCI_a}{PCI_{base}}\right)}$$

Where.

AS_a = The actual sales value of fisheries commodities in the area “a”

PCS_{base} = Per capita sales of fish products in the base area

PCI_a = Per capita income for the area analyzed

PCI_{base} = Per capita income in the base area

If the number obtained from TAC > total population in the area analyzed then it can be said that the number of inhabitants has a pattern of expenditure againts fishery products is greater than the base region (e.g. national). Conversely, if TAC < total population then the region lost a potential trade of fishing and has a pattern of spending that is lower than national. TAC measure purchases by residents and also the inhabitants of non-residents.

2.1.4 Analysis of Pull Factor (PF)

Pull Factor (PF) analysis can strengthen Trade Area Capture (TAC) analysis which is an analysis to measure the purchasing power of local residents for a fishery product. PF has the following formula [9]:

$$PF_a = \frac{TAC_a}{P_a}$$

Where.

TAC_a = Capture trading area in area "a"

P_a = Total population in area "a"

If PF> 1, then region A's fishery product market is able to attract customers from other regions, whereas if PF <1, then region A loses customers to other competing markets.

2.1.5 Analysis of Location Quotient (LQ)

Location Quotient (LQ) analysis is an analysis used to determine the magnitude of the role of business sectors in regional development. According to [11], the material formula used in the LQ method to compare the capabilities of the sectors of the region is as follows:

$$LQi = \frac{vi/vt}{Vi/Vt}$$

Where.

vi = GRDP sector i value at the district / city level

vt = Total GRDP at the district / city level

Vi = GRDP sector i value at the provincial level

Vt = Total GRDP at the provincial level

If LQ> 1, then the sector is classified as an economic base, where the results can meet the needs of the local area and are exported outside the region. If LQ = 1, then the sector is classified as a non-economic basis, where the sector does not have export power that can only meet the needs of the local area. If LQ <1, then the sector is classified as a non-economic basis, where the sector is unable to meet the needs of the local area and must import from outside the region.

2.2 Research Location Overview

Cirebon Regency is an area which has an area of 990.36 km2 which is classified as part of the West Java Province which definitively becomes a Level II Region based on Law No. 14 of 1950 concerning the Establishment of Regency in West Java Province which is in the eastern part. Cirebon Regency is included in the agricultural sector, which is one of the rices producing areas located on the North Coast route. The land area extends from the Northwest to the Southeast., The whole area can be divided into two parts, first the lowland areas are generally located along the north coast, namely Gegesik, Kaliwedi, Kapetakan, Arjawinangun, Panguragan, Klangenan, Gunungjati, Tengahtani, Weru, Astanajapura, Pangenan, Karangsembung, Waled, Ciledug, Losari, Babakan, Gebang, Palimanan, Plumbon, Depok, and Pabedilan District and the second part includes the highlands [6].

Cirebon Regency is geographically located at positions 108 ° 40 '- 108 ° 48' East Longitude and 6 ° 30 '- 7 ° 00' LS, which is limited by [6]:

- In the north: Cirebon City and Java Sea
- West side: Majalengka Regency and Indramayu Regency
- South side: Kuningan Regency
- East side: Brebes Regency, Central Java Province

The sub-district area which is located along the north coastline is included in the lowlands which have an altitude between 0-10 m above sea level, but the sub-district area located in the southern part has an altitude between 11-130 m above sea level.

Climate and rainfall factors in Cirebon Regency are influenced by natural conditions, which mostly consist of coastal and hilly areas, especially the northern, eastern, and western areas, while the southern area is a hilly area.

Cirebon Regency is traversed by 18 rivers that originate in the southern part. The rivers are classified as large include Cisanggarung, Ciwaringin, Cimanis, Cipager, Pekik, and Kalijaga. In general, these large rivers are used for irrigating rice fields as well as for bathing, grandchildren, and as public latrines.

3. RESULTS AND DISCUSSION

3.1 The Contribution of Fisheries Sector in Regional Development Analysis of Growth Indices

The economy of a region can be seen from the indicators of its contribution to Gross Regional Domestic Product (GRDP). Growth is a reflection of the rate of economic growth [3]. The calculation of the Growth Indices analysis in this study shows that the growth of Cirebon Regency Gross Regional Domestic Product (GRDP) on the basis of current prices according to business fields shows that the growth in the fisheries sector has always increased from year to year. In 2013 GRDP of the fisheries sector has a value of Rp. 733,527.6 million; where in 2014 the GDP of the fisheries sector has increased by Rp. 823,165.9 million; in 2015 the GRDP of the fisheries sector has increased by Rp. 932,385.2 million; in 2016 the GDP of the fisheries sector was Rp. 1,018,430.6 million; in 2017 the GRDP of the fisheries sector has increased by Rp. 1,099,739.8 million; in 2018 the GDP of the fisheries sector has increased by Rp. 1,190,859.1 million; and in 2019 also the GRDP of the fisheries sector has increased by Rp. 1,300,002.8 million.

Based on the results of the calculation of the growth indices in Cirebon Regency in 2013-2019, it was found that the growth index value was 177.22 (Table 1). It can be said that the GRDP of the fisheries sector in Cirebon Regency has increased by 77.22% in a period of seven years. This can happen because Cirebon Regency is an area with a strategic area especially related to the fisheries sector.

3.2 Analysis Shift Share (SS)

Shift Share (SS) analysis is an analysis to describe the performance of regional sectors compared to the performance of the national economy or the wider region above it [2,3]. Shift Share (SS) analysis in this study is used to see the economic growth process of the fisheries sector in Cirebon Regency compared to West Java Province. The variable used is GRDP which is an indicator of regional economic growth in Cirebon Regency. The growth of added value in the fisheries sector in the GRDP of Cirebon Regency is the sum of the Provincial Growth Components (KPP), Proportional Growth Components (PP) and Regional Share Growth Components (PPW).

Table 1. Results of the calculation of the GDP growth index based on the prevailing prices in the fishery sector i

GRDP of Cirebon Regency at Current Prices According to Business Fields 2013 - 2019				
Year	**GRDP of Fishery Sector (Million Rupiah)**	**GRDP of Fishery Sector in Base Year (Million Rupiah)**	**Growth Indices**	**Fisheries sector GRDP**
	$Y_{i.base}$	Y_{it}	GI_i	
2013	733.527,6	733.527,6	-	-
2014	823.165,9	733.527,6	112,22	12,22
2015	932.385,2	733.527,6	127,10	27,10
2016	1.018.430,6	733.527,6	138,84	38,84
2017	1.099.739,8	733.527,6	149,92	49,92
2018	1.190.859,1	733.527,6	162,34	62,34
2019	1.300.002,8	733.527,6	177,22	77,22

Table 2. Results of Calculation of Trade Area Capture (TAC) in the Fisheries Sector of Cirebon Regency in 2013-2019.

Year	P*a*	AS*a*	PCS*base*	PCI*a*	PCI*base*	TAC*a*
2013	2.093.100	1.233.849.696.000	944.055	14.051.274	27.767.250	2.582.747
2014	2.109.600	1.560.975.138.300	1.019.588	15.443.236	30.118.314	2.985.820
2015	2.126.200	2.478.430.820.000	1.074.594	16.815.287	32.647.995	4.478.005
2016	2.143.000	2.420.005.895.000	1.144.311	18.144.143	34.893.612	4.067.071
2017	2.159.600	2.834.998.895.836	1.148.561	19.410.672	37.228.612	4.734.074
2018	2.176.200	2.735.781.300.289	1.162.638	20.907.673	40.305.554	4.536.242
2019	2.192.900	2.376.082.384.790	1.115.085	22.406.770	43.092.056	4.097.997
Avg	**2.142.942**					**3.925.994**

Fig. 1 shows a graph of the provincial growth component (KKP) whose growth has a positive value each year, this means that the growth of the West Java Province GRDP has influenced the GRDP growth of Cirebon Regency. The fisheries sector in West Java has an average growth of 9.12 in 2013-2019. The results of this study are in line with previous results of [2,3,12], explaining that economic growth in the periphery region will greatly depend on its central region.

Fig. 2 shows a graph of the proportional growth component (PP) of the fisheries sector in Cirebon Regency against West Java Province in 2013-2019. In 2017/2018 the fishery sector in Cirebon Regency experienced negative growth with PP <0, this means that in that year the fisheries sector in Cirebon Regency had a slow growth rate compared to the fisheries sector in West Java Province.

Meanwhile, 2013/2014, 2014/2015, 2016/2017, and 2018/2019 had a positive proportional growth value (PP) which means that the fisheries sector in Cirebon Regency has a faster growth rate than the fisheries sector in West Java Province. The results of the proportional growth value (PP) of Cirebon Regency are in line with previous research [3,13]. Where changes in the economic structure of the parent region will actually reduce the GRDP growth of the regions underneath. Meanwhile, competitiveness or competitive advantage positively determines the growth of the district economy [13].

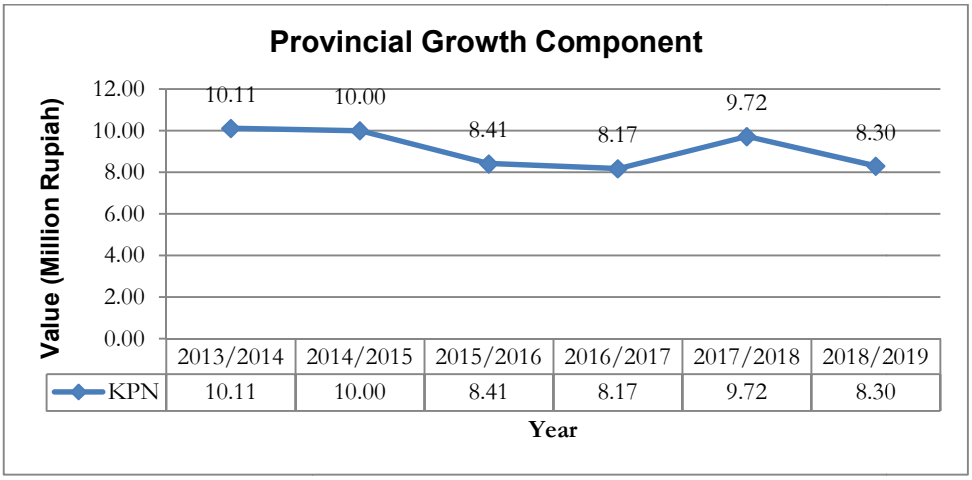

Fig. 1. Graph of provincial growth components (kpp) in the fishery sector of cirebon regency, 2013-2019

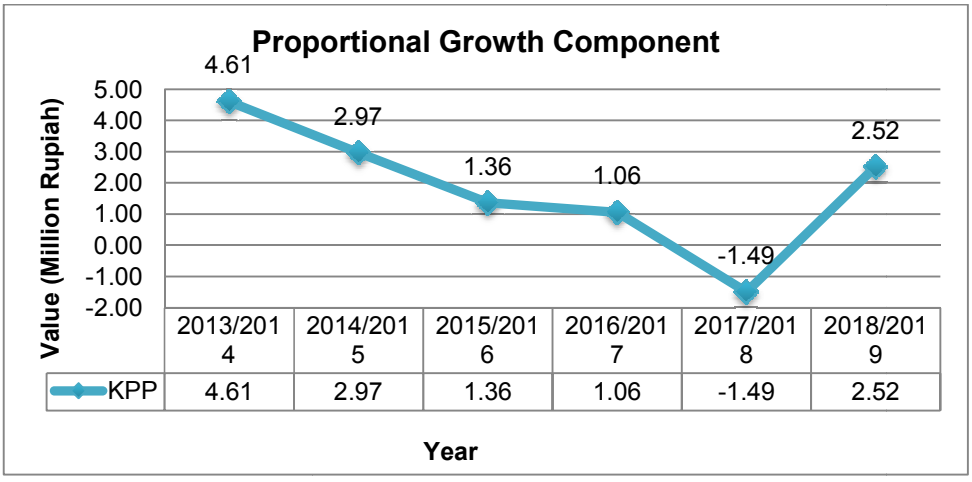

Fig. 2. Graph of the proposional growth component (PP) of the fisheries sector in cirebon regency, 2013-2019

Fig. 3 shows a graph of the growth of the share of the area (PPW) of the fisheries sector in Cirebon Regency in 2013-2019. In 2014/2015 and 2017/2018 the growth in the share of the fisheries sector in Cirebon Regency shows a positive value, where PPW> 0, this shows that in that year the fishery sector in Cirebon Regency has good competitiveness compared to other sectors. Meanwhile, 2013/2014, 2015/2016, 2016/2017, and 2018/2019 showed a negative area share growth value, where PPW <0, this indicates that the fisheries sector of Cirebon Regency in that year did not have good competitiveness compared to the sector. other. According to [12] says that competitiveness or competitive advantage positively determines the district's economic growth.

Fig. 4 shows a graph of economic growth in the fisheries sector in Cirebon Regency as a whole in 2013-2019. The economic growth of the fisheries sector in Cirebon Regency has experienced a fluctuating growth with an average value of 10.12, indicating that the fisheries sector has a value of> 0. So it can be concluded that the economic growth of the fisheries sector has fishery business activities in several categories including capture fisheries, aquaculture, and product processing. fisheries and salt production.

3.3 Analysis Trade Area Capture (TAC)

Trade Area Capture (TAC) analysis is an indicator in the fisheries sector that can be used to describe fisheries in relation to economic activities (commodities) at the regional level (district / city and province). TAC aims to measure how strong the fishery commodity market is as well as its relationship with socio-economic indicators such as people's income and purchasing power [9].

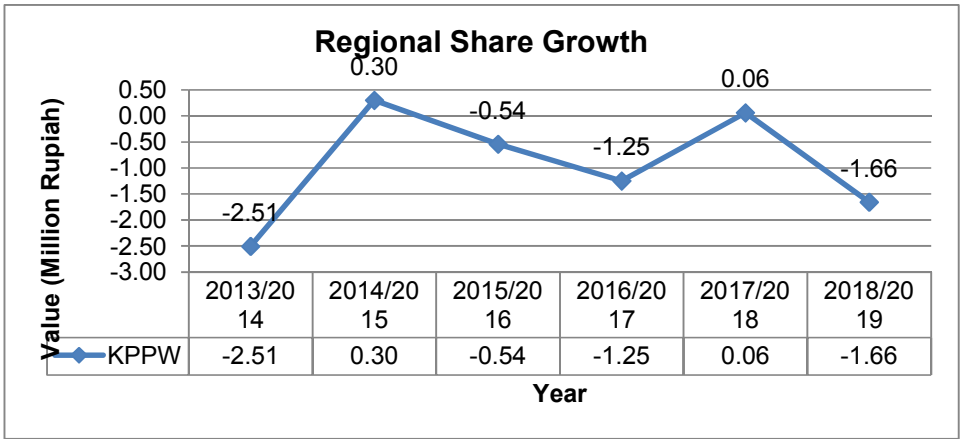

Fig. 3.Graph of the regional share growth (PPW) of the fishery sector in cirebon regency, 2013-2019

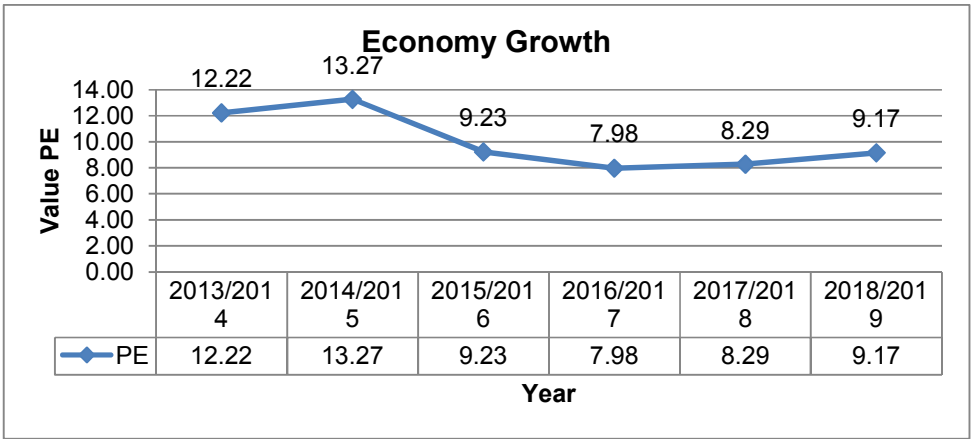

Fig. 4. Graph of economic growth in fisheries sector in cirebon regency, 2013-2019

The calculation of Trade Area Capture (TAC) carried out in this study used the variable actual value of fish in Cirebon Regency (ASa), the per capita value of fish product sales in West Java Province (PCSbase), per capita income in Cirebon Regency (PCIa), and income. per capita in West Java Province (PCIbase). Based on the results of the TAC calculation for the fisheries sector in Cirebon Regency in 2013-2019, the TAC value for the fisheries sector in Cirebon Regency was obtained with an average value of 1,753,631.

The results of the Trade Area Capture (TAC) calculation describe the number of people who will buy fishery products. When viewed from the results of the average TAC calculation for the fisheries sector in Cirebon Regency in 2013-2019, the TAC for the fishery sector in Cirebon Regency has a greater value than the total population in Cirebon Regency (TACa> Pa) where the TAC value from 2013-2019 can be seen in (Table 3) which shows that each year the TAC> total population with an average TAC value of 3,925,994 and an average value of 2,142,942 people. So it can be concluded that the fishery sector in Cirebon Regency is able to capture trade opportunities for fishery products in other regions and the people of Cirebon Regency have a higher expenditure pattern for fishery products than West Java Province.

Based on a similar previous researchin Pangandaran Regency [14-15], the TAC value of Pangandaran Regency is greater than the number of its population, this indicates that Pangandaran Regency is able to capture trade opportunities for fishery products in other areas. In line with the results of the TAC research in Cirebon Regency, which shows that the TAC value is greater than the total population, so that the fishery sector in Cirebon Regency is able to capture opportunities for trade in fishery products from other areas, this is because the amount of fishery production in Cirebon Regency is able to meet the needs of the local community. and the fishery potential of Cirebon Regency has a very large value every year so that it can become a sector that can meet the demands of other regions.

3.4 Analysis Pull Factor (PF)

Pull Factor (PF) analysis is used to measure the attractive strength of the population of Cirebon Regency for a fishery commodity. The calculation of PF in this study uses the TAC value in Cirebon Regency and the population in Cirebon Regency.

The results of the calculation of the average PF value in the fisheries sector in Cirebon Regency in 2013-2019 show that the PF value of the fisheries sector in Cirebon Regency is greater than 1 with a value of 1.82 (1.82> 1). This is due to the increase in the contribution of the fisheries sector to GRDP in Cirebon Regency and the high market demand from other regions for the fisheries sector commodities of Cirebon Regency, so it can be concluded that Cirebon Regency is able to attract customers from other regions or Cirebon Regency has a specialization in fishery products. According to [9,15-16], if the PF value is <1, it indicates that the fishery product market in that area is unable to attract customers from other areas around it. Conversely, if PF> 1, then the area is able to attract customers from other areas around it.

3.5 Analysis Location Quotient (LQ)

The Location Quotient (LQ) analysis model is a calculation technique to determine the basis and non-basis sectors by comparing the percentage of the fisheries sector's contribution [2,3]. Based on the results of the calculation of the LQ analysis of the fisheries sector in Cirebon Regency, it was found that in 2013-2019 it had an average LQ value of 2.75 (> 1), which indicates that the fisheries sector in Cirebon Regency is an economic base sector.

Table 3. Results Calculation of the 2013-2019 Fisheries Sector Pull Factor (PF)

Tahun	P*a*	TAC*a*	Pf*a*
2013	2.093.100	2.582.747	1,23
2014	2.109.600	2.985.820	1,41
2015	2.126.200	4.478.005	2,10
2016	2.143.000	4.067.071	1,89
2017	2.159.600	4.734.074	2,19
2018	2.176.200	4.536.242	2,08
2019	2.192.900	4.097.997	1,86
Avg			**1,82**

Table 4. Calculation of the Location Quotient (LQ) of GRDP based on the prevailing prices in the Fishery Sector of Cirebon Regency in 2013-2019

Year	LQ Value	information
2013	2,82	Economic Basis
2014	2,75	Economic Basis
2015	2,76	Economic Basis
2016	2,74	Economic Basis
2017	2,71	Economic Basis
2018	2,75	Economic Basis
2019	2,71	Economic Basis
Average	**2,75**	**Economic Basis**

Every year starting from 2013-2019, the Cirebon Regency fishery sector has become an economic base sector with a value (LQ> 1) experiencing stable growth from 2013-2019. This shows that each year has a comparative advantage. The production of the fishery sector in Cirebon Regency can meet the needs of the community in its own area and be able to meet the demands of other regions.

Fisheries development is one of the sectoral developments which is expected to be able to make a significant contribution to increasing regional income, employment and national development as a whole [2-3]. So that regional development in Cirebon Regency can be maximized by increasing development in the fisheries sector as a base sector by making the fisheries sector one of the priorities for regional development investment because each year the fishery sector in Cirebon Regency has an LQ value greater than one (> 1) [2-3].

3.6 Cirebon Regency Fisheries Sector Development Policy

The main problem in the fisheries sector policy in Cirebon Regency according to Widiastuti (Head of the Sub-Division of Food, Agriculture and Fisheries, Regional Research and Development Development Agency (RRDDA) of Cirebon Regency who was interviewed on May 3, 2021), Development institutions in the Cirebon Regency area do not work with integrated management. As a result, the use of resources and the fisheries sector is not optimal and sustainable. Another problem in the fishery sector in Cirebon Regency is that the role of TPI is still not optimal because many fishermen sell their catch directly to collectors or collectors, this results in the management of fishery production from catches not being managed properly through TPI, in addition to the use of fishing gear Illegal activities are still common among fishermen in Cirebon Regency. In this case the Cirebon Regency government through the Department of Marine Affairs and Fisheries has made programs to improve the quality of the Cirebon Regency fishery sector, including: capture fisheries development programs, assistance to groups of fishery fishermen, procurement of environmentally friendly fishing gear, maintenance of harbor ponds. at PPI, assistance for certification of rights to fishermen business land [7,15-18].

Cirebon Regency has several business activities in the fisheries sector, apart from capture fisheries, there are also aquaculture and fishery processing business activities. Each of these business activities has a program plan that is the priority of the Cirebon Regency government, for aquaculture it has been planned to develop fish seed cultivation (BBI) in several strategic areas of Cirebon Regency and the restoration of the ecosystem in brackish waters is also a priority to plan future development in Cirebon Regency. Increasing fishery processing production is also a top priority because fishery processing business activities provide a major contribution to the economy of the fisheries sector. However, the main obstacle to fishery processing in Cirebon Regency is still the chemical substance used for the mixture of fishery processing (Rahman Arifudin, Head of Sub Division of Research and Socio-Economic Development of RRDDA of Cirebon Regency).

The policy direction taken by the Cirebon Regency government towards the fishery sector generally focuses on:

- Increasing the welfare of fishermen.
- Increasing empowerment of fishermen.
- Development of education, training and skills of human resources who work in fisheries.
- Administering regulations on fishery sector business activities.

- Build sustainable fisheries resources.
- Utilization and expansion of cultivated land in Cirebon Regency.
- Optimized the role of TPI.
- Strengthening fishermen institutions.
- Development policies in an integrated and sustainable manner.

4. CONCLUSION

Based on the research results, several conclusions were obtained including:

GRDP of the fishery sector in Cirebon Regency in 2013-2019 has experienced an increasing growth every year. The calculation results show the value of the growth index (Growth Indices) of Cirebon Regency in 2013-2019 of 177.22. It can be said that the GRDP of the fisheries sector in Cirebon Regency has increased by 77.22% in the five-year period.

The calculation of the Shift Share analysis in this study shows the results of the GRDP of the fisheries sector every two years starting from 2013-2019 experiencing a fluctuating growth process. In 2013/2014 amounting to 12.22; 2014/2015 amounting to 13.27; 2015/2016 amounting to 9.23; 2016/2017 amounted to 7.98; 2017/2018 9.29; and 2018/2019 amounted to 9.17.

The value of the Trade Area Capture (TAC) of Cirebon Regency in 2013-2019 is always greater than the total population. The average TAC value of Cirebon Regency in 2013-2019 was 3,925,994, greater than the average population of Cirebon Regency, which was 2,142,942. This means that the Cirebon Regency fishery sector can seize opportunities for trade in fishery products from other regions. Meanwhile, the Pull Factor (PF) value of the fisheries sector in Cirebon Regency in 2013-2019 was 1.82 (> 1). This means that Cirebon Regency fishery products can attract customers from other regions.

The Location Quotient (LQ) value of Cirebon Regency has an average value of 2.75 (> 1) which means that the Cirebon Regency fishery sector is an economic base sector where the production of the Cirebon Regency fishery sector can meet the needs of the community in its own area and is able to meet demand needs from another region.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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