

# REGIONAL ECONOMIC DEVELOPMENT: THE INDUSTRIAL AGGLOMERATION AREA DEVELOPMENT IN IMPROVING ECONOMIC GROWTH IN CILACAP REGENCY

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## Abstract

*The inequality of economic development in the Cilacap Regency is an important issue that requires serious attention. Uneven economic growth, income disparity, and dependence on certain sectors are some of the main problems that need to be addressed. As the southern industrial region of Central Java, Cilacap Regency has great potential to become a centre of economic growth through the development of industrial agglomeration areas. Industrial agglomeration refers to the concentration of companies in a particular location, so as to increase economic growth and employment in the region. This research uses a qualitative-descriptive method with data analysis techniques using the Miles and Huberman model which includes data reduction, data presentation, and data verification/conclusion drawing. This research concludes that the Cilacap Industrial Estate, the Central Java Provincial Industrial Allotment Area, and the industrial allotment area consisting of the Bunton, Karangandri, Warungbatok, and Tinggarjaya Industrial Allotment Areas are currently the concentration of industrial areas that are used as industrial agglomeration development areas in supporting economic development in Cilacap Regency. In its development, the government will also build Cilacap Industrial Park to support the KPI of Central Java Province located in Mertasinga Village (North Cilacap District) and Menganti Village (Kesugihan District). In addition, industrial agglomeration has a positive impact on economic growth in Cilacap Regency, especially through increased industrial efficiency and productivity.*

**Keywords:** *Economic Development, Industrial Agglomeration, Economic Growth, Cilacap Regency*

## Abstrak

Ketimpangan pembangunan ekonomi di wilayah Kabupaten Cilacap merupakan sebuah isu penting yang memerlukan perhatian serius. Pertumbuhan ekonomi yang tidak merata, kesenjangan pendapatan, dan ketergantungan pada sektor-sektor tertentu menjadi beberapa masalah utama yang perlu diatasi. Sebagai kawasan industri selatan Jawa Tengah, Kabupaten Cilacap memiliki potensi besar untuk menjadi pusat pertumbuhan ekonomi melalui pengembangan kawasan aglomerasi industri. Aglomerasi industri merujuk pada konsentrasi perusahaan-perusahaan di suatu lokasi tertentu, sehingga dapat meningkatkan pertumbuhan ekonomi dan lapangan kerja di wilayah tersebut. Penelitian ini menggunakan metode kualitatif-deskriptif dengan teknik analisis data menggunakan model Miles dan Huberman yang meliputi reduksi data, penyajian data, dan verifikasi data/penarikan kesimpulan. Penelitian ini menyimpulkan bahwa Kawasan Industri Cilacap, Kawasan Peruntukan Industri Provinsi Jawa Tengah, dan kawasan peruntukan industri yang terdiri dari Kawasan Peruntukan Industri Bunton, Karangandri, Warungbatok, dan Tinggarjaya saat ini merupakan

konsentrasi kawasan industri yang dijadikan sebagai kawasan pengembangan aglomerasi industri dalam mendukung pembangunan ekonomi di Kabupaten Cilacap. Dalam pengembangannya, pemerintah juga akan membangun Cilacap Industrial Park untuk mendukung KPI Provinsi Jawa Tengah yang terletak di Desa Mertasinga (Kecamatan Cilacap Utara) dan Desa Menganti (Kecamatan Kesugihan). Selain itu, aglomerasi industri memberikan dampak positif terhadap pertumbuhan ekonomi di Kabupaten Cilacap, terutama melalui peningkatan efisiensi dan produktivitas industri.

**Kata Kunci:** Pembangunan Ekonomi, Aglomerasi Industri, Pertumbuhan Ekonomi, Kabupaten Cilacap

## 1. Introduction

The inequality of economic development in the Cilacap Regency is an important issue that requires serious attention. Uneven economic growth, income disparity, and dependence on certain sectors are some of the main problems that need to be addressed. Regional economic development is the process by which local governments and communities manage existing resources and work together to create new jobs and drive local economic growth. (Todaro & Smith, 2012; Mulyadi, 2011). In the context of Cilacap Regency, there is abundant natural resource potential, so there needs to be an integrated and sustainable strategy to optimise this potential in supporting regional economic growth.

With rapid economic growth, many of the economic facilities and infrastructure needed to accelerate economic development can be created. However, it should be borne in mind that rapid economic growth is not always followed by adequate equity (Aprianto, 2016). In regional economic development, it is important to pay attention to dependence on certain sectors and efforts to increase economic diversification. This can be done through the development of regional potential, improving the quality of human resources, and increasing investment in various potential economic sectors in the Cilacap Regency area.

Economic development is also related to the urgency of sustainable infrastructure development. Adequate infrastructure in a country is considered an important factor in determining the level of expansion and acceleration of economic development (Todaro & Smith, 2012; Amalia et al., 2022). Aschauer (1989) argues that infrastructure investment is positively correlated with economic growth. It is expected that the sustainability of infrastructure development will increase the equity of economic growth and create new jobs. Therefore, equitable infrastructure development plays an important role in increasing economic growth in a region.

As the southern industrial region of Central Java, Cilacap Regency has the potential for industrial agglomeration that acts as the centre of regional economic development. Industrial agglomeration refers to the concentration of firms in a particular location, thereby increasing economic growth and employment in the region. The advantage of spatial concentration as a result of industrial agglomeration can result in a reduction in production costs as economic activities are located in the same place (Sodik & Iskandar, 2007; Tilaar, 2010).

In order to develop the industrial agglomeration area, approximately 5.286 ha of land was granted by the Cilacap Regency government to be used as industrial estates in the Central Java Provincial Industrial Allotment Area, Cilacap Industrial Allotment Area, Bengawan Donan, Karangandri, East Cilacap, Bunton, Warung Batok, and Tinggarjaya (Bappeda Kabupaten Cilacap, 2022). To support the Central Java Provincial Industrial Designation Area, in Mertasinga Village (North Cilacap District) and Menganti Village (Kesugihan District), the Cilacap Regency local government has also provided 821,756 square metres of land (Sulistya, 2022 in [jatengaja.com](http://jatengaja.com)).

According to Announcement Number 590/0012541 on the Decree of the Governor of Central Java Number 590/25 of 2022 on the Determination of the Location of the Cilacap Industrial Estate Development in Cilacap Regency, the purpose of the Cilacap Industrial Estate is to improve the regional economy and support regional development programmes in the field of industrial investment. This will be achieved by accelerating economic growth in the industrial sector.

As a strategic area on the southern coast of Central Java, Cilacap has great potential to become a centre of economic growth through the development of industrial agglomeration areas. The potential of the Cilacap industrial area has been the concern of researchers. Based on a previous literature review conducted by Kamio & Ahmad (2011) it shows that industrial agglomeration can have a positive influence on real sector growth in the Cilacap-Banyumas region. This is in line with the opinion of Sodik & Iskandar (2007); Kusumasari &

Kartiasih (2017); dan Sholihah et al. (2018) that industrial agglomeration areas, if further developed, can make a significant contribution and create new centres of economic growth in a region.

Based on the previous research above, a common thread can be drawn that industrial agglomeration has a positive influence on economic growth (Kamio & Ahmad, 2011; Kusumasari & Kartiasih, 2017; Gosen & Susanti, 2019; Prastiwi & Arisetywan, 2022; Artha et al., 2022). However, there are different opinions as Sodik & Iskandar (2007) stated that industrial agglomeration has no significant effect on economic growth. In addition, Zhafirah et al., (2023) and Pujiati et al., (2018) also do not explicitly state that industrial agglomeration is correlated with economic growth. The studies emphasise more on the development of industrial estates that have a significant impact on increasing land values (Zhafirah et al., 2023), and evaluate the Sustainable Urban Development Index in various regions in the agglomeration area (Pujiati et al., 2018).

Researching regional economic development with a focus on the development of industrial agglomeration areas is very important because it can have a significant impact on the economic growth of a region. Industrial agglomeration areas facilitate the collection of various industries in one location, creating synergies that can increase efficiency, innovation, and competitiveness.

In the concept of agglomeration, Alfred Marshall (1920) was the first to introduce the benefits of industrial agglomeration and its role in economic growth. He used the term localised industry (Kuncoro, 2018a). According to him, economic growth will be driven by external economic activities such as labour market coupling, input sharing, and technology transfer (Kamio & Ahmad, 2011; Sodik & Iskandar, 2007; McDonald, 1997). In the context of the Cilacap industrial estate, the potential to drive economic growth in the region can be realised through optimal industrial estate development. However, the development of industrial agglomeration areas in Cilacap Regency is also faced with major constraints related to infrastructure. New investment is deterred by the deterioration of Cilacap's road transport infrastructure and annual repair efforts (Kamio & Ahmad, 2011a). In addition, regional imbalances due to differences in resources and factors of production in each region are an obstacle to the development of industrial estates.

Industrial agglomeration is a phenomenon where industries are not located in certain places in a dispersed manner, but clustered closely together in the region (Faggio et al., 2020; Duranton & Puga, 2004). Industrial agglomeration has a positive impact on the growth of the industrial sector and facilitates the transfer of knowledge and technology (Zuliastri et al., 2013). In the context of economic development, industrial agglomeration is important because it combines two or more industries in a region for optimal management. With good management, the industry will grow and gain profits.

Each region has a different level of economic growth. This is in accordance with the concept of agglomeration proposed by Perroux (1950), which states that economic growth does not occur evenly in all places. Furthermore, this opinion is closely related to the growth pole theory. This theory states that economic development can be fuelled through the concentration of investment in key sectors and strategic locations, which will then spread to surrounding areas. Agglomeration refers to the spatial concentration of economic activities in urban areas (Sidabutar et al., 2023). This concentration occurs due to economic benefits for neighbouring firms, such as savings in transport costs and easier access to resources and markets (Combes et al., 2008).

Despite a number of challenges and obstacles in developing a competitive and sustainable industry in Cilacap Regency, efforts are needed from the local government, industry stakeholders, and the local community to jointly overcome infrastructure problems, availability of skilled labour, industrial waste management, and other constraints. As one of the economic locomotives in Central Java, the role of the Cilacap industrial agglomeration in increasing regional income is increasingly strategic, so strong synergy and collaboration are needed to achieve optimal results for the progress and welfare of the community.

Based on the above background, industrial agglomeration in Cilacap Regency has the potential to improve regional economic development, so it is necessary to conduct a comprehensive analysis to understand the impact of industrial agglomeration more deeply and formulate appropriate policies to optimally utilise this potential.

## 2. Research Methods

This research uses a qualitative-descriptive method (Sugiyono, 2014; Bungin, 2011). This type of research is field research and uses a case study approach (Yin, 2014). The case study approach allows researchers to

study a case or phenomenon more specifically and in depth, so as to gain a better understanding of the phenomenon. In this case, it can be used to capture phenomena in the field regarding regional economic development efforts through the development of the Cilacap industrial area.

Research on regional economic development through the development of industrial agglomeration areas was conducted in the Cilacap Regency, Central Java, especially in the Cilacap Industrial Estate. Data collection techniques included observation, interviews, and documentation. These techniques are a series of methods or ways used in the research process to collect data needed to answer research questions (Sugiyono, 2014; Moleong, 2008).

Analysis of the data obtained was carried out in three stages, namely data reduction, data presentation, and data verification/conclusion drawing (Miles & Huberman, 1994; Sugiyono, 2014; Sukandarrumidi, 2006). Data reduction was carried out to select and simplify the data obtained in the study. Then data presentation was carried out as a result of data reduction regarding agglomeration areas. The last stage is data verification to draw a conclusion. This verification stage is carried out using a triangulation technique which is the result of a comparison of the data sources found (Usman & Akbar, 2006; Arikunto, 2013). This was done to analyse the development of industrial agglomeration in Cilacap Regency.

In qualitative research, data is obtained through interviews, observation, and document analysis, so it requires a specific validity test method to ensure the validity of the data (Sugiyono, 2014; Emzir, 2011). Data validity testing in this study was carried out using several tests, namely the credibility test, transferability test, dependability test, and confirmability test (Sugiyono, 2014). The credibility test was carried out by extending observation, increasing persistence, and using triangulation to increase data confidence. In addition, the transferability test is carried out by providing a detailed and clear description of the research, so that the data collected can be understood by other readers. The dependability test is carried out with a trace of field activities and the confirmability test is carried out with a research process that is carried out systematically.

### 3. Results And Discussion

#### Potential of Cilacap Regency Industry Sector

Cilacap Regency has great potential in the industrial sector which makes it one of the centres of economic growth in Central Java. There are several potential industrial sectors in Cilacap Regency, including:

##### 1. *Oil and Gas Processing Industry*

Oil and gas processing is one of Cilacap Regency's key industries that plays an important role in the local economy. Pertamina RU IV Cilacap oil refinery, which is the economic centre of the country, has a production capacity of 348.000 barrels per day and is the largest refinery in Indonesia, even in Southeast Asia. The refinery not only produces fuel oil for national needs, but also produces a variety of petrochemical products that are highly profitable economically. In addition, Pertamina RU IV Cilacap is the only refinery in the country that produces asphalt and base oil.

According to Badan Pusat Statistik Kabupaten Cilacap (2022), the processing industry sector, including oil and gas processing, accounts for around 35% of the total Gross Regional Domestic Product (GRDP) of Cilacap Regency. This shows how important this sector is to the economy of Cilacap Regency. In addition, this industry also absorbs a large number of workers, both directly and indirectly through supporting industries.

The existence of Pertamina RU IV Cilacap Oil Refinery also encourages the development of supporting industries in the vicinity. According to the Kementerian Perindustrian (2021), there are more than 50 companies engaged in oil and gas supporting services in Cilacap Regency. These companies play a role in providing various services such as equipment maintenance, construction services, and the provision of spare parts.

##### 2. *Seafood Processing Industry*

Cilacap Regency, with 201.9 km of coastline, has great potential in the fisheries and seafood processing sector. This industry is one of the main drivers of the regional economy, contributing around 15% of the total Gross Regional Domestic Product (GRDP) of Cilacap Regency (Badan Pusat Statistik Kabupaten Cilacap, 2022). According to data from the Dinas Kelautan dan Perikanan Kabupaten Cilacap (2023), capture fisheries production in Cilacap reaches 35,000 tonnes per year, with the main commodities including tuna,

skipjack, tuna, shrimp, and squid. Cilacap Samudera Fishing Port is the largest fish landing centre on the south coast of Java, facilitating more than 1,000 fishing boats operating in the region. The seafood processing industry in Cilacap is growing rapidly, with more than 50 medium and large-scale processing businesses operating in the district (Dinas Perindustrian dan Perdagangan Kabupaten Cilacap, 2022). The processed products produced include frozen fish, fish fillets, frozen shrimp, surimi, as well as various other processed products such as fish balls and nuggets. In addition, the seafood processing industry in Cilacap is highly competitive in the international market. Exports of fishery products from Cilacap reached a value of US\$ 150 million in 2020, with major markets including Japan, the United States, and the European Union.

### 3. *Cement Industry*

The cement industry in Cilacap Regency is one of the fastest growing industrial sectors and has a significant contribution to the regional economy. The existence of this industry is supported by the abundance of raw materials such as limestone and clay in the region. According to data from the Badan Pusat Statistik Kabupaten Cilacap (2023), the cement industry contributed around 8% of the total Gross Regional Domestic Product (GRDP) of Cilacap Regency in 2022. This figure shows the important role of the cement industry in the regional economic structure.

PT Holcim Indonesia Tbk, now part of the Semen Indonesia Group, is a major player in the cement industry in Cilacap. Holcim's cement plant in Cilacap has a production capacity of 3.4 million tonnes per year (Semen Indonesia Group, 2023). The plant not only serves cement needs in the Central Java region, but also distributes its products to various regions in Indonesia.

The existence of the cement industry in Cilacap also has a positive impact on labour absorption. The cement industry in Cilacap absorbs more than 5,000 workers, both directly and indirectly through supporting industries and economic multiplier effects. In terms of technology, the cement industry in Cilacap continues to innovate to improve production efficiency and reduce environmental impacts. However, the cement industry also faces several challenges. Fluctuations in energy prices, which is a significant component of production costs, is one of the factors affecting the industry's performance (Kementerian Perindustrian, 2023). In addition, environmental issues related to raw material mining and carbon emissions are also a major concern.

### 4. *Agricultural Product Processing Industry*

The agricultural product processing industry in Cilacap Regency is one of the sectors that plays an important role in the regional economy. This sector utilises the abundant agricultural potential in the region, processing it into higher value-added products. According to data from the Badan Pusat Statistik Kabupaten Cilacap (2023), the agro-processing industry contributed around 12% of the total Gross Regional Domestic Product (GRDP) of Cilacap Regency in 2022. This figure shows the significance of this sector in the regional economic structure.

One of the leading commodities in the agro-processing industry in Cilacap is coconut and is one of the largest coconut producers in Central Java, with production reaching 125,000 tonnes per year. The coconut processing industry in Cilacap produces various products such as coconut oil, coconut flour, and other derivative products.

The sugar industry is also an important component of the agro-processing sector in Cilacap. PT Dharmapala Usaha Sukses, which operates a sugar factory in Cilacap, has a production capacity of 4,000 tonnes of sugarcane per day (Kementerian Pertanian, 2023). The factory not only processes sugarcane into sugar, but also produces by-products such as molasses used in the bioethanol industry.

Processing of rice agricultural products is also growing rapidly in Cilacap and there are more than 100 units of medium and large-scale rice mills in Cilacap Regency. In addition to producing rice, this industry also produces derivative products such as rice flour and rice bran which have high economic value. The soybean processing industry into tempeh and tofu is also one of the significant sectors in Cilacap. This is because more than 500 micro, small and medium enterprises are engaged in this sector, absorbing more than 2,000 workers.

### 5. *Metal and Machinery Industry*

The metal and machinery industry in Cilacap Regency is one of the fastest growing sectors and has great potential for regional economic growth. This sector is supported by the existence of adequate

infrastructure, especially Tanjung Intan Port, which facilitates the import of raw materials and export of finished products (Dinas Perindustrian dan Perdagangan Kabupaten Cilacap, 2023).

According to data from the Badan Pusat Statistik Kabupaten Cilacap (2023), the metal and machinery industry contributed around 7% of the total Gross Regional Domestic Product (GRDP) of Cilacap Regency in 2022. This figure shows the important role of this sector in the regional economic structure.

One of the major players in the metal and machinery industry in Cilacap is PT Pindad (Persero). The company has a production facility in Cilacap that focuses on manufacturing precision components for the defence and civilian industries. The existence of this facility not only encourages technological development in the region, but also absorbs a significant amount of skilled labour. The shipbuilding industry is also an important part of the metals and machinery sector in Cilacap. PT Dok and Perkapalan Kodja Bahari (Persero) Cilacap Branch is one of the largest shipyards on the south coast of Java. According to the company's annual report, it has the capacity to build vessels up to 8,000 DWT and perform ship repairs up to 15,000 DWT.

The development of the metal and machinery industry in Cilacap is also fuelled by the presence of small and medium industry clusters. In Cilacap Regency, there are more than 200 small and medium enterprises engaged in metal processing and machinery component manufacturing. This cluster plays an important role in the supply chain of the larger industry.

#### 6. *Textile and Garment Industry*

The textile and garment industry in Cilacap Regency is a growing sector that has great potential for regional economic growth. Although not as large as the textile industry in some other regions in Central Java, this sector is starting to show significant development in Cilacap (Dinas Perindustrian dan Perdagangan Kabupaten Cilacap, 2023).

According to data from the Badan Pusat Statistik Kabupaten Cilacap (2023), the textile and garment industry contributed around 3% of the total Gross Regional Domestic Product (GRDP) of Cilacap Regency in 2022. Although the percentage is still relatively small, the sector has shown steady growth in recent years.

The development of the textile and garment industry in Cilacap is supported by the availability of competitive labour and adequate infrastructure. One of the major players in the textile industry in Cilacap is PT Cilacap Garment. The company focuses on producing apparel for the export market, with a production capacity of 500,000 pieces per month. The existence of this company not only encourages industrial development, but also opens opportunities for supporting businesses in the vicinity.

#### 7. *Renewable Energy Industry*

The renewable energy industry in Cilacap Regency is a growing sector that has great potential for economic growth and environmental sustainability. Although still relatively new compared to other industrial sectors, it has shown significant growth in recent years. According to data from the Badan Pusat Statistik Kabupaten Cilacap (2023), the renewable energy industry contributes around 2% of the total Gross Regional Domestic Product (GRDP) of Cilacap Regency in 2022. Although the percentage is still small, the sector is showing rapid growth, with annual growth rates reaching 15% in the last three years.

One of the flagship projects in renewable energy development in Cilacap is the Cilacap Solar Power Plant (PLTS). According to a report from PT PLN (Persero) Central Java Generating Unit (2023), PLTS Cilacap has an installed capacity of 25 MW and is capable of supplying electricity to around 20,000 households. The project not only contributes to the provision of clean energy, but also creates new jobs in the renewable energy sector.

A bioenergy industry is also starting to develop in Cilacap, utilising the biomass potential of the agricultural and plantation sectors. According to a report from the Dinas Pertanian Kabupaten Cilacap (2023), there are several small and medium-scale biogas processing units that utilise agricultural and livestock waste to produce energy.

#### 8. *Tourism Industry*

Cilacap Regency, located on the southern coast of Central Java, has a large and diverse tourism potential. The tourism sector has become one of the main focuses in regional economic development, with significant contributions to Gross Regional Domestic Product (GRDP) and labour absorption. The development of this sector is supported by natural beauty, cultural wealth, and infrastructure improvements that continue to be carried out by the local government.

Nature tourism is the main attraction of Cilacap Regency. Teluk Penyu Beach, with its 7 kilometres of coastline, is a favourite destination for local and domestic tourists. In addition, Segara Anakan, a unique lagoon located between Java Island and Nusakambangan Island, offers an exciting ecotourism experience with its mangrove forests and high biodiversity (Badan Pusat Statistik Kabupaten Cilacap, 2023). The development of infrastructure and supporting facilities in these areas has increased the number of tourist visits by 15% per year in the last five years. Cultural and historical tourism is also an important part of Cilacap's tourism industry. Fort Pendem, a Dutch colonial relic, and the Soesilo Soedarman Museum are witnesses to history that attract tourists.

The development of tourism villages is a new strategy in diversifying Cilacap's tourism products. Some villages such as Karangbanar Tourism Village in Jetis Village have successfully developed the concept of community-based tourism, offering a unique experience for tourists to enjoy rural life and local products (Badan Perencanaan Pembangunan Daerah Kabupaten Cilacap, 2023). These initiatives not only increase the income of local communities but also encourage cultural and environmental preservation.

The hospitality and culinary industry in Cilacap has also experienced significant growth. The number of hotels and restaurants has increased by 20% in the last three years, with hotel occupancy rates reaching 65% on average. Cilacap's culinary specialities, such as Sate Tunggal and Lontong Tuyuhan, are an added attraction for culinary tourists.

#### 9. *Creative and Digital Industries*

Cilacap Regency has shown significant development in the creative and digital industry sector. This sector has become one of the focuses of regional economic development to diversify sources of income and create new jobs for the younger generation (Dinas Perindustrian dan Perdagangan Kabupaten Cilacap, 2023). This development is in line with national trends in encouraging a knowledge- and innovation-based economy.

The creative economy in Cilacap Regency covers various subsectors, including crafts, performing arts, design and culinary. According to data from the Badan Ekonomi Kreatif Kabupaten Cilacap (2023), the sector's contribution to Cilacap's GRDP (Gross Regional Domestic Product) reached 7.5% in 2022, showing a significant increase from 5.2% in 2018. Traditional crafts, such as Cilacap batik and woven bamboo, have undergone revitalisation through design innovation and digital marketing, opening up export opportunities to international markets.

The development of the digital industry in Cilacap is characterised by the emergence of local tech startups and the increasing adoption of technology in various sectors. E-commerce is one area of focus, with local platforms such as 'CilapMarket' having facilitated the marketing of Cilacap MSME products to a wider market (Dinas Koperasi dan UMKM Kabupaten Cilacap, 2023). The fintech sector is also growing, with local startups developing digital payment solutions and microloans to aid financial inclusion in rural areas.

Cooperation between government, industry and universities has also resulted in training and incubation programmes to encourage digital entrepreneurship among Cilacap youth. These programmes have successfully spawned several promising local startups, some of which have secured funding from national investors. Despite its promising development, the creative and digital industries in Cilacap still face challenges such as limited access to capital, digital skills gap, and uneven infrastructure. To address this, the local government has developed a comprehensive digital economy development roadmap.

The local government's target is to increase the contribution of creative and digital industries to 12% of Cilacap Regency's GRDP by 2030, with a focus on developing local digital talents and increasing the competitiveness of creative products in the global market. With the right policy support and sustainable investment, Cilacap's creative and digital industries are projected to become one of the main drivers of the regional economy in the future.

### **Industrial Agglomeration Area as Economic Development of Cilacap Regency**

Regional economic development in Cilacap Regency is a process that aims to improve community welfare through the utilisation of local resources and optimisation of regional potential. In this context, the development of industrial agglomeration areas is a strategic step directed at improving regional economic competitiveness and supporting industrial growth in the region.

Based on Government Regulation No. 13/2017 on the National Spatial Plan, Cilacap Regency is designated as a National Activity Centre, namely an urban area that functions or has the potential to function

as a major node for export-import activities or a gateway to international areas; an urban area that functions or has the potential to function as a centre for industrial and service activities serving the National scale; and/or an urban area that functions or has the potential to function as a transportation node serving the National scale.

Cilacap Regency is included in the development stage of the Revitalisation and Accelerated Development of National Growth Centre Cities function and is one of the designated regencies of three other regions in Central Java, namely Semarang City and Surakarta City. In addition, based on Presidential Regulation No. 79/2019 on the Acceleration of Economic Development of the Kendal-Semarang-Salatiga-Demak-Grobogan Region (Kedungsepur Region); Purworejo-Wonosobo-Magelang-Temanggung Region (Purwomanggung Region); and Brebes-Tegal-Pemalang Region (Bregasmalang Region), which places Cilacap Regency as a hinterland area to support the development of the Brebes Industrial Estate.

To support the development of agglomeration areas, there are several industrial estates in Cilacap, namely the Cilacap Industrial Estate, the Central Java Provincial Industrial Designation Area, and industrial designation areas consisting of the Bunton, Karangandri, Warung Batok and Tinggarjaya Industrial Designation Areas. Industrial designation areas also include medium, small and micro industrial areas spread across all sub-districts (Interview, Bappeda Cilacap, 2024). In addition, to support the Central Java Provincial Industrial Designation Area, a Decree of the Governor of Central Java No. 590/25 of 2022 dated 5 August 2022 was issued concerning the Determination of the Location of the Cilacap Industrial Estate Development in Cilacap Regency located in Mertasinga Village (North Cilacap District) and Menganti Village (Kesugihan District). This can be seen in Figure 1:



Source: Pemerintah Daerah Kabupaten Cilacap (2024)

Figure 1. Location of Industrial Estate Development Menganti-Mertasinga Cilacap

In the development of industrial estates, the Cilacap Regency government seeks the development of industrial allotment areas. Even now the government provides 8 locations that will be used for the development of industrial estates. The 8 locations of the industrial allotment area include: Kutawaru/Bengawan Donan, Adipala, Central Java Province, Karangandri, Sidareja, Warungbatok, Binangun, and Nusawungu. Based on this, it can be classified that Cilacap Regency is divided into 3 regions, namely Eastern Cilacap, Cilacap City, and Western Cilacap.

The development of areas in each of these regions is almost evenly distributed, the Eastern Cilacap region has industrial designation areas consisting of Nusawungu, Binangun, Bunton (Adipala), and Karangandri. Cilacap City has industrial designation areas consisting of Kutawaru/Bengawan Donan, Cilacap Industrial Estate, and Central Java Province. While the western part of Cilacap has industrial designation areas consisting of Tinggarjaya (Sidareja) and Warungbatok (Dayeuhluhur).

The concentration of industrial estates in the Eastern Cilacap region emphasises the steam power plant industry located in the Bunton industrial allotment area (Adipala) and the Karangandri industrial allotment area. The Cilacap City area has a larger industrial sector, especially with Pertamina's oil refinery and cement factories located in the Cilacap Industrial Estate. Meanwhile, in Western Cilacap, there is a textile and garment industry centre located in the Tinggarjaya industrial allotment area (Sidareja) and an agricultural product processing industry centre (wood industry) in the Warungbatok industrial allotment area

(Dayeuhluhur).

Currently, the development of industrial agglomeration areas is still concentrated in the Cilacap City area. In addition, the local government of Cilacap Regency has also acquired 82 hectares of land to support the industrial allotment area of Central Java Province in Mertasinga Village (North Cilacap District) and Menganti Village (Kesugihan District) and the plan is to build the Cilacap Industrial Park. The development of the Cilacap Industrial Park is not only to develop the industrial area in Cilacap, but also to advance the economy of local residents and to promote Cilacap Regency as a pro-investment city. The plan is that this industrial area will be used for the fish processing industry, food industry, tobacco processing industry, coal product industry and petroleum refining, wood goods industry, pharmaceutical industry such as chemical drugs and traditional medicines, transportation care industry, cosmetics industry, and others.

The development of Cilacap's industrial agglomeration area is in line with Krugman (1991), industrial cluster theory, which emphasises the importance of geographic concentration of economic activity. In the context of Cilacap's economic development, the development of an integrated industrial estate can be a catalyst for accelerating regional economic development by utilising its potential and comparative advantages (Porter, 1990).

The development of the Cilacap industrial agglomeration area is in line with the growth pole theory proposed by Perroux (1950) and Hirschman (1958). This theory states that economic development can be fuelled through the concentration of investment in key sectors and strategic locations, which will then spread to surrounding areas. PT Pertamina (Persero) RU IV Cilacap as an anchor industry, acts as a growth pole that can increase/attract investment and encourage the growth of surrounding supporting industries. This will create a stronger value chain and increase the added value of the regional economy (Gereffi et al., 2005).

Agglomeration economic theory, rooted in the thinking of Marshall (1920), highlights how the clustering of interrelated industries can generate collective efficiency through the sharing of inputs, knowledge and skilled labour. In Cilacap Regency, the implementation of this concept can be realised through the establishment of integrated industrial estates that facilitate interactions between companies. This can encourage technology and knowledge transfer, which in turn will increase overall productivity (Fujita & Thisse, 2002). For example, the petrochemical industry can collaborate with the plastics and packaging industry, creating synergies that benefit both parties.

The new economic geography theory developed by Krugman (1991) is relevant in this analysis. This theory explains how the interaction between economies of scale, transport costs, and mobility of production factors can lead to the concentration of economic activity in certain locations. The development of integrated infrastructure, especially Tanjung Intan Port, in the Cilacap industrial agglomeration area concept is in line with this idea.

Regional economic development in Cilacap Regency is a process that aims to improve community welfare through the utilisation of local resources and optimisation of regional potential. In this context, the development of industrial agglomeration areas has strong relevance to several key aspects of regional economic development.

*First*, industrial agglomeration is in line with the concept of regional leading sector development. Cilacap Regency has comparative advantages in the processing industry sector, especially those related to marine resources and energy (Bappeda Kabupaten Cilacap, 2023). By focusing on the development of industrial clusters in these sectors, Cilacap Regency can take advantage of economic specialisation to improve productivity and regional competitiveness.

*Second*, industrial agglomeration supports the local economy's value-added creation strategy. Through vertical and horizontal integration between industries in the agglomeration area, Cilacap Regency can increase the added value of its local production. This is in line with the concept of regional economic transformation from natural resource-based to more advanced processing industry-based (Sjafrizal, 2018).

*Third*, the development of industrial agglomeration has the potential to create a significant economic multiplier effect. With the formation of industrial clusters, various supporting industries and related services will emerge, which in turn will expand the regional economic base. This is in line with regional economic growth theory, which emphasises the importance of the base sector in driving the growth of the non-base sector (Tarigan, 2019).

*Fourth*, industrial agglomeration can be a catalyst for capacity building of local human resources.

Through cooperation between industry, local government and educational institutions, training and skills development programmes can be developed to suit industry needs. This supports the concept of regional economic development that focuses on improving the quality of human capital as a driver of long-term growth (Todaro & Smith, 2012).

*Fifth*, the development of industrial agglomeration areas is in line with the strategy of increasing regional investment attractiveness. By providing integrated infrastructure and a conducive industrial ecosystem, Cilacap Regency can attract more investment, both domestic and foreign. This is important in the context of regional economic development that is increasingly dependent on capital and technology mobilisation from outside the region (Kuncoro, 2018).

Planned economic development will create new jobs, increase community income, and strengthen local infrastructure such as transport and public facilities. In addition, by utilising geographical advantages as a port and industrial area, Cilacap Regency can attract investment, expand markets, and improve regional competitiveness. Integration between the industrial sector and other economic activities will promote inclusive and sustainable economic growth, and improve the overall quality of life of the community.

### Impact of Industrial Agglomeration on Cilacap Regency Economic Growth

Regional economic growth is an important aspect of a country's national development (Acemoglu, 2011). Increased economic activity at the regional level can drive improvements in the welfare of local communities and contribute to overall economic growth (Todaro & Smith, 2012). Various factors can influence the rate of regional economic growth, including infrastructure, human resources, investment, and local government policies. In addition, local governments play a crucial role in creating a conducive climate for economic growth through targeted regulations and development programmes. The development of regional leading sectors and increasing the competitiveness of local products are key strategies in spurring regional economic growth.

Cilacap Regency is one of the important regions in Central Java with diverse economic potential. Some sectors that are generally the main drivers of Cilacap's economy include: 1) industry, the presence of Pertamina oil refinery, cement factory, PLTU, and other industrial areas contribute significantly to Cilacap's GRDP; 2) agriculture and fisheries, where this sector is still the main livelihood of most Cilacap residents; 3) tourism, the beaches in Cilacap and other tourist attractions have the potential to encourage the tourism sector; and 4) ports, where Tanjung Intan Port plays an important role in export-import and logistics activities.

Industrial estates in Cilacap have an integral role in driving regional economic growth, acting as the main engine of regional economic development. The existence of well-planned industrial estates has created a conducive ecosystem for the development of the manufacturing, processing, and related services sectors, which in turn has contributed significantly to the increase in Cilacap's Gross Regional Domestic Product (GRDP).

GRDP is one of the main indicators in assessing development performance. The economic growth rate of Cilacap Regency is strongly influenced by the production of the oil industry (oil and gas), where the contribution of the oil industry to the total GRDP is quite large. This can be seen in table 1.

Table 1. Economic Growth of Cilacap Regency

Year	With Oil and Gas (%)	Without Oil and Gas (%)
2019	2,27	5,37
2020	-10,28	-1,36
2021	2,15	3,39
2022	5,15	5,77
2023	5,34	5,76

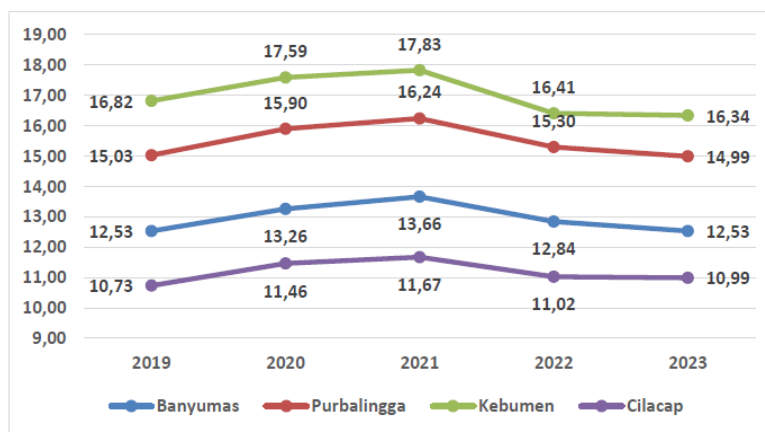
Source: Kabupaten Cilacap dalam Angka (2024)

Table 1 above shows that economic growth with oil and gas in 2020 experienced a decline in economic growth due to the impact of Covid-19 reaching -10.28%. While in 2021-2023 the economic growth rate with oil and gas has increased to 2.15%, 5.15%, and 5.34%. Meanwhile, economic growth without oil and gas showed a decline in economic growth reaching -1.36% in 2020. In 2021 and 2022, it increased to 3.39% and

5.77%. However, in 2023, it decreased to 5.76%.

With the development of agglomeration areas, industrial activities in Cilacap Regency contribute to labour absorption. Industrial companies are able to absorb labour and become a reliable business field to support regional economic activities. This business field ranks first in contributing to the formation of Cilacap GRDP without oil and gas. The main products of industrial companies in Cilacap vary, including dynamix cement, tuna canning, wheat flour, refined sugar, spinning yarn, shrimp crackers, vermicelli, pusri fertiliser bagging, and others. Meanwhile, household industries that are carried out by most households in rural areas and are able to absorb quite a lot of labour are food industries including brown sugar, weaving industries, and others.

The industrial agglomeration area has had a positive impact on the economic growth of Cilacap Regency. In addition, the poverty rate in the region has also decreased in recent years. This can be seen in Figure 2.



Source: BPS Kabupaten Cilacap (2023)

Figure 2. Percentage of Poor People in Cilacap Regency and Neighbouring Regencies

Table 2 above shows that the percentage of poor people in Cilacap Regency decreased in 2023. In 2020, there was an increase due to the impact of the Covid-19 pandemic. The percentage of poor people in Cilacap Regency in 2019 was 10.73%, increasing to 11.46% in 2020. In 2021, it increased again to 11.67%. However, in 2022 the number of poor people managed to decrease to 11.02% and in 2023 decreased again to 10.99%. When compared with neighbouring regencies, the percentage of poor people in Cilacap Regency is low.

The industrial agglomeration area has a significant impact on the regional economic growth of Cilacap Regency. *First*, the concentration of industries in Cilacap creates a positive effect in terms of increased efficiency and productivity. With industrial agglomeration, firms can utilise economies of scale, i.e. cost savings gained from producing in large quantities. For example, the processing industry sector in Cilacap such as the petrochemical industry and seafood processing can experience reduced production costs due to the proximity of industrial facilities and raw material providers.

*Second*, industrial agglomeration in Cilacap contributes to job creation. A growing industry requires a large workforce, which supports the absorption of local labour and migration from other regions. Data from BPS Cilacap (2023) shows that the unemployment rate in Cilacap decreases as the number of industries in the area increases, from 9.62% (in 2022) to 8.74% (in 2023).

*Third*, industrial agglomeration supports better infrastructure development. To meet the needs of growing industries, local governments and the private sector often invest in infrastructure improvements such as roads, ports, and energy facilities. This not only improves operational efficiency but also spurs broader economic growth.

In this regard, industrial agglomeration areas have a significant positive impact on Cilacap's economic growth. By increasing external savings, community welfare, urban concentration, and economic growth rate, industrial agglomeration can be an effective strategy to improve economic welfare in the region.

#### 4. Conclusions

Cilacap Industrial Park, Central Java Provincial Industrial Designation Area, and industrial designation areas consisting of Bunton, Karangandri, Warung Batok, and Tinggarjaya are concentrations of economic development in the development of industrial agglomeration areas in Cilacap Regency. In addition, the government will also build the Cilacap Industrial Park to support the Central Java Provincial Industrial Allotment Area located in Mertasinga Village (North Cilacap district) and Menganti Village (Kesugihan Sub-district).

The impact of agglomeration on economic growth in Cilacap Regency is significant, especially through increased industrial efficiency and productivity. This contributes to job creation, increased investment, and infrastructure development that supports local and regional economic growth. In addition, industrial agglomeration also plays a role in improving regional competitiveness by optimising resource use and minimising transportation costs. With the concentration of economic activity, leading sectors such as oil and gas processing, petrochemicals, and seafood and agricultural processing industries can develop more rapidly. The growth of these sectors contributes directly to GRDP and creates positive synergies for the regional economy.

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