

SWOT ANALYSIS ON THE DEVELOPMENT OF GREEN ECONOMY IMPLEMENTATION IN THE WEST BANDUNG REGION

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Abstract

West Bandung has abundant natural resource potential, including agricultural products, plantations, and forestry. Abundant natural resources make West Bandung a pioneer in the implementation of an environmentally friendly and sustainable green economy. This study aims to analyze the strengths, weaknesses, opportunities, and threats in the development of the green economy in West Bandung with a focus on 3 indicators, namely economic, environmental, and social through SWOT analysis with a Resource-Based View (RBV) approach. The methods used are field observation, interviews with village stakeholders, and secondary data analysis. The results of the study show that the main strength of West Bandung is from natural wealth, local knowledge in environmentally friendly practices and government policy support. However, limited infrastructure and suboptimal coordination are weaknesses in the development of the green economy. On the other hand, great opportunities are opening up through technological advancements and strategic partnerships such as market demand for green raw materials that can accelerate the adoption of a green economy. In addition to natural disasters, the main threats are economic instability, conventional industrial competition, and policy inconsistencies. Of the three green economy indicators, environmental indicators are considered the most crucial because of the abundant natural resource potential in West Bandung. The implications of this research are the importance of consistent policy support and regulation from the government, and educating the public with empowerment to strengthen the green economy. This research is expected to be a reference for strategic planning of green development in the West Bandung region and other regions of Indonesia that are sustainable and competitive.

Keywords: Green Economy, SWOT Analysis, Sustainability, West Bandung, Resource-Based View

A. INTRODUCTION

A sustainable economy is a strength for a country's economic development. The green economy acts as an 'umbrella' concept that unites various green initiatives by utilizing the potential of nature. To achieve sustainable economic growth towards the environment, governments must create policies that support the environment in the long term in increasing private participation in investment in green energy projects (Rasoulinezhad & Taghizadeh-Hesary, 2022). The challenge of achieving sustainable economic targets and carbon neutrality with minimum CO₂ emissions is largely faced by developing countries (Shao et al., 2021). Efforts to overcome climate change and environmental sustainability have become a global consensus to formulate fiscal policies and policies in achieving environmental sustainability (Ma et al., 2023). Efforts to implement a green economic system are not easy for a country. In China, it was found that the green transition depends

on the innovation of green economic sectors. The priority of innovation that must be implemented is the capital sector, human resource skills development, and government support as a policymaker (Teng et al., 2023).

Indonesia is blessed with a tropical climate that makes Indonesia very rich in natural resources. Indonesia has very abundant natural resources and is very suitable for implementing the concept of a green economy. However, Indonesia's dependence on fossil fuels is very high at 94.5%. Therefore, the government targets an increase in renewable energy by 23% of the national primary energy mix by 2025 (Adamowicz, 2022). Indonesia must switch to using renewable energy sources as an effort to reduce greenhouse gas emissions that trigger global warming. In addition, switching to renewable energy sources is a solution to the problem of the availability of fossil fuels, which are becoming fewer and fewer (Hidayat et al., 2024).

One of the regions of Indonesia with a wide biodiversity is the West Bandung area which excels in agro-industrial activities. Astronomically, Bandung has a tropical climate influenced by monsoon winds with average rainfall ranging from 1500 to 4000 mm/year, average temperatures ranging from 19°C - 24°C so it is very suitable for agricultural, forestry, and plantation activities. The West Bandung Regency area has undergone a change in land area of 11,000 ha. Land conversion is converted to dry and wetlands, plantations, forests, and built land. The most changes in plantations occurred in the coffee plantation area in West Bandung Regency, which covered an area of 3,015.40 ha, followed by tea plantations with an area of 1,893.68 ha, coconut plantations with an area of 1,339.00 ha, and cocoa plantations with an area of 14.44 ha (Christian et al., 2021). West Bandung has a potential for coffee plantations in Sindangkerta Regency of around 722.96 ha, with an average total harvest of 1,341,565 tons in 2023. The area of coffee land in the West Bandung area is around 2,982.18 ha. Natural products owned by the West Bandung region such as plantations and agricultural products are one of the supporters in the development of the green economy in Indonesia (BPS Bandung Regency, 2024). However, problems related to the slow absorption of technology transfer in West Bandung are a challenge in implementing a green economy system for sustainable economic transformation (Kozich et al., 2023).

Based on the presentation of the importance of implementing a green economic system to support long-term sustainable energy and efforts to overcome problems related to limited fossil fuel sources and global warming. Therefore, this study seeks to analyze SWOT (Strength, Weaknesses, Opportunities, and Threats) related to the development of green economy indicators in the West Bandung area. Green economy indicators consist of three things, namely economic, social, and environmental (Tiwari et al., 2023). The green economy cannot be separated from the role of technological development and in line with investment activities, this was conveyed by the WHO (World Health Organization) who explained that the development of financial technology is in line with green investment and a very competitive industry considers the transformation of the green economy in terms of marketing and target orientation (Lyulyov et al., 2024). Sustainability for future generations is the urgency of the green economy transition. With the analysis of strengths, opportunities, challenges, and obstacles in the implementation of the green economy, the things that need to be developed by the government and local communities can be clearly identified and this research can be used as a reference for improving strategies in realizing sustainable regions.

B. RESEARCH METHOD

The research method used is qualitative descriptive. This research is designed to influence the development of the green economy in West Bandung. This study uses SWOT analysis (strengths, weaknesses, opportunities, and threats) by describing it through the *Theory Resource-Based View* (RBV) approach so as to find effective analysis results (Freeman et al., 2021). The RBV approach is

used to assess the availability of existing resources and community capabilities in managing the West Bandung area in implementing a green economy. This research also identifies opportunities and challenges in realizing a sustainable West Bandung region.

This research was conducted in Mekarwangi Village, West Bandung. Researchers obtained primary data sources from structured interviews with selected interviews, and supplemented with secondary data from government reports, business records, and sustainability assessments. The resource persons in the structured interview were to the head of Mekarwangi Village, the chairman of the youth organization, and several communities that manage tea and coffee farming in West Bandung. The data was taken in 2024. The following is the flow of the research using SWOT analysis with *the Theoretical Resource-Based View* (RBV) approach aimed at Figure 1:

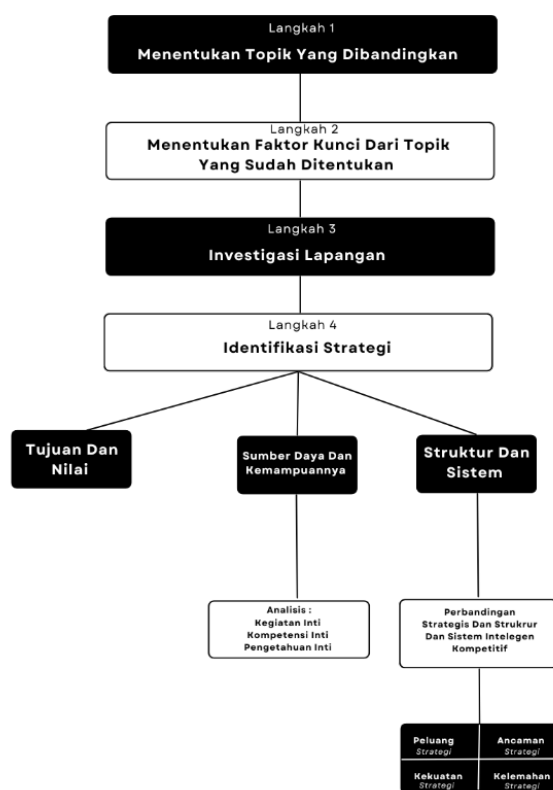


Figure 1. Flow of research framework
Source: Primary data processed, 2024

This SWOT analysis research method aims to produce in-depth insights into the implementation of green economic development in West Bandung using the RBV approach. This research will provide a strategic roadmap for stakeholders to maximize local resources, encourage collaboration, and overcome challenges to achieve sustainable development.

C. FINDINGS AND DISCUSSION

1. Profile of West Bandung

West Bandung, located in the province of West Java, Indonesia, is an area rich in natural resources and has great potential in improving the green economy. West Bandung itself is located on a volcanic plateau, so the land in the West Bandung area is fertile and the natural scenery is also amazing, as well as a cool climate. Culturally, West Bandung is mostly inhabited by the Sundanese tribe, who have a rich heritage that is reflected in their customs, arts, and traditional practices.

Economically, West Bandung has a strong agricultural base, with residents engaged in agriculture and cultivation of various crops, including rice, vegetables, tea, coffee, and fruits. Fertile soil and favorable climate contribute to produktivitas pertanian di kawasan ini, menjadikannya kontributor penting bagi ekonomi lokal. Selain itu, munculnya ekowisata telah membuka jalan baru for economic development, it attracts visitors looking for outdoor adventures, health retreats, and cultural experiences. West Bandung consists of 16 districts, which can be seen from the following map image:

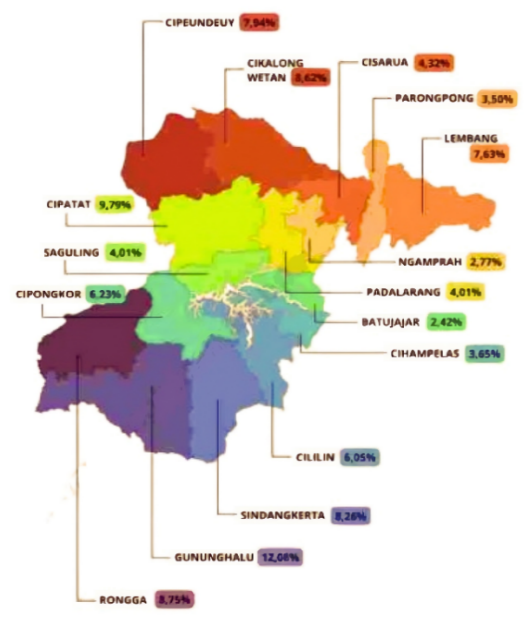


Figure 2. Area by District
Source: BPS West Bandung, 2024

In this study, the researcher focused on Mekarwangi Village located in West Bandung Regency, West Java, Indonesia. The village has become a center for tea and vegetable commodities. This village is located in an area characterized by lush green landscapes and beautiful views of the expanse of tea gardens and other agricultural products that support the implementation of the green economy. The condition of West Bandung is characterized by moderate temperatures, an average of around 24.67°C, which is typical because the altitude is about 789.599 meters above sea level. The area experiences a relatively high humidity level of around 74.28%, contributing to its humid and comfortable atmosphere. Wind speeds are generally mild, averaging 1.64 knots, while air pressure is recorded at around 923.8 mbar. This combination of factors indicates a stable and calm weather pattern for the region. Rainfall is significant, with an annual average of 146.09 mm, and the area sees about 15 rainy days each month, indicating a fairly wet climate throughout the year. Nonetheless, Iklim enjoys quite a bit of sunshine, with about 5.51 hours of sunlight per day, providing a balanced mix of wet and dry conditions. The following is a table related to the climate picture in the West Bandung area:

Table 1. Condition of Iklim West Bandung

Parameter	Average
Height	789,599 mdpl
Temperature	24,67°C
Humidity	74,28%

Wind Speed	1,64 knot
Air Pressure	923,80 mbar
Rainfall	146.09 mm/year
Number of Rainy Days	15 days/month
Solar Illumination	5.51 hours/day

Source: BPS West Bandung, 2024

Overall, the climate of West Bandung, characterized by moderate temperatures, high humidity, and stable rainfall patterns, makes it a region with a generally stable weather profile. Then related to the educational background of the community in the West Bandung area.

Table 2. Pure Participation Rate (APM) Education Level in West Bandung Regency

Level of Education	Pure Participation Rate (APM)	
	2022	2023
SD/MI/Sederajat	97,91	97.87
SMP/MTs/ Sederajat	75,87	88.60
SMA/SMK/MA/Sederajat	50,36	58.36

Sumber: BPS West Bandung, 2024

The education level of the people of West Bandung based on data obtained from the Central Statistics Agency (BPS) is known that in 2022 people with an education level that graduated from elementary school / MI / equivalent as seen from the Pure Participation Rate (APM) showed a figure of 97.91% and a slight decrease in 2023 of 97.87%. The education level of the people of West Bandung at the junior high school/Mts/equivalent level in 2022 the APM shows a figure of 75.87%, then in 2023 it will increase by 88.60%. The education level of the people of West Bandung at the SMA/SMK/MA/Equivalent level in 2022 has an APM score of 50.36% and then increases in 2023 by 58.36%.

The data show an encouraging trend in education participation, especially at the secondary and high school levels, where a significant increase in APM is approximately 8% indicating an increase in access and retention. A slight drop in APKs at the primary level may indicate better enrollment according to age. Overall, the upward trend shows that more students stay in school longer, which is a positive indicator for future educational outcomes. The author's analysis of the education level of the people of West Bandung has increased well even though the increase for junior high and high school levels is not too high. It can be said that the community is increasingly aware of the importance of education for the future. Improving education also means that in increasing people's knowledge, they will manage existing resources for economic improvement.

A. SWOT Analysis of Green Economy Implementation in West Bandung Based on the Theoretical Resource-Based View (RBV) Approach

West Bandung has several main strengths that position it as a promising region to develop a green economy. These strengths include natural resources, renewable energy potential, and favorable geographical locations. West Bandung benefits from abundant natural resources, especially its fertile soil and clean water supply. These resources are essential to support sustainable agriculture and maintain the region's rich ecosystems. The availability of arable land encourages productive and environmentally friendly agricultural practices, making it a significant asset for green economy initiatives. The region has strong potential for the development of renewable energy, especially in the fields of geothermal and hydropower. West Bandung's geothermal resources present an opportunity to utilize clean energy directly from the earth,

reducing dependence on fossil fuels. Additionally, the existence of rivers and water bodies makes hydropower a viable option for sustainable energy production, contributing to the region's overall energy security.

1. Analysis of the Strength of Green Economic Development in West Bandung

The green economy is conceptualized as an economic model based on exchange, consumption, production, and economic and social benefits along with sustainability and balance to nature and the environment with special attention (Adamowicz, 2022). The potential of natural resources and renewable energy is the main strength of West Bandung. This potential is in line with the green economy theory which emphasizes the sustainable use of natural resources to support economic growth and community welfare. To support the smooth development of the green economy, government support is needed which is a driving factor in accelerating the implementation of green economic development. The following are the strength points of the implementation of green economic development in West Bandung based on an interview with the Head of Mekarwangi Village stated: *"Natural potential and active participation of the community, the village can achieve better economic sustainability with the support of the local government"*. The results of these points are presented in the form of the following table:

Table 3. Analysis of the Strength of Green Economic Development in West Bandung

No	Points	Actualization Details
1	Abundant Natural Resources	West Bandung has a diverse range of natural resources such as forests, rivers, and agricultural land, which are important for sustainable economic activities such as ecotourism and organic agriculture
2	Local Knowledge and Practice	Many communities are already running eco-friendly agriculture and small-scale green initiatives, creating a culture of sustainability
3	Supportive Local Government Policies	There are local government initiatives to promote environmentally friendly businesses, such as waste management programs and green tourism development
4	Skilled Workforce in the Green Sector	Training programs for farmers and small businesses in organic farming, renewable energy, and recycling are already available

Source: Primary data processed, 2024

The potential of natural resources from forests, rivers, and fertile agricultural land is very supportive to be developed as ecotourism and organic agriculture, as the basis of a green economy. Supported by local knowledge and practices that are environmentally friendly is also a strength in the West Bandung area. In West Bandung, many farmer groups have implemented environmentally friendly agricultural practices and other initiative practices, albeit on a small scale.

The local government as an institution that makes policies to strengthen green economic development efforts in West Bandung. Government support is a strategic factor in making policies to promote environmentally friendly businesses, waste management, and tourism development is also a strength for West Bandung. The existence of this support makes it easier to invest and is able to create jobs in green sectors. Of course, it encourages West Bandung to have a workforce that focuses on the green sector. The existence of labor as human resources in West Bandung allows West Bandung to implement more effective development, and strengthen regional competitiveness.

2. Analysis of Weaknesses of Green Economic Development in West Bandung

Low levels of education, and community resistance behavior are obstacles to accelerating green economic development in West Bandung due to a lack of public awareness. This is in line with the low knowledge and skills needed in managing and implementing green technology. In addition, West Bandung still has limited infrastructure facilities and the lack of optimal distribution of natural resource products is the main obstacle to green economic development in West Bandung.

Based on an interview with the Head of Mekarwangi Village, he stated: "*The lack of public awareness of the importance of knowledge and skills in reaching capital for a sustainable economy and agriculture*". The author describes the results of these points presented in the form of the following table:

Table 4. Analysis of Weaknesses of Green Economic Development in West Bandung

No	Points	Actualization Details
1	Limited Access to Funding and Investment	Green economy initiatives often require large amounts of capital, but local businesses and cooperatives struggle to get enough funding
2	Lack of Infrastructure for Green Innovation	Infrastructure such as renewable energy systems or recycling plants are still limited, hindering sustainable development
3	Coordination Between Stakeholders That Is Not Optimal	Collaboration between government, business, and society is still ineffective, leading to inefficiencies
4	Knowledge Gap and Lack of Awareness	Awareness levels about the benefits of the green economy are still low in some circles, slowing the adoption of sustainable practices

Source: Primary data processed, 2024

To start green economy projects in West Bandung, it is difficult to get funding from institutions, investors or CSR. Due to limited funding and investment. The limited infrastructure to support green innovations such as renewable energy systems or recycling plants is also very minimal. These infrastructure limitations limit the development of environmentally friendly technology from the potential that exists in strengthening the green economy in West Bandung.

Of course, in the development of the green economy, it cannot be separated from the role of the government as a stakeholder who makes policies. Minimal coordination is an obstacle to the implementation of green economy program collaboration between the government, businesses, and the community becoming ineffective and efficient. Then, there are still many people who do not understand the concept or practice of green economy for the benefits of the environment and improve the quality of life of the community. The low understanding of the green economy triggers most of the people of West Bandung to be less motivated to be actively involved in adopting green economy program initiatives. This low public awareness is an obstacle to the adoption of green technology and also in environmentally friendly sustainable business practices to encourage economic growth as well as environmental maintenance in West Bandung.

3. Analysis of Green Economic Development Opportunities in West Bandung

West Bandung has a great opportunity to attract investors or invest in environmentally friendly technologies and for the development of green economy-based educational programs. Opportunities to collaborate with the private sector can accelerate the development of a green economy. The importance of investment in an effort to support innovation and the application of more comprehensive green technology in West Bandung. Then, the development of a green economy-based certification program can increase public knowledge and awareness so that they are able to adopt environmentally friendly practices. Based on an interview with the Head of Mekarwangi Village, he stated: "*By managing sustainable resources, we can create jobs and improve the welfare of the community*". The results of these points are presented by the author in the following table:

Table 5. Analysis of Green Economic Development Opportunities in West Bandung

No	Points	Actualization Details
1	Increasing Demand for Green Products and Ecotourism	National and International Support for the Green Economy
2	National and International Support for the Green Economy	Policies at the national level and international cooperation provide conditions that support the development of a green economy
3	Technological Advancements in Sustainability	New technologies in renewable energy, waste management, and sustainable agriculture can be leveraged to accelerate the adoption of green practices
4	Open Innovation Through Partnership	Opportunities for collaboration between local governments, universities, NGOs, and the private sector to promote green innovation

Source: Primary data processed, 2024

The world community is increasingly concerned about the environment so that this opportunity for West Bandung can be used to attract tourists and support local business actors in developing environmentally friendly products in line with current market needs. Government policies that are pro-environment and opportunities for international cooperation provide strong support for West Bandung to adopt the acceleration of the green economy with renewable technology and energy can accelerate the implementation of green economy practices. Of course, there is an open space to collaborate with government partners, NGOs, the private sector, and universities to be able to innovate, allowing for the creation of sustainable solutions from multi-sector collaboration.

4. Analysis of Threats to Green Economic Development in West Bandung

Natural products produced in West Bandung have a high selling value because of their abundant and quality natural products. However, this threat to natural resources is inevitable from pest attacks, fertilizer scarcity, and natural disasters. In addition, often the policies made are inconsistent, thus creating an unstable environment for the public and investors. Global economic fluctuations also affect the ability of regions to attract investment in funding green economy projects. It emphasizes the importance of policy stability and community support to ensure long-term sustainability. The previous research was conducted by Robi Kurniawan and Managi in 2018 with the research topic: "Economic growth and sustainable development in Indonesia: An assessment." Overall, from the findings of the study, it is important to develop more proactive policies to ensure economic growth in Indonesia can be achieved without sacrificing environmental quality and focus on the transition to a green economy (Kurniawan & Managi, 2018) . This was conveyed by the Head of Mekarwangi Village regarding the threat, namely: *"The most real threat is earthquakes, but the increase in fertilizer prices and the decrease in commodity prices are also significant challenges to support the green economy"*. The results of these points are presented by the author in the following table:

Table 6. Analysis of Threats to Green Economic Development in West Bandung

No	Points	Actualization Details
1	Economic Instability and Market Uncertainty	Fluctuating market conditions and economic uncertainty can hamper investment in green economy initiatives
2	Environmental Degradation and Climate Change Risks	Deforestation, pollution, and climate-related risks pose significant challenges to sustainable development efforts
3	Competition with Conventional Industries	Traditional industries that are not aligned with green practices may resist change, creating barriers to adoption
4	Policy and Regulatory Inconsistencies	Inconsistent implementation of regulations and policies can hinder the progress of green economy initiatives

Source: Primary data processed, 2024

The threat of economic and market instability causes considerable market fluctuations for the green sector, as investment requires long-term support for maximum impact. This is also from environmental degradation such as deforestation, pollution and the impact of climate change to challenges, efforts to develop a sustainable green economy in West Bandung. The increasingly fierce global industry competition adds to the challenge because conventional industries that are not environmentally friendly are still reluctant to switch to green practices because they are reluctant to face significant changes in terms of costs and operations. The local government does support green economy practices in West Bandung, but the government's inconsistency as a policymaker is a serious threat, due to the lack of stable and consistent policies in supporting the green economy. Without clear regulations, government support will not have much of an impact, it will make it difficult for green businesses or investors to operate and develop businesses for the long term.

D. CONCLUSION

Bandung can take a role in efforts to encourage and develop a green economy in Indonesia. The development of the green economy is very important and has the potential to mitigate environmental, economic and social risks as well as in improving the economy sustainably in all sectors. West Bandung needs to transform towards a green economy. The transformation to a green economy is very relevant for the West Bandung region which relies heavily on natural products to meet its food needs. The role of the government as a policymaker is very important to make policies in the implementation of comprehensive strategies that can encourage strengths and opportunities while providing solutions to the weaknesses and threats faced.

This SWOT analysis provides a strategic basis to understand internal resources and external conditions that affect the implementation of the green economy in West Bandung. The RBV approach helps focus on harnessing strengths, addressing internal weaknesses, harnessing opportunities, and mitigating threats to achieve the sustainable development goals. This research can be used as a guide or policy level for sustainable green economic development in other regions in Indonesia that have similar potential to West Bandung which has taken the initiative to develop a green economy and environmentally friendly regional development.

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