



Achieving Sustainability: Green Economic Synergy in The Indonesian Economy

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Abstract. This research aims to analyze various implementations of the green economy in the economic sector and its aspects as an effort to achieve sustainable synergy of the green economy within Indonesia's economy. The study uses a descriptive qualitative method, with data collection techniques utilizing literature studies. Data analysis applies the Miles and Huberman model, including data reduction, data presentation, and conclusion drawing. The results show that the implementation of the green economy is an effort to achieve sustainable economic development. Overall, the transition and implementation of the green economy in the economic sector offer greater and more sustainable economic benefits, as well as improve the quality of life by creating more jobs, increasing income, and supporting environmental conservation. Furthermore, the analysis of the development of the three pillars of the green economy in the environmental, economic, and social aspects of Indonesia demonstrates that the transformation towards a green economy has a positive impact on realizing sustainable synergy in Indonesia's economy across various sectors. The challenges in implementing a green economy in Indonesia can be addressed through a combination of appropriate policies, adequate investment, and active participation from all stakeholders. A blend of strong regulations, education, and supporting technology and infrastructure will accelerate Indonesia's transition towards a more environmentally friendly, sustainable, and climate-resilient economy.

Keywords: Green Economy, Indonesia's Economy, Sustainable Synergy

1 Introduction

The transition to a green economy is projected to have a significant impact of up to IDR 4,376 trillion on Indonesia's national economic output. This shift is also expected to boost gross domestic product (GDP) by IDR 2,943 trillion over the next decade, representing 14.3% of Indonesia's GDP in 2024. The green economy's multiplier effect on GDP is substantially higher than that of the current economic structure, which still depends heavily on extractive sectors like mining. These insights come from research by the Center of Economics and Law Studies (CELIOS) and Greenpeace Indonesia, as highlighted in their policy brief on the effects of the green economy transition on Indonesia's economy, equity, and welfare. [2].

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Indonesia's economic development has seen rapid progress, positioning the country among the fastest-growing economies globally. Now classified as a middle-income nation, Indonesia is also a member of the G20 major economies group [3]. In the first quarter of 2023, Indonesia's economy, measured by current gross domestic product (GDP), amounted to IDR 5,071.7 trillion. At constant 2010 prices, GDP reached IDR 2,961.2 trillion, reflecting a growth rate of 5.03 percent year-on-year (y-on-y) [1]. The Transportation and Warehousing sector recorded the highest growth in terms of production, expanding by 15.93 percent [1].

The United Nations Environment Programme (UNEP), through a new global agreement known as the Global Green New Deal, emphasizes that governments should promote economic reforms that move beyond a sole focus on profit and welfare, shifting towards a green economy that prioritizes environmental sustainability [6]. This transition to a green economy aims to tackle pressing environmental challenges, particularly climate change, which remains a key global issue [5].

Economic growth is one of the most widely used indicators to reflect a country's development over a specific timeframe. It represents a substantial rise in added value compared to the previous period. Economic growth can also be understood as the long-term increase in total output, regardless of whether this growth surpasses population growth or is accompanied by shifts in the economic structure. According to Tresnawati Kusuma, Zafrullah, and Budiarto (2021), economic growth refers to the expansion of economic activities that lead to higher production of goods and services, as well as improvements in people's welfare [7].

One factor contributing to high income growth in a country is the extensive use and management of natural resources without regard for ecological balance, which results in environmental degradation [8]. Therefore, the management of natural resources is crucial, as their abundance can drive economic growth, enhance human welfare, and reduce income inequality [9]. Consequently, there is a need for an economic development model that not only aims for maximum profit but also takes into account ecological sustainability and social conditions [10].

Globally, economic crises affect not only human populations but also the environment. Environmental problems are increasingly acknowledged as complex and critical global challenges that many nations, including Indonesia, are currently facing. The combination of population growth, limited natural resources, and the irresponsible use of modern technology to exploit nature has led to a deterioration in environmental quality [11].

The green economy is closely linked to sustainable development, which is currently a global goal that all countries are striving to achieve through the Sustainable Development Goals (SDGs) program. Therefore, ongoing discussions about the concept and role of the green economy are essential for supporting sustainable development efforts. As Kasztelan [12] explains, sustainable development ensures that present-day progress does not compromise the ability of future generations to meet their own needs. In essence, development should avoid harming the preservation of nature. Today, environmental preservation is a major concern worldwide, as various forms of pollution and damage occur, primarily due to human activities. The green economy is seen as a potential solution to address these challenges [12].

The green economy is built on three key pillars: economic, social, and environmental. This approach is crucial for maintaining economic sustainability through the principle of “growth without harming the foundation of the economic model.” In the green economy, economic growth can be achieved by reducing carbon emissions and pollution, improving energy efficiency, and preserving biodiversity and ecosystems [4]. The green economy offers a solution to broader economic challenges by optimizing the use of available energy and resources [13]. A region's GDP can continue to grow if it maximizes the use of green products. For the green economy concept to succeed, involvement from policymakers, economists, and business leaders is essential to guide policies for sustainable development [13].

The green economy emphasizes social justice, emerging from environmental advocates and green politics, with its main focus on environmental issues. It also considers human aspects, such as behavior and motivations, addressing not only physical needs but also spiritual and psychological ones. Today, there is heightened attention on environmental protection and sustainable development due to the growing environmental challenges faced by both current and future generations. These issues are collective problems that affect everyone, particularly future generations, including our children. Given the severe consequences, it is crucial to closely examine efforts to protect the environment and address ecological damage [14].

Dogaru [15] describes the green economy as an economic model that integrates activities spanning from production and distribution to consumption, all centered around sustainability. This approach not only promotes welfare and social equity but also contributes to a notable reduction in environmental risks and ecological imbalances. The green economy policy framework aims to reestablish the disrupted balance between humanity and nature, thereby necessitating policies that motivate various stakeholders to take proactive measures [15]. Economic growth driven by green principles is highly favorable for sustainable environmental progress and inclusive social development. Achieving sustainable economic growth requires maintaining a balance that addresses global challenges while considering the environmental impact and the environment's capacity to absorb such impacts. As a result, the green economy is considered a potential guide for economic recovery [15].

The growth of Indonesia's economy is closely tied to industrialization, with the industrial sector playing a significant role in driving economic progress. Data from the Central Statistics Agency highlights the industrial sector's contribution to the country's economic development. Nevertheless, the rapid expansion of industries, particularly in mining sectors such as oil and coal, has had adverse effects on the environment, including the deterioration of air and soil quality [26]. Additionally, environmental degradation is evident in Indonesia's forests due to deforestation. This forest damage is supported by data from the Ministry of Environment and Forestry (KLHK), which reported handling cases of forest fires in 2015 involving over 200 companies, including those in the palm oil and rubber plantation industries, among others [17][18][21][24].

The persistent environmental degradation has driven the government to explore various solutions to address the problem [20]. The Indonesian government's strategy includes sustainable environmental management and the application of green economy principles across different sectors [23]. The green economy is an economic

approach that aims to promote equality, improve social welfare, and mitigate the environmental risks associated with economic activities [23]. Therefore, it can be inferred that the green economy is a concept capable of fostering economic growth while maintaining environmental sustainability [16].

This research will explore the interplay between the green economy and Indonesia's economic growth, focusing on how this approach can support sustainable development in the country. It will also examine Indonesia's potential and the challenges it faces in adopting a green economy to stimulate economic growth. Key issues addressed in this study include the contribution of the green economy and its components to Indonesia's economic performance.

2 Literature Review

2.1 Green Economy

The Green Economy refers to economic activities aimed at improving long-term human well-being and social equity through the production, distribution, and consumption of goods and services, while significantly minimizing ecological and environmental harm [26]. According to the United Nations Environment Programme, the green economy is defined as economic activities that are low in carbon emissions, utilize resources efficiently, and are inclusive of all social groups. This approach can stimulate innovation and investment, driving progress towards sustainable development [27].

The Green Economy is built upon three fundamental pillars: the environment, society, and the economy. It has gained global prominence [29] due to the growing scale of economic activities and the expanding human population, which have led to increased exploitation of energy resources, especially non-renewable ones, contributing to environmental degradation and higher greenhouse gas emissions. The deteriorating state of the environment has prompted the adoption of the Green Economy as a strategy for economic progress that does not compromise environmental sustainability [28].

The green economy is structured around three core pillars: economic, social, and environmental. Each of these components is crucial for the success of the green economy, as they help mitigate environmental damage caused by unsustainable economic practices. Additionally, the green economy aims to achieve equitable and sustainable economic growth. This study seeks to evaluate whether the implementation of green economy principles in Indonesia has been effective by analyzing these three pillars [35].

The green economy concept has garnered significant international attention, particularly after the 2012 United Nations Conference on Sustainable Development [35]. This attention aligns with the growing concerns about global economic and environmental challenges, including climate change, biodiversity loss, land degradation, and the increasing scarcity of natural resources. The United Nations Environment Programme (UNEP) defines a green economy as an economic system that enhances human well-being and social equity, while substantially reducing environmental risks and ecological scarcities. In essence, a green economy is

characterized by low carbon emissions, efficient use of resources, and social inclusiveness [34].

2.2 Indonesian Economy

Economic growth is a critical factor in shaping economic policies within a country or region. It is often seen as a means to provide greater opportunities for economic equity across a nation or area [37]. Typically, economic growth is measured quantitatively using indicators such as Gross Domestic Product (GDP) or Output per Capita [37]. GDP represents the total market value of all final goods and services produced in an economic process over a specific period, generally annually, and is used to address development challenges within a country [36].

As a developing nation, Indonesia continues to pursue structured and gradual development while focusing on equity and stability. Economists define economic growth as an increase in GDP, regardless of whether this growth outpaces population growth or involves changes in the economic structure. It serves as a crucial indicator for assessing the success of development efforts and the overall economic health of a country or region [36]. Continuous economic growth can drive a country or region's progress, leading to sustained improvements in the living standards of its people [43].

A region's development success can be evaluated through its economic growth rate, reflected in the change of its Gross Regional Domestic Product (GRDP) at constant prices (PDRB ADHK) [42]. A higher economic growth rate, indicated by an increasing GRDP, is seen as a sign of successful regional development and a robust economy, whereas a lower rate suggests the opposite [40].

In macroeconomic theory, the analysis of economic growth encompasses several key factors influencing economic activities, such as inflation, unemployment, and other variables that impact government policy responses to these issues [41]. Economic growth is closely tied to fiscal development, which includes increased production of industrial goods and services, expansion of public facilities and infrastructure, and overall growth in economic activities [44].

Therefore, a nation's economy can be considered to grow or develop when there is an increase in real output [38]. Economists have long sought to comprehend the dynamics of economic growth within a society. This effort has led to the development of various theories of economic growth, many of which remain relevant today. According to classical economists, four main factors influence economic growth: the availability of capital goods, population size, natural resources and land area, and technological advancements [38].

2.3 Synergy of Green Economy in Indonesia's Economy

Green economic growth is an approach aimed at achieving multiple goals simultaneously, bringing Indonesia closer to genuine sustainable development. This approach seeks to boost GDP while ensuring a sustainable and equitably distributed standard of living [49]. It focuses on minimizing pollution, developing clean and resilient infrastructure, utilizing resources more efficiently, and appreciating natural assets that have historically supported economic prosperity but are often overlooked

in traditional economic calculations. These natural assets ultimately play a crucial role in determining human well-being [47].

If Indonesia's future economic growth lacks environmental consideration, it risks undermining future prosperity. In contrast, green economic growth emphasizes the quality of growth, achieving economic prosperity with positive social impacts while reducing stress on Indonesia's environment and natural resources [47]. Additionally, this approach can help secure food, energy, and maritime needs. Although transitioning to green economic growth may involve short-term costs, the long-term benefits are likely to outweigh these costs. As such, the trade-off between environmental sustainability and economic development is not inevitable. In fact, a green economy can drive progress on various social goals, such as promoting more inclusive growth, without hindering the creation of prosperity or jobs. However, achieving this vision requires well-designed policies and active participation from the business sector [47].

In terms of national development, integrating and applying sustainable development principles is essential, especially since Indonesia is among the United Nations member states that adopted the UN General Assembly Resolution A/RES/70/1, "Transforming Our World: The 2030 Agenda for Sustainable Development," in 2015 [4]. As stated in the 1987 Brundtland Report, sustainable development is about meeting current needs without compromising the ability of future generations to meet theirs. One of the key challenges in achieving sustainable development lies in balancing the restoration of environmental health with economic growth and social justice. Economic progress does not inherently conflict with environmental protection; rather, both can be mutually supportive [4].

Zhang & He argue that environmental regulations play a vital role in promoting green innovation, as long-term sustainable innovation is only possible when effectively governed at both local and global levels [53]. Similarly, Yang et al. highlight the importance of government efforts to enforce regulations through incentives and penalties [52]. Therefore, regulations must facilitate the development and adoption of new energy solutions. Jolink & Niesten emphasize the role of collaboration between domestic and international companies in advancing toward a sustainable future [46]. Such partnerships can foster sustainable governance, especially in building green industries. Kheder & Zugravu further note that robust environmental regulations are crucial for penalizing companies that fail to comply with environmental standards and for promoting greater green economic efficiency [49].

Presidential Regulation No. 59 of 2017 on the Implementation of Sustainable Development Goals (SDGs) [51] represents Indonesia's commitment to the global SDGs agenda. According to Article 2, paragraph 2 of this regulation, the SDGs aim to enhance the sustainable economic well-being of society. This includes maintaining social cohesion, adhering to environmental standards, fostering inclusive development, and implementing governance practices that ensure the quality of life improves across generations [4].

2.4 Previous Research

Previous studies on the green economy include one by Sabina Syaharani Nurseha (2024), which explores the government's role in accelerating the transition to a green economy in response to the demands of younger generations. It also addresses the challenges in achieving an inclusive and sustainable green economy, the effects of this transition on job creation, and the enhancement of community welfare. Employing a library research approach, the study analyzes various sources such as books, journals, and legislation. Through qualitative analysis, the study provides a deeper understanding of the urgency of transitioning to a green economy and its impact on sustainable development. The research highlights the necessity of collaboration between the government, society, and private sector in achieving sustainable development goals through the green economy.

Additionally, a study by Muhamad Syahwildan, Indra Setiawan, and Fiqih Maria Rabiatal Hariroh (2023) examines the influence of the green economy on the environment and society, particularly in industrial zones like Pasirsari Village. It investigates the link between economic growth and its negative environmental impacts, such as pollution and depletion of natural resources. This study used surveys in Pasirsari Village to identify environmental issues and also featured a national seminar held in both online and offline formats to share insights about the green economy. The seminar brought together speakers from diverse backgrounds, which provided a wide range of perspectives. The results indicated that increasing public awareness of green economy principles is essential, and that active community involvement is key to the success of green economy initiatives.

Another study conducted by Djihadul Mubarak (2023) focuses on applying green economy concepts as a means to achieve sustainable economic development. The research examines various green economy practices and their effects on social, economic, and environmental growth using a qualitative descriptive approach. Data were collected through literature reviews of books and journals and analyzed using Miles and Huberman's model, which involves data reduction, data presentation, and drawing conclusions. The study found that the green economy can achieve five main goals within the green growth framework: sustained economic growth, inclusive and equitable development, social, economic, and environmental resilience, healthy and productive ecosystems, and reduced greenhouse gas emissions.

Gusti Firmansah (2023) also investigated the green economy, focusing on its application within the context of sustainable development in Indonesia. The study examined how environmentally friendly economic practices can address social, economic, and environmental challenges while contributing to the achievement of the Sustainable Development Goals (SDGs) by 2030. Utilizing a qualitative analysis method, the research involved reviewing literature on sustainable development concepts and green economy-supporting regulations. Case studies highlighted policies and initiatives in Indonesia that support the green economy. Findings revealed that Indonesia has implemented several regulations to promote environmental protection and sustainable development, such as the Environmental Protection and Management Act. Despite progress, further efforts are needed to overcome challenges in the green economy's implementation.

Lastly, research by Nurmala Aprilia and Ersi Sisdianto (2024) explored the impacts of the global economic crisis on both people and the environment. In response to these significant consequences, the green economy emerged as a solution to mitigate these challenges without harming the environment. The study aimed to understand how the green economy contributes to economic recovery, using a qualitative descriptive method and a library research approach. The findings indicate that the green economy can facilitate economic recovery. By promoting innovative and authentic green economic strategies, the study suggests that a new economic model centered on sustainability and social equity can be developed.

3 Research Method

This research employs a qualitative descriptive method. As noted by Agustin (2023), descriptive research is useful for explaining, describing, and analyzing various current issues or phenomena. The selection of a qualitative approach ensures a thorough research process, as it requires the researcher to interpret the gathered data [55]. Data for this study is collected from secondary sources through a literature review utilizing references such as books, research journals, and reputable websites [54].

The analysis of qualitative data follows the Miles and Huberman model, consisting of four stages: data collection, data reduction, data presentation, and conclusion drawing [56]. Data reduction involves filtering and selecting information deemed essential and relevant to the research topic. Data presentation organizes the reduced data into narrative text, including interpretation based on the relevant theories. The final stage, drawing conclusions, synthesizes the research findings to address the research objectives, potentially revealing new insights discovered during the study [56].

4 Result and Discussion

4.1 The Impact of Green Economy on Indonesia's Economy



Fig. 1. The Impact of the Green Economy on the Indonesian Economy 2023, Center of Economics and Law Studies (CELIOS) and Greenpeace Indonesia (2024).

Economic development that focuses on transitioning to cleaner energy sources and moving away from extractive activities like coal mining and fossil fuels can yield substantial economic gains. Shifting bank financing away from the mining and quarrying sectors to more sustainable investments is a key aspect of this transition. One strategy to expedite this shift is revising the green taxonomy to exclude the mining sector and coal-fired power plant projects from green or transitional categories. Simultaneously, implementing supportive monetary policies, such as setting a minimum green financing ratio, providing greater monetary incentives, and encouraging Loan to Value (LTV) adjustments for projects that reduce carbon emissions, can significantly boost Indonesia's economy. This approach is projected to generate an increase in aggregate economic output of IDR 4,376 trillion over a decade, driven by green investments totaling IDR 1,300 trillion. The transition to a non-extractive economy thus has a multiplier effect greater than three times (Center of Economics and Law Studies (CELIOS) and Greenpeace Indonesia, 2024) [2].

This more than threefold increase in output could contribute an additional IDR 2,943 trillion to Indonesia's gross domestic product (GDP) over 10 years, equivalent to 14.3% of the 2024 GDP. Compared to the mining and quarrying sector, which contributes 12.2%, the shift towards a sustainable economy holds the potential to make a larger contribution to Indonesia's GDP. The economic activities and their resulting multiplier effects from ongoing programs are key drivers of this output (Center of Economics and Law Studies (CELIOS) and Greenpeace Indonesia, 2024) [2].

The shift also leads to a boost in income for domestic businesses, with a projected increase of IDR 1,517 trillion over the 10-year transition. This rise in income is driven by both direct supplies for renewable energy programs and the indirect support of businesses like food and telecommunications services. In contrast, maintaining the current extractive-based economic structure would yield aggregated profits of IDR 1,152 trillion, which is IDR 365 trillion less than what could be achieved through transitioning to a green economy (Center of Economics and Law Studies (CELIOS) and Greenpeace Indonesia, 2024) [2].

Worker income is also expected to increase by IDR 902.2 trillion, driven by direct activities such as the construction of Renewable Energy Power Plants (EBT) and other related sectors. This income growth extends to the agricultural sector, where improvements make it more appealing to younger workers, as well as to the manufacturing sector, which could see a boost of IDR 148.9 trillion beyond business-as-usual levels due to the rising demand for new industries like renewable energy components, recycling, and other environmentally sustainable industries (Center of Economics and Law Studies (CELIOS) and Greenpeace Indonesia, 2024) [2].

Furthermore, the shift to a green economy is expected to create up to 19.4 million new jobs over the next decade. These jobs are generated directly through green economic activities and through related sectors. The largest job growth is anticipated in agriculture, forestry, and fisheries, contributing 3.9 million jobs. During the transition, land that might have been allocated for mining can be preserved through initiatives like social forestry or cooperatives for forest product utilization. Coastal areas at risk from mining activities could benefit from sustainable fisheries, leading to better catches and, consequently, increased employment opportunities for local

communities (Center of Economics and Law Studies (CELIOS) and Greenpeace Indonesia, 2024) [2].

4.2 Green Economy in the environmental aspect

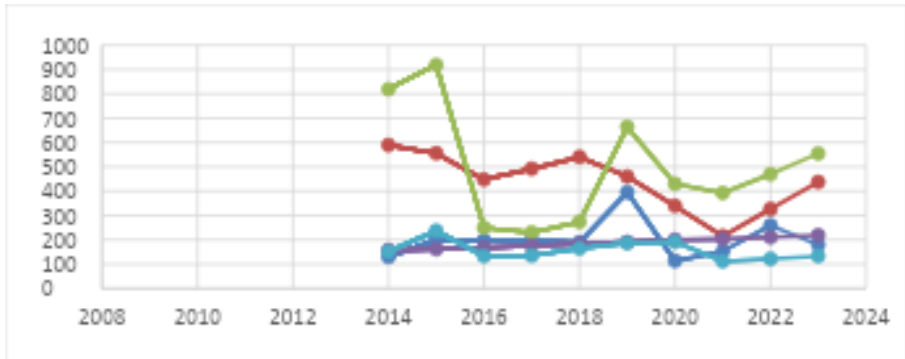


Fig. 2. Green Economy in the environmental aspect 2014-2023, Performance Report of the Source: Ministry of Environment and Forestry (KLHK), 2023.

The graph illustrates that the environmental dimension of the Green Economy has seen progress across several criteria, including the evaluation of forest rehabilitation control areas, water efficiency, energy efficiency, emission reduction, and greenhouse gas (GHG) emission inventories. These criteria have evolved to emphasize continuous improvement, even adapting to economic shifts. Such indicators are anticipated to encourage companies to engage actively in sustainable environmental development, rather than solely focusing on profit.

With continuous improvements and monitoring over the years, there has been a noticeable rise in both the number of participating companies and their rankings. This trend suggests that an increasing number of businesses are recognizing the importance of contributing to environmental stewardship. By adopting strategies to reduce energy consumption, cut down on waste, and promote the use of sustainable resources, the business sector can positively influence the environment. The contribution of environmental factors to Indonesia's green economy is evident in the growing role of businesses in environmental advancements from 2014 to 2023.

4.3 Green Economy in the economic aspect



Fig. 3. Green Economy in Economic Aspects 2014-2023, Central Bureau of Statistics Indonesia (BPS), 2023.

The graph highlights that the economic aspect of the Green Economy is now focused on achieving sustainable economic growth while taking environmental factors into account. This approach is particularly relevant for Indonesia, given its environmental challenges and the need to enhance the well-being of its population. Investments in green economy sectors, such as renewable energy and sustainable agriculture, influence the Gross Domestic Product (GDP), which measures the total value of all goods and services produced within a country over a specific period. These investments can boost productivity and efficiency, thereby positively impacting Indonesia's economy. Sustainability-oriented sectors, like renewable energy, have the potential to create new employment opportunities, helping to reduce unemployment rates in the country. In terms of economic benefits, the green economy provides opportunities to increase GDP, attract investment, and decrease unemployment levels.

4.4 Green Economy in Social Aspects

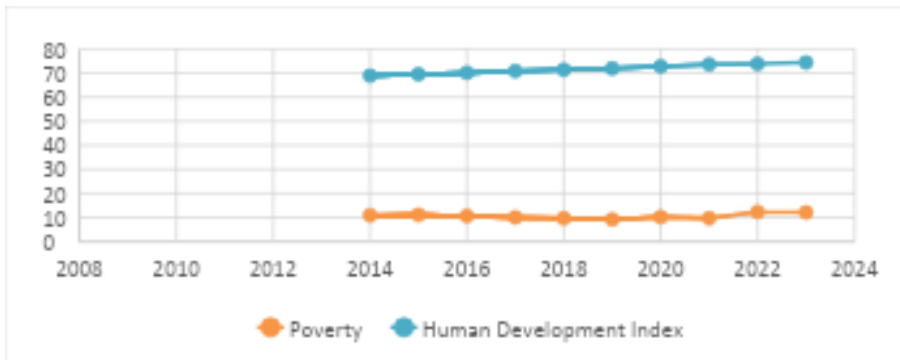


Fig. 4. Green Economy in Social Aspects 2014-2023, Central Bureau of Statistics Indonesia (BPS), 2023.

The graph indicates that the social dimension of the Green Economy is currently centered on reducing poverty. The goal of the green economy is to create sustainable job opportunities and alleviate poverty. If the graph shows a decrease in the poverty rate, it may suggest that green economy initiatives have effectively provided improved economic opportunities, particularly for communities in the most vulnerable regions. By prioritizing sustainability, the green economy improves community access to essential resources such as clean water, renewable energy, and food, which contributes to poverty alleviation.

The Human Development Index (HDI) evaluates a country's social and economic well-being based on three key aspects: health (life expectancy), education (literacy rate and years of schooling), and living standards (GDP per capita). If the graph shows a rise in the HDI alongside a reduction in poverty levels, it suggests that green economy initiatives are not only generating employment but also enhancing the quality of life through improvements in education and healthcare. A reduction in poverty, coupled with an increase in the HDI, indicates that communities are benefiting from more inclusive economic growth. Green economy programs can support advancements in education and health, thereby contributing to an improved Human Development Index.

4.5 Challenges in the Implementation of Green Economy in Indonesia

The implementation of the Green Economy in Indonesia faces numerous challenges and obstacles in achieving sustainable green economic growth. These challenges include the undervaluation of natural resources and environmental services, investment patterns that remain rooted in traditional models like the expansion of resource-intensive activities, as well as institutional barriers and debates around defining new economic models that can foster prosperity. Challenges in realizing green economic growth also involve managing the transition process towards a new economic model, which may temporarily disadvantage certain groups while benefiting others. Indonesia's past experiences with economic reforms demonstrate that, in the long run, the benefits can outweigh the transition costs, as the new growth model offers significant opportunities for businesses and society as a whole.

The implementation of the Green Economy in Indonesia encounters several major challenges. Below are some key challenges and proposed solutions:

1. Dependence on Natural Resources

Indonesia's economy still heavily relies on the exploitation of resources like coal, oil, gas, and forestry products. This reliance is at odds with the green economy's principles of sustainability and carbon reduction. Solution: Diversify the economy by strengthening eco-friendly sectors such as renewable energy (solar, wind, hydro, geothermal). Foster the growth of green industries by offering incentives for companies that invest in green technologies, thereby reducing reliance on non-renewable resources.

2. Inconsistent and Conflicting Policies

At times, government policies related to economic growth and environmental protection contradict each other, hindering the effective implementation of green economy strategies. Solution: Develop clear and consistent environmental regulations that align with economic development goals. Ensure policy coherence between central and local governments so that all levels of government share the same vision for a green economy.

3. Limited Funding

Green projects often require substantial initial investment, and many companies or local governments face challenges in securing funds for projects like renewable energy, waste management, and nature conservation. Solution: Establish green financing mechanisms, such as green bonds or public-private partnerships, to raise funds for sustainable initiatives. Engage with international partners for financing and technology transfers through cooperation with global institutions that support the shift to clean energy.

4. Low Public Awareness and Engagement

Many individuals and businesses in Indonesia lack a deep understanding of the advantages of a green economy and are not fully aware of the urgency to change their consumption or production habits. Solution: Conduct continuous education and awareness campaigns to highlight the long-term benefits of the green economy. Provide incentives to communities that adopt eco-friendly practices, such as using renewable energy or recycling, and to companies that comply with green standards.

5. Inadequate Infrastructure and Technology

Much of Indonesia's infrastructure is not yet conducive to the development of a green economy. For instance, renewable energy networks remain limited, and efficient waste management technologies are not widely adopted. Solution: Invest in developing green infrastructure, such as renewable energy grids and advanced waste processing technologies. Strengthen research and innovation capabilities by collaborating with universities, research institutes, and industries to develop green technology solutions.

6. Climate Change and Natural Disasters

Indonesia is particularly vulnerable to the impacts of climate change, including floods, droughts, and rising sea levels, which can damage infrastructure and strain the natural resources required for a green economy. Solution: Implement climate change mitigation and adaptation strategies by building climate resilience through disaster risk management, reforestation, and infrastructure that can withstand natural disasters. Integrate sustainability principles into development planning, especially in sectors that are sensitive to climate change.

7. Coordination Among Stakeholders

A successful green economy transition requires collaboration between the government, private sector, non-governmental organizations, and communities.

However, coordination among these stakeholders is often slow and lacks synergy. Solution: Enhance stakeholder dialogue through multi-stakeholder forums focused on the green agenda. Develop strategic partnerships between government and private sector actors to foster collaborative implementation of green economy policies.

Overcoming these challenges requires a combination of sound policies, adequate investment, and active engagement from all stakeholders. Strong regulations, public education, and the right technological and infrastructure support can facilitate Indonesia's transition to a more sustainable, eco-friendly, and climate-resilient economy.

Should Indonesia continue on a path of non-environmentally friendly economic growth, current progress could eventually undermine future prosperity. In contrast, a focus on green economic growth emphasizes the quality of economic development, aiming to achieve prosperity while delivering positive social impacts and reducing pressure on Indonesia's environment and natural assets. Green economic growth can also enhance food, energy, and maritime security. Although transitioning to green economic growth may involve costs, especially in the short term, these costs will likely be outweighed by the benefits. Thus, achieving a balance between environmental sustainability and economic progress is possible. Ultimately, the pursuit of green economic growth can drive progress toward broader social goals, including more inclusive growth, without sacrificing job creation or prosperity. However, achieving these outcomes requires the implementation of the right policies and active engagement from the business sector.

5 Conclusion

5.1 Summary

This research highlights the successful realization of a green economy based on a study by Greenpeace Indonesia and the Center of Economics and Law Studies (2024). The findings demonstrate that transitioning to a green economy in Indonesia offers significantly greater economic advantages compared to maintaining an extractive-based economy, such as mining and fossil fuel industries. By redirecting investments from extractive sectors to more sustainable areas like renewable energy, agriculture, and eco-friendly industries, Indonesia has the potential to generate a cumulative economic output of IDR 4.376 trillion over the next decade. This output stems from green investments totaling IDR 1.3 trillion, with a multiplier effect exceeding threefold.

The shift also leads to a GDP increase of IDR 2.943 trillion, representing 14.3% of GDP in 2024, surpassing the mining sector's 12.2% contribution. Additionally, entrepreneurs' and workers' incomes are expected to rise substantially, reaching IDR 1.517 trillion and IDR 902.2 trillion, respectively. Employment opportunities will also expand, with the creation of 19.4 million new jobs, primarily in agriculture, forestry, and fisheries.

In summary, the transition toward a green economy brings greater and more sustainable economic benefits, improves the quality of life by boosting employment and income, and promotes environmental conservation. Analyzing the development of

the three pillars of the Green Economy—environmental, economic, and social—shows that this transformation has a positive impact in fostering sustainable green economic synergy across various sectors of Indonesia's economy:

1. Environmental Aspect:

The conclusion drawn from the study on Realizing Sustainable Green Economy Synergy in Indonesia's Economy, focusing on the environmental aspect between 2014 and 2023, reveals a significant shift in corporate commitments toward environmental sustainability. Companies are becoming more aware of their responsibility in environmental management, moving beyond a sole focus on profit. Key indicators such as forest rehabilitation, water and energy efficiency, emission reductions, and greenhouse gas (GHG) inventories have become essential benchmarks for evaluating a company's contribution to sustainable environmental development.

The growing number of companies adopting sustainability strategies and their improved rankings demonstrate that many businesses are aligning with initiatives aimed at reducing energy use, cutting waste, and promoting the adoption of more sustainable resources. These continuous efforts in environmental improvement and monitoring have had a positive impact, with the corporate sector's contributions to environmental sustainability increasing steadily each year. In summary, companies engaged in sustainable environmental development not only boost their reputations but also contribute to Indonesia's economy by adopting more environmentally responsible and sustainable practices.

2. Economic Aspect:

The findings from the study on Realizing Sustainable Green Economy Synergy in Indonesia's Economy, focusing on the economic aspect from 2014 to 2023, reveal that the green economy presents significant opportunities for sustainable economic growth in Indonesia. In response to environmental challenges, the shift toward sectors such as renewable energy and sustainable agriculture can enhance productivity and economic efficiency. Investments in the green economy not only contribute to an increase in Indonesia's Gross Domestic Product (GDP) but also attract more domestic and foreign investments into sustainable industries. Furthermore, these sectors have the potential to generate new jobs, reduce unemployment, and improve overall societal welfare. Thus, the green economy delivers a dual benefit by promoting both economic growth and environmental sustainability.

3. Social Aspect:

The analysis of Realizing Sustainable Green Economy Synergy in Indonesia's Economy, focusing on the social aspect from 2014 to 2023, highlights the significant role green economy initiatives play in reducing poverty and enhancing social welfare in Indonesia. By creating sustainable employment opportunities, especially in sectors like renewable energy and agriculture, the green economy offers improved economic prospects for communities, particularly those in vulnerable regions. Additionally, it helps improve access to essential resources such as clean water, renewable energy, and food, contributing further to poverty reduction. This positive impact is reflected in the rising Human Development Index, indicating progress in health, education, and

living standards. The combined effects of poverty reduction and improved human development demonstrate that the green economy fosters inclusive and sustainable growth, benefiting society as a whole.

However, the implementation of a green economy in Indonesia faces several challenges, including reliance on natural resources, inconsistent policies, limited funding, low public awareness, and insufficient infrastructure and technology. These obstacles are compounded by the effects of climate change and a lack of coordination among stakeholders. Nevertheless, these issues can be addressed through targeted policies, increased investment, and active participation from the government, private sector, and public.

Key solutions include diversifying the economy into more environmentally friendly sectors, strengthening environmental regulations, developing green financing mechanisms, and enhancing public education and green infrastructure. Through collaboration among all stakeholders and strong policy backing, Indonesia's transition to a green economy will not only promote high-quality economic growth but also improve social welfare, preserve natural resources, and bolster resilience to climate change.

While the transition process involves certain costs, the long-term advantages—such as enhanced food, energy, and maritime security—will far outweigh these costs. Thus, rather than being a barrier to prosperity and job creation, the green economy represents a crucial step toward more inclusive and sustainable social progress for Indonesia's future.

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