



Indonesia's Green Economy Transition: Potentials, Challenges, and Strategies for Sustainable Development

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Abstract

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This study examines Indonesia's transition towards a green economy as a pathway to achieve sustainable development. Using a library research method on literature from the past five years, it finds that the green economy offers strong potential to drive economic growth while protecting the environment. Such potential is particularly evident in renewable energy development, waste management, and community empowerment. However, implementation still faces key challenges, including low public awareness, limited infrastructure, inconsistent regulations, and the dominance of commercial interests. The discussion highlights that success in the green transition requires strong synergy among government policies, private sector investment, civil society participation, and academic support. Cross-sector collaboration is believed to be the key to overcoming existing obstacles and strengthening Indonesia's global competitiveness. Thus, the green economy can serve as the main driver of sustainable development that is inclusive, adaptive, and equitable, while ensuring social welfare and environmental sustainability for future generations.



1. Introduction

Today's global developments show how big the challenges the world faces in maintaining a balance between economic development, environmental sustainability, and social justice. The problems of climate change, ecosystem degradation, and increased pollution due to dependence on fossil energy have had a significant impact on the quality of human life. Indonesia, as a country with abundant natural resources, faces a serious dilemma: how to maintain economic growth without sacrificing environmental sustainability. High dependence on conventional energy resources such as coal and petroleum remains a major obstacle in the transition to environmentally friendly development.¹ The urgency of the transition towards a green economy is increasingly evident in the global and national contexts. This concept not only offers technical solutions to reduce carbon emissions, but also provides a strategic framework in achieving sustainable development goals.

The green economy is seen as a “triple-win” approach that is able to integrate economic growth, social inclusion, and environmental protection.² From a long-term development perspective, the green economy is expected to create new jobs, improve people's quality of life, while maintaining the carrying capacity of the ecosystem. The link between the green economy and the Sustainable Development Goals (SDGs) adds to the relevance of this theme. The SDGs mandate that development must include economic, social, and environmental dimensions in a

¹ Khoirunisa Wahida and Hoirul Uyun. “Tatanan Indonesia dalam Mewujudkan Pertumbuhan Ekonomi Berkelanjutan melalui Green Economy.” *Harmoni: Jurnal Ilmu Komunikasi dan Sosial* 1, no. 2 (2023): 14–26.

² Hanneke Kruize, Nina van Der Vliet, Brigit Staatsen, Ruth Bell, Aline Chiabai, Gabriel Muiños, Sahran Higgins et al. “Urban green space: creating a triple win for environmental sustainability, health, and health equity through behavior change.” *International journal of environmental research and public health* 16, no. 22 (2019): 4403.

balanced manner. In this context, the green economy serves as a catalyst for the achievement of the SDGs, for example through reducing dependence on fossil fuels, developing renewable energy, and more efficient waste management.³ Furthermore, changes in people's mindsets and behaviors are also important requirements. Environmentally friendly consumption practices, recycling habits, and energy-efficient lifestyles are integral parts of the transformation towards a sustainable society.⁴

Indonesia has strategic potential in accelerating the transition to a green economy. The availability of renewable energy resources ranging from solar, wind, water, to biomass can be a great capital for energy diversification. The Government of Indonesia has launched various policies, such as the Master Plan for the Acceleration and Expansion of Indonesia's Economic Development (*Masterplan Percepatan dan Perluasan Pembangunan Ekonomi Indonesia/ MP3EI*), the National Green Economy Action Plan, and the commitment to the Paris Agreement. In addition, Indonesia is also active in international forums such as the Global Green Growth Institute (GGGI) and the Partnership for Action on the Green Economy (PAGE) which play a role in strengthening the global network of sustainable development.⁵

³ Mieczysław Adamowicz. "Green deal, green growth and green economy as a means of support for attaining the sustainable development goals." *Sustainability* 14, no. 10 (2022): 5901.

⁴ Abdulrahman Altassan. "Sustainable Integration of Solar Energy, Behavior Change, and Recycling Practices in Educational Institutions: A Holistic Framework For Environmental Conservation And Quality Education." *Sustainability* 15, no. 20 (2023): 15157.

⁵ Hanneke Kruize, Nina van Der Vliet, Brigit Staatsen, Ruth Bell, Aline Chiabai, Gabriel Muiños, Sahran Higgins et al. "Urban green space: creating a triple win for environmental sustainability, health, and health equity through behavior change." *International journal of environmental research and public health* 16, no. 22 (2019): 4403.

However, the realization of the green economy concept in Indonesia still faces various challenges. Several studies highlight low public awareness of the importance of the green economy and the limitations of infrastructure that supports the development of renewable energy.⁶ On the other hand, the dominance of commercial interests that pursue short-term profits often ignores environmental aspects. Existing regulations and policies are also considered inconsistent in providing incentives for green investment or enforcing sanctions for environmental violations.⁷

In addition, external factors such as the COVID-19 pandemic also have a significant impact. This crisis exposes the vulnerability of conventional economic systems that depend on the exploitation of natural resources. However, these conditions also open up opportunities to encourage a greener recovery. Recent studies emphasize that the transition to a post-pandemic green economy can strengthen economic resilience while accelerating the achievement of the sustainable development agenda.⁸ With these challenges, the transition to a green economy requires close collaboration between the government, the private sector, civil society, and academia. This synergy is important to address structural barriers, raise public awareness, and strengthen regulations that favor sustainability. The long-term hope is that the implementation of the green economy in Indonesia can be a way to create

⁶ R. Masdar, R. Amborowatie, L. Meldawaty, M. I. Mursali, and N. Naida. "Implementation of a Sustainable Green Economy in Indonesia: A Literature Review." In *IOP Conference Series: Earth and Environmental Science*, 1075, no. 1 (2022): 012056.

⁷ Arien Arianti Gunawan, Jose Bloemer, Allard CR van Riel, and Caroline Essers. "Institutional Barriers and Facilitators of Sustainability for Indonesian Batik SMEs: A Policy Agenda." *Sustainability* 14, no. 14 (2022): 8772.

⁸ Berly Martawardaya, Ari Rakatama, Dhenny Yuartha Junifta, and Dinda Ayu Maharani. "Green Economy Post COVID-19: Insights from Indonesia." *Development in Practice* 32, no. 1 (2022): 98-106.

inclusive development, improve community welfare, reduce emissions, and protect the environment for future generations.⁹

2. Literature Review

Studies on the green economy in Indonesia show that the transition to sustainable development has become a strategic topic in recent years. The latest literature confirms that the implementation of the green economy is not only related to the environmental dimension, but also closely related to policies, regulations, and socio-economic aspects. Masdar et al.¹⁰ through a literature review concluded that the implementation of a green economy requires a strong institutional foundation, consistent policy support, and wider community involvement. They emphasized that without the active participation of various actors, efforts towards sustainable development will be difficult to achieve. In addition, research by Martawardaya et al.¹¹ highlights the context of global crises such as the COVID-19 pandemic which shows the fragility of economic systems based on the exploitation of natural resources. In their findings, the green economy is seen as a strategic solution that can increase economic resilience while accelerating post-crisis recovery. Green recovery is considered to be able to reduce structural vulnerabilities and open up opportunities for more inclusive and sustainable job creation.

⁹ Muhamad Syahwildan, Indra Setiawan, and Fiqih Maria Rabiatal Hariroh. "Peran Green Economy Terhadap Pembangunan Berkelanjutan di Indonesia." *Lentera Pengabdian* 1, no. 02 (2023): 163-171.

¹⁰ R. Masdar, R. Amborowatie, L. Meldawaty, M. I. Mursali, and N. Naida. "Implementation of a Sustainable Green Economy in Indonesia: A Literature Review." In *IOP Conference Series: Earth and Environmental Science*, 1075, no. 1 (2022): 012056.

¹¹ Berly Martawardaya, Ari Rakatama, Dhenny Yuartha Junifta, and Dinda Ayu Maharani. "Green Economy Post COVID-19: Insights from Indonesia." *Development in Practice* 32, no. 1 (2022): 98-106.

Another study by Swainson and Mahanty¹² emphasizes the importance of understanding the green economy through a political-economic lens. The experience of the Aceh Green initiative shows that although there is a commitment to implement sustainable development, its realization is highly dependent on the dynamics of power, regulation, and support from local actors. This shows that the concept of green economy cannot be separated from the local socio-political context. From the existing literature, it can be seen that the direction of research on the green economy in Indonesia focuses on three main aspects: first, the need for consistent public policies; second, the need for adaptive strategies in dealing with crises; and third, the importance of integrating socio-political factors in sustainable development practices. Thus, these studies provide a strong theoretical foothold to analyze the prospects and challenges of green economy implementation in Indonesia.

3. Methods

This research uses the library research method to examine and analyze the concept of green economy and its relevance to sustainable development in Indonesia. The literature study method was chosen because it allows researchers to gain a comprehensive understanding from various scientific sources, both in the form of journal articles, books, research reports, and policy documents published in the last five years. By examining these sources, this study seeks to explore in depth

¹² Luke Swainson and Sango Mahanty. "Green Economy Meets Political Economy: Lessons from the 'Aceh Green' Initiative, Indonesia." *Global environmental change* 53 (2018): 286-295.

the dynamics, opportunities, and challenges in the implementation of the green economy in Indonesia. The research process begins with the literature collection stage. Source searches are carried out through academic databases such as Google Scholar, ResearchGate and Elsevier, using keywords such as green economy, sustainable development, Indonesia, and renewable energy policy.

The literature inclusion criteria used are publications in the last five years, relevance to the Indonesian context, and direct relevance to the theme of sustainable development. From this process, several main articles were obtained that were used as core references, coupled with supporting documents in the form of national policies such as the National Green Economy Action Plan and Indonesia's commitment to the Paris Agreement. The next stage is content analysis. This analysis is carried out by categorizing the findings of the literature based on major themes, namely: (1) green economy policies and regulations in Indonesia, (2) potential resources and transition opportunities, (3) implementation challenges, and (4) socio-economic implications. This categorization aims to make it easier to identify patterns, similarities, and differences from various studies. Furthermore, the findings are interpreted to formulate broader conclusions about the position and direction of the green economy in Indonesia's development.

To ensure the validity of the data, this study uses a source triangulation technique, which is by comparing the results of studies from various academic literature with government policy documents and reports from international institutions. This is done to reduce bias and ensure compatibility between theoretical concepts and implementation in the field. In addition, the researcher also refers to a

critical analysis approach to understand the relationship between structural, economic, and political factors that influence green economy practices in Indonesia. With this literature study approach, the research is expected to make a theoretical and practical contribution. Theoretically, the research enriches academic discourse on the integration of the green economy with sustainable development. Practically, the results of the research can be a reference for policymakers, business actors, and civil society in strengthening the transition strategy towards environmentally sound development.

4. Results

4.1. Concept and Implementation of Green Economy in Indonesia

The concept of green economy in Indonesia developed in response to the need to balance economic development with environmental sustainability and social inclusion. A green economy is defined as a development model that integrates social, economic, and ecological dimensions within a single policy framework. This approach is expected to be able to create sustainable economic growth without sacrificing environmental carrying capacity and social justice for the community.¹³ The implementation of this concept in Indonesia is marked by a number of strategic policies. One of them is the National Green Economy Action Plan, which emphasizes energy efficiency, renewable energy development, and sustainable waste management.

¹³ Khoirunisa Wahida and Hoiril Uyun. "Tatanan Indonesia dalam Mewujudkan Pertumbuhan Ekonomi Berkelanjutan melalui Green Economy." *Harmoni: Jurnal Ilmu Komunikasi dan Sosial* 1, no. 2 (2023): 14–26.

Research by Masdar et al.¹⁴ shows that the implementation of the green economy requires consistent policy commitment and support from various stakeholders. They emphasized that cross-sector coordination is an important prerequisite for green initiatives to run effectively. In addition, efforts towards a green economy are also related to the global development agenda. The relationship between the green economy and the Sustainable Development Goals (SDGs) makes Indonesia have a moral and strategic obligation to adjust its policies to international targets. Adamowicz¹⁵ emphasized that the integration of the green economy with the SDGs can accelerate the achievement of emission reduction targets, increase access to clean energy, and create inclusive jobs. In this context, the implementation of the green economy in Indonesia is not only a national policy, but also part of a global commitment.

On the other hand, political-economic dynamics also affect the course of the transition to a green economy. Swainson and Mahanty's¹⁶ study highlights that power factors, local interests, and institutional support strongly determine the successful implementation of green policies. This means that despite the vision and regulations, the realization of a green economy often faces structural obstacles. This is in line with the findings of Gunawan et al.¹⁷ who stated that policies in Indonesia are often

¹⁴ R. Masdar, R. Amborowatie, L. Meldawaty, M. I. Mursali, and N. Naida. "Implementation of a Sustainable Green Economy in Indonesia: A Literature Review." In *IOP Conference Series: Earth and Environmental Science*, 1075, no. 1 (2022): 012056.

¹⁵ Mieczysław Adamowicz. "Green deal, green growth and green economy as a means of support for attaining the sustainable development goals." *Sustainability* 14, no. 10 (2022): 5901.

¹⁶ Luke Swainson and Sango Mahanty. "Green Economy Meets Political Economy: Lessons from the 'Aceh Green' Initiative, Indonesia." *Global environmental change* 53 (2018): 286-295.

¹⁷ Arien Arianti Gunawan, Jose Bloemer, Allard CR van Riel, and Caroline Essers. "Institutional Barriers and Facilitators of Sustainability for Indonesian Batik SMEs: A Policy Agenda." *Sustainability* 14, no. 14 (2022): 8772.

fragmented and inconsistent, making it difficult to implement long-term strategies to support the energy transition and other green practices. The concept of green economy in Indonesia has been recognized as an important development strategy. However, its success still depends on the quality of policy implementation, institutional support, and public awareness. The implementation of the green economy is not only about providing renewable energy, but also about transforming people's mindset and synergy between development actors. Thus, the green economy in Indonesia is in a promising initial phase, but it needs a stronger push to be realized comprehensively.

4.2. Potential and Opportunities of the Green Economy in Indonesia

Indonesia has great potential in developing a green economy thanks to its abundant natural resources. Renewable energy such as solar, wind, biomass, and water can be a strategic alternative to reduce dependence on fossil energy which has dominated national energy needs. Research by Anggraeni et al.¹⁸ confirms that the sustainable use of natural resources can open up opportunities for Indonesia's economic transformation, with green indicators as benchmarks for development success. In addition to energy, other promising sectors are sustainable tourism, organic farming, and integrated waste management. Resosudarmo et al.¹⁹ found that renewable energy policies in Indonesia provide great opportunities to attract green

¹⁸ V. Anggraeni, A. F. Achsanta, and N. H. Purnomowati. "Measuring Opportunities: Transforming Indonesia's Economy through Utilizing Natural Resources for Sustainable Development through Green Economy Indicators." In *IOP Conference Series: Earth and Environmental Science*, 1180, no. 1 (2023): 012011.

¹⁹ Budy P. Resosudarmo, Jahan F. Rezki, and Yuventus Effendi. "Prospects of energy transition in Indonesia." *Bulletin of Indonesian Economic Studies* 59, no. 2 (2023): 149-177.

investments, which not only support energy security but also strengthen Indonesia's position in the global arena.

With supportive regulations, the renewable energy sector can grow as the main engine of the transition to a green economy. The potential of the green economy can also be seen from the social aspect. Green economy-based community empowerment programs play an important role in improving welfare while strengthening public participation in protecting the environment. Ren et al.²⁰ highlight that the involvement of local communities in green economy programs contributes to the creation of new jobs as well as expanding access to an inclusive economy. This shows that the green economy does not only focus on technical aspects, but also has a significant social impact.

In addition, great opportunities also come from the post-COVID-19 pandemic recovery. Martawardaya et al.²¹ revealed that the crisis period can be used as a momentum to accelerate the implementation of green policies, by directing economic stimulus to sustainable projects. Green recovery not only increases economic resilience, but also strengthens systems that are more adaptive to global shocks. At the global level, Indonesia's involvement in international forums such as the Global Green Growth Institute (GGGI) and the Partnership for Action on the Green Economy (PAGE) is a strategic opportunity to strengthen national capacity.

²⁰ Shuming Ren, Lianqing Li, Yueqi Han, Yu Hao, and Haitao Wu. "The emerging driving force of inclusive green growth: does digital economy agglomeration work?." *Business Strategy and the Environment* 31, no. 4 (2022): 1656-1678.

²¹ Berly Martawardaya, Ari Rakatama, Dhenny Yuartha Junifta, and Dinda Ayu Maharani. "Green Economy Post COVID-19: Insights from Indonesia." *Development in Practice* 32, no. 1 (2022): 98-106.

Pandey et al.²² emphasize that international cooperation can accelerate the transfer of green technologies and increase access to financing for sustainable projects. With the support of domestic policies and international networks, Indonesia has a great opportunity to make the green economy the main engine of sustainable economic growth in the future.

4.3. Challenges and Obstacles to Green Economy Implementation in Indonesia

Despite its great potential, the implementation of the green economy in Indonesia still faces a number of complex challenges. One of the main obstacles is the low public awareness of the importance of sustainable development. Research by Syahwildan et al.²³ shows that public understanding of the benefits of the green economy is still limited, so environmentally friendly consumption behavior has not become a widespread habit. This lack of awareness has an impact on low public participation in supporting green policies. Another challenge lies in the limitations of infrastructure and technology. Masdar et al.²⁴ revealed that investment in renewable energy technology is still relatively low compared to national needs. Limited infrastructure, such as an electricity grid that has not been optimally

²² Nimisha Pandey, Heleen de Coninck, and Ambuj D. Sagar. "Beyond technology transfer: Innovation cooperation to advance sustainable development in developing countries." *Wiley Interdisciplinary Reviews: Energy and Environment* 11, no. 2 (2022): e422.

²³ Muhamad Syahwildan, Indra Setiawan, and Fiqih Maria Rabiatul Hariroh. "Peran Green Economy Terhadap Pembangunan Berkelanjutan di Indonesia." *Lentera Pengabdian* 1, no. 02 (2023): 163-171.

²⁴ R. Masdar, R. Amborowatie, L. Meldawaty, M. I. Mursali, and N. Naida. "Implementation of a Sustainable Green Economy in Indonesia: A Literature Review." In *IOP Conference Series: Earth and Environmental Science*, 1075, no. 1 (2022): 012056.

integrated, makes it difficult to develop green energy quickly. This condition is exacerbated by the relatively high initial cost of green technology investment.

In addition, political-economic dynamics are also important factors that hinder it. Swainson and Mahanty²⁵ emphasized the imbalance of local political and economic interests led to the inhibition of the realization of green development. This phenomenon illustrates that the success of the green economy is not only determined by the existence of regulations, but also by the support of political actors and the dominant business interests. Fragmented policies have also worsened conditions. Gunawan et al.²⁶ assessed that government policies related to the green economy still tend to be partial, less consistent, and have not provided attractive enough incentives for the private sector to invest in clean energy or sustainable waste management. This shows that there is a gap between the vision of sustainable development and real implementation on the ground.

Finally, external factors such as the COVID-19 pandemic also add a layer of challenges. Although the pandemic opens up opportunities for green recovery, Martawardaya et al.²⁷ found that in practice many economic stimuli are directed at the conventional sector. As a result, opportunities to drive green economy-based recovery are often missed. Obstacles to the implementation of the green economy in Indonesia include aspects of public awareness, limited infrastructure, political-

²⁵ Luke Swainson and Sango Mahanty. "Green Economy Meets Political Economy: Lessons from the 'Aceh Green' Initiative, Indonesia." *Global environmental change* 53 (2018): 286-295.

²⁶ Arien Arianti Gunawan, Jose Bloemer, Allard CR van Riel, and Caroline Essers. "Institutional Barriers and Facilitators of Sustainability for Indonesian Batik SMEs: A Policy Agenda." *Sustainability* 14, no. 14 (2022): 8772.

²⁷ Berly Martawardaya, Ari Rakatama, Dhenny Yuartha Junifta, and Dinda Ayu Maharani. "Green Economy Post COVID-19: Insights from Indonesia." *Development in Practice* 32, no. 1 (2022): 98-106.

economic dynamics, policy fragmentation, and external pressures such as global crises. Overcoming these barriers requires a comprehensive strategy that integrates policies, technology, and community participation.

5. Discussion

The results of the study show that the green economy has an important role as a sustainable development strategy in Indonesia. However, implementation achievements are still not optimal due to various structural, social, and political obstacles. This discussion focused on how research findings can be interpreted in a broader framework, as well as their implications for future development policies and practices. First, the integration of the green economy with the Sustainable Development Goals (SDGs) emphasizes that green development is not just an option, but an urgent need. Adamowicz²⁸ emphasized that the green economy functions as a catalyst that is able to accelerate the achievement of SDGs targets, especially in the aspects of clean energy, emission reduction, and improvement of social welfare. Thus, the results of this study reinforce the view that green economy policies should be positioned as the main strategy in national development, not as an additional policy.

Second, the potential of Indonesia's natural resources provides great opportunities for the clean energy transition, but limited infrastructure and

²⁸ Mieczysław Adamowicz. "Green deal, green growth and green economy as a means of support for attaining the sustainable development goals." *Sustainability* 14, no. 10 (2022): 5901.

investment are significant obstacles. Anggraeni et al.²⁹ emphasized that green economy indicators can be an important tool to measure the effectiveness of resource utilization in sustainable development. These findings are in line with research results showing that Indonesia has large capital from solar, wind, and biomass energy, but the development of these potentials requires stronger institutional support. This discussion implies that the policy focus does not stop only on the provision of resources, but must also include the development of infrastructure that supports the energy transition. Third, socio-political aspects play a crucial role in determining the success of the green economy. Swainson and Mahanty³⁰ highlight that green initiatives cannot be separated from political dynamics and local interests. This shows that the transition to a green economy requires an inclusive approach, involving various stakeholders in the policy formulation and implementation process. By involving the private sector, civil society, and local governments, the implementation of the green economy will be more adaptive to the needs and conditions of the community.

The discussion also showed that Indonesia is at an important crossroads: on the one hand there are great opportunities to harness natural resource capital and international commitments, but on the other hand there are structural barriers that have not been fully addressed. Therefore, strategic steps that can be taken include

²⁹ V. Anggraeni, A. F. Achsanta, and N. H. Purnomowati. "Measuring Opportunities: Transforming Indonesia's Economy through Utilizing Natural Resources for Sustainable Development through Green Economy Indicators." In *IOP Conference Series: Earth and Environmental Science*, 1180, no. 1 (2023): 012011.

³⁰ Nimisha Pandey, Heleen de Coninck, and Ambuj D. Sagar. "Beyond technology transfer: Innovation cooperation to advance sustainable development in developing countries." *Wiley Interdisciplinary Reviews: Energy and Environment* 11, no. 2 (2022): e422.

consistent policy formulation, providing incentives for green investment, technology capacity building, and public education on the importance of sustainable development. Thus, the green economy in Indonesia can be seen as a long-term transformation process that requires the synergy of policies, technology, and social awareness. If it is able to overcome existing obstacles, Indonesia has the potential to make the green economy a key pillar of sustainable development, which not only maintains environmental sustainability but also strengthens national economic resilience.

6. Conclusion

This research emphasizes that the green economy is an important strategy in realizing sustainable development in Indonesia. This concept is present as a solution that integrates economic, social, and environmental aspects, as well as an effort to answer the challenges of climate change and social inequality. The results of the analysis show that Indonesia has great potential to develop a green economy, especially through the use of renewable energy, integrated waste management, and strengthening the sustainable agricultural sector. In addition, community involvement in green economy-based empowerment programs is an important capital to strengthen development inclusivity.

However, a number of challenges still hinder the implementation of the green economy in Indonesia. The main obstacles include low public awareness, limited infrastructure and technology, dominance of commercial interests, and regulatory inconsistencies. External pressures such as the global crisis also add to the

complexity of this transition. Therefore, a comprehensive strategy is needed through synergy between the government, the private sector, civil society, and academia. If these obstacles can be overcome, the green economy has the potential to become the main driving force for inclusive, sustainable, and adaptive national development. The implementation of the green economy is not only about reducing emissions or developing clean energy, but also about building a more prosperous, fair, and sustainable future for future generations.

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