EMAGRAP
Economic Military and Geographically Business Review
EMAGRAP 3(1): 60–78
ISSN 3025-3160

Institute for Advanced Science, Social and Sustainable Future
MORALITY BEFORE KNOWLEDGE

Green economy and inclusive communities: Achieving harmony between humans and nature

M. Iswari A Salman[1,*]
[1] *School of Environmental Science, Universitas Indonesia, Central Jakarta, Jakarta 10430, Indonesia.*
*Correspondence: m.iswari@ui.ac.id

Received Date: June 6, 2025 Revised Date: July 11, 2025 Accepted Date: July 31, 2025

ABSTRACT

Background: This study aims to explore and analyze the implementation of a green economy in the context of sustainable development, with a focus on the development of an inclusive society. **Methods:** The approach used is a literature review with a descriptive-analytical method, involving various secondary sources, such as scientific journals, reports from international institutions, and government policies. **Findings:** The results show that the transition to a green economy requires the integration of sustainability principles in development policies at various levels. In addition to resource efficiency and carbon emission reduction, the green economy must also encompass social justice and protection for vulnerable groups. Key challenges in implementing a green economy include weak institutional capacity, resistance to policy changes, and financing gaps, particularly in developing countries. Furthermore, the importance of an interdisciplinary approach, collaboration between the public and private sectors, and community participation in decision-making are key factors in the success of the green transition. **Conclusion:** The successful realization of a green economy as a pillar of sustainable development requires an integrated, adaptive, and inclusive approach that harmonizes policy, institutions, innovation, and social equity. **Novelty/Originality of this article:** This study also highlights the importance of education and technological innovation to support sustainability and economic resilience. Overall, the findings provide valuable insights into the need for a fair and inclusive green economy as part of the sustainable development agenda.

KEYWORDS: environmental policy; green economy; resource efficiency; sustainability; sustainable development.

1. Introduction

Rapid economic development in urban areas often brings positive impacts, such as increased income, employment opportunities, and infrastructure advancement. However, uncontrolled growth can also lead to serious problems, including environmental degradation, increased air and water pollution, and excessive exploitation of natural resources. In addition, social inequality becomes an inevitable issue, where certain segments of society benefit more than others, exacerbating economic and social disparities. This situation puts pressure on urban planning and demands the implementation of sustainable development strategies. Without proper regulation, the urban ecosystem becomes imbalanced, threatening long-term livability. Therefore, cities must adopt integrated approaches that prioritize environmental protection, equitable economic growth, and social inclusion.

Cite This Article:
Salman, M. I. A. (2025). Green economy and inclusive communities: Achieving harmony between humans and nature. *Economic Military and Geographically Business Review, 3*(1), 60-78. https://doi.org/10.61511/emagrap.v3i1.2025.2282

The growth of the industrial and service sectors also contributes to innovation and enhances regional competitiveness in the global economy. Nevertheless, uncontrolled expansion can result in negative consequences such as worsening traffic congestion, which undermines productivity and reduces the quality of life in cities. Furthermore, these conditions can increase urban poverty and lead to other social issues, such as rising crime rates and the proliferation of slums. In order to mitigate these challenges, governments and urban planners must invest in efficient public transportation and smart city technologies. Collaboration between public and private sectors is also crucial to ensure inclusive development. By aligning urban expansion with sustainability principles, cities can achieve long-term prosperity without sacrificing social well-being.

Sustainability is a key concept in maintaining the balance between human needs and the environment's capacity to provide resources over the long term. Miller & Spoolman (2015) emphasize that sustainability encompasses three main pillars—environmental, social, and economic—which must be developed simultaneously to ensure the well-being of current generations without compromising the needs of future generations. Each pillar is interconnected; neglecting one can jeopardize the stability of the others. For example, economic development that disregards environmental limits may lead to resource depletion and ecosystem collapse. Likewise, social inequality can undermine environmental efforts, as marginalized communities often lack access to sustainable options. To achieve true sustainability, policies must be inclusive, participatory, and adaptive to local contexts. Education and public awareness also play crucial roles in fostering a culture of sustainability from the ground up.

From an environmental perspective, the principles of sustainability focus on the conservation of natural resources, sustainable ecosystem management, and the reduction of negative impacts such as pollution and climate change. According to Miller & Spoolman (2015), social sustainability involves equitable access to resources, human rights, and the reduction of social disparities that can worsen environmental degradation. Societies with better welfare, education, and healthcare access are more likely to support sustainability policies and engage in environmentally friendly practices. Therefore, building resilient and inclusive communities is an integral part of sustainable development strategies. Environmental education and awareness campaigns are crucial to foster pro-environmental behavior. Biodiversity protection should also be a core priority in land-use planning. Cross-sectoral collaboration among governments, industries, and civil society is essential to tackle complex environmental challenges. Climate adaptation strategies must be localized and supported by scientific data.

Economic sustainability, on the other hand, requires an economic system that promotes inclusive growth, long-term stability, and resource efficiency. A sustainable economy is not only focused on increasing gross domestic product (GDP) but also emphasizes quality of life, equitable distribution of wealth, and resilience to crises. These three pillars—environmental, social, and economic—must support one another to enable a holistic and integrated development approach that avoids sacrificing one aspect for another. Green investment initiatives, such as renewable energy and sustainable infrastructure, are central to this transformation. Governments need to implement fiscal policies that incentivize low-carbon development. Small and medium-sized enterprises (SMEs) must be empowered to adopt sustainable practices. Additionally, circular economy principles should be embedded in production and consumption models.

Sustainability refers to a growth model that is not only profit-driven in the short term but also considers long-term impacts on the environment and society. Miller & Spoolman (2015) highlight that a green economy offers solutions by adopting technological innovation, resource efficiency, and more environmentally friendly production systems. The transition to a green economy requires the integration of public policy, sustainable investment, and private sector participation in creating environmentally responsible business solutions. This shift also demands institutional reform to ensure transparency and accountability. Workforce reskilling programs are essential to prepare labor markets for green jobs. Monitoring and evaluation systems must track progress toward sustainability

indicators. Finally, international cooperation is vital to support low-income countries in adopting green economy pathways.

By balancing environmental, social, and economic dimensions, sustainability can be realized more effectively. However, achieving sustainability also requires changes in individual and collective consumption and production patterns. Education, environmental awareness, and regulatory reinforcement are essential to promoting more ecologically responsible behavior. Only through cross-sector collaboration and a shift in development paradigms can the transition to a truly sustainable green economy be achieved.

The green economy is defined as an economic system that is low-carbon, resource-efficient, and socially inclusive (Pallaske, 2024). Job creation and income growth are driven by investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent biodiversity loss. The implementation of the green economy spans various sectors, including renewable energy, sustainable agriculture, waste management, and environmentally friendly transportation, aiming to balance human needs with environmental preservation.

The green economy concept represents a concrete effort to realize sustainable development. It emphasizes the importance of balancing economic growth, social equity, and environmental conservation. By prioritizing the efficient use of natural resources, clean technology, and inclusive community participation, sustainable development aims to improve quality of life for all (Fu, 2023). Policy frameworks supporting green jobs and eco-friendly business practices are vital to ensure long-term economic resilience. Education and public awareness play key roles in shifting consumer behavior toward more sustainable lifestyles. Moreover, green economy initiatives can help mitigate climate change impacts while fostering inclusive prosperity.

According to Zhang et al. (2022), the green economy is closely related to environmental conservation efforts and ecological-based policies intended to maintain ecosystem balance. It also directly addresses human activities, such as deforestation and urbanization, which contribute to environmental changes affecting ecosystem sustainability. An economic approach that takes environmental aspects into account is essential to ensure that development can occur alongside nature preservation. This approach shifts the focus of economic growth from merely increasing production to ensuring the long-term sustainability of ecosystems.

The application of the green economy provides numerous benefits across environmental, social, and economic dimensions. Environmentally, it helps reduce greenhouse gas emissions, improves air and water quality, and conserves biodiversity. Socially, the green economy creates new job opportunities in the renewable energy sector and environmentally friendly industries. Economically, it enhances production efficiency and reduces long-term costs associated with unsustainable resource exploitation (Wijayanti & Sari, 2024). Furthermore, green investments tend to attract international financing and increase competitiveness in global markets. Long-term savings from energy efficiency and waste reduction also contribute to fiscal stability. Overall, the green economy provides a strategic pathway for sustainable development that balances environmental stewardship with economic resilience and social equity.

The transition to a green economy in Indonesia promises sustainable economic growth that aligns with improved social welfare and environmental quality. According to a study by Bappenas, the implementation of a green economy could drive economic growth at an average rate of 6.1–6.5 percent annually until 2050 and create 1.8 million new jobs in sectors such as energy, electric vehicles, land restoration, and waste management by 2030 (Nugraha, 2022). This transition also supports Indonesia's commitment to reducing greenhouse gas emissions by 31.89% unconditionally and up to 43.20% with international support, as outlined in its NDC targets. In addition, the green economy can help reduce urban environmental burdens through better waste processing, green infrastructure, and sustainable transport. Encouraging green investment and innovation will also enhance the competitiveness of Indonesian industries in the ASEAN and global markets. Local governments play a crucial role in mainstreaming green policies into regional development

plans. With strong policy frameworks, Indonesia can simultaneously achieve environmental protection, social inclusion, and economic modernization.

Some perspectives view the green economy as an inevitable economic transformation driven by environmental sustainability and technological advancement. However, others argue that the concept is exclusive and more feasible for developed and wealthy countries, while its implementation in developing nations may hinder development and exacerbate poverty. his debate highlights the need for differentiated strategies that consider the unique challenges faced by low-income countries. International cooperation and financial support are essential to ensure that developing countries can transition without sacrificing their growth. Additionally, transferring green technologies and capacity building can bridge the implementation gap between the Global North and South. Addressing these disparities is crucial to making the green economy a truly inclusive and equitable global framework.

To achieve this potential, Indonesia must overcome several challenges in transitioning to a green economy. Key obstacles include limited human resource capacity, slow technology adoption, investment flow barriers, and high upfront costs for adopting green technologies and renewable energy. Moreover, inconsistent policies and regulations across countries hinder the broader adoption of this economic model (Wijayanti & Sari, 2024). Strengthening institutional capacity and aligning regulatory frameworks will be essential to accelerating the transition. Government incentives and public-private partnerships can also play a critical role in addressing financial and technical barriers. Without these efforts, the green economy agenda may fail to achieve widespread impact and risk deepening existing inequalities.

While the green economy offers significant benefits, its implementation faces challenges, especially in developing countries. These include the lack of supportive regulations, limited investment in green technologies, and resistance from conventional industrial sectors (Meadowcroft, 2022). In many cases, traditional industries fear that green transitions could disrupt their business models and reduce short-term profits. This fear is exacerbated by uncertainty regarding market demand for green products and limited access to skilled labor in the green sector. Additionally, a just transition is essential for workers affected by the shift, particularly in sectors dependent on natural resource exploitation. Displaced workers need targeted support to reskill and transition to new employment opportunities in sustainable industries. Governments must also ensure that vulnerable groups are not left behind in the process. Therefore, policies that accommodate labor transitions—such as retraining programs and incentives for green industries—are crucial (ILO, 2023).

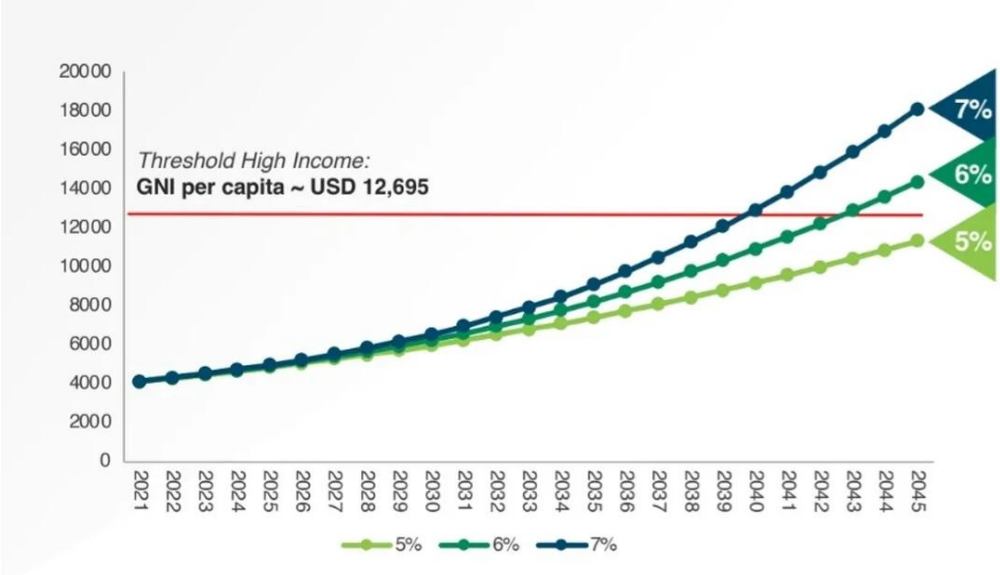

Fig. 1. Scenarios for Indonesia's economic growth to escape the middle-income trap. (Nugraha, 2022)

Lack of awareness and support from industries and communities also poses barriers, making education and incentives vital to fostering the shift toward more sustainable economic practices. Investment remains a major challenge, as achieving carbon neutrality by 2060 is projected to require 3–5 percent of Indonesia's GDP, necessitating private sector involvement due to the government's limited fiscal capacity (Nugraha, 2022). Creating green financing mechanisms, such as green bonds and sustainability-linked loans, can help bridge the funding gap. International cooperation and donor support are also essential to mobilize technical and financial resources. Overcoming these multifaceted challenges requires a coordinated national roadmap and long-term policy consistency.

The future of the green economy heavily relies on global commitment to adopting policies that support sustainability. With growing awareness of climate change and the increasing demand for more efficient resource utilization, more countries and companies are investing in green technologies. Governments play a crucial role in establishing regulations that support the green economy, such as tax incentives for renewable energy and carbon emission restrictions (Kiristanto, 2020). Through these strategic measures, the green economy is expected to become a cornerstone of sustainable global development.

Active public participation in environmental conservation and increased awareness of the importance of sustainable lifestyles must be continuously promoted through education and public campaigns (Sterner & Coria, 2021). Both governments and the private sector can provide incentives for environmentally friendly practices, such as carbon taxes and subsidies for renewable energy, to encourage behavioral change among citizens. With a holistic approach, the green economy not only serves as a tool for sustainable economic growth but also as a solution for creating a more inclusive and equitable society.

Fig. 2. Indicators in the green economy index, divided into three pillars: social, economic, and environmental
(Nugraha, 2022)

Collaboration among multiple stakeholders—including governments, the private sector, academia, and civil society—is a key element in accelerating the implementation of the green economy. Innovation in environmentally friendly technologies and investments in research and development of renewable energy are critical to achieving a faster and more effective transition (UNEP, 2023). Furthermore, policy harmonization at both national and international levels is essential to ensure that green economic practices can be consistently

applied across sectors and regions. Through integrated strategic actions, the green economy can serve as a foundational pillar for achieving a balance between humans and nature and for shaping a more sustainable future for generations to come.

In recent decades, the concept of the green economy has emerged as a key strategy in efforts to achieve sustainable development. It is promoted as a solution to increasingly complex environmental and economic crises, particularly in the context of transitioning toward a more environmentally friendly and inclusive system. However, there is ongoing debate about the effectiveness of the green economy in driving fundamental change within the global economic system, which remains dominated by an exploitative growth paradigm (Bina, 2013). The green economy has gained prominence in global discussions on sustainable development and is often viewed as a potential solution to the current economic and environmental crises. Significant investments have been directed toward the development of green technologies, renewable energy, biodiversity conservation, resource efficiency, and green infrastructure to support the transition toward a more sustainable economy (Newton & Cantarello, 2014).

The concept gained substantial international attention, particularly after the 2012 United Nations Conference on Sustainable Development (Rio+20). This aligns with growing global concern over pressing challenges such as climate change, biodiversity loss, land degradation, and increasing scarcity of natural resources. Nevertheless, implementing a green economy requires genuine commitment from all stakeholders to address structural inequalities and ensure long-term sustainability. Without systemic transformation and inclusive cross-sectoral approaches, the green economy risks becoming a partial solution that fails to address the root causes of today's global crises.

Although the green economy offers various innovative approaches—such as energy efficiency, ecosystem service valuation, and investments in environmentally friendly technologies—its implementation often remains centered on market mechanisms and green capitalism-based growth. Studies show that the green economy is more frequently positioned as a tool for improving economic efficiency rather than as a true systemic shift in development paradigms (Bina, 2013). This raises the risk that the green economy will merely continue the "business as usual" model with only minor environmental policy adjustments.

The green economy approach not only emphasizes economic efficiency but also promotes principles of sustainability rooted in environmental science. In this context, it highlights the interdependence between economic and ecological systems and recognizes that economic sustainability depends on the environment's capacity to provide resources and absorb waste. Furthermore, implementing a green economy requires the integration of a wide range of disciplines—including ecology, geography, social sciences, psychology, law, and economics—to create more holistic and effective solutions (Newton & Cantarello, 2014).

The success of green economy implementation relies heavily on accurate understanding and management of environmental carrying capacity and ecological thresholds. Carrying capacity refers to the environment's ability to provide the natural resources needed for human life, while ecological thresholds refer to the environment's ability to absorb waste and pollution resulting from economic activities. When economic activities exceed these limits, environmental degradation becomes inevitable, ultimately threatening the sustainability of the economic system itself.

Consequently, green economy policies must be designed with consideration for ecological boundaries and must integrate biophysical indicators into development planning to avoid surpassing the planet's limits. Within the green economy framework, it is essential to use carrying capacity and ecological thresholds as the foundation for spatial planning and regional development policies to ensure that development remains within ecosystem limits and maintains a balance between economic needs and environmental preservation (Sihombing & Suprayogi, 2021).

The UNEP report emphasizes that the green economy generally does not act as a barrier to growth. From a macroeconomic perspective, UNEP modeled various projects

demonstrating that, in the long run—after a transition period—the green economy has the potential to generate higher growth, reduce poverty, and increase employment opportunities compared to the conventional high-carbon (brown) economy. In a green economy, income growth and job creation are driven by public and private sector investments aimed at reducing carbon emissions, increasing energy efficiency, and minimizing environmental degradation to achieve the Sustainable Development Goals (SDGs).

The implementation of the green economy and green growth has become increasingly urgent, as both are essential components in achieving the SDGs (Kristianto, 2020). There are three key dimensions that must be considered when advancing the green economy, economic growth, and the SDGs; political, social, and economic aspects. These dimensions are interconnected and require integrated policy responses to be effective. Political will is needed to drive reforms and create an enabling environment for green investments. Social inclusiveness must ensure that vulnerable populations benefit from green growth initiatives. Economic strategies should prioritize sustainable industries that generate both prosperity and environmental protection. This discussion focuses on how to promote the green economy and green growth across these three dimensions, with the primary goal of alleviating poverty and reducing environmental degradation (Kiristanto, 2020).

The green economy approach in international policy—such as seen at the Rio+20 Conference—still faces significant challenges in balancing ecological sustainability, economic growth, and social justice. Many developing countries remain skeptical about the fairness of this model, fearing it may deepen existing global inequalities. They worry about trade barriers, unequal access to green technologies, and dependency on developed nations for knowledge and financing. Furthermore, the risk of "greenwashing"—where countries or companies claim sustainability without real action—undermines trust in green policies. Developing countries often perceive the green economy as a mechanism that could reinforce global economic inequality through trade barriers and technological dependence on developed countries. Therefore, a critical and inclusive analysis is necessary to determine how the green economy can genuinely contribute to sustainable development without compromising social and ecological justice (Bina, 2013). International cooperation, technology transfer, and equitable financial mechanisms are key to addressing these concerns. Only with these efforts can the green economy become a tool for truly inclusive and sustainable progress.

While many actors support the idea of a green economy, the concept still encounters various challenges, including differing interpretations regarding its definition and implementation. Some view the green economy as an evolution of sustainable development, while others argue that the concept requires further refinement to address the underlying problems of the current global economic system. Therefore, further research and more comprehensive policy approaches are needed to ensure that the green economy truly contributes to a balance between economic growth, social well-being, and environmental preservation (Newton & Cantarello, 2014).

In the context of global inequality, critiques of the green economy also highlight a lack of attention to distributive justice in the use of natural resources and access to environmentally friendly technologies. Developing countries often lack the fiscal capacity, technology, and institutional infrastructure needed to adopt green policies developed in industrialized nations. This situation risks exacerbating development gaps, particularly if international environmental standards are applied uniformly without considering socio-economic disparities and local capacities (Khor, 2011). Hence, the transition to a green economy must be accompanied by equitable international support mechanisms, including technology transfer, inclusive green financing, and policies that place social justice at the heart of sustainable development.

The transition toward a green economy is inseparable from the concept of a just transition, which emphasizes the need to protect vulnerable groups such as informal workers, Indigenous peoples, and impoverished communities that depend on natural resources. In many cases, green policies that are not inclusively designed can exacerbate

social and economic vulnerabilities. For instance, land acquisitions for conservation purposes or clean energy projects may ignore land rights and the participation of local communities (ILO, 2015). Therefore, the green economy must be designed not only to reduce emissions or enhance efficiency but also to ensure that all segments of society equitably benefit from this economic transformation.

2. Methods

This study employs a qualitative approach using a descriptive-analytical library research method. The purpose of this approach is to explore, identify, and analyze the concepts, practices, and challenges associated with the implementation of the green economy within the context of sustainable development and inclusive societies. The study is based on the understanding that the transition to a green economy is not solely a technical or economic issue, but also involves complex social, political, and institutional dimensions.

The research design is exploratory, focusing on the identification of relevant scholarly literature and international policy documents to construct a conceptual framework and provide a critical analysis of the dynamics surrounding green economy implementation. This study does not aim to test specific hypotheses; rather, it seeks to build a comprehensive understanding of the interactions among economic growth, environmental sustainability, and social justice within the green economy paradigm.

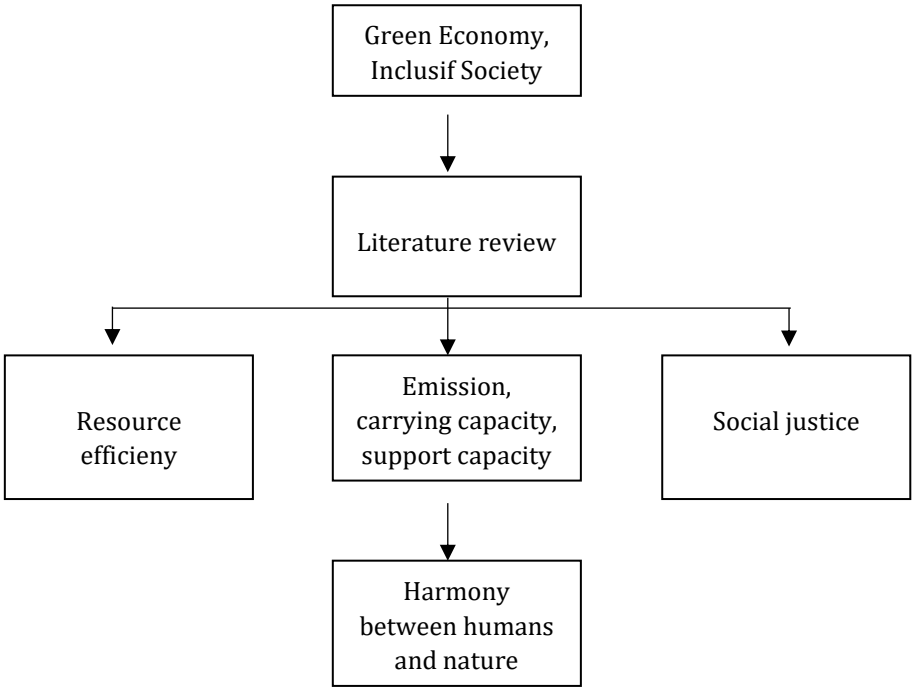

Fig. 3. Research concept design

The data for this study were collected through a literature review of various secondary sources, including peer-reviewed national and international journal articles, reports from international organizations such as UNEP, ILO, and Bappenas, as well as government policy documents and publications from multilateral institutions. Additionally, academic books relevant to the topics of the green economy, sustainability, and inclusive society were used as references, along with other academically valid secondary sources such as symposium proceedings, white papers, and institutional research reports. The selected literature spans the past 10 to 15 years, with an emphasis on publications that reflect contemporary developments and case studies from various countries, including Indonesia, to obtain a balanced global and local perspective.

The collected data were analyzed using a thematic content analysis approach to identify patterns, themes, and relationships among key concepts. The analysis was

conducted systematically through several interconnected stages. It began with open coding, where key themes such as resource efficiency, carbon emissions, social justice, and structural transformation were identified. This was followed by axial coding, which grouped the data according to the relationships among implementation challenges, policy strategies, and their observed impacts. Next, a categorical analysis was performed by organizing the data into categories aligned with the three pillars of the green economy—environmental, social, and economic—while also assessing their alignment with sustainability principles. Finally, a critical synthesis was carried out to integrate the findings, develop a comprehensive conceptual narrative, and evaluate the validity of the green economy transition model in fostering equitable and inclusive development.

To ensure the validity and credibility of the analysis results, data validation was carried out. The study applied source triangulation by comparing data from different types of literature and institutions. The researcher also adopted a reflective approach to interpretive bias and ensured that the analysis results were intersubjective and scientifically accountable. Transferability and dependability criteria were also used to evaluate the extent to which the findings can be applied across different social and geographical contexts.

3. Results and Discussion

Findings from the literature review indicate that the implementation of the green economy within the framework of sustainable development cannot be separated from the social, political, and institutional dynamics that influence it. Literature from UNEP (2011) and Bappenas (2022b) highlights that a successful transition toward a green economy requires cross-sectoral commitment and the integration of sustainability principles into national and local development planning. This study finds that the green economy is not solely about resource efficiency and carbon emission reduction, but also addresses social justice, inclusivity, and structural transformation. For instance, green initiatives that are not accompanied by social protection measures for affected workers risk exacerbating inequality. Therefore, an interdisciplinary approach and holistic policy are essential to promote a just green economy. In addition to the two references mentioned above, several other sources also share similarities and slight differences in the interpretation of the green economy, as presented in the following Table 1.

Table 1. Comparison of green economy paradigms

Literature	Green Economy Concept	Approach Used	Strengh	Weaknes
UNEP (2011)	An economy that supports environmental sustainability through green policies	Policy analysis and global framework approach	Provides general global guidelines and applicable strategies	Overly focused on international policy; lacks local specificity
Bappenas (2022b)	Implementation of green economy to support sustainable development in Indonesia	National policy study and government data analysis	Contextually relevant to Indonesia, offers specific solutions	Mainly policy-oriented, less attention to local socio-economic aspects
OECD (2015)	Green economy as a driver of economic growth through green investment	Economic modeling and fiscal policy analysis	Offers guidance on fiscal incentives for green investment	Focused on economic aspects, lacks emphasis on social equity
Barbier (2016)	Green economy through sustainable financing and resource allocation	Financial analysis and green economy management	Highlights the importance of financing in green transitions	Limited discussion on social impacts of

				green economy policies
Meadowcroft (2009)	Green economy prioritizing public participation in policy-making	Social analysis and stakeholder engagement	Emphasizes public acceptance and citizen participation	Challenging to implement in regions with low social participation
Siqueira-Gay et al. (2020)	Green economy focusing on conservation and natural resource management	Case studies on REDD+ and environmental conservation	Provides concrete examples of green economy practices in developing countries	Implementation challenges such as land tenure conflicts
WTO (2022)	Green economy linked to international trade and environmental standards	Trade policy analysis and environmental governance	Discusses barriers and opportunities for green economy in global trade	Narrow focus on trade-environment linkages; limited domestic insights
Ardiansyah et al. (2015)	Green economy with decentralized policy approach	Case studies on local governance and decentralization	Highlights importance of local policies and decentralization	Potential capacity disparity between developed and underdeveloped regions
Ostrom (2009)	Community-based green economy focusing on common resource management	Community-based natural resource governance	Emphasizes community participation in environmental governance	Requires cultural change and long-term commitment
UN Women (2021)	Inclusive green economy focusing on social and gender justice	Gender analysis in green economy policy	Ensures social equity and empowers women in the green economy	Often overlooked in mainstream green economy policies

3.1 The dynamics of green economy implementation in society

The dynamics of green economy implementation in society, both at the national and international levels, show significant progress along with various challenges and opportunities. Globally, the green economy has become a central focus in the sustainable development agenda, driving economic transformation through investments in renewable energy, resource efficiency, and green technology innovation (Prasetya & Ali, 2024). Developing countries such as Indonesia play a crucial role in this transition by integrating sustainability policies that emphasize sustainable natural resource management, sustainable agriculture development, clean energy, and green transportation.

At the national level, the implementation of the green economy in Indonesia has advanced through various strategic policies supporting sustainable trade and environmentally friendly practices in the industrial and logistics sectors (Faza & Hammam, 2025). The Indonesian government has adopted fiscal incentives and green certification to enhance the competitiveness of export products in the increasingly sustainability-driven global market. However, this implementation still faces obstacles such as a lack of regulatory harmonization between central and local governments, limited access to green technology, and low awareness and capacity among business actors, especially in the micro, small, and medium enterprises (MSMEs) sector.

Internationally, the dynamics of green economy implementation also involve cross-country collaboration and international institutions focusing on policy development, green financing, and technology transfer that support the global green transition (Vargas-Hernández & Vargas-González, 2023). This approach emphasizes the importance of synergy between economic and environmental policies to achieve comprehensive sustainable development goals. Nevertheless, challenges such as differences in country capacities, political dynamics, and unequal access to technology remain major barriers to green economy adoption across nations.

Furthermore, studies show that the success of green economy implementation largely depends on the involvement of multiple stakeholders, including governments, the private sector, and civil society, as well as on the strengthening of institutional capacity and human resources. The application of green economy principles not only contributes to economic growth but also to environmental impact reduction and social welfare enhancement through the creation of green jobs and poverty alleviation (Judijanto & Amin, 2025).

Overall, the dynamics of green economy implementation reflect a complex and multidimensional transition process that requires a holistic and adaptive approach. Effective policies must address structural and social barriers, strengthen inter-sectoral collaboration, and promote technological innovation and sustainable financing to ensure an inclusive and environmentally friendly economic transformation. As tangible evidence of this dynamic, the level of participation by countries in the annual climate change conferences (COP/Conference of the Parties) reflects a steadily growing global commitment to adopting and strengthening green economy policies (Mcesweeney, 2021). The graph of national delegation participation in COP Congresses over the past decade illustrates how international collaboration has become a key driver in this transition process, while also emphasizing the importance of inter-country synergy in addressing the challenges of climate change and sustainable development.

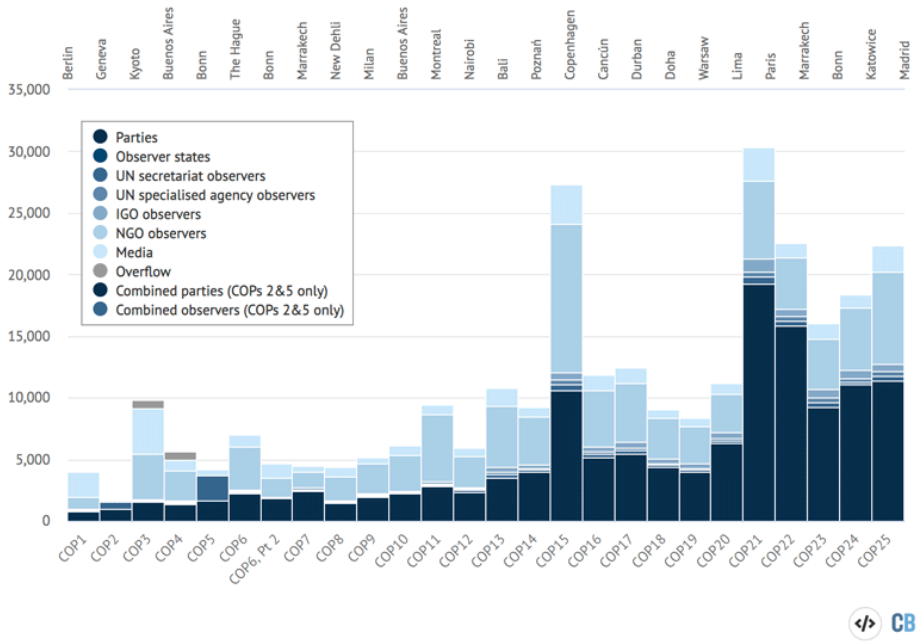

Fig. 4. Total attendance at COPs through the years
(Mcsweney 2021)

3.2 Strategies and practices toward human-nature harmony

Various strategies and practices have been implemented to achieve harmony between humans and nature through the green economy. One example is the adoption of sustainable agriculture, which employs environmentally friendly techniques to increase productivity

without degrading soil and ecosystems. Additionally, waste management based on the circular economy has become an essential practice that reduces waste and enhances resource efficiency.

Policy innovations, such as providing fiscal incentives to companies that adopt green technologies and supporting environmentally based MSMEs, have accelerated the adoption of the green economy. Education and advocacy serve as crucial pillars in raising public awareness about the importance of environmental protection and encouraging active participation in green economic practices. For instance, green skills training programs and environmental campaigns involving local communities can reinforce behavioral changes that support sustainability.

Cross-sector collaboration is also key to success. Governments, academia, the private sector, and civil society must work in synergy to create innovations, policies, and practices that foster an inclusive and sustainable green transformation.

From a spatial planning perspective, the integration of green economy principles into land use policies and regional development strategies shows mixed results. Case studies from Indonesia and Brazil—two countries with large bioeconomy potential—reveal that environmental conservation efforts often clash with economic expansion pressures in the extractive and commercial agriculture sectors. For example, research by Siqueira-Gay et al. (2020) in the journal Land Use Policy found that Brazil's REDD+ program faced serious challenges due to weak law enforcement and land tenure conflicts. In Indonesia, Bappenas (2022a) reported that the integration of green aspects into the National Medium-Term Development Plan/*Rencana Pembangunan Jangka Menengah Nasional* (RPJMN) is still hindered by limited spatial data and sectoral fragmentation. This indicates that a green transition requires stronger evidence-based spatial governance and intersectoral collaboration.

In the context of globalization and international trade, the green economy transition demands reforms in the global trade system and supply chains. Developing countries often face tariff and non-tariff barriers when exporting sustainable products due to stringent environmental standards imposed by developed countries. According to the World Trade Organization (WTO, 2022), although there is potential to increase exports of green products by USD 1 trillion per year, developing nations still lag in certification and clean technology. To address this disparity, collaborative approaches such as technology transfer, capacity building, and environmentally oriented trade agreements need to be strengthened. Thus, the green economy is not merely a domestic agenda but also an integral part of a fair and sustainable global trade architecture.

At the local government level, decentralization is a crucial factor in the success of green economy implementation. Although regional autonomy allows for policy innovation at the local level, disparities in capacity across regions often present major obstacles. A study by Ardiansyah et al. (2015) shows that areas with low technical and fiscal capacity tend to struggle in adopting progressive environmental policies, while more advanced regions can capitalize on green economy opportunities to enhance competitiveness. Therefore, vertical support mechanisms from the central government—such as ecological fiscal transfers and technical assistance—are needed to ensure that green economy policies are implemented evenly across regions, not just in major economic hubs.

Science and technological innovation also play a key role in accelerating the green economy transition. Innovation extends beyond renewable energy development to include sustainable agriculture, green transportation systems, and circular waste management technologies. According to IRENA (2021), technological advances have significantly lowered the cost of clean energy, but technology adoption remains concentrated in developed countries. To bridge this gap, developing nations must strengthen their national research ecosystems, build green innovation incubators, and establish international research and development partnerships. This will enhance technological self-reliance and increase the relevance of solutions to local challenges.

Community-based green economy approaches have emerged as important strategies for achieving a more equitable transformation. This concept positions communities as key

actors in planning and implementing green policies, rather than merely being the objects of development. Programs such as village forests, community-based ecotourism, and community-managed waste systems across Indonesia demonstrate that active citizen participation can improve the effectiveness and sustainability of environmental programs. Ostrom (2009) work on common-pool resource governance underscores that locally rooted governance models are often more adaptive to social and ecological dynamics. Thus, a green economy rooted in community participation has the potential to build social trust, enhance economic inclusion, and strengthen local resilience to climate crises.

In addition to economic, social, and institutional dimensions, legal and regulatory frameworks also play a vital role in supporting green economy implementation. Regulatory inconsistencies across government levels and overlapping sectoral rules often hamper consistent and sustainable decision-making. For example, in the forestry and energy sectors, there are still frequent conflicts between conservation policies and resource extraction permits issued by different agencies. According to the WRI (2020), environmental legal reforms are needed to unify the principles of precaution, sustainability, and protection of indigenous rights so that green economy policies can be implemented consistently and accountably.

Furthermore, gender and social equity dimensions must be addressed in the green economy agenda. Many green transition policies overlook the roles and needs of vulnerable groups such as women, indigenous communities, and persons with disabilities, thereby risking the exacerbation of existing social inequalities. UN Women (2021) reports that women's participation in the renewable energy and sustainable agriculture sectors remains low, despite their critical roles in household and community-level resource management. Therefore, applying a just transition principle must involve a thorough gender analysis to ensure that the green economy is not only environmentally efficient but also socially equitable.

Finally, the role of higher education and academic institutions is essential in supporting the green economy through capacity building and the provision of evidence-based data. Universities and research centers hold strategic positions in developing relevant curricula, producing applied research, and facilitating dialogue between policymakers, the private sector, and civil society. According to the Higher Education Sustainability Initiative (HESI, 2023), integrating sustainability issues into higher education can strengthen human resources who are critical and innovative in designing green solutions. Thus, investing in sustainability-oriented education and vocational training is one of the main pillars in building a long-term foundation for a resilient and inclusive green economy transition.

In evaluating the conceptual frameworks of the green economy, it is important to recognize the diversity of paradigms that have emerged across various geopolitical and economic contexts. Each paradigm reflects different priorities—ranging from ecological modernization in Europe, to inclusive green growth in Southeast Asia, to climate-resilient development in African regions. These approaches show that there is no one-size-fits-all model; instead, localized interpretations of the green economy must be aligned with national development goals, cultural contexts, and environmental vulnerabilities.

A key observation from cross-country comparative studies is that the success of green economy strategies often depends on how well environmental targets are mainstreamed into core macroeconomic policies. For example, countries that embed green job creation, sustainable fiscal policies, and low-carbon infrastructure into their national development plans tend to report more integrated progress. In contrast, nations that treat green economy initiatives as peripheral projects frequently encounter fragmented implementation and poor public buy-in.

his variation in policy integration highlights the need to categorize green economy paradigms to better understand their underlying logic, assumptions, and operational focus. The following table presents a comparative overview of dominant green economy paradigms—ranging from technocentric and market-driven models to socially inclusive and community-based approaches. This classification is intended to facilitate a deeper

understanding of how each paradigm addresses the balance between ecological integrity, economic viability, and social equity.

3.3 Constraints, challenges, and recommendations

Further thematic analysis identified several major challenges in implementing the green economy, including weak local institutional capacity, limited green investment, and resistance to policy changes that disrupt the economic status quo. Open coding revealed themes such as the lack of fiscal incentives, the vulnerability of marginalized communities to top-down environmental policies, and the misalignment between global policies and local contexts. Through axial coding, a strong relationship was found between policy strategies and the socio-economic impacts that arise. The study shows that a green economy approach focused only on technical aspects tends to fail in achieving sustainable transformation without a clear institutional framework and public participation. Through critical synthesis, it can be concluded that the success of green economy implementation strongly depends on the alignment of environmental goals with social protection within inclusive public policies.

The dynamics of green economy implementation at both national and international levels face a range of complex constraints and challenges, spanning policy, social, and technical aspects. In Indonesia, one of the main obstacles is the lack of awareness and commitment from both the public and private sectors regarding sustainability, leading to a gap between the rhetoric and the actual implementation of green economy policies (Prasetya & Ali, 2024). In addition, overlapping regulations and inefficient institutional designs hinder the execution of green economy programs, necessitating better policy harmonization to ensure an effective transition toward a green economy (Rany et al., 2020). Another significant challenge lies in the trade-offs between economic growth and environmental conservation, where GDP increases are often accompanied by environmental degradation before improvements are achieved in the later stages of development (Environmental Kuznets Curve Hypothesis) (Rany et al., 2020).

Globally, green economy implementation also faces constraints such as high upfront investment costs, limited access to environmentally friendly technologies, and social as well as bureaucratic resistance that slows down the adoption of green practices (Ulucak, 2024). Bureaucratic barriers often arise due to overly administrative and inflexible regulations, which prolong the licensing process and the implementation of programs. Moreover, challenges related to investment and trade persist, particularly in aligning green economy policies with the constantly evolving dynamics of global markets.

To address these constraints, several strategic recommendations have been proposed. First, strengthening policy and institutional frameworks that comprehensively support sustainability is essential, including harmonization of regulations across sectors and levels of government (Prasetya & Ali, 2024). Second, enhancing human resource capacity through education and green job training is key to raising awareness and improving the adaptability of communities and business actors. Third, expanding fiscal incentives and sustainable financing mechanisms is necessary to encourage green investments, particularly for MSMEs, which often face limited access to capital (Rany et al., 2020). Fourth, participatory approaches that involve communities in the planning and implementation of green economy programs can minimize social resistance and increase implementation effectiveness (Ulucak, 2024).

In addition to structural and institutional challenges, cultural factors and the level of environmental literacy among the public also influence the effectiveness of green economy implementation. Low public awareness of sustainability issues often hampers the execution of environmentally friendly policies, particularly in developing countries. Meadowcroft (2009) argues that the success of environmental policies greatly depends on social acceptance and citizen engagement in decision-making processes. Therefore, participatory public education and awareness campaigns are crucial in building a social foundation that supports the green transition while preventing resistance from local communities that perceive the change as a threat to their livelihoods or lifestyles.

From a social perspective, the role of the private sector and public-private partnerships (PPPs) is increasingly recognized as a key driver in supporting the green economy. Green investments by companies—especially in renewable energy, waste management, and low-carbon technologies—can stimulate innovation and create sustainable jobs. According to the OECD (2015), policy incentives such as carbon taxes and innovative financing instruments (e.g., green bonds, climate funds) are essential to attract private sector investment in green initiatives. However, clear and stable regulations are required to ensure a conducive investment climate. This study indicates that the success of PPPs in green projects heavily relies on transparency, accountability, and equal roles between the government and private actors, to avoid dominance by market interests alone.

In addition to the aforementioned constraints and challenges, international literature also highlights the technology gap as a major barrier in the transition toward a green economy. Developing countries often face limited access to advanced green technologies needed for resource efficiency and emissions reduction (Judijanto & Caroline, 2025). This gap is exacerbated by the lack of national research and development capacity, making the widespread adoption of green technological innovation difficult. Therefore, technology transfer and international cooperation are crucial to accelerate the adoption of context-appropriate green technologies.

Furthermore, financing challenges remain a significant issue in the green economy discourse. The large initial investments required for green infrastructure—such as renewable energy and waste management—often become major hurdles for developing countries and small private sector actors (Yi & Liu, 2015). Limited access to affordable financing and ineffective incentive mechanisms hamper the development of green projects. Thus, innovative financing mechanisms, including green bonds, green credits, and public-private partnerships, are essential to overcome these barriers and encourage broader participation from various stakeholders.

From a social perspective, cultural resistance and a lack of public awareness also pose significant challenges. Studies show that behavioral change and adoption of green practices are often hindered by traditions, habits, and inadequate environmental education (Singh et al., 2021). This calls for more effective education and communication approaches to build collective awareness of the short- and long-term benefits of the green economy. Active community participation in the planning and implementation of green programs is also key to reducing resistance and enhancing the sustainability of these initiatives.

In the policy realm, inconsistency and regulatory fragmentation are recurring issues across many countries. Differences in development priorities between central and local governments, as well as poor inter-agency coordination, often result in suboptimal implementation of green economy policies. Hence, a key recommendation is to strengthen governance by building an integrated and harmonized policy framework across all levels of government. This approach should be supported by a transparent monitoring and evaluation system to ensure accountability and program effectiveness.

Finally, literature also underscores the importance of international cooperation and multilateral partnerships in supporting the global green economy transition. Environmental issues are transboundary in nature and thus require policy synergy and knowledge exchange among nations (Abdullah et al., 2017). Technical assistance programs, technology transfers, and international green financing are vital instruments in helping developing countries address the challenges they face. Such cooperation also reinforces the global commitment to sustainable development goals and climate change mitigation.

The success of green economy implementation also hinges on the readiness of financing infrastructure and the country's fiscal capacity. Barbier (2016), in the Oxford Review of Economic Policy, points out that many developing countries struggle to provide sufficient public funding to support green investment, particularly in key sectors such as sustainable transportation and renewable energy. Data from the Climate Policy Initiative (2023) shows that out of the total global climate finance of USD 850 billion, only around 14% flows to low- and middle-income countries. This financing gap emphasizes the need for more inclusive and adaptive financial mechanisms, such as blended finance and results-

based financing, to ensure that the green transition is not exclusive to developed nations. Thus, the successful implementation of a green economy requires a holistic approach that synergistically integrates policy, technological, social, and economic aspects. This approach must be adaptive to both local and global contexts and capable of addressing existing structural challenges to ensure an inclusive and sustainable transition.

4. Conclusions

The implementation of a green economy within sustainable development is deeply influenced by multidimensional social, institutional, and political factors. While global and national efforts have demonstrated progress through policy reforms, green technologies, and inclusive strategies, challenges remain—especially related to institutional coordination, technological gaps, and socio-economic inequality. The green economy is not only a technical or environmental agenda but also a transformative approach requiring justice, inclusion, and localized adaptation.

Successful implementation of the green economy depends heavily on stakeholder synergy, institutional strengthening, and enabling legal frameworks. Participatory approaches, particularly community-based initiatives, prove effective in achieving both environmental sustainability and social equity. Moreover, decentralization, innovation, and targeted capacity-building are crucial to bridging gaps in regional readiness and aligning local policies with national and international sustainability goals.

Overcoming the identified challenges necessitates a holistic strategy combining policy coherence, public awareness, green investment, and education reform. To foster a just transition, the green economy must be embedded in core economic planning while considering cultural contexts, local livelihoods, and gender equity. Thus, an integrated, adaptive, and inclusive approach is critical to realizing the full potential of a green economy as a pillar of sustainable development.

Acknowledgement
The author of this study would like to acknowledge and thank all those who participated in this study. Gratitude is also extended to the researchers, previous researchers, and the government as a source of knowledge and data in this research.

Author Contribution
The author has taken full responsibility for ensuring the accuracy and integrity of the data presented. All sources have been carefully cited to maintain academic honesty. The author welcomes any inquiries or feedback regarding the research and is committed to making necessary revisions based on scholarly input.

Funding
This research received no external funding.

Ethical Review Board Statement
Not available.

Informed Consent Statement
Not available.

Data Availability Statement
Not available.

Conflicts of Interest
The author declare no conflict of interest.

Open Access

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Biography of Author

M. Iswari A Salman, School of Environmental Science, Universitas Indonesia, Central Jakarta, Jakarta 10430, Indonesia.

- Email: m.iswari@ui.ac.id
- ORCID: N/A
- Web of Science ResearcherID: N/A
- Scopus Author ID: N/A
- Homepage: N/A