

GREEN ECONOMY AS A PILLAR OF SUSTAINABLE DEVELOPMENT: INTEGRATION OF PUBLIC AND PRIVATE POLICIES IN REDUCING CARBON EMISSIONS

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Abstract

Green economy is a strategic approach in realising sustainable development oriented towards reducing carbon emissions, preserving the environment, and improving social welfare. This article discusses the importance of public and private policy integration in supporting the transition to a low-carbon economy. The government plays a role through regulation, incentives, and development of green infrastructure, while the private sector contributes through technological innovation, investment, and implementation of sustainable practices. Synergy between these two sectors is needed to increase the effectiveness of climate change mitigation, while creating new economic opportunities such as green jobs. With an integrated green economy approach, it is expected that sustainable development can be realised without compromising the ecological balance in the future.

Keywords: Green Economy, Pillars of Sustainable Development, Integration of Public and Private Policies, Carbon Emissions.

Introduction

Global climate change has become one of the biggest challenges for humanity in the 21st century. Increased greenhouse gas (GHG) emissions, largely resulting from industrial activities, transport and unsustainable exploitation of natural resources, have a direct impact on the environment, public health and economic resilience. Reports released by the Intergovernmental Panel on Climate Change (IPCC) show that increasing carbon emissions can accelerate environmental degradation, increase the risk of extreme weather changes, and threaten the sustainability of human life (Hossain et al., 2018).

In facing these challenges, the concept of green economy comes as a strategic solution that integrates economic growth with efforts to maintain environmental sustainability. Green economy is an economic development paradigm that emphasises sustainability and balance between economic growth, social welfare, and environmental conservation. This concept emphasises the efficient use of natural resources and the reduction of negative impacts on global ecosystems, such as carbon emissions, pollution, and deforestation (Kapoor & Agarwal, 2021). The green economy aims to create long-term solutions through investments in environmentally friendly technological innovations, renewable energy, sustainable industrial practices, and effective resource management. In the global context, the green economy is becoming

an important instrument in the effort to address key challenges such as climate change, environmental degradation, and social and economic inequality (UNEP, 2011).

The green economy plays a crucial role in supporting sustainable development goals, especially in realising the three main pillars: economic, social and environmental. In the economic aspect, this paradigm promotes the transition from an economic system based on resource exploitation to one that is low-carbon and based on energy efficiency. On the social side, the green economy contributes to improving people's quality of life by creating new jobs in the renewable energy, green technology and environmental sustainability sectors. Meanwhile, from an environmental perspective, the implementation of a green economy helps prevent ecosystem damage, protect biodiversity, and ensure natural resources remain available for future generations (Ivanova & Wood, 2020).

In the context of sustainable development, the implementation of a green economy is becoming increasingly relevant given the adverse impacts of conventional economic activities on the environment and social balance. Without a systemic shift towards a green economy approach, long-term risks such as rising global temperatures, biodiversity loss, vital resource scarcity, and social inequality could threaten sustainability in various sectors of human life. Therefore, collaboration between public and private parties is necessary to accelerate the transition to a greener economic system (Barbier, 2011).

Thus, Green economy is a development paradigm that not only pursues economic benefits, but also ensures that economic activities are carried out in an environmentally friendly manner. Its main principles involve efficient resource utilisation, reducing carbon emissions, increasing renewable energy, and maintaining ecosystem balance. Although recognised as an ideal concept in sustainable development, the implementation of green economy faces various challenges, especially in the integration of public and private policies (Martinez & Urquiza, 2021). At the government level, barriers are often encountered in the form of lack of coordination across sectors, limited effective regulations, and weak supervision of the implementation of environmental policies. Meanwhile, from the private sector, resistance often arises due to the high initial costs involved in changing business models to become greener. The situation is even more complex when government incentives are not enough to motivate companies to adopt a comprehensive green economy approach (Bowen & Fankhauser, 2011).

Through the integration of public and private policies, synergies are expected to emerge that can encourage widespread implementation of the green economy. The government, as the main regulator and facilitator, can issue strategic policies such as tax incentives, renewable energy subsidies, and environmental education and training programmes. Meanwhile, the private sector can play a role in creating low-emission

technology innovations, investing in green projects, and building alliances to support carbon emission reduction together (Managi, 2019) .

Therefore, this research aims to analyse how green economy can be used as a pillar of sustainable development through strategic integration between public and private policies, especially in the effort to reduce carbon emissions. By understanding the principles of green economy, implementation challenges, and cross-sector synergy opportunities, it is hoped that it can make a real contribution in designing effective solutions to mitigate climate change and create a more sustainable future.

Research Methods

The study in this research uses the literature method. Literature research method, or often referred to as literature study, is a research approach that aims to collect, analyse, and synthesise information from various written sources such as books, journals, scientific articles, research reports, and other documents. This method is used to understand existing concepts, theories, or findings related to the topic to be studied (Tranfield et al., 2003) ; (Machi & McEvoy, 2016) . Literature research generally begins with a process of identifying relevant literature, organising data, and integrating information to support a theoretical framework or answer research questions. The advantage of this method is that it allows researchers to use data that is already available without the need to conduct primary data collection, which is often more efficient in terms of time and cost, and provides a strong foundation in understanding a particular context or problem (Ridley, 2012) .

Results and Discussion

Green Economy Can Be a Pillar of Sustainable Development

Green economy is an important concept in sustainable development because it focuses on the integration of economic growth, social welfare, and environmental conservation. This concept was born as a solution to global challenges such as climate change, environmental degradation, and socio-economic inequality due to conventional development models that tend to overexploit natural resources. With the green economy, development is directed to strengthen long-term sustainability without sacrificing the preservation of the earth for future generations (Green & Stern, 2021) .

The essence of a green economy is efficient use of natural resources, reduction of carbon emissions, and a shift towards environmentally friendly technologies. In practice, a green economy can be realised through investment in renewable energy, such as solar, wind and hydro power, which not only reduces dependence on fossil fuels but also creates new jobs. In addition, cleaner production processes, recycling and good waste management are also integral to this approach (Stern, 2006) .

A green economy does not only focus on environmental aspects, but also includes efforts to ensure that people benefit equitably from the development process.

Green economy strategies, such as the development of environmentally friendly economic sectors, can create sustainable jobs for people, especially in communities that have been marginalised. In this sense, green economy models contribute to the reduction of social inequalities that are often a challenge in conventional development (Chu & Nature, 2021).

In the agricultural sector, the green economy encourages sustainable farming practices that pay attention to soil health, wise use of water, and reduced use of harmful chemicals. Green economy-based agriculture not only preserves natural ecosystems, but also increases long-term productivity. This is important in meeting the growing global food demand without compromising ecosystems or causing massive deforestation (Kim et al., 2020).

In the urban context, green economy development can be realised through the concept of "smart cities" that apply technology for resource efficiency, integrated waste management, and low-emission public transport. Cities that adopt this approach can become thriving economic centres while supporting environmental interests by minimising pollution and negative impacts on residents' health (Kapsali & Fitsiou., 2022)

The government has a strategic role in encouraging the implementation of a green economy. Policymaking that supports green investment, incentivising green industries, and enforcing strict regulations on activities that damage the environment can be the driving force for the success of a green economy. This approach requires collaboration between the public, private and community sectors to jointly create a development model that benefits all parties (Awan & Sial, 2021).

In addition to the direct environmental and economic benefits, implementing a green economy also impacts a country's positive image internationally. Countries that support the development of clean energy and sustainable technologies are often perceived as leaders in the global effort to deal with the climate crisis. This image not only provides positive diplomatic leverage, but also attracts foreign investment that leans towards environmentally friendly sectors (OECD, 2013).

However, the transition to a green economy is not an easy one. One of the main challenges is the high initial cost of implementing green technologies, such as the construction of renewable energy infrastructure or the development of low-emission transport systems. In addition, resistance from long-established conventional industries is also often an obstacle. Therefore, long-term commitment and consistent policy support are needed to overcome these challenges (Ulaby, 2014).

On the other hand, the public also needs to be involved in the green economy development process. Education on the importance of sustainable lifestyles, such as the consumption of environmentally friendly products or waste reduction, is an important endeavour. Public awareness not only helps accelerate the adoption of the green economy, but also creates market demand for sustainably produced products (Fiorio & Crafts, 2022).

With all its benefits, challenges and opportunities, the green economy is an important pillar in realising sustainable development. This approach not only offers concrete solutions to environmental problems, but also opens up opportunities for innovative economic growth and social inclusion. With consistent action and strong cooperation, the green economy can be the foundation for a more just, harmonious and sustainable world.

Integration of Public and Private Policies Can Reduce Carbon Emissions

The integration of public and private policies in dealing with climate change and reducing carbon emissions has become an important topic in many countries. This collaboration can have a more significant effect because it involves the two main sectors that influence global emission levels. The government has a major role in designing policies, regulations and incentives, while the private sector is able to innovate and implement practical solutions (Kedia & Lahiri, 2021) .

Firstly, the government can set policies that force carbon emission reductions through strict regulations, such as emission limits for heavy industry and transport. Through laws that set emission limits, the government is able to pressure companies to find more environmentally friendly alternatives. Examples include the implementation of lower emission standards on vehicles as well as incentives for the production and use of Electric vehicles (Hart, 2001) .

Apart from regulation, the government can also provide financial incentives to encourage the private sector to innovate in green technology. Subsidies for renewable energy, tax rebates for investment in green technology, and funding for research and development can accelerate the adoption of green technology. These incentives are important to help companies transition to more sustainable operations (Costantini et al., 2021) .

On the other hand, private companies also have an important role to play in reducing carbon emissions. Companies with sufficient resources can invest in research and development of more efficient and cleaner technologies. They can implement technologies such as energy-efficient machinery, renewable energy sources, and cleaner production that not only reduce carbon emissions, but can also save operating costs in the long run (Zhang & Chen, 2021) .

Companies can also design and implement comprehensive environmental management programmes. These programmes often include carbon footprint audits, setting emissions reduction targets, and ongoing reporting and verification. With this strategy, companies not only comply with existing regulations, but also improve their image in the eyes of the public and increase competitiveness in the global market (World Bank, 2012) .

In addition, public-private partnerships can create collaborative platforms for different parties, including governments, companies, research institutions and civil

society, to co-create solutions to climate change. For example, smart city projects, which are a direct collaboration between the public and private sectors, can lead to more efficient and environmentally friendly transport systems and better energy management (Tundys & Capysławska., 2022)

It is also important to involve the public in carbon emission reduction programmes through education and active participation. Public awareness of climate change issues and practical ways to reduce emissions can be raised through public campaigns and education programmes. When people are aware and supportive, they can also lead greener lifestyles, which in turn has a positive impact on overall carbon emission levels (Park, 2021).

In addition, the establishment and enforcement of policies that support the circular economy can be an important step in reducing carbon emissions. The circular economy focuses on reducing waste and reusing resources, which can reduce environmental burdens. Governments can support this initiative with more environmentally responsible production and consumption standards (UNEP, 2011).

The contribution of digital technology and innovation in industrial transformation cannot be underestimated. Digitalisation and the use of technologies such as the Internet of Things (IoT), artificial intelligence (AI) and big data analytics can help optimise resource use and reduce emissions. For example, optimising logistics routes with AI can reduce fuel consumption and carbon emissions from the transport sector (Le Blanc, 2011).

Furthermore, it is important to create an international regulatory framework that supports carbon emission reduction efforts. Many carbon emissions issues are transnational in nature, requiring cross-border co-operation. In this regard, global agreements such as the Kyoto Protocol and Paris Agreement demonstrate the importance of collective international commitment. Governments from different countries need to continue collaborating to set global targets and share technology and knowledge (Oh & Kim, 2022).

That is why transparency and accountability are key elements in the integration of public and private policies. Establishing clear metrics and transparent reporting systems are important to ensure policies are actually implemented and result in the desired changes. Both governments and companies should be prepared to engage in regular evaluation and continuous improvement (Rautiainen & Lahti, 2022).

By integrating public and private policies, we can optimise the potential of both sectors to achieve significant carbon emission reductions. This collaborative effort will not only benefit the environment, but will also provide long-term economic benefits and improve the quality of life for future generations. Measures such as stringent regulations, financial incentives, technological innovation, public education, and international co-operation are key to holistically addressing the challenges of climate change.

Conclusion

The green economy is a key pillar in the effort to realise environmentally sustainable development. This approach emphasises the transformation of the economic system to be more sustainability-oriented, with a focus on reducing carbon emissions, conserving natural resources and improving social welfare. To achieve this, collaboration between the public and private sectors is essential in designing policies that support the transition to a low-carbon economy.

The integration of public and private policies in the green economy is a strategic step to increase the effectiveness of carbon emission reduction. The government can play a leading role through regulation, fiscal incentives, and green infrastructure development. Meanwhile, the private sector contributes with green technology innovation, investment in renewable energy, and adoption of sustainable business practices. Alignment between public policy and private practice provides greater synergy in driving systemic change towards sustainability.

Green economic development requires a collective commitment to address global challenges such as climate change and ecological crisis. With continuity between public policy and private practice, carbon emission reduction targets can be achieved more efficiently. It can also create new economic opportunities, such as green jobs, that support people's welfare without compromising the future of the environment. The green economy, with its integration of public and private policies, is an effective solution to realising sustainable development that is inclusive and adaptable to the challenges of the times.

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