

Rethinking of Green Economy: A Literature Review

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ABSTRACT: Green economy refers to an economic system that prioritizes sustainability and environmental protection while promoting economic growth and development. The concept of a green economy has gained significant attention in recent years as a response to the pressing environmental challenges facing the world. The implementation of the green economy in ASEAN has not developed as well as in other countries. This article tries to provide insight specifically regarding the philosophical basis of the green economy. There are several important points related to this topic, namely the concept of green economy, green energy, sustainable agriculture, green finance, green jobs and industries.

KEYWORDS: green energy, sustainable agriculture, green finance, green jobs, green industries.

I. INTRODUCTION

Green economy is a relatively new concept that has gained significant attention in recent years. It is an economic system that aims to promote sustainable development while reducing the negative impact of human activities on the environment. The concept of green economy is based on the idea that economic growth and environmental protection can go hand in hand. It is a holistic approach that takes into account the social, economic, and environmental aspects of development.

The need for green economy arises from the growing concern about the impact of human activities on the environment. The world is facing a range of environmental challenges, including climate change, deforestation, air and water pollution, and loss of biodiversity. These challenges not only threaten the natural environment but also the social and economic well-being of people around the world.

Green economy offers a solution to these challenges by promoting sustainable development. It is an economic system that is based on the principles of environmental sustainability, social justice, and economic efficiency. It aims to create a balance between economic growth and environmental protection by promoting the use of renewable resources, reducing waste and pollution, and promoting sustainable consumption and production patterns.

The concept of green economy is not only relevant to developed countries but also to developing countries. In fact, developing countries are more vulnerable to the negative impacts of environmental degradation due to their high dependence on natural resources. Green economy can help these countries to achieve sustainable development by promoting the use of renewable resources, reducing waste and pollution, and promoting sustainable consumption and production patterns.

Green economy is a concept that offers a solution to the environmental challenges facing the world today. It is an economic system that promotes sustainable development while reducing the negative impact of human activities on the environment. The concept of green economy is relevant to both developed and developing countries like ASEAN countries and can help to achieve a balance between economic growth and environmental protection. However, the implementation of green economy in ASEAN countries has not been widely reported. It is suspected that this is caused by a lack of understanding of this concept, especially regarding its philosophical basis. This article aims to bridge this gap and provide insight into this topic. In the following sections, we will explore the principles of green economy and how they can be applied in practice.

II. METHOD

We collected several articles related to the topic of green economy through search engines (Google Scholar). The selected articles are articles published during the last five years. Articles that are more than five years old are still considered if there is important information that cannot be answered in articles published in the following year. Next, we carried out descriptive analysis.

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III. RESULT AND DISCUSSION

Concept of Green Economy

Green economy is a field of study that aims to reduce environmental risks and deficits while promoting sustainable development. The theoretical foundations of green economy are based on principles of sustainability, environmental economics, and ecological economics. The concept of green economy is closely related to environmental economics, but has a more politically applied orientation. The concept of sustainable development has evolved over time, from its origins as eco-development to its present formulation as green economy. The weak sustainability concept premises allow for the neoclassical environmental economics not to take into full account the natural reality in its environmental policy proposals. The analysis of the ecological economics theoretical foundations has made it possible to conceive a strictly ecological definition of sustainability, a necessary condition for the sustainable development definition proposed. The development of green economy is relevant in the context of increasing global environmental challenges associated with anthropogenic destructive impact on the environment. The bioeconomic direction of sustainable development in combination with a closed production cycle becomes relevant, the development of which would help to overcome the imbalance of the ecological and economic system and minimize the burden on the environment (Egorova & Nekrasov, 2022; Romeiro, 2012; Yareмова, 2021; Zvarych et al., 2022). Overall, green economy is an important field of study that has significant implications for sustainable development, economic growth, and social equity. By promoting sustainable resource use and reducing environmental risks and deficits, green economy can help to create a more sustainable and equitable future for all (Alovsat, 2019; Dissanayake et al., 2021; Hsiao & Wang, 2022; Kumar & Aggarwal, 2022).

The principles of sustainability are a set of guidelines that aim to ensure that human activities do not harm the environment and that natural resources are used in a responsible and sustainable manner. These principles are essential for achieving sustainable development and ensuring that human activities do not harm the environment. They provide a framework for decision-making that takes into account the long-term consequences of our actions and the need to protect natural resources for future generations (Cundy et al., 2013; Śleszyński, 2016). Some of the principles of sustainability are conservation, equity, participation, precaution, and integration. The principle of conservation emphasizes the need to preserve natural resources and biodiversity for future generations. This involves reducing waste, recycling, and using resources efficiently. The principle of equity emphasizes the need for fair distribution of resources and benefits across different social groups and generations. This involves ensuring that everyone has access to basic needs such as food, water, and shelter. The principle of participation emphasizes the importance of involving all stakeholders in decision-making processes related to environmental and social issues. This involves engaging with communities, civil society organizations, and other stakeholders to ensure that their voices are heard. The principle of precaution emphasizes the need to take preventive measures to avoid environmental and social harm. This involves anticipating and addressing potential risks and uncertainties associated with human activities. The principle of integration emphasizes the need to integrate environmental, social, and economic considerations in decision-making processes. This involves recognizing the interdependence of these factors and ensuring that they are all taken into account.

Environmental economics is a branch of economics that focuses on the economic impact of environmental policies and the use of economic tools to address environmental issues. It seeks to understand how human activities affect the environment and how economic incentives can be used to promote sustainable development. Environmental economics plays a crucial role in informing environmental policy and decision-making. By understanding the economic implications of environmental issues, policymakers can design more effective and efficient solutions to address these challenges. Some key concepts and principles of environmental economics include externalities, market failure, cost-benefit analysis, pollution taxes and permits, and sustainable development. Externalities are the costs or benefits that are not reflected in the market price of a good or service. In the context of environmental economics, externalities often refer to the environmental costs or benefits associated with production or consumption. For example, pollution from a factory is a negative externality, while the preservation of a natural habitat is a positive externality. Market failure occurs when the market does not allocate resources efficiently, leading to an overuse or underuse of resources. In the context of environmental economics, market failures often arise due to the presence of externalities. For example, if a factory does not have to pay for the pollution it emits, it may overproduce and create a negative impact on the environment. Cost-benefit analysis is a method used to evaluate the costs and benefits of a project or policy. In the context of environmental economics, cost-benefit analysis can be used to assess the economic and environmental impacts of different policy options and help policymakers make informed decisions. Pollution taxes and permits are economic instruments used to internalize the costs of pollution. By imposing a tax on pollution or requiring companies to purchase permits to emit a certain amount of pollutants, these tools create an economic incentive for companies to reduce their emissions. Sustainable development is a key concept in environmental economics, which emphasizes the need to meet the needs of the present generation without compromising the ability of future generations to meet their own needs. Environmental economists study how economic growth can be achieved in a way that is environmentally sustainable and socially equitable.

Ecological economics is a field of study that seeks to understand the relationship between the economy and the environment. It is based on the premise that the economy is a subsystem of the larger ecosystem, and that economic activities must be conducted in a way that is environmentally sustainable. Ecological economics is an important field of study that provides insights into the

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complex relationship between the economy and the environment (Harris & Roach, 2021). Here are some key concepts and principles of ecological economics:

1. Transdisciplinarity

Ecological economics is a transdisciplinary field that draws on insights from economics, ecology, and other disciplines to understand the complex interactions between the economy and the environment.

2. Ends, means, and a normative stance

Ecological economics takes a normative stance, emphasizing the need to prioritize environmental sustainability and social equity over economic growth. It also recognizes that economic means must be aligned with social and environmental ends.

3. The scale issue

Ecological economics emphasizes the importance of understanding the ecological limits to economic growth. It recognizes that economic growth cannot continue indefinitely in a finite ecosystem, and that a sustainable economy must operate within the limits of the ecosystem.

4. Distribution of wealth

Ecological economics recognizes that the distribution of wealth is an important factor in achieving sustainable development. It emphasizes the need to address issues of social equity and distributive justice in environmental policy.

5. Allocation of resources

Ecological economics recognizes that the allocation of resources is a key factor in achieving sustainable development. It emphasizes the need to use economic tools such as taxes, subsidies, and regulations to promote environmentally sustainable resource use.

6. Sustainable scale

Ecological economics emphasizes the need to operate the economy within the limits of the ecosystem. This involves promoting sustainable resource use, reducing waste and pollution, and protecting biodiversity.

7. Fair distribution

Ecological economics emphasizes the need to address issues of social equity and distributive justice in environmental policy. This involves ensuring that the benefits and costs of environmental policies are distributed fairly across different social groups.

8. Efficient allocation

Ecological economics emphasizes the need to use economic tools such as taxes, subsidies, and regulations to promote environmentally sustainable resource use. This involves promoting the efficient allocation of resources to achieve environmental and social goals.

Green Energy

Green energy, also known as renewable energy, is derived from sources that are naturally replenished and have a minimal impact on the environment. It plays a crucial role in addressing expanding energy demands, combating climate change, and promoting sustainable development. Green energy should reach goals such as reducing greenhouse gas emissions, diversifying the energy supply, improving energy access and affordability, promoting innovation and job creation, enhancing energy resilience and supporting sustainable development goals (Ahmed et al., 2022; Androniceanu & Sabie, 2022).

Renewable energy sources are derived from natural resources that are replenished over time and have a minimal impact on the environment. Some example of renewable energy are solar energy, wind energy, geothermal energy, biomass energy, and hydropower. Renewable energy sources play a crucial role in addressing expanding energy demands, combating climate change, and promoting sustainable development. They provide an alternative to fossil fuels, reducing dependence on volatile and uncertain markets. By promoting sustainable resource use and reducing waste and pollution, renewable energy sources help to protect the environment for future generations (Ahmad et al., 2022; Carrasco et al., 2006; Erdiwansyah et al., 2021; Zhao et al., 2022). The main principal of renewable energy is for energy efficiency. Energy efficiency refers to the practice of using less energy to perform the same task or achieve the same result. It involves reducing energy waste and improving the efficiency of energy use. Energy efficiency is an important practice that can help to reduce energy costs, mitigate climate change, enhance energy security, promote innovation, and improve comfort and productivity.

The most important thing to remember, all about green energy cannot be achieved without knowledge of green energy policy. Green energy policies are initiatives and regulations implemented by governments to promote the development and use of renewable energy sources. These policies play a crucial role in transitioning to a more sustainable and low-carbon energy system. Green energy policies can create new job opportunities in the renewable energy sector and energy-efficient technologies. However, there may be a potential crowding out effect, where employment in other sectors is reduced as a result of the shift towards a low-carbon green economy. Green energy policies, such as feed-in tariffs that subsidize renewables, may lead to an increase in energy prices. This can have a burdening effect on industrial sectors, potentially stifling labor demand, and reducing the purchasing power of private households (Pestel, 2019). Green energy policies are often seen as a response to sustainability crises, such as the environmental impacts of conventional energy sources. However, a critical evaluation of these policies is necessary to assess their effectiveness in providing a sustainable energy future (Singh, 2017). Green energy policies can

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drive innovation and the development of new technologies in the renewable energy sector. This can create new business opportunities and job opportunities in the energy industry. Green energy policies are also essential for mitigating climate change by promoting the use of low-carbon and renewable energy sources. This can help to reduce the environmental impact of energy production and consumption (Pestel, 2019). Overall, green energy policies have both positive and negative impacts on various aspects of the economy, environment, and society. A comprehensive and well-designed approach is necessary to maximize the benefits and minimize the potential drawbacks of these policies.

Sustainable Agriculture

Sustainable agriculture is a practice that aims to meet the needs of the present generation without compromising the ability of future generations to meet their own needs. It involves reducing the environmental impact of agriculture and promoting the efficient use of natural resources. There is a gap between the theoretical concept of sustainable agriculture and its implementation in practice. This gap is caused by various obstacles, including theoretical, methodological, personal, and practical issues. To overcome these obstacles, a broader approach that addresses different dimensions and stakeholders is required. Areas of action include institutionalization, assessment and system development, education and capacity building, and social and political support (Siebrecht, 2020).

Crop production is facing unprecedented challenges due to a booming world population, a shortage of arable land, and rapid changes in climate. To ensure food and ecosystem security, there is a need to design future crops for sustainable agriculture development by maximizing net production and minimizing undesirable effects on the environment. Strategies to design future crops include improvement of current well-cultivated crops, *de novo* domestication of wild species, and redomestication of current cultivated crops. Advanced genome editing tools, synthetic biology approaches, and new integrative omics tools can be used to achieve these goals (Tian et al., 2021).

Soil health is closely associated with sustainable agriculture, as a healthy soil acts as a dynamic living system that delivers multiple ecosystem services. Agricultural sustainability is defined as the ability of a crop production system to continuously produce food without environmental degradation. Organic farming and tillage improve soil health by increasing the abundance, diversity, and activity of microorganisms. Conservation tillage can potentially increase grower's profitability by reducing inputs and labor costs as compared to conventional tillage (Tahat et al., 2020).

Green Finance

Green finance refers to financial products and services that are designed to promote sustainable development and reduce the environmental impact of economic activities. Green finance is an important tool for promoting sustainable development and reducing the environmental impact of economic activities. By providing financial incentives for environmentally sustainable projects and promoting sustainable investing, green finance can help to create a more sustainable and resilient economy for the future.

Sustainable investing is an investment approach that considers environmental, social, and governance (ESG) factors in selecting and managing investments. Sustainable investing can have a positive impact on firms by making them greener and shifting real investment toward green firms (Pástor et al., 2021). Sustainable investing is an important approach that considers ESG factors in selecting and managing investments. It can have a positive impact on firms and promote sustainable development. However, there are challenges associated with sustainable investing, such as the lack of transparency in ESG ratings and the potential impact on capital flows (Abhayawansa & Tyagi, 2021; Blitz et al., 2021).

Carbon pricing is a policy tool that puts a price on carbon emissions, creating an economic incentive for companies to reduce their emissions. Cities are developing local policies and programs to achieve carbon neutrality, and carbon pricing tools are emerging as a way to accelerate the reduction of greenhouse gas emissions (Ferreira et al., 2022). However, there is a need for scientifically robust, verifiable, and transferable carbon cost methodologies at the local level. Despite slow policy response by governments, higher education institutions are adopting internal carbon prices (ICPs) as a tool for decisions around carbon neutrality (Barron et al., 2020). Proxy carbon prices may be especially well-suited to decisions around carbon neutrality at a wide range of institutions. The interplay between carbon pricing and white certificate programs is complex, especially regarding opportunity costs and the efficiency of the two mechanisms combined in achieving environmental goals (Di Foggia & Beccarello, 2022). The relative weight of the components on saving differs significantly according to the dynamics of the related commodity and environmental markets. Carbon pricing can be used as a decision-making tool for decarbonizing the electricity generation mix of developing countries (Herath & Jung, 2021). Other regulatory policy tools, such as mandatory renewable energy development and fossil fuel phasing out, can be included as possible supporting tools. Carbon pricing is an important policy tool for reducing greenhouse gas emissions and promoting sustainable development. However, there are challenges associated with carbon pricing, such as the need for scientifically robust carbon cost methodologies at the local level and the complexity of the interplay between carbon pricing and other policy tools.

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Green Jobs and Industries

Green jobs and industries are those that promote sustainable development and reduce the environmental impact of economic activities. Green jobs and industries are an important component of the transition to a more sustainable and low-carbon economy. By promoting sustainable development and reducing the environmental impact of economic activities, green jobs and industries can create new job opportunities and promote economic growth while protecting the environment.

Green jobs and industries include three main things: green technology, green manufacturing, and green transportation. Green technology refers to technologies that are designed to reduce the environmental impact of economic activities and promote sustainable development. Green technologies can contribute to sustainability by reducing the environmental impact of economic activities and promoting sustainable development. By adopting green technologies, companies can improve their sustainability performance and reduce their environmental impact. Environmental regulation, lean production systems, stakeholder integration, and green investment are some of the factors that can promote the adoption of green technologies and improve environmental sustainability practices (Wang et al., 2022).

Green manufacturing refers to the use of sustainable practices in manufacturing processes to reduce the environmental impact of economic activities. Green manufacturing practices are designed to reduce the environmental impact of manufacturing processes by minimizing waste, reducing energy consumption, and using sustainable materials (Gupta, 2016). Green manufacturing can improve economic performance by reducing costs, increasing efficiency, and enhancing competitiveness. Green manufacturing can promote social sustainability by creating job opportunities, improving working conditions, and promoting social responsibility. This can help to improve the well-being of workers and communities. Green manufacturing also can encourage innovation by promoting the development and adoption of new technologies and practices that reduce the environmental impact of manufacturing processes (Abualfaraa et al., 2020). This can create new business opportunities and job opportunities in the green economy. Overall, green manufacturing is an important area of research and development that can help to reduce the environmental impact of economic activities and promote sustainable development.

Green transportation refers to transportation practices that reduce the environmental impact of economic activities. Green transportation is an important area of research and development that can help to reduce the environmental impact of transportation and promote sustainable development. By implementing green transportation practices, companies and cities can reduce their environmental impact and promote energy conservation and emission reduction. The optimization of green transportation routes and the policy implications of green transportation are important factors in promoting sustainable transportation practices (Primastuti & Puspitasari, 2022; Xin et al., 2021).

Green Economy in ASEAN

There have been some efforts to promote green economy in ASEAN countries. For example, the ASEAN Plan of Action for Energy Cooperation aims to promote the use of renewable energy sources and energy efficiency. The ASEAN Center for Energy also provides support for the development of renewable energy projects in the region. However, there is still a lot of work to be done to fully integrate green economy into the economic systems of ASEAN countries. One study investigated the relationship between CO₂ emissions, green finance, energy efficiency, and the green energy index (GEX) in six ASEAN member countries. The results indicate that green bonds are an effective technique for promoting green energy projects and significantly reducing CO₂ emissions (Ahmed et al., 2022). Another study argues that Southeast Asia's transition to clean energy has a consequential impact on the cohesiveness of the region. The cohesion itself is the result of the stepping up of ASEAN's clean energy cooperation and the growth of intra-regional trade in that respective area. However, there are still challenges to overcome, such as national interest, the involvement of great powers, the inequality in technology distribution, and the overshadowment in global investment to China, India, and Brazil due to their potential (Araisya & Susila, 2023). A third study suggests that hydrogen can be a high potential renewable fuel, energy storage, and energy carrier in ASEAN countries. However, the application of hydrogen in ASEAN is not optimally unlocked, and the high cost of hydrogen might be caused by high production costs that should be lowered down by applying various technologies to the production process (Clarance, 2022).

Some potential areas where green economics can be implemented in the region:

1. Clean energy

ASEAN countries have different potentials for every type of renewable energy. Therefore, there is an opportunity to develop renewable energy sources such as solar, wind, hydro, and geothermal power. The ASEAN Plan of Action for Energy Cooperation aims to promote the use of renewable energy sources and energy efficiency.

2. Water security

The sustainable green economy for protecting environmental health via income increase and poor eradication was discussed during the RIO+20 meeting. Countries with a successful, sustainable green economy depend on efficient integrated water management and provision of water supply and sanitary services. The water security index was another issue proposed to monitor national socio-economic development, and took account of domestic water, urban water, economic water (including irrigation water), river health, and resilience (Koontanakulvong et al., 2015).

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3. Green financing

Green finance can promote energy efficiency in ASEAN member countries. The issuance of green bonds can be used to finance green energy projects and reduce energy intensity. The establishment of digital green finance, long-term planning of a green finance market, trade liberalization, and policies are recommended as golden policy implications (Quang & Thao, 2022).

4. Green technology

Green technology and carbon finance have the potential to greatly add significance towards traditional financing practices related to carbon emissions because of information-based nature. By employing the panel data of ASEAN economies from 2011-2019, the study used CUP-FM and CUP-BC methods to empirically analyze the relationship between green technologies, carbon finance, carbon taxes, economic growth, and GHG emissions. The outcomes of the study revealed that green technologies, carbon finance, carbon taxes, and economic growth decrease GHG emissions. It implies that the synergetic effect of green technologies, carbon finance, carbon tax, and economic growth play an essential role in improving environmental conditions. Consequently, the ASEAN region can reshape the policies by integrating green technologies and carbon finance and also looks into the country's local condition to improve the urban environmental efficiency, hence, achieving carbon neutralization goal (Yunikewaty & Siswahyudi, 2023).

5. Bioenergy

ASEAN's logistical concerns and support for bioenergy production from biomass waste are consolidated to discuss the updates and the areas needing modification/improvement to sustain the increasing trend of bioenergy production and consumption amidst food security and other ecological issues in the region. There is an opportunity to develop an efficient and optimal logistical system for bioenergy in ASEAN, which needs to be supported with intensified R&D (Balanay & Halog, 2023).

IV. CONCLUSION

Green economics is an economic system that aims to promote sustainable development by reducing environmental risks and ecological scarcities. It involves the integration of environmental considerations into economic decision-making, such as the use of renewable energy sources, sustainable agriculture, and waste reduction. The implementation of green economics can lead to the creation of green jobs, increased energy efficiency, and reduced greenhouse gas emissions. Overall, while there have been some efforts to promote green economy in ASEAN countries, there is still much work to be done to fully integrate it into the economic systems of the region. There is potential for green economics in ASEAN countries, and the implementation of green economics can lead to the creation of green jobs, increased energy efficiency and reduced greenhouse gas emissions.

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