



Some Solutions to Promote the Circular Economy toward Sustainable Development in Vietnam

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ABSTRACT: The recent global economic growth has reached many significant milestones, however, there is a problem with natural resources shortage and increasing environmental pollution. Circular economic development has become an international trend, especially when the world's resources are increasingly exhausted, helping to solve the conflict between economic and environmental interests. In the context of international economic integration, Vietnam has signed a lot of new-generation free trade agreements (FTAs) with different countries and economic sectors, including commitments on environmental protection. Hence, adopting the circular economic model in Vietnam is inevitable to achieve sustainable development.

KEYWORDS: Circular Economy, Economic Development, Sustainable Development, Sustainable Economic Development.

1. INTRODUCTION

In recent years, the world has been transforming from a lineareconomyinto acirculareconomy model. The linear economic model's principle is using the natural resourcesas an input for the economy system, then going through the production and consumption process, eventually eliminating into the environment(which results indepletion,environmental degradation, increase in waste and pollution). Meanwhile, the circulating economic model vision towards sustainable development, environment quality guarantee, economic prosperity, and social equality, meets both the current and future benefits.

2. RESEARCH OVERVIEW AND METHOD

2.1. Research overview

The concept of sustainable development and sustainable economic development is derived from the 80s of the twentieth century and has gradually become a common trend in countries over the world. Many individual and organizational researchers have been discussing and researching this topic.

The report "Our Common Future" by the World Commission on Environment and Development (WCED, 1987) has analyzed the risks and challenges to threaten the sustainable development of countries in the world. The definition of sustainable development introduced in the report is: " Development that meets the needs of the present without compromising the ability of future generations to meet their own needs". This can be considered the foundation for later research on the nature of sustainable development and its principles, criteria, and target, which makes it still in wide use today. Holger Rogal (2011) in the work "Economics of sustainable development. Theory and practice" summarized previous theories focusing on the economic orientation school of sustainable development, which assists in building sustainable economy development policies such as sustainable economic policy, sustainable energy policy, and sustainable transport policy. Jeffrey D. Sachs (2014) in "Sustainable Development Economics " systematized and re-evaluated the issues of modern economics and considered a need for a new approach on sustainable development in the new era.

In Vietnam, some scholars have also researched and proposed significant concepts about the nature of sustainable economic development (or the sustainability of economic development). Nguyen Huu So (2009) in the article "Sustainable economic development in Vietnam" assumed 4 main points to focus on to ensure sustainable economic development: (1) Economic growth must be reasonable, of high quality, and maintained for a long time; (2) Economic growth must be associated with the economic structure formation and economic restructuring towards a reasonable development trend; (3) Developing the economy must go along with maintaining the macroeconomic balance; (4) Economic enhancement must have a spillover influence on social issues such as poverty reduction and social equality. Ngo Doan Vinh (2006) in the work "The main issues of economic development" supposed that economic development based merely on the increase in input factors of production factors is not sustainable economic



development. The economy is considered developing efficiently when the increase in the output is more than the increase in the input. This can happen owing to the application of advanced science and technology, management knowledge, use of capital and resources with more efficiency, and higher labor levels by promoting education and training. Besides, Pham Van Linh (2020) in the article "The Relationship between economic development and Implementation of social progress and Fairness in Vietnam Today" presumed economic development and social progress contribute greatly to social management and development. Thanks to fast and sustainable economic growth, the Party and State of Vietnam will have more resources and conditions to manage and keep society stable.

2.2. Research methods

Theoretical research methods have been used in this paper, such as reviewing relevant literature; analyzing and synthesizing data from scientific works, theses, related articles published in scientific journals, specialized magazines, and websites. After discussing the advantages and disadvantages of developing circular economics towards sustainable development in Vietnam, the author offered solutions to promote the circular economy towards sustainable development in the future.

3. RESEARCH RESULTS

3.1. Circular economy - The inevitable trend for sustainable development

In recent years, the world has been transforming from a linear economy into a circular economy model. The linear economic model's principle is using the natural resources as an input for the economy system, then going through the production and consumption process, eventually eliminating into the environment (which results in depletion, environmental degradation, increase in waste and pollution). Meanwhile, the circulating economic model vision towards sustainable development, environment quality guarantee, economic prosperity, and social equality, meets both the current and future benefits.

Circular Economy (CE) was introduced in the 1990s when developing modern society and increase in consumption started to put negative impacts on human health and ecosystem, as well as bring many threats to the environment and sustainable development. So far, there are many ways to understand the circular economy; however, the concept of circular economy by the Ellen MacArthur Foundation presented at the 2012 global economic conference is most widely recognized: "The circular economy refers to an industrial economy that is restorative by intention. It aims to enable effective flows of materials, energy, labor, and information so that natural and social capital can be rebuilt. It seeks to reduce energy by design, treating everything in the economy as a valuable resource." [8]. Accordingly, the circular economy is the economy that surpasses the current exploitation industry model, focusing on positive benefits for the whole society. It separates economic activities from the consumption of finite resources and limits waste and toward converting to renewable energy sources [9]. This is a vital economic development model in the world towards sustainable development because this economy achieves 3 goals: (1) Addressing the problem of the input resources exhaustion; (2) Overcoming environmental pollution in the development; (3) Harmonizing between economic growth and environmental protection.

The circular economy operates based on basic principles: *First*, preserving and improving natural resources by controlling limited resources and balancing renewable resources. *Second*, optimizing the use of resources by recycling products, ingredients of products and raw materials at the highest level always during the cycle of technical and biological life. *Third*, promote the effectiveness of the system by detecting vulnerabilities and eliminating negative effects from the outside [9].

Over the past years, the circular economic model has been applied in many different fields, generating socio-economic and environmental benefits and associating with sustainable development in many countries around the world. It is considered a sustainable economic system, with following characteristics:

Firstly, the important purpose of a circular economy is to optimize the use of resources.

The circular economy optimizes the use of resources through products or raw materials in the circular economy will be continuously maintained, reused, and recycled with a view to no resources exploit or wastes generation. This has become one of the main components of the carbon reduction plan in many countries. The circular economy also aims at separating economic growth from the overuse of limited resources through cutting down on and circulating natural resources, achieving both goals, which are responding to the exhaustion of input resources and solution to environmental pollution in the output process.

Secondly, the benefits that circular economy bring in the field of socio-economic and environment are both towards sustainable development.



The circular economy creates high economic growth potential and more jobs. Using resources economically, businesses can produce at a low cost by providing products and services with multiple functions. Compared with the common raw material exploitation by linear method, the circular economic model can save a larger number of raw materials. While the demand for raw materials will increase due to the world population and the increasing demand for consumption, activities in the circular economy use less raw materials owing to much focus on extending the cycle of raw materials.

Thirdly, the conversion to circular economy is the process of satisfying climate change adaptation requirements.

This is an adjustment process with the aim of minimizing the negative impacts of the linear economy, creating a long-term recovery, a path towards the low carbon economy, especially in heavy industries field. Circular economic development can reduce the amount of carbon emissions from industry by 2030, compared to 2018. The European agricultural circular economy model has the potential to reduce the use of artificial fertilizers by 80% and thus contribute to the natural balance of the soil [10]. Soil degradation causes damage estimated at \$ 40 billion every year worldwide and has implied costs such as a biodiversity loss and a unique landscape loss [3].

Fourth, the circulating economy has a connection with many sustainable development goals (SDG) passed in 2015.

In September 2015, the 2030 Agenda with 17 Sustainable Development Goals was adopted by the United Nations General Assembly to end poverty, protect the planet, and ensure prosperity for all, including goals such as zero poverty, responsible consumption and production, sustainable cities, and communities, promoting industrialization, inclusive and sustainable growth, etc.

The transition to a circular economy is a great opportunity for rapid and sustainable development, helping to meet the goals of the 2030 Agenda for Sustainable Development. At the same time, this is also a premise to realize the sustainable development goals (SDGs 2030) through ensuring sustainable production and consumption, such as reducing the rate of "declining" resources, preserving meet the needs of future generations; raise people's awareness about reuse, waste recycling, and limit unnecessary consumption of single-use items; extend manufacturer's responsibility to support 100% waste-to-material recycling. This is the path towards a low carbon economy, especially in heavy industries. Calculations of the European Union (EU) show that the circular economy through measuring and controlling activities from the demand side can help reduce emissions from industries by more than half.

3.2. Advantages and challenges in developing circular economy in Vietnam

After over 35 years of renovation, Vietnam has achieved many socio-economic achievements but is still a low-middle-income country. Although we are only 68th in the world in terms of area and 15th in population, we are currently ranked 4th in the world in terms of plastic waste, with 1.83 million tons/year. Energy consumption has increased rapidly in recent years, so since 2015, Vietnam has become an energy importer. Many resources are currently in serious decline, typically coal. Since 2015, Vietnam has had to import coal, of which in 2018 is about 22.9 million tons; It is forecasted that by 2030, our country may have to import up to 100 million tons of coal per year. Environmental pollution is also causing serious damage. According to the World Bank, water pollution could cost Vietnam up to 3.5% of GDP by 2035. Vietnam is among the most vulnerable countries to climate change [12]. Therefore, to realize the sustainable development goals and international commitments that Vietnam has signed, the approach to transforming the model from "linear economy" to "circular economy" needs to be considered as a priority in the next phase of the country's development. The development of a circular economy in Vietnam currently has the following advantages:

Firstly, the Party and State have made many guidelines and policies on circular economy development towards sustainable development. That is, Vietnam is continuing to perfect the institution of a socialist-oriented market economy, transforming from a linear economy to a circular economy, with many new business models based on the application of science - technology and policy innovation, contributing to rapid and sustainable economic development.

Resolution No. 55-NQ/TW of the Politburo dated February 11, 2020 "On the orientation of Vietnam's national energy development strategy to 2030, with a vision to 2045", affirms that priority must be given to development. renewable energy, develop power plants using waste and waste to protect the environment and develop circular economy. The Resolution of the 13th Party Congress affirms the policy of "building a green economy, a circular economy, and being environmentally friendly" [6, p. 331], "Building roadmaps, mechanisms, policies and laws to form and operate the circular economy model" [13, p. 143].

In addition, Directive No. 36/1998/CT-TW dated June 25, 1998, of the Politburo, "On strengthening environmental protection in the period of industrialization and modernization of the country" identified focus on supporting the application of clean



technology with low consumption of raw materials. In 2017, the Prime Minister approved the Project "Development of Vietnam's environmental industry to 2025", aiming to form an environmental industry that can meet the contents of the circular economy. In 2020, the Prime Minister approved the "National action plan on sustainable production and consumption for the period 2021 - 2030". There are also several related laws and policies, such as the Law on Minerals, the Law on Natural Resources and Environment of Sea and Islands, and the Law on Environmental Protection 2020, which have legislated regulations on the circular economy.

Secondly, the circular economy has been receiving the consensus of people and businesses. With the development of science - technology and the Industrial Revolution 4.0, it will be a dedicated opportunity to explore and implement solutions to improve the efficiency of using natural resources. The circular economy will also reduce the pressure of resource shortage, environmental pollution, large amount of waste, especially plastic waste. It contributes to the implementation of sustainable development goals and climate change response, to the reduction and almost complete recovery of greenhouse gases, with no emissions to the environment. Therefore, the circular economy development will receive the consensus of the whole society.

From a business perspective, the circular economy also brings a new perspective on the relationship between markets, customers, and natural resources, thereby contributing to the promotion of new innovative business models. breakthrough technology helps businesses grow higher through cost reduction; reduce energy consumption and CO₂ emissions; strengthen the supply chain and conserve resources [14]. The circular economy is a distinctly different way of doing business, forcing businesses to rethink every step of their production and business, from product design and manufacturing to customer relationships. The advantage of the circular economy is that it helps businesses to produce and do business efficiently, while aiming for a zero-emissions economy and environmental protection, thereby, well solving the relationship between economic growth and negative effects on the environment.

Thirdly, many new production and business models making it closer to the circular economy in the private sector have been successfully implemented, creating many production and business opportunities, and improving competitiveness in Vietnam as well. The model of eco-industrial parks in Ninh Binh province, Can Tho city and Da Nang city can be mentioned, saving 6.5 million USD/year; model of processing aquatic by-products; Vietnam Packaging Recycling Alliance (PRO) [15].

The foreign direct investment (FDI) business sector is active in promoting the circular economy in Vietnam through waste and by-product recycling plans, with modern, advanced, and transparently controlled waste treatment processes. Nestlé Company produces unburnt bricks from boiler waste, processes fertilizers from non-hazardous sludge and uses milk cartons as ecological roofing. Nestlé also plans to recycle and reuse 100% of its product packaging by 2025 [16].

Heineken Vietnam has nearly 99% of waste or by-products reused or recycled, 4/6 breweries use heat energy from renewable energy and zero-carbon fuel. Unilever Vietnam implements a program to collect and recycle plastic packaging and sort waste at source, etc. [17]. In June 2019, 9 pioneering enterprises founded the Vietnam Packaging Recycling Alliance (PRO Vietnam) [18].

Besides the above opportunities, the circular economy in Vietnam still faces many difficulties and challenges:

The biggest challenge in adopting a circular economy model is the cost of recovering value from waste. The circular economy is a closed model that uses the waste of one cycle for the input of the new cycle. In Vietnam, the amount of waste is forecast to double in the next 15 years. Recent Vietnam's waste recycling rate is less than 10% of total waste, which is a small percentage compared to countries that have been implementing the circular economy model. The amount of plastic waste and plastic bags nationwide currently accounts for about 8% - 12% of domestic solid waste. If on average about 10% of plastic waste is not reused but completely discarded, the amount of plastic waste and plastic bags discharged into the environment is approximately 2.5 million tons/year [14]. The high rate of waste makes it difficult to manage the collection and recycling of waste resources.

Secondly, the current economic system in Vietnam is geared towards the needs of a linear economy. Enterprises, when making economic decisions, give priority to considering market signals, not paying much attention to external factors that are positive or negative to society and the environment. The production and business models under the circular economy are not yet popular, because most businesses are still operating according to the logic of the linear economy, whose goals are focused on creating short-term value, while circular economy is a model of long-term value creation.

Thirdly, the legal and infrastructure conditions for the development of the circular economy are still lacking, with many inadequacies, making it difficult to deploy new business models. The circular economy requires a production and development strategy that uses the product as long as possible, and a plan to bring materials back into production later. Achieving that requires large investments in waste collection, segregation, and recycling infrastructure.



In addition, difficulties and challenges come from the small demand for cyclic products and substitutes; lack of qualified and technical experts to implement this new economic model. The current measurement of gross domestic product (GDP) index has also not focused on considering social and environmental factors and has not encouraged value creation in both these areas.

3.3. Some solutions for circular economic development towards sustainable development in Vietnam

To promote the development of the circular economy to contribute to sustainable development, in the coming time, it is necessary to implement the following solutions:

Firstly, the State needs to continue to perfect the system of policies and laws to issue regulations and standards for circular economy development in line with new trends in the region and in the world. Using technical standards, environment, tax tools, etc. to limit the excessive use of resources, limit waste in the production process. Strongly renovate the economic growth model based on the efficient use of capital and labor inputs, sustainable economic growth associated with economical and efficient use of resources.

Secondly, encourage enterprises to participate in planning production and business strategies in a sustainable way, applying circular economy models, and production and business associated with environmental protection, additionally, have strict regulations on corporate responsibility for waste generated by enterprises.

Thirdly, build a database on the circular economy associated with digital economic transformation and the Fourth Industrial Revolution. Promote cooperation and linkage among economic sectors and social organizations in the development of circular economy in Vietnam, in which the Government plays the leading and creating role.

Fourthly, propagandize for people to change their thinking about consumption towards using environmentally friendly products and products with CE marking; Raise awareness of waste segregation at source to reduce costs in waste use and recycling.

Fifthly, to introduce into the education - training program at all levels the knowledge of circular economy in order to provide basic knowledge about the circular economy; at the same time, training human resources capable of operating the circular economy model associated with innovation and high technology use.

4. CONCLUSION

Shifting from a linear economy to a circular economy is a global trend and Vietnam is no exception to that trend. It is the best way to deal with the relationship between economic growth and the negative effects such as resource depletion, pollution and environmental degradation, or in other words, no longer have to trade-off between economic development and environmental sustainability, simultaneously realizing many goals of sustainable development. Towards this orientation, it requires the efforts of all sectors of society, especially, businesses are the central driving force, the State plays the role of creating, leading, and the community participates in implementation to change both the perception and behavior of the whole society.

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