



GREEN LOGISTICS GUARANTEES SUSTAINABLE DEVELOPMENT IN THE FUTURE - A CASE IN VIETNAM

Dr. Luu Thanh Tam

HUTECH University, Ho Chi Minh City, Vietnam

Email: lttam@hutech.edu.vn

Abstract

In recent years, the world economy has grown strongly, but this also directly affects the environment, causing climate change. So besides business development, we also need to pay attention and have solutions to protect the environment sustainably. Understanding the urgency of this issue, many countries have been applying "greening" to the development of their economic sectors, including logistics - one of the industries that have a great impact on society and play a vital role in the development of the economy important role in contributing to sustainable development. Currently, the popular trend that logistics enterprises in other countries focus on in operating criteria is Green Logistics. However, Green Logistics in Vietnam is still in the development stage, and despite its potential, it is still slow due to some inadequacies. From the above research results, the research team has proposed several solutions for Vietnamese logistics enterprises to apply Green Logistics in their businesses.

Keywords: Environmental protection, Logistics enterprises, Green Logistics, sustainable development, trends.

Introduction

For many centuries, Vietnam has always been a country strongly affected by climate change, global warming, and environmental pollution. In recent years, the situation of environmental pollution and destruction in our country is gradually becoming more serious, and the influence of climate change is also increasing. One of the main causes of this situation comes from the negative side of the industry, or more specifically, the production, exploitation, and development activities of enterprises. Over the past decade, the annual industrial growth rate

of 15 - 17% has greatly contributed to the country's economic growth. Besides the positive side, the process of industrialization also causes significant environmental impacts. Environmental pollution is becoming more and more serious in industrial zones, urban areas, and densely populated areas.

To minimize the negative impacts of industry on the environment, Sustainable Development is the development strategy that Vietnam is proposing and implementing in the 21st century. Therefore, "Green Logistics" is an inevitable trend and an important criterion that Logistics enterprises must implement together with the State to complete this strategy. Economic development associated with ecological and environmental balancing activities" will be an inevitable trend and an important criterion to evaluate the sustainable development of the whole industry.

Literature Review

Definition of Green Logistics

According to Liwen Zheng (2010), Changchun University of Science and Technology (China), "Green logistics is the implementation of management activities aimed at satisfying customer needs and social development goals, connecting green supply and demand, overcoming the obstacles of space and time to achieve efficiency in providing goods and services. Green Logistics limits environmental damage and uses the best logistics resources. Green Logistics is a concept that encompasses both the Green Logistics business and the activities to manage, standardize and control Green Logistics."

In general, Green Logistics includes all activities related to reducing and measuring the environmental impact of supply chain activities, creating sustainable development values for businesses, and balancing between business efficiency and environmental protection.

Benefits of Green Logistics

- Increase the efficiency of vehicles, save costs and time of waiting and picking up goods, contributing to limiting traffic congestion, reducing fuel and energy consumption of vehicles and equipment, and reducing emissions. environment.
- Create new competitive advantages, and increase brand value for businesses.
- Limiting the impact on the environment such as minimizing industrial waste when businesses are encouraged to use materials that can be reused, recycled, and easily decomposed in the natural environment; reduce CO₂ and waste of natural resources when Green Logistics will prioritize the use of fuel-efficient means of transport; use energy

efficiently, exploit and expand clean energy, reduce the proportion of non-renewable energy (oil, coal, gas).

- Green Logistics improves the living environment and people's health: In Green Logistics, products are produced environmentally friendly and delivered to consumers by Green Logistics service.

- Green Logistics contributes to minimizing social costs such as costs of improving and rehabilitating water, land, forests, etc., improving and enhancing people's health and quality of life.

Limitations of Green Logistics

- The process is complicated, takes a lot of time, and requires synchronization, unification between stages, and close cooperation between the parties.

- Expensive costs, especially the planning costs of transportation, urban areas, residential ... and when converting to using clean energy such as electricity, wind, solar will also have to bear a higher price, which is costly for Business.

- Data risk: Going paperless will directly pose a risk to data record keeping. System crashes, computer theft, viruses, and hacking of sensitive information will cause great damage.

- The use of green materials in production and business processes may lead to an increase in product prices.

- Requires high technology level and high-quality human resources; modern and synchronous infrastructure.

Results and Discussions

The situation of green logistics development in Vietnam

In the integration period, when our country's economy is undergoing a remarkable transformation, Vietnam is considered a potential market that can create momentum for the development of logistics in the future. With logistics services, businesses can easily manage the production and business process, and circulate goods easily at the lowest cost. According to statistics from the Vietnam Logistics Business Association (VLA), the growth rate of the logistics industry in Vietnam in 2021 will reach 10-12%, and in 2022 is expected to reach 14% and continue to increase. The logistics market in Vietnam is highly appreciated, ranking

64th out of 160 countries in terms of logistics development and ranking 4th in ASEAN after Singapore, Malaysia, and Thailand. This is a positive expression for the development of the logistics industry in our country.

According to the World Bank (WB) data, in 2020, Vietnam's logistics costs currently account for about 20.9-25% of GDP, of which transportation accounts for 50-60% of the high costs compared to developed countries. However, logistics is also the main cause of environmental pollution when it increases carbon emissions and uses a lot of fossil fuels. To minimize the negative impacts of the logistics service industry on the environment, Green Logistics is the development strategy and the goal that our country is aiming for.

Besides activities related to infrastructure and legal institutions, Vietnam also facilitates and supports a lot for businesses in developing green logistics. Enterprises receive support from the Government and ministries and branches through circulars and decrees. Most recently, Prime Minister Pham Minh Chinh has just signed Decision No. 1044/QĐ-TTg dated September 5, 2022, establishing the National Steering Committee on Green Growth, which is an inter-sectoral coordination organization with the function of helping the Government, the Prime Minister studies, directs and coordinates to solve important and interdisciplinary works on green growth and implements the National Strategy on green growth in Decision No. 1658/QĐ-TTg dated October 1, 2021, of the Prime Minister.

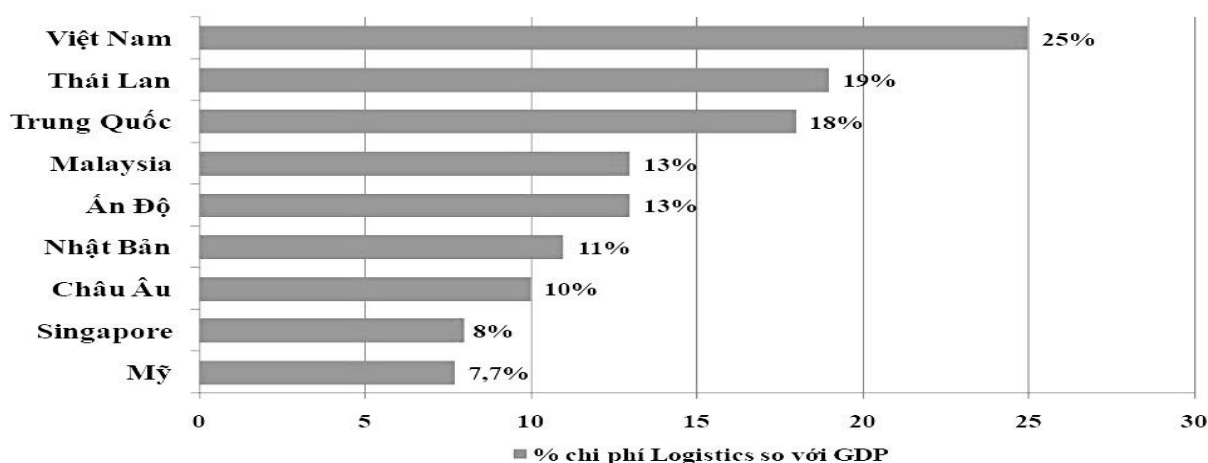


Figure 1. Logistics cost to GDP ratio of some countries in 2020

Analysis

Operations of Logistics Centers

Logistics centers are a key factor in promoting the development of production, circulation, import, and export of goods, bringing many important contributions to

sustainable development and ensuring the competitiveness of all types of services. logistics service. Currently, in the localities, many logistics centers have appeared, but the scale is small, not meeting the requirements. Therefore, it is necessary to accelerate the construction of many large logistics centers outside of Hanoi, Ho Chi Minh City, etc. according to the planning and at the same time effectively apply policies to support the development of logistics services and suitable socioeconomic conditions of the region.

In addition to the large physical logistics centers, now with the advancement of technology and the development of e-commerce, from the end of 2018, in Vietnam, a new model has begun to form, that is Dropshipping – a business model: when online stores can still operate without needing to store inventory, just have products and immediately ship them to consumers. Businesses that have developed this model are Tiki, Lazada, Shopee,...

Logistics infrastructure

In general, our country's transport infrastructure is still incomplete and synchronous: the road system between regions, seaports, and warehouses is still scattered and lacks connectivity. At the same time, there are many inadequacies, leading to slow transportation speed in logistics, high costs, and low competitiveness. Currently, railway transport is mainly developed at the level of safety and endurance. Railway infrastructure is still weak and outdated, which is one of the main reasons why the rail transport market share has decreased recently. The seaport structure is also unsatisfactory when it comes to low efficiency because most of them are general and container terminals, the number of international ports is small and the reception capacity is low. In addition, in the process of transportation, there are also difficulties such as traffic jams, narrow roads, and regulations on vehicle loads ... making the costs of businesses increase when it wastes time and fuel. to transport raw materials and goods. In addition, transportation capacity is still limited, and outdated vehicles cannot keep up with the development needs of the logistics industry. These are the challenges for the development of Vietnam's Green Logistics in the context of integration and green economic growth.

As a country bordering the East Sea, with the current waterway and seaway infrastructure, it has great potential to develop in the future to become a key green, sustainable, and environmentally friendly mode of transport. for Vietnam. Currently, our country is also focusing on projects to build new highways. According to the report of the Ministry of Transport, in the 2021-2025 period, nine new East North-South expressway

projects will be invested with a capital of 124,619 billion VND, helping to transport goods faster and save money fuel consumption.

Application of information technology in logistics activities

In the 4.0 era, the application of information technology to logistics has made new developments, when E-Logistics, Big Data, IoT, etc. Save costs and improve service quality. However, according to a survey in the Logistics White Paper 2018, nearly 40% of IT applications and software used in logistics enterprises are basic tools (tracking and tracing, delivery management systems). , warehousing, electronic data exchange, and transportation management). Most of them are small and medium logistics enterprises, while in enterprises, they use modern applications such as EDI (Electronic Data Interchange), radio frequency identification technology - RFID (Radio Frequency Identification), and management system. Enterprise management integrates ERP (Enterprise - Resource - Planning), cloud logistics, tools for codes, and barcodes, ... but still very limited.

Consumer Demand for Green Logistics

As life is changing, shoppers are becoming more concerned about the environment than ever, and their buying habits reflect that. According to recent IBM data, nearly 80% of consumers consider sustainability important. The data also shows that nearly 60% of consumers are "willing to change their shopping habits to reduce their environmental impact". Therefore, more and more countries around the world have considered environmental protection as one of the criteria to evaluate products as well as the sustainable development of enterprises. With stakeholders focused on the environment, both e-commerce and brick-and-mortar businesses will need to prioritize sustainability to stay competitive. In the Vietnamese market, the requirements for environmentally friendly products as well as consumer awareness have also greatly improved, which is a favorable condition and opportunity for the development of Green Logistics.

Some solutions and recommendations for the development of green logistics in Vietnam

- Solutions for Logistics businesses

Regarding production: Companies need to focus on training employees on how to optimize production activities but still be environmentally friendly. Having skills and qualifications to use new techniques in production activities. Limit the discharge of untreated

waste directly into the environment, and have a clear waste classification process: not or can be recycled. Enterprises should also use materials that can be reused, recycled, and easily decomposed in the natural environment, such as can be applied to packages or used pallets to place goods instead of using packaging that takes up space. warehouse area and cause pollution. Developing digitization in the production process reduces the use of paper and documents, avoids waste of resources, and saves costs. Design and layout of warehouses, a reasonable number of warehouses near the source of raw materials, traffic hubs, and consumer markets will save costs for the production and transportation process. Optimizing inventory strategy to reduce logistics costs and environmental pollution because more or less stock creates waste, leading to low business efficiency, and increased storage costs. Therefore, it is necessary to study and calculate the volume of supply, demand, and inventory cost ratio to apply an appropriate inventory strategy. Design a sustainable warehouse, for long-term use... to avoid the waste of materials, rebuilding, or rapid deterioration of the warehouse.

- *About the warehouse system:*

Automated warehousing solutions: businesses use warehouse management systems (WMS). The system is capable of connecting stores and distribution centers with warehouses, as well as coordinating maritime and inland shipping. WMS allows companies to maintain inventory control and spot areas for improvement. By applying automatic technology, businesses can track the amount of inventory and goods sold in the warehouse through current applications, such as Kiotviet, Botbanhang, and Vietnamese CRM.

Increasing energy efficiency in warehouses: to save energy, businesses can now use solar energy equipment, led black, .. to reduce emissions. According to the Prologis website, about “15 percent of a warehouse’s total operating budget is spent on energy costs.” As a result, many companies prefer solar-powered warehouses and distribution centers because they save them money and bring companies closer to environmental, social, and governance goals. ESG).

Optimize warehouse design: companies need to collect operational data on actual base throughput, information on warehouse structure requirements such as load and flatness, and accurate data on the flatness of the warehouse. flooring and even weather information as it relates to the possible impact on the strength of the warehouse structure. By incorporating these elements into warehouse design, companies can achieve energy efficiency and increase productivity.

Optimal warehouse construction location: warehouses tend to be built as close to major ports, roads, airports, and their customers as possible to minimize shipping between each step in the distribution process. From there, it is possible to optimize transportation costs and warehouse locations of businesses.

- 'Regarding transportation:

Enterprises should apply multimodal transport and can choose environmentally friendly means such as waterways. Apply technology to logistics data management to be able to track metrics such as vehicle time on the road, fuel level, and emissions,... Or increase vehicle efficiency with route optimization automated routes such as pre-route planning for transportation using GPS technology, locating transport units for managers and creating more efficient routes. This helps to increase the efficiency of the vehicle, save costs and time to wait, pick up goods, contribute to limiting traffic congestion, and at the same time reduce fuel and energy consumption of vehicles and equipment. reduce emissions into the environment. From there, understand the situation as well as control their Green Logistics better, achieve transport efficiency, and protect the environment. -Using green packaging: businesses use packaging services made from recyclable or biodegradable materials, which are environmentally friendly. In addition, warehouses reuse pallets and containers, materials such as cardboard, and metal to reduce wastes that pollute the environment.

Green transport: Businesses should switch to using means of transport that generate lower emissions such as electric vehicles using clean energy, water transport, etc.

Green logistics data management: applying technology to manage data effectively, improve logistics efficiency, and minimize transportation and delivery time. From there, it helps businesses to track and manage data, saving time and costs.

- Application of Reverse Logistics

Activities related to the control and reuse of products and materials. The purpose is to recover the material products that do not meet the user's requirements but can still be recycled from the point of consumption to the place of production. This is also one of the difficult solutions for many logistics businesses today, because the cost to recall that product is quite high, from contacting customers again, handling products and negotiating with customers. But if businesses build a professional and smooth operation plan, this will be an advantage because it also helps the production system work better, reducing costs in transporting goods to the warehouse. , product packaging,... Reverse logistics: enhancing the optimal flow of materials and semi-finished products from the point of consumption to the initial stages. The

basic operations of reverse logistics include Direct reuse or resale; Product recovery includes repair, renewal, remanufacturing, and dismantling of spare parts.

Application of artificial intelligence (AI) in warehouse automation. Inventory processes, collect and analyze inventory information, and forecast revenue to increase efficiency and drive sales for businesses.

Use AI to predict demand, modify orders, and reroute products in transit. In addition, it is possible to predict many warehouses in the supply chain to find the best supplier to bring efficiency and save transportation costs for businesses.

Combining AI and Robotic Automation (RPA) has created a technology called cognitive automation. In enterprises, repetitive tasks can be automated with the help of AI. For example, a back-office automation application that helps companies with multiple supply chains save employees, time, and money for businesses.

Recommendations

The State needs to continue to improve policies and regulations on the environment, with specific regulations on the recovery and treatment of scrap, discarded products, and non-degradable packaging for businesses. At the same time, there is a policy of higher tax on non-recyclable materials to encourage businesses to be self-conscious about using materials that can be recycled and reused and have measures to protect them. more environmental protection. Implement policies on preferential loans, subsidies, and tax support for businesses applying Green Logistics to encourage them.

In terms of infrastructure, it is necessary to focus on investing in transport infrastructure, improving the quality of existing transport modes and transportation systems: railway stations, ports, etc. to develop optimally. routes between logistics centers with raw material suppliers, production plants, and consumer markets.

Regarding information technology, it is necessary to promote the application in the management of production and transportation activities, to quickly implement customs declaration procedures, save transportation time, and achieve high efficiency.

Conclusion

Through research, we realize that Green Logistics is very necessary when it has contributed to the sustainable development goals of the world in general and Vietnam in particular. The development of Green Logistics not only saves costs and time, optimizes supply chains, and strongly promotes sustainable business activities of enterprises, but also

actively supports ensuring environmental friendliness. school, demonstrating social responsibility.

Green Logistics is an important factor in "greening" the supply chain as well as for the sustainable development of companies and businesses. Hopefully, in the future, Green Logistics can receive more and more attention and investment in Vietnam. To do so, it is necessary to join hands, and close coordination between related departments. Government support such as policies to encourage the use of green logistics, ... Efforts of businesses: choosing a strategy, finding the best direction, most suitable for the economy and society, the environment, as well as in line with its policies and business objectives. In short, making good use of opportunities, promoting available strengths, and overcoming limitations and challenges will help Vietnam's green logistics develop stronger, creating a competitive advantage for the country's overall economy. water, making breakthroughs in the integration period, reaching out in the global big sea, especially in the context that consumers are increasingly attaching importance to environmental protection, prioritizing the use of environmentally friendly products and trends. The transition to a greener economy is taking place globally.

References

- Business Forum, Vietnam Logistics Industry 2022: Need a mechanism to support the development of 4PL-5PL logistics businesses, <https://diendandoanhnghiep.vn/nganh-logistics-viet-nam-2022-can-co-che-ho-tro-phat-trien-enterprises-logistics-4pl-5pl-215094.html>
- Decision 221/QĐ-TTg dated 22/02/2021, <https://thuvienphapluat.vn/van-ban/Thuong-mai/Quyiet-dinh-221-QĐ-TTg-nam-2021-sua-doi-Quyiet-dinh-200-QĐ-TTg-phat-trien-dich-vu-logistics-465626.aspx>
- Many positive signals for the logistics industry (April 23, 2022), <https://daibieunhandan.vn/nhieu-tin-hieu-tich-cuc-voi-nganh-logistics>
- Liwen Zheng, J. Z. (2010). Research on Green Logistics System Based on Circular Economy. *Asian Social Science*, 6(11), 116 - 119.
- Vietnam Association of Logistics Service Enterprises (2018), White Paper – VLA 2018 (VLA Whitebook 2018), page 73.

VTC10 channel news on August 13, 2018, the topic is "Vietnam towards green logistics development". <https://www.youtube.com/watch?v=7kEQB2GVzEA>

Website “VLA”. Vietnam Logistics Service Enterprise Association.

Vu Phong Energy Group (November 3, 2021)- Green Logistics- An important link for sustainable development, <https://vuphong.vn/logistics-green/>

What Is Green Logistics and Why Does It Matter? December 30, 2021, <https://optimoroute.com/green-logistics/>

<https://clibme.com/logistics-xanh-5-giai-phap-huong-den-kho-bai-xanh>

<https://isocert.org.vn/vai-tro-cua-ai-trong-nganh-cong-nghiep-logistics-la-gi-2>