

An Overview of Sustainable Development Through Green Logistics

Dr Usman Mohideen K S, *Associate Professor,*
Kuralarasi S and Sagarika V, *First year students,*
Department of Management Studies, Sri Sai Ram Engineering College.

ABSTRACT *The process of reducing a product's environmental impact throughout its life cycle is known as "green logistics." Environmental concerns among businesses are becoming more pressing, and this approach is attracting a lot of interest. For instance, when we talk about a "green supply chain," we usually think of road traffic. On the other hand, green thinking may be applied from supply to distribution at any point in the supply chain. By integrating an ecological approach into logistical system management, green logistics seeks to reduce the environmental effect of logistical systems. This includes the product's development, use, promotion, storage, transit, and final destruction throughout its whole life cycle. On the other hand, the health crisis has caused the various supply networks to become disrupted. However, the health issue has caused interruptions to the various supply chains, causing firms to restock on materials where production had resumed, which have led to an increase in pricing. This is in contrast to the situation that existed before the confinement ended and the construction sites resumed operations. The purpose of this essay study is to understand how green logistics can be implemented through sustainable development.*

KEYWORDS: *Environmental Impact, Green Logistics, Sustainable Development*

I. INTRODUCTION

“Green Logistics” creates a huge impact on competitive environment in recent days. Due to the fact that it is a crucial component of supply chain management and helps to enhance the transportation system. Logistics makes it easier for customers to receive goods and services when they need it. Because it facilitates economic transactions, it plays a significant role in fostering the expansion of trade and commerce within an economy. The concept of “Green Logistics” is the use of more sustainable and environmentally friendly methods. This method addresses every stage of the product’s life cycle, including production, marketing, storage, transportation, consumption and disposal. However, there are significant environmental issues resulting from the manufacturing, transportation, storage and consumption of all these items. One of the main environmental concerns are now a days is Global Warming, which is brought on by massive emissions of greenhouse gases. The most significant national and international concerns at the moment is reducing the adverse effects on the environment. The solution to this problem lies in the global application of sustainable development concepts and principles as well as the performance of transportation and logistics through the use of green logistics methods and principles. The “Green Logistics” notion is one of the ideas that can be address environmental protection criteria. This research is mainly focused on “How green logistics affects environment and how to overcome the green logistics through sustainable development”.

The primary goal of green logistics is to maximize sustainability and efficiency across the supply chain while reducing the negative effects of logistics and transportation on the environment. It involves reducing carbon-di-oxide emissions from various means of transport, energy consumption, and waste generation associated with transportation, warehousing, packaging, and distribution processes. Previously, "cost" solely applied to the amount of money, today it also refers to the extra expenses associated with logistics activities, such as waste, air pollution, and climate change. The ultimate goal is to maintain an equal balance between economic, environmental and social factors in logistics management.

II. REVIEW OF LITERATURE

Mariam (2023), This essay examines all of the environmentally friendly regulations and practices that the logistics industry has put in place to lessen its impact. This idea influences how structures and processes are set up, as well as how items are distributed and stored, and how transportation systems and equipment are used.

Anil Kumar (2015), The author created a conceptual framework for the use of optimization software, satellite navigation and positioning systems (GPS) or mobile communications systems (GSM and GPRS), automatic identification tools, and other tools to support the creation of new logistics processes that aim to lower costs by making better use of the resources at hand.

Oksana (2014), The paper describes ways to reduce externalities and achieve a more sustainable balance between environmental, economic, and social goals, this paper discusses green logistics as a component of sustainable development.

Paula Bajdor (2012), The focus of the study is on minimizing the negative and harmful environmental impacts, but it also introduces methods and behaviours that improves the society and causes rapid economic development.

Quan Chunguang (2008), This paper examines how logistics affect the environment and sustainable development, emphasizing the necessity of laws and regulations from the government and explains the need of green logistics for sustainable development as well. The creation of green logistics' countermeasures is then suggested.

III. OBJECTIVES OF THE STUDY

To conceptually review impact challenges of green logistics on sustainable development

IV. SCOPE OF THE STUDY

The purpose of this article is how the green logistics plays a vital role in our country and to identify the problem of logistics that affects environment in recent days in many manufacturing companies and analysing the tactics to overcome certain issue through sustainable development .

V. THE STRATEGIC IMPORTANCE

From an economic perspective, a green supply chain, also known as a sustainable supply chain, can be very helpful because it lowers operating costs, especially because of its energy efficiency. In fact, a green supply chain management allows for the reduction of usage of water, electricity, and other resources required for the process of manufacturing, supply, and transportation. Reusing end goods in a new industrial process is another option for recycling them. Due to intense competition in the market, businesses are becoming more conscious of social and environmental issues. As a result, they are implementing sustainable production methods to cut down on greenhouse gas emissions and optimizing their logistics to save expenses. Companies use energy-intensive forms of transportation to cut down on the amount of items they have on hand. But there are other links in the supply chain that contribute to its greenness than transportation; these include buildings, raw materials, and recyclable packaging.

VI. THE PROBLEM OF GREEN LOGISTICS

A number of challenges need to be addressed for green logistics to succeed. The high upfront costs of adopting green technologies and practices, the challenge of incorporating sustainable practices into the supply chain, the scarcity of green infrastructure and the constant need to comply with environmental regulations. Businesses and policy makers need to work together, be innovative, and show leadership in long-term sustainability to meet these issues. For example, air transport eliminates the storage cost also the fastest transport, however releasing a substantial quantity of CO₂. On the other hand the low and cheap packages that after consumption causes waste dumps they are not impacted by recycling or excessive recovery costs. The issue, though, is that this drives up the cost of goods generally and raw materials in particular. As a result, every business implementing this strategy is compelled to raise the service's final price, which will lower the sales and the business transactions.

VII. KEY STRATEGIES FOR OVERCOMING GREEN LOGISTICS CHALLENGES

Transportation: This includes not just improving delivery routes but also determining the most efficient ways of transportation. For example, rail or marine freight for long-distance transportation may dramatically cut carbon emissions when compared to trucks. Implementing car telematics systems may also assist monitor fuel use and driver behaviour to find areas for improvement.

Fuels: Switching to alternative fuels like biodiesel, compressed natural gas (CNG), or electric vehicles may significantly cut greenhouse gas emissions from logistical operations. Investing in infrastructure for charging stations or alternate fuelling stations may be required to facilitate this shift.

Packaging: Reducing packaging waste by utilizing recyclable or biodegradable materials, optimizing container sizes to reduce empty space, and introducing packaging designs that use fewer resources may all help to promote greener logistics. Furthermore, using reusable packaging options like tote bags or pallets may help reduce waste and save money over time.

Carbon credits: While lowering emissions should be the primary goal, carbon offsetting can assist to offset unavoidable emissions by investing in initiatives that remove or decrease greenhouse gases from the environment. This might include money for forestry, renewable energy initiatives, or carbon capture and storage technology.

Reduce, Recycle and Promote Green Logistics: Adopting the reduction, recycling, and reuse principles may significantly improve logistical procedures. Companies may reduce their environmental impact greatly by

decreasing waste, particularly in packaging and recycling materials. Promoting alternative delivery methods and incorporating them into the core logistics network is the future of sustainable and environmentally friendly operations.

VIII. WORKING ON THE FUTURE LOGISTICS TOGETHER

As we can see, in order to address the major obstacles facing sustainable logistics, we must collaborate to bring about change. The logistics industry can quickly become sustainable if the country and enterprises can gradually unite to bring about the necessary changes.

IX. CONCLUSION

As the world's ecosystem deteriorates as a result of globalization and industrialization, along with increasing temperatures and sea levels, many global logistics corporations are implementing green logistics, which is both economically and environmentally sustainable. Businesses are always under pressure to create ecologically conscious and conscientious operations, and environmental dedication is a crucial factor in competitive situations. Even though the concept of sustainable development for logistics operations can help give rise to "green logistics," which will not only emphasize actions to reduce its negative environmental effects but also introduce the instruments and behaviours that support the rapid economic development of the local community and society. In the global supply chain, green or ecological logistics enables a company or corporation to develop new technology and create regulations that lower carbon emissions, make the enterprise sustainable, and provide competitive advantages. Business and our country may overcome GREEN LOGISTICS issues by applying these tactics, as well as regularly analysing and upgrading sustainability initiatives.

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