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Green Logistics: A Learn, Evaluation And Initiatives In Business Organizations

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Abstract

Green logistics describes all attempts to measure and minimize the ecological impact of logistics activities. This includes all activities of the forward and reverse flow of products, information and services between the point of origin and the point of consumption. The objectives of this paper are to study and review the concept of Green Logistics and various issues governing green logistics. This paper aims to discuss the concept of green logistics through case studies of a few business organizatons. The paper also highlights the challenges in implementing green logistics in Indian business oganizations.

Approach/Methodology

The present paper studies the theoretical concepts concerned with environment, green logistics and the issues governing green logistics. This paper aims to review the concept of green logistics contributed by researchers in the field of environment and green logistics.

Value

The research paper concludes that due to a tremendous increase in the public and government concern for the environment there has been an excessive amount of pressure on Indian business firms todecrease the environmental impact on the local air quality generates noise pollution, leads to accidents and, in totality, remarkablycontributes to global warming. The impact of logistics on weather change has called for increasing attention in recent years, partially because increasing controls on pollution and road safety improvements have alleviated the other

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environmental problems. The Indian business organizations need to understand the concept of green logistics and need to rethink and redesign their logistics operation in order to protect the environment.

Keywords:(Environment and development); (Climate, Natural – disasters, Global –warming); (Transportation); (Green Logistics).

JEL Codes; Q56; Q54; L91; L99.

1. Introduction:

Logistics is the management of the flow of goods between the point of origin and the point of consumption in order to meet some requirements, for example, of customers or corporations. The resources managed in logistics can include physical items, such as food, materials, animals, equipment and liquids, as well as abstract items, such as time, information, particles, and energy. The logistics of physical items usually involves the integration of information flow, material handling, production, packaging, inventory, transportation, warehousing, and often security. The minimization of the use of resources is a common motivation in logistics for import and export.Logistics is the terminology used to convey the transportation, storage and handling of products as they move from the source of raw materials, through the manufacturing system to their final point of sale from where the purchase happens for end consumption. However, in this period logistics has been managed and studied for purely commercial reasons. It is only over the last few years that the concern for the economy has slowly grown about the environment. The last decade has seen a tremendous increase in the public and government concern for the environment. As a result there has been an excessive amount of pressure on major business firms to decrease the environmental impact of their logistics operations. Transportation of goods has a negative impact on the local air quality, generates noise pollution, leads to accidents and, in totality, makes a remarkable input to global warming.The impact of logistics on weather change has called for increasing attention in recent years, partially because increasing controls on pollution and road safety improvements have alleviated the other environmental problems.

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2. Review of Literature:

(*Brundtland Commission*, 1987), "Sustainability does not only have a green dimension. Sustainable development was originally portrayed as the reconciliation of environmental, economic and social objectives". The World Commission on Environment and Development Report (1987), with its establishment of environmental sustainability as a goal for international action, gave green issues a major boost in political and economic areas. The transportation industry was recognized as a major donor to ecological issues through its modes, infrastructures and flows. *McKinnon* and *Woodburn* (1996), *McKinnon* (1998), and *Cooper, Black* and *Peters* (1998) recognized a series of logistics and supply chain trends accountable for freight traffic growth. A UK study by PE International (1993) found that companies essentially reacting to external pressures for ecological improvement, mainly from European and UK government regulations. (*Kahn Ribeiro* and *Kobayashi,* 2007), "In the road transport sector, it is estimated that freight transport accounts for roughly 8 percent of energy-related CO2 emissions worldwide". (*Klassen and Johnson*, 2004), "Green Supply Chain Management as the alignment and integration of ecological management surrounded by Supply Chain Management". It indicates that an individual firm's environmental impact extends healthy beyond its business limits. (*Sarkis*, 2000), "Business firms who apply green principles to their in-house operations naturally wish to ensure that their purchases of goods and services come from suppliers that also meet certain ecological standards and the firms want to minimize any environmental liability connected with purchase of goods and services. *(Murphy* and *Poist*, 2003*)*, "In their research survey from the samples of US and Non-US companies found strong similarities in the ecological perceptions and practices of logistics management".

3. Green Logistics:

The concept of *green logistics* refers to supply chain practices that attempt to reduce energy and environmental footprint in terms of freight distribution. To be more specific, it focuses on materials handling, waste management, packaging, and transportation. While green logistics

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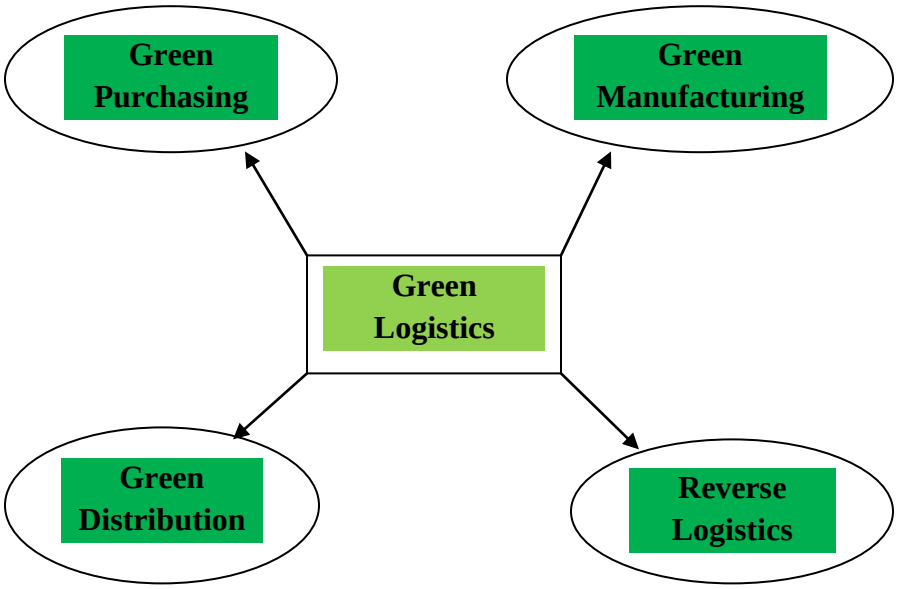
encompasses a wide variety of dimensions, companies that focus only on one specific dimension can still be implementing green logistics. For instance, one firm may be looking to decrease the amount of packaging materials while another firm may be looking into using alternative fuels. In both instances, each firm is attempting to implement a green logistics strategy. Green logistics describes all attempts to measure and minimize the ecological impact of logistics activities. This includes all activities of the forward and reverse flows of products, information and services between the point of origin and the point of consumption.

➢ Key Players in Green Logistics:

- State and Central Government.
- Customers and consumer with rising consciousness and demand for eco-friendly products and logistics services.
- Employees who are conscious about the environment and want to work in an environmentally and socially responsible company.
- Society with increasing claims for more corporate social responsibility (CSR).
- Companies themselves who can take initiatives towards environment.

➢ Components of Green Logistics:



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- **Green Purchasing:** Green Procurement (GP) is defined as environmental purchasing consisting of involvement in activities that include the reduction, reuse and recycling of materials in the process of purchasing. It is a process of selection and acquisition of product and services which minimize the negative impact over the lifecycle of manufacturing, transportation, use and recycling.
- **Green Manufacturing:** Green Manufacturing defined as aproduction processes which use inputs with relatively low environmental impacts, are highly efficient, and generate little or no waste or pollution.
- **Green Distribution:** The distribution of goods, either done by the companies themselves or by the logistics and distribution companies, generates a lot of waste and damages the environment. Green Distribution (GD) consists of green packaging and green logistics.
- **Reverse Logistics:**The concept of Reverse Logistics (RL) includes not only the returns from the customers, but also the management of e-waste. RL is the process where a manufacturer accepts previously shipped products from the point of consumption for possible recycling and/ or re-manufacturing.

➢ Challenges of Green Logistics:

Implementation of Green Logistics is still a narrow mounting concept and business organisation faces some challenges to its implementation. Some of the challenges that Consumer Goods Organizations could face are as follows:

- ✓ Lack of information about the green supply chain best practices.
- ✓ Lack of tools to optimize the supply chain with environmental management.
- ✓ Timing is a critical component of any logistics system.
- ✓ Another contradictory issue involves reliability.
- ✓ Lack of proper Technology.

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4. Case Studies in Green Logistics:

- ✓ **Toyota Kirloskar Motor Private Limited (TKM)** is a joint venture between Toyota Motor Corporation and the Kirloskar Group, for the manufacture and sales of Toyota cars in India. TKM have employed environment friendly technologies such as water-borne paint, energy efficient equipment and water recycling facility at its Etios Plant at Bidadi, Karnataka. In automobile industry, along with the careful usage of precious oil supplies, trend is now towards developing hybrid technologies which will prove very essential in the upcoming era.

  Five Year Environment Action Plan of TKM:

  TKM has so far achieved 20% reduction in CO2 emissions at production by reducing the energy consumption such as usage of electricity, LPG etc.

  Achievements of TKM:

- ✓ Fuel Efficiency improvement, by monitoring driving speed, maintaining tyre pressure check sheet etc.
- ✓ Volume Efficiency improvement, by changeover of trucks from double axle to triple axle leading to increase in capacity of goods transport by 3 tons from 23 tons bringing down CO2 emissions by 2.72%.
- ✓ Further CO2 emission reductions by utilization of bio diesel as alternative fuel in forklift in a ratio of 1:9 with diesel.

  The above strategies have led to 6.26% reduction in CO2 emission as compared to targeted reduction of 4%.

- ✓ **Boise: Leveraging Rail Direct Service:** Boise Inc. has launched two initiatives to improve its logistics operations and environmental performance. The Carload Direct Initiative is shifting product transport to rail, and the Three-Tier Pallet Initiative is

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increasing railcar utilization. Both initiatives have resulted in a combined 62-72% reduction in the company's CO_2 emissions, as well as cost savings on those shipments.

- ✓ **Caterpillar: Light-Weighting and Inbound Consolidation:** In this case study, the inbound shipping operations of Caterpillar's North American large mining truck facility to determine – based on weight, packaging, routing, and scheduling – opportunities to streamline shipping protocols, and thus reduce carbon emissions associated with the supply chain. When combined, the streamlined shipping and packaging efforts could reduce Caterpillar's overall carbon emissions by 340-730 tonnes of CO_2 per year.

- ✓ **Ocean Spray: Leveraging Distribution Network Redesign:**This case study present two Ocean Spray initiatives – distribution network redesign and intermodal shift from road to rail – that in combination led to a 20% reduction in transportation CO_2 emissions, while achieving comparable cost savings across the transportation network.

- ✓ **DHL and Blue Dart**: DHL and Blue Dart Steer India's Logistics a New Direction with the Launch of Smart Truck Bangalore, India.Adapts successful innovations from the corporate unit DHL Solutions & Innovations to improve servicequality, cut costs, reduce time and CO2 emissions in emerging market conditions. DHL, the world's leading logistics company, and Blue Dart, part of the DHL Group, are piloting Smart Truck technology in Bangalore, India, the first deployment of this successful logistics innovation outside Germany. Created by DHL Solutions & Innovations (DSI), the DHL Smart Truck is an "intelligent" pick-up and delivery vehicle that combines a number of innovative technologies including a route planner. Launched in Germany in 2010, DHL Smart Truck reduced number of miles traveled by 15 per cent and length of average route by 8 per cent during its pilot stage, reducing both fuel consumption and CO2 emissions.

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- ✓ **HCL Info systems Limited**: HCL always focused on developing a sustainable future through environment- friendly ICT products and services. With regard to various initiatives, HCL has been recognized as one of the greenest companies among Indian ICT manufacturing companies. The company launched ***'HCL ecoSafe'*** program which ensures that all HCL products are matching standards and compliances. This led to the introduction of Green desktops, equipped with the unique Dynamic Energy Saver (DES) technology, that cut overall power consumption by 20-35%. It also developed desktops, servers and laptops and enjoys being a leader in ***Green Integrated Circuit Technology*** (GICT) manufacturers.
- ✓ **Tata Consultancy Services (TCS) Limited:** TCS Limited is one ofthebest Indian IT services, consulting and business solutions organizations. TCS offers a consulting-led, integrated portfolio of IT BPO, infrastructure, engineering and assurance services. It is committed to measure, report and continually improve its overall environmental performance by optimizing its resource consumption, minimizing its ecological impact and working to reduce its carbon footprint. To minimize the ecological footprint of the company and alleviate the impact of environmental damage through its operations, TCS has developed an environment policy that guides its key activities. The basic foundation of the policy is: Leadership, going beyond mere compliance. Climate change mitigation through commitment to reduce Greenhouse Gas (GHG) emissions and corresponding carbon footprint. Green procurement. Reduce, reuse, and recycle. Resourceefficiency. Green infrastructure - green buildings. Green IT. All TCS sites are compliant with all relevant environmental laws, acts, rules and guidelines.

5. Conclusion

The research paper concludes that due to a tremendous increase in the public and government concern for the environment there has been an excessive amount of pressure on Indian business firms to decrease the environmental impact of their logistics operation. Transportation of goods has a negative impact on the local air quality, generates noise pollution, leads to accidents and, in totality, makes a remarkable input to global warming. The impact of logistics on weather change has called for increasing attention in recent years, partially because increasing controls on pollution and road safety improvements have alleviated the other environmental problems. The Indian

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business organizations need to understand the concept of green logistics and need to rethink and redesign their logistics operation in order to protect the environment through green logistics initiatives.

6. Scope for Future research

The concept of Green Logistics is still in its infant stage and many Indian business organizations are still lack in understanding the concept of green logistics and its implementation. Only few business firms are practicing green logistics in India. Further, research is required to know the implementation of green logistics in the field of automobile industry, garment industry, textile industry, IT industry, cement industry and other industries in Indian economy.

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