

Optimization Green Logistics To Build Efficiency and Environmental Friendly

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Abstract. Economic growth raise the consumption of items in large quantities. At the same time there is activity of production and transportation causes problems to the environment. Environmental problems affecting many logistical decisions throughout the value chain. Global warming created by gas from vehicles is our main problem in the environment, and the problem of waste paper which until now has not been handled properly. Because of this the government and some of companies start to adjust Green Logistics. Therefore Green Logistics is important in influencing the environmental impact of every organization involved in supply chain and the most important green logistics can contribute to continuous performance improvement. Not only environmentally friendly green logistics also identify environmental aspects and cost. We are discuss about contribution for Green Logistics involving environment in Indonesia.

Keywords: green logistics, transportation, waste paper, global warming

1. Introduction

Indonesia is developing country, developing logistics in Indonesia are so fast, based on analysis from Supply Chain Indonesia (SCI) is predicting of logistics sector in Indonesia will grow from 11,56% to 797,3 billion in 2018 to become 889,4 billion in 2019 (Supply Chain Indonesia, 2019), on the other side with increasing demands in proportion to logistics activities, it will need transportation, material handling equipment, and the choices of transportation modes also increases both the number of vehicles, volume of the items, transport frequency, and route traveled. However, the cost for the environmental care in the past few years has been ignored, so that the government issue new regulations to companies and entrepreneur to reduce the environmental impact caused by their logistical activities. (Akyelken, 2011)

Be involve with the environmental, transportation is one of the biggest aspect in supply chain. Number of emission of CO₂ in transportation was contribute around 14% of overall total emissions in global. (Stern, 2006). Nowadays, transportation become the main reason of the pollution. Public will blame the government and companies who design motorized vehicles not in accordance with the specified regulation. Therefore, urban areas are considered to be one of the main sources of the air pollution, and has very large role in air pollution polemic. (Ismiyati, Devi Marlita, 2014)

Transportation has an impact on reducing the quality of the environment and health through air pollution, increasing carbon especially monoxide carbon (CO), dioxide carbon (CO₂), and Particular Matter (PM) produced by fuel combustion which is has a negative impact to the environment, human health and other creatures. In logistics context, CO₂ contributes the most from transportations activities, almost 90% (Dr. Zaroni, CISCIP., 2017), and as we know pollution can render the global warming, like increasing the air temperature surrounding the environment.

On the other side transportation has an impact on decreasing environmental quality. Paper use has been increasing too, paper still needed for shipping documents, office needed, and paper have strong relations with freight forwarding companies. In one year Indonesia can produce paper around 13 tons. In developing countries, the increase in paper demand growth has averaged 4.1% while the growth of paper needs in developed countries is 0.5% per year. (Kementrian, 2017)

Competitiveness of paper producers in Indonesia quite high in international scene, many requests exporting to overseas. Paper industry has two side negative and positive. Based on record from the Ministry of Forestry of the Republic Indonesia, at least 1,1 million hectares or 2% of the forest in Indonesia shrinking every year. Record from the Ministry of Forestry of the Republic Indonesia mention if around 130 million hectares left in Indonesia, 42 hectares have been cleared. (WWF Indonesia, 2015) Therefore the government provide strict punishment to the executant of the pollution and environmental damage that is on UU Number 32 in 2009. (UU No. 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup, 2009)

The development of technology in the last decade become one of main reason to reduce paper use, it's called as paperless. These days all the storages media already using digital format (Orantes-Jimenez, Zavala-Galindo, & Vazquez-Alvarez, 2015), To execute this point of course we need changes and adjustment, not only technology however cost, law and organization which always raises pro and contra, we have to admit if we can not eliminate paper use, but this is will be steps forward to offset the use paper and the existing ecosystem.

Green Logistics is not only transportations and paperless, however a lot of activities we can apply in daily life. But in this research we only focusing to transportations and paper use, because in Indonesia those 2 aspects have big role in environmental issues.

2. Method

This research using qualitative approach to describe in details how to use Green Logistics, especially to logistics companies. Colleting the data through structured interview, semi structured interview, depth interview, and group discussion. Researcher using Miles and Huberman method to processing data in this research, included (after collecting data) data reduction, separation of data from the unfocused and too detailed so that data can veal pattern or themes. To display the data which functions to understand advanced analysis from information and certain event. Last process is the conclusion based on the pattern and theme. The conclusion is continuously and at the same time with data reduction and data display, (Miles, Huberman, & Saldana, 2014)

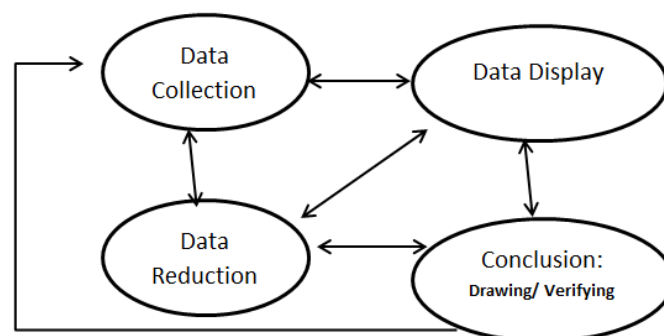


Figure 1. Data Processing Technique Source: Miles, Huberman, & Saldana (2014)

Data source in this research is informant who have the ability and expertise, so that the information is proper information and can be trusted and in accordance with the needs of this research (purposive). Because the main goals of this research is to improve optimization in logistic companies. The informant :

- a. Mr. Dony Nasrullah as Head of HSE and Assets Facility PT. Jalur Nugraha Ekakurir (JNE)
- b. Mr. Rijal Alfarisi as Warehouse Manager PT. Nutricia Indonesia Service
- c. Mrs. Budha as SPV Distribution PT. TNT Skypak International Express

3. Discuss and Result

Green Logistics is not a new thing in Indonesia, but lack of awareness of the importance of survival and ecosystem is inversely proportional to business principles, more concerned to profit. Therefore there are still many improvements and understanding of Green Logistics that must be done. Green Logistics can be the key of successness logistic in Indonesia, even though in the implementation still need substantial investment and costs. But the efficiency in long-term expected to exceed the previously investment, and Green Logistics is not always about the expensive assets investment. The application of Green Logistics can be done through efficient and environmentally friendly operational practices, by implementing practice efficient and environmentally friendly continously will have significant impact in the future on the environment.

The results of the research are:

1.1 Transportation

- The availability of environmental friendly vehicles technology is still very low in Indonesia, because the government still has not limited the operation vehicles based on the year of the making the vehicles. In developed countries the vehicles over than 5 years is not allowed to operate.
- Incomplete combustion from the vehicles caused by poor fuel quality.
- Logistics companies has not implemented driving standards that are safe and environmentally friendly, and maximizing route to distribution.

1.2 Paper Use

- Digital era does not affect the community to not using paper at work. In 2017 Indonesia recorded as number 6 largest paper producer in the world, because of that at least 1.1 million hectares or 2% of forest in Indonesia shrinking every year.
- There is no regulation from government about restriction on paper use by companies.

1.3 People Mindset

Most the companies assume the practice of Green Logistics is something that expensive and difficult to implement in Indonesia. Therefore in Indonesia still not maximal and running slowly, and lack of understanding from the agents and Indonesian people as well as obstacle of the process Green Logistics in Indonesia.

4. Conclusion

Understanding how important Green Logistic, but most companies assume the application of Green Logistics is something that expensive and hard to implementation. In fact Green Logistics can be applied easily in Indonesia without cost, just changes from the small things but capable of having big impact to environment, which as we have seen environmental conditions worsening every year due to our lack of awareness as humans to keep and preserve environment, the solution to reduce pollution and paper used are a revolution for transportation and paperless which must be implemented even though the implementation is not maximized like other developed country but with the continuous and long term implementation are expected it will greatly affect with the ecosystem and environment because there never too late to improve for the first step of success.

Based on the results of research, the conclusion are:

- The government has issue a regulation about limited the operation vehicles based on the year of the making the vehicles and regulation about to use environmentally friendly fuels.
- The government has to release the regulations to logistics companies to limited paper use and to maintain the paper used.
- The government should to socialization to logistics entrepreneurs about the advantages and benefits if adjust Green Logistics in their companies.
- The companies should to rejuvenation their vehicles which have high exhaust emission gas.
- The companies should do eco-driving and eco-routing, socialization and training about safety, eco-driving, and eco-routing are necessary. In order that drivers can understand and be able to drive the vehicle safely, safety, and save fuel.
- Paperless system is reduce the paper use, by digitizing like using barcode to all documents.
- Society should understand how important Green Logistics and contribute like using environmental friendly products.
- The companies cooperate with some environmental care communities to campaign how important Green Logistics in daily life.

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