International Journal of Recent Engineering Research and Development (IJRERD)
ISSN: 2455-8761
www.ijrerd.com || Volume 04 – Issue 08 || August 2019 || PP. 01-06

Green logistics is a necessity in near future

Nguyen Minh Quyen, Hai Nam Vu
Ho Chi Mnh city University of Transport, Ho Chi Minh city, Vietnam

Abstract: Most considerations in sustainable transportation focus on passengers, leaving freight issues somewhat marginalized. Logistics are at the heart of the operation of modern transport systems and implies a degree organization and control over freight movements that only modern technology could have brought into being. It has become one of the most important developments in the transportation industry. Greenness has become a code word for a range of environmental concerns, and is usually considered positively. It is employed to suggest compatibility with the environment, and thus, like logistics is something that is perceived as beneficial. When put together the two words suggest an environmentally friendly and efficient transport and distribution system. Supply chain management practices and strategies that reduce the environmental and energy footprint of freight distribution. It focuses on material handling, waste management, packaging and transport.
Keywords: green logistic, environmental pollution, low cost, sustainable development

I. INTRODUCTION

The loosely defined term covers several dimensions related to production planning, materials management and physical distribution opening the door to a wide array of potential applications of environmentally friendly strategies along supply chains. This implies that different stakeholders could be applying different strategies, all of which being labeled as green logistics. One corporation could be focusing on product packaging while another on alternative fuel vehicles; both are undertaking green logistics. However, a closer look at the concept and its applications, a great many paradoxes and inconsistencies arise, which suggest that its application may be more difficult than what might have been expected in the first place. Although there has been much debate about what green logistics truly entails, the transportation industry has developed very narrow and specific interests about the issue. If transportation costs are reduced and assets such as vehicles, terminals and distribution centers better utilized, the assumption is that green logistics strategies are being implemented.

In common with many other areas of human endeavor, greenness became a catchword in the transportation industry. It grew out of the emerging awareness of environmental problems and negative externalities which started in the 1950s when the fast growth of trucking impacted urban communities. Factors such as truck size, emissions, noise became public concerns, leading to the first legislations focusing on pollutant and noise emissions and road access conditions. In a more recent context, well-publicized issues such as sustainability, energy, waste disposal and climate change have contributed to establish green logistics as a formal field of inquiry and mitigation. Environmental concepts, such as material flows or the carbon cycle, became readily applicable to supply chain management. The World Commission on Environment and Development Report (1987) established environmental sustainability as a goal for international action, which gave green issues a significant boost in political and economic arenas. The transportation industry was recognized as a major contributor to environmental issues through its modes, infrastructures and flows. The developing field of logistics was seen as an opportunity for the transportation industry to become more environmentally friendly. Yet, environmental perspectives and transportation sustainability issues remain predominantly focused on passenger transportation.For the aviation industry, as of November 30, 2010, ICAO has accelerated international efforts to establish a global CO2 emissions market for the aviation industry. ICAO promotes many options for reducing ICAO 190-member civil aviation emissions reductions by early 2012, seeking deals by the end of 2012 to approve the establishment of a new emissions market in September 2013. . These agreements also include increasing use of biofuels, the most effective way of reducing fuel use for planes and air routes.

In the coming time, the aviation industry will have to face new laws. As of January 1, 2012, all airlines with flights to and from the EU will be required to participate in the airline's Joint Aviation Trading Program, in Europe. This means that firms that do not participate in the program or do not meet emissions requirements may be barred from flying into the EU.Two Airbus and Boeing aircraft makers are competing in recycling old aircraft and producing eco-friendly aircraft. In April 2006, the old Aircraft Recycling Association (AFRA) came into existence, including 23 companies capable of recycling 150 old aircraft a year. And for the first time, the first full-size Boeing 787 Dreamliner with a shell was made entirely of lightweight material, not steel or aluminum, to save money and consume less fuel than other aircraft.

The eco-friendly train system at 300 km/h in Taiwan is a template that limits the amount of greenhouse gases that cause warming and enhances the standard of living for the majority of people. Be sustainable for the environment, using elevated rails instead of diesel engines will produce only one-quarter the amount of CO2. Train passengers spend only half the energy and release a quarter of CO2 compared to bus riders.In recent years, projects of enterprises and environmental action programs have been launched, even though they have just started, but they are good signs for the Vietnamese logistics industry.On June 30, 2010, the Vietnamese Ministry of Transport issued Circular No. 16/2010 / TT-BGTVT regulating details of management and operation of airports and airfields. The Circular clearly stipulates that projects on planning and investment in the construction of airports and airfields must be made in the form of environmental impact assessment reports and be subject to inspection and supervision of the implementation of environmental protection measures. , Must comply with the law on environmental protection, civil aviation law, Vietnam's environmental standards and treaties to which Vietnam is a member.Especially, on 06.6.2011, the Prime Minister issued Decision No. 855/QD-TTg approving the project on environmental pollution control in transportation activities with a total approved budget of 700 billions dong. The overall goal is to control, prevent and limit the increase of environmental pollution, aiming to build a sustainable and environmentally friendly transport system. Accordingly, by 2017, at least 25% of new rail car coaches will be built, 30% of international seaports will be equipped with means of collection and treatment of waste and waste oil from ships.

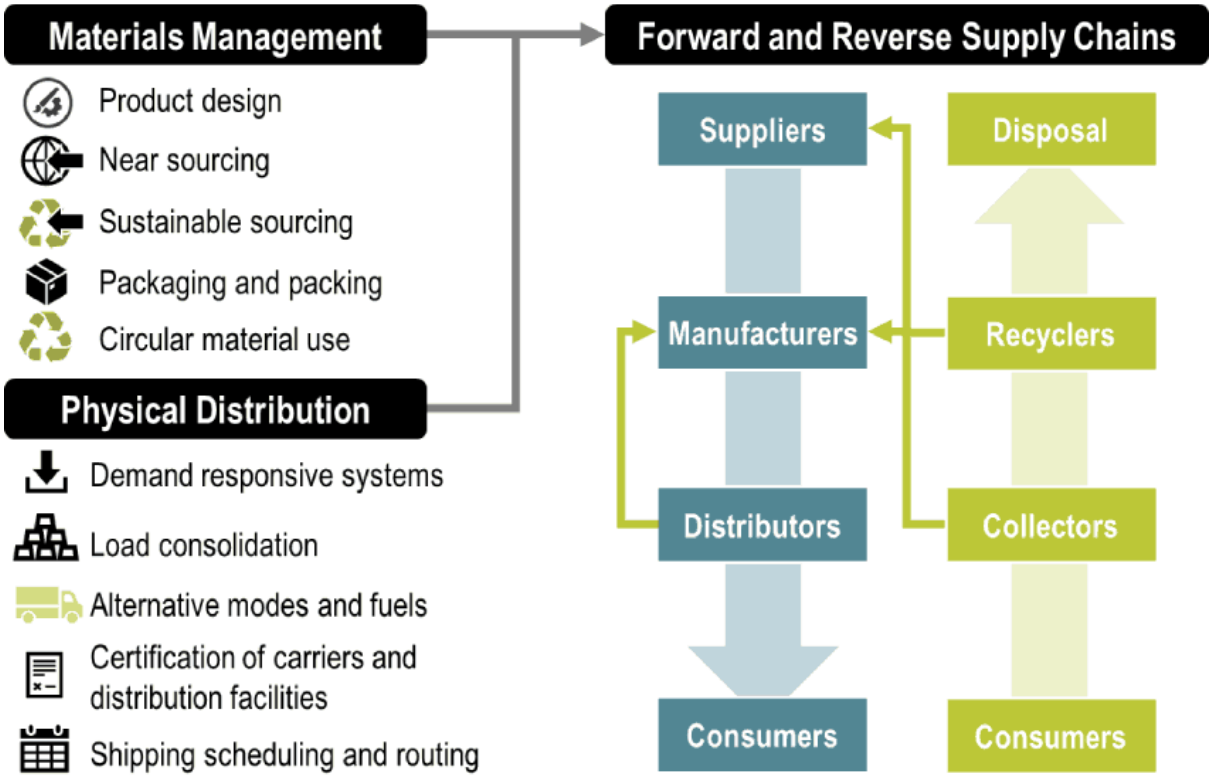

Figure 1. Green supply chain

II. GREEN LOGISTICS

By 2020, 80% of railway carriages will be built, completing the noise map for all airports; Maintaining the implementation of motor vehicle emission standards; 70% of international seaports; 50% of domestic inland wharf ports are equipped with means, equipment for collecting garbage and waste oil from ships. And to orient to 2030, focus on developing environmentally friendly transportation system, basically controlling the polluting components in all areas of road, railway, waterway Domestic, maritime and aviation.Green Logistics describes activities to calculate and minimize the ecological impact of logistics operations. This includes all front and back transactions of products, information and services between production start points and points of sale. It is the purpose to create a sustainable corporate value based on the balance between economic efficiency and environmental protection. The concept of green logistics has its roots in the mid-1980s and is a concept that describes logistics systems and methods using advanced technology and equipment to minimize environmental damage during operation.Global production is increasingly concentrated in China, India, Russia and Brazil. The

center of the world economy is also shifting to Asia. The development of production and consumption increases the volume of goods and transportation distances, raising the demand for global supply chain management and control. Many countries have developed programs and strategies to develop a green logistics system that meets the requirements of economic development, enhances the competitive position and protects national interests.

Vietnam's logistics industry is in its early stages of development. The competitiveness of industries and enterprises is still low compared to other countries. If Vietnam's logistics industry is expected to integrate and develop in the near future, in addition to the active efforts of the business itself, the government, industry and localities cannot stand by. They need more attention and support to implement urgent mid- and long-term solutions to develop the green logistics system in Vietnam, firstly planning to establish logistics centers. At international ports, the highway connects the main means of transportation in the distribution and circulation of goods. Reviewing packaging, waste disposal, fuel consumption and related factors at different steps of commodity production and transition processes will be the key to the success of these efforts.Interest in the environment by the logistics industry manifested itself most clearly in terms of exploiting new market opportunities. While traditional logistics seeks to organize forward distribution, that is the transport, warehousing, packaging and inventory management from the producer to the consumer, environmental considerations opened up markets for recycling and disposal, and led to an entire new sub-sector; reverse logistics. This reverse distribution involves the transport of waste and the movement of used materials. Even if the term reverse logistics is widely used, other names have been applied, such as reverse distribution, reverse-flow logistics, and even green logistics. A more recent framework is that of the circular economy, which is inserting logistics into reuse, remanufacturing, recycling and the disposal of waste into a feedback loop. It is becoming an emerging approach that takes into consideration the full extent of logistics, which is the greening of both the forward and reverse segments of supply chains.

Commercial logistics services in Vietnam began to develop in the 1990s on the basis of freight forwarding services, which are now in the early stages of development. According to the LPI in 2014, Vietnam ranked 48 out of 160 countries surveyed and ranked fourth in ASEAN countries (after Singapore, Malaysia and Thailand). By 2014, the logistics industry contributes about 3% of GDP, (Thailand is 3% in 2014, Singapore is 9.4% in 2014). The current outsourcing rate is about 30-35%, (China is 63.3%, 2010). The level of service provided by logistics companies in Vietnam is still limited, showing that the service price is not competitive and the quality of service is not high, thus the labor productivity and competitiveness are still limited. cover. Statistical capacity of logistics needs to be improved. Logistics costs are equivalent to about 21% of GDP (China is 17.8%, 2011), while developed countries like Singapore are about 9% - 14%. The average growth rate of logistics services in the past years is from 16-20% per year. The government's plan is to grow logistics services by about 24-25% a year by 2020 and by 2030 by 34-35% a year. It can be said that logistics services in Vietnam have a fast and stable development.

The logistics service system in Vietnam now consists of four components: the institution, the development policy and the law governing logistics services; Infrastructure (including hard infrastructure and soft infrastructure); Logistics service providers; Consumers of logistics services. The marine environment is heavily polluted by industrial, agricultural and aquacultural waste, household waste, but the impact of oil pollution on shipping, shipbuilding and seaports. Need alerts to minimize the stronger. Oil and oil spills despite the 0.1mg/litter of oil content in water can also cause zooplankton mortality and greatly affect juveniles and larvae of marine organisms. However, the seawater of HaiPhong coastal zone has the oil concentration in the water regularly exceeding the permitted limit of 100-300%. A recent report from the HaiPhong Department of Natural Resources and Environment showed that the area with high oil content is the water surface of HaiPhong port with an oil content of 0.3-0.6mg / l, exceeding the permitted level. The coastal area of HaiAn district, KienThuy district, average oil content of about 0.6mg / l. Bach Dang estuary concentration of oil tends to increase, especially in the Department of Oil.

It is only marine pollution in a large seaport where most of the fishing boats, cruise ships, military vessels regularly wash ships, dispose of engine oil, ballast water, discharged waste water directly Oil into the sea. Most types of vessels have no oil and waste of water collection and treatment facilities, whereas under the MARPOL for Vessels entering and leaving ports, all ships must dispose of their wastewater into the port waters. Nationwide, approximately 4 million tons of petroleum fuel from more than 1,700 transporters and about 130,000 fishing vessels a year are responsible for pollution in coastal and coastal areas and in many places. Focus on marine ecosystems, destroying marine resources, endangering human health. Particularly in BinhDinh province, there are nearly 7,000 vessels, of which 2,500 are fishing offshore. The implementation of Decree 67 of the Government will help fishermen in 28 coastal provinces gradually modernizing the fleet of offshore fishing, exploiting the strength of the ocean tuna fishing to enrich the sea. But the technology of shipbuilding, whether fishing or shipping, needs to be renewed with new green maritime standards, reduced engine emissions - ship engines, and incinerators, are rarely mentioned. The current technology of shipbuilding, petroleum fuel is

used quite heavily, causing a considerable amount of waste oil in construction stages. All major pollutant emissions to coastal waters, oil pollution and sediment heavy metal contamination in shipyard and shipyard areas. They alter the physical and chemical nature of seawater, bad effects on marine fauna and flora, salt production, aquaculture and marine tourism. Renewal of shipbuilding technology requires the installation of advanced equipment, especially pollution prevention equipment on board, to minimize the pollution caused by maritime and shipbuilding activities. Reducing toxic emissions to the sea to limit ocean acidification impacts is a global current issue. According to recent scientific reports, global warming is causing serious damage such as heat, heavy rain, ocean acidification and sea level rise. Ocean acidification is the phenomenon of continuous decrease of pH in the Earth's oceans due to the absorption of carbon dioxide by human action into the atmosphere. The means of shipping - especially old, backward ships emit more toxic gases due to low fuel burning efficiency and no exhaust gas treatment system, is a very polluting source. In the marine environment field, Vietnam should have policies, normative documents, regulations and standards for reducing emissions, especially greenhouse gas emissions, for fishing vessels and transport ships, which can be controlled and good emissions from ships in marine operations. Emission control areas need to be researched, built and established in seaports close to sea areas of special ecological value, such as QuangNinh - HaiPhong, Vung Tau - Ho Chi Minh City. . There are large sized vessels with emissions in excess of the permissible limits that will not be docked or under special pilot regimes. The policy to levy tolls on ships should also be enacted. It is necessary to blame the waste generator, to license operation to the certification of ecological ships, seaports, ecological enterprises. The purpose of logistics is to reduce costs, notably transport costs. While the former remain the most salient logistics cost, inventory carrying costs come second. In addition, economies of time and improvements in service reliability, including flexibility, are further objectives. Corporations involved in the physical distribution of freight are highly supportive of strategies that enable them to cut transport costs in a competitive setting. Economies of scale in transportation as well as higher load densities are common cost-saving strategies that concomitantly lead to environmental benefits in terms of lower fuel consumption per ton-km. On some occasions, the cost-saving strategies pursued by logistic operators can be at variance with environmental considerations that become externalized. This means that the benefits of logistics are realized by the users and eventually to the consumer if the benefits are shared along the supply chain.

However, the environment assumes a wide variety of burdens and costs, which form a hierarchy ranging from costs internal to the supply chain to externalized costs. Society is becoming less willing to accept these costs, and pressure is increasingly being put on governments and corporations to include greater environmental considerations in their activities. A salient example concerns food supply chains that have been impacted by lower transport costs, enabling a diversification of the suppliers and longer transport chains. The concept of food-miles has been developed as an attempt to capture the full costs of food distribution by using the distance food is carried as a proxy. Such measures are controversial since sourcing can vary substantially for a product based on changing input costs and seasonality.

III. GREEN LOGISTICS IN VIETNAM

Logistics is one of many types of large-scale commercial infrastructure, which in the process of operation always has certain effects on the environment. Therefore, the direction of environmental protection in the development of logistics system should ensure the conditions:

1. The development of logistics centers should be carried out on the basis of the implementation of the master plan for trade development in the country, the planning of other infrastructure systems, especially the planning of transport sector, urban planning, residential planning.
2. Development of logistics centers must be associated with the requirements to improve the responsibility of the environmental management of the competent agencies in terms of planning management, investment licensing and environmental management. According to the provisions of Decree No. 80/2006 / ND-CP, Decree No. 21/2008/ND-CP; Circular 08/2006/TT-BTNMT, the project owners are responsible for making environmental impact assessment report, environmental protection commitment, environmental protection project. However, due to various reasons, many investors have not fully implemented these regulations.
3. Development of logistics centers must be associated with raising the social responsibility and environmental protection of enterprises of all economic sectors involved in investment. The capital for the construction of logistics centers is actively mobilized from all resources of society, on the basis of ensuring reasonable benefits to attract investment of enterprises, including FDI enterprises.

   Improving the social responsibility of the environment for investment in the logistics system is not only to prevent negative impacts on the environment, but also to promote the positive aspects of enterprises in improving the environment. . For example, in the space of building a logistics center, if the company

promotes social responsibility for the environment, then the enterprise will choose the investment plan in harmony with surrounding landscape and architecture.

4. The process of industrialization, rapid urbanization is causing a lot of pressure on environmental pollution. In addition, the formation and development of large-scale logistics centers will increase the pressure on environmental pollution and the response to environmental incidents. Therefore, the planning implementation must be accompanied with the plan to strengthen the inspection and assessment of environmental impacts during the operation of the logistics center.

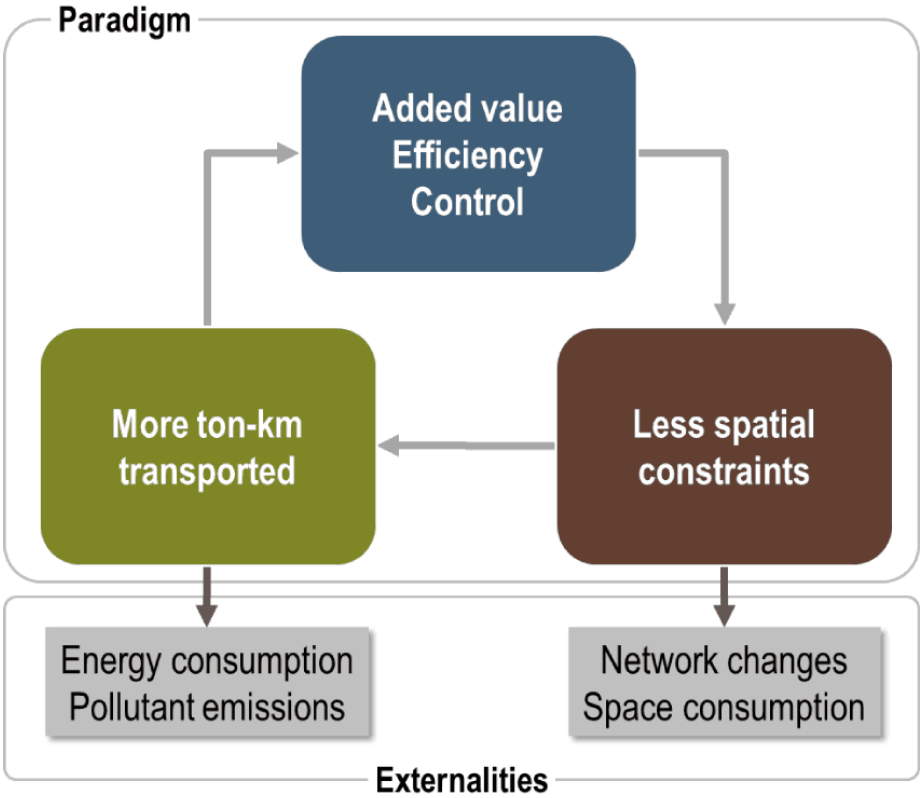

Figure 2. Environmental cycle in logistics

5. The investment licensing of large-scale logistics centers in areas that are close to the inner city need to be limited. But it needs to encourage the development of urban periphery to minimize the flow of traffic, people and goods concentrated in the medium At the same time improve the ability to solve environmental problems on the basis of reasonable allocation of green areas and water surface in the project area.

According to the trend of development in general and development of logistics system in particular in our country until 2020, orientation to 2030, the areas to be considered are the South East, Red River Delta, South Central Coast. The increase in large-scale logistics centers increases the risk of environmental impact.

In logistics, time is often the essence. By reducing the time of flows, the velocity of the distribution system is increased, and consequently, its efficiency. This is mainly achieved by using the most polluting and least energy efficient transportation modes. The significant increase of air freight and trucking is partially the result of time constraints imposed by logistical activities. The time constraints are themselves the result of an increasing flexibility of industrial production systems and of the retailing sector. Logistics offers door-to-door (DTD) services, mostly coupled with just-in-time (JIT) strategies. Other modes cannot satisfy the requirements such a situation creates as effectively. This leads to a vicious circle; the more DTD and JIT strategies are applied, the further the negative environmental consequences of the traffic it creates. The slow steaming strategy pursued by maritime shipping companies is further challenging time management within long distance supply chains.

At the heart of logistics is the overriding importance of service reliability. Its success is based upon the ability to deliver freight on time with the least breakage or damage. Logistics providers often realize these

objectives by utilizing the modes that are perceived as being most reliable. The least polluting modes are generally regarded as being the least reliable in terms of on-time delivery, lack of breakage and safety. Ships and railways have inherited a reputation for poor customer satisfaction. For instance, the schedule reliability of container shipping is around 50%, implying that about half the time a container ship will not arrive at a port terminal at the scheduled day. Lower reliability levels are linked with lower levels of asset utilization and higher inventory levels, which is wasteful and indirectly damaging to the environment. The reliability of the logistics industry is built around air and truck shipments which are the two least environmentally-friendly modes.Logistics is an important factor promoting globalization and international flows of commerce. Modern logistics systems economies are based on the reduction of inventories, as the speed and reliability of deliveries removes the need to store and stockpile. Consequently, a reduction in warehousing demands is one of the advantages of logistics. This means however, that inventories have been transferred to a certain degree to the transport system, especially to roads but also to terminals. Inventories are actually in transit, contributing still further to congestion and pollution. The environment and society, not the logistical operators, are assuming the external costs. Not all sectors exhibit this trend, however.In some industrial sectors, computers for example, there is a growing trend for vertical disintegration of the manufacturing process, in which extra links are added to the supply chain. Intermediate plants where some assembly is undertaken have been added between the manufacturer and consumer. While facilitating the customizing of the product for the consumer, it adds an additional external movement of products in the production line.Information technologies have led to new dimensions in retailing. One of the most dynamic markets is e-commerce. This is made possible by an integrated supply chain with data interchange between suppliers, assembly lines and freight forwarders. Even if for the online customers there is an appearance of a movement-free transaction, the distribution online transactions create may consume more energy than other retail activities. The distribution activities that have benefited the most from e-commerce are parcel-shipping companies rely solely on trucking and air transportation. Information technologies related to e-commerce applied to logistics can obviously have positive impacts. So once again, the situation may be seen as paradoxical.

IV. CONCLUSION

With regard to state management agencies, to further study to institutionalizing regulations on environmental protection for production and business activities of commercial establishments, especially large scale establishments. Like TT logistics, training and fostering to improve the capacity to assess and appraise reports on environmental impacts and environmental protection solutions of investment projects for the construction of logistics centers before the competent authorities and investment certification. Organize and direct the activities of the specialized agency in charge of State management of environmental protection, with a focus on environmental impact assessment, implementation of environmental protection measures and operation of the environment. Environmental protection of logistics system TT, strengthening the role of the system of environmental protection organizations at the grassroots level, promulgating and enforcing environmental protection regulations for industrial parks and economic zones in order to enhance the effectiveness of environmental management and protection are carried out. For service business enterprises, the management of logistics centers, it is necessary to assign leaders in charge, set up the team specializing in environmental protection activities of the logistics center. At the same time develop annual plans for environmental protection activities; and regularly monitor and supervise environmental protection activities.

REFERENCES

[1] http://interserco.com.vn/giai-phap-xanh-cho-trung-tam-logistics/
[2] http://repository.vnu.edu.vn/bitstream/VNU_123/5207/1/00050005964.pdf
[3] http://gdprte.ueb.edu.vn/article-Khai-quat-ve-chu-de-nghien-cuu-Logistics-xanh-13728-1201.html
[4] http://www.vlr.vn/vn/news/info/nhin-ra-the-gioi/762/xu-huong-logistics-xanh.vlr
[5] http://vnll.com.vn/vi/logistics-xanh/
[6] http://www.tapchigiaothong.vn/can-nhieu-hon-nhung-du-an-logistics-xanh-d13793.html
[7] http://www.vietnamshipper.com/?action=news_detail&atcid=28846&chnlid=14
[8] http://www.mpi.gov.vn/Pages/tinbai.aspx?idTin=14540&idcm=227
[9] http://www.vlr.vn/vn/news/img/trong-nuoc/395/can-lam-nhung-du-an-logistics-xanh.vlr
[10] http://isocus.vn/logistics-xanh-logistics-xanh-la-gi.html
[11] http://www.greenlogistics.org/