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Danang – Development Of Green And Sustainable Logistics Center

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Abstract

Logistics has an important role in the economy to increase the competitiveness of enterprises and the national economy. However, the logistics activities have the effect on the environment negatively including CO₂ emission, fuel consumption, or the cost of environmental compliance. Thus, green logistics has been a modern trend in over the world. This study focused to perform greening and sustainable logistic center in case Danang's – a mega city in the center of Vietnam. It noticed that the environmental preservation must be the highest priority to the progression of green logistics. We should suggest sustainable development as the first principle of benefit development.

Keywords: green logistic center, Danang, environment, sustainable development

Introduction

Recently, the Vietnam logistics industry is a large consumer of energy and fuel with emissions causing serious damage to the environment. Thus, green logistics has become a right way to develop economy based on sustainable development. The aim of green logistics is to achieve economic profits of certain subject, and for then, to protect the resources and environment especially[1].

Danang which a biggest city in center of Vietnam has been become a logistics hub. There is an area dedicated to activities concerned to logistics, transport, and domestic international delivery. The logistics center where is provided with machines and devices serving of logistics, transportation, and is connected with regional and global seaports by advanced communication technology. Hence, it is essential to create a modern green logistics center in order to conform to Danang's economy, which is characterized by big markets, mass production and high levels of consumption

The goal of this research was that analyzing optimal and limitation of Danang for building a green logistics center based on the scientific development concept, these fields have become an important issue in our modern logistics industry.

Status logistics of Danang and effect of logistics to the environment

According Sabine Limbourg et al in 2013, the total logistics profits of Danang got USD 5 billion dollars, one of the most developed regions in Vietnam. The logistics sector in Da Nang City is divided with 130 players but 70% providing 1 party logistics (PL) and 2PL services[2]. In fact, although there are many conditions for the development of logistics, Da Nang has not really done its role as the key economic zone in the area in the central region, the end of the East-West Economic Corridor (EWEC) Myanmar, Laos, Thailand and Vietnam. Da Nang is quite a lot of businesses are operating in the field of logistics. But in general, the capacity of these enterprises is weak and difficult to compete with foreign businesses located in the area. The activities of logistics companies in Da Nang are limit and simple. Addition, human resources of logistics industry have lack of experience and professional qualifications .

Logistics affects to the environment , including air pollution (CO₂ emission), noise, accidents, vibration, land-take and visual intrusion. Emission of gas from the transportation contributes the most to total emissions polluting the urban air of environment, including CO₂, SO₂, CO, the dust (TSP, PM₁₀, PM_{2.5}). Transport of motorization, using gasoline and diesel as fuel, the process of leaking, evaporating and burning fuel, also leads to the generation of toxic gases such as VOC, benzene, toluene. Fig.1 illustrated the rate of emission of polluted gases of Vietnam in 2014. Motorcycles have been a primary source of toxic ases in the air. The reason was

that they used over many years and not regularly maintained, effective low fuel consumption, toxic gases CO, VOCs, NO₂ and dusts.

Fig. 1. The rate of emission of gas polluted the air of Vietnam in 2014

In addition, vessels are a major source of pollution to the sea environment because of the poor quality fuels, which have high emissions such as nitrogen oxides (NO) and sulfur dioxide (SO₂). It leads to produce acid rain and the tiny dust. According to EPA, ships have been generate for two-thirds of SO₂ gas emissions in the transport sector in 2002 and this proportion may be increas as high as 98% in 2020 without control solution. About CO₂, the amount of CO₂ emissions by ships increased from 910 million tonnes to 932 million tonnes (+2.4%) from 2013 to 2015 (Table 1). While CO₂ emissions of the international shipping increased by 1.4%; those of domestic shipping increased by 6.8%; and for fishing emissions increased by 17%. In 2015, the quatitiy of CO₂ emissions of ships were included of 2.6% global CO₂ emissions. International shipping contributed the most, representing about 87% of total CO₂ emissions from ships each year.

Table 1

The amount of CO₂ emissions by ships

	Third IMO GHG Study (million tonnes)					ICCT (million tonnes)		
	2008	2009	2010	2011	2012	2013	2014	2015
Global CO ₂ Emissions	32133	31822	33661	34726	34968	35672	36084	36062
InternationalShipping	916	858	773	853	805	801	813	812
DomesticShipping	139	75	83	110	87	73	78	78
Fishing	80	44	58	58	51	36	39	42
Totalshipping	1135	977	914	1021	942	910	930	932
	3.5%	3.1%	2.7%	.9%	2.6%	2.5%	2.6%	2.6%

Consequently, the US government has set new emission standards for large vessels. Accordingly, from 2015, new ships will have to reduce 96% of SO₂ compared to today. Similarly, ships built after 2016 will have to cut 80% of their NO emissions.

Storage is sufficient method for logistics to create time effect. In order to ensure the store keep its application value, it must be well maintained. But some maintaining technology to parts of the store, such as spraying chemical protecting drug on the surface of the store, may lead to bad effect to the surroundings of the storage. Besides, if the store becomes damaged or useless, even spill of perilous substances because of inappropriate storage, it may also endanger the surroundings.

Environment loading, unloading and carrying will be repeated continuously during logistics process, which is a must for starting and ending a logistics activity. Inappropriate

loading or unloading methods cause invalid times and carry as well. And, more times to load and carry make more damage, missing and loss of merchandise, which makes both natural, human and energy resources waste.

The environmental pollution of ThọQuang Port in the central Đà Nẵng City has increased over the last decade. From MânQuang Bridge overlooking the port, garbage bags can be seen spread across adjacent grass fields and embankments. A fishing port of the city, after years of receiving untreated domestic wastewater and industrial wastewater from tourist cruises and seafood processing factories, ThọQuang Port is now glazed with black grease and stinks [3].

Development Danang as a green logistics center

Green logistics supply chain and logistics are becoming an indispensable trend in the context of the world, facing the situation increased environmental pollution and depletion of resources, lead to an increase in logistics costs and climate change. In response to this trend, many major corporations The world has actively developed supply chain and logistics solutions pro environmentally friendly. For example, the largest US retailer - WalMart requires the suppliers must report the use of 10 toxic chemicals in the manufacturing process, warehousing, storage and transportation of their products; HP Computer Company recommended suppliers reduce 20% of carbon emissions associated with manufacturing and carriage while Fujitsu Group (Japan) applies the policy of "green procurement" throughout the supply chain of the corporation, including business partners.

Logistics center planning must be prioritized for "golden" land, located in the important area to ensure the efficiency of the logistics center to ensure the efficiency criteria: optimize the reserve level; ensure quality customer service; save the time of transferring goods; reduce logistics costs; ensure efficient delivery of goods transported by means different; optimal use of domestic and international transportation system.

Da Nang Logistics Center is located in HoaNhon commune, HoaVang district, Da Nang city. In particular, most of the area (over 30 ha) are for ICD dry port and railway land. The rest of its are the truck yards, warehouse, roads, worker housing, auxiliary land, trees, operating centers, and auxiliary services. Especially the area for trees is quite large, up to nearly 10%, suitable for the trend green logistics. The location of logistics center is considered critical position because it is close to 14B national highway to the south and Da Nang - QuangNgai highway to the west. It is far only 8 km from Danang Railway Station, 12 km from Da Nang International Airport, 80 km from PhuBai International Airport, 101 km from Chu Lai Airport, Lien Chieu International Transit Port 10 km, Tien Sa port 20 km, Dung Quat port 116 km.

Da Nang logistics center is planned the five main functional areas are:

- Service area: in this area consists of 3 different departments is the business center, signaling center and truck operator, railway signaling center, assurance the job of running the business, moving of the central access.
- Multimodal area will integrate various types of transportation including railway stations, seaports and airports transportation, collection and distribution of goods by the means of transportation vary according to requirements.
- Logistic area: including warehouses and facilities private logistic services. This center's purpose are loading, unloading, storage, preservation, packaging, labeling, classification of goods; cleaning and quality control for the goods.
- Customs area composed of customs offices and the area of declaration, inspection, inspection and clearance import and export goods such as at border gates and seaport.
- Support area: car park, repair - security transport means, procedures, papers, consulting, finance, insurance, gasoline supply, where to eat break for partners, customers

One of solution to develop Da Nang – a green logistics center is solving the environmental pollution of Da Nang port such as solid waste collection under embankment, on the water surface. To supply of equipments to collect wastes for ships, small business households. Raising the knowledge of protect environment by various methods: signing commitments for pollution environment, not discharge pollutants into the port. Application of waste water collection system at 6/8 outlet around the port. Renovation and upgrading of wastewater collection system of the port.

It is important for port authorities to continuously collaborate with shipping companies to reduce environmental damage they produce. Reducing CO₂ emissions is an essential issue for the container shipping industry in achieving environmental and economic sustainability. Ports differentiate port dues for ships with low sulfur content emissions or with voluntary vessel speed limit. Green practices in the shipping industry such as using cleanburning low sulfur fuels, environmental-friendly materials and equipment, and adopting environmental friendly design shipbuilding have positive impact on green performances and firm competitiveness. It is also suggested that regular exercise of Port State Control for ship inspection is needed for a sustainable development port. Ports need to collaborate with urban authorities to evaluate projects as inhabitants around the port's areas may complain about port activities that could result in a serious conflict between a port and its community [4].

In addition, Vietnam needs to train human resources, raise awareness of marine emissions and climate change for marine, fisheries and marine economics; renewing marine shipbuilding technology according to new green maritime standards, reducing engine emissions - ship engines, incinerators. To promulgate policies on taxation and collection of charges for ship gases; collaborate and exchange experience with international marine environmental organizations in the field of marine emissions. To study, build and set up a number of "emission control" or "special" sea-going areas in seaports adjacent to sea areas with special ecological environment values in Vietnam's sea areas. Accordingly, all large-scale ships with emissions exceeding the permissible limits will not be docked or under special pilot regime.

Conclusion

Logistics centers in Danang play a big role in the state economy and the places for logistics centers should be chosen according to road network in the country, geographical situation and foreign trade policy. Logistics are responsible for variety of externalities, including air pollution (CO₂ emission), noise accidents, vibration, land-take and visual intrusion. Various attempts have been made to assess the relative environmental impacts of freight modes, and a relatively consistent picture emerges from these different studies despite some difference in absolute values. The impact of logistics on climate change has attracted increasing attention in recent years, partly because tightening controls on pollution and road safety improvements have alleviated the other environmental problems, but also because new scientific research has revealed that global warming presents a much greater and more immediate threat than previously thought.

1. L. Ping. "Strategy of green logistics and sustainable development. International Conference on Information Management, Innovation Management and Industrial Engineering, ICIII 2009, 2009, vol. 1, pp. 339–342.
2. S. Limbourg, H. T. Q. Giang, and M. Cools. Logistics service quality: The case of da Nang City. *Procedia Engineering*, 2016, vol. 142, pp. 123–129.
3. V. N. News "Coastal Đà Nẵng faces severe pollution problems," Vietnam News, 2017. [Online]. Available: <http://vietnamnews.vn/environment/392137/coastal-da-nang-faces-severe-pollution-problems.html#dESCQGYISf3wPJUV.97>.
4. S. Roh, V. V. Thai, Y. D. Wong. Towards Sustainable ASEAN Port Development: Challenges and Opportunities for Vietnamese Ports," *Asian J. Shipp. Logist.*, 2016.

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Исследование и развитие конкурентных преимуществ организации

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Аннотация

В данной статье рассмотрены теоретические аспекты конкуренции, а, так же, выявлены методики и особенности конкурентных преимуществ организации. Сделаны выводы о том, что конкурентные преимущества важны для любой организации, которая