



Original article

Proposal to build Logistic Center at Danang seaport area

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Abstract

Da Nang is situated in central Vietnam and at convenient cross-roads of the railway and road systems as well as the airport. Moreover, the city has a deep-seaport system and well-invested infrastructure in connection with other transportation modes. It is a favorable condition for the city to move towards a Logistics Center for seaports serving the central region in particular and the whole region in general. This paper presents the current operating status in Danang seaports and analyses the necessary conditions to build a Logistics Center. Based on the experience of the other countries and the actual conditions, the article points out that it is necessary to strongly develop hinterland's logistics services to create added value by building a Logistics Center and Dry ports system to effectively serve the operation of the seaports.

Keywords: Da Nang city, deep-seaport system, Logistics Center.

1. Introduction

Da Nang, which is a major city in the Central region and one of the five largest cities in Vietnam, plays an important role in the national economic growth. It is stated in the Resolution No.33 of the Political Bureau on building Da Nang city in the period of industrialization and modernization until 2020 that it has determined to build Da Nang into one of the major cities of the country, as a port-city, the country's important transport hub for inland transport and international transit.

According to the Decision No.1022/QD-TTg established by Prime Minister approving the Master plan for Vietnam's seaport groups up to 2020, including the planning of the Central Vietnam seaport group, Da Nang Port is defined as a general seaport, container port, key international passenger port in the Central region for cargoes exchanging, economic development and tourism for attractive regions including the Central provinces and Central Highlands, and at the same time transiting cargoes through some regions of Laos, Thailand and Myanmar via the East-West economic corridor.

Currently, seaports have become a vital part of the supply chain network. Seaports are important economic spaces, which provide a wide range of services and serve a wide range of customers including shippers, forwarders, transport companies and logistics operators (Montwill, 2014). One of their main tasks is to facilitate the domestic and international trade of goods, often on a large scale. Development of maritime services, with a focus on port services will play an important role in contributing to the increase of the imports and exports flows through the port, while also serving many ships arriving at the port. To strongly promote the import and export processes and circulation of the goods, along with developing production, expanding, developing and improving the capacity of seaports, the construction of a Logistics Center will bring high economic efficiency, contributing to the goal of port services' growth in the proportion of GDP of the city. The Logistics Center will play an essential role as a focal point for collecting and releasing goods from localities in the Central region, the Central Highlands and other regions in other countries, maximizing the strengths of Da Nang port.

2. General issues about Logistics Services

Logistics Services are work related to goods,

passengers and vehicles arriving at the port in order to transfer goods more quickly and efficiently. Port services to create added value are usually carried out at the Logistics Center and Dry ports (ICD-Inland Container Depot).

2.1. Logistics Center(LC)

Logistics Center is an area located in the port's hinterland area, equipped with facilities and connected to surrounding areas and their transportation systems, creating maximum convenience for transportation and distribution of goods.

Logistics Center plays a major role in the transport chain. It plays the role of collecting, sorting and doing the necessary procedures for import and export goods. Therefore, it contributes to reducing the time of stagnation of goods and minimizing related expenses such as storage, waiting for procedures, transportation and so on. Especially, the efficient operation of the Logistics Center in connecting to the other transport modes has a great impact on reducing congestion in the port.

The logistic center has the following main functions:

- ♦ Transportation service,
- ♦ loading and unloading goods;
- ♦ Forwarding, Warehousing;
- ♦ Consolidation services;
- ♦ Distribution services and value-added logistics services (VALS) such as packaging, customs declaration, labeling, bar coding, management services, goods tracking, etc.

Logistics Center has several types depending on each criterion:

- ♦ By distance to the port: Logistics Center located in the port, near the port and the center far away from the port.
- ♦ By the scale of the logistics service centers: Global LC, regional LC, national LC, Local LC and enterprise LC.

Based on the experience of other countries in the World in developing Logistics Centers such as in Europe

(Belgium, Netherlands, Germany) or in Asia (Japan, China, Thailand), although these countries have different approaches and development methods depending on their specific characteristics, the general experiences about the development of the Logistics Center can be drawn as follows:

- ♦ The government focuses on developing transport infrastructure connecting seaports with national highways, provincial roads and networks in the national transport system such as railways, roads, and waterways which enable multimodal connections at transshipment points. In China, the national logistics strategy is the responsibility of the Ministry of Transport. The Logistics Development Strategy of Thailand for 2007-2011 focused on enhancing Thailand's position as a regional hub by referring in particular to the transport infrastructure with central improvement of railway infrastructure. Following to the Five-Year Plan(12th) covering 2011-2015 which included a specific reference to the development of Logistics System. The Plan stated that ports, freight stations and Logistics Center are recognized as a priority area for upgrading and expansion, with increasing focus on the coherence of the logistics network. Besides, In the guidelines for developing Logistics Centers in Ports of ESCAP (Economic and Social Commission for Asia and the Pacific), it said that providing or improving rail and local road access into logistics centers should be one of the highest items on the addenda for ports in the ESCAP region.
- ♦ The government can invest or mobilize from the private sectors to build regional and national Logistics Centers and propose mechanisms and policies to encourage businesses to develop the services. In the 3rd strategic agenda of Thailand's strategy, which is Logistics Service Internationalization, it stated major strategy is to promote investment in the businesses of logistics service providers in both industrial groups/parks and individual business. In the guidelines of ESCAP, it is proposed that government agencies should try to accept delayed financial returns when providing land for Logistics Center, in order to attract investment of international logistics companies.

- ♦ All economic sectors (including the private sector) are free to participate and compete in port logistics service sector. Private investors invest in construction and do their self-business all kind of services in the Logistics Center. In the Thailand's strategy, the allocation of locomotives and bogeys, handling services and implementation of latest innovations is left to the private sector. Also, in the 12th Five-Year Plan of China, Transport companies and intermediary service providers are encouraged and guided to expand operational scope and work on brand building. The Republic of Korea has been developing comprehensive logistics plans and regulations since the 1990s. Every five years, a 10-year National Logistics Master Plan is developed based on the guidelines set by the Act (Korea Transport Institute, 2012). The Framework Act supported the development of third-party logistics companies.

2.2. The concept of Dry port

In order to connect with economic regions, together with the Logistics Center, which plays a major role in the port hinterland area, it is needed to have a system of satellite ports, which are also called dry ports (or Inland Container Depot, Inland Clearance Depot-ICDs) to handle the goods in faraway areas, or at border gates, industrial zones and export processing zones. Dry ports are often used for cargoes packed in containers.

In the world, there are two different ways to call a dry port. UNCTAD uses the English name "Inland Container Depot", some other countries use "Inland Clearance Depot", both are abbreviated as ICD; In Vietnam, there is no legal document that introduces the concept of dry ports. Through some references, the concept of dry port can be proposed as follows:

As originally conceived, 'dry port' was defined as an inland terminal to and from which shipping lines could issue their bills of lading, with the concept being initially envisaged as applicable to all types of cargo(UNCTAD, 1982) or else, relating simply to 'a place inland that fulfils original port functions' (Cullinane and Wilmsmeier, 2011). In another definition, dry port is an inland intermodal terminal directly connected to seaport(s) with high capacity

transport mean(s), where customers can leave/pick up their standardised units as if directly to a seaport (Leveque and Roso, 2002). Dry ports provide services of loading and unloading, delivery, temporary storage, consolidating and dividing cargoes, repairing and maintaining containers and completing customs procedures for goods exported and imported by containers. Dry ports are under customs' inspection and supervision.

Thus, Dry ports cover the entire function of inland goods inspection location, customs clearance locations outside border gate and inland clearance location; in addition, it also has many other functions to provide services such as loading and unloading, transportation, temporary storage, consolidating and dividing cargoes, repairing and maintaining containers.

Dry port has the following basic functions:

- ♦ To receive and deliver containerized cargoes;
- ♦ To load and unload cargoes into and out of the container;
- ♦ To transport containers from dry ports to seaports;
- ♦ To check and complete customs procedures for containerized import and export cargoes;
- ♦ To Consolidate and divide cargoes for LCL cargoes (Less than Container Load);
- ♦ Temporary warehouses for storing import and export cargoes and containers;
- ♦ To repair and maintain containers;
- ♦ To deliver other goods (bulk, departmental goods).

2.3. The conditions for building Logistics Center and Dry ports

The Logistics Centers and Dry ports must be located near major transport corridors to seaports, close to large sources of import and export cargoes with stable growth and the ability to exploit both

export and import processes.

The Logistics Centers and Dry ports must have convenient connections with the national transportation system: roads, railways, waterways and airports, ensuring the rational use of transport modes for economic efficiency, safety and reducing time during transportation.

The Logistics Centers and Dry ports must have sufficient infrastructure to store enough goods, internal transport infrastructure and convenient information infrastructure.

The Logistics Centers and Dry ports must be fully equipped with equipment for loading and unloading, transportation to provide logistic services and reasonable manpower arrangement.

3. Operation situation of Da Nang seaports

3.1. General review of Da Nang seaports



Figure 1: Geographical location of Da Nang seaports

Source: <http://dannangport.com/eng/>

Da Nang Port is located at 16°17'33" north latitude, 108°20'30" east longitude. Navigator Station location at 16°10' north latitude, 108°11' east longitude. It is located in semidiurnal tidal fluctuations which usually average 0.9 meters. Da Nang seaports are the cargo gateway of Central Vietnam and plays an important role in the Vietnamese port system. Da

Nang seaports is also selected as the terminus of the East–West Economic Corridor, linking four countries including Myanmar, Thailand, Laos and Vietnam, also as the main gateway to the East Sea for the entire region.

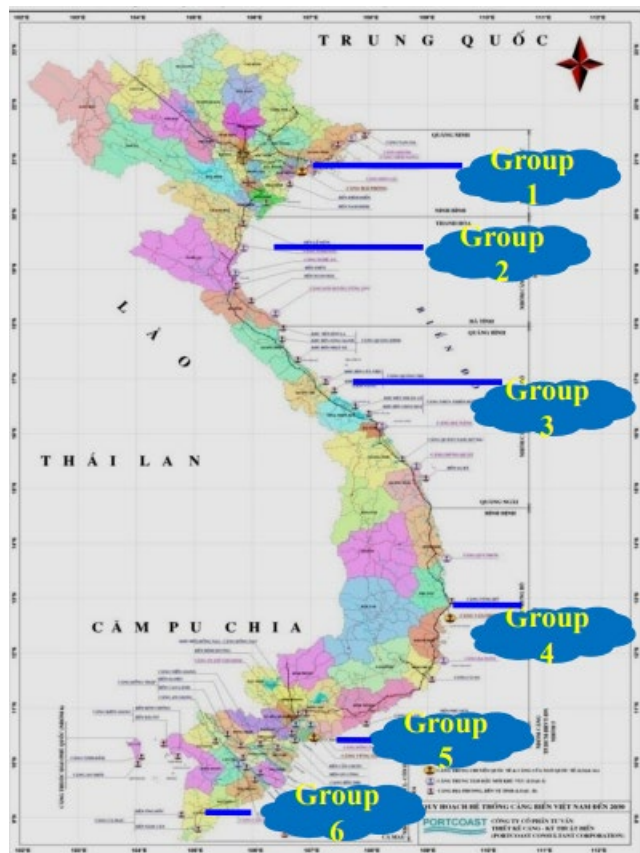


Figure 2: Vietnam Seaport System
Source: <http://www.vinamarine.gov.vn/>

Da Nang seaports are located in the the 3rd seaport group of Vietnam which is in the central Coast. According to the statistics data from VINAMARINE (Vietnam Maritime Administration), Da Nang seaports are now accounted for 5% of total dry cargoes and 5% of container cargoes handled in Vietnam’s seaport system. We need to know that seaports’ throughput is currently concentrated mainly in the 5th seaport group (the southern representative) and the 1st seaport group (the northern representative), and followed by the central seaport system, which is typically Danang seaports.

Currently, Da Nang Port includes the main port as Tien Sa Port and its subsidiaries, owns nearly 1,200m of berths with the capacity of receiving cargo vessels up to 50,000 DWT, container ships up to 2,500 Teus and passenger ships up to 75,000 GRT; in addition, the loading and unloading equipment and modern warehouse, in order to ensure the exploitation capacity of up to 8 million tons/year.

Da Nang seaports have total cargo yard area of 125,350m², warehouse area of 22,764m², total length of berths is 1,647 meters and total surface of the berth surface is 27,633m². Da Nang seaports have handling capacity of 3-4 million Ton per year. Moreover, the seaport system is also equipped various modern facilities for serving customers’ requirement.

Table 1. Equipment of Da Nang seaports

Equipment	Capacity	Quantity (Unit)
- Quayside gantry cranes exclusively used to load and unload containers at the Gantry	36 tons	3
- Tyred gantry cranes (RTG) exclusively used to load and unload containers at the yard	36-40 Tons	4
- Fixed gantry cranes (Liebherr)	40 Tons	2
- Fixed gantry cranes (Liebherr)	25 Tons	2
- Forklift truck	42-45 Tons	5
- Wood scraper	5 Tons	2
- Automobile cranes	25-80 Tons	25
- Lifting trucks, excavators, bulldozers all kinds	1.5-7 Tons	24
- Tractor trucks, dump trucks, trailers		66
- Tugboat	500-1700CV	7
- Electronic scale		4
- Power supply system for refrigerated container all		3

Source: <http://dannangport.com/eng/>

Da Nang seaports have following basic services:

- ♦ Loading and unloading, delivery and reservation of goods;
- ♦ Towing service;
- ♦ Inland waterway transport;
- ♦ Cargo transportation agent and inventory service;
- ♦ Repairing inland waterway transport means;
- ♦ Transporting goods to some countries in the world;

Table 2. Da Nang seaport system

	Tien Sa port	Song Han port
Berth length	897m	750m
Depth	-11m	-6/ -7m
Container yard	115,000m ²	10,350m ²
Warehouse	20,290m ²	2,474m ² (2 W.H)

Capacity	<30,000DWT	<5,000DWT
Yearly throughput	3 Million Ton	1 Million Ton

Source: <http://dannangport.com/eng/>

3.2. Performance of Da Nang seaports

The throughput of Da Nang seaports over years as follows:

Table 3. Throughput statistics (2011-2018)

Unit: Mil.Tons, Thousand Teus, Thousand persons

Year	Thrput	Im	Ex	Inland	Conts	Passengers
2011	3.868	784.9	1598.1	1485.5	114.4	38.190
2012	4.423	907.8	1988.1	1,527.5	144.6	56.746
2013	5.010	1345.1	2361.0	1,304.2	167.4	115.912
2014	6.022	1576.9	2285.0	2,160.0	227.4	108.279
2015	6.406	1902.4	2421.1	2,082.5	258.0	51.891
2016	7.255	2249.9	2749.7	2,255.3	318.7	136.459
2017	8.028	2307.6	3256.1	2,464.3	349.0	148.000
2018	8.651	2155.1	3642.2	2,854.0	370.0	200.058
Average growth rate	12%	17%	13%	12%	19%	43%

Thrput-throughput, Im-Import, Ex-Export, Conts-Container

Source: <http://dannangport.com/eng/>

Through statistics of Da Nang seaports' performance from 2011 to 2018, it shows that the throughput of Da Nang seaports have increased, with an average annual growth rate of over 12%, of which container cargo increases by about 19%. Annual volume in 2016 nearly doubled compared to 2011. Especially container cargo, in recent years, the volume of cargoes through the port has increased sharply. At the same time, in a research paper on the forecast of development trend of Da Nang seaports in the coming years of Nguyen (2018), the results show that, Da Nang Port should be towards containerization since the tendencies of container flows will increase rapidly in both the growth rate and the magnitude of growth. Therefore, in the foreseeable future, with the increasing rapidly volume of imports and exports through the seaports, especially the volume of goods from the East-West Economic, the area of the port and the warehouses currently exploited will be overloaded. Therefore, it is necessary to build a Logistics Center and develop Dry ports system in this area.

4. Proposing the construction of a Logistics Center and Dry port in Da Nang seaports area

With the main characteristic of being main entrance to the sea of the Middle Central provinces and the

Central Highlands, and the main gateway to the sea of the East-West economic corridor, serving goods for economic regions of other neighbor countries: the Northern of Thailand, the Southern of Laos, the volume of goods through the seaports of Danang in the coming years will increase rapidly. In addition, Da Nang seaports are also a destination for international passenger ships, the seaports also have the logistics services for passengers. Within the scope of this article, some suggestions are suggested:

♦ *Building a Logistics Center in Danang City*

It acts as the Freight Distribution Center (FDC), where all activities related to transport, logistics and distribution of goods are carried out by other operators.

Logistics is the high and complete development of freight forwarding services. Along with its development process, logistics has diversified the traditional forwarding concept. From only on behalf of customers to perform discrete stages such as chartering, storage, preparation, packaging, recycling, clearance procedures to provide full service (Door to Door). From acting as an agent, the trustee becomes a key actor in freight forwarding activities with customers.

Thus, the Logistics Center can be located anywhere in the hinterland area, near the airport and the international border gate; it should cover the entire function of a dry port and other functions of logistics activities. By 2020, this Logistics Center will have a medium size of about 30-40 ha. Then depending on the amount of cargoes through the seaports, it can expand to 70-100 ha.

♦ *Building a system of Dry ports (ICDs) at border gates and industrial zones*

These dry ports have the function of collecting goods, customs clearance and the cargoes will be delivered directly to the seaports. These dry ports will be built near the road system, railway system and connected to the seaports. The main services in dry ports will be forwarding, transportation, storage, sorting, packing and unloading of containers. These dry ports will be planned to ensure the most efficient distance and efficiency for the hinterland's services as well as serving the import and export cargoes of

the East-West economic corridor. The planning scope may be at border gates, along national highways linking the central provinces, along the East-West economic corridor and Central Highlands provinces, industrial zones and export processing zones.

♦ **Completing transport infrastructure connecting Da Nang with the national transportation system**

Road system: Completing the highway sections through Da Nang and the Central provinces in the North-South highway route. Besides, it is connected by a coastal road in the Central region.

Railway system: A new railway system from the national railway to Lien Chieu seaport needs to be built. In order to connect with the Central Highlands provinces and the border areas of other neighbor countries in the East-West economic corridor, it is necessary to construct the Da Nang - Central Highlands railway.

5. Conclusion

Da Nang has many geographical advantages for economic development and especially port economy. In order to maximize these advantages, we should not only expanding, developing and increasing the capacity of seaports, it is also necessary to strongly develop hinterland's logistics services to create added value by building a Logistics Center and Dry ports system to effectively serve the operation of the seaports. Making good use of these advantages contributes significantly to Da Nang's economic development under the Political Bureau's Resolution 43/ NQ-TW on building and developing Danang up to 2030, with a vision to 2045.

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