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The obtained results relating to the development of ports: A case in Vietnam

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Abstract

As of December 2017, Vietnam has 44 seaports with a total capacity of 470-500 million tons per year. The major ports in Vietnam include Hai Phong, Danang, Qui Nhon, and Ho Chi Minh City. Future ports under development include My Thuy International Seaport, Lien Chieu Seaport, and Lach Huyen International Gateway Port. These ports have attracted investors such as Vietnam Construction Service Development and Investment Co., Ltd, Golden Gate Construction Co., Ltd, Clearbrook Global Advisors, EMP Infra, PineStreet Infra, Boskalis, T&T Group, Infra Asia Investment, and Molnykit, a JV between Mitsui O.S.K Lines, Nippon Yusen Kabushiki Kaisha, and Itochu Corporation, and US-invested Cargill Vietnam. From 2005 to 2016, Vietnam's external trade increased from US\$69 billion to US\$351 billion, while the country's total freight traffic volume more than doubled in the same period from 100 billion ton-km to 238 billion ton-km. During the same period, the freight traffic volume in inland waterways increased from 18 billion ton-km to 45 billion ton-km, while in maritime transport it increased from 62 billion ton-km to 132 billion ton-km. Going forward, the growth in production and trade will bring a corresponding growth in freight traffic, which makes it a priority for the government to invest in port infrastructure. The major challenge faced by the biggest ports in Vietnam is the increasing use of smaller ports and vessels, which account for around 80 percent of container imports and exports. Underdeveloped shipping infrastructure has started to impact the industry, with annual freight-related losses reaching US\$2.4 billion. Some ports also suffer from being over-burdened with shipments, which has led to congestion and huge delays.

Keywords: orientation, port system, plan, development

1. Introduction

Prior to 2007, Vietnam's seaport system was still underestimated in terms of quality and backwardness, especially terminals for container ships operating on the far sea route. However, since 2007, Vietnam's seaport system has made a breakthrough development. The capacity of general ports and regional hubs has been newly invested and upgraded to allow the reception of vessels of 30,000-200,000 tons. Particularly, Ba Ria-Vung Tau port successfully received the world's largest container ship with a tonnage of 18,300 TEU (194,000DWT), affirming Vietnam's seaport capacity is catching up with the development trend of the world fleet. . In addition, investment projects for public infrastructure development, leading projects are attracting a strong investment in the private sector, many port operators, major shipping lines of the world. Came to participate in exploiting seaports in Quang Ninh, Hai Phong, Ho Chi Minh City, Ba Ria - Vung Tau. This shows that the port development orientation in our country is now on the right track, meeting the development needs of the economy. The Government of Vietnam has made a recommendation to build an international gateway port in Hai Phong, Ba Ria - Vung Tau and the central key economic region (when conditions permit) to receive ships of up to 100,000 tons (8,000 TEU container vessels) or larger, capable to integrate the international container transshipment role. These are seaports classified as IA in the decision approving the planning. The seaport system must ensure through the whole quantity of export and import goods and exchanges between regions and areas in the country by sea to meet the requirements of socio-economic development of the country with the capacity under the planning of the seaport system at the

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- In the year 2015, about 400-410 million tons/year, of which composite goods and containers will be from 275 to 280 million tons / year.
- By 2020, about 640 to 680 million tons /year, of which composite goods, containers from 375 to 400 million tons / year;
- In the year 2030, from 1,040 to 1,160 million tons/year in which synthetic goods, containers from 630 to 715 million tons / year.



Fig. 1: Characteristics of port systems in Vietnam

By seaport, Vietnam seaport system up to 2020 with orientation to 2030, including 6 port groups and the ability to pass through specific commodities as follows:

Funds for the development of the port system are estimated at 80,000 to 100 trillion dong. According to the master plan, Vietnam has four ports of type IA (Hai Phong, Ba Ria - Vung Tau, Van Phong, Khanh Hoa) and 11 grade I ports (Quang Ninh, Nghi Son, Nghe An, Ha Tinh, Thua Thien Hue, Da Nang, Dung Quat, Quy Nhon, Ho Chi Minh City, Dong Nai, Can Tho).

Total expenditures for development of Vietnam's seaport system up to 2020 are estimated at VND80 - 100 trillion (excluding investment funds for specialized ports and wharves); in which public port infrastructure is estimated at 40,000 to 50,000 billion VND.

According to the master plan, the state budget only concentrates on investing in public infrastructure of seaports in regional and regional seaports (understood as ports of types IA and I - PV);

The port facilities are mainly invested with the legal source of the enterprise. To attach importance to the application of forms of investment in new large-scale ports and development zones. Regarding the number of seaports, according to Bui Thien Thu, Director of Vietnam Maritime Administration at the 2nd Logistic Forum, up to September 2014 (after the approved sector planning), Vietnam has a total 44 seaports of which 14 seaports are class I, IA (15 seaports of types IA and I), 17 seaports of type II and 13 seaports of class III, including about 219 docks with nearly 44 km dock and dozens of transshipment areas. According

to the Maritime Department of Vietnam, by 2014, cargo through Vietnam's seaport system was estimated at 370.3 million tons, up 14%, of which containerized cargo reached 10.24 million TEUs, up by 20.1% compared to 2013 and is the highest yield ever.

Recently, the Prime Minister has issued a Directive requiring the implementation of solutions to reduce logistics costs, effectively connect transport infrastructure. The logistics cost of a country depends heavily on the hardware factors such as logistics infrastructure and software elements as mechanisms and policies. To reduce logistics costs, Vietnam needs to improve both. In order to implement groups of solutions to reduce logistics service costs such as the Prime Minister's Directive, the maritime industry will review and perfect the seaport system development plans towards the sea, minimizing restrictions on channels and closer access to international sea routes on the South China Sea. Attaching the investment in seaport construction with the construction of an advanced port management model to optimize the investment in port operation.

Seaports are defined as central hubs to deploy solutions to connect transport modes. Planning to develop dry ports to support seaport exploitation, contributing to restructuring the transport market share of modes, facilitating the transport of goods from seaports to production and distribution centers, Consumption is through. In the coming time, in order to meet the expectation, the Resolution on the strategic plan of the 8 th Central Conference set a goal of making Vietnam a strong nation on the sea, the orientation

of the maritime industry is to continue to drastically implement Marine strategy by region. According to the forecast in the development plan of Vietnam's seaport system, by 2020, Vietnam has demand for goods by sea of about 640 million tons and about 1.1 billion tons by 2030. On that basis, capital demand in the period of 2016-2020 to develop Vietnam's seaport system is estimated at VND 80,000 - 100,000 billion. In particular, public infrastructure of seaports is expected to account for 30 - 40% of the remaining capital from the private sector, including domestic and foreign capital.

However, with the double-digit growth rate every year, while the State's investment capital for the seaport system has reached the limit, the logistic cost of Vietnam is among the most expensive in the world. The presence of private economic groups is an inevitable trend but they are having to solve many challenges. Commenting on the marine economy, connecting traffic on October 26, according to National Assembly member Duong Minh Tuan (Ba Ria - Vung Tau National Assembly delegation), Cai Mep - Thi Vai port alone paid book VND 90,000 billion in 5 years. The central government collected over VND 90,000 billion but invested more than VND 5,700 billion, about 6%. It means that the central government spent 6 billion dong to collect 100 billion dong. However, in fact, the exploitation capacity of Cai Mep - Thi Vai port is only about 40%, while this is the regional transshipment port. The main reason is high logistics costs, asynchronous connection between roads and ports ... The key economic region in the south has two highways: Long Thanh - Ben Luc and Trung Luong - Long Thanh - Dau Giay. But there is no bridge connecting the highway with the port below. Therefore, it is recommended to build more bridges from the port to the highways, to increase the value of exploitation and create synchronous traffic connections. It is estimated that three bridges are connected to the above two expressways about VND 15,000 billion. A more synchronous connection system will help reduce logistics costs, improve competitiveness, moreover, it is possible to collect about VND 24,000 billion annually into the budget, increasing the capacity of exploiting Cai Mep - Thi Vai port. Double today, about 80%.

Vietnam's logistics costs currently account for an average of 21% on product costs, a very high cost ratio compared to developed countries. The scale of logistics services currently accounts for 3-4% of GDP and has a relatively fast growth rate of 15-20% / year, it is expected that the scale of this service sector will contribute 8-10% of GDP by 2025. Experience from developed countries and effective improvement of logistics activities will make an important contribution to the efficiency of the economy. But investing billions of dollars for infrastructure projects is a difficult problem for the big "giants" in the world. It is known that in the port area of Hai Phong, Dinh Vu is the seaport with the largest volume of cargo, followed by Hai Phong port (Hoang Dieu / Chua Ve), other ports in Hai Phong capacity is also quite high. Meanwhile, in the area of Ho Chi Minh City. Ho Chi Minh City, the leading ports in terms of capacity, including Cat Lai, Vietnam International Container Terminal - VICT, Sai Gon Port, Phuoc Long ICD, Ben Nghe Port. It is worth noting that Cai Mep - Thi Vai port complex in 2014 achieved 59.3 million tonnes of cargo throughput in the Ba Ria - Vung Tau region, an increase of 20% million TEUs. It is

considered as a potential deep-water port, which has favorable locations and receives large vessels. However, the efficiency of port exploitation is low due to the connection between the port and the localities in the region, TP. Ho Chi Minh is not synchronized. Thus, according to the development plan of Vietnam's seaport system up to 2020 with a vision to 2030, by 2014 commodity throughput through Vietnam seaports has reached from 90.3% to 92.6% of the heading out According to the approved plan as mentioned above, the goal of the industry is to increase the volume of goods through seaports by between 400 and 410 million tons by 2015, of which composite goods and containers from 275 to 280 million tons /year.

Currently, according to data reported from the Ministry of Transport, our country currently has 49 large and small seaports across the country. In particular, seaports in Vietnam will be classified into three types: Seaport I, Seaport II and Seaport III. Of which, the largest seaport in the North West and the country is Hai Phong port, the largest seaport in the Southeast is Vung Tau port. At present, Hai Phong seaport is the biggest cargo traffic port in the North of Viet Nam. It is equipped with the most modern equipment, the infrastructure is fully and safely secured. And in line with international shipping, international trade. Hai Phong port was built with a length of 2,567 meters, warehouse area of 52,052 m² and can handle about 10 million tons of cargo annually. At present, Hai Phong port consists of 5 branches and is located at 8A Tran Phu, May To, Ngo Quyen, Hai Phong. At the same time, due to the large sedimentation, this port can only receive ships of 6,000 - 7,000 DWT. Vung Tau port: This is the seaport part of Ba Ria - Vung Tau province and is considered to be the biggest seaport in the Southeast of Vietnam and also the national port complex of the country. Importance in the transportation of goods and the international focal point of our country. At present, Vung Tau seaport is composed of 4 terminals: Cai Mep wharf area, Sao Mai, Ben Dinh, The area of American Ferry, My Xuan, Dinh river wharf area, Dam area, Con Dao Accordingly, the State is planning to develop two more ports of Long Son - port for filtering and exploiting oil and gas, blast with Sao Mai wharf area, Ben Dinh - another place of transportation for Vung Tau port by 2020. Besides the two seaports above, our country also has seaports with large scale and payload such as: Van Phong Port - Khanh Hoa Province, Quy Nhon port - Binh Dinh Province, Quang Ninh Port - Quang Ninh Province, Saigon Port - Ho Chi Minh City, Cua Lo Port IJRED - Nghe An Province, Dung Quat port - Quang Ngai province, Chan May Port - connecting Thua Thien Hue Province and Da Nang Province, Da Nang Port - Da Nang City.

2. Actual and potential

Vietnam is a country with large seas and long coasts and has a maritime index of 0.01 (average of 100 km of land with 1 km of coastline), 6 times higher than this ratio of the world. Along the coast, there are many sloping lochs, deep bays, near major urban centers, sea and island tourism centers, and commodity production areas with import and export demands. In addition, nearly 3,000 inland islands form the island system that shields most of Vietnam's coastal and coastal waters at varying degrees. The international traffic crossing through the South China Sea is one of the busiest trade lanes in the world. Therefore, the

construction and development of the seaport system is vital to our maritime transportation and is an important infrastructure that determines the growth and economic growth of the sea in the coming time. Up to now, our country has about 90 seaports and nearly 100 coastal and island locations that can build ports, including international transshipment ports.

On December 24, 2009, the Prime Minister issued Decision No. 2190 / QĐ-TTg approving the master plan for the development of Vietnam's seaport system up to 2020, with orientation to 2030. Accordingly, the seaport system Vietnam is developed by territory, including 6 groups:

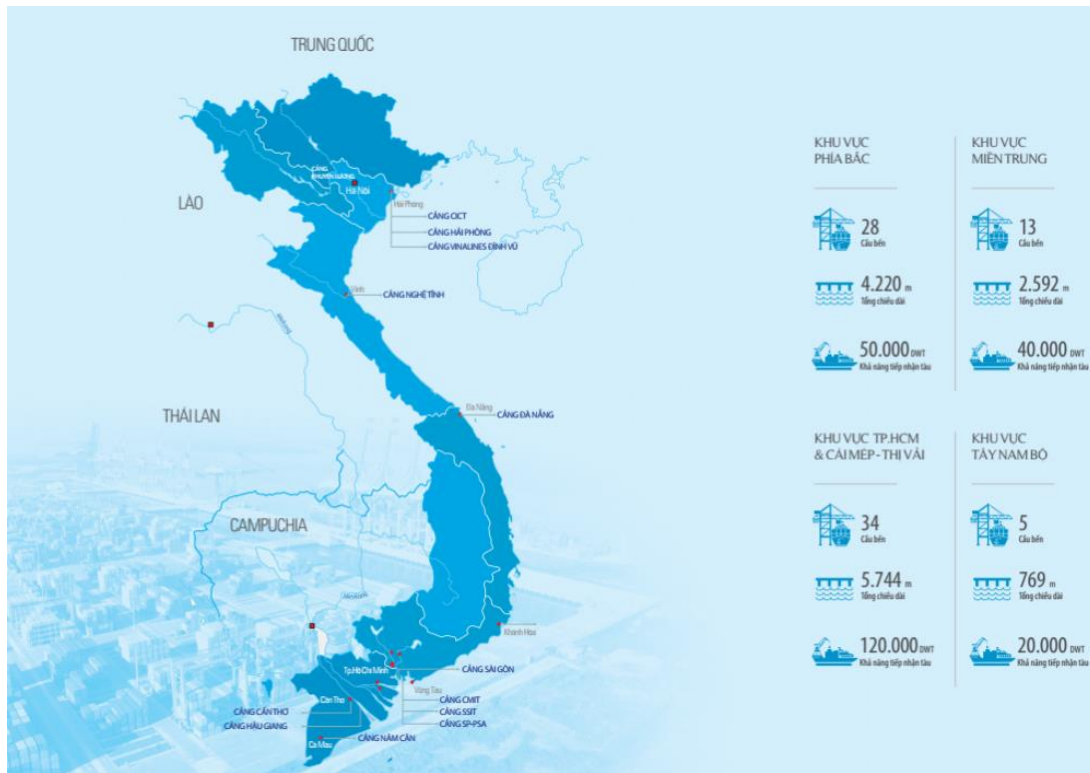


Fig. 2: Port system in Vietnam

Group 1: Northern seaport group from Quang Ninh to Ninh Binh.

Group 2: Port group of North Central Coast from Thanh Hoa to Ha Tinh.

Group 3: Central Mid-Central Port from Quang Binh to Quang Ngai.

Group 4: South Central seaport group from Binh Dinh to Binh Thuan.

Group 5: South East Sea Port Group (including Con Dao and Soai Rap River in Long an, Tien Giang).

Group 6: Group of seaports in the Mekong Delta (including Phu Quoc and southwest islands).

According to the scale, functions and tasks of the port system, Vietnam has several types of ports:

- (1) General National Port: is the main port in Vietnam seaport system including: international transshipment port: Van Phong (Khanh Hoa); International gateway port: Hai Phong (Lach Huyen) and Ba Ria - Vung Tau port (Thi Vai - Cai Mep area); Ports of the region: Hon Gai (Quang Ninh), Nghi Son (Thanh Hoa), Cua Lo (Nghe An), Vung Ang (Ha Tinh), Dung Quat (Quang Ngai), Quy Nhon (Binh Dinh), Nha Trang Ba Ngoi (Khanh Hoa), Sai Gon (Ho Chi Minh City), Dong Nai.
- (2) Local ports: attractive and functional in the local area (province, city).
- (3) Specialized Ports: Direct service to industrial facilities, cargoes through specific ports (crude oil, oil products, coal, ores, cement, clinker, passenger ...) and is a

category in the overall industrial base it serves.

In each port, there may be several wharfs, each wharf may have several wharfs, each wharf may have many wharfs of different capacities and sizes, complementary to each wharf. It is expected that by 2030, Vietnam's seaport system will adopt between 500 and 600 million tonnes per year (2015), 900-1,100 million tonnes per year in 2020 and 1,600-2100 million tonnes per year in 2030.).

The maritime industry is managing and operating 330 berths located on a total length of 39,951m (25,933m total berths, containers and 13,958m in length of dedicated wharves, nearly twice the size of 1999) of 160 National Harbor. Output through 2010 was 256 million tonnes, including 6.510 million TEUs of containers, liquid cargoes of 51.608 million tonnes, transit cargoes of 29.489 million tonnes; 35 streams into national ports and 12 channels into dedicated ports. In recent years, despite efforts in new construction as well as upgrading and modernization of available seaports, the infrastructure of the port system in Vietnam is still weak in terms of management and exploitation. And backward in science and technology compared to advanced countries in ASEAN and in the region. First of all, the productivity is low, reaching only 45-50% of the world's level (3000T-4000T / m berth length and 15-20 TEUs / crane / hour for container handling).

The general assessment shows that although the quantity is abundant and allocated from the North to the South, the land use and exploitation efficiency is low. The reason is the investment spread, the local "deep water port

syndrome" while the goods are less, natural conditions do not allow. Secondly, due to the lack of foresight and inaccurate seaport port planning, it is not possible to establish a synchronous and rational national transport network linking with local growth, closely connected with the port system. This has undermined capacity in large urban ports undergoing rapid population growth as well as severe degraded infrastructure. In particular, it lacks the true deepwater port to accommodate 80,000 DWT or more vessels or container ships of about 6,000 TEUs and there is no international transshipment port for the global shipping industry. Vietnam is also missing the opportunity to grasp Logistics as a key sector of maritime services formed during the development of the port system, which now stands at \$ 8- \$ 10 billion a year, largely in the international maritime groups operating in Vietnam.

Northern seaport system

Currently, our country has seven seaports with a total length of over 300 meters. Of the seven seaports in the north, 44 are multi-loading docks, 24 dedicated docks, eight other service piers and 15 buoys.

In terms of ports alone, this type of port is very high in terms of quantity but still limited in size. The average berth length is 140m / berth, with an average loading capacity of 3,000-4,000m / year. This capacity is considered by experts to be quite good compared to the general level of Vietnam due to relatively modern equipment. The container wharf has an average length of 170m / wharf. The loading capacity is not high because the investment equipment is not synchronized and the container flow is not uniform.

Specialized ports in the North are mainly associated with industrial, coal and electricity industries ... which are invested in a synchronous manner with factories. Therefore, the loading capacity is high along with the ability to receive many ships with large load on the landing.

Equipment at the northern seaports is much differentiated investment between ports. The inlet at the northern seaports is quite long and has uneven depths throughout the channel, leading to large vessels entering the harbor to reduce the load and take advantage of the tides. In terms of port connection, road transport still plays a key role. In general evaluation, the first sea ports in the North are invested in accordance with planning; however, there are still slow implementation projects progress.

Central seaport system

Over the past 10 years, more and more small and large ports have appeared in Central Vietnam. To date, the Central has 19 seaports with a total length of more than 8,000 meters, including 10 seaports of type 1 and 9 seaports of type 2. Port cargoes are mainly construction materials, type and mining products. Of the 19 seaports in the central region, 37 are multi-loading ports and 25 are specialized ports. In terms of equipment, the ports in Central Vietnam are equipped quite simply, so the capacity of loading and unloading of goods is low. Port access at central seaports is largely short due to the fact that most of the terminals are located near deep seas. The biggest feature in the central seaports is the lack of economic flows in the surrounding area so the source of too little leads to the central ports are often missing goods. Due to the fact that the production capacity as well as the market in the Central of Vietnam is too small and industrial parks are not effective, they cannot create sufficient and stable supply sources for seaports. The seaport is so dense that the investment capital is scattered, the scale of investment is small and port investment is lacking in science and technology. Central ports are just consolidation and bring Haiphong or Ho Chi Minh City ports for export. Essential elements for the development of seaport economy are insufficient, lack of port system, financial, logistic.

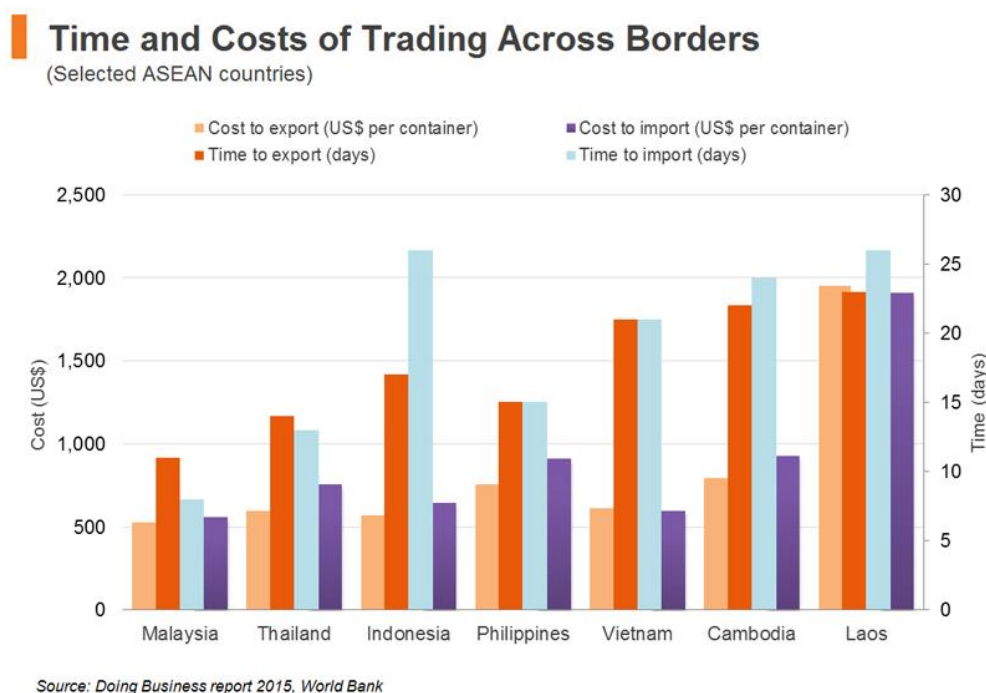


Fig. 3: Logistic cost in Vietnam compared to other countries

Southern seaport system

At present, there are 13 seaports in the South with a wharf length of over 27,000m, of which 4 are grade 1 and 9 are 2.

Ports are mainly agricultural products, fertilizers, ores and products from industrial zones. Of the 13 seaports in the south, there are 39 general docks and 48 specialized ports.

For seaports in the Southeast, the development of the port system is in line with the approved plan. The cargo through this area accounts for about 50% of cargo through the seaport and 65% of containerized cargo of the whole country. Large port terminals, large-scale container, invested in modern specialized equipment. The system of electronic exploitation management is put into common exploitation. Specialized ports are growing rapidly. The seaport system has been modernized and shipped to the US and Europe by the major shipping lines of the world.

However, the investment process of the seaport system in the Southeast has some limitations. For seaports in the Mekong River delta, development, upgrading and upgrading of seaports is not as planned. Investment has only been made in a number of ports, and local ports are almost un-implemented. Equipment loading and unloading management and management are backward and not synchronized. The flow into ports in this area is very long and shallow. Regular dredging and transfer of floats leading to annual streams is expensive and does not always achieve the desired results. Port connections are mainly land and water. In general evaluation, the investment in seaport development in the Mekong Delta has not achieved the set objectives as planned and did not meet the requirements of socio-economic development of the region. It can be seen that the reality of port development investment in Vietnam is still weak. Investment in seaports is still largely funded by state budget and ODA, but has not attracted much capital from other sources. The use of capital is ineffective in the state of planning is subjective, not strategic and long term. The investment management mechanism is still inadequate, resulting in ineffective state investment and capital recovery. This investment situation has resulted in the fact that Vietnam's seaports are generally outdated by the requirements and demands of the economy and are not commensurate with their potential.

3. Conclusion

Seaport is one of five transport infrastructures, the gateway of import and export goods and is the focal point for transforming transport modes from sea transport to rail, road and inland waterway transport. Therefore, the port system and logistics services associated with port operation always play a particularly important role. Currently, Vietnam has 44 seaports and 263 ports with a total length of about 89km. In particular, deep sea port, gateway port in combination with international transshipment port can receive ships of 100-200 thousand tons which have been invested in construction in the North and the South and are continuing to study investment in the central region. With the capacity of about 550-500 million tons / year, Vietnam seaport system annually approves 90% of import and export goods, contributing to the driving force of economic development of the country. In order to implement groups of solutions to reduce logistics service costs, it is necessary to attach investment in seaport construction with building an advanced port management model to optimize the port investment. Planning to develop ICDs to support port operation, contributing to restructuring the transportation market share of modes, facilitating the transport of goods from seaports to production, distribution and pepper centers. Pass through.

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