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Marine infrastructure – The key matter to promote the marine economy development

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Abstract
The 21st century is considered "the century of the ocean." With the advantage of being a coastal country, located on the most international shipping route of the region and the world, our country has favorable conditions to develop marine economy, especially sea port. Transport of sea, as a driving force for sustainable socio-economic development. Sea port as a gateway to the international regional area of Vietnam, to develop logistics as well as the development of business lines, the issue of investment in connection infrastructure is very important. Therefore, studying and building basic infrastructure conditions to create a good connection between the port system in Vietnam and the region will help the logistics and seaport industry to thrive.

Keywords: marine infrastructure, marine economy, economy development

Introduction
On December 24, 2009, the Prime Minister issued Decision No.2190 on approval of "Planning on development of Vietnam's seaport system up to 2020 with orientation to 2030". Viet Nam attaches great importance to the development of ports capable of receiving up to 100,000 tons of sea-going ships or larger ships in the northern, central and southern regions. Sea economy was selected as one of the key industries, the construction and development of the national seaport system has a great role, contributing worthily to the country's achievements.

The fourth plenum of the 10th Party Central Committee has issued a resolution on the Vietnam Marine Strategy to 2020 with the aim of making Vietnam a strong country on the sea, enriching it from the sea, ensuring firmly sovereignty, national sovereignty over the sea and islands, making an important contribution to the cause of industrialization and modernization. In particular, the resolution clearly defined: By 2020, successful development, breakthrough in marine and coastal economy with marine economy ranked second in the marine economy (after mining and processing oil and gas) and after 2020 the maritime economy will be at the forefront of maritime industries. Thus, the development of maritime economy has been considered by the Party and State as a breakthrough in marine economic development in particular and in the country's socio-economic development in the coming period. In order to successfully implement the resolutions of the Party, the Ministry of Transport has been directing the development of seaport infrastructure in accordance with planning directions, concentrating and not spreading; Organizing the management of seaport infrastructure in a coordinated and modern manner; Development of logistics services and infrastructure of the maritime industry, contributing to affirming and maintaining the sovereignty and sovereignty over the sea and islands.

Fig. 1: The marine infrastructure of Vietnamese port system

The implementation of the master plan of the national port system has achieved certain achievements, but also some shortcomings need to be adjusted and updated to suit the new situation. The Prime Minister has approved the master plan for the development of Vietnam's seaport system in the period up to 2020 and orientation to 2030. In 2015, the national port system should meet the cargo flow through 500 - 600 million tons per year, about 1 billion tons per year by 2020 and 1.6 - 2.1 billion tons per year by 2030. The Ministry of Transport has approved the detailed plan of 6 seaport groups in the system. There are 39 seaports, of which 3 are 1A seaports (Van Phong international transshipment port, two international gateway ports of Hai Phong and Cai Mep -Thi Vai port, 11 ports of type 1. With the launch of the entire political system, in 2016, the cargo through the port system of Vietnam is estimated at 456 million tons, up 7% compared to 2015, reaching 98% of the plan in 2016, of which containerized cargoes will reach 13.3 million TEUs, an increase of 11% compared to 2015, reaching 106% of the year plan. At present, there are 44 seaports (250 wharfs) with 59,405m long wharves, total designed capacity of 470-500 million tons per year. Vietnam's seaport system has met the requirements of rotating cargoes transported by sea, actively serving the socio-economic development process in coastal areas and the whole country; To create a motive force to attract and promote related economic sectors and industries. Most seaports are owned and operated by state-owned and private enterprises. Only four new ports have been invested with state budget funds. In the recent period, the state still owns infrastructure ownership and rents mining. The Vietnam Maritime Bureau is the agency assigned to act as a representative to sign contracts for the lease of 5, 6 and 7 ports of Cai Lan (Quang Ninh), Thi Vai ODA port and Cai Mep ODA port (Ba Ria - Vung Tau) and An Thoi harbor (Phu Quoc).

Characteristic of Vietnamese port system

In the period 1999-2007, this period Vietnam economy has basically overcome the crisis, entered the stage of development with high speed. Recognizing the role and importance of maritime transport as well as port infrastructure for the country's economic development, in 2009, under the direction of the Ministry of Communications and Transport, VINACHEM has developed and submitted to the Prime Minister to approve the master plan for the development of Vietnam's seaport system towards 2010 with the orientation of 2020. With the approved master plan, Vietnam's seaport infrastructure has made remarkable development, contributing greatly to the increase. The country's economic leader. Commodities through the port continued to grow rapidly, in 2007, the country has built 160 ports, 305 wharves with the total length of the wharf to 36.164 km. In this period, the size of Vietnam's seaport system has increased 1.8 times in berth length, increased 3 times in capacity throughput, and the rate of construction of berths increased 6% on average. Total volume of goods through the port system in Vietnam increased more than 2 times with an average speed of 11.36% per year, of which containerized cargo increased 3.35 times with an average speed of 18.9% per year, the number of ships calling has increased 2 times.

In those years, Vietnam's maritime industry invested in new construction and put into operation more efficient seaports such as upgrading and renovating Hai Phong, Da Nang, Saigon, Can Tho, Cua Lo, Nha Trang, Quy Nhon. A number of newly built ports are capable of receiving 10,000 DWT-40,000 DWT vessels at berths such as Cai Lan Port, Dinh Vu Port, Chan May Port, Vung Ang Port, Dung Quat Port, the Vietnam Maritime Bureau to carry out the maintenance of dredging and upgrading of navigable channels, the construction and maintenance of maritime signaling systems to ensure the safety of vessels entering and leaving ports. Especially important ports of the country. The system of marine lights in Vietnam includes island lights, door lights, port alarms, cruise control systems, boats and boats which are constantly being upgraded with state budget funds and support loans. Some countries friends the world.

Vietnam's seaport system consists of 6 groups, including 3 entrepot ports and international gateways (Category 1A), 11 regional ports (class 1), 21 local ports and some specialized ports. In particular, type 1 and 1A ports are the main port in the national port system. The overall layout is reasonable, in line with the Strategy for Marine Economic Development, which is typical of the natural terrain, the role of the Vietnamese seaport system.

Basically, the port system is approved to ensure good import-export goods and exchanges between regions in the country, meeting the needs of socio-economic development. However, the greatest current problem is the asynchrony between seaports and interconnected infrastructure. Asynchronous in scale, especially in the process of implementation between the investment projects to build technical infrastructure connected to the port (including the port entrance and logistics hub) greatly affect. To port performance and efficiency. This is one of the main reasons leading to the shortage of port in Cai Mep - Thi Vai area; "hanging" ports in Hiep Phuoc, Phu Huu (Ho Chi Minh City) ports; Limited operation of terminals / terminals in the Mekong Delta, not capable of promoting Dinh Vu (Hai Phong) and Cai Lan (Quang Ninh) terminals.

Specifically, for Nghi Son seaport (Thanh Hoa), up to now 20/20 wharfs have been approved at Nghi Son seaport. However, only 5 new wharves have been invested. Some of the terminals are under construction and the rest are demarcated. According to the plan, by the year 2030, loading and unloading capacity in Nghi Son seaport area is expected to reach 75 million tons per year. However, at present, cargo handling capacity in this seaport area is about 9 million tons / year. International sea transport is

mostly contained in containers but in Nghi Son seaport, there is no container wharf, so the goods through this are mainly raw, bulk cargo and accessories for machinery. The construction of Nghi Son Refinery and Petrochemical Complex Project. For Cai Lan seaport complex (Quang Ninh province), this is the general port with the deepest water level in the North. The port consists of three berths of 5, 6 and 7 with a total length of 680m, which can be used for ships. 40 thousand tons of landings. However, after 12 years of operation, vessels with a tonnage of 40,000 tons did not come to the floating port because the channel was not clear. It can be seen that currently the port of "trillion" is invested modern but still "hungry", not fully utilized capacity through the goods, is wasting the investment budget and is challenging marine economic development becomes the spearhead.

Fig. 1: The infrastructure of Hai phong port

The maritime industry is managing and operating 330 berths located on a total length of 39.951m (25.933m total length of wharves, containers and 13.958m of dedicated cargo berths, nearly twice as much as 1999) of 160 National ports. Throughput in 2010 was 256 million tons, including 6.510 million TEUs of containers, liquid cargoes of 51.608 million tons, transit goods of 29,489 million tons; 35 channels into national ports and 12 channels into dedicated ports.

In recent years, despite many efforts in new construction as well as upgrading and modernization of existing seaports, the infrastructure of the port system in Vietnam is still weak in terms of management and exploitation. And backwardness 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 advanced level (3000T - 4000T per meter of berth length and 15-20 TEUs / crane / hour for container handling).

Overall assessment shows that although the quantity is abundant and allocated from north to south, the efficiency and utilization are very low. The reason is the investment spread, the locals have deep water port syndrome while the goods are less, natural conditions do not allow. Secondly, due to the lack of foresight in the planning of the seaport system and the lack of accurate forecasts for coping with local growth, it is impossible to establish a synchronous and rational national transport network. Closely with the seaport system. This has undermined capacity in large urban ports undergoing rapid population growth as well as severe infrastructure degradation. In particular, there is a lack of deep-water ports in its own right to accommodate vessels of 80,000 DWT or more, or container ships of about 6,000 TEUs and no international transshipment port for the shipping industry to reach the global. Vietnam is also missing the opportunity to acquire Logistics as a key sector of maritime services formed during the development of the seaport system, which now stands at between $ 8 billion and $ 10 billion a year, largely in hand of international maritime groups operating in Vietnam.

For an exam about Hai Phong port, in the context of our country continuing to promote the development of infrastructure, especially the seaport system and roads linking seaports with industrial parks to improve the competitiveness and attract foreign investment, Hai Phong seaport system is constantly being invested in-depth, renovated, expanded and developed in the direction of "extending" to the sea and equipped with modern specialized loading and unloading system; Currently, Hai Phong seaport has 44 cargo handling ports with total length of about 11km. Some of these ports have the capacity to receive ships of up to 55,000 DWT capacity to reduce the load and to ensure safety. Apart from bridges for cargo loading and unloading, Hai Phong seaports will also be assigned three anchorage areas for transshipment: Bach Dang, Lan Ha and Ha Long which are capable of receiving large tonnage ships; Two floating wharves, with a total of 5 buoys (3 Bach Dang, 2 Ben Got). According to statistics from Hai Phong Port Authority, in recent years, the growth rate of cargo and ship through Hai Phong seaport has always reached a high level of 10-15%. By 2015 it would be 74.56 million tons corresponding to 19,466 turns of boats; In 2016, 79.2 million tons of ships were shipped; The first eight months of 2017 are 52.2 million tons, respectively, 12,209 turns of boats.

Based on the forecast of cargo throughput through seaports in Hai Phong up to 2020, it is estimated to reach between 109 and 114 million tons per year and between 187 and 210 million tons in 2030, seaport system. Hai Phong will develop towards the modern scale, be the main import and export for the whole Northern provinces and some neighboring provinces adjacent to the northern border and serve the socio-economic development. Assembly of the Northern provinces. This is accompanied by the upgrading of the infrastructure; modernization of loading technology; from management to mining to international standards. According to the Decision No. 2367 dated 29/7/2016 on the detailed planning of the Group of the North Sea (Group 1) in the period up to 2020, the direction to 2030 of the Ministry of Transport, Hai Phong is defined as port the international gateway (type IA), is the national general port, the most typical of the northern region. The Hai Phong seaport system includes the main wharfs: the port on the Cam River, the Dinh Vu wharf area (including Nam Dinh Vu), Lach Huyen harbor area. Besides, there will also be some other specialized seaports serving as satellite in the port system of Hai Phong, such as the port district of Bach Long Vi island. These wharves have complementary function in general.

Fig. 3: Crane system of Hai Phong port

Lach Huyen international gateway port is planned as the main wharf area of the port, mainly for general cargo and containers, combined with international transshipment; to receive passenger ships of 5,000 to 6,000 passengers. Capacity for the period of 2020-2025 is about 45-50 million tons / year, receiving ships in the tonnage of 50,000 tons, ships of 100,000 tons reduced load; container ships of up to 6,000 TEU, 8,000 TEU vessels offload; By the year 2030, and after 2030, a combined tonnage of 100,000 tons will be delivered, container vessels of up to 8,000 TEU, capacity of 115 to 125 million tons per year. Development of Hai Phong seaport in line with the master plan: At present, Lach Huyen port area is completing component A (foundation, breakwater, sand dike, dredging of Lach Huyen channel, quay); Component B, is constructing two launching berths, 750m in length, 50,000 DWTT full-load vessels, 100,000 DWT ships offloading and 6,000 TEUs in container ships. Construction progress of Lach Huyen port: expected in May 2018 exploited.

Lach Huyen Port plays a particularly important role in Vietnam's seaport system. This is a general port to meet the increasing demand for loading and unloading of sea transport by provinces, cities, industrial parks and key economic zones in the North, especially in the Hanoi Economic Triangle Area. - Hai Phong - Quang Ninh and in the long term to attract a part of international transit area.

Dinh Vu wharf (including Nam Dinh Vu) is a general wharf, a container ship near Hai Phong and the North. This area has two main functional areas: container terminals located in the north of Dinh Vu, receiving vessels of 2-3 thousand tons, there are also specialized wharves for petroleum products, chemical continuity. Downstream, serving the industry of fertilizer, chemicals. Capacity through 2020 is 40 to 50 million tons per year, in 2030 reached about 45 to 50 million tons per year. Currently the port is in Dinh Vu area is under construction with 8 harbors are under construction, 2 are under construction under planning. Most of the Dinh Vu terminals receive 20,000 DWT ships full load and up to 55,000 DWT offload. For Cam river area, it is a general port area with specialized wharves; No expansion, step by step relocation, conversion of Hoang Dieu port; Currently Hoang Dieu harbor capable of receiving over 40,000 DWT ships offload.

Conclusion

At present, there is no synchronization of land use planning, master planning for industrial development, infrastructure planning, population, and urban planning, labor planning. Besides, the forecasting ability is not high, leading to the situation of industrial park layout is more unreasonable, both the situation is spreading and the expression is too concentrated in some regions and localities, waste of capital, unreasonable location selection, not attractive to investors such as wilderness, hills, swamps. The allocation of industrial zones does not take into account the possibility of expanding urban areas, over-taking agricultural land, the lack of trained labor while the landless people are unemployed, lacking of housing worker. The overall planning of classification orientation is unclear. The orientation of the master plan for classification of qualifications such as kind towards international standards, regional standards, national standards, and the nature of industrial zones (general or specialized). The lack of clarity and the hasty investment psychology of localities has resulted in no difference in the level of priority and support of the Government. Therefore, many localities have introduced mechanisms and policies to overcome the framework and when implementing the detailed planning of industrial zones. In order to fully exploit the potential of cargo through seaports, it is necessary to have a synchronous solution between the development of seaports and industrial parks. Ultimately, industrial zones are the main sources of goods for operation of logistics at seaports.

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