

Future orientation for the development of domestic waterway-transportation

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Abstract: Vietnam's inland waterway sector is assessed by the World Bank to transport more cargo density than any other country (outside the Netherlands), with a share of three-fourths of the flow. domestic transport. The situation of waterway accidents has decreased by 2/3. The World Bank announced on 28/3, showing that the proportion of goods transported in the inland waterway sector of Vietnam is more than any other country in the world (outside the Netherlands). According to the analysis of the Report, the inland waterway transport routes also directly link to the major domestic ports. This is another important cause contributing to the above results. In fact, inland waterway and coastal transport is currently responsible for a quarter of the domestic traffic. Research shows that currently, the domestic fleet has more than 170,000 vehicles, most of which are small ships. However, the number of large and specialized vessels is increasing. International experience shows that these vehicles better meet the needs at lower costs. However, these vehicles require high standard waterways to accommodate larger investment costs for the fleet as well as for port mechanization.

Keywords: domestic waterway, transportation, future orientation

1. INTRODUCTION

Most of the traffic is carried out over 7,000 km of national inland waterways managed by the Central. However, only less than 30% of this network length is suitable for barges with a tonnage of more than 300 tons to operate. This is a very modest rate compared to the most successful commercial water transport networks in the world. The size of vessels in Vietnam is not large due to the shallow depth of rivers and canals, the size of the navigation channels is small and the bridge clearance is low. Many ports have outdated facilities and low level of mechanization, or poor maintenance, or poor inland connectivity. Meanwhile, all inland waterway transport networks of China, Europe and the United States are developed suitably for vessels with a tonnage of more than 1,000 tons to operate, normally the tonnage of this means even bigger. The remaining provincial waterways play an important role as a popular means of transport both in localities and transshipment of goods and passengers for the national transport network. The provincial waterway system connects to thousands of small ports and wharves where small barges are used to transport small volumes of cargo on lower standard routes. However, to ensure that the inland waterway sector develops successfully and plays a strategic role, the World Bank believes that Vietnam needs to maintain and improve the main routes of the national transportation network. Notably, the World Bank assessed that the safety level of inland waterways has improved in recent years. Accidents per ton-km have decreased by two-thirds since 2010.

Proposing policies to develop this field, the World Bank offers a series of solutions, especially the Ministry of Transport needs to increase domestic capital for investment and development projects inland waterways. "A small percentage of the funding for the construction of national roads can be transferred to bring about a transformative impact on waterways while making the road network development slower. negligible "- The World Bank report emphasized. However, the World Bank research team recommends that the Ministry of Transport consider carefully investing in ports because this activity will scatter the scarce investment capital that could have been invested. invest in more essential areas than the waterway network. "Investment in port systems should mainly come from private port owners" - the report suggests.

Both the waterway network in the north is currently over 4,500 km are exploiting transport, of which the national route is 2,663.9 km, running through most of the economic centers, urban areas and industrial parks. The birth of the Hoa Binh, Son La, Thac Ba, Tuyen Quang and other hydroelectric power plants such as Lai Chau, Huoi Quang, Ban Chat (Da River) contribute to regulate and reduce the amplitude of fluctuations. Flood level, downstream sedimentation of rivers; It also creates reservoirs hundreds of kilometers long and is the ideal transportation route. According to the economic zoning, the North has formed clusters of ports: Ha Noi, Ninh Binh, Viet Tri, Hoa Binh, Ha Bac, Quang Ninh, Da Phuc. Other, serving the export demand, coal consumption of thermal power plants, cement, ship industry, transshipment super-heavy cargo. However, since most of the river ports in the north were built in the 1980s, the old, outdated facilities, equipment and loading equipment were destroyed. Commodities through port terminals are less than 60% designed, mainly bulk goods, coefficient of using wharves and warehouses. There is not yet a river port that qualifies for container handling. Many temporary wharf ports, which are not up to the technical standards for exploitation, are not regularly inspected

(for stability, bearing capacity, anchorage ...). Environmental pollution and degradation of landscapes in ports and wharves have been and will continue to increase rapidly without restrictive measures.

As known, water transportation accounts for 53% of freight in our country in which 48% of the domestic waterway transportation with more than 210 million tons of goods transport by domestic waterway each year in it Mekong Delta is the main transport route with the largest mass transportation in our country.

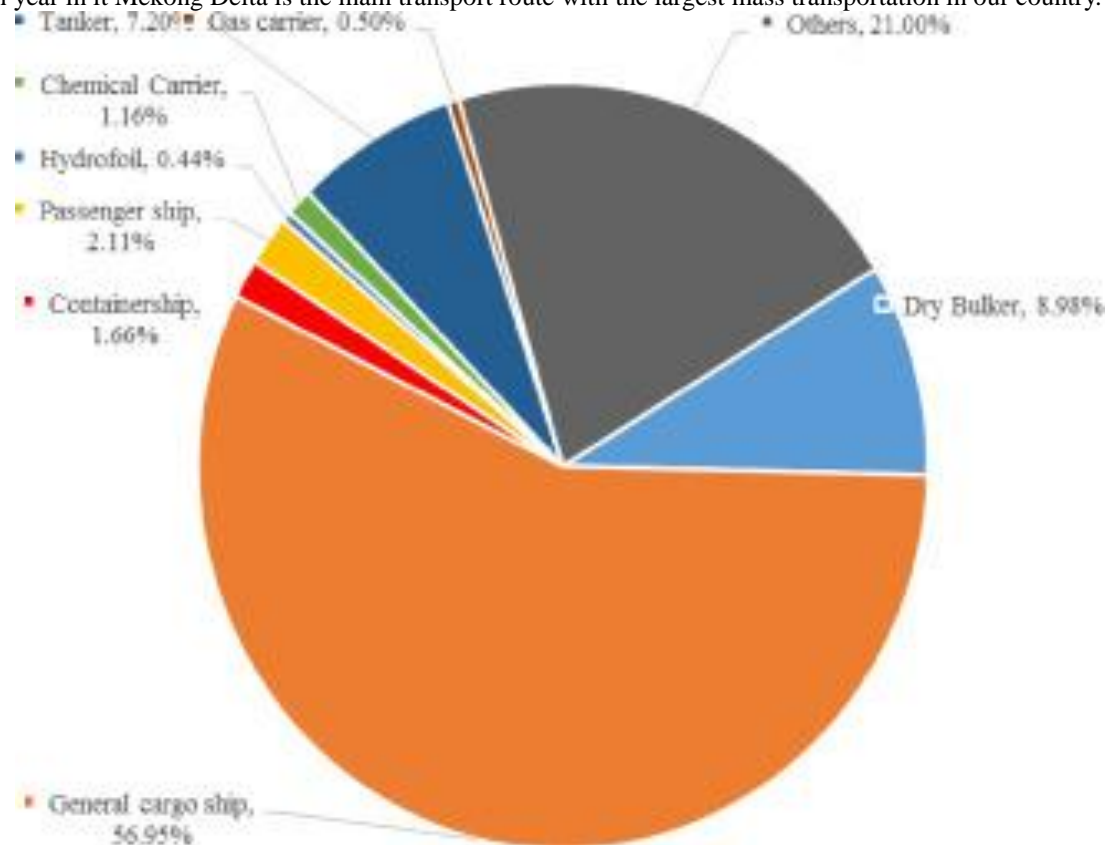


Fig.1. Structure of ship type in Vietnam

Besides, in spite of Vietnamese favorable geographic position and 3.260 km of coastline, Vietnam provides a great opportunity for fleet development but in 2015 Vietnam ranks only 28th in the world. With 45 points, Vietnam is much lower than other countries in Asia such as China, Hong Kong, Singapore, Korea, Malaysia, Japan. Due to the low export volume of Vietnam, the lack of seaport system, few deep water ports and outdated seaport infrastructure, the mother ships of major carriers do not favor to port. Moreover, the fleet of Vietnam sea ships is rather fragmented, low fleet weight and poor management capacity. Therefore, many companies exploit ships ineffectively, thus limiting their ability to link sea transport. According to data from the Transportation Sector Restructuring Scheme, the current share of ocean freight in the total transport volume is only 17.6% (while road transport is still at a high level With 75.3% of total transport volume), this proportion is not commensurate with the potential and strength of a country that has a huge advantage in maritime transport development such as Vietnam. Vietnam's shipping fleet is almost exclusively operating on inland transports with a market share of over 90%. On international routes, the fleet mainly runs short routes around Southeast Asia and Northeast Asia and also accounts for only about 12% of the market share on these routes. Despite its large market share, inland shipping is facing low tariffs, scarce resources and a disproportionate between North-South transportation (The direction between North to South is only about 60% in comparison with South to North). According to statistics of Vietnam Maritime Bureau, by 2015, Vietnam's cargo ship fleet has 1,849 vessels (not including 38 foreign flagged vessels) with a total tonnage of 7.3 million DWT. However, the structure of the US Navy fleet is generally not reasonable. In the container fleet trend of the world, container ships of Vietnam only 64, accounting for 3.5%, much lower than the average proportion of 13% of the world. Recently, the rate of growth of container ships in the world about 7.7%, the new Vietnam only increased by more than 1%. In contrast, composite cargo ships accounted for the largest number with 1,085 units, or 58.7%. Subsequently, dry bulk carriers were 318 (17.2%). Oil tankers and chemicals with 185 (10.5%), but owned by many shipowners. The bulk carrier has 188 (10.2%), but its exploitation is generally ineffective. According to general assessment of Vietnam Maritime Bureau, the number of ship owners in Vietnam is quite a lot, but financial capacity and

management level is limited. Of the 597 shipowners, only 33 owners of vessels have a total tonnage of over 10,000 DWT and the rest are 564 small business owners of the private sector in the provinces of Hai Phong, Thanh Hoa, Thai Binh. , Can Tho ... but only managed 27% of total fleet tonnage.

Apart from the above mentioned limitations, there are also inadequacies in each type of ship. Bulk cargo ships: mainly transported agricultural products (rice, sugar ...), steel products, iron ore, fertilizer, coal dust, cement ... on domestic and short routes in the Southeast Asia, China or some ships transported on long distances to West Africa, South America, Eastern Europe. Currently, bulk carriers with a tonnage of less than 10,000 DWT account for the largest volume but only 13% of total tonnage. The ships of 20,000 - 30,000 DWT account for 47% of the total tonnage, and over 40,000 TDW are very few but account for 21% of the tonnage of the bulk carriers of Vietnam. The exploitation of bulk carriers of Vietnamese enterprises is generally very inefficient, the average time for running vessels is only 30 - 35%, the time of empty bulk carriers is still quite high, about 13 - 15% during the year, the time waiting for ships to work usually also accounts for about 20-25%, the phenomenon of the afternoon ship in line while the lack of goods very often. Container fleet: Sea container shipping began to develop in Vietnam in the 1990s. Up to the end of 2015, Vietnam had 15 container shipping companies with a total of over 64 ships. Download about 544.106DWT. VN container ships are generally small in terms of tonnage, the age of the ship is high, the speed is slow compared to the container fleet of foreign firms. Vietnam has only two shipping lines ranked among the top 100 container shipping companies in the world, namely South China Sea and Vinalines, but also in relatively low rankings. Most of Vietnam's container ships operate on domestic routes like Hai Phong - Da Nang - Ho Chi Minh City under the protection of the Government. Only a few carriers have sailed to Singapore and Hong Kong but the frequency is limited. Meanwhile, competitive pressure on international routes for Vietnam shipping lines is growing. In 2015, Vietnam has over 40 international container shipping lines and currently accounts for about 85% of Vietnam's export and import container. These shipping companies operate mainly under three forms: VN companies as agents, joint venture companies or companies with 100% foreign capital.

2. VIETNAMESE SITUATION FOR DOMESTIC WATERWAY

The WB recommends that the transport sector should encourage investment from the private sector into the port system, while the state budget focuses on investing in the development of transport infrastructure. In addition, Vietnam may consider further development of a transport infrastructure development project (except for a port) that has the potential to implement a public-private partnership (PPP) model. For potential projects to focus on creating practical conditions and supporting successful deployment. In order to initiate the Inland Waterway Bureau of Vietnam, it is possible to consider expanding some small-scale contracts for short-term channel dredging (most of which are yearly contracts) into conventional PPP contracts. Small tissue taken over several years. Vietnam is a country has dense rivers network with 2630 rivers, canals large and small channel and more than 41.900 km receptions but now only 8036km exploited. Especially, in the Northern provinces (Red river delta) and the Southern provinces (Mekong delta) have many rivers most. Most of rivers of Vietnam are originated in from foreign and only flowing in the middle and downstream. And 2 big rivers of Vietnam are Mekong river and Red river also originated from foreign. Inside Mekong river originated from Tibet and Red river originated from China. Inland waterway transport is one of 5 modes of transport in our country which plays a very important role. Inland waterway transport not only plays a role of transshipment of large quantities of goods and passengers but also creates millions of jobs, contributing to ensuring social security and protecting national defense and security. There are still many shortcomings in our water transport such as: There is still a situation where the water transport routes are not uniform; the phenomenon of exploiting natural resources in the river bed is not in accordance with the planning or technological process (mining sand and gravel ...) often occurs widely in almost all rivers and canals across the country; signaling system is not synchronized between the signal of inland waterway management unit and the signal of the owner; cargo handling and management of inland ports and wharves are still inadequate; The rapid development of the means of transport is uneven but only concentrated in some urban and industrial areas. With a trade / GDP ratio of about 200%, Vietnam's demand for efficient logistics systems is huge. As reported by the World Bank (World Bank), in the transport sector, freight transport by road and inland waterways are two areas that transport up to 90% of the total circulation of goods and services in Vietnam. However, road transport is proving to be overwhelming. Data on the fleet capacity in 2018 shows that inland waterway transport accounts for only about 17% of the national freight share, while the proportion of road transport is about 77% and the river transport is 5%.

The number of domestic waterway ports in Vietnam as of the present time and planning for 2020 is more than 130 cargo ports are divided into three main group: Key ports; The ports of local and specialized port group and more than 30 passenger port are spread from North to South. In which port of cargo volume the largest is Ninh Phuc port in Ha Noi is with cargo volume 8,5 milliontons/year next is Chem – Thuong Cat port with cargo volume 4,5 milliontons/year, Truong Tho port with 3,6 milliontons/year, Phu Dong new port with 3

million tons/year and Viet Tri port with 3 million tons/year. The river ports can give ships size bigger 5000 DWT into are located in the Southem including: Port Bourbon Ben Luc, Thanh Tai port, Phuoc Dong Port, Phuong Quan Port (Long An); Port of Long Binh (HCMC); Ha Duc port; Nhon Trach port; Tin Nghia port; TRACOMECO Port (Dong Nai). Up to now, Vietnam has had 37 passenger ports, which concentrate mainly in North (Red river delta) and in South (Mekong delta). Particularly, the North has had 20 ports with 5,52 million passengers/year and the South has had 17 passenger ports with 29 million passengers/year. Vietnam not only has passenger ports and cargo ports but also the domestic waterway port, which exploit minerals. For example, coal, gasoline. About fleet in Vietnam, the cargo ship is divided into 2 types as voyage and liner. Liner is planned and well schooled but it is incoherent with Vietnam's economic versus the voyage. Passenger ship has fleet, which served passengers at the passenger ports.

Assessing the status of Vietnam's inland waterway industry, the World Bank said that restrictions on infrastructure conditions, especially inland waterway corridors, hindered Vietnam's inland waterway industry. Specifically, only 29% of the national waterways (about 2,033 km) are capable of operating barges of at least 300 DWT due to the shallow depth of the canal, small vessel sizes and low bridge clearance. In particular, many ports have outdated facilities with low mechanization, poor maintenance or poor domestic connectivity. Meanwhile, all inland waterway transport networks of China, Europe and the United States have been developed appropriately for vessels with a tonnage of over 1,000 tons to operate, normally the tonnage of the vessels. This facility is even bigger.

According to the WB, the challenge for Vietnam in the coming time is to ensure the mobilization of capital for operation and maintenance of inland waterway transport infrastructure after 2020. At the same time, also must ensure sufficient capital to invest in upgrading infrastructure and improving the capacity of inland waterway transport on technical and market facilities. Notably, if reducing the proportion of investment in road infrastructure 2-3% will not cause much impact on transport efficiency. But if the investment for water transport is 2-3%, it will bring huge economic benefits to the country, because the average cost / ton-km of road transport is 5 times higher than transport. download by inland waterway. Agreeing with the above view, WB's Country Director in Vietnam, Ousmane Dione (WB), said that according to the WB's review, in the 2011-2015 period, the inland waterway sector accounted for 2-3% of the budget. Annual investment in the transport sector, however, in the period 2016-2020, this rate decreased to 1.2% of the budget estimate. This level of investment is not enough for the expansion of transportation capacity and maintenance. After decades of development, the length of inland water transport network receiving barge over 300 tons accounted for only 30% of the 7,000 km of the entire route. This rate is very low compared to the successful commercial inland waterway transport systems in the world.

This fact shows that the need to continue investing and making significant investments in essential backbone infrastructure systems is also the main commercial corridors. These large-scale investment needs need to be met through a strategic allocation of limited public resources, while mobilizing the participation of the private sector in capital financing and service provision. "The elimination of infrastructure restrictions to attract private investment into their fleet, and encourage international service providers with new technologies to cooperate with domestic businesses, will give increased authorization as well as improved standards for these critical services, with lower logistics costs and less emissions, "proposed Ousmane Dione. Additionally, the government and the ministries of Transport has made a decision on developing and planning period 2015 -2020 and oriented development about fleet in 2030. Accordingly, 2020: Volume of cargo will reach 393.89 million tons and 85.9 billion tons per km. The number of passengers will reach 170 million passengers and 3.5 billion passenger per kilometer; volume of container traffic will reach about 3.45 million TEUs; volume of marine cargo will reach about 17.1 million tons. Tending to 2030: Volume of cargo will reach 655.89 million tons and 141.5 billion tons per km ; the number of passengers will reach 200 million passengers and 4.1 billion passengers per kilometers; volume of container traffic will reach about 5.57 million TEUs; volume of marine cargo will reach 30.3 million tons.

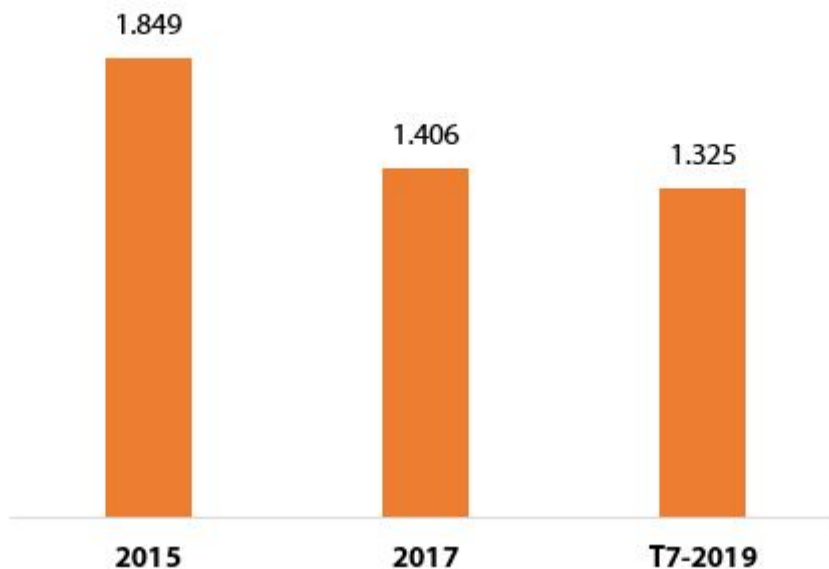


Fig. 2. Volume of Vietnamese vessel fleet

Inland Waterways Department said that in 2017, only about 50% of the inland waterway transportation network in kilometers could be easily navigated. It means that only about half of the 19,000km of waterways are convenient to travel, so many shippers in Vietnam only choose to go to waterways if goods are large such as coal, construction materials, fertilizers and cement. Rice is a commodity that has the potential to be transported by waterway, but only 4% of the rice produced in the Mekong Delta follows this path. Referring to infrastructure, a recent report by the World Bank (WB) pointed out that most of the transport is done on 7,000km of nationally managed inland waterways. However, less than 30% of this network is suitable for barges with a tonnage of over 300 tons. This is a very modest rate compared to the successful commercial waterway transport network in the world. The size of boats in Vietnam is not large due to the shallow depth of the canal, the small size of the navigation channel and low bridge clearance. Many ports have outdated facilities and low mechanization or poor maintenance, poor domestic connectivity. In China, Europe or the United States, the inland waterway transport network is well developed to accommodate vessels of more than 1,000 tons. Even the tonnage of these vehicles is even greater. Recently, container shipping services have begun to be deployed in the Mekong Delta region with positive results. Saigon Newport Company said that the cost of transporting goods by barge from ports in the Mekong Delta to Cat Lai, Ho Chi Minh City decreased by 7% for each 40 feet container and 20% for 30-foot containers. But in general, inland waterway ports in Vietnam have not yet met the container loading and unloading facilities. About 15% of the cargo arrived at the port without an operational and unsafe license, according to the statistics of the Inland Waterway Bureau in 2017. As can be seen from the plan of oriented fleet development period 2015-2020: Total the volume of cargo which will be planned until 2020 will be 20 – 22 million tons (The volume of fluvio-marine cargo will reach 0,85 million tons; The volume of container traffic will reach 1,2 -1,3 million tons) and passenger ship will be 780 thousand seats . About the number of exploitation of vehicles on the domestic waterway of cargo fleet in VietNam which is planned until 2020 will be about 7,8 – 10.2 million tons of vehicles, there will be 6.8 -8.8 million tons to satisfy with development and 1.0 – 1.4 million tons to change the old ships which need to sell. About passenger fleet will be 90 – 125 thousand seats, there will be 10 thousand seats to satisfy with development and 80- 115 thousand seats to change the old ships which need to sell. According to the plan of the Government and The ministries of Transport, Vietnam will develop all types of ship have modern technical features, apply new technologies, appropriate equipment, prevent from environmental pollution (equipment which contains sludge, waste from oil, sewage, garbage, hazardous waste, collection, transport, waste disposal,...) to use for developing water transport in general and domestic waterway in particular. Since the North does not have a domestic container terminal to handle container cargo at river ports, container cargo is mainly transported by road to industrial parks and export processing zones. Should only about 15% of goods in Hai Phong port and about 35% of cargo transport by container in the Mekong Delta region is transported by inland waterways. Over the past decade, capital invested in lower structures Inland transport layer almost entirely comes from ODA with very little direct budget allocation from the Government. No new infrastructure construction projects with ODA or Government capital have been implemented recently. Meanwhile, the World Bank warned that many ministries participating in management made Vietnam's inland waterway transportation more difficult to develop. This overlap is

reflected in the competition issues of traffic flow management, water supply and drainage, irrigation, fishing and aquaculture, recreational tourism ... Even Vietnam Inland Waterway Association Nam also statistics over 100km of rivers with 13 control stations of all kinds, hindering the development of water transport.

3. CONCLUSION

Facing the limitations of road transport, many experts believe that it is time for Vietnam to take advantage of the river system to develop waterway transport. Vietnam has a coastline of 3,200 km, with 19,000 km of inland waterways and 45 main routes used to transport goods. With 224 river ports and 8,800 floating berths, Vietnam's inland waterway transport accounts for only 17% of the total cargo volume although the price of goods transport by waterway is currently only one-fourth of that of transport set. According to Saigon Newport Company of Saigon Newport Corporation, the cost of transporting goods by barges from ports in the Mekong Delta to Cat Lai, Ho Chi Minh City is reduced by about 7% for every 40 feet container and 20% for 30 feet containers. However, experts also pointed out that currently, inland transport of goods by coastal water in Vietnam is very limited, accounting for nearly 39% of the total output of goods transported by sea because it has not been built. building efficient supply ecosystems as well as infrastructure constraints in and around the port. On the supply side, only a small number of transport service providers operating in the field of coastal water transport, make customers incur additional costs such as, handling charges at the wharf (accounting for nearly 50% of the total cost of coastal waterway transport). In addition, containerized cargo transportation by barge is limited due to the low capacity of waterways and can only accommodate small sized vessels. More than 50% of the inland waterway port system nationwide is a type 3 port, which can only accommodate vessels of a tonnage of 100 - 300 DWT. This has limited investment from the private sector to improve barge design, improve container loading capacity of ships and maintain a small number of container terminals with adequate cargo handling equipment. at river ports.

REFERENCES

- [1] <http://www.vinamarine.gov.vn/print.aspx?page=detail&id=2028>
- [2] <http://thoibaotaichinhvietnam.vn/pages/xa-hoi/2015-10-28/van-tai-thuy-noi-dia-can-luc-day-de-vuon-khoi-25664.aspx>
- [3] <http://www.vlr.vn/vn/news/van-ban/van-ban-moi/2551/nhung-bat-cap-cua-doi-tau-bien-viet-nam.vlr>
- [4] <http://cangvinhtan.vn/tin-tuc-su-kien/phat-trien-giao-thong-duong-thuy-noi-dia-de-anh-cho-duong-bo>
- [5] http://www.vietnamshipper.com/?action=news_detail&atcid=33925&chnlid=3
- [6] <http://ndh.vn/van-tai-thuy-noi-dia-tiem-nang-chua-duoc-khai-thac-dung-muc-2014080608417957p145c153.news>.
- [7] <http://www.daibieunhandan.vn/default.aspx?tabid=75&NewsId=383037>
- [8] <http://www.mt.gov.vn/khcn/tin-tuc/42124/tang-suc-hut-van-tai-duong-thuy.aspx>
- [9] <http://vcci.com.vn/quy-hoach-phat-trien-doi-tau-van-tai-thuy-noi-dia>
- [10] <http://www.business.gov.vn/Tint%E1%BB%A9cv%C3%A0s%E1%BB%B1ki%E1%BB%87n/tabid/96/catid/10/item/14160/quy-ho%E1%BA%A1ch-phat-tri%E1%BB%83n-%C4%91%E1%BB%99i-tau-v%E1%BA%ADn-t%E1%BA%A3i-th%E1%BB%A7y-n%E1%BB%99i-%C4%91%E1%BB%8Ba-2015-2020-%C4%91%E1%BB%8Bnh-h%C6%B0%E1%BB%9Bng-%C4%91%E1%BA%BFn-2030.aspx>