



SPATIAL PLANNING FOR MARITIME ECONOMIC LOGISTICS SERVICE CENTERS IN COASTAL ECONOMIC ZONES TO DEVELOP VIETNAM'S MARITIME ECONOMY

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Summary: Marine economic development is indispensable for Vietnam today. The paper is divided into two parts. Part 1 highlights the favorable conditions, the policy priority of Vietnam's maritime economy and the current situation to develop logistics services for maritime economic industries. Part 2 analyzes the advantages of Vietnam's coastal economic zones - which are necessary for the development of the maritime economic logistics service centers. The development of the maritime economic logistics service centers in Vietnam's coastal economic zones is not only able to contribute to the development of Vietnam's maritime economy, but can also make Vietnam's coastal economic zones more sustainable. Finally, the paper proposes the research implementation and sequence development in planning maritime economic logistics service centers in Vietnam's coastal economic zones.

Keywords: Vietnam's maritime economy; Vietnam's coastal economic zones; maritime economic industries; maritime economic logistics service centers.

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1. Overview

1.1 Vietnam's conditions for maritime economic development

Vietnam is a coastal country located on the West bank of the East Sea. Its land area is approximately 331,212 km². The coastline is more than 3,444 km long from Mong Cai (Quang Ninh province) to Ha Tien (Kien Giang province) excluding islands. The area of the maritime zones under Vietnam's sovereignty, sovereignty rights and jurisdiction covers about 1,000,000 km² of the East Sea, which is 3 times bigger than the land area [1].

At the beginning of the 21st century, Vietnam relies upon the sea for its economic development. Mineral and marine resources with huge potential, favorable geographic location (Fig.1 - 2) and abundant human resources in coastal areas are conducive to maritime economic development.

Against this background, the Communist Party and the State have introduced a wide range of significant guidelines, policies and measures for sea management, protection and exploitation. The resolution of the 11th Party Congress in 2011 states that Vietnam needs to develop a strong maritime economy while taking advantage of the country's sea location and potentials, align maritime economic development to national defense and security and protect the sovereignty of maritime zones.

In the Vietnam's Sea Law was approved in 2012 by the National Assembly, the State prioritizes the development of the following maritime economic industries:

- The 1st: Exploration, survey, exploitation and processing of oil, gas, minerals and other maritime resources;
- The 2nd: Maritime transport, seaports, building and repair of seagoing vessels and other maritime services;
- The 3rd: Maritime tourism and economy;
- The 4th: Fishing, farming and processing of marine products;
- The 5th: Research, development, application and transfer of science and technology for resource exploitation and maritime economic development;
- The 6th: Building and development of maritime human resources.

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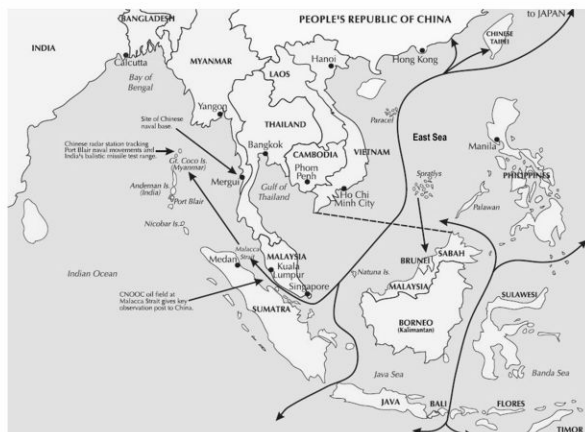


Figure 1. Map of international maritime routes in South East Asia and sea route across East Sea [2]

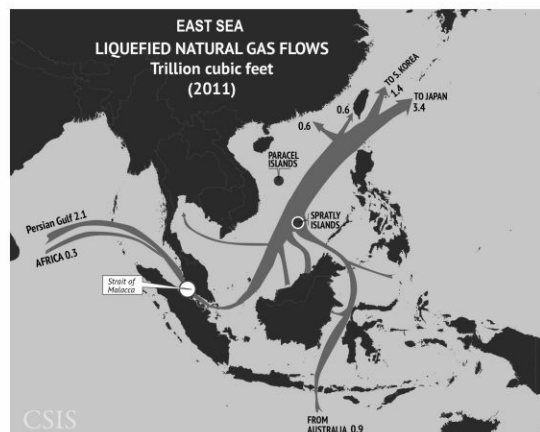


Figure 2. Map of the East Sea liquefied natural gas flow [3]

1.2 Maritime economic logistics services of Vietnam

Vietnam's maritime economic development has yet to match the existing conditions and advantages. The output of Vietnam's maritime economy is approximately 10 billion USD while the world's maritime economic output is estimated at 1,300 billion USD, with Japan making up 468 billion USD and Korea 33 billion USD respectively. Vietnam's maritime and coastal economic output accounts for 47-48% of its GDP while the "purely maritime" economic output makes up only 20-22% of the national GDP. Among maritime economic industries, those taking place on the sea contribute 98%, mainly exploitation of oil, gas and marine products, navigation and marine tourism. The economic industries directly related to the exploitation of marine resources including processing of oil, gas and marine products, building and repair of seagoing vessels, communications, among others, have started to develop but their output accounts for 2% of that of maritime economy and 0.4% of the national GDP. The sea cargo transport per capita indicator is only equal to 1/140 of Singapore, 1/7 of Malaysia and 1/5 of Thailand [4]. In other words, despite being a maritime country, maritime and island strengths and potentials have not been fully harnessed, which explains why Vietnam has yet to become a maritime powerhouse.

Maritime economic development requires the establishment of a logistics service system. Currently, the planning for Vietnam's maritime economic logistics service centers only covers fishery logistics service centers and oil/gas service centers. The government has approved of the planning for development of six fishery logistics service centers associated with major fisheries in many regions nationwide. Among them, Hai Phong fishery logistics center is associated with Gulf of Tonkin fishing area; Da Nang with East Sea and Paracel fishing area; Khanh Hoa with South Central Coast and Spratly fishing area; Ba Ria - Vung Tau with South East Coast fishing area; Kien Giang with South West Coast fishing area; and Can Tho aquatic product development center with Mekong River Delta's aquacultural area.

An oil and gas logistics service center has been built in Ba Ria - Vung Tau and the building of Nghi Son oil and gas logistics service center in Tinh Gia, Thanh Hoa has been planned.

The development planning for maritime economic logistics service centers tends to serve a single industry, without an integrated system for serving other maritime economic industries and without comprehensive planning to link ministries and departments together for a more vigorous maritime economic development.



2. Coastal economic zones provide conditions for the development of Vietnam's maritime economic logistics service centers

2.1 The goal, the process of formation and development of Vietnam's coastal economic zones

Decision 1353/QĐ-TTg of the Prime Minister was issued on 23 September 2008 approving of the "Planning for development of Vietnam's coastal economic zones to 2020" project. Until now, Vietnam has had 18 coastal economic zones spreading from the North to the South with the total land and water surface area of 730,000 ha (Fig.3).

The objective of forming coastal economic zones is to generate driving forces for attracting investment capitals, especially foreign investment to transform the economic structure; develop maritime economy; play a core role in regional and local economic development; connect maritime economic zones, coastal economic zones and economic zones in land; and link domestic and overseas economic zones [5].

2.2 The relationship between coastal economic zones (CEZs) and Vietnam's maritime economic industries (MEIs)

As shown in Fig. 3, 18 coastal economic zones of Vietnam were established. According to the survey results in each coastal economic zone by the author, the MEIs are shown in Table 1, the activities of the MEIs taking place in each CEZ. The CEZs are closely connected with the activities of the MEIs. Therefore, the construction of the maritime economic logistics service centers should be necessary for the development of the coastal economic zone in particular and maritime economy in general. In other words, a coastal economic zone is where all the conditions for the development of the maritime economic logistics service center are provided and secured.

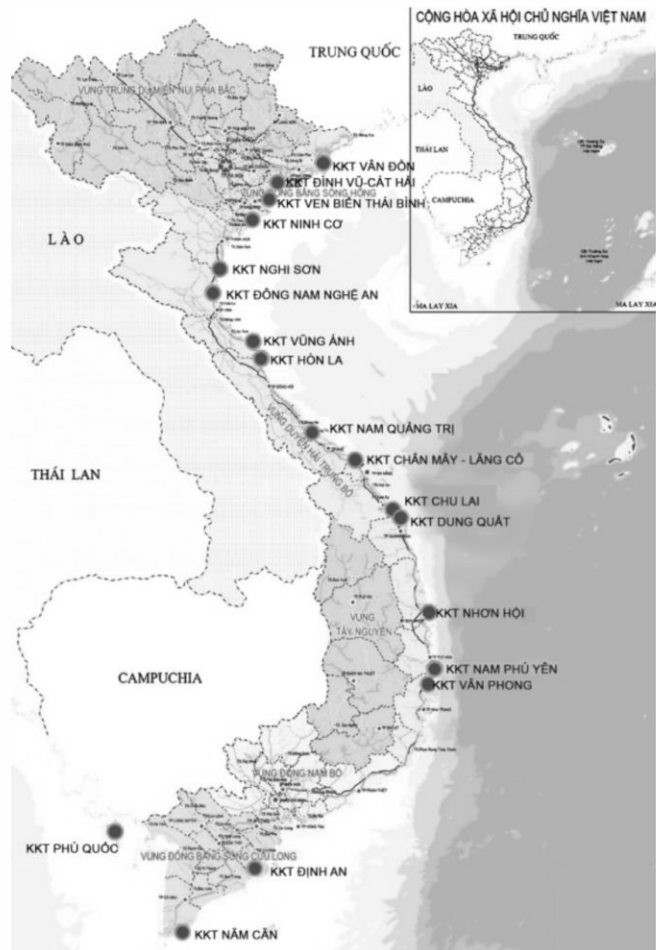


Figure 3. Map of Vietnam's coastal economic zones to 2020 [5, 6]

Table 1. Relations between coastal economic zones and maritime economic industries of Vietnam

No	Coastal economic zones (CEZs)	Maritime economic industries (MEIs)					
		1 st	2 nd	3 rd	4 th	5 th	6 th
1	Chu Lai - Quang Nam					●	●
2	Dung Quat - Quang Ngai	●				●	●
3	Nhon Hoi - Binh Dinh		●	●		●	●
4	Chan May - Lang Co			●		●	●
5	Phu Quoc - Nam An Thoi		●	●		●	●
6	Vung Ang - Ha Tinh	●	●			●	●
7	Van Phong - Khanh Hoa		●	●		●	●
8	Nghi Son - Thanh Hoa	●				●	●
9	Van Don - Quang Ninh			●		●	●
10	Southeast Nghe An		●	●		●	●
11	Dinh Vu - Cat Hai		●			●	●
12	Southern Phu Yen	●	●			●	●
13	Hon La - Quang Binh		●	●		●	●
14	Dinh An - Tra Vinh		●			●	●
15	Nam Can - Ca Mau		●		●	●	●
16	Thai Binh						
17	Ninh Co - Nam Dinh						
18	Southeast Quang Tri	●	●	●		●	●

2.3 The advantages of the coastal economic zones to develop maritime economic logistics service centers

The spatial planning of maritime economic logistics service centers in Vietnam's coastal economic zone will take the initial advantages in favourable location, area and infrastructure of CEZ. From the results of the author's survey, Table 2 shows the area, level of investment until now and market links of 18 the coastal economic zones of Vietnam. The obtained data are extracted from various sources [7, 8].

Table 2. Advantages of Vietnam's coastal economic zones

No	CEZs	Area (ha)	Level of investment	Market link
1	Chu Lai - Quang Nam	27,040	In the first 3 years after establishment, more than 400 billion VND was invested for infrastructure of the economic zone. Until 17 July 2003, 16 projects had been registered to invest in the economic zone with the total capital of 483.5 million USD.	This economic zone, together with Hai Phong and Quang Ninh, forms a major economic zone of Northern Vietnam, assuming critical economic role, linking GMS routes and expanding Vietnam-China relationship.
2	Dung Quat - Quang Ngai	10,300	Until 2005, total state capital and enterprises' capital invested for infrastructure was 2,000 billion VND.	The economic zone facilitates the growth of the key economic zone in Central Vietnam and economic growth of South Central Coast and Central Highland provinces.
3	Nhon Hoi - Binh Dinh	12,000	According to the management board of the economic zone, up to January 2010, 426 billion VND had been invested for communication infrastructure systems. Resettlement projects have been implemented with the capital amount of 514 billion VND.	The economic zone has played a core role in the growth of the key economic zone in Central Vietnam, is an important international exchange center, an export and import gateway of a large logistics area, covering Central Highlands of Vietnam, Lower Laos, Northeast Cambodia and Thailand and is the only economic zone which can combine various forms of tourism under the key national coastal tourism routes.
4	Chan May - Lang Co	27,108	According to the management board of the economic zone, up to June 2011, 1,253 billion VND had been invested in 22 infrastructure projects for the economic zone, including communication systems, electricity, water, communication, and waste treatment.	The economic zone creates a motivation for growth of the key economic zone in Central Vietnam, as a crucial point on the East-West economic corridor connecting to the Indian Ocean, enabling easy access to markets of Laos, Thailand and Myanmar. Chan May - Lang Co economic zone is built to exploit tourism potentials in the region, forming a tourism - service center of the key economic zone and Vietnam as a whole.
5	Phu Quoc - Nam An Thoi	56,100	According to the Vietnam News Agency, until 2013, 8,100 billion VND had been granted by the government for building roads, bridges and An Thoi port serving the economic zone. 1,578 billion VND was spent on infrastructure until 2012. The capital need for 2013-2015 period was 6,522 billion VND. Among which, 50% was funded by the state budget.	The economic zone is a strong general maritime economic center of the whole country and will be an administrative unit under the management of the central government.
6	Vung Ang - Ha Tinh	22,781	From 2005 to 2010, the economic zone attracted 139 investment projects with the total registered capital of over 236,613 billion VND.	The economic zone has a geographic advantage to facilitate the socio-economic development of Ha Tinh, makes a breakthrough in socio-economic development of the North Central Coast, creates a development link between North Central Coast provinces, minimizes the gaps in socio-economic development and facilitates national and international integration.
7	Van Phong - Khanh Hoa	150,000	Until February 2016, 20 communication route construction bidding packages with the total capital of more than 998 billion VND had been invested for the economic zone. This was an infrastructure project funded by the state budget, which contributed to completing the Northern infrastructure of the economic zone. Together with this project, a communication project outside Van Phong port has been approved with an investment of more than 292 billion VND.	The economic zone is the core for economic growth, urban - industrial - service - tourism center of the South Central Coast, key economic zone of Central Vietnam and an important international exchange and tourism center of Vietnam.

No	CEZs	Area (ha)	Level of investment	Market link
8	Nghi Son - Thanh Hoa	18,612	From 2011-2016, more than 4,004 billion VND (531 billion in 2016 alone) had been invested in 45 infrastructure projects (13 transition projects). 35 projects have been completed and put into operation.	The economic zone creates a motivation for socio-economic development of Thanh Hoa province, underdeveloped Southern Thanh Hoa - Northern Nghe An and Northern provinces of Vietnam in general. Nghi Son is also considered a gateway connecting to Laos through National Highway No. 7 and Greater Mekong Subregion (GMS).
9	Van Don - Quang Ninh	217,133	In 2016, an extra 75 billion VND of state budget was granted to the economic zone for the project of building major communication routes connecting main functional areas of the economic zone, 1 st stage.	The economic zone is the economic center of Eastern Quang Ninh and Red River Delta and is one of the important international trading gateways in Northeast Vietnam. The economic zone aims to meet social development needs of Quang Ninh province and Northern coastal region, high quality sea and island tourism center and high-class recreation center of Northern Vietnam, Hai Nam island and Eastern China cities; is an international transport junction and main driving force for the development of the key economic zones in Northern Vietnam.
10	Southeast Nghe An	18,826	According to the report of the economic zone's management board, the total capital for infrastructure of the economic zone from 2015 to the end of January 2016 was 335,843 billion VND.	The economic zone is an international trading hub of the North Central Coast, important gateway of central and upper Laos and Northeast Thailand to Central Vietnam. It is a major industrial, tourism, service and urban center of the North Central Coast.
11	Dinh Vu - Cat Hai	21,600	Until the end of the 1 st quarter of 2015, the economic zone attracted 58 FDI projects with the total investment capital of 4.76 billion USD, accounting for 75% of the total FDI capital of Hai Phong city. At the same time, it attracted 61 domestic projects with the total investment capital of 32,300 billion VND. Most of the projects were for infrastructure of the economic zone.	The economic zone is positioned in the development planning of the key economic zone in Northern Vietnam, Kunming - Hanoi - Hai Phong economic corridor and Gulf of Tonkin economic belt. It aims to become a maritime economic center of the South East Asia.
12	Southern Phu Yen	20,730	In 2015, more than 94 billion VND was invested in the economic zone to build the route connecting the 1A highway and the economic zone.	It is a general economic zone which accelerates development of the South Central Coast region; a sea-oriented gateway of the Central Highlands, Southern Laos provinces and Northeast Cambodia and Thailand; and a major international trading hub.
13	Hon La - Quang Binh	10,000	By the end of 2015, 988 billion VND of central state budget and 18.1 billion VND of local state budget had been allocated to invest for the economic zone's infrastructure. Besides the state capitals, another 500 billion VND was mobilized for infrastructure investment.	The economic zone is a gateway of Central Laos and GMS across National Highway No. 12. It is an economic center of Quang Binh province and a development motivation for other regions.
14	Dinh An - Tra Vinh	39,020	Until now, there have been 2 projects funded the central state budget which is an electric power center with investment capital of 88,000 billion VND and a passage for high capacity seagoing vessels project with investment capital of 3,149 billion VND. 30% of progress has been made.	The economic zone embodies a strategic scheme of connecting Vietnam with Cambodia and the GMS, taking advantage of the big canal system of Mekong River Delta.
15	Nam Can - Ca Mau	11,000	Building infrastructure was the focus of 2012-2015 period. 2016-2020 period should be entirely spent on developing completing infrastructure and attracting investment for production and business.	This economic zone, together with other economic centers in Mekong River Delta, will form a general coastal economic zone covering trade, service, industry, urban area and ecological tourism.
16	Thai Binh	30,583	Planning, compensation and ground clearance for the first stage is in progress.	The economic zone will become an economic development center of the province.
17	Ninh Co - Nam Dinh	13,950	Planning, compensation and ground clearance for the first stage is in progress.	The economic zone will be a major hub for international exchange in industry, trade, tourism and seaports of the Southern Red River Delta subregion.
18	South East Quang Tri	23,460	It is estimated to cost about 1.5 billion USD in the first stage of investment registration.	The economic zone will be a focal point to attract investment on East-West economic corridor routes.

Vietnam's coastal economic zones have full favorable conditions: location, infrastructure, development policies, market link... therefore able to develop maritime economic logistics service centers for Vietnam's maritime economic development in general and formation and development of Vietnam's coastal economic zones in particular.

3. Recommendation of research implementation and sequence of development planning for maritime economic logistics service centers in coastal economic zones to contribute to Vietnam's maritime economic development

There has not been any research so far on development of a maritime economic logistics service system. To plan for the development of maritime economic logistics service centers, relevant development models must be proposed. The elements for creating a model for maritime economic logistics service centers must be based on: 1) Interrelated components or institutions in a logistics service center; 2) Natural and socio-economic characteristics of Vietnam's marine and coastal areas; 3) Legal bases enforced by the Party and State; 4) Planning and plan for using the sea by related industries including maritime industry, oil and gas, aquatic products, sea and island tourism, national security and defense...

The research implementation and sequence of planning for development of maritime economic logistics service centers in Vietnam's coastal economic zones shall be suggested in the diagram (Fig.4):

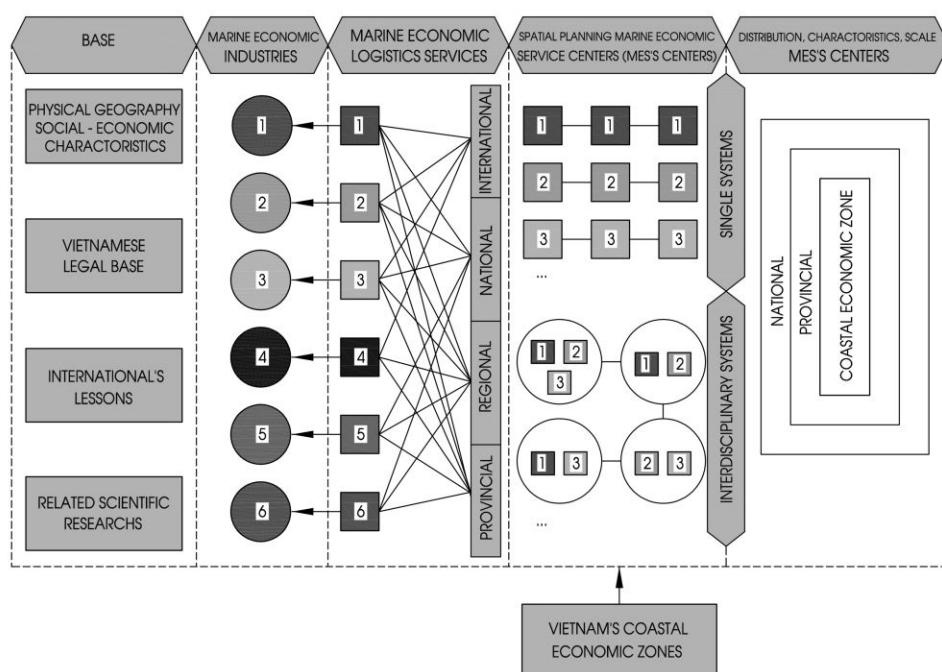


Figure 4. Research implementation and sequence of spatial planning for development of maritime economic logistics service centers in Vietnam's coastal economic zones

Notes:



Maritime economic industries (MEIs)



Logistics services for each economic industry



The 1st MEI



Logistics services for the 1st MEI



The 4th MEI



Logistics services for the 4th MEI



The 2nd MEI



Logistics services for the 2nd MEI



The 5th MEI



Logistics services for the 5th MEI



The 3rd MEI



Logistics services for the 3rd MEI



The 6th MEI



Logistics services for the 6th MEI



4. Conclusions

- Vietnam's maritime economic logistics service system has not yet been properly examined or developed.

- Maritime economic logistics service center models have been built in many countries in the world and present high overall efficiency for maritime economy. In Vietnam, a number of maritime economic logistics service centers have started to prove efficiency such as fishing port service centers, oil and gas service centers... However, the network is unconnected to the coastal economic zones in the general planning. This indicates that development models for maritime economic logistics service centers have been explored but to a small and limited extent only.

- It is necessary to plan the building of maritime economic logistics service centers in coastal economic zones where full favorable conditions for the development of maritime economic logistics service centers are provided. This will benefit the development of maritime economy in general and coastal economic zones in Vietnam in particular;

- In general, the development of maritime economic logistics service centers under the current model is insufficient and inefficient, which threatens the future development. The current requirement is to explore how to build appropriate models for maritime economic logistics service centers systematically applicable to Vietnam's coastal economic zones (from theoretical basis to practice, from socio-economic model to spatial model, from network planning to investment in construction of specific maritime economic logistics service centers), relevant to specific characteristics, potentials and internal forces of individual provinces, relevant to industries and in line with the world's development trend;

- It is essential to build new components or institutions for maritime economic logistics service centers. The network organization, identification of characteristics, scope and space of maritime economic logistics service centers should be relevant to the characteristics, development stages and models of Vietnam's coastal economic zones.

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