A COMPARATIVE ANALYSIS OF MYANMAR AND VIETNAM INTERNATIONAL CONTAINER TERMINALS

PHÂN TÍCH SO SÁNH CÁC BẾN CẢNG CONTAINER QUỐC TẾ CỦA MYANMAR VÀ VIỆT NAM

NGUYEN CANH LAM*, HTUN THANT ZAW
International School of Education, Vietnam Maritime University
**Email: nguyencanhlam@vimaru.edu.vn*

Abstract

Recently, the rapid growth of international and intra-ASEAN trade is going hand in hand with the increase of maritime freight in the regional countries. This put an urge requirement in port development with countries in ASEAN as to release the bottleneck of global logistics. This study aims at identifying the characteristics of Myanmar container terminals through a comparative analysis with Vietnamese seaports, which benefit stakeholders in both countries and other maritime nations in the region. From a literature review, we define the comparison framework of five dimensions, i.e. port infrastructure, port connectivity, port management, port operation and port charge. The conclusion and recommendation for container port development in are given accordingly from the perspective stakeholders in Myanmar.

Keywords: *Seaport, comparative analysis, Vietnam, Myanmar, terminal..*

Tóm tắt

Hiện nay, sự phát triển nhanh chóng của thương mại quốc tế và trong khu vực Đông Nam Á đồng hành cùng với sự tăng trưởng về vận tải biển của các nước trong khu vực. Điều này đặt ra yêu cầu bức thiết cho các nước trong Đông Nam Á về việc phát triển cảng biển nhằm giải phóng các nút thắt của logistics toàn cầu. Nghiên cứu này nhằm mục đích xác định, phân tích các đặc tính của các cảng container quốc tế của Myamar thông qua phân tích so sánh với cảng biển Việt Nam và giúp ích cho các bên liên quan của hai quốc gia này và các quốc gia khác trong khu vực. Từ nghiên cứu cơ sở lý luận, chúng tôi xác định khung lý thuyết so sánh gồm 5 yếu tố, bao gồm cơ sở hạ tầng cảng, kết nối cảng biển, quản lý cảng, khai thác cảng và cảng phí. Từ phân tích so sánh, bài báo đưa ra kết luận và khuyến nghị cho việc phát triển cảng container quốc tế ở Myanmar.

Từ khóa: *Cảng biển, phân tích so sánh, Việt Nam, Myanmar, bến cảng.*

1. Introduction

According to Arbia and Sami [1], a seaport is a multidimensional system with the combination of economical purpose, infrastructure system, geographical plot and trade. The seaport system in a country plays a vital role in the national economy as it facilitates the cargo movement of import and export flow [2]. Within the transport network, seaports are normally seen as the bottlenecks since they are the concentration point of numerous transport links with huge traffic by roadway, railway and inland waterway. As the result of increasing globalization and massification trend in maritime freight, seaports are under pressures of development to catch up with ever-growing traffic of international trade.

Recently, Myanmar economy is growing rapidly which exceeds the capability of the seaport system. Therefore, developing the seaport system and maritime industry would bring a significant impact by removing the bottleneck of Myanmar import/export flows. That leads to the need of studying the characteristics of the port system in Myanmar, which contributes to the foundation of further research for improvement. This study aims to identify the current capacity of the Myanmar container terminals by comparing them with maritime operations performed in major Vietnamese container terminals. We choose Vietnam as a benchmarking object for Myanmar port because this country is one of the leading maritime systems among the maritime countries which have similar characteristics with Myanmar. Myanmar and Vietnam are both emerging countries in Southeast Asia region with high reliance on maritime transport for international trading. The two countries share similarities of geographical location, rapid economic

TẠP CHÍ ISSN: 1859-316X
KHOA HỌC CÔNG NGHỆ HÀNG HẢI
JOURNAL OF MARINE SCIENCE AND TECHNOLOGY

growth, living standards and both possess advantages in developing maritime transport. The system in both countries are mainly gateway ports, which mainly serve the domestic demand of international trade. Other leading system in the region like Singapore does not fit well in this situation due to incomparability in size or different types of seaports (transhipment port instead of gateway). As seaports are the most important gateways to international connectivity on trading, comparing with major Vietnam international container terminals will highlight the characteristics of seaports in Myanmar and provide insights for stakeholders in the industry.

The structure of the paper is as follows. From a literature review, we define the comparison framework of five dimensions, i.e. port infrastructure, port connectivity, port management, port operation and port charge. We then use the comparison results to point out the current issues in Myanmar and Vietnam seaports and give the recommendation accordingly.

2. Overview of Seaports in Myanmar and Vietnam

Myanmar has a strategic location near all major Indian Ocean maritime routes. The country has a long coastline of 2,930kilometres from the mouth of Naf River to the city Kawthaung. It covers three main regions: the North-West area, called Rakhine Coast with 713km length; the Yangon area with Dealta Coast of 437km and the South area with Thanintharyi Coast of 1078km [3].

Myanmar has a total of nine ports catering mainly for its seaborne and coastal trade, spreading over the whole national coastline. According to Netherland Maritime Land [3], the ports of Sittwe, Pathein, Mawlamyine and Myeik serve as international exporting ports, while the ports of Kyaukphyu, Thandwe, and Dawei mainly serve for domestic coastal traffic. Among these ports, Kawthaung port has been used for domestic coastal traffic as well as an export port for cargoes going to Thailand. Yangon port is the biggest international port of Myanmar as it handles the most import and export maritime freight of the country. As the largest existing port complex, it can serve vessels up to 15,000 - 20,000DWT, with underway expansion to increase up to a 35,000DWT vessel capacity. Thilawa International Port, an expansion of the Port of Yangon, is located 16km from Yangon downstream of the river.

Vietnam has a coastline of over 3,200 kilometres with thousands of small and large islands, and many locations for ship building along the coast. The country is very close to the main international maritime routes with the highest density of vessel traffic in the world. The seaports in Vietnam can also be used as gateways for landlocked neighbouring countries, such as Laos and the hinterlands, North - Western Thailand and South - Eastern China. Currently, Vietnam has 45 seaports and 263 berths with about 89km total length of berths [4]. In particular, there are two international gateway ports in Vietnam, i.e. Cai Mep - Thi Vai (Vung Tau) and Lach Huyen (Hai Phong). The former can receive up to 194,000DWT vessels while the later could serve the largest vessels of 100,000DWT. With the capacity of about 543.7million tons/year, Vietnam seaport system annually serves up to 90 percent of import and export goods, contributing as a driving force of the national economic development.

3. Comparative Analysis of International Seaports in Myanmar and Vietnam

We first review the literature of port competition and port selection to identify the criteria for the comparative analysis. Although ports are assessed from different perspectives based on specific context, many studies share the similarity of five main components, i.e. port infrastructure, port connectivity, port management, port operation and port charge [5-11]. Port infrastructure includes characteristics of nautical accessibility, the area of marshalling and container yards, infrastructure for transloading to inland transportation like road, rail and inland waterway, handling facilities and equipment at ports. Port connectivity component is twofold, i.e. the ability to reach the inland locations from such port and the ease to move cargo to/from other seaports. The criteria group of port management implies the port governance models, i.e. public service port, tool port, landlord port, and private service port, defined by World Bank [12]. Port operation includes the perspectives of port productivity, port security, safety and paperwork processing like customs clearance. Finally, port charge implies the cost and efficiency of all port activities, i.e. towage, pilotage, berthing, handling, storing and the number of ship calls.

Table 1. Comparison of Myanmar and Vietnam international container terminals

Criteria	Sub-criteria	Myanmar	Vietnam	Note
Port Infrastructure	Port area	Average 27.03 ha. in each port	Average 48 ha. in each port	Average area
	Quay	174 meters a quay in average 4 quays per terminal	320 meters a quay in average 3 quays per terminal	Average value of quay and quay length
	Nautical accessibility	Max draft - 9 m (MPA) *Vessels visiting the ports of Yangon have to deal with tidal issues.*	Max draft - 17 m (VPA) *No need to wait for tide*	
	Equipment Used	- MPA: 2 x 40-ton Gantry Crane 3 x 40-ton Mobile Crane - MIP: 7 x GOTTWALD Crane 2 x GENMA Crane - MITT: 2 x 40-ton Container Quay Crane 5 x 40-ton Gantry Crane	- HCIT: 8 x waterside outreach 65m, height of spreader 46m, hoisting capacity 65mt - TICT: Total 10 cranes: 1 unit: 46m height, 65m outreach (24 rows) 6 units: 40m height, 55m outreach (20 rows) 3 units: 33m height, 50m outreach (18 rows)	
Port Connectivity	Port liner shipping connectivity index	12.74	85.52	
Port management	Port governance model	Landlord	tool port and landlord	
Port operation	Port safety	0.45%	1.73%	Maritime transport accident rate
	Administration & customs procedure	Myanmar Automated Cargo Clearance System; within 24 hours	Electronic customs clearance, takes 70 hours to clear export goods and 90 hours for imports.	
	Throughput	1,043,469TEU	13,008,463TEU	In 2018
	Number of vessels called	2,267 calls	34,913 calls	In 2018
	Handling productivity	80-100 moves/hour	30-35 moves/hour	Container Gantries
	Ship turnaround	14.2 hours	More than 30 hours	1000 TEU vessel
Port charge	Pilotage & towage	$460	$5,536	For a vessel of 200 m Length with a Draft 9 m
	Berthing cost	$410	$986	Per day for up to 15000 GRT vessels
	Handling cost	$150	$90	Per 40’ FCL containers
	Storing cost	$2	$1.8	For 1 TEU per day

TẠP CHÍ ISSN: 1859-316X
KHOA HỌC CÔNG NGHỆ HÀNG HẢI
JOURNAL OF MARINE SCIENCE AND TECHNOLOGY

Table 1 summarizes our findings on the comparison of major international container terminal in two countries using the proposed framework. The secondary data was collected and synthesized from each seaport's webpage, the data source of Vietnam Port Association and recent maritime reports. As introduced before, Yangon is the largest international seaports which cover most import and export seaborne traffic in Myanmar. Therefore, we compare all container terminals of Yangon seaport with two largest international container terminals in Vietnam, i.e. Haiphong International Container Terminal (HICT) and Tan Cang - Cai Mep International Terminal (TCIT). They are major container terminals in Vietnam which provide mainline service between Vietnam and North America/European. There are seven terminals in Yangon seaport, including MITT, Sule Terminals, Bo Aung Kyaw Terminals, Asia World Port Terminals, MIP, Ahlone Int'l Terminal, Htee Tan Oil Terminals.

a. Port infrastructure

In terms of port infrastructure, the average area of these Vietnamese international container terminals almost doubles the Myanmar ports' size. Although the number of quays per terminal in major Vietnamese terminals is slightly less (3 compared to 4), the average quay length in Vietnamese cases double the one in Myanmar terminals. Moreover, the comparison between the depths of Nautical Accessibility highlights that these Vietnamese terminals are able to receive the much bigger vessels with the deepest terminal of 17-meter water depth, compared to the maximum number of 9-meter depth in Myanmar terminals. The maximum vessel called at Vietnamese terminals has the size of 190,000DWT, while Myanmar terminals could only serve up to 20,000DWT vessels. Next, in terms of handling facilities, the total number of various kinds of cranes and tractors are used to demonstrate the level of facilities at ports of Myanmar and Vietnam. As shown, facilities and equipment at the Port of Yangon and other Ports are not modernised compared to Vietnamese Ports. The equipment used at the Myanmar Ports are smaller in terms of size as well as the numbers.

b. Port connectivity

In order to measure the international connectivity of the ports, we use the Liner Shipping Connectivity Index by UNCTAD. The study found out that the Myanmar's index was 12.74 while Vietnam is 85.52 in 2019. According to TICT, being near the biggest manufacturing area in Vietnam including Ho Chi Minh City and Binh Duong, Dong Nai and Ba Ria - Vung Tau, Tan Cang - Cai Mep International Terminal has developed as Vietnam's first deep water terminal to accommodate the large container vessels for direct linkage to the main export destinations in America and Europe. Also, TCIT has expanded Intra - Asia services to transport containerized cargoes from Cai Mep to other countries in Asia such as Japan, Korea, China, Philippines, Thailand, etc. In contrast, Yangon terminals only connect to Port of Singapore, Malaysia, India and China.

c. Port management

With regards of port management, Yangon Port was a public service port until it became a landlord port in 1998. Before the change, the port is owned and operated by Myanmar Port Authority, which is under the control of the Ministry of Transport. At the same time, the MPA also operates, owns, manages and operates other coastal ports in Myanmar. At the 1998, the Port Authority leases land to a private terminal operator, and then manages and operates the terminal on a BOT (build-own-transfer) basis. Such port management change is due to the insufficient budget on the port sustainment of Myanmar national government. MPA has to depend fully on the government budget. The participation of the private sector increases port development knowledge in MPA, which can serve as a capacity building opportunity. Therefore, the influence of the private sector is indispensable. In Vietnam, most seaports are under tool port model and owned by the public sector. There is one exception in the case of new terminal in HICT where landlord port model was applied.

d. Port operation

The comparison of the Port Safety between the Vietnamese and Myanmar container terminals can be characterised by the maritime accident rate which is influenced by the numbers of vessels in each country's territorial water. According to Korea Maritime institute [13], the accident rate at Vietnamese ports is 1.7%, four times of such number at Yangon Port (0.45%). These percentages indicate safer ports to be found at Yangon Port, Myanmar.

The comparison points out the port productivity of Vietnamese terminals is much higher than Myanmar ones. In 2017 Vietnamese terminals handle 13,008,463TEU while this number in Myanmar is 1,043,469TEU. This is nearly 13 times difference of throughputs, which highlights how the Vietnamese terminals are more efficient in operating than Yangon Port of Myanmar. This number is in line with the comparison of Number of vessels called by each port:

34,913 at Vietnam compared to 2,267 at Myanmar. Additionally, the handling productivity of 80-100 moves per hour in major Vietnamese terminals are much higher than ones in Myanmar (30-35 moves/hour). The ship turnaround time at Vietnamese terminals is only a half of Myanmar terminals as shown in Table 1.

However, the customs clearance procedure in Myanmar ports is much faster than in Vietnam ports. The process takes to clear export goods and 90 hours for imports in Vietnam ports while takes only 24 hours in Myanmar. This could be explained by the fact that Vietnamese seaports are facing huge maritime traffic which creates the bottleneck in customs clearance process.

e. Port charge

At Myanmar ports, the pilotage & towage charge is $460 for a vessel of 200-meter length with a 9-meter draft, whilst the same type of vessel will be charged $5,536 at Vietnamese Ports. This comparison definitely points out an apparently higher charges of Pilotage & Towage at Vietnamese Ports than those at Myanmar Port. Similarly, the berthing cost at Vietnamese Ports are likely doubled the cost at Myanmar port. When comparing the handling costs of containers at these two ports, we found the handling cost in Vietnam is only a half of Myanmar ports (90 USD per 40 feet container in Vietnam and 150USD in Myanmar). This favourable price in Vietnam could be explained by the high competition among terminals in concentrated areas of the country. For storing containers, ports in both countries authorise free period allowed of 7 days from the date of receipt. The storing charge for exceeded days is 2 USD per TEU per a day in Myanmar and 1.8 USD in Vietnam, which is not much different.

4. Conclusion and recommendations

The study compares the major international container terminals in Vietnam and Myanmar, using the framework of five factor groups, i.e. port infrastructure, port connectivity, port management, port operation and port charge. The study has come up with a comparative report to provide a better understanding about the port system in Myanmar. This could benefit the relevant stakeholders in maritime industries, such as the government, port cities, port operators, shipping lines in Myanmar, Vietnam and connecting countries by providing insights of the situation in both countries for their decision-making. In the following part, we give the recommendation for maritime stakeholders in Myanmar in developing seaport systems through the lessons learnt from Vietnam.

The comparison shows that Myanmar ports are lagging behind with poor infrastructure, limited maritime connectivity, low productivity in port operation despite they have the preferable port charge, fast customs clearance process, low accident rate and the private participation in the port governance model. The weakness of port operation in Myanmar terminals includes low handling productivity, high ship turnaround, which lead to their low total throughput. In order to develop the international port system, Myanmar government needs to pay more attention in following issues. First, they need to upgrade the port infrastructure in their terminals and utilize better the current resource, including equipment and land uses. In order to improve the productivity at ports, Myanmar needs to eliminate overlapped paperwork systems to replace with single window port online system. They might seek for foreign investments, financial and technology aids for port developments. Finally, the port managers in Myanmar need to seek for more international collaboration in the maritime sector to improve their port connectivity, which will improve the maritime traffic and strengthen their ports' competitiveness.

This paper also points out the current issues of Vietnamese container terminals in operation. The high maritime accident rate requires more attention of port managers in port safety. The long customs clearance procedure would severely influence the port competitiveness and unnecessarily increase the total logistics cost and time for shippers. They could be explained by the fact that Vietnamese seaports are facing huge maritime traffic which create the problems in congestion, safety and customs procedures. From the perspective of Myanmar maritime stakeholders, they should foresee these issues when the maritime traffic grows and have better preparation for such development.

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Received: 20 Apirl 2020
Revised: 15 May 2020
Accepted: 25 May 2020