STUDY ON STRENGTHENING CAPACITY TO PLAN AND DEVELOP EFFICIENT COASTAL SHIPPING IN SOUTHEAST ASIA

Transport Division

Bangkok, December 2018
# CONTENTS

<table>
<thead>
<tr>
<th>Chapter 1</th>
<th>1. Introduction</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.1 Background</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>1.2 Objective</td>
<td>2</td>
</tr>
<tr>
<td>Chapter 2</td>
<td>2. Status and Challenges for selected countries</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>2.1 Current situation of Coastal Shipping / Inland waterways in CLMV-T and selected archipelagic countries - Cambodia - Indonesia - Malaysia - Myanmar - Philippines - Thailand - Viet Nam</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>2.2 Structural issues and challenges of coastal shipping / inland waterways development A. Specific national obstacles B. Regional status &amp; challenges</td>
<td>53</td>
</tr>
<tr>
<td>Chapter 3</td>
<td>3. Guidelines for efficient coastal shipping, inland waterways development</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>3.1 Good Practices</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>3.2 Fostering coastal shipping strategy in the region: A. Country-level approach B. Regional initiatives</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>3.3 Way Forward A. Review national agenda for sustainable transport development and SDGs B. Establishment of a coherent coastal shipping development strategy C. ESCAP Role</td>
<td>85</td>
</tr>
<tr>
<td>Chapter 4</td>
<td>4. Conclusion</td>
<td>95</td>
</tr>
</tbody>
</table>
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1

Introduction

1.1 Background

Mainland Southeast Asia and archipelagic Southeast Asia has a long history of freight movements using sea and river routes. It is a unique sub-region with numerous ports and long distances that demands a special approach to physical connectivity. Indeed, hub and spoke shipping network has expanded rapidly and is being already used extensively. One of the reasons for this is the geography impeding proper connections to remote location and absence or underdeveloped road or rail options. Hence, the regional maritime sector is very competitive and motivation for countries with coastlines and inland waterways to further use maritime transport is therefore a function of the geography of the region.

Coastal Shipping also knows as Short Sea Shipping (SSS) can help make movement of cargo of member countries faster, less costly, and more environment friendly. The same applies to Inland waterways which takes the form of a network within a territory of rivers, canals or backwaters being used for transportation purposes. Coastal shipping and inland waterways usually require smaller vessels compared to deep sea shipping.

Coastal shipping refers to domestic or interstate shipping operation that moves cargo and/or passenger between ports over a short distance between ports of a nation and between a country’s port and the ports of adjacent countries. Short sea shipping is a concept that has its genesis in sea transport practices from ancient times. With the development of maritime transport, coastal shipping evolved with larger vessels carrying increased cargo volumes as well as varied cargoes on a more fixed schedule. Besides, advancing technological improvements strengthened safety and merchant vessels became more fully integrated into their region’s economy.

With the advent of the automobile industry and the expansion of highways and road system in many countries, coastal shipping and inland navigation entered a phase of decline. The combination of governmental subsidies and reduced transit time for road transportation has shifted movement of cargo from water transport. However, recently, increased road congestion, acknowledgment of infrastructure and maintenance costs, as well as technological advancements in containerization and cargo handling have led many to now view coastal shipping and inland waterways as an attractive alternative to road and rail transport.

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2 Accessible from: http://www.insourceaudit.com/WhitePapers/Short_Sea_Shipping.asp
However, in order to increase coastal shipping and the use of inland waterways, governments need to invest more in ports, shipping-related and intermodal infrastructure to provide efficient hinterland connection from ports as part of an integrated (intermodal) transport system. Further research is needed to find out how to best adapt port operations and infrastructures to future maritime trade pattern developments across Asia-Pacific and globally. Suggestions have been made in the past to implement a common transport policy in the region, nonetheless careful attention should be made on how competitive or cooperative behaviors such policy would entail in the relation between ports.

There is a general consensus across the region for the promotion of coastal shipping and inland waterways in order to alleviate congestion and environmental impacts, as well as to leverage and unlock new economic opportunities. Nowadays, coastal shipping and the use of inland waterways is being integrated in national transport master plans across the region as a mean to develop national coastlines and inland waterways to improve logistics performance. However, challenges and obstacles are shared among regional countries, notably the issue of additional handling costs notably the issue of additional handling costs from ship-to-ship cargo transfer and connectivity between different transport modes. The fundamental way to facilitate coastal and inland waterway transport is to build an affordable and reliable transport network, and the following research is to find such policies.

1.2 Objective

The need for a study on Coastal Shipping / Inland Waterways in Southeast Asia

Over the past several years, Cambodia, Lao People’s Democratic Republic, Myanmar, Viet Nam and Thailand (CLMV-T) and archipelagic countries have exerted efforts to improve their transport and logistics efficiency and inter-country connectivity through land and sea, including by practical actions and a more intense use of intermodal transport.

However, coastal shipping transport, along with the use of inland waterways, among these countries still faces numerous challenges that include limited routes and poor infrastructures, lack of skilled workers, inadequate customs procedures and port facilities to efficiently handle traffic, non-harmonized regulations, complicated documents, and other non-physical barriers.

There is now an opportunity for developing and operationalizing efficient coastal and inland shipping transport that can act as a key enabler of sustainable and intermodal transport and hence sustainable development. Short sea shipping and inland waterways transport can bring various benefits such as: alleviate congestion through the development of an alternative mode of transport, unlocking economic potential of national coastlines, support the development of rural areas by strengthening their links with national and regional transport networks, promote sustainable transport by ensuring optimal balance among its economic, social and environmental dimensions. This report focuses on coastal shipping as a whole, although it also deals with inland waterways transport, which has great potential as an environmentally friendly means of transport in CLMV-T countries. In other words, this study emphasizes on coastal shipping, not only because the countries in the comparative countries include the archipelagic countries with high percentage of coastal transport, but also because the facilitation of inland waterways is mainly carried out by related institutions such as ASEAN.
ESCAP has in the past undertaken several projects related to the development of coastal shipping and inland waterways in the region. In recent years, however, studies on coastal shipping and inland waterways facilitation have been rare, so this study will help identify the current status and issues of coastal shipping in the selected countries. A few works related to maritime connectivity and sustainable port development are still in process, and in 2018 a series of workshop focusing on Cambodia, Lao People’s Democratic Republic, Myanmar, Viet Nam and Thailand (CLMV-T) and Archipelagic countries has been undertaken with the aim to strengthen the capacity of selected member countries in planning, developing and implementing efficient coastal shipping while promoting the use of inland waterways for sustainable transport connectivity, including identification of main challenges related to coastal shipping. In summary, the objective of this study is to provide the guideline for coastal shipping development as well as workshop for disseminating the guideline and policy recommendations. And also, this project contributes to enhance knowledge and awareness of the stake holders for coastal shipping development and ultimately to achieve the increasing of coastal shipping in target countries for sustainable transport development.

Maritime transport is at the core of international trade in merchandise and plays a crucial role in the CLMV-T and archipelagic region. About 85% of volume of goods exchanged in the world are transported via sea (UNCTAD, 2018) and this percentage is even higher for most developing countries and in terms of total transport measures (in ton-kms).

This predominance of maritime transport in the region calls for a better understanding of sea transport components of which coastal shipping is part of. Due to the increase in manufactured goods exchanges and the intensification of containerized transport services, coastal shipping can provide smart and efficient trade between countries if integrated efficiently in national logistics master plan. But it is also an alternative mode of transport for passengers and could participate in reducing land transport congestions in a sustainable way.

However, despite a growing participation of developing countries in seaborne trade and growing number of maritime routes in ESCAP region, except for a few countries such as China, many countries of the region have not yet reached their full potential. Among them CLMV-T and archipelagic countries have expressed interest in coastal shipping and inland waterways development but are still at early an early stage.

To further develop the concept of coastal shipping in ESCAP region (in line with the idea of an ASEAN Single Shipping Market) and inland waterways, and in order to help the implementation and operation of such concept, this paper focuses on the analysis of these selected countries.

The following part gives us a snapshot of the maritime/coastal shipping sector of CLMV-T and archipelagic countries, focusing on national maritime strategy, traffic volume, modal split ratio, infrastructures and national legal system. The second part of the Chapter analyzes structural issues and challenges of coastal shipping development in the selected countries.
2.1 Current situation of Coastal Shipping / Inland waterways in CLMV-T and selected archipelagic countries

Coastal shipping, which has advantages for long haul and bulk cargo transport, can contribute to the development of safe and reliable transport and accessible and sustainable transport systems. This is because coastal transport is usually more environmentally friendly than road transport. It also serves as a lifeline for the small and remote islands as well as a means of replacing land transportation in the event of a disaster.

Maritime transport and, coastal shipping, is directly linked to target 9.a of SDG 9 to "Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to the least developed countries and small island developing States", as well as SDG 7 on “Ensuring access to affordable, reliable, sustainable and modern energy for all”, SDG 11 on “Making cities and human settlements inclusive, safe, resilient and sustainable”, SDG 14 on “Conserving and sustainably use the oceans, seas and marine resources for sustainable development”. Coastal shipping and the use of inland waterways is also indirectly contributing to the achievement of other SDGs through promoting sustainable economic development and social integration.

A successful coastal shipping program offers an opportunity to add value to a national transportation network while increasing the economy’s efficiency and ultimately the societal standard of living. Besides, coastal shipping is in line with the 2030 SDGs agenda.

In spite of the lack of investment budget and the limitation due to the transport system dominated by land transport, coastal shipping is already largely used in the region and has the potential to contribute even more to sustainable transport development.

The following paragraphs present the current situation of the maritime / coastal shipping sector of CLMV-T and archipelagic countries, including Indonesia, Malaysia and the Philippines. For each country, the following elements are analyzed:

1) National Maritime Strategy
2) Traffic volume (cargo and passenger)
3) Modal split ratio (by transport mode)
4) Port infrastructure
5) Legal system: acts, regulations, rules and cabotage
In Cambodia, which is bordered by Thailand, Vietnam, and Laos, inland waterways, including the Mekong and the Tonlé Sap river, have played an important role in transport as well as economic and social development.\(^4\)

However, inland waterways are operated with small vessels mainly due to the limitation of depth, seasonal effects, and accumulated sand, and it is very difficult to operate large vessels. This situation affects the port of Phnom Penh as River port, which is the traditional trade port of Cambodia, and there is a limit to handle the vessels of more than 10,000 tons. In order to overcome the constraints of the river port, the Sihanoukville Port has been developed as sea port. The port of Phnom Penh still plays an important role in tourism, fishing, and domestic transport, although the Sihanoukville port is developing into the main port of Cambodia as it is possible to call various large cargo ships including container ships.

1) National Maritime Strategy

In 2007, in response to a request from the Royal Government of Cambodia, a study on the Master Plan for Maritime and Port Sectors in the Kingdom of Cambodia was conducted by the Japan International Cooperation Agency (JICA). This report described the current situation of Cambodian maritime sector at the time, giving some guidelines as well for development. In 2015, the Infrastructure and Regional Integration Technical Working Group (IRITWG) published an “Overview of the Transport Infrastructure Sector in the Kingdom of Cambodia” in the purpose of sharing basic information and the overall picture concerning the transport infrastructure sector with related organizations, developments partners and stakeholders, and also to provide key data for future planning in the transport infrastructure sector.

In addition to this, the Government has its own strategy planning called “Rectangular Strategy” as shown in Figure 2.1. The Rectangular strategy for growth, employment, equity and efficiency phase II is the "Socio Economic Policy Agenda" of the Royal Government of Cambodia of the fourth legislature of the national assembly. It was announced by the Prime minister at the office of the council of ministers, Phnom Penh on 26 September 2008.

Figure 2.1 Rectangular Strategy in Cambodia

Source: Cambodian Rehabilitation and Development Board (CRDB), Council for the Development of Cambodia (CDC).

As we can observe on the second corner rectangular strategy, maritime connectivity is comprised in the aim for Further Rehabilitation and Construction of Physical Infrastructure through improvement of transport infrastructure.

There are as well other existing National Policies/Strategies such as:

- Port Policy and Administration System in the Kingdom of Cambodia (MPWT);
- National Strategy for Maritime Security (NCMS);

And National Policies in Developing with:

- The National Maritime Transport Policy (MPWT);

2) Traffic volume (cargo and passenger)

Maritime activity in Cambodian water:
International Shipping Route & Companies:\(^5\)

- There are several fixed routes between ports in ASEAN countries and Hong Kong, business by 5 shipping lines that have regular schedules;
- The Cargo from/to EU, Japan & US are transferred through Singapore & Hong Kong ports;
- Few international cruise ships called PAS per months without fixed route and regular schedule;
- Special vessels from cooperation countries;

Table 2.1 Domestic vessels in Cambodia (registered between 1999-2017)

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Cargo vessel (185)</td>
<td>Cargo vessels (61), 56&lt; 500T, 5&gt;1000T</td>
</tr>
<tr>
<td>Passenger vessel (157)</td>
<td>Passenger vessels (42), 42&lt;500Ton</td>
</tr>
<tr>
<td>Fishing vessel (754)</td>
<td>Fishing vessels (0)</td>
</tr>
<tr>
<td>Oil Tanker (4)</td>
<td>Oil Tanker vessels (7), 7&gt;500T</td>
</tr>
<tr>
<td>Pleasure yacht (3)</td>
<td>Trailing vessels (28), 14&lt;500T&lt;12, 2&gt;1000T</td>
</tr>
<tr>
<td>Trailing vessel (12)</td>
<td>Pleasure Yacht (33), 33&lt;500T</td>
</tr>
<tr>
<td><strong>In total: 1142 vessels</strong></td>
<td><strong>Boat no machine (22), 15&lt;500T&lt;4, 3&gt;1000T</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Sand drilling vessels (368), 291&lt;500T&lt;19, 58&gt;1000T</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Tourist vessel (38), 36&lt;500T&lt;2</strong></td>
</tr>
<tr>
<td><strong>In total: 557 vessels</strong></td>
<td></td>
</tr>
</tbody>
</table>


*Note*: The numbers in this table are all ships registered during that period (1999-2017), some of these ships might still not be operational.

Table 2.2 Cruise vessel and passenger traffic

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<table>
<thead>
<tr>
<th>Year</th>
<th>Vessel</th>
<th>Crew</th>
<th>P/G in</th>
<th>P/G out</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>34</td>
<td>12,519</td>
<td>20,298</td>
<td>20,436</td>
</tr>
<tr>
<td>2013</td>
<td>21</td>
<td>8,237</td>
<td>16,401</td>
<td>16,529</td>
</tr>
<tr>
<td>2014</td>
<td>25</td>
<td>11,858</td>
<td>21,767</td>
<td>21,725</td>
</tr>
<tr>
<td>2015</td>
<td>36</td>
<td>21,87</td>
<td>43,549</td>
<td>43,334</td>
</tr>
</tbody>
</table>


Domestic ports & Shipping Routes:

- Provincial ports serve for domestic passenger & cargo ships. As well as for cargo ships of neighboring countries;
- There are several fixed routes for cargo and passenger/tourist from mainland to islands, mostly from Preah Sihanouk Province;
- Domestic ships are mostly owned by individuals;

Figure 2.2 Maritime activity in Cambodian water

Source: Logistics master plan development in Cambodia, Presentation, Workshop on Strengthening Transport Operational Connectivity among Cambodia, Lao People’s Democratic Republic, Myanmar, Viet Nam and Thailand (CLMV-T), Hanoi, 30 November – 01 December 2017.

3) Modal split ratio (by transport mode)

6 Ibid.
Transport modes in Cambodia include road, rail, air, maritime and inland waterways. Road transportation is the dominant mode with a share (of total transport output) often stated as 65% for passengers and 70% for freight. However, these figures might still be “understated and date back to a time when both inland waterways and the Royal Railway of Cambodia (RRC) played a greater role in moving passengers and freight”.

According to the ADB, it is highly likely that the share of road transport in both passengers and freight is currently about 95%, even though there are no official sources. In the case of exports, the proportion of maritime transport through Phnom Penh (26.5%) and Sihanoukville (70.9%) accounts for 97.5%, while imports are very low at 52.5%. This is due to the fact that 41.3% of imported goods are imported through Poipet, which is a border area with Thailand, and 6.2% are imported into the land via Bavet, the border region of Viet Nam.

4) Infrastructure

Ports and Ships:

- Sihanoukville Autonomous Port as deep-sea port, serves for ships of international voyage;
- Several ports including Phnom Penh Autonomous Port as river port serve for ships from/to neighboring counties;
- Many ports such like Kampot serve for domestic ships;
- There no Cambodian flagged ships transported cargo from/to Cambodian ports;
- The most 3 kinds of ship: Cargo, Passenger & Fishing

Figure 2.3 Sea and River Ports in Cambodian water


5) Legal system: acts, regulations, rules and cabotage

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8 Ibid.
Table 2.3 Cambodia Shipping policies

<table>
<thead>
<tr>
<th>Country</th>
<th>Cambodia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping Policy</td>
<td>There is a general thrust towards deregulation</td>
</tr>
<tr>
<td>National Flag administration</td>
<td>Cambodia opens registries</td>
</tr>
<tr>
<td>Competition policy with respect to Liner Shipping</td>
<td>No clear legislative framework for regulating the behavior of shipping conferences or dominant shipping lines</td>
</tr>
<tr>
<td>Cabotage</td>
<td>Cambodia does not have cabotage restrictions</td>
</tr>
<tr>
<td>Subsidies, Grants and Tax Incentives</td>
<td>N/A</td>
</tr>
<tr>
<td>Manning issues / Industry</td>
<td>N/A</td>
</tr>
<tr>
<td>Cargo reservation policies</td>
<td>No formally articulated cargo reservation policy, monopoly position of the Kampuchea Shipping Agency &amp; Brokers (KAMSAB)</td>
</tr>
</tbody>
</table>


Existing Legislation:
- National Port Policy and Administration System;
- Sub-decree No.40 on Ship and Port Facility Security;
- Prakas of an Act for the Registration of Merchant Vessels;
- Instruction No.006 on Sea Shipping Management;
- Instruction No. 003 on Ship Management in Inland Waterway;
- Sub-Decree on Air and Noise pollution.

Legislation in Approval Process:
- Draft Law on Waterway Transport, which covers all ships navigating in the Cambodia waters, regardless of sea or inland water;
- Port Act, which covers all ports in Cambodia, regardless of size;
- Draft Declaration on Port Facility Security, which is utmost significant for the compliance with the international code, to which Cambodia is obliged;
- Draft Declaration on Formality and Procedure for Foreign Vessel's’ Entry Permit.

Legislation in Drafting Process:
- Draft National Policy on Maritime Transport;
- Draft Law on Maritime Transport, the main provisions of which are related to the management and control over national flagged ships, seafarers, shipping companies, and soon.
Indonesia is aspiring to be a global maritime nation, and it is the reason why the country launched the Sea Toll Road project in order to improve national connectivity within the archipelago. Cost of this project is about IDR 700 trillion (US$ 53 billion), which is difficult to be matched by the government’s annual budget.

Several initiatives are being undertaken from Indonesia side, but regional ones are also a leverage to enhance its shipping activities. The Master Plan for ASEAN Connectivity is seen as one to facilitate regional trade and investment, covering many physical and maritime infrastructures projects. China has also come to the forefront through its regional connectivity plan of Belt and Road Initiative (BRI) and its attached financing schemes. But even though Indonesia has the potential to expand its project, the country faces several issues including land acquisition or coordination among governmental agencies which are impeding the capacity roll-out of the project at larger scale.

One of the main challenges of the future Indonesian maritime policy is to determine how to maximize the advantage on the complementarity between national and regional projects to resolve its domestic investment bottlenecks and leverage on regional financing schemes to realize its maritime connectivity strategy.

1) National Maritime Strategy

On 20 October-2014, Joko “Jokowi” Widodo was inaugurated as the seventh president of Indonesia. The new president came to power with a national development agenda called Nawa Cita, consisting of nine development priorities.

**Figure 2.4 National Policy on Maritime Transport in Indonesia**

*Source: Country presentation at the Workshop in Yangon.*

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10 ISEAS, 2017. Challenges for Indonesia to achieve its Maritime Connectivity Plan and Leverage on Regional Initiatives.

11 Ibid.

12 Ibid.

In October 2014, in his inaugural speech as President, Jokowi stated that as an archipelagic country, Indonesia must develop its vast sea resources to raise its maritime competitiveness. Under this vision, the government of Jokowi indicates its commitment to revive Indonesia’s maritime identity in order to face existing challenges including illegal fishing, human trafficking and climate change in the maritime regions. Besides, Indonesia’s strategic position between the Pacific and the Indian Ocean, encompassing some of the most dynamic economies in the world, makes it natural for the country to strengthen its maritime connectivity.

Currently, Indonesia’s maritime vision is mostly inward oriented as it is set as a strategy to narrow the economic gap in the archipelago. Started in November 2015, the Sea Toll Road project, is planned to improve inter-island connectivity and strengthen port infrastructure of the country. It aims to reduce price disparity (especially between Java and outside Java) as well as boosting economic trade within the country. This project would promote Indonesia as a hub for international trade in the broader ASEAN.

The Sea Toll Road connects 5 major ports: Belawan in North Sumatra, Tanjung Priok in Jakarta, Tanjung Perak, Surabaya in East Java, Makassar in South Sulawesi, and Sorong in Papua - and several smaller ports all over the country. As illustrated in Figure 2.5 and Figure 2.6, most of the freight (return) routes in this project are directed towards the remote areas of Eastern part of Indonesia. T-6 route is set to cover the Natuna Island, located in South China Sea. Until now, governments subsidized freight rates as load factor is not able to cover operational costs. The sustainability of this freight operation will eventually depend on whether it can attract shippers, traders and manufacturers to use the services more frequently.

**Figure 2.5 Indonesia Sea’s Toll Road Network**

![Sea Toll Road Network](image)

*Source: National Planning Agency (Bappenas)*

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15 ISEAS, 2017. Challenges for Indonesia to achieve its Maritime Connectivity Plan and Leverage on Regional Initiatives.
The maritime highway, also referred to as sea toll road, aims to create regional container shipping access to major ports able to serve large commercial ships. Among the many challenges, the most imposing are institutional, regulatory, and financial. The Ministry of Transportation envisages 1,240 ports, with 33 major ports, 217 collector ports, and 990 feeder ports. The Strategic Plan as adopted by RENSTRA calls for:

- increasing safety, security, and service of marine transport facilities and infrastructure according to Minimum Service Standards;
- increasing the access to services facilities and sea transport infrastructure in order to encourage the development of inter-regional connectivity;
- increasing the capacity of marine transportation infrastructure to reduce the backlog and sea transport infrastructure capacity bottlenecks;
- enhancing the role of local governments, the state, the private sector, and civil society in the provision of marine transportation sector infrastructure in an effort to improve the efficiency of marine transportation;
- improving the quality of human resources and marine transportation;
- institutional restructuring and regulatory reforms; and
- increasing sea transportation technology development for efficiency and environmental sustainability in anticipation of climate change.

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17 Ibid.
To achieve this maritime strategy, the government of Indonesia plans to implement various strategic-related programs in order to address different issues such as reliability of maritime transport service, maritime safety, infrastructure, institutional structure etc. However, at this early stage of program development, it appears that there is still a lack of qualitative and quantitative indicators, realistic roadmap, and financial resources.18

Overall the objectives of the Indonesian Short Sea Shipping Program are:

- Reduce travel time
- Decrease Road Building Cost
- Efficiency of Maintenance Road
- Reduce accident on Roads
- Decrease Vehicle Maintenance Cost
- Decrease Emission of Road Vehicle

2) Traffic volume (cargo and passenger)

In 2009, nearly 1 billion tons of cargo were handled in Indonesia’s ports, with about 543 million tons (56 percent) and 435 million tons handled in foreign and domestic volumes, respectively. There are more than 100 commercial ports in Indonesia, but most of these ports are small and medium-sized ports that are only available for small vessels or domestic vessels, making it difficult to receive large vessels. Since the enlargement of container ships has been progressing rapidly in recent years, it is possible to receive these large vessels only in a small number of ports in Indonesia, and the other ports are available with only small vessels.

In terms of container cargo, it showed 3.8 million TEU in 2000, 9.7 million TEU in 2010 and 13.8 million TEU in 2017 respectively. According to the Ministry of Transport, the projected cargo volume in 2020 is expected to increase to 30 million TEU and the expected cargo volume in 2030 to 48 million TEU.

The figure below shows the major ports where these volumes are to be handled. Also, as shown in the figure below, the Ministry of Transportation indicated that in 2009, the cargo flow was 8.8 million TEU, and estimated data for 2020 was 30 million TEU and 48 million TEU in 2030.

The ambitious port development plan in Indonesia is intended to develop ports by expanding existing port facilities and opening new terminals in Indonesia's major economic regions. However, there are some delays in investment, patterns in which shipping companies call to the existing small number of large ports, due to uncertainties in the global economy, overall port investment is not being made as originally planned.

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3) Modal split ratio (by transport mode)

Unlike the expectation that freight, and passengers will be transported mainly by ships because of the archipelago country, Indonesia has a road-based transport system. Road infrastructure is dominating the transport share in the mobility of people and goods, serving around 85% of passenger transport and 90% of freight.¹⁹

The rail system in Indonesia, legacy of colonial times, is mainly present on the most populated islands of Java and Sumatra; carrying over 200 million passengers in a year and more 20 million tons of cargo (only around 0,6% of goods transported).²⁰

More than 90% of imports/exports are carried by sea, but lack of port infrastructure and inadequate port facilities have not leveraged the full potential of shipping in Indonesia. The ADB points out in a 2016 report about Indonesia Transport that in order to improve the road-based transport system along with the development of islands, “it is necessary to plan, develop and implement the policies and strategies on maritime and port development plan including the existing Maritime Highway plan”²¹.

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²⁰ Ibid.
²¹ Ibid.
4) Infrastructure

Figure 2.8 Indonesian Port Structure

Source: MoT Indonesia, 2012.

Figure 2.9 Port as international hub in Indonesia

Source: Country presentation in Yangon.²²

As shown in the figure, in a bid to pursue economic development, Indonesia has developed five hub ports representing each region and 19 feeder ports serving sub-regions in connection with these hub ports and more than 100 sub-feeder ports linking these hub and feeder ports. Kuala Tanjung in West Indonesia and Bitung in Timur area will be developed as International Hub Port, which will strengthen the transport connection in Indonesia and beyond.

Indonesia has more than 100 commercial ports. Most of them are dedicated to domestic routes and small vessels, with few of them equipped with container facilities.

Indonesia plans to upgrade 14 of the country’s largest ports in order to handle growing international traffic, preparing at the same time the ASEAN single market.

Up to now, the shortage of large ports able to welcome trans-oceanic vessels has given rise to an inefficient system. Jakarta’s Tanjung Priok port is overburdened, handling about two-thirds of Indonesia’s imports and exports. The latest is not capable of accommodating very large container ships, though plan for its long-term expansion will enable it to handle container vessels with a capacity of up to 18 000 TEU. Currently, the capacity throughput of the port is 5 million TEU/year, which is little comparing to other global ports such as the port of Singapore (annual throughput of more than 31 million TEU).

Indonesia comprises 725 public ports which appears to be not enough in terms of capacity to serve all the islands. It represents around 24 islands per port, and 2,650 km2 per port.

Regarding performance, Indonesia can still maximize its logistics efficiency. Waiting time, approach time, and effective time are only about 77%, 75%, and 54% respectively. Besides, dwelling time is between 2 and 14 days, inducing expensive logistics costs.

Source: MoT Indonesia, 2012.

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24 Ibid.
25 Ibid.
5) Legal system: acts, regulations, rules and cabotage

Table 2.4 Indonesia Shipping policies

<table>
<thead>
<tr>
<th>Country</th>
<th>Indonesia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maritime administration</td>
<td>Directorate General of Sea Communications (The Ministry of Communications)</td>
</tr>
<tr>
<td>Shipping Policy</td>
<td>Access to more competitive and reliable shipping and waterfront services, greater transparency in costs and the creation of economic, safe and reliable shipping services</td>
</tr>
<tr>
<td>National Flag administration</td>
<td>In Indonesia, registered vessels must be owned by Indonesian citizens or by a company existing under the Law of Indonesia, and must be crewed by Indonesian nationals</td>
</tr>
<tr>
<td>Competition policy with respect to Liner Shipping</td>
<td>Indonesia has not attempted to control the activities of shipping conferences</td>
</tr>
<tr>
<td>Cabotage</td>
<td>Reservation of coastal trade for Indonesian-flag vessels. Indonesian law allows foreign companies to participate in local trade, providing they do so in joint ventures with Indonesian partners</td>
</tr>
<tr>
<td>Subsidies, Grants and Tax Incentives</td>
<td>Indonesia does not have a clearly structured program of support for its shipping industry</td>
</tr>
<tr>
<td>Manning issues / Industry</td>
<td>N/A</td>
</tr>
<tr>
<td>Cargo reservation policies</td>
<td>Reservation of Government and State-owned enterprise import cargoes, which must be carried by Indonesian-flag vessels</td>
</tr>
</tbody>
</table>

Over the years, the tremendous growth of ports and shipping activities in Malaysia highlights the importance of maritime sector for its economic prosperity and the importance of the seas for the lives of its people. Maritime economy is acknowledged as crucial contributors in facilitating Malaysia’s trade, thus indispensable to its economic well-being. Because Malaysia is a country surrounded by a sea much larger than its land mass, it is appropriate to consider Malaysia as maritime nation. In a few decades, Malaysia has successfully converted its economy from an agricultural and commodities-dependent one to a manufacturing and trade based one.

The remarkable growth in global trade has had a significant impact in the development of ports and shipping activities in the country. It has spurred investments and expansion of numerous infrastructures to support rapid increase in its trade with other nations. Maritime infrastructures benefited massively from this investment surge. This is marked by the estimation that 95% of Malaysia’s international trade, the lifeblood of its economy, is being transported through seas via its international seaports.26

1) National Maritime Strategy

Malaysia recently developed strategic maritime transport guidelines for the years to come, under the name “Malaysia Shipping Master Plan 2017 to 2022 – Revitalizing shipping for a stronger economy”. It aims to build a resilient and competitive shipping industry though introducing sustainable measures aiming at removing competitive disparities and improving capabilities of Malaysian shipowners, maritime human resources, and maritime ancillary services to meet domestic and regional shipping needs.

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2) Traffic volume (cargo and passenger)

In 2011, it was estimated by the Malaysian Institute for Maritime Affairs that between 95% and 98% of Malaysia’s international trade in terms of volume is carried by sea. As a trading nation, Malaysia relies on shipping for trade and it is as well a source of employment with other
multiplier effects for the rest of the national economy especially regarding its shipping auxiliary services including ship-building, ship-repair etc. The importance of shipping to the Malaysian economy is significant and has been recently illustrated through the decision of the Malaysian government to recognize shipping as one of its strategic sectors in its “Third Industrial Master Plan 2005-2020”. With over 100 domestic shipping lines (out of which 10 are container operators), Malaysia is still highly dependent on foreign shipping lines for container trades.  

**Figure 2.13** Traffic volume - Passenger  

**Figure 2.14** Handling of Import & Export Container, 2015 – 2017

*Source: Marine Department Malaysia.*

**Figure 2.15** Total cargo throughput by Export, Import and Transshipment at Ports, Malaysia 2013-2017

*Source: Marine Department Malaysia.*

3) **Modal split ratio (by transport mode)**

Malaysia accounts for 95%-98% of its foreign trade by shipping, due to the geographical characteristics of the country, with most of its land surrounded by the sea except for the border

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with Thailand and Singapore. Transportation of raw material and daily life commodities between the Kalimantan region and the mainland is also largely dependent on sea transport. Ports that serve as a hub to cargo transportation and serve as a gateway for economic development are connected by roads and railways, but their road dependence is as high as 95%. In the case of freight transport by land transport, 95% is transported by road and 5% by rail.

4) Infrastructure

**Figure 2.16 Ports of Malaysia**

![Ports of Malaysia](image)

*Source: Maritime Institute of Malaysia, 2006.*

As shown in the picture, some port such as Port Klang, Penang, Johor Port, Sabah Port and Bintulu port are handling trade cargoes and domestic cargoes, and port such as Tanjung Pelepas, specialized in transshipment. Port Klang is Malaysia's representative port and serves as a gateway to the capital city of Kuala Lumpur. Most of the cargo (95%) handled at Port Klang is transported by truck, 3.5% by rail and 1.5% by pipeline.

Malaysia announced the 11th Malaysia Plan (2016-2020), which includes the budget of 72.8 billion dollars, and allocated a budget of 50% to build the infrastructure. The Port Infrastructure Improvement Plan includes the implementation of national port policies, construction of port communication systems and electronic systems, and improvement of port capacity to enhance the port accessibility of large ports.
5) Legal system: acts, regulations, rules and cabotage

Table 2.5 Malaysia Shipping policies

<table>
<thead>
<tr>
<th>Country</th>
<th>Malaysia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maritime administration</strong></td>
<td>Marine Department (Ministry of Transport)</td>
</tr>
<tr>
<td><strong>Shipping Policy</strong></td>
<td>Malaysia has a long-standing program designed to encourage the growth of the Malaysian fleet, emphasizes on greater self-sufficiency in shipping services</td>
</tr>
<tr>
<td><strong>National Flag administration</strong></td>
<td>To fly the Malaysian flag, a vessel must be 51% owned by Malaysian interests; The merchant Shipping Amendment Act (1997) created a second register, the Malaysian International Shipping Registry, as one plank of a policy designed to encourage the development of the Malaysian shipping industry leading to increased employment opportunities and technology transfer</td>
</tr>
<tr>
<td><strong>Competition policy with respect to Liner Shipping</strong></td>
<td>Malaysia does not have general competition legislation</td>
</tr>
<tr>
<td><strong>Cabotage</strong></td>
<td>The cabotage trade in Malaysia is administered by the Domestic Shipping and Licensing Board (DSLB)</td>
</tr>
<tr>
<td><strong>Subsidies, Grants and Tax Incentives</strong></td>
<td>Fiscal incentives, many operating through the tax system, favor Malaysian shipowners as well as shippers using Malaysia flag vessels.</td>
</tr>
<tr>
<td><strong>Manning issues / Industry</strong></td>
<td>Malaysia allows foreign nationals to serve on Malaysian ships provided that they have a permit obtained from the Marine Department.</td>
</tr>
<tr>
<td>Cargo reservation policies</td>
<td>Malaysia does not adopt cargo reservation policies</td>
</tr>
</tbody>
</table>

*Source: Dr Rosli Azad Khan, MDS Transportation Consultants. *Korea Int. Seminar ASEAN*, 2012.*
Myanmar is a developing country that ranks 136 out of 187 countries in terms of (PPP-adjusted) GDP per capita.\(^{28}\) Since 2010, when Myanmar introduced a series of political and economic reforms, the country grew rapidly at 7.57% per year, representing one of the fastest regional growth rates. However, despite this growth, the country’s agricultural sector accounts for 30 percent of its GDP. Industrial sector (mining, manufacturing, construction, electricity, water, and gas) accounts for 32 percent of its GDP. \(^{29}\)

The economy expansion relied on growing trade. Since 2010, containers volume arriving in Myanmar’s ports is up three times. It has reached a level of 1 million TEUs in 2017.\(^{30}\) The IMF estimates that this momentum is to be pursued with a GDP growth of around 7.3 per cent in the upcoming 5 years. \(^{31}\)

With soaring trade, sea port become even more important node in the logistics network as the bulk of cargo is moved by sea. Also, it must be noted that Myanmar’s trade is still imbalanced with imports exceeding by around 4 times exportations. \(^{32}\) Thus, it is essential that Myanmar can operate efficiently and productively ports in order to lower down overall logistics costs for ship liners and shippers alike.

Due to the fast-economic developments in the country since 2012 and with the new government since 2016, many maritime opportunities are expected, varying from port development to fisheries and from shipping to offshore developments. \(^{33}\)

\textbf{1) National Maritime Strategy}

Started in December 2012 and completed in 2014 with the assistance of JICA, the Master Plan is prepared and formulated in line with national frameworks regarding national spatial development, regional integration, demographic, environmental, financial, demand and economic growth. \(^{34}\)

The Myanmar National Transport Plan is designed to provide guidance for a long-term investment program of transport sector that will help the Government to achieve its economic growth targets by 2030. More specifically, the vision is “to develop an efficient, modern, safe,
and environmentally-friendly transportation system in a coordinated and sustainable manner that embraces all transport modes for the benefit of the country and people of Myanmar.”

In regard to the preparation of a National Logistics Master Plan (started in June 2016), Myanmar has adopted a corridor-based approach. This also applies to the development of coastline activities as shown in the figure below.

**Figure 2.17 Corridor based development approach**

Myanmar envisions a future in which its sea and river ports are driving domestic economic growth and placing the country at the center of trade in Asia, transport authorities announced at the 15th ASEAN Ports and Shipping Conference in 2017.

Leveraging its geographic position between the regional powers China and India, Myanmar plans to expand its ports and shipping industry to become a leading hub for maritime commerce and a crucial part of the regional economic infrastructure.

Myanmar’s deputy minister for transport and communications, underlined in 2017 during the 15th ASEAN Ports and Shipping Conference the importance for Myanmar’s economic development to establish an efficient and integrated transport system centered around ports.

Regarding inland shipping, commercial navigable length comprises 6951km of river among which Ayeyarwady, Chindwin, Thanlwin and Sittaung River. The governmental fleet has a capacity of 100,000 tons and privately-owned ships can serve around 500,000 tons. The governmental fleet is a mix of cargo and passenger ships. Developing inland water transport is strategic for the national transport system and the adoption of multimodal transport system could provide reliable and efficient related logistics services.

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35 Ibid.
37 Ibid
38 Ibid.
39 Embassy of the Kingdom of The Netherlands, 2016. Factsheet, Maritime in Myanmar.
As for shipping, further development of Myanmar shipping industry is expected following increase of value and volume of international trade. In order to maximize this benefit there is a need to continue the development of ports, terminals and inland waterways, as well as information and communication infrastructure. Recently, a Ship owners’ Association was formed ailing at professionalize the industry. In 2010, Myanmar Five Star Line (MFSL), the only state-owned national flag carrier was privatized.

2) Traffic volume (cargo and passenger)

Figure 2.18 Cargo Traffic (only the ships from the association)

<table>
<thead>
<tr>
<th>Year</th>
<th>Inbound to Yangon</th>
<th>Outbound from Yangon</th>
<th>Total Coastal Traffic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>84120</td>
<td>121378</td>
<td>205498</td>
</tr>
<tr>
<td>2007</td>
<td>86818</td>
<td>116557</td>
<td>203375</td>
</tr>
<tr>
<td>2008</td>
<td>96648</td>
<td>78402</td>
<td>173050</td>
</tr>
<tr>
<td>2009</td>
<td>115342</td>
<td>149461</td>
<td>264803</td>
</tr>
<tr>
<td>2010</td>
<td>125792</td>
<td>140809</td>
<td>266601</td>
</tr>
<tr>
<td>2011</td>
<td>137405</td>
<td>182882</td>
<td>320287</td>
</tr>
<tr>
<td>2012</td>
<td>97219</td>
<td>154952</td>
<td>252171</td>
</tr>
<tr>
<td>2013</td>
<td>104792</td>
<td>136240</td>
<td>241032</td>
</tr>
<tr>
<td>2014</td>
<td>87060</td>
<td>120869</td>
<td>207929</td>
</tr>
<tr>
<td>2015</td>
<td>68077</td>
<td>93253</td>
<td>161330</td>
</tr>
<tr>
<td>2016</td>
<td>82321</td>
<td>86361</td>
<td>168682</td>
</tr>
<tr>
<td>2017</td>
<td>55789</td>
<td>84146</td>
<td>139935</td>
</tr>
</tbody>
</table>

Source: Myanmar Port Authority, MoT.

3) Modal split ratio (by transport mode)

Based on the 1993 Myanmar Comprehensive Transport Study (UNDP, 1993) about 50% of passenger travel was undertaken by road and 44% by rail. For freight, about 20% was carried by road, 30% by rail, and 40% by inland water transport. It is likely that these modal shares have changed somewhat since the study was completed and that the road sector is now more dominant. According to recent study Road transport now dominates long-distance travel, carrying 90% of freight transport and 86% of passenger transport.

Since Myanmar is bordered by countries such as India, Thailand, Bangladesh, Laos and China, it is possible to transport imports and exports using roads, but it is not showing its full potential

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40 Ibid.
due to lack of linked transportation networks, customs clearance and logistics facilities. The use of railways and inland waterways has fallen sharply due to the fact that investment in logistics facilities is not so much in the case of convenient roads for short distances, while inland waterways and railways are required to invest a lot in logistics facilities such as terminals and warehouses. 85% of the maritime import and export cargo is transported through the port of Yangon, and it is expected that maritime transport will increase further in the future due to port development.

4) Infrastructure

Even Myanmar's transport infrastructure is not enough to support their potential due to insufficient facilities, segmented logistics market, and complicated business process, but Myanmar has a great capacity with geographical advantage as well as natural resources like inland waterways. Especially, Myanmar has 2,800km coastal line and 6,650 km navigable waterways which are needed to develop and integrate with other transport modes, railway, and road.

Myanmar currently has nine ports that mostly facilitate sea trade. However, 95% of maritime exports and imports some through the Yangon Port, which consists of the Yangon inner harbour terminals and outer Thilawa Port. If the GDP will continue its growth at a pace of 8% annually, Yangon Port cannot handle the national requirements with its existing capacity.

The Myanmar Port Authority expressed that maritime transport was already responsible for more than 85% of the nation’s trade.

Currently, the largest existing port complex can be found in Yangon, which can serve vessels up to 15,000–20,000 dwt, with works underway to increase up to a 35,000 DWT vessel capacity.

Thilawa International Port, developed by a Japanese Joint Venture company and relevant for the Special Economic Zone, is located only 16 km from Yangon. Two deep sea port projects are currently being developed: Kyaukpyu Deep Sea Port and Dawei Deep Sea Port. The Dawei Special Economic Zone is being developed into a deep-sea port with involvement of Thailand and Japan. However, all deep-sea port projects are in planning and negotiating stages, thus waiting for implementation.

45 Embassy of the Kingdom of The Netherlands, 2016. Factsheet, Maritime in Myanmar.
46 Ibid.
Along the coastline, nine out ports are mainly serving for coastal and domestic maritime traffic.

### Figure 2.19 Ports in Myanmar

<table>
<thead>
<tr>
<th>Port</th>
<th>Division/State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yangon</td>
<td>Yangon</td>
</tr>
<tr>
<td>Sittwe</td>
<td>Rakhine</td>
</tr>
<tr>
<td>Kyaukphu</td>
<td></td>
</tr>
<tr>
<td>Thandwe</td>
<td></td>
</tr>
<tr>
<td>Pathein</td>
<td>Ayeyarwady</td>
</tr>
<tr>
<td>Mawlamyne</td>
<td>Mon</td>
</tr>
<tr>
<td>Dawei</td>
<td></td>
</tr>
<tr>
<td>Myeik</td>
<td>Tanintharyi</td>
</tr>
<tr>
<td>Kawthoung</td>
<td></td>
</tr>
</tbody>
</table>


### Figure 2.20 Ships registered in Myanmar

#### Ocean Going

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cargo</td>
<td>16</td>
<td>17</td>
<td>14</td>
<td>12</td>
<td>11</td>
<td>10</td>
</tr>
</tbody>
</table>

#### Inland Water Transport

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger</td>
<td>882</td>
<td>987</td>
<td>710</td>
<td>926</td>
<td>828</td>
<td>798</td>
</tr>
<tr>
<td>Cargo</td>
<td>2248</td>
<td>2651</td>
<td>1493</td>
<td>2090</td>
<td>1958</td>
<td>2186</td>
</tr>
<tr>
<td>Under 20 BHP Engine Power</td>
<td>30688</td>
<td>37812</td>
<td>35662</td>
<td>21091</td>
<td>26719</td>
<td>26887</td>
</tr>
</tbody>
</table>
Coastal Shipping

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger</td>
<td>18</td>
<td>23</td>
<td>22</td>
<td>20</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>Cargo</td>
<td>413</td>
<td>451</td>
<td>471</td>
<td>509</td>
<td>519</td>
<td>567</td>
</tr>
</tbody>
</table>

Source: Myanmar Port Authority, MoT.

5) Legal system: acts, regulations, rules and cabotage

Table 2.6 Myanmar Shipping policies

<table>
<thead>
<tr>
<th>Country</th>
<th>Myanmar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maritime administration</td>
<td>Ministry of Transport, Dpt. of Marine Administration (DMA)</td>
</tr>
<tr>
<td>Shipping Policy</td>
<td>N/A</td>
</tr>
<tr>
<td>National Flag administration</td>
<td>N/A</td>
</tr>
<tr>
<td>Competition policy with respect to Liner Shipping</td>
<td>N/A</td>
</tr>
<tr>
<td>Cabotage</td>
<td>Myanmar reserves coastal cargoes to ships registered domestically</td>
</tr>
<tr>
<td>Subsidies, Grants and Tax Incentives</td>
<td>Myanmar provides an accelerated depreciation allowance, using the straight-line method</td>
</tr>
<tr>
<td>Manning issues / Industry</td>
<td>No clear legislative framework for regulating the behavior of shipping conferences or dominant shipping lines</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Cargo reservation policies</strong></td>
<td>Myanmar does not adopt cargo reservation policies</td>
</tr>
</tbody>
</table>

Source: Dr Rosli Azad Khan, MDS Transportation Consultants. *Korea Int. Seminar ASEAN, 2012.*
Key sector in the Philippine’s economy, transport is the link between the population and economic centers across islands. Especially, seaborne transport plays a significant role because of the archipelagic nature of the country, however, road transport is by far the dominant subsector accounting for 98% of passenger traffic and 58% of cargo traffic.47

With about 215,000 kilometers of roads, 1,300 public and private ports, and 215 public and private airports, the level of service is yet not sufficient because of lack of sustainable financing and poor sector governance. Besides, a large part of the road network remains in poor condition and intermodal integration is still weak.

1) National Maritime Strategy

In 2003, the Philippines introduced a model of nautical highway resulting in seamless connectivity and the implementation of Ro-Ro policy. This implementation allowed to increase delivery time, 3 days down from an average of 9 days and reduced logistics costs.48 Thus, a rapid growth of cargo and passenger volumes was observed on the Ro-Ro network. For example, on the Western Nautical Highway, in 2008 rolling cargo traffic has experienced an increase from 254,029 rolling cargoes to 419,740 vehicles.49

The Philippines Nautical Highway (PNH) model is in fact seen as having great potential for other archipelagic Southeast Asian countries involving Brunei Darussalam, Indonesia, Malaysia, Singapore and Timor Leste as well as the other ASEAN countries.50 The idea for the implementation of an ASEAN Nautical Highway (ANH) came after ASEAN authorities were convinced following the result of initial assessment of PHN that demonstrated important benefits regarding reduction of transport costs, creation of transport links and expansion of regional markets.51

2) Traffic volume (cargo and passenger)

In recent years, international cargo and container traffic grew steadily, supported by significant investments in Batangas port and in the port of Subic. However, despite growth in the population and economy, passenger traffic on domestic inter-island shipping services fell about 13% between 2003-2008.52 As for freight traffic in inter-island shipping it stands at the same level that in the mid-1990s.

48 ADB, 2010.
49 Ibid.
50 Arof, 2013.
51 ASEAN, 2011.
### Figure 2.21 PPA Managed Ports: Cargo/Passenger Traffic

<table>
<thead>
<tr>
<th></th>
<th>Cargo throughput (MT)</th>
<th>Container Traffic (in TEU)</th>
<th>Passenger Traffic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic (Q2, 2017)</td>
<td>51,353,591</td>
<td>1,500,903</td>
<td>Total: 42,742,268</td>
</tr>
<tr>
<td>Foreign (Q2, 2017)</td>
<td>71,269,316</td>
<td>2,156,978</td>
<td>Disembarked: 21,855,270</td>
</tr>
<tr>
<td>Import</td>
<td>46,442,523</td>
<td>1,089,039</td>
<td>Embarked: 20,632,687</td>
</tr>
<tr>
<td>Export</td>
<td>24,826,793</td>
<td>1,067,939</td>
<td>Cruise ships: 254,311</td>
</tr>
</tbody>
</table>

Source: PPA, 2018.\(^{53}\)

### Figure 2.22 CPA Managed Ports: Cargo/Passenger Traffic

<table>
<thead>
<tr>
<th></th>
<th>Cargo throughput (MT)</th>
<th>Container Traffic (in TEU)</th>
<th>Passenger Traffic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic (2017)</td>
<td>31,438,008</td>
<td>548,910</td>
<td>Total: 29,945,736</td>
</tr>
<tr>
<td>Foreign (2017)</td>
<td>7,974,893</td>
<td>365,610</td>
<td>Disembarked: 19,737,455</td>
</tr>
<tr>
<td>Import</td>
<td>N/A</td>
<td>N/A</td>
<td>Embarked: 10,208,281</td>
</tr>
<tr>
<td>Export</td>
<td>N/A</td>
<td>N/A</td>
<td>Cruise ships: N/A</td>
</tr>
</tbody>
</table>

Source: CPA, 2017.\(^{54}\)

3) **Modal split ratio (by transport mode)**

As an archipelagic country, the Philippines heavily rely on waterborne transport to carry its freight and passenger. Like other archipelagic countries or coastal countries, maritime transport is an absolute dominant in transporting imports and exports cargos. As described above, the proportion of roads in domestic transport is very high, with 98% of passengers and 58% of freight.\(^{55}\) This is because the interisland shipping has an important role to transport between islands, but transport within an island shows that road took most of the traffic. However, the Philippine government is preparing various policies including the expansion of roll-on roll-off

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(ro-ro) ferry services and the construction of port facilities in order to facilitate maritime transport. Therefore, the role of shipping for inter and intra transport connectivity is expected to increase.

4) Infrastructures

Among the 1,300 ports, 1,000 are owned by the government while the rest is privately owned/managed. Of the public-owned ports, 140 ports are under the jurisdiction of the Philippine Ports Authority (PPA) and the Cebu Ports Authority, and the rest are the responsibility of local governments units.56

25 shipping operators run 42 Ro-Ro vessels that are able to operate because numerous port facilities have been accommodated which Ro-Ro facilities. However, significant capital is still needed for further development. It is the reason why PPA is seeking to facilitate the involvement of private sector.57

In 2010, due to positive investment climate, high level of skilled workforce and other elements, the Philippines became the 4th largest shipbuilding nation after China, the Republic of Korea and Japan. The shipbuilding industry representing $500 million USD of tax to the government and it employed around 46,000 workers in 2015.58

Figure 2.23 Ports/terminals (international, domestic) for cargoes and passengers

<table>
<thead>
<tr>
<th></th>
<th>No. of Ports</th>
<th>No. Ships Calls</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PPA</strong></td>
<td>282 (RoRo-66)</td>
<td>Domestic: 25,382 (Q2, 2018)</td>
</tr>
<tr>
<td><strong>SBMA</strong></td>
<td>1</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Private Ports</strong></td>
<td>269</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Note: PPA (Philippines Port Authority), CPA (Cebu Ports Authority), SBMA (Subic Bay Metropolitan Authority)
Source: PISA, 2018.

5) Legal system: acts, regulations, rules and cabotage

57 Ibid.
58 German Chamber 2016
<table>
<thead>
<tr>
<th>Country</th>
<th>Philippines</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maritime administration</strong></td>
<td>Department of Transportation and Communications, Maritime Industry Authority (MARINA)</td>
</tr>
<tr>
<td><strong>Shipping Policy</strong></td>
<td>Focus on the development of integrated multimodal systems</td>
</tr>
<tr>
<td><strong>National Flag administration</strong></td>
<td>To fly the Philippines ‘flag, the vessel’s owner must have substantial Philippines representation at management and board level</td>
</tr>
<tr>
<td><strong>Competition policy with respect to Liner Shipping</strong></td>
<td>The Philippines has no anti-trust law applying specifically to the marine sector, and has not sought to control the activities of shipping conferences</td>
</tr>
<tr>
<td><strong>Cabotage</strong></td>
<td>In the Philippines, cabotage continues, with only Philippines’s vessels allowed to lift domestic cargo</td>
</tr>
<tr>
<td><strong>Subsidies, Grants and Tax Incentives</strong></td>
<td>In the Philippines, there are various measures that have been in place to assist ship owners</td>
</tr>
<tr>
<td><strong>Manning issues / Industry</strong></td>
<td>This industry supplies Filipino crews for the world’s fleet, with over 200,000 seafarers contributing 25% to 28% of the global manning, and US$2.5B to the Philippines economy. The initiative, administered by the Philippines Seafarers ‘Promotion Council, is developing quality amongst the seafarers, protecting this major industry from competition from low cost providers.</td>
</tr>
<tr>
<td><strong>Cargo reservation policies</strong></td>
<td>In the Philippines, cargo owned by Government or purchased with public funds or under Government guarantee requires a waiver to move on non-Philippine vessels</td>
</tr>
</tbody>
</table>

Table 2.7 Philippines Shipping policies
Thailand has a coastline of 3,129km and over 4,000km of inland waterways, comprising 250 islands as well. But even though Thailand benefits from maritime assets, the maritime sector is still relatively small compared to other regional countries. With numerous ports, located at strategic points, the largest port is ranked 22nd globally. Overall infrastructure is relatively good, and the sector is forecasted to grow in the near future through the development of trade.  

Figure 2.24 Main Shipping Routes


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1) National Maritime Strategy

Figure 2.25 National Transport Development Strategy

**National Transport Development Strategy**

Transport Infrastructure Development Strategy 2015-2022

Plan 1: Intercity Rail Networks Development
- 1.1 Tracking & Facilities Improvement
- 1.2 Dual Track Development

Plan 2: Improving Public Transport Networks & Services
- 2.1 Implementation of 10 Metro Lines
- 2.2 Construction of Roads & Bridges
- 2.3 Procurement of Buses & Depots

Plan 3: Enhancing Connectivity between Key Bases & Neighboring Domestic Production Countries
- 3.1 Accessibility to Agricultural & Tourist Areas
- 3.2 Connectivity between Hub & Key Production Bases
- 3.3 Connectivity between Gateways
- 3.4 Promoting Seamless Multi-Modal Transport

Plan 4: Increasing Water Transport Network
- 4.1 Inland Port Development
- 4.2 Coastal Port Development

Plan 5: Enhancing Air Transport Capability
- 5.1 Airport Capacity Expansion
- 5.2 Enhancement in Air Traffic Management Capability
- 5.3 Increased Flight Utilization
- 5.4 Air Transport Industrial Park
- 5.5 Human Resource Development

*Source: MoT, 2017.*

Figure 2.26 National Water Transport Network

**Water Transport Network**

- MOT approved to terminate the feasibility study of the project as a result of low financial returns.

*Source: MoT, 2017.*
2) Traffic volume (cargo and passenger)

Thailand, which faces the Indian Ocean and the Pacific Ocean and has inland waterways including the Chao Phraya River, has a higher proportion of waterborne traffic than other Southeast Asian countries. During the period from 2011 to 2015, domestic total freight volume showed at a CAGR of 2.4%, while coastal freight volume grew at a relatively high rate of 5.8%.

Table 2.8 Domestic Freight Volume classified by modes of transport in 2011-2015

<table>
<thead>
<tr>
<th>Mode of Transport</th>
<th>Year (million tons)</th>
<th>Rate of increase (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2011</td>
<td>2012</td>
</tr>
<tr>
<td>Road</td>
<td>442.667</td>
<td>458.781</td>
</tr>
<tr>
<td>Railroad</td>
<td>10.864</td>
<td>10.758</td>
</tr>
<tr>
<td>Domestic water</td>
<td>46.932</td>
<td>47.422</td>
</tr>
<tr>
<td>Coast</td>
<td>41.273</td>
<td>44.261</td>
</tr>
<tr>
<td>Aerial</td>
<td>0.063</td>
<td>0.068</td>
</tr>
<tr>
<td>Total</td>
<td>541.868</td>
<td>561.352</td>
</tr>
</tbody>
</table>

Source: ICT Center Office of the Permanent Secretary of the MoT.

3) Modal split ratio (by transport mode)

In the early years of 2010, more than 80% of domestic cargoes rely on roads, while inland waterway and coastal shipping account for 17%. The data for 2015 showed that road dependence is almost same, such as 81% of roads, 17% of water transport (inland waterways 8%, Coastal 9% respectively), and 2% of rail roads. Due to its advantages in short-haul, small cargo transport, and transport completeness, it has still relied on road transport. However, the necessity of conversion to eco-friendly transport is increasing day by day due to higher transport costs per cargo unit and side effects such as traffic congestion and environmental pollution.

Figure 2.27 Current modal share of each mode of transport

Regarding inland waterways; the Chao Phraya, Tha Chin, Pa Sak, and the Mae Khlong rivers are used for domestic transportation while the Mekong River is used for international transport with the Greater Mekong Subregion. Inland shipping is the second most important type of freight transport in Thailand, with around 9% of total freight transported. It is expected that the Thai government will develop river transport through focusing on “dredging, building and maintenance of vessels, and port-related work.”

In the case of domestic cargo transport, road accounts for 80% of the total, while in the case of foreign trade, maritime transport accounts for 86% and road account for 13%. This ratio is similar for both exports and imports.

4) Infrastructures

**Table 2.9 Existing Transport Network**

<table>
<thead>
<tr>
<th>Primary roads</th>
<th>Highways</th>
<th>Highways (ETA and Motorway)</th>
<th>66,794 km</th>
<th>(146+207.9) 353.9 km</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary roads</td>
<td>Rural roads</td>
<td>Local roads</td>
<td>47,916 km</td>
<td>352,157 km</td>
</tr>
<tr>
<td>Water</td>
<td>Coast</td>
<td>2,614 km</td>
<td>1,750 km</td>
<td>883 km</td>
</tr>
<tr>
<td>Rail</td>
<td>Single track</td>
<td>3,763 km</td>
<td>280 km</td>
<td></td>
</tr>
<tr>
<td>Airport</td>
<td>Airport operated by DCA and AOT</td>
<td>34 airports</td>
<td>280 km</td>
<td>1 airports</td>
</tr>
<tr>
<td>Bangkok Airways</td>
<td>3 airports</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Royal Thai Navy</td>
<td>1 airports</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


---

60 Netherlands Embassy in Bangkok, 2017. The maritime sector in Thailand.
Source: MoT Thailand, Maritime promotion division

It is the Port Authority of Thailand (PAT) who is responsible for the management/development of Thailand’s major deep-sea port, with this state unit controlling/owning many of Thai maritime assets. Recently, the PAT undertook the transformation of its ports into more sustainable green ports in accordance with IMO standards.61

The port of Laem Chabang is the largest in Thailand, ranking 4th largest in the ASEAN and 22nd globally (2015). Handling 54% of the country’s total import/export, construction is being done to enlarge its capacity.

The second largest port is the Bangkok port, in which PAT has been investing in order to modernize ICT and increase its capacity.

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Other ports are: the port of Chiang Saen, located close to the border with Myanmar and Laos and being used as a mid-point depot for shipments from south China to Laem Chabang; the port of Chiang Khong, serving small ships from Laos; the port of Ranong, main port at the Adaman Sea.

5) **Legal system: acts, regulations, rules and cabotage**

**Table 2.10 Thailand Shipping policies**

<table>
<thead>
<tr>
<th>Country</th>
<th>Thailand</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maritime administration</strong></td>
<td>Ministry of Transport (MoT) / Office of Transport and Traffic Policy and Planning (OTP) / Marine Department (MD)</td>
</tr>
<tr>
<td><strong>Shipping Policy</strong></td>
<td>Focus on the development of integrated multimodal systems.</td>
</tr>
<tr>
<td><strong>National Flag administration</strong></td>
<td>To be eligible for registration as a Thai vessel trading with foreign countries, a ship must be either owned by natural persons or owned by a Thai company with a majority of Thai directors and at least 51% of shares held by Thai nationals</td>
</tr>
<tr>
<td><strong>Competition policy with respect to Liner Shipping</strong></td>
<td>The Thai Government has not pursued an active anti-trust policy in the maritime sector</td>
</tr>
<tr>
<td><strong>Cabotage</strong></td>
<td>In Thailand, the Vessels Act 1938 reserves coastal trade for Thai-flagged vessels</td>
</tr>
<tr>
<td><strong>Subsidies, Grants and Tax Incentives</strong></td>
<td>The Maritime Law 1992 gave Thai nationals a tax exemption on the purchase of vessels and reduced import taxes on the purchase of vessels</td>
</tr>
<tr>
<td><strong>Manning issues / Industry</strong></td>
<td>The minimum proportion of Thai Nationals crews on Thai registered vessels engaged in International Shipping was reduced in 1997 from 70% to 50% of total.</td>
</tr>
<tr>
<td>Cargo reservation policies</td>
<td>Residual restrictions are limited to Government-controlled cargoes but there is provision for a waiver where no Thai vessel is available</td>
</tr>
</tbody>
</table>

Source: Dr Rosli Azad Khan, MDS Transportation Consultants. *Korea Int. Seminar ASEAN, 2012.*
Situated in the heart of Southeast Asia, with 3,260 km of coastline, Viet Nam offers ideal advantages for economic development, trade and tourism. Vietnam has achieved remarkable economic growth among Southeast Asian countries based on its rich natural resources such as oil, gas and coal, with a population close to 100 million.

In particular, “Doi Moi”, an economic reform and opening policy, is leading the opening of the market and economic reform, contributing greatly to the economic and social development of Viet Nam. Vietnam, which has been strengthening its foreign cooperation so that 72.5% of Vietnam's exports accounted for by foreign direct investment (FDI), achieved GDP of US $ 220 billion in 2017 and showed a high economic growth rate of 6.8%.

Vietnamese economy is dominated by southern regions, including Ho Chi Minh and Southern Focal Economic Area (SFEA), and economic growth continues to expand into the Central region and Northern area centered in Hanoi.

The Vietnamese economy has experienced significant growth, accompany with the demand of shipping for imports as well as exports. It is very important for Viet Nam to develop its infrastructures, particularly deep-water ports, in the time ahead.\(^{62}\)

1) **National Maritime Strategy**

Master Plan for Viet Nam seaport system development till 2020 was approved by the Prime Minister. In recent time, the seaport system development is following the approved plan: “Master Plan for Viet Nam seaport system development till 2020, orientation to 2030” directed by MOT, owned by Vinamarine. Prime minister’s decision of 26, April 2014, approved the Master Plan to “develop sea transport toward modernity, higher quality, reasonable expenses, safety environmental pollution reduction, energy conservation and higher competitiveness to proactively integrate into and expand to the regional and international sea transport markets”\(^{63}\)

In Viet Nam the seaport system associated with coastal shipping network plays a decisive role in connecting and improving the economic and social development, establishing at the same time economic areas, industrial zones and coastal urban areas. Coastal shipping is therefore critical to support growing trade and to allow global economic trade in the region.

Viet Nam already drew a master plan regarding their maritime strategy around a decade ago. Objectives and guidelines have since been updated. Below is a brief summary of 2020 objectives:

**Figure 2.29 Master Plan of Viet Nam Seaport System to 2020**

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\(^{62}\) HCMC University of Technology. *Seaport System in the Southern key area of Viet Nam: present status and development strategies*.

\(^{63}\) VINAMARINE, 2018.
Vietnamese port development plan (2020-2030) will be updated with the support of the Ministry of Maritime Affairs and Fisheries of Republic of Korea by February 2020, including the basic plan for 34 ports in Vietnam and the feasibility study of major 4 ports development.

Vietnamese foreign trade is heavily dependent on maritime transport, just like any other countries in Southeast Asia. However, most of the ports have difficulties with lower water draft which can't receive bigger ships and traffic congestion. Therefore, in order to solve the lack of facility capacity, Viet Nam is concentrating on the development of deep-sea ports centered on Ho Chi Minh, Kai Mep and Hai Phong area.64

Inland waterways based on the Mekong Delta River Ports also play an important role in cargo transportation between Cambodia. If coastal shipping agreement currently consulting between Cambodia, Thailand and Viet Nam is concluded, logistics services through maritime transport will become more active.

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2) Traffic volume (cargo and passenger)

Figure 2.30 Major shipping routes

As shown in the figure, major Vietnamese ports are linked to international routes including ASEAN countries, and some cargoes are transported to ports in Europe, North America, and other trading countries through transshipment ports such as Singapore, Busan, and Hong Kong.

Especially, the opening of new routes is increasing on the basis of the rapidly increasing trade volume, and also there is increasing direct calling to connect major trading markets through the deployment of larger vessels.

Figure 2.31 Cargo Volume via Sea Port System

As shown in the figure, traffic volume of Vietnamese ports has achieved a growth rate of more than 10% per annum on the basis of Vietnam's strong economic growth. In particular, container traffic has grown more than 16%. These cargoes were handled in ports scattered all over Viet Nam. Especially, they were concentrated in the regional hub ports, such as Hon Gai, Hai Phong, Nghi Son, Da Nang, Quy Nhon, Sai Gon-Vung Tau, Cai Mep-Thi Vai and Hau river.

Table 2.11 Passenger through port 2017

<table>
<thead>
<tr>
<th></th>
<th>Viet Nam</th>
<th>Foreigner</th>
<th>Shore to island</th>
<th>Inland waterway</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>680,153</td>
<td>877,033</td>
<td>2,629,819</td>
<td>201,777</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>4,388,782</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: VINAMARINE, 2018

Passenger traffic by ship has reached 4.4 million, including foreign passengers using cruise ships and passenger boats, and over 2.6 million passengers are visiting the island. Increasing income levels and interest in marine tourism are expected to promote tourism and leisure activities using by ships in the future.

Table 2.12 Cargo throughput (Mil.ton)

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
<th>Compare to the same period of 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>536,432</td>
<td>459,833</td>
<td>117%</td>
</tr>
<tr>
<td>Export</td>
<td>127,523</td>
<td>111,535</td>
<td></td>
</tr>
<tr>
<td>Import</td>
<td>153,963</td>
<td>143,937</td>
<td></td>
</tr>
<tr>
<td>Domestics</td>
<td>175,133</td>
<td>160,902</td>
<td></td>
</tr>
<tr>
<td>Transit</td>
<td>79,813</td>
<td>43,459</td>
<td></td>
</tr>
</tbody>
</table>


Table 2.13 Container throughput (Mil.TEU)

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
<th>Growth rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>14,733</td>
<td>12,988</td>
<td>13.4</td>
</tr>
<tr>
<td>Export</td>
<td>5,727</td>
<td>5,158</td>
<td>11.0</td>
</tr>
<tr>
<td>Import</td>
<td>5,771</td>
<td>5,162</td>
<td>11.7</td>
</tr>
<tr>
<td>Domestics</td>
<td>3,235</td>
<td>2,668</td>
<td>21.2</td>
</tr>
</tbody>
</table>


Vietnamese container traffic volume has grown at a CAGR of 15% over the period from 2013 to 2017, and the ratio of exports and imports is very balanced at 50:50.
In Vietnam, maritime transport plays an important role in interregional cargo transportation because of the geographical conditions leading to the north and south, and domestic container cargo exceeds 3.2 million TEU. Some of the domestic container cargoes are consumed domestically, but many of them are estimated to be converted into import and export cargo.

3) Modal split ratio (by transport mode)

As in many other ASEAN countries, in the case of Viet Nam, passenger traffic carried by roads is very high. In particular, the expansion and upgrading of land transportation networks, including highways as well as increasing cars, is an important factor in increasing dependence on roads.

**Figure 2.32 Modal Split ratio**

**Passenger transport** (Growth: 7.7% per year, up to 3 billion people in 2015)

<table>
<thead>
<tr>
<th>Market share 2015:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Transport 93.80%,</td>
</tr>
<tr>
<td>River: 4.92%,</td>
</tr>
<tr>
<td>Air: 0.94%</td>
</tr>
<tr>
<td>Rail: 0.34%</td>
</tr>
</tbody>
</table>

**Cargo transport** (Growth: 8.29% per year, up to 874 billion Tons in 2015)

<table>
<thead>
<tr>
<th>Market share 2016:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Transport 75.69%,</td>
</tr>
<tr>
<td>River: 17.78%,</td>
</tr>
<tr>
<td>Sea 5.03%,</td>
</tr>
<tr>
<td>Air: 0.02%</td>
</tr>
<tr>
<td>Rail: 0.58%</td>
</tr>
</tbody>
</table>

*Source: MoT, 2017.*
4) **Infrastructures**

**Seaports:**

- Includes 32 seaports (14 class I and IA, 18 ports class II and 13 ports class III).
- Divided in 6 port groups.
- 256 terminals with 402 berths with total length of 59,405m
- Total capacity of 550 million tons/year.
- Total throughput in 2016 about 460 million tons/year, 13 million TEUs
- Major ports: Cai Mep (Vung Tau), Lach Huyen (Hai Phong)

**Figure 2.33 Viet Nam Seaports System**

![Seaports System Diagram](image)

*Source: VINAMARINE, 2018.*

**Figure 2.34 Viet Nam Inland Waterways and Fleet**

**Inland waterways:**

- Total length 17,200 km in operation
- Central government in charge of 7,100 km (Northern: 2,900 km, Southern: 2,900 km, Central: 1,200 km)
- Number of riverports: 306 ports

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National Fleet:

![National Fleet Chart](chart.png)

**Source**: VINAMARINE, 2018.

5) Legal system: acts, regulations, rules and cabotage

Table 2.14 Viet Nam Shipping policies

<table>
<thead>
<tr>
<th>Country</th>
<th>Viet Nam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maritime administration</td>
<td>Ministry of Transport, VINAMARINE</td>
</tr>
<tr>
<td>Shipping Policy</td>
<td>Policy responsibility for the maritime sector is shared principally by Vinamarine and Vinales under the umbrella of the Ministry of Transport (MoT)</td>
</tr>
<tr>
<td>National Flag administration</td>
<td>Viet Nam operated open registries</td>
</tr>
<tr>
<td>Competition policy with respect to Liner Shipping</td>
<td>Viet Nam has not adopted an active stance towards shipping conferences</td>
</tr>
<tr>
<td>Cabotage</td>
<td>Transportation of cargoes between Vietnamese ports and harbors is wholly reserved for vessels which are Viet Nam-</td>
</tr>
</tbody>
</table>
owned, fly the flag of Viet Nam and have a Vietnamese crew (except for some specialized officer positions)

<table>
<thead>
<tr>
<th>Subsidies, Grants and Tax Incentives</th>
<th>Viet Nam national carrier Vinales’ fleet development is supported by low interest loans from Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manning issues / Industry</td>
<td>N/A</td>
</tr>
<tr>
<td>Cargo reservation policies</td>
<td>Implements cargo sharing formula</td>
</tr>
</tbody>
</table>


### 2.2 Structural issues and challenges of coastal shipping / inland waterways development

Coastal shipping is recognized to be a very effective transport mode to reduce road traffic congestion and decrease greenhouse gas emissions. Transporting a metric ton of cargo for 1 km by coastal shipping costs about 5 per cent of the cost incurred by road, and carbon dioxide emissions are about 17 per cent. Coastal shipping has great advantages for long-haul, bulk cargo transportation, and as an environmentally-friendly means of transport, it can contribute to achieving the Sustainable Development Goals. Although coastal shipping has been emphasized in its usefulness as an environmentally-friendly means of transport, many countries still have a transport system that heavily relies on land transport, especially road transport.

Coastal countries, meanwhile, face common challenges in their pursuit of economic development and their efforts to improve transport efficiency. Most of developing coastal countries have many challenges, such as inadequate infrastructure, unstable services, inadequate development of integrated intermodal transport, the risk of accidents associated with aging vessel operations, lack of investment resources, and inconsistent policies. In addition, islands far from the mainland often fail to provide reliable service due to a lack of commercial viability and many routes rely on subsidies. The coastal shipping has the potential to greatly contribute to the nation’s and local economic development and sustainable transport, but they have been pushed back from their policy priorities.

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Research showed that each selected country faced specific challenges. But even though each national situation might be different from one another, there are shared challenges that can also be identified.

A. SPECIFIC NATIONAL OBSTACLES TO THE COASTAL AND INLAND SHIPPING

Specific challenges faced by selected countries depend on various factors such as the economic development, industrial structure, geographic and natural environment and development of transport. These countries are exposed to the common problems faced by the coastal shipping industry in the region, namely, the aging of vessels, the lack of skilled crew, lack of safety awareness, and road-oriented transport systems. In addition to these common problems, they also have inherent problems depending on their circumstances.

Specific challenges for each country are as follows.

❖ CAMBODIA

- The issues of the logistics sector, as a whole, have been identified as follows:
  - Infrastructure: Infrastructure (road, railway, port and inland waterways) has been gradually developed with lengthy efforts. Capacity Enhancement will be necessary to continue to meet future demand increase.
  - Transport: Transport hubs are not effectively organized.
  - Border Control: Limited capacity of border facility causes congestion. Border operating hours are not fit to business needs.
  - Logistics Costs: Logistics costs are expensive compared with Thailand and Viet Nam. In particular, forwarding charge and port charge are high in Cambodia.
  - Logistics Services: Logistics services are not sufficiently qualified as professional service. For example, truck drivers with appropriate skills is scarce. Modern logistics services like LCL services and Cold chain service are still in beginning stage.
  - Regulatory and Institutional Framework: Many logistics-related regulations are missing. Even if they are prepared, some are not well functionalized. Inter-governmental coordination is just starting.

In addition to these general problems of logistics, Cambodia faces several specific problems in terms of shipping and maritime safety.\(^68\)

- Limited human capital in shipping industry and in government
- Lack of laws and regulations to govern the maritime activities
- Public involvement in implementing existing regulations very poor
- Law enforcement still far behind acceptable level

\(^67\) Workshop on Strengthening Transport Operational Connectivity among Cambodia, Lao People’s Democratic Republic, Myanmar, Viet Nam and Thailand (CLMV-T) Hanoi, 30 November – 01 December 2017

- Technical challenges for training of individuals specialized in ship building and safety in maritime affairs (Not enough experts to train)
- Lack of budget in capacity building and technology development R&D
- Newly established General Department, with the need for staffs and regulations
- Passing the laws and regulations consuming a lot of time.

On more specific aspects regarding domestic (inland?) shipping: 69
- Lack of specific standards/rules for safe construction, inspection and operation of ship
- Lack of qualified ship surveyors and inspectors
- Lack of skilled/trained ship operators

❖ INDONESIA

Indonesia, being a large archipelagic country, suffers from an uneven distribution of population and economic activities inducing long distance shipping routes.

In order to fulfill its national infrastructure plan, one critical aspect for Indonesia is to mobilize significant amount of resources. “Government of Indonesia, in order to manage the infrastructure deficit, has pushed the infrastructure budget to IDR313 trillion in 2016. This is 15 per cent of total state expenditure, a significant jump compared to an average of 8 per cent during 2005-2014” 70; however, this is not sufficient as the government cannot only rely on state funding as it also has to hold Indonesia’s fiscal deficit under 3 per cent of GDP. For this reason, private sector participation is encouraged to engage in infrastructure projects. But for the latter, a conducive investment climate needs to be implemented and Indonesia needs to tackle three challenges identified that are presently inhibiting the country’s attractiveness as an infrastructure destination. Addressing these following issues would also unlock Indonesia’s ability to leverage on regional connectivity plans: 71

1. Land acquisition: land acquisition being a critical obstacle for numerous infrastructure projects with private sector required to cover up to 30 or 40 per cent of the total investment costs. Also, the lack of coherent and clear national land tenure data remains an ongoing challenge that should be addressed as a first step.
2. Coordination problem: lack of coordination between central, provincial and regional authorities remains a critical issue for many projects. PPP permit process for example was a fastidious task requiring too many approvals from many different agencies. To tackle this, a new Committee has been implemented to speed up the process, with results yet to be seen.

Other more practical problems include:

71 As identified in ISEAS, 2017. Challenges for Indonesia to achieve its Maritime Connectivity Plan and Leverage on Regional Initiatives. Singapore, ISSUE 2017.
- Backhaul issues (mainly freight imbalance) especially in eastern route of Indonesia
- Poor congestion management (stevedoring rate is generally high)\textsuperscript{72}
- Inefficient handling equipment
- Regulatory burden, red tapes
- Fragmented port operations: different operation hours and disconnected inside ports’ services causing less competing service
- Non-sterile ports (issues of security and safety resulting in process delays)
- Maritime transport cost still too high
- Lack of hinterland transport connectivity from port to final destination

To conclude, despite all the opportunities mentioned in a previous chapter, several challenges remain for Indonesia to overcome. The country needs to get its domestic act together before being an attractive destination for infrastructure investments and benefit from leverage on regional initiatives.\textsuperscript{73} It is time for Indonesia to give priority to maritime and coastal shipping development projects and increasing its full potential of activity. The Sea Toll Road project should be the first stone of a wider infrastructure strategic development using a holistic approach and not on a stand-alone basis to avoid overlapping activities and wasting scarce resources. It should be wise for Indonesia policy makers to seek for “regional or international mechanisms in order to leverage more resources, thereby benefiting from the shared interest of infrastructure building”\textsuperscript{74}.

**Figure 2.35 Indonesia’s maritime logistics: West-East corridor challenges**


\textsuperscript{72} ERIA, 2016. ASEAN Maritime Connectivity: Overview and Insights. Conference in Hong Kong.

\textsuperscript{73} ISEAS, 2017. Challenges for Indonesia to achieve its Maritime Connectivity Plan and Leverage on Regional Initiatives. Singapore, ISSUE 2017.

\textsuperscript{74} ISEAS, 2017. Challenges for Indonesia to achieve its Maritime Connectivity Plan and Leverage on Regional Initiatives. Singapore, ISSUE 2017.
MALAYSIA

Research pointed out a lack of support from the Malaysian government for the International Federation of Freight Forwarders Associations (FIATA). It has been noted that most training related to logistics education for logistics workers has mostly been provided so far by the private sector when Malaysian authorities could have shown more leadership in this key sector. In addition to this, it doesn’t seem that there is a clear and integrated national shipping policy (with so far, no precise document spelling out defining policies)\(^75\), even though Malaysian shipping may not seem inhibited by it.

As mentioned in Tongzon & Lee (2015), “There is lack of consolidation of cargoes due to the dual port system adopted in Malaysia where the ports of Klang and Tanjung Pelepas are both promoted as hub ports for Malaysia and the region; this lack of consolidation has led to the absence of economies of scale for shipping lines that call at these ports. A number of agencies are involved in the administration of shipping services instead of having a one-stop agency to optimize the allocation of resources which may result in unnecessary long bureaucratic delays\(^76\). It must be noted also that there is no real single platform or mechanism allowing to share port data or shipping info (e.g.: origin and destination data). This absence of data base and the weak usage of these useful information is an issue that could be overcome for better efficiency of (coastal) shipping. For the latter, the absence of a sharing platform between private and public stakeholders is not helping build shipping cooperation on policy and other shipping-related matters.

Other practical challenges and issues, as identified by the Maritime Institute of Malaysia: \(^77\)

- Adapting to bigger cargo volumes
- Overcapacity in tonnage
-aster turnaround time
- Shortage of qualified seafarers
- Rising vessel and operation costs
- Reliance on foreign ships
- Complying with IMO regulations
- Integrating with other transport modes
- Adopting to ports’ “hub and spokes” system
- Attracting more main line operators to call at Malaysian ports
- Providing adequate logistics and support services.
- Providing competitive financing


\(^77\) Maritime Institute of Malaysia, 2008. *The thing about shipping: overview of Malaysia’s shipping industry.*
Main obstacles for better coastal shipping development in Myanmar are related to serious challenges in terms of infrastructure (ports and shipping-related) and customs/inspections procedures where Myanmar is lagging compared to neighboring countries. Furthermore, improvement are to be done regarding licensing requirements, labor limitations and specific regulations and policies.

Among the key challenges Myanmar is facing:

- **Infrastructure related barriers**: The infrastructure gap between neighboring countries of the same region is quite significant and these differences in shipping development is causing a threat to the implementation of a single shipping market. These gaps may generate different levels of capacity to benefit from a freer and more competitive shipping market. In addition to this, disparities cause port inefficiency regarding

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loading/unloading operations, under-equipped handling services, reliance on transshippments and contribute to inadequate and low-quality ports.

As underlined by the MoT of Myanmar: 
- Lack of infrastructure such as shipyard, dock yard and passenger terminals
- Capacity of wharves/jetties for coastal shipping needs to be improved
- Aids to navigation along the coastline need to be upgraded
- To introduce the feeder service with container vessels/barges
- Old existing tankers barges have to be replaced with new modernized ones

- Customs procedures / inspections: Different customs clearance process at borders are creating delays and barriers to logistics flows. “Although overall there has been an improvement in customs clearance and processing in terms of speed and efficiency under the ASEAN Single Window initiative, successful implementation of this initiative has varied, with customs authorities in some countries insisting on the use of offline documents”81. Other practices having a negative impact on procedures efficiency include security-related delays, different classification of goods among ASEAN countries and burdensome inspection requirements.

- Licensing requirements and insufficient transparency: The lack of coherent and consistency in regulations are contributing to disparate logistics performance among countries, affecting Myanmar. There is as well lack of law enforcement and outdated Myanmar Merchant Shipping Act.82 Also, there is still very few reporting procedures for data collection.

- Labor limitations: Shortfall of skilled workers is a major impediment in Myanmar, affecting overall trade and logistics performance. Lack of human resources such as Naval architect, ship designer etc.

- Other obstacles: Other socio-political reasons can be cited as barriers to Myanmar effective coastal shipping. For instance, crimes, corrupt practices and lack of finance are obstacles that have been mentioned to affect shipping transport in Myanmar. Other challenges include the lack of reporting procedure for data collection, a weak insurance system for coastal shipping, and the need for implementing coastal vessel traffic management and monitoring system.

In conclusion, coastal shipping infrastructures will have to be enhanced and developed quickly to meet increasing number of passenger and cargo. But this development needs to be done in accordance with the National Transport Master Plan for coherent and comprehensive expansion of transport networks. Currently, Myanmar has underlined the importance of transport sectors development including coastal shipping and recognizes the need to meet international standards

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82 Myanmar Port Authority, MoT. Presentation delivered during the Workshop in Yangon, 10 oct. 2018.
in order to support economic and social development of the country. For the latter, regional cooperation and improving sea and land connectivity is a first step toward development of transport and its related industries.

❖ THE PHILIPPINES

The Philippines is facing particular challenges inherent to being an archipelagic country. This include a long-distance shipping routes, and an uneven distribution of population and economic activities.

Besides, a number of studies in the Philippines have identified both the costs and inefficiency of cargo handling charges as a major reason in the high cost of inter-islands transportation. This also explains why it has been recommended a decade ago to use Ro-Ro shipping model to replace the earlier Lo-Lo shipping one.

Studies also pointed out that Philippines faced major barriers to integrating its shipping services with those of ASEAN. In addition to this, there is a lack of direct shipping services to the US or Europe, shipping lines instead use Singapore, Malaysia, Hong Kong and Taiwan are transshipment hubs. In the end this reliance on transshipments is leading to unnecessary long shipping time and entails higher costs than direct shipment.

Furthermore, insufficient investments in ports and shipping infrastructures constrains the promotion of intermodal transport. Some studies also supported that the lack of port access was responsible for traffic congestion when others pointed out the poor port location.

To summarize challenges and difficulties on coastal/domestic shipping in the Philippines:

- High cost of doing business
  - High cost of vessel acquisition
  - High fuel cost
  - High cost of drydocking
- Lack of economies of scale
- Lack of connectivity, network planning, and consolidation
- Poor port infrastructures
- Conflict of interest of port regulator
  - “The PPA is both a regulator and an operator of ports. It sets cargo handling rates for all its ports but also receives at least 10 percent of all cargo handling fees. This not only raises the cost of shipping, but also gives rise to real or perceived conflict of interest. This conflict of interest could be removed by

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83 Myanmar Railways, 2018. Workshop on Strengthening Integrated Intermodal Transport Connectivity for Southeast and South-Southwest Asia, Bangkok.
shifting away from its port operations mandate so that it can focus exclusively on its regulatory mandate.”

❖ THAILAND

The Office of Transport and Traffic Policy and Planning (OTP) recently conducted a study in 2016 on Upgrading Thailand’s Coastal Transport Service and Infrastructure System Efficiency. Among the challenges found in this study are:

- Insufficient depth of water channels
- Limited areas for coastal port construction
- Protest by local communities due to environmental concern
- Lack of sophisticated port facilities and equipment due to short period of concession
- Lack of hinterland and supported industries
- Lack of efficient inland transport linkages

Other issues of domestic coastal shipping in Thailand also include:

- Cargo owners / consignees / logistics operators prefer road transport to coastal shipping due to the advantage of door-to-door services and to avoid double handling and incentives/subsidy for cargo owners to divert from road transport to coastal shipping.
- Marine Department vs Department of Treasury on different port management approach.
- Ranong Port has been underutilized due to unfavorable geographical conditions.
- Customs Department plans to introduce E-Coasting Trading System to facilitate Thai vessels engaged in domestic coastal shipping to report cargo declaration to the Department by electronic system using NSW gateway.

❖ VIET NAM

Viet Nam is facing serious problems in terms of port and shipping infrastructure which hampers a rapid development of coastal shipping, even though the geography of Viet Nam encourages such mode of transport. In reality, customs procedures and inspections along with licensing requirements, labor limitations and specific regulations are not yet developed and implemented efficiently for better logistics performance.

Among the main shortcomings that need to be resolved:

- Lack of skilled workers.
- Lack of comprehensiveness both in scale and implementation process.
- Low quality and backward technology.

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B. REGIONAL STATUS & CHALLENGES

The level of sophistication in coastal shipping transport and logistics transportation varies greatly across the ESCAP region. In Singapore, and Hong Kong, China, ports have access to intermodal services that rival those in the United States and Europe. As previously noted, India has quite an extensive coastal shipping network of intermodal services that is being continuously upgraded and extended. Ports on the west coast compete with Chennai Port and others located in the Bay of Bengal area for cargo moving to and from the Far East, Delhi and the provinces of northern India. Malaysian container ports compete for cargo moving in and out of the ports located in southern Thailand. However, these examples are the exception for Asia.91

Although most Asian countries have relied on maritime transport because industrial development has tended to occur along the coastal regions, there is little physical or organizational infrastructure for moving goods from the ports into the hinterland. Several factors combine to make it very difficult for Asia to achieve integrated intermodal operations on the continent-wide scale that is happening in Europe and the United States, at least in the short term. For example, although there have been a number of intergovernmental initiatives to facilitate the smooth flow of goods within one country and across borders into other, landlocked countries, political fragmentation and difficult to reconcile regulatory and transport system differences still remain significant barriers. Geographical barriers, such as inland waterways that are too shallow or narrow, or landmasses that impede efficient transport connections are expensive for governments with scarce capital resources available.

Figure 2.37 Shipping Routes in ASEAN

![Shipping Routes in ASEAN](image)

Source: Dr Rosli Azad Khan, MDS Transportation Consultants.

These inherent difficulties are compounded by the fact that many Asian countries are also challenged by skill shortages and retain institutional arrangements (particularly in the port

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91 UNESCAP, 2006. Improvement of transport and logistics facilities to expand port hinterlands: policy guidelines.
sector) that tend to be centralized and bureaucratic. As a result, most Asian ports (with the major exceptions, the transshipment hubs) remain bound to a relatively small and well-defined hinterland.92

Figure 2.38 Shipping Routes – ASEAN Port Network System

Source: Dr Rosli Azad Khan, MDS Transportation Consultants.

Among the regional shared issues representing a key obstacle to a continuous development of coastal shipping we can cite:93

- **A lack of awareness.** In order to tackle this issue, critical activities such as increasing coordination and prioritization are needed among local, state and provincial authorities of the region. A greater understanding of the complementary interests and relationships among the various transportation nodes is needed. Further, increased knowledge about the costs of short sea shipping is needed. Increasing education and outreach to governmental leaders, organized labor, and the general public is crucial as well as increasing participation in shipper organizations to make short sea shipping’s beneficial aspects known. Advocacy, R&D, outreach materials and research study cost categories are key aspect in this matter.

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- **Increased public funding needed to complement private investment.** For this issue, recommendation include gaining initial support for vessel construction as well as securing funding for start-up costs. There is also a need to secure costs related to infrastructure construction. Among the expected benefits are public transportation improvements, highway congestion relief, environmental and health and welfare benefits and the growth in the short sea shipping industry with a commensurate increase in employment.

- **The need for competitive shoreside and port capital costs.** As to overcome this obstacle, identifying costs related to Short Sea Shipping and assessment of these costs in relation to other transportation modes is recommended. There is a need to reduce costs to make Short Sea Shipping competitive with alternative transportation modes.

Table 2.15 below summarizes the specific elements of the challenges for each country faced and summarizes common elements. Individual countries are divided into infrastructure, operational, and legal aspects. As shown in the table, sustained infrastructure, education / training of professional workforce, awareness of coastal shipping and increasing policy priorities were identified as common elements in all target countries. In particular, in order for national policies and initiatives to be carried out efficiently, it was reaffirmed that both the budget allocation and the legal support for institutional guarantee should be accompanied at the same time.
Table 2.15 Summary of country-specific and shared challenges and issues.

<table>
<thead>
<tr>
<th>Country</th>
<th>Infrastructure</th>
<th>Operational</th>
<th>Legal</th>
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</table>
| **Cambodia** | - Poor infrastructure  
               - Enhancement are needed to accommodate increasing traffic | - Limited human capital in shipping industry and in government  
               - Technical challenges for training of individuals specialized in ship building and safety in maritime affairs (Not enough expert to train)  
               - Lack of budget in capacity building and technology development R&D | - Public involvement in implementing existing regulations is very poor  
               - Lack of laws and regulations to govern the maritime activities  
               - Law enforcement still far behind acceptable level  
               - Newly establish General Department, staffs and regulations needed  
               - Passing the laws and regulations consuming a lot of time |
| **Indonesia** | - Significant amount of resources needed. It cannot rely only on state funding.  
               - Land acquisition being a critical obstacle for numerous infrastructure projects with private sector required to cover up to 30 or 40 per cent of the total investment costs.  
               - Inefficient handling equipment  
               - Non-sterile ports (issues of security and safety resulting in process delays) | - Coordination problem, lack of coordination between central, provincial and regional authorities remains a critical issue for many projects  
               - Backhaul issues especially in eastern route of Indonesia  
               - Liners businesses are demand driven  
               - Poor congestion management (stevedoring rate is generally high)  
               - Fragmented port operations: different operation hours and disconnected inside ports’ services causing less competing service | - Regulatory burden, red tapes |
<table>
<thead>
<tr>
<th>Country</th>
<th>Infrastructure</th>
<th>Operational</th>
<th>Legal</th>
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</table>
| **Malaysia** | *Infrastructure* | - More integration is needed with other transport modes  
- Container overcapacity of Malaysian tonnage due to cargo imbalances  
- Reliance on foreign ships | *Operational* | - Shortage of qualified seafarers  
- Aging vessels and operation costs  
- A number of agencies are involved in the administration of shipping services instead of having a one-stop agency to optimize the allocation of resources which may result in unnecessary long bureaucratic delays  
- No real single platform or mechanism allowing to share port data or shipping info | *Legal* | - Lack of support for the Federation of Freight Forwarders Associations (FIATA) |
| **Myanmar**   | *Infrastructure* | - Poor infrastructure  
- Lack of infrastructure such as shipyard, dock yard and passenger terminals  
- Capacity of wharves/jetties for coastal shipping needs to be improved  
- Aids to navigation along the coastline need to be upgraded  
- Old existing tankers barges have to be replaced with new modernized ones | *Operational* | - Different customs clearance process at borders are creating delays and barriers to logistics flows  
- Shortfall of skilled workers is a major impediment | *Legal* | - The lack of coherent and consistency in regulations are contributing to disparate logistics performance among countries, affecting Myanmar |
| **Philippines** | *Infrastructure* | - Poor port infrastructures  
- High cost of vessel acquisition  
- High fuel cost  
- High cost of drydocking | *Operational* | - Long distance shipping routes | *Legal* | N/A |
| **Thailand**   | *Infrastructure* | - Insufficient depth of water channels  
- Limited areas for coastal port construction  
- Lack of sophisticated port facilities and equipment due to short period of concession | *Operational* | |
| Operational | - Protest by local communities due to environmental concern  
- Lack of hinterland and supported industries  
- Lack of efficient inland transport linkages |
| Legal | N/A |
| Viet Nam | Infrastructure | - Low quality infrastructure and backward technology.  
| Operational | - Lack of skilled workers  
- Lack of comprehensiveness both in scale and implementation process.  
| Legal | N/A |

### 2. Shared Challenges

| Infrastructure | - Need for better coastal shipping infrastructure  
- Increased public funding needed to complement private investment  
| Operational | - Labor limitations  
- Lack of skilled workforce  
- The need for competitive shoreside and port capital costs  
- A lack of awareness, a greater understanding of the complementary interests and relationships among the various transportation nodes is needed  
| Legal | - Specific regulations and laws are needed  
- Customs procedures and inspections to be specified according to national particularities  

*Source:* This table is based on relevant sources from extensive literature and countries expert’s presentations during Workshops held by ESCAP in 2018.
Guidelines for efficient coastal shipping, inland waterways development

The following part will examine some cases of efficient coastal shipping policies (including inland waterways) in several countries including Europe in order to draw implications from these cases. The economic development stage, the transport system, and the awareness of coastal shipping and sustainable transport of civil society are different from the target countries, but the policy implication is of good relevance.

3.1 Good Practices

- **EUROPEAN UNION**

Many lessons can be learned from long European Union’s experience that could help southeast Asia coastal shipping operations. Short sea shipping or coastal shipping was introduced with the purpose of diverting freight transportation away from congested roads.

Many European studies conducted tried to identify the determinants of success regarding coastal shipping. They are presented in the Table 3.1 below.

The ones frequently identified as key success elements were:\n
- Port efficiency
- Reliable coastal shipping service with sufficient frequency
- Right mix of ship type, payload and space

Even though there are some essential elements to the successful implementation of coastal shipping, each route or area has its own peculiarity. It is hard to put forward exact variables that could be generalized ensuring the success of coastal shipping in every part of the world. But European studies reviewed recognized the fact that Europe became a proponent of short sea shipping because it was seen as a “transport mode that could offer a realistic prospect of

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substantial modal shift from the congested roads and to reduce environmental damage”\textsuperscript{95}. On the other side, coastal shipping initiatives to be introduced in ASEAN countries are “meant to enhance connectivity in the process of building a well-connected ASEAN community where most of the routes identified would not be in direct competition with road transportation”\textsuperscript{96}.

Another lesson demonstrated by European experience is the importance of sea operators to ensure that the sea connection is well integrated into the intermodal environment for a seamless, well connected network. The latter would assure a reliable and competitive environment for coastal shipping operation.

**Figure 3.1 Determinants for a successful Short Sea Shipping operation (European literature)**

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<tbody>
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<td>Competitiveness of shipping companies</td>
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<td>Good intermodal link</td>
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<td>Port Efficiency</td>
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<td>Promotion of SSS</td>
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<td>Reliable SSS services with sufficient frequency</td>
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<tr>
<td>Right mix of ship type, payload &amp; space</td>
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<td>Simplified &amp; standardized procedures</td>
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<td>Standardized freight distribution system</td>
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<td>Standardized port infrastructure &amp; services</td>
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<td>Suitable sea-leg distance</td>
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\textsuperscript{95} Ibid. 
\textsuperscript{96} Ibid.
Studies from Europe should trigger further research on coastal shipping to explore and evaluate lessons from other region’s experience on coastal shipping. Specialists may also find out the existence of other determinants promoting or hindering coastal shipping in a specific region only.

Also, on a policy level the European Union has implemented a great number of measures to ensure efficient functioning of the shipping framework. As such, the Integrated Maritime Policy (IMP) of the EU seeks to “provide a more coherent approach to maritime issues, with increased coordination between different policy areas. By doing so, the IMP contributes to the development of dynamic and innovative maritime sectors and to improve their sustainability, resource efficiency and synergies in order to deliver growth and jobs and reduce pressures on the marine and coastal environment”.

It focuses on:

- Issues that do not fall under a single sector-based policy e.g. "blue growth" (economic growth based on different maritime sectors).
- Issues that require the coordination of different sectors and actors e.g. marine knowledge.

The whole point of these institutional arrangement is to coordinate but not to replace policies on specific maritime sectors.

For more details:

*Coastal challenges and shortsea shipping (Europe)*


*Unprecedented opportunities to promote short-sea shipping (Canada)*


*A European Perspective on Public Service Obligations for Island Transport Services* (for financing topic e.g. via PPP)

*Shipping Policy in the European Union* by Ana Casaca (EU SSS Policy)

Non-EU member but in Europe: “Norwegian Green Coastal Shipping Programme”

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Especially in Europe, coastal shipping is being used as an environmentally friendly means of transport along with inland waterways, and it has become an important axis of modal shift to reduce side effects caused by road-oriented transport systems.

- **REPUBLIC OF KOREA**

Regarding useful data concerning ROK, there are:\(^98\)

- Fleet by Nationality of Owner: 3,271 (44.2 million GT), Source: Ministry of Oceans and Fisheries, 2015
- Islands: 3,237. 470 inhabited, 2,767 uninhabited

**Cargo**

- Coastal Shipping
  - Jeju route: (Inbound) Sand, Oil, Cement / (Outbound) Tangerine, Water, Fish, Carrots
  - Other route: Cement, Oil/gas, Metal, Non-metal
- International Car-Ferry routes
  - Korea-China route: Dalian, Tianjin, Qingdao, Lianyungang, etc.
  - Korea-Japan route: Tokyo, Osaka, Yokohama, Tomakomai, etc.
  - Korea-Russia route: Vladivostok, Vostochny

**Passenger**

- Coastal Shipping
  - Regular route: 112 routes
  - Remote Island route: 27 routes
- International Shipping
  - Korea-China route: 16 routes, 8 routes (more than 100,000 passengers/year)
  - Korea-Japan route: Shimonoseki, Osaka, Hakata, Izuhara, Sakaiminato, etc.
  - Korea-Russia route: Vladivostok, Zarubino

According to the Korea Maritime Institute, modal share of coastal shipping has been gradually decreased and will continue to drop. Estimated share of coastal shipping is now changing from 25% to 18% in 2020: 19.2% (2011), 17.5% (2012), 19.1% (2013), 18.2% (2014), 18.3% (2015).

Without special measures, the share of coastal shipping is expected to continue to decline, so the Korean government has established and implemented various coastal shipping promotion policies.

Figure 3.2 Estimated share of Coastal Shipping

![Estimated Modal Share of Coastal Shipping(2011)](image)

*Source: KMI, 2018.*

As shown in the above figure, the share of coastal shipping is projected to decrease to 18% by 2020 if there is no specific action taken. Korea has prepared and implemented various policies such as Figure 3.3 and 3.4 to raise the modal share to the same level as the early 2000s.

South Korea has a huge potential for coastal shipping and inland navigation as there are numerous seaports and islands requiring seaborne transport. Indeed, it plays an essential role in transporting cargoes and passengers between ports and also between the mainland and 471 inhabited islands. The share of coastal shipping is 19.1% of total domestic cargo transport. Also, except for the island of Jeju, all passengers and cargoes are carried through ships to and from the islands. Coastal shipping is also seen as a useful alternative in Korea to back up road cargo trucks or railway cargo in case they would stop carrying because of emergencies including natural disaster and strikes.

The existence of the Korea Shipping Association is a key element to the efficient development and analysis of coastal shipping in Korea. Its mission is to promote the advancement of economic and social status of coastal shipping service providers. Its main role is to activate coastal shipping for freighters and passengers. For freighters, it coordinates ship finance in liaison with public banks, freight subsidy to shippers whose cargoes are carried by ships instead of trucks or trains. For passengers, the association is coordinating fare subsidy and developing new business models. It also operates passenger terminal entrusted by government.99

The management of such organization is among the lessons to be learned for other countries that wish to operate coastal shipping. Its missions are broad and also comprise assisting crewing through discussions with unions, supply marine fuels to member’s ships at competitive price or provide marine insurance cover and integrated passenger ticketing service.

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The importance of government subsidies and assistance is crucial for the operation of national coastal shipping (regarding loan period extension or subsidy for the order of eco-friendly ship) but as well to ensure a fair market to be in place among shipping companies. The association also manages safety aspects and manning costs and conditions.

**Figure 3.3 Vision and Objective of Coastal Shipping in ROK**

**Vision:** “Eco-friendly coastal shipping protecting national economy and marine territory”

**Objective:**

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2022</th>
<th>2030</th>
</tr>
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<tbody>
<tr>
<td>Gross sales</td>
<td>KRW 24 mn</td>
<td>KRW 26 mn</td>
<td>KRW 3 trn</td>
</tr>
<tr>
<td>Marine passenger</td>
<td>15.4 mn</td>
<td>17 mn</td>
<td>20 mn</td>
</tr>
<tr>
<td>Share of aged ships</td>
<td>64.5%</td>
<td>62%</td>
<td>57%</td>
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</tbody>
</table>

*Source: KMI, 2018.*

Strategy of ROK regarding coastal shipping can be summarize as below:

**Figure 3.4 National Strategy for Coastal Shipping in ROK**

**Strategy 1: Solid shipping with competitive edge**
- replace 40 coastal passenger ships
- Increase port infrastructure by 72 units

**Strategy 2: Public shipping with no blind spots**
- Support deficit routes and bordering routes
- Strengthen safety management trainings

**Strategy 3: Win-win shipping moving beyond competition**
- Instal a consultative body by each type of freight

**Strategy 4: Eco-friendly shipping**
- Support the transition to eco-friendly coastal freighters
- Build two (state-supported) eco-friendly passenger ships

*Source: Based on information from KMI, 2018.*
However, as identified by the Korea Shipping Association, prospect of coastal shipping in ROK may be at risk because of elements such as:

- Increasing number of aged ships due to increases in new ship building prices
- Fierce competition by over-supply of tonnage
- Lack of and aging crew/seafarers affecting ship safety
- Few new users of inland waterways
- Costs pushed up due to reinforcement of laws and regulations

- **INDIA**

In India the Sagarmala Programme of the Ministry of Shipping is the flagship programme for the promotion of national port-led development through harnessing India’s 7,500 km long coastline and 14,500 km of potentially navigable waterways and strategic locations on international maritime trade routes. Missions of this agenda is to modernize ports and coastlines infrastructure to boost the country’s growth. It aims for “transforming the existing Ports into modern world class Ports and integrate the development of the Ports, the Industrial clusters and hinterland and efficient evacuation systems through road, rail, inland and coastal waterways resulting in Ports becoming the drivers of economic activity in coastal areas.”

Overall the government of India has taken several initiatives to promote coastal shipping under this programme, including dedicated coastal berths in major ports, financial aid to state governments for coastal berths, concession in cargo related and vessel related charges, encourage Ro-Ro services, easing customs procedures etc.

Coastal Employment Zones (CEZ) are an important component of this programme to cover economic region consisting of several coastal districts with strong linkage to ports. CEZs will create synergy with industrial corridors along the country. All this development will also integrate coastal community development and promote coastal tourism.

Agreement between India-Bangladesh regarding coastal shipping and BIMSTEC coastal shipping (ongoing negotiation) projects are paving the way for reinforcing coastal shipping in the region.

Inland Waterways Authority of India (IWAI) has started the operation of inland waterway container vessels between Ganga - Bhagirathi - Hooghly since last November. This route, which operates over a distance of 1620 km, takes 13 days to transport food, snacks and fertilizer. The project, which was funded by the World Bank, increased efficiency by constructing multimodal terminals and Ro-Ro terminals at various intermediate river ports.

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India's Sagarmala Program is expected to contribute to the transportation and economic development of India in the future as it includes coastal shipping and inland waterway development as a major national plan for port and shipping development in India.

**Figure 3.5 Connectivity initiatives of India**

![Connectivity initiatives diagram](chart)

*Source: Prabir De – ASEAN-India Centre, 2018.*

### 3.2 Fostering coastal shipping strategy in the region

The following part underlines the importance of stimulating coastal shipping strategies in the region, highlighting the need to promote a consistent regional coastal shipping plan. Also, this part will also point out country-level approach needed and regional initiatives already existing.
Coastal shipping presents numerous acknowledged advantages but is still facing some obstacles. Research findings indicated that short sea shipping is:

- Sustainable in the way that it is environmentally safe in terms of producing less carbon dioxide in than other modes of transport
- But perceptually lacking in terms of its image to provide a door-to-door service
- Hindered by a complex administration management. It requires various administrative procedures across different offices generally
- Hampered by port inefficiencies and port service providers’ relative inflexibility

For these above-mentioned reasons, guidelines to overcome these difficulties should learn from the available best practices, such as these identified by the European Union, which focused on the efforts to:

- “sponsor exercises to identify bottlenecks, potential solutions and best practices;
- change perceptions of short sea shipping from that of a port-to-port service to one of door-to-door intramodality;
- harmonize administrative and documentary procedures both across states and provinces within a nation as well as across nations; and
- enhance port efficiency and operations.”

For ESCAP region, efforts should be made regarding coastal shipping because:

- It would help achieve SDGs on sustainability and connectivity
- Promote sustainable transport of cargo and passenger
- Strengthen relationship among ESCAP member states (and archipelagic countries)
- Meet current and future economic growth demands

Overall, Coastal Shipping is a key element in the drive for economic cohesion within Asia and the Pacific and represent an interesting alternative to the congestion of road and rail transport.

**A. Country-level approach**

At the national level, transport planning or logistics planning has almost all the effects of land utilization, environmental, economic, social and regional development as well as national financing. This means that the national transport plan is a multi-sectoral work in which many ministries of the government should cooperate, not only in specific agencies, for example, the Ministry of Transport. Most transport problems are the challenges of the individual sector, but some problems, such as traffic congestion, are not merely traffic problems but are intertwined with land and automobile industry policies, urban policy, and public transportation.

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For this reason, the diagnosis of the exact problem is of utmost importance and the cooperation of experts in each field is important.

Although the problems and causes of each individual country are different, these causes and problems are similar to each other as seen in the case of the Philippines below.

In this chapter, we focus on the inherent problems and solutions of selected countries, not on the issues described in the previous chapter.

**Figure 3.6 Problem tree for the transport sector**

![Problem tree for the transport sector](image)


Following specific challenges faced by countries as described in chapter 2, these countries need to integrate national responses to overcome these distinct issues.
• Possible solutions for Cambodia: 103

Efforts from the public service side, which is already being done:

- Provide ship registration services to ships engaged in domestic, bilateral, and international voyages;
- Issue ship inspection books, ship operational license to ships, and to shipping companies;
- Issue certificates of competency to seafarers, and seamen books;
- Issue license of ship building and repairs yard
- Issue license of ship building to insure safety and clean environment of ship
- Training officials and seafarers on safety and clean ocean, 2-3 times per year.

Future activities to be undertaken on Cambodian side:

- Follow-up and strengthening of the use of the National Port Policy and Administration System;
- Collect and compile statistics relating to ports and ships, and other port-ship related matters;
- Promote the development of shipyards for ship construction, ship repairs, either at seaside or riverside;
- Enhance the effective implementation of the Agreement on Waterway Transport between Cambodia and Viet Nam cross-border transport with Viet Nam in order to ensure freedom of navigation of ships entering to and exiting from Cambodia (Port of Phnom Penh in particular);
- Accelerate the drafting and adopting all related laws and regulations, especially those which are related to ship registration and seafarers, port management and control; and to fulfill the obligations set out in the conventions and other international rules to which Cambodia is Party;
- Promote and provide seafarers to work on board Cambodian flagged ships or other foreign ships through the attraction of foreign investment in establishing maritime schools or colleges;
- Encourage private sectors to develop and use ports with the creation of special economic zones, and other related services;
- Ensure the good environment for maritime affairs, such as to reduce the import tax for vessels, open for many other related services even ship and cargo transport agents and brokers

In order to efficiently carry out the following projects for improving coastal shipping beyond the national scale, it is necessary to strengthen cooperation with the international organization such as ESCAP, IMO, ASEAN, ABD, UNDP and etc. as well as all the countries of Gulf of Thailand.

- Develop Sihanoukville, Phnom Penh Port and Inland Water Transport
- Enhance Port EDI, Port Management System and Cambodia National Single Window (CNSW)
- Develop coastal shipping among Cambodia, Viet Nam and Thailand

Possible solutions for Indonesia,

ADB already made some recommendations after realizing a transport assessment in Indonesia (2016).

As an archipelago country with more 6,000 inhabited islands and rich seafaring tradition, Indonesia must significantly strengthen its maritime related infrastructure and shipping lines by developing:

- “Coastal / short-sea-shipping through secondary ports developments, which in turn will enhance feeder shipping and increase support for traditional community based and modernized boat services”
- “Port competitiveness within the government’s strategy for a “maritime highway”, focusing on the targeted 24 strategic ports and 10 feeder ports”
- “Port hinterland connections through multi-modal connectivity by improving road and rail links between ports and industrial centers, cities and transport hubs”

In line with its Maritime Highway Plan, Indonesia could improve its maritime connectivity through enhancing domestic or subregional connectivity to make it more efficient (western, central, eastern and with Philippines and Serawak). Also, international hubs should also be designed in order to reach economies of scale and connected with most effective international ports abroad. Finally, relaxing restrictions within subregion agreement could boost activities and connectivity with the hinterland.

Possible solutions for Myanmar:

Possible recommendations already formulated by the MoT:

Rules and Regulation:
- To be developed for the carriage of dangerous petroleum by oil barge for coastal shipping
- To formulate specific law for coastal shipping development

Training:
- To be conducted for human resource development in ship building sector

Coastal shipowner’s association should
- Take the leading role officially and legally with government support
- Actively participate in development of coastal shipping industry

Infrastructure development for the coastal shipping industry
- Wharves, Jetties, Docks

105 ERIA, 2016. ASEAN Maritime Connectivity: Overview and Insights. Conference on “Logistics and Maritime Studies on One Belt One Road”, Hong Kong.
- Aids to navigation

Administration supports:

- Liberalize the documentation procedures
- Financing for new ship building dedicated to coastal shipping
- Insurance system

• Possible solutions for Thailand:

The Ministry of Transport of Thailand and its Maritime Promotion Division already suggested some recommendations to tackle national challenges.

These recommendations comprise:107

- Port infrastructure development and management approach (PPP)
- Promotional measures and incentives to divert from road transport to coastal shipping
- Develop hinterland and supported industries
- Improve inland transport linkages
- Improve water channels by sub-contract to private sector
- Provide information on benefits and advantages of coastal port development to local community
- Request the Department of Treasury to extend the concession period to allow private port operators to invest in modern port equipment and facilities

Other cooperation projects are also solutions for Thailand to strengthen its coastal shipping strategy. Such projects encompass:

- The initiative on coastal shipping of Thailand-Cambodia-Viet Nam (TCV)
- BIMSTEC coastal shipping agreement
- Coastal shipping agreements proposed by other countries (Thailand & India, Thailand & Bangladesh

• Possible solutions for Viet Nam:108

The Ministry of Transport in Viet Nam suggested some solutions for more efficient coastal shipping development. It includes advancing connectivity capacity of international gateway port of Cai Mep to Cambodia, international gateway port of Lach Huyen to South-West of Chinam the ports of central region to Laos, and ports to Thailand.

Authorities also pointed out the need to:

- Raise connectivity capacity of inland waterways, most of all between Viet Nam and Cambodia.
- Improve policies and laws on logistics services
- Complete the logistics infrastructure

107 Ibid.
- Strengthen business capacity and service quality
- Develop the market of logistics services
- Train, raise awareness and quality of human resources
- Other tasks

- Regarding other selected countries,

Overall suggestions at national scale include: 109

- Port modernization:
  o To separate cargo and passenger terminals
  o Approaching congestion issues with market mechanism
  o Increase berth and terminal capacities in strategic or international ports
  o Simplify organizational structure in port management and use new technologies (modern soft infrastructure) to increase efficiency, real time information, transparency and accountability
- Setting some performance standards and level of service for national ports
- Regions with economic potential or specific commodities (such as oil, gas, minerals, agriculture products etc.) should be accommodated with appropriate ports that can leverage this potential
- Enhance hinterland connectivity through connecting efficiently industrial zones to proper ports
- Integrating currently separated port system into national supply chain system. At the moment, a number of ports-land connectivity are suffering from congestion and thus expensive costs

The two above cited countries give us an example on what could be national way forward regarding the development of coastal shipping.

B. Regional initiatives

Several initiatives for better maritime connectivity and coastal shipping are currently ongoing in the region. This chapter will focus on these existing initiatives to foster a regional strategy on the topic. There is indeed a leverage on regional initiatives to be made in order to fully benefit from the connectivity and potential of each countries

1) ASEAN

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109 ERIA, 2016. ASEAN Maritime Connectivity: Overview and Insights. Conference on "Logistics and Maritime Studies on One Belt One Road", Hong Kong.
ASEAN Single Shipping Market (ASSM):

The establishment of an Association of Southeast Asian Nations (ASEAN) Single Shipping Market (ASSM) is an important part of ASEAN governments’ overall plan to achieve an ASEAN Economic Community. Expected outcomes of such project would be a free-flow of intra-ASEAN shipping services with substantially no restriction to ASEAN shipping services suppliers in providing, in line with the ASEAN Economic Community (AEC) blueprint to transform ASEAN into a region with free movement of goods, services, and skilled labor.\textsuperscript{110}

It is expected that ASSM would enhance region’s logistics performance and international competitiveness, contributing to economic development by lowering transaction costs and improving world market access. However, to achieve this vision, ASEAN countries would need to remove remaining barriers to logistics performance.\textsuperscript{111} Following a study by ASEAN, a task force on the implementation of ASSM has been established and has finalized the setup of an implementation framework, including its Action Plan. This framework provides strategic measures regarding policy coordination and institutional harmonization of regulation and rules for the shipping services liberalization within the region. This action plan of ASSM has been endorsed by the 20\textsuperscript{th} ASEAN Transport Ministers Meeting.\textsuperscript{112}

Figure 3.7 Actions taken by ASEAN to implement Single Shipping Market

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure3.7.png}
\caption{Actions taken by ASEAN to implement Single Shipping Market}
\end{figure}

Source: CIMB ASEAN Research Institute, 2017.\textsuperscript{113}

\textsuperscript{110} ASEAN Secretariat, 2008.
\textsuperscript{112} ASEAN Secretariat, 2015. Implications of the ASEAN Economic Community to Logistics Industry. UNESCAP Regional Conference, Bangkok.
\textsuperscript{113} Accessible from: \url{http://www.cariasean.org/AEC_Blueprint_2025_Analysis/AEC_Volume1_Paper17.pdf}
To summarize, the Single Shipping Market will aim to achieve the following:  

Harmonize regulatory requirements and commercial practices.

- Improve the capacity and technologies required to manage shipping and port operations.
- Develop guiding principles for the pricing of port services.
- Intensify infrastructure development to support the effective and efficient operation of intra-ASEAN shipping services.
- Carry out liberalization of services that support the maritime trade, including maritime cargo handling services, storage and warehouse services, and freight transport agency services.

2) ASEAN Ro-Ro Concept:

Supporting the establishment of an integrated ASEAN maritime transport system, one of ASEAN key actions is to establish efficient and reliable shipping routes through the newly introduced **ASEAN Nautical Highway (ANH)** that involves the utilization of Roll-on Roll-off (Ro-Ro) vessels as the main platforms (ASEAN, 2011). In conventional containerized (or “load-on, load-off”) shipping, goods are delivered by trucks to the points of origin, unloaded, and then loaded onto ships, carried to next port, unloaded once more and loaded again onto other trucks until their delivery at final destination. Each step of this process repeated many times in transport distribution chain creates a layer of costs and bureaucracy. However, a policy shift from containerized shipping to a “roll-on, roll-off” (or “Ro-Ro”) system that “allows trucks, buses, and cars to roll on and roll off the vessel without unloading”, would eliminate the need for “time-consuming and costly cargo-handling and portside equipment, and burden-some regulatory procedures” (see Figure Below). This concept has been proven successful in the Philippines where it has transformed the maritime sector, “vastly improving inter-island economic linkages, increasing competition and driving down costs with minimal investment”.

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115 ASEAN Secretariat, 2011. Master Plan on ASEAN Connectivity.
117 Ibid.
Since the Ro-Ro system can deliver the cargo directly to the shippers at the same time as unloading, it can significantly reduce the time of the cargo stay in the port area, which is one of the disadvantages of the coastal shipping and can contribute to the reduction of the related logistics cost. Despite these advantages, the Ro-Ro system is not activated because it is not only an increase in facility investment to support Ro-Ro vessels, but also higher ship prices than other vessels. Ro-Ro cargoes and vehicles must be able to transport freely as soon as they have completed all CIQ procedures, but institutional and systemic back-up is still lacking in many ports. In conclusion, despite the advantages of the Ro-Ro system and the support of the government, the failure to activate the Ro-Ro system in the port where the Ro-Ro route was established or under review is due to the insufficient demand and overall logistics system was not integrated and harmonized.

Attention should be drawn to the demand-based service provision or demand creation. This is because the RORO service between the Philippines and Indonesia, which began in May 2017 as a part of strengthening the ASEAN RORO business, was holed due to low demand. The RORO system needs to be continually introduced and expanded in this region because it is very useful for saving transport time as well as reducing freight transport costs. Therefore, it is necessary to coordinate and cooperate with various stakeholders such as shippers, trucking companies, freight forwarders, shipping lines, terminals and etc. And also supporting policies
such as providing subsidies and incentives to promote the RORO system at the government level need to be considered.

3.3 Way Forward

A successful coastal shipping program offers an opportunity to add value to a national transportation network while increasing the economy’s efficiency and ultimately the societal standard of living. Besides, coastal shipping is in line with the 2030 SDGs agenda.

With lowest cost compared to other modes of transport, it is also safe and the most environmentally friendly option. Coastal linking also offers potential for tourism routes linking domestic or international destinations if ports are accommodated for cruise ships.

A. Review national agenda for sustainable transport development and SDGs

The question "How can coastal transport contribute significantly to achieving SDGs goals?" is a question that is being discussed in relation to SDGs in most countries. Although sustainable transport is not represented by a standalone SDG in the 2030 agenda, it is mainstreamed in a direct or indirect manner into many of the proposed SDGs.

**Figure 3.10 Transport-related SDGs and targets**

*Source: SloCaT, 2015.*

Especially those related to food security, health, energy, infrastructure, cities and human settlements, and climate change. Transport services and infrastructure are essential to achieving most, if not all, SDGs:
More specifically, based on the observation from this paper, SDGs in line with coastal shipping, directly or indirectly are:

Table 3.1 Direct and Indirect Transport Targets of the SDGs linked with Coastal Shipping

<table>
<thead>
<tr>
<th>Direct and Indirect Transport Targets of the Sustainable Development Goals</th>
<th>7. Ensure access to affordable, reliable, sustainable and modern energy for all (Energy efficiency)</th>
<th>7.3 By 2030, double the global rate of improvement in energy efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure)</td>
<td>9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all</td>
<td></td>
</tr>
<tr>
<td>9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all)</td>
<td>11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons</td>
<td></td>
</tr>
<tr>
<td>11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management</td>
<td></td>
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</tr>
</tbody>
</table>

Most member countries recognize coastal transport as a very environmentally friendly means of transport, but they rely heavily on road transport for cargo transport and logistics. Therefore, if coastal shipping which has advantages for long-haul and bulk cargo transport is developed, it can contribute to developing safe and reliable transport by providing efficient transportation infrastructure as well as integrated multimodal system.

Given that the transport sector is a key enabler for achieving multiple SDG goals and targets, this project will support the achievement of the aforementioned goals.

In addition to this, each target includes the following indicators:

- Passenger and freight volumes, by mode of transport (target 9.1)
- CO2 emission per unit of value added (target 9.4)
- Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities (target 11.2)

Furthermore, coastal shipping in consonance with the Regional Roadmap for Implementing the 2030 Agenda in Asia and the Pacific. It is indeed of relevance for themes such as:

- **Technology**: Applying of maritime safety technology to provide safe and reliable coastal shipping and high efficiency & low emission technologies as well as information and communication technology to allow stakeholders to access the information and data on coastal shipping
- **Finance**: Seeking financial support policy as public obligation to provide services for remote and small islands where do not receive stable services by shipping lines
- **Policy coherence**: Sustainable development of coastal shipping will require policy coherence, integrated approaches and a move away from single-sector policies and investments, which in turn will need an all-of-Government approach that promotes the balanced integration of the economic, social and environment.

Coastal shipping is also linked to thematic issues such as climate change, connectivity for 2030 agenda and energy.

- **Climate Change**: Coastal shipping has great advantages in long-haul and mass cargo transport. Therefore, converting the road-based transport system, which is a major part of greenhouse gas emissions in transport sector, to maritime transport can contribute to the reduction of greenhouse gas emissions and ultimately, it also helps mitigate climate change which has a major impact on Asia-Pacific region.
- **Connectivity for the 2030 Agenda**: Based on social and environmental comparative advantages, integrated intermodal transport system through optimization of transport has great potential to contribute to sustainable development and mitigation of carbon dioxide. Facilitation of coastal shipping is not only an effective way to increase environmental benefits, it is very crucial for the regional maritime connectivity.
- **Energy**: Maritime transport serves as a lifeline for not only in remote islands and small islands, but also in areas where access to road traffic is difficult to transport energy and necessities commodity. In particular, islands with low energy independence depend on coastal shipping for most commodities including fossil fuels, so it is vital to provide stable and economical transport services.

**B. Establishment of a coherent coastal shipping/inland waterways development strategy**

Coastal shipping has a key role in economic development facilitating passenger and freight movements; and can facilitate or hinder use of oceans, seas and marine resources. In order to leverage at its benefits of coastal shipping, a proper vision and strategy should be discussed.
1) **Target Setting**

Coastal countries should set targets to aim for in their coastal shipping strategy as it would pave the way to concrete and ordered actions.

2) **Design of a coastal shipping development strategy:**

- National road map/strategies (including integrated transport system)
- Infrastructure development and investment
- Legal and institutional basis (including subsidy system: Public Service Obligations)
- Business and commercial platform
- Technologies
- Culture, awareness
- Regional cooperation

National policies should seek to coordinate, not to replace policies on specific maritime sectors. For that, the definition of a vision on coastal shipping strategy is vital to define objectives and step to be achieved in a comprehensive way. It would also allow public policies to be coherent and consistent if thought as a whole and not on a silo-basis. For this reason, coastal shipping should be included in national transport master plan to build an integrated transport system with seamless connectivity.

First, we can identify 3 different layers on which coastal shipping should modernize itself:

- **Infrastructure:**
  - regarding hardware sector, including
  - Ports (to accommodate both cargo and passenger)
  - Container terminals (berths lengths)
  - Handling equipment
  - Fleet
  - Connection with inland routes
  - Automation
  - Hard infrastructure, only when necessary

National agenda must include modernization of hard infrastructure in current ports (berths length, handling equipment, trucking, inventory) and replacing old and outdated vessels with modern ones as it would have a significant impact on coastal shipping as a whole.

- **Operation:**
  - Trained experts, workers (manpower)
  - Education on coastal shipping
  - ICT capacity (enhancement in information computerization, electronic information)
  - Including trained experts

Investing in human resources capacity building, especially to produce newer qualified mariners and programs to level stakeholders’ capacity would benefit largely to the expansion of shipping and boost its expansion.
Improving the connection of major shipping lines such as ports of Japan, China, Singapore and Malaysia with archipelagic territories would push forward maritime connectivity and trade as countries should try to establish a networked economy in sub regions in order to increase supply-demand and to build value added services to anticipate demand.

- **Institution/Regulation:**
  - Implementation of rules to promote coastal shipping
  - Legal framework at regional and sub regional level
  - Regulatory convergence, harmonization of rules
  - Incentives, subsidy to push coastal shipping in having bigger share in modal shift.
    - E.g.: voucher from government to buy oil at shipping companies
  - Public Service Obligations
  - Safety

The Economic Research Institute for ASEAN and East Asia also suggested that removing cabotage could improve connectivity and competitiveness in maritime services, at least within a sub region scheme.\(^{118}\)

There are a number of determinants to take in account in order to measure the success of a coastal shipping strategy. These elements also represent goals for a well-operated coastal shipping industry.

In summary, among key elements to integrate in national plan regarding coastal shipping:

**Table 3.2 Direct and Indirect Transport Targets of the SDGs linked with Coastal Shipping**

<table>
<thead>
<tr>
<th>Elements to integrate in national plan for coastal shipping strategy</th>
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<tbody>
<tr>
<td>▪ Competitiveness of shipping companies</td>
</tr>
<tr>
<td>▪ Good intermodal link</td>
</tr>
<tr>
<td>▪ Government assistance at initial period</td>
</tr>
<tr>
<td>▪ Port efficiency</td>
</tr>
<tr>
<td>▪ Promotion of coastal shipping</td>
</tr>
<tr>
<td>▪ Reliable coastal shipping with sufficient frequency</td>
</tr>
<tr>
<td>▪ Simplified and standardized procedures</td>
</tr>
<tr>
<td>▪ Standardized freight distribution system</td>
</tr>
<tr>
<td>▪ Standardized port infrastructure and interfaces</td>
</tr>
<tr>
<td>▪ Suitable sea-leg distance</td>
</tr>
<tr>
<td>▪ Right mix of ship type, payload and space</td>
</tr>
<tr>
<td>▪ Sufficient number, and trained/educated for safety-measures, crew/seafarers</td>
</tr>
</tbody>
</table>

*Source:* This table is created based on relevant sources\(^ {119}\) and research-findings.

Taking in account these elements would prevent:

\(^{118}\) ERIA, 2016. ASEAN Maritime Connectivity: Overview and Insights. Conference in Hong Kong.

- Fierce competition by over-supply of tonnage
- Lack of and aging crew/seafarers affecting ship safety
- Few new users of inland waterways
- Costs pushed up due to reinforcement of laws and regulations

At the same time, setting some performance standards and level of service for national ports would allow:

- **Port modernization** (separation of cargo and passenger terminals, increase of berths and terminal capacities in strategic and international ports, simplification of organizational structure in port management and use of new technologies to increase efficiency, real-time information, transparency and accountability)

- **Harmonization of administrative procedures** across states and provinces within a nation as well as across nations

- **Enhancement of port efficiency and operations** (change perceptions of short sea shipping from that of a port-to-port service to one of door-to-door intermodality)

- **Expansion of port network** and hinterland connectivity between industrial zones to appropriate ports

- **Integration of national supply chain system**, lowering down congestion and thus costs

Working groups among countries of the region also highlighted some guidelines to follow to strengthen cooperation and coastal connectivity:

1. Coastal shipping should be further promoted in a more systematic manner.

2. In order to realize its full potential, efforts from all sectors would be needed. Respective governments could provide more institutional support by creating official frameworks, such as bilateral / trilateral / (or more) cooperation agreement to further accommodate and facilitate coastal shipping. The public sector could act as an intermediary by partnering local provinces between countries in order to promote cooperation in trade and investment. Concerning the private sector, shipping operators should improve quality and price of their respective service as to encourage exporters to choose coastal shipping as choice of transport.

3. At the moment, there are some deep-sea ports in the region (Thailand, Cambodia and Viet Nam for example) that are able to provide the infrastructure needed for coastal shipping, with small shipping operators already operating along some routes. However, the number is still very small, and operations need further standardization and harmonization due to insufficient demand in transporting goods by coastal shipping. In addition to this, sea transport must be competitive comparing to road transport where

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120 Seminar on Coastal Shipping: an alternative answer to Thailand, Cambodia and Viet Nam export, 2015. Organized by the Department of East Asian Affairs, MOFA of Thailand, Bangkok.
trucks tend to carry loads in excess of maximum weight allowed, thus reducing its real transport cost.

4. Ships used in coastal shipping are normally the size of 500 – 1,000 DWT (Deadweight Tonnage). Currently, a number of fishing boats are modified for shipping resulting in sub-standard carriers which in turn affect the conditions of the transported goods. National Ship Owners’ Association could ask for standardization of shipping operators to operate appropriate ships for coastal shipping purpose.

**Figure 3.11 General Guidelines to implement Coastal Shipping as a sustainable transport solution**

**Source:** Marine Department Malaysia.

**Figure 3.12 Area Development for Action Plan**

**Source:** Marine Department Malaysia.
3) **Public Service Obligations:**

Regarding transport of passenger, one aspect that should be included in coastal shipping national strategy is the feature of Public Service Obligation (PSO). This service is indeed important to bring together public opinion. Economies should support domestic services through PSO, particularly for uneconomical routes to their small outer islands. This takes the form of franchise or subsidy schemes for shipping services along routes that are otherwise not commercially viable. The provision of domestic shipping services can take the form of public provision, fully privatized services and State-owned enterprises (SOEs), or even community associations to operate domestic vessels.

A clear regulation on PSO would prevent irregular ferries, and disconnected transport network. The formal implementation of subsidies system (depending on population size etc.), in CLMV-T and archipelagic countries, to ensure the connection between islands or remote places with main territories should be designed by government after consultation of needs.

In Malaysia for example, the federal government continues to allocate the annual RM11 million subsidy for travelers’ sea transport cost from Labuan to Sabah and Sarawak and vice versa this year, despite the economic uncertainty. “Labuan Corporation (LC) in a statement today said the subsidy given since 2014 was aimed at lessening the burden of travellers (Malaysian citizens) commuting by sea transport from and to the island. The subsidized routes are Labuan-Menumbok-Labuan, Labuan-Kota Kinabalu-Labuan, Labuan-Sipitang-Labuan, Labuan-Limbang-Labuan and Labuan-Lawas-Labuan”.

As for Indonesia, a RP 1.8 trillion budget was allocated at PT Pelni by the Ministry of Transport for the implementation of PSO for passengers of economic class sea freight vessels in 2018. This PSO budget will be assigned to 26 ships on 622 routes and crossing 96 ports. As mentioned by the 2015 presidential regulation of the republic of Indonesia (n°106) concerning the provision of public service obligations for transport of goods at sea:

- To provide commodity goods and reduce price disparity for the community, the Government carries out public service obligations for the transportation of goods at sea.
- Goods are all types of commodities that are unloaded or loaded from and to the ship, including goods of basic needs and important goods in accordance with the provisions of the legislation in the field of goods and essential goods.

Implementation of public service obligations for the transportation of goods at sea must fulfill the following principles: Carry out shipping freight transportation based on the tariff and route network specified by the Minister; Provide treatment and services for all service users according to service standards stipulated by the Minister; and Maintain the safety and security of freight transport.

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C. ESCAP Role

The United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) is the regional development arm of the United Nations for the Asia-Pacific region. Made up of 53 Member States and 9 Associate Members, it provides its member States to promote regional cooperation and collective action in pursuit of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals, assisting countries to achieve shared economic growth and social equity.

Responsible for transporting up to 85% of international freight, maritime transport and port logistics have traditionally played a decisive role in the development of ASEAN and the Pacific countries that rely heavily on intra-regional and inter-regional trade. But the role and the responsibility of the maritime transport sector are changing profoundly in line with the region’s evolving development agenda. The Sustainable Development Goals and the related targets and objectives on regional integration and sustainable economic development, social inclusion and environmental protection drive a demand for a more sustainable approach to maritime transport and port development.

Such an approach has become an operative necessary in order to face the ever increasing demands on the ports’ capacity, efficiency and logistics costs in order to remain competitive in the regional and global market, while effectively responding to the demands of the international and local communities to reduce various negative externalities of the port activities, such as air pollutants emitted by vessels, maritime traffic accidents, inland traffic congestion and accidents, issues of land management and territorial and social integration, especially for the ports, located within the city limits.

In other terms, in pursuing the Sustainable Development Goals, ESCAP member countries need to address a wide range of increasing social and environmental requirements to the maritime connectivity. This entails complex sets of measures such as promoting a sustainable modal split in favor of waterborne transport, reducing fossil energy consumption by heavy stevedoring equipment in ports, mitigating emissions from vessels anchored at ports, integrating intermodal transport connectivity between port and hinterland, securing port safety and security and developing green, smart and resilient port facilities. Designing and implementing such comprehensive policies face numerous challenges in most developing countries, due to the frequent lack of long-term national framework for sustainable transport, the inertia of the road oriented domestic transport system, a lower priority given to maritime transport, a lack of investment and resources, existing infrastructure gaps, limited technical expertise, outdated information and communication technologies, and other barriers. At the same time, new opportunities constantly arise, especially from the innovative new technologies and digitalization in the maritime sector, such as container terminal automation, artificial intelligence, eco-technologies for shipping, electric stevedoring devices, and the Internet of
Things, but these need to be harvested through a systematic and proactive approach, with due attention to the risks and costs of their deployment.

In this context, further development regarding the promotion of coastal shipping and inland waterways could be done, aiming at supporting and strengthening the capacity of member countries to develop and implement integrated coastal shipping policies, based on holistic approach and incorporating greater sustainability concerns, such as accessibility, mobility, safety and efficiency, and maximizing the positive returns of the use of new technologies.

If member states express further interest in coastal shipping, along with inland waterways, it would be translated in ESCAP work through more research, policy dialogues and recommendations; providing good development practices, knowledge sharing and technical assistance to member States in the implementation of these recommendations. In particular, it is necessary to seek various cooperation with ASEAN countries on potential activities such as Single Shipping Market facilitation, promotion of Ro-Ro system in the region, and inter-island shipping development. Measures for inland waterway facilitation, such as infrastructure investments including dredging to maintain navigational channels, development of river ports and logistics facilities as well as institutional arrangements for seamless vessel traffic and freight transport, are also agenda that requires additional research and cooperation among countries. One of the ESCAP's key responsibilities is to continue to collaborate for analytical research, capacity building programs, technical assistance, and infrastructure investments in coastal shipping and inland waterway development in member countries, with various donor agencies and multilateral development banks.
Conclusion

Overall the challenge is to foster the development of appropriate and commercially viable models for coastal shipping and inland navigation in the Southeast Asia region, and enhancing the business models of stakeholders involved. This is coupled with the challenge to meet the inflexible demand of time sensitivity in a just-in-time commercial environment. At the same time, coastal Shipping (or Short Sea Shipping) business model, along with the use of inland waterways, may be, on many occasions, the best suitable solution to address the issue of freight mobility to satisfy the market place.

One key decisive factor for efficiently adopting coastal shipping concept is making it an inexpensive seamless component of an integrated intermodal transportation system so it effectively facilitates cargo movements. This requires further changes and flexibility in current practices.

There are many reasons why coastal shipping/inland waterways cannot achieve its natural potential, but lack of long-term integrated transport plans and lack of transport infrastructure and operational connectivity are particularly critical. Coastal shipping is not sufficiently connected to other land transport infrastructure, and additional interconnection is required for first and last mileage transport. Despite the advantage of being able to transport bulk cargo at low cost, coastal shipping is used mainly for long-haul transportation of bulk cargoes because of the additional transport time and expense due to the last mile challenge. In order to enhance the advantages of coastal shipping and to reduce the disadvantages, it is necessary to further strengthen the Ro-Ro network for rapid unloading and transport to the hinterland.

Following recommendations brought forward in this paper, coastal shipping and inland waterways development should now move beyond the discussion stage. The following step demands applied research and filed operations to develop coastal shipping and inland waterways in a commercially viable way.

Governments of the region should investigate different opportunities to gain market share, initially at the expense of short term profits. And if a business model proves to be sufficiently interesting, profits may then flow during subsequent time periods. Public opinion and stakeholders should bear in mind that coastal shipping or inland waterways transport may not be profitable immediately at its introduction stage, as for every change in business model. Generally, profitability will follow after a period of time when strategic planning, effective


budgeting, and accurate forecasting are thought over and implemented by maritime professionals and responsible authorities. As an environmentally friendly means of transport, all-round efforts should be made to improve the potential of coastal shipping/inland waterways to mitigate the economic and social burden given from road dominated transport system. For Southeast Asian countries, which are highly dependent on road transport for domestic traffic, a holistic and multi sectoral approach is needed to develop waterborne transport.

Mid- and long-term national plan for developing coastal shipping should be established and reflected in the integrated transport plan for the entire country. In doing so, it is crucial the relevant departments, including the transportation and budget departments, work together and prioritize so that the reforms and operations can be supported. As noted above, coastal shipping in particular, along with inland waterways, should have higher policy priority because it can reduce road congestion and accidents, mitigate air pollution and contribute to the realization of sustainable development.

Since the countries under consideration share the same sea area and river basins, a regional cooperation program is relevant to prevent marine and fluvial accidents and to prevent pollution. There is a need to actively promote digitization in order to speed up and correct the work process, reduce logistics costs and improve service quality. Now that the world is entering the age of hyper connectivity, relying on paperwork and complex procedures is not only a deterrent to competitiveness but also a constraint to development. Finally, it is equally important to continue to strengthen training and education to enhance their expertise in cooperation with international organizations and donor countries, as the competence of coastal and inland shipping stakeholders including government officials and professionals is essential for the sector’s development.