

【Thailand】

The current situation and future initiatives of Laem Chabang Port.

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1. Introduction

Due to the impact of COVID-19, the current situation of international logistics has undergone considerable changes. Meanwhile, ASEAN has seen remarkable economic growth and has increased its presence as a region supporting the world's supply chains. This trend is particularly evident in Thailand, which is centrally located in the ASEAN region, especially the pivotal role of ports in logistics. Their importance has been heightened.”

Laem Chabang Port, Thailand's largest port, has a history of utilizing Japan's Official Development Assistance (ODA) for its construction. Furthermore, Japanese companies are significantly involved in the operation of terminals, showcasing a strong connection with Japan. The volume of handling cargo is increasing annually, and there are expansion plans for further enhancement of facilities. Therefore, it is necessary to closely monitor the development status and other factors related to its maintenance.

We recently had the opportunity to observe Laem Chabang Port with the cooperation of the Port Authority of Thailand (PAT). We will now report on the current situation and recent initiatives regarding the port.

2. Overview of Laem Chabang Port

Bangkok Port that located along the Chao Phraya river and close to the city center was Thailand's primary port. However, due to limited space for expansion in the hinterland and shallow waters

unsuitable for accommodating larger vessels, it became increasingly

challenging to cope with the growing volume of annual cargo handling. Consequently, consideration was given to constructing Laem Chabang Port on Thailand's eastern side, facing the Gulf of Thailand.

With a support from ODA in the development process, the construction has began in 1987, and being commissioned in 1991. Laem Chabang Port has now surpassed Bangkok Port and has become Thailand's largest commercial port.

The port is managed by the Port Authority of Thailand (PAT), which operates under the Ministry of Transport. In addition to Laem Chabang Port, PAT is also responsible for 5 ports in total including Bangkok Port, Chon Buri Port, Chon Buri Container Terminal, and Ranong Port.



Figure 1 : The 5 ports managed by PAT (Source : PAT)

Laem Chabang Port is developed in three phases, and currently, Phase 2 has been completed. Phases 1 and 2 are divided into several berth areas, labeled A to D.

Phase 1 (Terminals A and B) has a depth of -14 meters, with a total berth length of 3,600 meters and a cargo handling capacity of 4.3 million TEUs. Phase 2 (Terminals C and D) has a depth of -16 meters, with a total berth length of 4,100 meters and a cargo handling capacity of 6.8 million TEUs.

Phase 3 is located to the south of Phase 2, and is undergoing on dredging and land reclamation activities.

The Port Authority of Thailand (PAT), as the administrator, is responsible for dredging navigation routes and maintaining berths. However, to improve productivity and service standards, PAT utilizes Public-Private Partnerships (PPP) and entrusts the maintenance and operation of facilities to private companies through concession contracts. As a result, the efficiency and productivity of terminal operations, as well as customer satisfaction, have improved, and furthermore, maintenance cost reductions have been achieved. Japanese companies such as Obayashi Corporation and Mitsui & Co., Ltd. are also involved in the Special Purpose Companies (SPCs) of each terminal. Combining Phases 1 and 2, the container berths have a total length of approximately 5,000 meters, multipurpose berths have around 1,800 meters, and RORO berths have about 900 meters. Additionally, Laem Chabang Port handles a significant amount of sugar, one of Thailand's agricultural products, and it also has a bulk berth with a length of 400 meters.

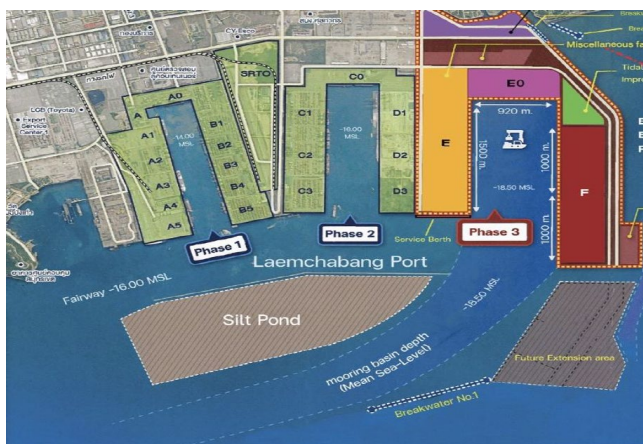
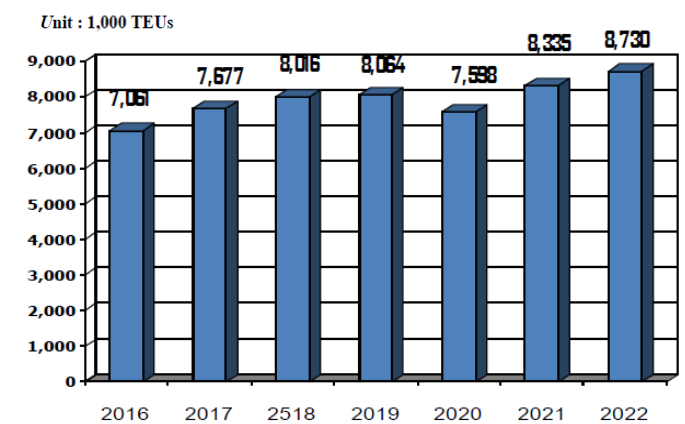


Figure2 : Development Status of Laem Chabang Port by Phase (Source : PAT)

The cargo volume has been increasing annually,

growing at a rate of 4% per year since 2020. In 2022, the port handled 8.73 million TEUs, making it the 20th busiest port in the world in terms of cargo volume. While container cargo accounts for the majority of the handled goods, due to the presence of many automobile manufacturers including Japanese companies located in the hinterland of Laem Chabang Port, there is also a significant handling of completed automobiles. In 2022, the port handled 1.24 million vehicles. Additionally, Terminal A houses a Roll-on/Roll-off (RORO) terminal with a capacity of handling 2 million completed automobiles. Most of these automobiles are destined for Japan, Southeast Asia, and Australia, with some exports



also going to Europe and South America.

Figures3 : Changes in Cargo Volume at Laem Chabang Port (Source : PAT)

Also, imports account for 50.5%, exports for 48.5%, and transshipments for less than 1% of the handled cargo. While the cargos handling in hinterland covers cargos from all of Thailand as well as Laos and Cambodia, its majority is directed towards industrial estates such as Sriracha, Rayong, and Chachoengsao around Laem Chabang, Bangkok.

Moreover, Laem Chabang Port and Bangkok Port together handle around 80% of Thailand's total cargo volume, highlighting the significant economic concentration in Bangkok. However, Bangkok Port faces various constraints, including limited facilities and the presence of berths without cargo handling machinery, resulting in inefficient operations where cargo handling relies on traditional ship cranes. Therefore, plans for the redevelopment of Bangkok Port are being considered alongside the expansion of Laem Chabang Port.



Figures4 : Phasel Area (Terminal A and B)

Between terminals B and C, there is a container transfer facility to connect to trains on the State Railway of Thailand (SRT) line, operated by the Single Rail Transfer Operator (SRT0). This facilitates bonded transportation between the Laem Chabang Port, located approximately 100 km away, and the inland container depot (ICD) at Laem Chabang. At Laem Chabang Port, the breakdown of cargo transportation by mode is as follows: trucks account for 88.5%, inland waterway 6.9%, and railways 4.7%. However, for transportation between Laem Chabang ICDs, approximately 20-30% is carried out by rail transport, with operations occurring at a frequency of around 12 round trips per day.



Figure 5 : SRT0 facility

The SRT0 facility within the port has 6 tracks and is equipped with cranes spanning these tracks, enabling simultaneous loading and unloading operations for two trains. X-ray inspection equipment is installed

at the exit point from the port, allowing trains to undergo inspection while passing through without stopping.

3. The overview of Phase 3 project

As part of the third phase development of Laem Chabang Port, terminals E (E0, E1, E2) and F (F1, F2) are being constructed. Terminal E0 has a berth length of 920 meters, while terminals E1 and E2 are 1,500 meters long. Terminals F1 and F2 are being developed to be 2,000 meters long. This expansion will increase the total cargo handling capacity of the port to 18 million TEUs when combined with the existing terminals.

The total project cost is approximately 1 trillion baht, 600 billion baht is financed by private funds. In November 2021, a joint venture named GPC, consisting of Gulf Energy Development, PTT Public Company Limited, and China Harbour Engineering Company, signed a 35-year concession agreement for the project.

Terminal E and F1 are targeted to commence operations in 2025, while the construction of F2 Terminal aims to begin by 2027. The development area covers approximately 5.7km² (including about 2.5 km² of land reclamation), with the establishment of berth with a depth of -18.5 meters, enabling the handling of large vessels up to 20,000 TEUs. The SRT0 facility will also be expanded at Terminal F, increasing the cargo handling capacity of the entire Laem Chabang Port SRT0 by an additional 4 million TEUs. This will raise the modal share of railway freight to 30% and is expected to reduce transportation costs by approximately 25 billion baht. As part of modal shift initiatives, plans are in place to develop a dedicated inland waterway terminal to expand feeder transportation.

Furthermore, this project is positioned as one of the major infrastructure projects within the Eastern Economic Corridor (EEC), alongside the expansion plans for U-Tapao Airport and the construction of the Eastern Airport Rail Link. The progress of the project is being closely monitored due to its significance within the EEC's development framework.



Figure6 : Map of major projects in the EEC (Source : PAT)

4. Recent Activities

Currently, at terminals D1 to D3, remote-controlled gantry cranes and unmanned trucks have been introduced as part of the policy set by the terminal operator, Hutchinson. Japan's ports are currently trying to automate cargo handling to address labor shortages, but in Thailand, labor shortages are not as much of a challenge, so the focus is on accident reduction during operations, enabling 24-hour operations, and improving efficiency through increased accuracy in operations.

Currently, around 15 unmanned trucks have been introduced, and they are also planned to be introduced at the F Terminal, which is currently under construction, to accommodate the expected increase in cargo volume.



Figure7 : Self -Driving trucks (Source : Hutchison Ports)

In addition, efforts towards environmentally friendly port operations, known as Green Port initiatives, have been urging recently. Based on the greenhouse gas reduction plan formulated by the Thai Ministry of Transport, the Port Authority of Thailand (PAT) has established an environmental master plan for ports. This plan includes transitioning to green energy, implementing forest regeneration projects, and promoting modal shifts. In Phase 3, efforts are being made to achieve a Green Port by utilizing renewable energy such as solar power, introducing electric cargo trucks, and implementing Single Rail Transfer Operator (SRT0) systems to reduce CO2 emissions.

5. Conclusion

Due to its location deep within the Gulf of Thailand, Laem Chabang Port has relatively fewer transit cargoes compared to ports like Ho Chi Minh in Vietnam or Port Klang in Malaysia. To compensate for this, efforts are being made to secure cargo from surrounding countries such as Cambodia and Laos as hinterland regions. Despite being at a disadvantage compared to ports like Ho Chi Minh and Klang ports, Laem Chabang port is benefit from having a railway connecting it to China via Laos, although difference gauges only within Thailand, it is expected that handling cargoes from China will be increased in the future.

As previously mentioned, the Phase 3 project of Laem Chabang Port is positioned as one of the key projects within the government's Eastern Economic

Corridor (EEC) initiative. It is considered a significant project within the Thai government, as evidenced by Prime Minister Prayut Chan-o-cha's visit to inspect the port last November.

The progress of the project at Laem Chabang Port is expected to bring about significant changes in the logistics situations of Thailand and the surrounding countries. It is important to continue monitoring the progress of the development and tracking for its operation to continue evolving logistics situations in the region.

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