

Japanese ODA Loan

Ex-Ante Evaluation (for Japanese ODA Loan)
Southeast Asia Division 2, Southeast Asia and Pacific Department
Japan International Cooperation Agency

1. Name of the Project

- (1) Country: Kingdom of Cambodia
- (2) Project :Sihanoukville Port New Container Terminal Expansion Project (I)
- (3) Project site/Target area: Sihanouk Province

Loan Agreement: August 6, 2022

2. Background and Necessity of the Project

- (1) Current State and Issues of the Ports and Harbors Sector in Cambodia

The Kingdom of Cambodia (Cambodia or “the country”) has two main international ports, one is the Sihanoukville Port that faces the Gulf of Thailand (“this Port”), and the other is the Phnom Penh Port on the banks of the Mekong River in the capital city, Phnom Penh. As Phnom Penh Port is a river port, there are restrictions on the amount of cargo it can handle as large vessels have difficulty entering the port due to its shallow water depth, so as the only deep-sea port in the country, this Port handles around 70% of Cambodia’s import and export container cargo freight.

The volume of container cargo handled at this Port has shown a year-on-year increase of 14% on average from 2015 to 2019, corresponding to the steady economic growth of Cambodia like the sewing industry leading the way. Due to the impact of COVID-19, growth was relatively flat in 2020 at 0.4% compared to the previous year, but the volume handled started to increase again in 2021, with an increase of about 14% on the previous year (Source: Port Authority of Sihanoukville (PAS) statistics).

Currently, this Port has a container cargo handling capacity of around 750,000 Twenty-foot Equivalent Units (TEU), but in 2021 they handled around 730,000 TEU, so the handling capacity is tight. Responding to this, PAS, which is in charge of running this Port, is trying to take short-term measures to increase the handling capacity, such as adding cranes and improving the quay of the existing container terminal, as well as developing the New Container Terminal 1 (NCT1) that is expected to increase the container cargo handling capacity by about 450,000 TEU through the Sihanoukville Port New Container Terminal Development Project (the ODA loan agreement (L/A) was signed in August 2017,

the detailed plans were completed in October 2021, and it's scheduled to start operations in December 2025).

However, future demand for container cargo handling capacity will be affected by the opening of an expressway between Phnom Penh and Sihanoukville, which will be discussed later, (scheduled to be completed in 2022), and while it will reach 1.2 million TEU in 2026-2027 (total capacity of the existing container terminal and NCT1) (Source: JICA Sihanoukville Port New Container Terminal Expansion Project Preparatory Survey (2022), hereinafter referred to as the "JICA Preparatory Survey") there are concerns that the handling capacity will once again be tight soon after NCT1 operations start. For this reason, there is an urgent need to increase the handling capacity of this Port by developing a New Container Terminal 2 and New Container Terminal 3 (NCT2 and NCT3 respectively) with the Sihanoukville Port New Container Terminal Expansion Project ("this Project") and procuring cargo handling equipment.

In addition, the volume of container cargo handled at this Port concerning the North American and European regions accounts for around 10% of imports and around 61% of exports (2020 results. Source: JICA Preparatory Survey), so both regions are a major and important trading partner for Cambodia, but the water depth of the existing port facilities and the quay extension are insufficient for the large vessels in service on the main North American and European sea routes for container transportation that call in at this Port. Therefore, at present the import/export container cargo that comes and goes from North America and Europe needs to be transshipped at Singapore, which is disadvantageous in terms of transportation time and costs in comparison with neighboring countries that have a direct transportation service to those regions, so the Cambodian government is hoping that this Project will help promote trade and improve the country's investment environment, by constructing a quay with the required extensions and water depth so that the large vessels on the North American and European sea routes will be able to stop at the port. It is estimated that by 2030 the volume of loaded container cargo handled at this Port between the North American and European regions will reach around 180,000 TEU with North America and around 270,000 TEU with Europe (Source: JICA Preparatory Survey).

Furthermore, in the fourth Quadrangle Strategy (2018-2023) of Cambodia's National Development Plan, the expansion of this Port is placed in the priority area of "improving the logistics system and improving connectivity in the

transportation, energy and digital fields.” In addition, this Port is located at a strategic point in the Greater Mekong Subregion Southern Economic Corridor Towns Development Project spearheaded by the Asian Development Bank (ADB), and is expected to become a regional logistics hub.

(2) Japan and JICA's Policy and Operations in the Port Sector

Japan's Development Cooperation Policy for the Kingdom of Cambodia (July 2017) sets out “support for promoting industry” as one of the priority areas, stating that Japan would work on “strengthening distribution networks (roads, ports, customs, etc.) in physical and non-physical aspects, from the perspective of enhancing regional connectivity and promoting industry.” “Strengthening the economic base” is a priority area in JICA Country Analysis Paper for the Kingdom of Cambodia (March 2014), and the development and expansion of this Port were analyzed as an important issue. Therefore, this Project is consistent with these policies and analyses. In addition, promoting the development of this Port that is geopolitically important, locating at a focal point that connects the Pacific Ocean and Indian Ocean, contributes to improving connectivity and helping to spread and establish the rule of law, freedom of navigation, and free trade in a Free and Open Indo-Pacific. Moreover, this Project will contribute to sustainable economic growth and industrialization through the improvement of logistics functions, and play a part in achieving Goal 8 (promote sustained, inclusive and sustainable economic growth) and Goal 9 (building resilient infrastructure) of the SDGs.

By implementing various schemes, Japan has continually cooperated with this Port that supports the economic development of the whole of Cambodia. Specifically, development planning survey technical cooperation formulated a plan for port expansion in the Study on Strengthening Competitiveness and the Development of Sihanoukville Port Project (2011-2012), an ODA loan was provided for the Sihanoukville Port New Container Terminal Development Project (L/A signed in 2017), the development of port facilities was promoted through the acquisition of PAS shares with overseas investment in the Sihanoukville Port Development and Operation Project (acquired in 2017, all acquired shares were sold in 2019, and currently two Japanese companies own PAS shares and provide it with technology and knowledge), and operational efficiency was optimized in the ODA loan ancillary project, the Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port Phase 2 (2018-2022).

Through these cooperation activities, JICA has made a large contribution to Cambodia's logistics and has become PAS's most important partner, and this Port has simultaneously become a symbol of the friendly relationship between Japan and Cambodia.

(1) Other Donors' Activity

A railway was constructed between Phnom Penh and Sihanoukville in cooperation with ADB. Even though this railway is used for freight transportation to this Port, as it takes longer to transport it by rail than by road, currently usage is limited to empty containers and some of the heavier containers.

China is supporting the development of an expressway between Phnom Penh and Sihanoukville (scheduled to be completed in 2022), and this is expected to be a new transport route for freight vehicles that travel between the two cities.

3. Project Description

(1) Project Description

1) Project Objective

The objective of the Project is to improve the container cargo handling capacity of Sihanoukville Port, the only international deep sea port in Cambodia, by expanding new container terminal and related infrastructure, thereby contributing to increase in shipping routes calling at Sihanoukville Port and trade promotion in Cambodia. .

2) Project Components

1) Civil engineering work: Development of NCT2 (container cargo handling capacity of around 570,000 TEU, total area of 20 ha, quay water depth of 16.5 m), development of NCT3 (container cargo handling capacity of around 620,000 TEU, total area of 21.5 ha, quay water depth of 17.5 m), dredging of routes and berths (water depth of 14.5 m), development of terminal facilities (administrative building and other related facilities) , etc.

2) Procurement and installation of cargo handling machines, etc.: Gantry cranes (6 units), rubber-tired gantry cranes (RTG) (20 units), yard trailers (35 units), reach stackers (4 units), etc.

3) Procurement of vessels: Tugboat (2), pilot boat (1)

Consulting services: Detailed designs (civil engineering work part), basic designs (cargo handling equipment, vessels part), bidding assistance, construction supervision, environmental and social consideration support, technology transfer, etc.

- 3) Beneficiaries of this Project (Target Group)
 - 1) Direct beneficiaries: Port Authority of Sihanoukville (PAS), Sihanoukville Port users
 - 2) Ultimate beneficiaries: Cambodian citizens
- (2) Estimated Project Cost
80,250 million Yen (Japanese ODA Loan: 41,388 million Yen)
- (3) Schedule
August 2022 - November 2030 (100 months). When all of the facilities start operations is considered as the completion of the Project.
- (4) Project Implementation Structure
 - 1) Borrower: The Government of the Kingdom of Cambodia
 - 2) Executing Agency: Port Authority of Sihanoukville
 - 3) Operation and Maintenance Agency: Same as above
- (5) Collaboration and Sharing of Roles with Other Projects and Donors
 - 1) Japan's Activities

Over time, Japan has repeatedly dispatched "port management advisors" (2009-2024), experts in loan fund cooperation, to PAS, to provide advice on the supervision and promotion of port management and ODA loan projects. In addition, there is a plan for the executing agency, PAS, to further strengthen the operation and management capabilities of this port (Container Terminal and SEZ) in an ODA loan ancillary project, the Project for Capacity Development on Container Terminal Management and Operation in Sihanoukville Port Phase 3 (2022-2026).

It is expected that the competitiveness of this Port will be increased by carrying out this Project along with these other projects, through all-round cooperation in expanding port facilities and optimizing operational efficiency.

- 2) Other Donors' Activities
None in particular
- (6) Environmental and Social Consideration
 - ① Category: B
 - ② Reason for Categorization: This Project does not qualify as a large-scale one as listed in the port sector of the JICA Guidelines for Environmental and Social Considerations (announced in April 2010), its undesirable impact on the environment is judged to be minimal, and it does not fall into any sensitive characteristics or sensitive areas

categories according to the same guidelines.

③ Environmental Permit: The Environmental Impact Assessment (EIA) report for this Project was submitted to the Ministry of the Environment in April 2022 and is scheduled to be approved in October 2022.

④ Anti-Pollution Measures : Countermeasures, like the maintenance of construction vehicles, water sprinkling, the use of silt fences and restrictions on construction times, will be taken during construction to protect the water quality, air quality, and to restrict noise and vibrations, etc. Dredged soil from the sea will be used for landfill as much as possible, but residual soil that is not suitable for landfill will be disposed of properly in accordance with Cambodian law. After the start of operations, air quality and water quality will be protected by measures like the maintenance of machines and the utilization of the ocean dumping site for which an official license has been obtained, so no significant negative impacts are expected.

⑤ Natural Environment: The area affected by the Project are not designated as or near national parks or other sensitive areas, and the level of undesirable impact to natural environments is expected to be minimal.

⑥ Social Environment: As this Project will be carried out in an existing port, it will not involve any land acquisition. However, the development of New Container Terminal 3 (NCT3) will involve the removal of an existing breakwater, and 21 of the household's involved in the aquaculture industry who use this breakwater will have to relocate their work huts, aquaculture nets, and floating huts, and this will proceed in accordance with a simple resettlement plan drawn up in line with JICA's Guidelines for Environmental and Social Considerations and Cambodia's domestic procedures and regulations. The affected residents have not expressed any particular dissenting opinions regarding this Project and their relocation. As fishermen reside in and use the existing port, an opening for the entry and exit of fishing vessels will be installed in the existing breakwater so that the passage of fishing vessels will not be hindered during construction and when it's in operation. In addition, measures will be taken to support even safer navigation in and around the port, like informing the fishermen of construction times and vessel's sailing times, and using tugboats for vessels entering and leaving the port.

- ⑦ Other / Monitoring: During the construction it will be under the supervision of this Project's executing agency, the Port Authority of Sihanoukville (PAS), and the contractors will monitor air quality, water quality, sludge (excavated materials), waste matter, noise, vibrations, etc. After operations start, PAS will monitor the air quality and water quality. Also, the resettlement mentioned above will be monitored by the Ministry of Economy and Finance's Directorate General of Resident Relocation.
- (7) Cross- Sectoral Issues: HIV/AIDS countermeasure clauses will be included in the bidding documents, with a plan to implement measures like providing HIV/AIDS preventative education for the construction workers.
- (8) Gender Category: [Gender issues] ■ GI (S) (Gender Activities Integration Project)
 <Details of Activities/Reason for Categorization> In order to promote the employment of female staff and the appointment of female management at PAS, the executing agency of this Project.
- (9) Other Important Issues: Japan's advanced technology, such as the column strut construction method is scheduled to be used for the civil engineering in this Project.

4. Targeted Outcomes

(1) Quantitative Effects

1) Outcomes (Operation and Effect indicators)

Indicator	Baseline (Actual value in 2021)	Target (2031) [2 years after project completion]
Container Cargo Handling Volume (TEU / year)	730,000	1,700,000
Annual Average Berth Operation Ratio (%)	62	60
Maximum Deadweight Tonnage (DWT) of vessels entering the port	26,000	160,000

Note: All baseline values are the actual results from the existing container terminal. The target for "Container cargo handling volume" is the total amount from the existing container terminal and the new container terminals (NCT1, NCT2, NCT3), and the target for the "Annual average berth occupancy" is the average from both.

(2) Qualitative Effects

An increase in the number of sea routes that stop at this Port including those from North America and Europe, promoting Cambodia's trade

(3) Internal Rate of Return

Based on the assumptions below, the economic internal rate of return of this Project will be 23.1%, and the financial internal rate of return will be 7.5%

【EIRR】

Costs: Project costs, operation and maintenance costs (all excluding taxes)

Benefits: Reduction of transportation costs, reduction of transportation time

Project Life: 40 years

【FIRR】

Costs: Project costs, operation and maintenance costs

Benefits: Port operation income

Project Life: 40 years

5. External Factors and Risk Control

(1) Preconditions

- The preceding ODA loan Sihanoukville Port New Container Terminal Development Project is carried out smoothly.
- Installation of customs facilities and deployment of customs officers needed for the operation of the new container terminals is carried out properly and smoothly by the Cambodian government.
- Transformer substations needed for the operation of NCT2 and NCT3 are installed properly and smoothly by the Cambodian government.
- Relocation of residents, which is necessary due to the partial removal of the existing breakwater for the development of NCT3, will be carried out properly and smoothly by the Cambodian government.

(2) External Factors

None in particular

6. Lessons Learned from Past Projects

The ex-post evaluations of the ODA loan projects to Cambodia, the Sihanoukville Port Urgent Rehabilitation Project and the Sihanoukville Port Urgent Expansion Project, (evaluations in FY2011), found that on the weekends when many vessels enter the port, trailer trucks congregated in front of the container terminal gates and obstructed traffic in the neighboring areas, so it was worth considering construction work to widen the roads around the gates. Based on this, the JICA Preparatory Survey for this Project estimated the future traffic volume, and confirmed that the access roads that were being constructed for the preceding ODA loan Sihanoukville Port New Container Terminal Development Project would be able to handle the volume of traffic after NCT2 and NCT3 start

operations.

The ex-post evaluation (FY2011) of the ODA loan Batangas Port Development Project (II) in the Republic of the Philippines found that a lack of differentiation and an allotment of roles between ports not being carried out as planned, led to a low level of operations. In addition, as the actual movement of cargo was determined by various factors, it was found that target values should not only be set from macro perspectives like GDP estimates, but should also consider the mid- and long-term outlook of industrial structure and requirements from client companies. Taking this into account, the JICA Preparatory Survey for this Project considered the future role sharing ratio of the two major international ports in Cambodia, Sihanoukville Port and Phnom Penh Port, and along with macro methods, used micro methods like creating demand forecasts of container cargo volume for each major product based on data collection from hearings with industry groups and related organizations, to confirm that plenty of container cargo volume is expected after this Project is completed.

7. Evaluation Results

This Project is consistent with Cambodia's development issues and policies, as well as Japan and JICA's cooperative policies and analyses. The expansion of new container terminals at Sihanoukville Port will contribute to increasing the number of sea routes that stop at this Port and promote Cambodia's trade, and it is thought that it will contribute to achieving Goal 8 (promote sustained, inclusive and sustainable economic growth) and Goal 9 (building resilient infrastructure) of the SDGs. Therefore, the necessity of the implementation of this Project is high.

8. Plan for Future Evaluation

(1) Indicators to be Used

As indicated in Sections 4.

(2) Future Evaluation Schedule

Ex-post evaluation : Two years after the project completion

END