

## **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: The Lao People's Democratic Republic ("Lao PDR")
- ( 2 ) Project Site / Target Area: Vientiane Capital
- ( 3 ) Project: The Project for Improvement of Vientiane International Airport
- ( 4 ) The Project for the Improvement of Vientiane International Airport
- ( 5 ) Grant Agreement: October 30, 2024

#### **2. Background and Necessity of the Project**

- ( 1 ) Current State and Issues of the Aviation Sector and the Priority of the Project in Lao PDR

The Lao People's Democratic Republic ("Lao PDR") is the only landlocked country in ASEAN, with 80 percent of its land comprising mountainous regions. Air transportation is a crucial component of the country's infrastructure as it facilitates the efficient movement of people and goods while enhancing connectivity with its neighboring countries. Vientiane International Airport ("Airport") located in the Vientiane Capital, plays a particularly important role as the gateway to the country and its economic hub. Backed by steady economic growth, with the average annual real GDP growth rate of 7 percent, the number of air passengers traveling through the Airport increased at an average annual rate of approximately 16 percent between 2010 and 2019, and in 2019, it reached approximately 2.34 million, with approximately 1.76 million international passengers and approximately 0.58 million domestic passengers (Source: The Department of Civil Aviation (DCA) of the Ministry of Public Works and Transport). Similarly, the number of flight arrivals and departures also increased at an average annual rate of approximately 16 percent, and in 2019, it reached 28,433, with 16,244 international flights and 12,189 domestic flights.

Although the number of passengers and flights declined due to the impact of COVID-19 in 2020 and 2021, air travel demand started to rise again in 2022 as cross-border mobility rebounded. By 2023, the number of passengers reached approximately 1.91 million, with approximately 1.34 million international passengers and approximately 0.57 million domestic passengers, while the number of flight arrivals and departures reached 23,008, with 11,653 international

flights and 11,355 domestic flights. By 2035, the number of passengers departing on international flights during peak hours is expected to reach 831 passengers per hour, and given the Airport's existing passenger handling capacity of 488 passengers per hour, it may struggle to meet the rising demand. For this reason, there is growing concern that the usability and efficiency of the Airport may be compromised due to its inadequate capacity in some passenger terminal facilities, such as international boarding gates and domestic baggage claim areas.

In addition, the taxiways connecting the runway and the aprons in the Airport were fully repaved with the support from the Asian Development Bank (ADB) in 1995 and then from Thailand in 2006. However, it has been confirmed that the taxiways are now in a state of deterioration due to aging as it has been over 15 years since they were last improved. As the number of flight arrivals and departures is anticipated to grow in the future, the taxiways are likely to suffer from more extensive and severe deterioration. Allowing the paved taxiways to continue to deteriorate would not only require more time and financial resources to repair them, but it could also seriously jeopardize aviation safety. In addition to the taxiways, an apron has cracks and the airfield lighting system is in a dilapidated condition as well, and the situation poses a serious challenge to aviation safety.

Under these circumstances, the Government of Lao PDR has identified the development of robust infrastructure, the fulfillment of regional potential, and the utilization of regional and international cooperation as one of its key policies in the 9th Five-Year National Socio-Economic Development Plan (2021–2025). Leveraging the country's geographically strategic location at the center of ASEAN countries, the Government aims to develop the country into a transportation hub for the movement of people and goods. Enhancing the convenience of air transportation between Lao PDR and its neighboring countries has been identified as one of the measures to achieve the goal.

The Project for the Improvement of Vientiane International Airport ("The Project") is intended to improve the usability, efficiency, and safety of the Airport by expanding the passenger terminal building and paving and repairing the taxiways and apron. It is identified as a priority project that is essential to the achievement of the above-mentioned Development Plan of the Government of Lao PDR.

## ( 2 ) Japan's and JICA's Cooperation Policy and Operations in the Aviation

## Sector

The Japanese Government has identified strengthening the connectivity of Lao PDR with its neighboring countries in both tangible and intangible aspects as a priority area in the Country Assistance Policy for Lao People's Democratic Republic (April 2019), and the Japanese Government provides support for the development and maintenance of infrastructure (including Vientiane International Airport) in both tangible and intangible aspects, which is beneficial to the enhancement of ASEAN connectivity. According to Lao People's Democratic Republic JICA Country Analysis Paper (March 2024), air transportation is considered to be an important means of transportation, both domestic and international, for Lao PDR as a landlocked country. However, Lao PDR does not have adequate facilities to meet the growing demand for international air transportation, and there is an urgent need to improve its airport facilities. The Project is, therefore, in line with Japan's and JICA's policy and analysis. Furthermore, the Project will contribute to the Third Pillar: Multi-layered Connectivity of the new plan for a Free and Open Indo-Pacific (FOIP) in terms of strengthening connectivity.

The steady economic growth of Lao PDR pushed the demand for air transportation higher than expected at the start of the Vientiane International Airport Terminal Expansion Project (2014 to 2018), an ODA loan under which the international passenger terminal building was expanded and the new domestic terminal building was built. The Project is designed to urgently improve facilities in the passenger terminal building whose capacity may be partially inadequate, and the taxiways, apron, and airfield lighting system, which have been improved before by other developing partners but are in need of urgent repair for aviation safety reasons, and the Project will be carried out in such a way that does not overlap the activities of the past ODA loan project. The Project is expected to achieve synergy with the cooperation provided by Japan in the past. The Transportation Strategy of the JICA Global Agenda states that airports are the essential transportation infrastructure for the development of a global network to realize a Free and Open Indo-Pacific. The Project is, therefore, in line with Japan's and JICA's policy.

### (3) Other Donors' Activities

Countries such as China and Thailand have provided support for Lao PDR in the past to pave the taxiways and apron and improve the airfield lighting system

of the Airport. However, there is currently no confirmed ongoing assistance from other donors for the Airport.

### **3. Project Description**

#### **( 1 ) Project Description**

##### **① Project Objective**

The objective of the Project is to expand the passenger terminal building and repair the taxiways and apron of Vientiane International Airport, thereby improving the efficiency and safety of the Airport and contributing to the strengthening of Lao PDR's industrial foundation.

##### **② Project Components**

- A) Facilities and equipment: **【Facilities】** Expanding the international passenger terminal building, repairing and improving the taxiways (Taxiways A and T), repairing the apron (Apron 1A), etc. Total floor area of approximately 64,200 m<sup>2</sup>; repairing and improving the airfield lighting system and electric facilities; adding baggage transportation equipment, etc.
- B) Consulting services/intangible components: Providing detailed design services; assisting in the tendering process; supervising construction and procurement; and providing technical advice and guidance on the maintenance and management of facilities and equipment.
- C) Procurement and installation method: We plan to source equipment in Japan. We will source any equipment that cannot be sourced in Japan or Lao PDR from a third country.

##### **③ Project Beneficiaries (Target Group)**

Direct beneficiaries: Users of the Airport (approximately 910,000 people),  
Ultimate beneficiaries: People of Lao PDR (approximately 7.52 million people)

#### **( 2 ) Estimated Project Cost**

Estimated project cost: 3,088 million yen (estimated cost contributed by Japan: 2,836 million yen, estimated cost contributed by Lao PDR: 252 million yen)

#### **( 3 ) Schedule (Cooperation Period)**

The Project is scheduled to last for a total of 51 months from October 2024 to December 2028. The Project will be completed when the airport facilities come into operation, which is scheduled for December 2027.

( 4 ) Project Implementation Structure

1 ) Executing Agency: Department of Civil Aviation (DCA) of the Ministry of Public Works and Transport

2 ) Operation and Maintenance System: Airports of Laos (AOL)

( 5 ) Collaboration and Sharing of Roles with Other Donors

1 ) Japan's Activity

In the Project for Expansion of Vientiane International Airport in the Lao People's Democratic Republic (2011 to 2013), which was an ODA grant, Japan provided cooperation in expanding the aprons and improving the security facilities, and in the Vientiane International Airport Terminal Expansion Project (2014 to 2018), which was an ODA loan, Japan helped to expand the international passenger terminal building and to build the new domestic terminal building.

Moreover, Japan carried out the Project for Technical Support on Continuous Improvement of Vientiane International Airport (2021 to 2022), which was a technical cooperation. In this project, Japan provided support for the development of the Airport' improvement plan in order to ensure the development effects of the above-mentioned ODA loan would continue.

2 ) Other Donors' Activity

N/A

( 6 ) Environmental and Social Consideration

1 ) Environmental and Social Consideration

① Category: B

② Reason for Categorization: The Project is not classified as a major project in the airport sector listed in the Japan International Cooperation Agency (JICA) Guidelines for Environmental and Social Considerations (issued in January 2022), is not likely to have significant adverse impacts on the environment, and does not have sensitive characteristics or is not in a sensitive area listed in the Guidelines.

③ Environmental Permit: The findings of the Initial Environmental Examination (IEE) for the Project has already been prepared by DCA, and an IEE report, which will be prepared based on the IEE findings, is due to be approved by the Department of Natural Resources and Environment (DONRE) of Vientiane Capital by the end of September 2024.

④ Anti-Pollution Measures: During the construction process, air quality and water quality may be affected, and it is expected that dust will be

generated and wastewater will be discharged from the work site because of the operation of transportation vehicles, the partial demolition of the side walls of the departure terminal building, and the removal of old slabs. However, the Project should be able to meet the environmental criteria of Lao PDR by having sprinkler facilities and simple septic tanks installed. Although noise may also be expected due to an increase in the number of night flights when the airport facilities become operational, the impact will be minimized as there are few houses nearby, and aircraft will only take off in the opposite direction of the urban area.

⑤ Natural Environment: The Project will be carried out on the existing premises of Vientiane International Airport and is likely to have minimal adverse impacts on the natural environment.

⑥ Social Environment: The Project will be carried out on the existing premises of Vientiane International Airport and will not be required to obtain land or relocate local residents. No major objections have been raised at stakeholder meetings from affected residents or other people.

⑦ Other/Monitoring: A construction company will monitor air and water quality levels, etc. under DCA's supervision in the Project. DCA will monitor noise levels when the airport facilities become operational.

( 7 ) Cross-Sectoral Issues: As measures to tackle climate change, LED lighting will be used for the airfield lighting system, which will be improved in the Project, and the existing facilities will be more energy efficient. The Project will, therefore, contribute to mitigating climate change.

( 8 ) Gender Category: 【Not applicable】 ■ Gender Informed [GI]

<Details of Activities/Reason for Categorization> We conducted a social and gender analysis in a survey, and we did not need to set specific initiatives or indicators for gender equality or women's empowerment.

( 9 ) Other Important Issues: N/A

#### 4 . Targeted Outcomes

( 1 ) Quantitative Effects

Indicator	Baseline (Actual value in 2019)	Target (2030) [3 years after project completion]
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Passenger handling capacity at the boarding gates in the international passenger terminal (passenger per hour)	488	831
Waiting times during peak hours at the baggage claim areas in the domestic passenger terminal building (in minutes)	20	10
Pavement Condition Index (PCI) for Taxiways A and T (point)	39	95 or higher
PCI for the entire Apron 1A (point)	55	70 or higher
Number of international flight arrivals and departures per year	16,244	24,655

Note: In the Pavement Condition Index (PCI), 100 is the best possible condition and 0 is the worst possible condition. 70 or higher is a satisfactory condition. In the Project, repair works will be carried out based on the PCI rating.

Note: The actual value in 2019 is used as the baseline so as not to take air traffic reduced by the impact of COVID-19 into account.

## ( 2 ) Qualitative Effects

- Improving the usability and efficiency of the Airport;
- Ensuring aviation safety; and
- Increasing the movement of people and goods through the Airport

## 5 . External Factors and Risk Control

The number of air passengers in Lao PDR will be closer to the pre-COVID-19 pandemic levels.

## 6 . Lessons Learned from Past Projects

We have learned the importance of selecting equipment with the continuous maintenance and management of the equipment in mind. The 2015 ex-post evaluation of the Project for Expansion of Vientiane International Airport in the Lao People's Democratic Republic, which was an ODA grant for Lao PDR, states that when selecting equipment (i.e. fire engines in this project), there may not have been full discussion between DCA, which was the owner of the equipment, and AOL, which was responsible for the maintenance of the equipment. The evaluation also states that although firefighting functions were not affected, spare parts for some electrical systems needed to be procured from outside ASEAN countries, and it was difficult to perform repair works in a timely manner. In order to ensure the appropriate maintenance of equipment in the Project, DCA, which

is the executing agency of the Project, and AOL, which is responsible for the maintenance of equipment, worked closely in a preparatory survey to effectively select equipment.

## **7 . Evaluation Results**

The Project is in line with Lao PDR's development challenges and policy and Japan's and JICA's cooperation policy and analysis. The Project will help strengthen the country's industrial foundation and is expected to contribute to SDG Goal 8: Promote inclusive and sustainable economic growth and Goal 9: Build resilient infrastructure. It is, therefore, crucial to support the implementation of the Project.

## **8 . Plan for Future Evaluation**

( 1 ) Indicators to be Used:

As indicated in Sections 4.

( 2 ) Future Evaluation Schedule:

Ex-post evaluation: 3 years after the project completion

END

Appendix:

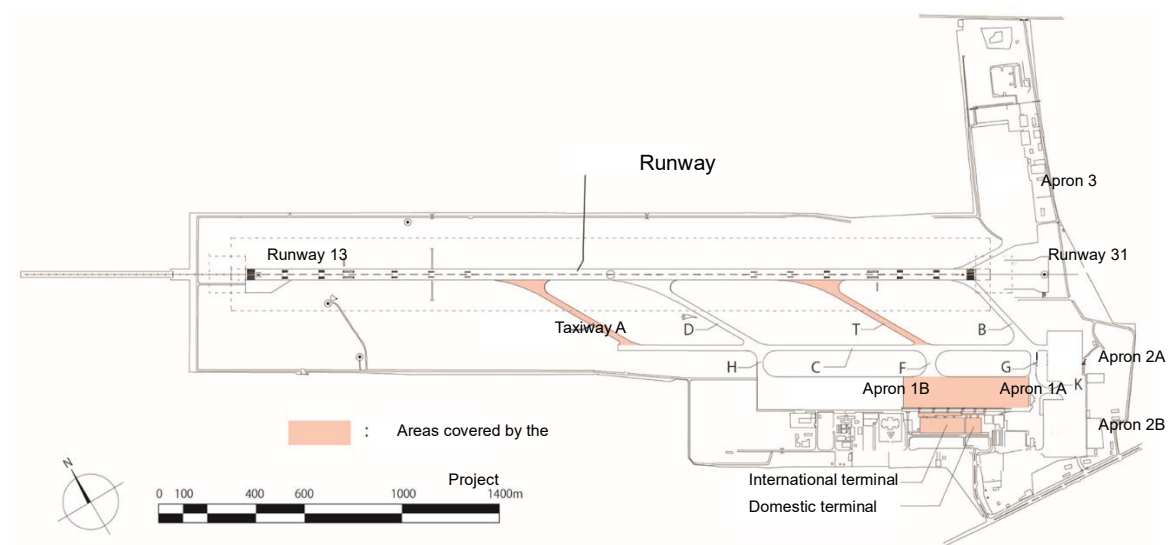
Map for the Project for the Improvement of Vientiane International Airport



Map for the Project for the Improvement of Vientiane International Airport



Source: Report from JICA Project



Source: JICA Survey Team