

Ex-Ante Evaluation (for Japanese ODA Loan)

Southeast Asia Division 2, Southeast Asia and Pacific Department, JICA

1. Name of the Project

- (1) Country: Kingdom of Cambodia
- (2) Project Site/Target Area: Banteay Meanchey, Battambang, Kampong Cham, Kampong Chhnang, Kampot, Kandal, Kratie, Prey Veng, Siem Reap, Svay Rieng (10 provinces in total, population of about 8 million)
- (3) Project: The Project for the Improvement of Infectious Waste Management
Grant Agreement: November 12, 2022

2. Background and Necessity of the Project

- (1) Current State and Issues of Health Sector Development and Priority of the Project in the Kingdom of Cambodia

While the novel coronavirus infection ("COVID-19") spread globally, the Kingdom of Cambodia ("Cambodia") was successful in controlling the spread of infections. However, the number of infected people grew after a community-acquired infection occurred in February 2021, with the number of new cases rising to around 1,000 per day at its peak. Under such circumstances, the government of Cambodia promoted vaccination, resulting in more than 80 percent of the public being vaccinated and some 60 percent receiving a booster (as of October 2022, source: Our World in Data).

The public healthcare service delivery system in Cambodia is gradually being established mainly around the capital, Phnom Penh, but the gap between the capital and provinces is wide. For instance, regarding medical waste management, incinerators and sterilization equipment are installed in local hospitals, but their features may be insufficient with no temperature control due to mainstream incinerators being made of brick. There are hospitals where the equipment is not fully functioning due to aging. Hospitals that do not own incinerators or sterilization equipment bring their medical waste to nearby hospitals with treatment facilities to have them treated. The temperature of brick and old incinerators is unable to be controlled and the exhaust cannot be treated resulting in complaints from residents in the vicinity about black smoke and foul odor. They also generate large amounts of dioxins as they are unable to get hot enough, potentially damaging the health of nearby residents. Under such circumstances, despite the increase in medical waste from the COVID-19 vaccination, medical waste is not managed thoroughly, but is scattered across the hospital grounds with inappropriate disposal of infectious waste occurring

such as insufficient separation of general waste and medical waste, placing the staff working at the hospital, patients, and neighboring residents at risk of exposure to pathogens from the infectious waste. Additionally, the National Deployment and Vaccination Plan for COVID-19 Vaccines launched in January 2021 lists establishing an environment that enables proper waste disposal at medical facilities as a priority issue in order to respond to increasing medical waste from the COVID-19 vaccination campaign.

The Project for the Improvement of Infectious Waste Management ("the Project") aims at proper sterilization and infection control of infectious waste by installing incinerators at a total of 29 public medical facilities at provincial and district levels responsible for infectious waste disposal. It is positioned as a high priority project that is essential for achieving the plan mentioned above. As for the target of the Project, public medical facilities that do not receive duplicate support from other donors, that have infectious waste disposal equipment with insufficient disposal capacities, and that are high priority for the Ministry of Health and provincial health departments were selected from provinces where there has been cooperation from Japan in the past in the field of healthcare.

(2) Japan and JICA's Cooperation Policy and Operations in Relation to the Health Sector

The health and medical care sector is included in the pillars of priority "improvement of quality of life" in the Japan's Country Development Cooperation Policy for the Kingdom of Cambodia (July 2017). The JICA Country Analysis Paper for Cambodia (March 2014) also analyses the promotion of social development such as "improvement of waste disposal" and "improvement of health and public health" as priority issues and the Project is consistent with these policies and analyses. JICA Global Agenda "Health and Medicine" promotes strengthening our response to public health crises such as COVID-19 and building a system to protect health, which is fundamental to people's lives, and the Project is consistent with this as well. The Project also contributes to enhancement of hospital functions, which aligns with "strengthening the infectious disease diagnostic and treatment system" in JICA's Initiative for Global Health and Medicine. Additionally, it also contributes to the objectives of SDG 3 *Ensure healthy lives and promote well-being for all at all ages*.

(3) Other Donors' Activity

Regarding the proper disposal of infectious waste, the World Bank and the Asian Development Bank provided medical waste sterilization equipment. The

Global Fund provided incinerators. There is no overlap between these Projects and the Project.

3. Project Description

(1) Project Description

[1] Project Objective(s): The Project is aimed at strengthening infectious waste disposal by installing infectious waste disposal equipment at 29 public medical facilities, thereby contributing to reducing health hazards.

[2] Project Component(s):

a) Facilities, equipment, etc.: [Equipment] Medical waste incinerators with temperature control and an exhaust treatment device (29 units)

b) Consulting service/Intangible component: Detailed design work, bidding assistance, procurement supervision, training for operating and maintaining procured equipment, etc.

[3] Beneficiaries (Target Group): Staff working at 29 target hospitals (5 provincial hospitals, 24 district hospitals), their patients and local residents using the target hospitals: Approximately 542,000 people (Target provinces: Banteay Meanchey, Battambang, Kampong Cham, Kampong Chhnang, Kampot, Kandal, Kratie, Prey Veng, Siem Reap, Svay Rieng)

(2) Estimated Project Cost: 451 million yen (Estimated cooperation (Japan): 436 million yen, (Cambodia): 15 million yen)

(3) Schedule (Duration of Cooperation): November 2022 to August 2027 (58 months in total). The Project will be completed upon commencing equipment provision (September 2024).

(4) Project Implementation Structure

1) Executing Agency: Ministry of Health, Kingdom of Cambodia

2) Operation and Maintenance Agency: The gap is wide between hospitals in terms of operating systems and the skill levels of hospital staff for maintaining infectious waste disposal equipment. To continuously strengthen the maintenance system, a system will be established for the Ministry of Health and provincial health department staff to receive training to become instructors so that training can be conducted in the hospitals for hospital staff by infection control committee members regarding incinerator operation, proper separation and management of waste, monitoring, etc. The development of manuals for this purpose and some of the training will be provided as part of the intangible component. The Project also adds a two-year maintenance contract in addition

to the one-year manufacturer warranty to strengthen the maintenance system. In terms of finances, the provincial health departments bill the Ministry of Health for maintenance costs including fuel costs for the incinerators needed at each hospital, and receive allocation from the Ministry of Health. There is no obstacle to the same applying in this cooperation as well.

(5) Cooperation and Sharing of Roles with Other Donors

- 1) Japan's assistance activities: None
- 2) Other donors' assistance activities: None

(6) Environmental and Social Consideration

1) Environmental and Social Consideration

[1] Category: B

[2] Reason for Categorization: The Project does not fall into any category in the large-scale waste management and disposal sector as per the JICA Guidelines for Environmental and Social Consideration (promulgated January 2022), and it has been determined that the Project will not result in serious undesirable impacts on the environment, nor does it have sensitive characteristics or take place in a sensitive area as per the Guidelines.

[3] Environmental Approval: The domestic laws of Cambodia do not mandate the preparation of an Initial Environmental Impact Assessment (IEIA) report for the Project.

[4] Pollution Control: During construction, for noise, soundproofing equipment will be used and the use of heavy machinery will be avoided at night to meet the domestic environmental standards. When commencing the service, there may be an impact due to air pollution and noise in surrounding areas caused by operation of the incinerator. However, the impact on air quality is minimized by installing incinerators with temperature control and controlling the incineration temperature, checking that it is operated properly, and conducting regular maintenance. To minimize noise, the fan, which is the main source of sound, will be placed in a soundproof box.

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

[6] Social Environment: The Project installs incinerators in medical

facilities. No additional land acquisition or involuntary relocation of residents will take place.

[7] Other / Monitoring: During the construction, the installation agencies, and after commencing the service, the infection control committee at each hospital will monitor noise, accidents, etc.

(7) Cross-Cutting Issues: None in particular

(8) Category of Gender: GI (Gender mainstreaming needs assessment and analysis project)

<Description of activities and reason for classification> Although gender mainstreaming needs were studied in the preparatory survey for cooperation in the Project, no indicators were set for specific activities that contribute to gender equality or women's empowerment.

(9) Other Important Issues: None in particular

4. Targeted Outcomes

(1) Quantitative Effects

1) Performance Indicators (Operation and Effect Indicators)

Indicator	Baseline (Actual value in 2022)	Target (2027) [3 years after Project completion]
Amount of medical waste properly disposed of (kg/day)	310	1,454

* Amount of medical waste disposed of with low environmental impact using incinerators with temperature control, sterilization equipment, etc. Baseline and Target are total values of the 29 hospitals receiving support.

(2) Qualitative Effects: Reduction of damage from exposure to infectious pathogens or its risk. Lower impact on surrounding environment (smoke pollution, foul odor, etc.)

5. Preconditions and External Conditions

(1) Preconditions: None in particular

(2) External Conditions: None in particular

6. Lessons of Similar Past Projects and Application of the Lessons to This Project

The ex-post evaluation of the Project for Infectious Disease Control (evaluated in 2013), a grant aid for the Kingdom of Cambodia, found that in one of the 24 incinerators installed, repairs were delayed for its solar panel battery that runs the

fan due to the skill level of the healthcare facility staff and budgetary restraints. Recommendation was made advising that the executing agency check the state of the incinerator and analyze the cause of the malfunction before arranging for repairs. In the Project, to prevent problems related to regular maintenance including repairs from occurring, technical support for operational staff will be implemented as part of the intangible component for continuous education and training on equipment maintenance, in addition to selection of equipment whose part procurement and repairs are easy.

7. Evaluation Results

The Project aligns with the assistance policies and analysis results of Japan and JICA, as well as the development issues and policies of Cambodia. Providing equipment that supports the growing need for medical waste management helps improve medical waste management in Cambodia. The Project is also consistent with the objectives of SDG 3 *Ensure healthy lives and promote well-being for all at all ages*. The Project is therefore considered to have a high level of need that warrants support.

8. Plan for Future Evaluation

(1) Indicators to be Used

As indicated in section 4.

(2) Timing

Ex-post evaluation: 3 years after Project completion

End

Attached material: The Project for the Improvement of Infectious Waste Management - Map

Map for the Project for the Improvement of Infectious Waste Management



Legend

- ★ Capital
- Provincial hospitals (underlined)
- District hospitals

Source: Created by the preparatory survey consultant for The Project for the Improvement of Infectious Waste Management in the Kingdom of Cambodia