

**Ex-Post Project Evaluation 2020
Package II -2(Ecuador,Cambodia)**

February 2022

JAPAN INTERNATIONAL COOPERATION AGENCY

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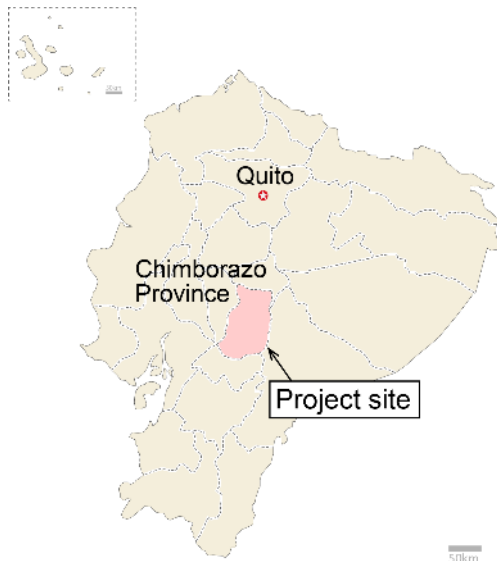
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FY2020 Simplified Ex-Post Evaluation Report of Japanese Grant Aid Project

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Duration of the Study: October 2020-February 2022

Ecuador	<El Proyecto de Construcción y Equipamiento de las Unidades Operativas del Ministerio de Salud Pública en la Provincia de Chimborazo>
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Project site



Carpi health center constructed under this project

I. Project Outline

Background	<p>In Ecuador, almost half of the medical facilities were over 25 years old on average, and medical equipment became inoperable, outdated, and scarce, which became an obstacle for the residents to receive medical services. Especially in Chimborazo province, which is located in a mountainous area with a high poverty rate, due to the existing medical inequality compared to the urban areas, even the basic medical services were not adequately provided because of the poor functionality of the primary medical institutions. People in these areas were forced to use remote medical facilities, which was a physical and economic burden for many of them. Therefore, the renovation and expansion of medical facilities and the improvement of medical equipment became an urgent matter to realize a healthy life for the residents. The government had identified the strengthening of primary health care services as a key issue, and has been reviewing the health care service system, promoting the construction of new facilities and the renovation of existing ones. Based on the above background, the Government of Ecuador requested Japan to provide grant assistance for the construction of primary health care facilities and medical equipment in Chimborazo Province.</p>
Objectives of the Project	<p>To provide appropriate healthcare services to the residents of the Chambo Riobamba first health district in Chimborazo province, by the means of constructing two primary health centers and procuring medical equipment in Santa Rosa and Carpi, thereby contributing to the improvement of healthcare services in the project target area.</p>
Contents of the Project	<ol style="list-style-type: none"> 1. Project Site Chambo Riobamba first health district in Chimborazo province (At the time of the ex-post evaluation, the name was changed to "Health Division Three") 2. Japanese Side: <ul style="list-style-type: none"> 【Facility Construction/Procurement of medical equipment】 <ul style="list-style-type: none"> ▪ two primary healthcare centers in Santa Rosa and Carpi (about 4,000m² of floor space) ▪ medical equipment (X ray instruments, ultrasound diagnostic machines, a set of dental equipment, hemocytometers, etc.) 【Soft component】 <ul style="list-style-type: none"> ▪ maintenance training for medical equipment 3. Ecuador Side: <ul style="list-style-type: none"> ▪ Demolition of existing facilities, clearance and preparation of the land for the construction

	<ul style="list-style-type: none"> ▪ Securing of construction infrastructure at the project sites ▪ Securing of construction infrastructure to the project sites ▪ Payment of relocation expenses for new facility (including purchase of furniture and equipment) ▪ Construction of the entrance, fences, and gate houses ▪ Procurement of medical equipment, furniture and office supplies for the new facility ▪ Conducting environmental monitoring and construction permission, etc. 		
Implementation Schedule	E/N Date G/A Date	<p>E/N: June 27, 2014 G/A: October 6, 2014</p> <p><1st change> E/N: June 16, 2015 G/A: June 16, 2015 (Additional funds were provided due to insufficient funds from exchange rate fluctuations.)</p> <p><2nd change> G/A: April 18, 2016 (Extended the deadline to adjust the construction plan due to failed bidding.)</p> <p><3rd change> E/N: December 12, 2017 G/A: December 22, 2017 (Extended the deadline for soft components due to delays in procurement of materials.)</p>	<p>Completion Date</p> <p>Date of delivery of procured equipment January 30, 2018</p> <p>Completion ceremony of constructed facility February 6, 2018</p>
Project Cost	<p>E/N Grant Limit/G/A Grant Limit: 【Japanese side】Phase 1: 1,019 million yen/Phase2: 166 million yen Total: 1,185 million yen 【Ecuador side】 100 million yen 【Total cost】 1,285 million yen</p>		<p>Actual Grant Amount 【Japanese side】 1,183 million yen 【Ecuador side】 unknown</p>
Executing Agency	Ministry of Public Health		
Contracted Agencies	<p>Main consultant: Nihon Sekkei, Inc. Agents: Tokura Corporation</p>		

II. Result of the Evaluation

Summary

This project was implemented in the Chambo Riobanba first health district (at that time of planning), Chimborazo Province of Ecuador, with the aim of providing appropriate healthcare services to the residents by upgrading the facilities and equipment of two health centers (Santa Rosa and Carpi). At the time of planning this project, the Ministry of Public Health was implementing a plan to upgrade medical facilities and equipment, which was consistent with Ecuador's development policy. In addition, the lack of primary level medical facilities and the aging of medical equipment were serious problems in the target areas of this project, so it can be said that the project was fully in line with the development needs. This project targeted areas with high poverty rates in Ecuador, which was in line with Japan's aid policy of emphasizing support in the health sector to improve disparities. As for the achievement of the project's effectiveness indicators, the number of outpatients generally met the target, and the number of radiographs and laboratory tests exceeded the target. As a result of this project, the medical services available at both health centers have been diversified and the number of accepted patients has increased, thereby improving the health and medical services. Qualitative effects were also confirmed, such as the newly established prevention and awareness office conducting awareness-raising activities for the residents to promote their health. In addition, the project reduced congestion at secondary level medical facilities, promoted cooperation among medical facilities, and increased the number of indigenous people using the facilities. Regarding control measures against Covid-19, the project played an important role as one of the regional medical institutions by conducting PCR tests, vaccinations, and the monitoring of patients with positive test results. Therefore, this project is deemed to be highly effective with a positive impact. The facilities and equipment were generally in line with the plan, and the

project cost was also as planned, but the project period exceeded the plan, so the efficiency is fair. In terms of operation and maintenance, there were no technical problems, however, both centers were not able to secure the number of medical staff expected at the time of planning, and in terms of finances, there were issues in securing a budget for hiring medical staff, so the sustainability of the project is judged to be fair. Overall, the evaluation of this project can be said to be satisfactory.

Overall Rating¹	B	Relevance	3²	Effectiveness & Impact	3	Efficiency	2	Sustainability	2
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<Special perspectives considered in the ex-post evaluation/constraints of the ex-post evaluation>

Implementation of a remote field survey using local survey assistants

Due to the spread of Covid-19 in the project country, the external evaluator did not travel to the project site. However, the external evaluator conducted the field survey remotely from Japan. The survey was conducted with the help of a local survey assistant, who in turn conducted an on-site inspection of the project sites, collected information and data, interviewed the people involved in the project, etc. The external evaluator examined the information collected and made an evaluation analysis and judgment. To check the operation and maintenance status of the equipment, the local survey assistant observed the operation and maintenance status of the equipment at the two health centers on behalf of the evaluator. In addition, a list of equipment provided by the project was sent to the two centers, and they were asked to fill in the form regarding the status of the equipment. Based on these results, the evaluation of the maintenance status of the equipment was conducted.

Revision of quantitative indicators for judging effectiveness

Revision of the target year: The two health centers constructed under the project were originally planned to be completed in 2016, and the target year for achievement of the indicators was 2019, three years after the original completion year. However, the project was completed in February 2018 (the reason for the delay is described in the efficiency section), so the target year was revised in this evaluation. Normally, the target year should be set at 2021, which is three years after the completion of the project (2018), but since the latest data available at the time of this evaluation is 2020, the indicator (target values) was recalculated with 2020 as the target year.

Modification of target values: Health centers in Ecuador are classified into types A to C based on the size of their beneficiary population and the type of medical services. Before the project was implemented, the two health centers were classified as type A, which is the smallest type, and the target beneficiary population was up to 10,000. (As of 2013, the actual beneficiary population was 18,925 in Santa Rosa and 6,632 in Carpi).³ It was planned that both health centers would be upgraded to medium size centers, type B, through this project and the target population at that time was 10,001 to 25,000. The beneficiary population was later reviewed and by the time of the ex-post evaluation, both centers were classified as type B as planned, but the target population was changed to 10,001 to 35,000. Since the actual beneficiary population was not available at the time of the ex-post evaluation, the target values are recalculated based on the estimated population in 2020 (31,050 in Santa Rosa and 25,101 in Carpi), which was used in the planning stage.

Definition of project cost at time of planning

The first G/A for this project was signed in October 2014, followed by an amended G/A to allow for additional grant. This project was signed before the introduction of the system for dealing with exchange rate fluctuations (**contingencies**), and it was concluded that the additional grant for this project was an appropriate adjustment to deal with the shortage of funds due to exchange rate fluctuations. Therefore, in this evaluation, the project cost after the additional grant is evaluated at the planned amount.

1 Relevance

<Consistency with the development policy of Ecuador at the time of ex-ante evaluation>

Ecuador's national development plan, the *National Plan for a Good Living 2009-2013*, identified the improvement of infrastructure, medical equipment, and dissemination of and access to healthcare services as key policy issues in the healthcare sector. The *Ministry of Public Health Institutional Strategic Plan 2009-2013* (Draft), which was prepared by the Ministry of Public Health at the time of the plan, identified the improvement of medical facilities and equipment to maximize service delivery as one of the priority issues. In addition, the *Territorial Plan* clearly stated that facilities should be built or renovated for each territory according to their local health and medical needs, rather than by the administrative division. Regarding the primary health care facilities in the Chambo Riobanba health division, it was planned to construct seven type A, five type B, and two type C health centers. Of these, the Santa Rosa and Carpi health centers, the targets of this project, were to be renovated as type B. Based on the above, it is concluded that this project was consistent with Ecuador's development policy.

<Consistency with the development needs of Ecuador at the time of ex-ante evaluation>

At the time of the planning of this project, in the Province of Chimborazo, which is located in a mountainous region with one of

¹ A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

² ③: High, ②: Fair, ①: Low

³ The Carpi Health Center was planned to be upgraded to type B by merging with the Lican Health Center (beneficiary population: about 8,600) in the vicinity.

the highest poverty rates in Ecuador, the number of people using primary health institutions had increased rapidly from 524,651 to 965,041 within the past four years between 2007 and 2010 (an increase rate of 184%). Due to the increase of the users, medical facilities and equipment became seriously damaged and deteriorated, and it also became difficult to update them in a timely manner, which became an obstacle for residents to receive basic medical services. Instead of primary medical institutions located nearby, locals started visiting secondary medical facilities located in remote areas, which were better equipped and staffed. It was a physical and economic burden for many of them. As a result, the number of patients was over-concentrated at the secondary level, even though they could be treated at the primary level. Based on the above, it is concluded that the project to provide primary-level medical facilities and equipment was consistent with the development needs of Ecuador.

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

In the *Country Assistance Policy for Ecuador* (April 2012), the final goal was "Reducing inequalities and promoting sustainable development", and the medium goals were "Reducing inequalities" and "environmental conservation and disaster prevention". To achieve this goal, the policy clearly stated that assistance would be provided in the health sector, in addition to regional development, education for the poor and disabled, etc. This project was consistent with Japan's aid policy.

<Evaluation result>

In light of the above information, the relevance of the project is high.

2 Effectiveness and Impacts

<Effectiveness>

In this evaluation, the target values for the number of patients, the number of X-ray examinations, and the number of laboratory examinations at both health centers were set as quantitative effects. As mentioned in the above special perspectives to the evaluation, the status of achievement is judged based on the revised target values at the time of the ex-post evaluation. In addition, the effectiveness of this project is evaluated by confirming the following: "activities in the Prevention and Awareness Office will be continuously implemented based on the plan" and "the types of health care services will be expanded," which were assumed as qualitative effects.

<Quantitative effects: Number of outpatients, X-ray examinations and laboratory examinations at both health centers>

The status of achievement of the revised target values is as follows.

Regarding the number of outpatients⁴, Santa Rosa and Carpi achieved 91% and 80% of their targets, respectively. Both centers experienced a temporary decline in the number of patients after 2019 due to people avoiding the risk of Covid-19, but after taking measures to prevent the infection risk, such as building separate entrances and waiting rooms for patients with a fever and other symptoms of respiratory illness, residents feel safe using the centers again. The number of X-ray examinations at both centers significantly exceeded the target. There are no other health centers equipped with X-ray equipment in the neighborhood, so it is thought that the number of patients, including people referred from other centers, greatly exceeded the target values. It was reported that there were no negative effects such as aging of equipment and increased waiting time due to the unexpected increase in X-ray examinations. Regarding the number of laboratory examinations, both health centers achieved more than the target value. Santa Rosa achieved a significant increase, and this was due to the large number of requests for examinations from neighboring laboratories and health centers. No negative effects such as aging of equipment and increased testing time were reported here either.

Looking at the achievement status of the quantitative indicators, the number of patients has been almost achieved, and the number of X-ray and laboratory examinations has exceeded the target values. Therefore, it is considered that the facilities and equipment provided by this project are being properly utilized and are contributing to the improvement of the healthcare services provided by the two centers.

Table 1 Achievement Status of the Quantitative Indicators (2018-2020) (Unit: number of cases)

Santa Rosa health center					
	2012 Baseline	2020 Revised target	2018 Actual	2019 Actual	2020 Actual
Number of Outpatients	10,860	32,776	21,938	28,543	29,860 (91%)
X-ray Examinations	0	268	2,126	2,490	3,045 (1,135%)
Laboratory Examinations	0	31,857	101,945	136,162	107,520 (337%)
Carpi health center					
Number of Patients	19,375	26,497	28,573	31,235	21,220 (80%)
X-ray Examinations	0	703	1,633	690	1,047 (149%)

⁴ Number of patients who used the health center for prevention and treatment of disease (including dental).

Laboratory Examinations	17,261	25,754	38,928	42,129	27,999 (108%)
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Source: Questionnaire responses, % means percentage of targets achieved

<Qualitative effects: Activities in the prevention and awareness office will be continuously implemented based on the plan>

The prevention and awareness office is a unit that conducts activities to promote health and disease prevention in the community. It was planned that community health workers would mainly conduct awareness raising activities in their home communities, and the office for these activities would be established in both health centers. At the time of the ex-post evaluation, the prevention and awareness office had been set up in both centers, and various awareness raising activities were being conducted for the local residents. However, due to budget constraints, the community health workers were not hired as planned, and the center's staff, including doctors, nurses, and nutritionists, prepared a weekly plan for awareness-raising activities and conducted them on a rotation basis. On this point, it was mentioned that conducting such awareness-raising activities after medical consultation hours was a burden on the center staff, and that it would be desirable to hire community health workers in the future.

The theme of the recent activities of the prevention and awareness office has been countermeasures against Covid-19. Specifically, the office provides information on how to prevent infection at home and in the workplace, individual counseling for those who cannot go to the large-scale vaccination sites, and individual counseling for alcoholism and domestic violence. From the above, at the prevention and awareness office established in both health centers, the center staff prepares activity plans according to the local needs, and activities based on these plans have been continuously implemented.

<Qualitative effects: Types of health care services will be expanded>

Before the project's implementation, both centers were classified as type A, providing basic medical services, and their main services were internal medicine and dentistry, with only Carpi providing gynecology and basic laboratory services (blood, urine, tuberculosis, etc.). After the project, both centers were upgraded to type B. In addition to the previous services, the center now offers basic diagnostic imaging, rehabilitation, sample collection, and laboratory examinations, enabling it to meet the medical needs of a larger number of patients. It is clear from the increase in the number of patients and various examinations in the quantitative indicators that the capacity to provide medical services has been improved. In addition to the medical services, the large waiting room that is user-friendly and the design that makes it easy to find the location of each department are highly appreciated by users. The multi-purpose toilets that are designed for mothers, children, and the disabled are also appreciated not only by the users but also by the staff of the neighboring health centers (see Gender Impact).

From the above, it is judged that the expected qualitative effects, such as the implementation of the activities by the prevention and awareness office and the expansion of the health care services, have been achieved.



Laboratory (Carpi)



Prevention and Awareness Office and the educational materials (Carpi)

<Impacts>

The impact of the project as stated in the project objectives is the "improvement of health care services" in the project area, but no indicators were set at the time of planning. In this ex-post evaluation, interviews and questionnaires were conducted with the department of primary health care of the Ministry of Public Health, the health coordinating zone three, and the directors of the two health centers to determine the impact and identify examples showing improvement in the health service in the target areas. The specific impacts identified is as follows.

<Strengthened coordination among medical institutions>

At the time of the project planning, there were not enough medical services in Chimborazo province due to the aging of the primary medical facilities and a lack of equipment, which resulted in a concentration of patients in the secondary medical facilities. At the time of the ex-post evaluation, both health centers were able to receive a larger number of patients due to the new healthcare services added through the project, such as X-ray examination, laboratory examination, and rehabilitation. As a result, it was confirmed from the interviews with the directors of both health centers and the health coordinating zone three that the project contributed to reducing overcrowding at the secondary medical facilities.

The number of referrals from the health centers to secondary medical facilities decreased significantly from 2019 to 2020 due to Covid-19 (from 7,114 to 278 in Santa Rosa and from 423 to 119 in Carpi). Data before 2018 was not available, so it is not possible to confirm changes after the completion of this project. According to the directors of the two centers, the number of patients that can be handled by the health centers has increased, and only those patients with serious illnesses that cannot be cared by the centers would be referred and transported to higher-level medical facilities. At the same time, the number of consultations from lower-level medical facilities such as health posts increased due to the increased number of medical services and doctors at the centers. This shows that coordination among medical facilities in the region is being strengthened.

<Increase in indigenous users>

In particular, the Carpi health center is located in a mountainous area with a large population of indigenous people. They rely on traditional doctors and medicines and tended to not want to go to public medical facilities. In addition, the water quality in such areas is poor, and there are issues such as food shortages and poverty, which make malnutrition a serious problem in these areas. The prevention and awareness office, which was established after this project, aims to provide cross-cultural medical services by assigning staff who can speak indigenous languages and who visit their villages to give lectures on health and nutrition. In addition, the signboards in both centers are written in two languages, Spanish and indigenous languages. As a result, the awareness of the health center has increased and the number of users, especially among the younger generation of indigenous people, is increasing.⁵

<Countermeasures against Covid-19 infections>

Both health centers have established emergency rooms for Covid-19, with separate entrances and spaces from general users. The center provides free PCR testing, referral of infected patients needing treatment to special facilities for Covid-19 and monitoring by phone of patients who are staying at home. In addition, the centers provide individual vaccination services for the disabled and elderly, who are unable to go to the large-scale vaccination centers, at the centers' prevention awareness room. In this way, to prevent the spread of Covid-19 infections, the centers respond to the needs of the residents and plays an important role as a part of the local medical facilities in cooperation with related institutions.

<Gender considerations and other impacts>

With regards to gender, there were no specific cases of impact that could be identified. Both facilities are designed with consideration for gender. Both centers have multi-purpose toilets equipped with baby cots, which are not found in any other centers, so that mothers and children can use the facilities comfortably. Another example is the educational program on nutrition for pregnant and mothers at the Carpi health center, where malnutrition among children is a serious problem. By conducting such awareness-raising activities for mothers and children, it is expected that the use of facilities by women and children will be increased, and their health checkup coverage will be improved.

Moreover, no negative impact on the natural environment has been reported since medical waste is separated from general waste and collected by a waste collection company entrusted by the city. In addition, land acquisition for the project was carried out without any problems, and no resettlement has occurred.⁶

<Evaluation result>

Therefore, the effectiveness and impacts of the project are high.

3 Efficiency

<Project output>

During the construction of the two health centers, some changes were made in accordance with Ecuadorian construction standards for health facilities, such as changes in the floor plan, reduction and replacement of each room, and addition and replacement of each piece of equipment, but there were no changes that would affect the effectiveness of the project. Regarding the procurement of medical equipment, the Japanese side originally planned to procure 78 types of equipment⁷, but the plan was changed to 14 types by the Japanese side and the rest by the Ecuadorian side. This was because the Japanese side's budget needed to be allocated to the construction of the facility at the time of the revised G/A when the additional grant was decided. At this time, the allocation of equipment was made with consideration for the possibility of procurement by the Ecuadorian side, and no

⁵ Evidence to confirm the increase in indigenous population was not acquired in this evaluation. According to the classification of racial groups who use the health centers (2019-2020) provided by the Ministry of Public Health, both centers had the highest percentage of mixed race (Spanish and indigenous) (approximately 80% in Santa Rosa and 60% in Carpi), followed by indigenous (approximately 10% in Santa Rosa and 30% in Carpi).

⁶ This project was categorized as Environmental Category C by JICA's Environmental and Social Consideration Guidelines (2010).

⁷ Based on the list of standard equipment for the health centers (type B) to be targeted by this project, the decision was made in consultation with the Ministry of Public Health on the Ecuadorian side.

problems were observed in this process.

The Ecuadorian portion of the project, such as the procurement of medical equipment and furniture, the preparation of construction sites, and the road construction, was generally carried out as planned. However, some of the procedures for the refund of the Value Added Tax (VAT), which should be paid by the Ecuadorian government, were still incomplete at the time of the ex-post evaluation.

<Project input>

The total planning project cost was 1,285 million yen (1,185 million yen for Japan and 100 million yen for Ecuador). Of this amount, the actual amount of the Japanese side was 1,183 million yen (100% of the planned amount) compared to the planned amount of 1,185 million yen. The actual cost amount of the Ecuadorian side was 109 million yen, compared to 100 million yen in which was the planned amount. However, it was found that the Ecuadorian side included some construction projects that they carried out on their own, which were not included in the plan agreed with the Japanese side. Therefore, it was concluded that it is difficult to compare the planned and actual project costs.

The planned project period for this project was 21 months from the date of the consultant contract to the date of completion of construction. The actual project period was 37 months from February 2015 to February 2018 (176% of the planned period), which was much longer than planned. The reasons for exceeding the planned period were mainly due to the revision of bidding documents due to unsuccessful bidding, unstable weather conditions during the construction and procurement process, a shortage of workers, delays in import permits for equipment procured overseas, and delays in electricity receiving work.

Table 2 Comparison between planned and actual results for the project period (breakdown)

Task	Plan	Actual (note 1)
Detailed design	4 months	4 months (February 2015 – May 2015)
Bidding operations	3 months	7 months (note 2) (August 2015 -February 2016)
Construction and procurement	14 months	22 months (May 2016 - February 2018)

Note 1: The project period was 37 months, including 33 months required for each task, 2 months from the completion of detailed design to the start of bidding work, and 2 months from the completion of bidding work to the start of construction and procurement.

Note 2: The period from the date of the first public announcement to the date of the contract with the agent who won the second bid.

Source: Information at the time of planning: ex-ante evaluation sheets and preparatory survey reports, information on actual results: JICA-provided materials, questionnaire responses to the consultant

<Evaluation result>

As described above, although the project cost was as planned, the project period exceeded the planned period, so the efficiency of this project is fair.



Residents using the health center (Carpi)



Japanese flag near the entrance (Santa Rosa)

4 Sustainability

<Institutional aspect>

There are nine regional health coordinating zones under the department of primary health care, Ministry of Public Health. This project was implemented in the Chambo Riobanba first health district, which was managed by the first health district office under the health coordinating zone three. There are no major changes in the organizational structure related to this project, but the name of the district office that is responsible for both centers was changed from "the first health district office" to "the third health

district office". In addition, the health administrative district was reorganized, and the name of "the Chambo Riobanba first health district" was changed to "health district three", but the area of responsibility remains the same as when the project was planned. As for the maintenance and management system of facilities and equipment, whenever a problem occurred that could not be handled by the health centers, a report was submitted to the third health district office. At the time of ex-post evaluation, two engineers and one architect are assigned to the office. Based on the reports submitted from the health centers, they visit the centers as needed and repair them. The number of health centers in the district has increased from 20 at the time of the plan to 23 at the time of the ex-post evaluation, but there have been no delays in repairs that would affect the daily operations of the health centers, and therefore there are no major problems in terms of both systems and manpower.

The number of staff in the health centers is overall low compared to the staffing plan prepared by this project (52% of the planned staffing in Carpi and 72% in Santa Rosa). Among them, community health workers, who were planned to be assigned at the time of planning, have not been hired due to budget constraints. In each health center, when a doctor or nurse retires, they are not automatically replaced, but the health center must apply to the Ministry of Public Health to hire new staff. As a result, some positions may remain vacant for a long time. Currently, the necessary doctors and nurses are assigned to each section, and with the current staffing level, the health center can continue to provide medical services. However, as the population of Chimborazo is expected to increase in the future⁸, it is desirable to increase the number of staff at the health center to reduce the workload of the staff and to cope with the increasing number of patients. During the busy periods, such as the response to the Covid-19 infections, the medical institutions cooperate with each other to overcome the shortage of medical staff by sending doctors and nurses from neighboring medical institutions. This shortage of medical staff is a common problem not only in the two health centers but also in medical institutions in Ecuador and is caused by the lack of financial resources of the Ministry of Public Health.

Table 3 Staff allocation at both health centers (planned and actual) (Unit: person)

Position	Carpi		Santa Rosa	
	Plan	Actual	Plan	Actual
Manager (Director)	1	1	1	1
Obstetrician/Gynecologist	1	0	1	1
Dentist	4	3	4	3
Physician	10	6	7	6
Nurse	10	4	7	6
Community Health Worker	10	0	7	0
Psychiatrist	1	1	1	1
Psychiatric Rehabilitator	1	1	1	1
Laboratory Technician	5	1	5	3
Radiologists	2	2	2	6
Other Staff	8	10	8	8
Total	53	28 (52%)	44	32 (72%)

Source: Information at the time of planning: preparatory survey reports, information on actual results: questionnaire responses from the health center directors
(%) means percentage of targets achieved

<Technical aspect>

Although the equipment to be procured under this project does not include equipment that is complicated to operate and maintain, it was thought that the maintenance and inspection by the center staff should be strengthened to respond quickly and accurately in instances of medical equipment breakdowns. Therefore, a soft component was conducted for the center staff to acquire the knowledge and skills necessary for the maintenance and operation of medical equipment. At the time of the ex-post evaluation, it was not available to confirm whether the staff who received training through the soft component are still working at the center, but it was found that the inspection list for medical equipment created by the software component was still being used. It was reported that by using this list, the condition of equipment is checked daily, and equipment breakdowns are handled quickly, resulting in fewer instances of broken equipment. In addition, since technical guidance is provided to new staff using manuals and inspection lists, it is concluded that there are no major technical problems in operation and maintenance.

<Financial aspect>

At the time of planning the project, the Ministry of Public Health had committed to budgeting for both health centers (estimated operating costs including personnel costs upon completion of the facilities: USD1,475,691 for Carpi and USD1,332,652 for Santa Rosa). Regarding the question of whether this budget allocation has been realized, the health center confirmed that they were not aware of this, as all financial management of the health center is handled by the health coordinating zone three. Table 5 shows the annual budget allocation (2017-2021) from the Ministry of Public Health to the health coordinating zone three. However, since no data was provided on the budget allocation to the two health centers, it was difficult to identify the financial status of each center after the completion of the project. It shows that the annual budget has been gradually decreasing since 2018.⁹ According to the

⁸ According to the 2017 provincial population estimates of the National Information System (<https://sni.gob.ec/inicio>), the population of Chimborazo province was expected to increase from 510,935 in 2017 to 524,004 in 2020.

⁹ According to the report "2020: the year of budget cuts in the social sector (2020: un año de reducciones en el presupuesto para los sectores sociales)" published in Observatorio de Gasto Público (<https://www.gastopublico.org/>), the social sector (education, health, labor, and social welfare) budget for 2020 was the lowest in the last four years from 2017 to 2020. Among them, the budget for the health sector has been decreasing since 2018, despite the response to the Covid-19.

health centers, the budget for personnel, activity, and maintenance costs necessary to continue daily medical operations has been allocated, however, it is necessary to hire new doctors and nurses to handle the increasing number of patients in the future.

The budget of the health coordinating zone three is decreasing, and a sufficient number of staff, including community health workers, are not employed in each health center. Considering all this information, it can be concluded that each health center is under budget constraints. The number of patients is expected to increase in the future, and in addition, considering the possibility of another emergency situation like Covid-19, it is desirable to secure budget to increase the number of medical staff.

Table 4 Budget from the Ministry of Public Health to the health coordinating zone three (Unit: USD)

	2017	2018	2019	2020	2021
Budget of the health coordinating zone three	196,561,515	235,651,263	225,198,494	212,160,663	201,035,917

Source: questionnaire responses from the Ministry of Public Health

<Current status of operation and maintenance>

The status of the medical equipment was checked by the on-site visit by the local survey assistants and the questionnaire survey, and it was found that the equipment procured under the project was in generally good condition. As for the equipment procured by the Japanese side, one hematology analyzer at each center had not been used since the reagents were no longer in stock. The reagents were initially available at a dealer in Ecuador, but later the dealer closed the store, so it became necessary to order them from Japan. Since hematology analyzers are indispensable for blood tests to measure the number of red and white blood cells in blood, it is desirable to obtain the reagents again and restart their use.

As for the equipment procured from Ecuador, the locations of some equipment were unknown, some were on rent to other centers, and some were out of order, but it was confirmed that about 80% of the equipment was in normal use at both centers.

As for the mechanical facilities, the purification tank system, air conditioning system, and oxygen supply system (only in Santa Rosa) are not properly functioning, although the problems do not affect daily operations. According to the directors of both health centers, they reported the problem to the third health district office and an engineer have made several repairs but have not been able to completely fix the malfunction. In this study, interviews were conducted with the directors of both health centers and the third health district office, but no clear answers were obtained about the reasons for the problems and how to deal with them in the future.

<Evaluation result>

From the above, there are no technical problems in terms of operation and maintenance, but in terms of systems, both centers have not secured the number of health care staff that was expected at the time of the project planning, and in terms of finances, there are issues in securing budget for hiring health care personnel in the future, considering the increasing number of outpatients. In addition, some of the equipment has not been used and some problems with the facilities have been reported, so the sustainability of the project is judged to be fair.



Director of the Santa Rosa health center explains the facility



Director of the Carpi health center explains the facility

III. Recommendations & Lessons Learned

Recommendations to the Ministry of Public Health:

The hematology analyzers provided to both health centers are in good condition, but they are not currently being used. This is due to the stock of the testing reagents running out. During the planning of the project, the reagents could be procured in Ecuador, but since the agent was closed, it became necessary to procure them from Japan. This situation was not anticipated at the time of the project planning, and the current condition of the equipment not in use is unavoidable due to the cost and time required for procurement. However, it is desirable to restart the use of the equipment at both health centers as this is the basic equipment

required for blood tests. Therefore, it is recommended that the Ministry of Public Health contact the supplier of the reagents for the equipment, confirm the cost of the reagents and the number of days required, and continue to discuss with the health centers about restarting the use of the equipment. As for the problems with the mechanical facilities reported by both health centers, it would be desirable to identify the cause of the problems by an engineer and discuss the necessary measures, budget, and possibility for the Ecuadorian side to handle the problem.

Recommendations to JICA:

It is recommended that JICA follow up on the results of the discussions between the Ministry of Public Health and the health centers regarding the problems of equipment and mechanical facilities identified at both centers and discuss with the Ministry of Public Health how to deal with the problems in the future as necessary.

FY2020 Simplified Ex-Post Evaluation Report of Japanese Grant Aid Project

External Evaluator: Yukiko Sueyoshi, International Development Center of Japan Incorporated (July 2021)

Duration of the Study: October 2020-October 2021

Duration of the Field Study: March 9, 2021-March 31, 2021

Cambodia	<The Project for Improvement of Equipment for Demining Activities (Phase VII)>
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Project site



CMAC deminers and pick-up trucks procured by the project

I. Project Outline

Background	<p>In Cambodia, while more than 20 years have passed since the end of the conflict in 1991, contamination through landmines and unexploded ordnances (hereinafter referred to as “UXOs”) was a serious problem. According to the nationwide baseline survey results obtained until 2014, approximately 2,839 km² of the area was contaminated by landmines/UXOs. Most of the areas contaminated were found to be concentrated in rural areas, where most of the country’s population lives. While the annual number of landmine/UXO victims was found to be decreasing, there were still 154 victims recorded in the year 2014, at the time of the project planning. Thus, it was an urgent issue to remove landmines/UXOs to build a safe living environment and to promote socioeconomic development. Under these circumstances, Japan has continuously provided support to improve the capacity of the Cambodian Mine Action Center (hereinafter referred to as “CMAC”) for landmine/UXO clearance activities through six grant aid projects to provide their equipments, technical cooperation projects, deployment of experts, and south-south cooperation. However, there were still many areas contaminated with landmines/UXOs, and it became an issue to update the equipments that were crucial for CMAC to continue its landmine/UXO clearance activities. Therefore, the seventh grant aid project for equipment improvement was implemented.</p>
Objectives of the Project	To maintain and improve the landmine/UXO clearance activities through the procurement of necessary equipment for CMAC, thereby contributing to the promotion of social development.
Contents of the Project	<ol style="list-style-type: none"> 1. Project Site: Landmines/UXOs buried area in Cambodia 2. Japanese Side: <ul style="list-style-type: none"> ▪ Brush cutter 9 units ▪ Mine/UXO detector 729 sets ▪ UXO detector 62 sets ▪ Deep search detector 2 sets ▪ Protective vest 450 units ▪ Protective visor 450 units ▪ Vehicles-station wagon 35 units ▪ Single cabin pickup truck 11 units ▪ Double cabin pickup truck 39 units ▪ Ambulance 3 units

	3. Cambodian Side: <ul style="list-style-type: none"> ▪ Payment of commissions to the bank ▪ Completion of the procedures required to get exemption from customs and import duties ▪ Assistance for the Japanese nationals involved in this project on entry to Cambodia and during their stay in Cambodia to perform their duties for this project, etc. 			
Implementation Schedule	E/N Date	March 21, 2016	Disbursement Date	
	G/A Date	March 21, 2016	Completion Date	July 6, 2017 (delivery date)
Project Cost	E/N grant limit/G/A grant limit: 1,372 million yen; actual grant amount: 1,248 million yen			
Executing Agency	Cambodian Mine Action Center (CMAC)			
Conditions (Loan Only)	-			
Borrower (Loan Only)	-			
Contracted Agencies	Main consultant: Ingerosec Corporation Agents: Toyota Tsusho Corporation, FutureBud International Co., Ltd.			

II. Result of the Evaluation

Summary

This project was implemented with the aim of providing the equipments needed to carry out landmine/UXO clearance activities and maintaining the capacity of CMAC in Cambodia, which suffers from the serious problem of landmine/UXO contamination. The purpose of the project was consistent with Cambodia's national development policy and development needs at the time of planning, and consistent with Japan's aid policy. Thus, the project is highly relevant. At the time of the ex-post evaluation, there were serious concerns about the spread of Covid-19 pandemic, but, due to the importance of the activities, the CMAC staff were prioritized by the government to receive the vaccine. As a result, the demining activities were carried out as usual and the equipments procured under the project were used appropriately. In addition, it was clear from the progress in the landmine/UXO clearance activities that CMAC's operational capacity has been maintained and strengthened since the completion of the project. Furthermore, the positive impact of the project was confirmed once CMAC cleared the land previously contaminated with landmines/UXOs and released it to the residents. The land was available for safe use and the convenience of life improved through the construction of roads and public facilities. Thus, the effectiveness and impacts of the project are found to be high. All the equipments planned for the project was procured as planned, and the project cost and period were generally the same as they were planned, thus, the efficiency of the project is high. While the sustainability of CMAC in terms of its structure and technical capacity has been confirmed to be high, the financial sustainability of the project is fair due to the uncertain prospects for future financial resources.

Therefore, the result of the evaluation is highly satisfactory (A).

Overall Rating¹	A	Relevance	3²	Effectiveness & Impact	3	Efficiency	3	Sustainability	2
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<Special Perspectives Considered in the Ex-Post Evaluation/Constraints of the Ex-post Evaluation>

Implementation of a remote field survey using local survey assistants

Due to the spread of Covid-19 in the project country, the external evaluator did not travel to the project site. However, the external evaluator conducted the field survey remotely from Japan. The survey was conducted with the help of a local survey assistant, who in turn conducted an on-site inspection of the project sites, collected information and data, interviewed the people involved in the project, etc. The external evaluator examined the information collected and made an evaluation analysis and judgment.

Indicators for judging the effectiveness of the project

There were two quantitative indicators for effectiveness set in the ex-ante evaluation sheet: "Cleared Area of Landmine/UXO (full clearance)" and "Released Area by Technical Survey (technical survey)." These indicators were based on the different methods used to clear landmines/UXOs. CMAC chooses the method of full clearance or a technical survey depending on the conditions of landmines/UXOs buried in the assigned land. Therefore, depending on the conditions of the land, the planned targets for each of the indicators may differ from the actual results. For this reason, CMAC officially discloses to the public the total area declared safe, which is the sum of the full clearance and the technical survey, as CMAC's actual results. Furthermore, since the equipments of the project are used in both methods, the effectiveness of the project should be judged based on the achievement of the sum of these values, rather than on the achievement of each indicator³.

¹ A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

² ③: High, ②: Fair, ①: Low

³ The same indicator was set in the 6th phase project. In the ex-post evaluation of the 6th phase, the technical survey was not considered for the judgment of effectiveness because it was in the trial stage after its introduction and there was a gap between the planned and the actual value. In this ex-post evaluation of the 7th phase, the technical survey was fully introduced in all the sites as a demining method, thus, it was considered during the judgment of effectiveness.

Inspection of the operation and maintenance of the equipments

The equipments procured under the project are mainly used in six demining units in Cambodia. In consideration of the risk of COVID-19 among the local survey assistants and the CMAC staff, we visited only three demining units and the central workshop, where the number of infections was relatively low at the time of the ex-post evaluation and checked the operation and maintenance condition of the equipments on site. All the other equipments were checked based on the latest information available in the equipment database at CMAC Headquarters.

1 Relevance

<Consistency with the Development Policy of Cambodia at the Time of Ex-Ante Evaluation>

At the time of the planning, “Rectangular Strategy for Growth, Employment, Equity and Efficiency Phase III” (2013) focused on good governance in the following four areas: (1) Promotion of Agriculture Sector, (2) Development of Physical Infrastructure, (3) Private Sector Development and Employment, and (4) Capacity Building and Human Resource Development. Since it was necessary to secure the safe land for strengthening the agricultural sector, the necessity of landmine/UXO clearance activities was clearly stated in the national strategy.

Furthermore, “National Development Strategic Plan 2014-2018,” the action plan for the above strategy, stipulated that, although landmine/UXO activities had been steadily making progress, contaminated areas still existed. It was also stated that landmine/UXO clearance activities were still important because they hindered the socio-economic development of Cambodia.

<Consistency with the Development Needs of Cambodia at the Time of Ex-Ante Evaluation>

The number of accidents caused by landmines/UXOs had been declining since its peak at 4,320 in 1996. This was the result of a multifaceted and continuous effort. Although the number of people affected by landmines/UXOs had decreased to 154 in 2014, accidents continued to happen. The reasons for this were as follows: (1) with population flowing from urban areas to rural areas because of the economic crisis, people started to live in areas that were not previously residential, and (2) due to the increased size of the agricultural machineries, the number of accidents with anti-tank mines and UXOs buried in relatively deep areas had increased. For this reason, even if the number of accidents decreased, it was essential to continue removing landmines/UXOs to protect the safety of the residents.

Despite CMAC's efforts to maintain its equipments in its own central workshop, the equipments did get damaged and aged quickly due to the severe operating environment, including working in rough and remote areas that have a tropical monsoon climate with dry and rainy seasons. Under these conditions, there was a concern that the work efficiency would decline. To maintain the accuracy and efficiency of the clearance activities in the future, it was necessary to update the aging equipments, but, CMAC did not have a sufficient budget. In addition, most of the assistance from UN agencies and bilateral donors was invested in the operating expenses of landmines/UXOs clearance activities, making it difficult to update the necessary equipments.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

“JICA Country Analysis Paper (March,2014)” analyzed that the continuous support provided to CMAC's activities was an important matter. In addition, “Japan's Country Assistance Policy for Cambodia (April,2012)” identified “clearance of antipersonnel landmines” as one of the issues to be supported by JICA under “promotion of social development,” one of the areas of priority. Therefore, this project was in line with Japan's aid policy at the time of planning.

<Evaluation Result>

In light of the above information, the relevance of the project is high.

2 Effectiveness and Impacts

<Effectiveness>

In this evaluation, the effectiveness of the project will be judged by “CMAC's landmine/UXO cleared area” as a quantitative effect and “maintaining CMAC's landmine/UXO clearance capacity and improving operational efficiency and safety” as a qualitative effect.

<Quantitative Effect: CMAC's landmine/UXO cleared area>

There are two main methods that are used for clearing landmines/UXOs: full clearance and technical survey. When it comes to the former, the whole area where landmines/UXOs are definitely buried is detected and cleared. In the latter, interviews are carried out to determine the land where landmines/UXOs are likely to be buried, but not yet confirmed, instead of detecting the whole area. Based on this information, a small area is detected if the probability of burial is low, and a large area is detected if the probability of burial is high, mainly using a mine detection equipments. The indicators set at the time of the planning of the project are: (a) the full clearance area and (b) the area released by the technical survey.

The Provincial Mine Action Committee (PMAC), established in each province, determines the priority of the land to be cleared of landmines/UXOs, and allocates the land to each clearance organization. CMAC will survey the allocated land and decide whether to conduct the full clearance or the technical survey. Even if CMAC chooses to conduct the technical survey, it may switch to the full clearance depending on the land conditions. Due to the nature of these activities, the values planned for each of the indicators set at the time of planning may differ from the actual results. For this reason, CMAC officially discloses the total area declared safe to the public, which is the sum of the full clearance and the technical survey, as CMAC's actual results. Therefore, as mentioned at the

beginning of this report, the effectiveness of the project will be judged by the achievement of the total value, not by the achievement of each indicator.

As shown in the table below, the cumulative area of landmines/UXOs cleared by CMAC (full clearance) in 2019 was about 820 km², with the target of 826 km². The target was almost achieved. The cumulative area released by the technical survey was below the target, at 210 km² compared to the target of 405 km². In terms of the total area, however, the target was 1,231 km² and the actual area was 1,029 km², which is about 80% of the achievement rate.

At the time of the ex-post evaluation, despite concerns about the spread of Covid-19, the CMAC staff were given priority for vaccination by the government due to the importance of the activities, and as a result, demining activities were being carried out as usual. It was confirmed that the equipments procured through the project were being appropriately used to support their demining activities.

Table 1 CMAC’s landmine/UXO cleared area (2015-2020)

Indicators unit: km ²		2014 (baseline)	2019 (target)	2015 (actual)	2016 (actual)	2017 (actual) completion	2018 (actual)	2019 (actual) target year	2020 (actual)
(a) Area cleared of landmines/UXOs	Cumulative	525.8	825.8	584.8	648.8	705.5	767	819.4	885.8
	Annual	-	-	58.6	64.0	56.6	61.5	52.3	66.4
(b) Area released by the technical survey	Cumulative	105.8	405.4	135.8	156.8	174.8	196.8	209.8	225.4
	Annual	-	-	30.1	20.9	17.7	21.5	13.2	16.1
(a) +(b) total	Cumulative	631.6	1,231.2	720.6	805.6	880.3	963.8	1,029.2 (83.6%)	1,111.2
	Annual	-	-	88.7	84.9	74.3	83.0	65.5	82.5

Source: CMAC questionnaire answers and CMAC operational summary progress report (2017-2020)

* The percentages in the table are the achievement rate of the target.

<Qualitative Effect: Maintaining CMAC's Landmine/UXO Clearance Capabilities, and Improving Work Efficiency and Safety>

As for “maintaining CMAC's landmine/UXO clearance capabilities,” the annual total cleared area is shown in Table 1. The total (annual) figures show no significant increase or decrease, except in 2019, indicating that the scale of activities has been maintained after the completion of the project. While it decreased in 2019, it recovered and increased in 2020. According to CMAC, the main factors affecting demining activities, including the reasons for the decline in 2019, are weather and activity budgets. This is because demining is an outdoor activity, and if the rainy season or floods are prolonged, the area of activities will be limited. In addition, since CMAC relies on foreign aid agencies for most of its activities, delays in funding are directly related to the delays in demining activities.

To continue their demining activities, it is important that they secure a stable activity budget, well-trained deminers, and demining equipments. Of these, Japan mainly supports the provision of demining equipments. It can be said that the project has made a significant contribution to the maintenance of CMAC's landmine removal activities. In addition to this, CMAC is also undertaking various other efforts to improve its technical capabilities. For example, since 2016, CMAC has been using mine detection sensors developed by Tohoku University on a trial basis, and by 2020, CMAC has ensured that trained deminers are operating the sensors in the field. In the same year, together with a Belgian NPO, they introduced a mine detection activity using rats. Due to the time and cost required for training, less than 20 rats had completed the training at the time of the ex-post evaluation. Thus, the activity is limited in scale. However, it is playing a role in demining activities.

In the interview with the deminers regarding “improvement of work efficiency and safety,” the following points were confirmed as the contributions of this project.

“Wearing of protective vests and visors allows workers to focus on their work with safety.”

“Renewal of mine detectors has reduced the number of malfunctions and shortened the working hours.”

“Introduction of the brush cutter has made it possible to work safely and quickly in a wide area.”

“More vehicles and fewer breakdowns of new ones have enabled the smooth transportation of more deminers.”



Deminers wearing protective vests and visors

<Impacts>

Social Development through Land Use after Demining

From the completion of the project to the time of the ex-post evaluation, the land cleared by CMAC has been used for agriculture (73%), agriculture and housing (8%), roads (2%), housing (1%), and for the construction of public facilities such as temples, schools, and health centers (as shown in the photos below). According to CMAC, the effective use of such land has come to contribute towards the development of infrastructure such as roads and water supply system as well as population increase, thereby promoting the social development in the area.

In addition, CMAC has been carrying out infrastructure development projects on the released land in cooperation with various organizations and companies, including the Mines Advisory Group (MAG, a demining organization based in the UK), Japan Mine Action Service (JMAS), and Komatsu Ltd.

Promotion of the Economic Activities of Private Companies

CMAC has been entrusted by domestic and foreign companies to carry out demining activities to secure the safe land. As the equipments procured through this project are also used in these activities, it can be said that the project is partially contributing towards the promotion of the economic activities of private companies.

Decrease in the Annual Number of Victims of Landmines and UXOs

While the annual number of casualties due to landmines/UXOs in Cambodia was 154 in 2014, at the time of the planning of this project, it declined to 65 in 2020. Since CMAC has been responsible for about 55% of the landmine removal areas and 70% of the number of landmines/UXOs removed in Cambodia, it can be said that it has made a large contribution to this reduction. In addition, various contributions such as clearance activities by other organizations, risk education provided to residents, baseline surveys to detect contaminated areas, and improved accuracy of demining technology have also contributed to the reduction of the annual number of victims in Cambodia.

Table 2 Number of landmine/UXO casualties from 2014 to 2020

Indicators	2016	2017	2018	2019	2020
Landmine casualties (case)	83	58	58	77	65

Source: CMAC questionnaire answers and Cambodian Mine Action and Victim Assistance Authority website

No other negative impacts on the natural or social environment were identified.

<Evaluation Result>

Therefore, the effectiveness and impacts of the project are high.



Agricultural land after landmines/UXOs were removed



CMAC staff assisting bridge construction after demining activities

3 Efficiency

<Project Outputs>

All equipments were procured as planned and were handed over to CMAC. However, the specifications of a total of 85 station wagons and pickup trucks were changed from the ones without car radios to those with car radios. For deminers who move frequently in remote areas, car radios allowed them to obtain local news, weather forecast, and traffic information in real time, which are important to conduct activities smoothly. For this reason, the change was approved. The additional cost was 4.25 million yen, which

was paid from the balance. Since the reason for the change is appropriate and the purchase was made through the remaining funds, it is concluded that there is no problem with this change.

The Cambodian side planned to “deliver and allocate procured equipments to each demining unit” and “provide banking fees, customs and duty exemption procedures, and assistance to Japanese personnel.” With regard to the first point, the equipments procured under the project were delivered and allocated based on the requests submitted by each unit, including the allocation status and the period of use of the equipments. With regard to the second point, according to the Japanese consultant, it was confirmed that the bank charges and tax exemption procedures, which were the responsibility of the Cambodian side, were properly carried out.

Table 3 Equipments procured under the project

	Equipments	Units (plan)	Units (actual)
1	Brush cutter	9	9
2	Mine/UXO detector	729	729
3	UXO detector	62	62
4	Deep search detector	2	2
5	Protective vest	450	450
6	Protective visor	450	450
7	Vehicles-station wagon	35	35 *Modifications to the equipments
8	Single cabin pickup truck	11	11 *Same as above
9	Double cabin pickup truck	39	39 * Same as above
10	Ambulance	3	3

Source: documents provided by JICA

<Project Input>

i)Project Cost

While the planned project cost to be incurred by the Japanese side was 1,372 million yen, the actual project cost was 1,248 million yen, which was within the plan (91% of the plan). The planned project cost to be incurred by the Cambodian side was about 9.5 million yen, and although the actual amount is unknown, it was confirmed by the Japanese consultant that it was borne without problems.

ii)Project Period

While the planned project period was 18 months in total, from March 2016 to August 2017, the actual project period was 17 months, from March 2016 to July 2017, which was within the plan (94% of the plan).

Therefore, the efficiency of the project is high.

4 Sustainability

<Institutional/Organizational Aspect>

According to CMAC's current organizational strategy, “25 Years In Mine Action Path Ahead 2018-2025 And Beyond 2025” (the “Organizational Strategy”), CMAC plans to maintain its current scale of activities until 2021, and then gradually decrease its scale until 2025. The strategy states that by 2025, CMAC will release about 58% of the contaminated land identified in the country at the time of the strategy's formulation, with the remaining land to be released by the Cambodian National Army and other organizations. Although the strategy targets “identified contaminated areas,” there are still “unidentified contaminated areas” in Cambodia. It is assumed that the remaining landmine/UXO clearance activities will continue after 2025. In addition, it also has the plan to conduct community development projects such as infrastructure development and agricultural support, as well as have technical cooperation with demining organizations operating in countries facing similar problems. To realize this plan, consultations with the ASEAN Regional Mine Action Center (ARMAC)⁴ are ongoing. Moreover, JICA signed the Record of Discussions (R/D) for the technical cooperation project “Cambodia Mine Action Center Organizational Strengthening Project” in December 2019. This project supports CMAC to strengthen its organizational capacity in the areas of finance, project management, public information, and human resource development, as well as to discuss the future of CMAC so that it can continue its demining activities in the country and carry out south-south cooperation after 2026.

CMAC's departments were reorganized in January 2020 to reflect the actual operations. This includes the dividing of existing departments, the re-establishing of regional demining units, and the establishing of new departments such as the Peace Museum for Mine Action, the Public Relations and Editing Department, and the General Affairs Department. The total number of staff at the time of the ex-post evaluation was 1,360, down from 1,628 at the time of planning. The main reasons are the retirement of deminers and the

⁴The ASEAN Regional Mine Action Center was established in 2012 and its headquarters was opened in Phnom Penh in 2014. The center provides risk awareness education on landmine/UXO, provides social rehabilitation support for the victims, and shares its knowledge with ASEAN countries. CMAC has conducted international training under the contract with JICA. To expand these activities in the ASEAN countries, CMAC believes that ARMAC is important as a platform.

reduction of staff due to the withdrawal of foreign donors' projects. According to CMAC, while large numbers of deminers are aging, the budget constraints make it difficult to recruit new staff on a large scale. As a result, CMAC is trying to improve the efficiency of its demining operations. For example, previously personnel were assigned separately to each task such as bush cutting, weeding, detection, excavation, removal, and explosion. However, in recent years, multi-skilled personnel have been trained to be able to handle all of these tasks. This way, CMAC is establishing a system that can operate faster with a smaller team. Moreover, CMAC has been proactive when it comes to adopting new approaches such as mechanization with the use of brush cutters and demining machines, and the introduction of mine detection dogs and rats.

There has been no change in the maintenance and management system for the equipments owned by CMAC since the time of the project planning. The number of staff at the central workshop has increased from 15 at the time of planning to 17 at the time of the ex-post evaluation.

Based on the above information, the institutional sustainability of the project is judged to be high.

<Technical Aspect>

Since the project is a renewal of the existing equipments, the engineers at the central workshop have no problem when it comes to their technical level. When there is a problem with the equipments, and if there is no agency in Cambodia, engineers can contact the manufacturer directly. According to an engineer at the central workshop, while there is no problem regarding the technical level of the staff at the moment, it is desirable to strengthen the maintenance ability of the vehicles in the future. Since vehicles are an important means of transportation to smoothly carry out the work of deminers in remote areas, it is important to be able to repair them immediately when they break down. The engine, air conditioner, brake system, etc. installed in the vehicles are being improved every year. In line with this, engineers also need to acquire new knowledge and skills. For technologies that are not available in Cambodia, technical guidance from overseas is required. Also, since the demining equipments are the updated versions of the same ones, there is no problem at the technical level when it comes to the use and maintenance of equipments for the deminers as well.

CMAC has a training institute called the Technical Institute of Mine Action (TIMA). Training is provided not only to the CMAC staff, but also to the Royal Cambodian Armed Forces and National Police. For CMAC deminers, training is available for each position, such as beginners, team members, and team leaders. As for the training content, various courses have been prepared so that deminers can acquire multi-skills such as land mine detection survey, topographic survey, UXOs disposal, and land mine removal machine. Training participation is one of the criteria for promotion and salary increase. CMAC has signed a training contract with JICA to conduct training programs for demining organizations in other countries. Since 2017, TIMA has offered 14 training courses to 319 students in Colombia, Laos, and Iraq (including plans until January 2022). Based on this experience, CMAC plans to focus on developing human resources involved in landmine clearance not only in Cambodia but also overseas.

Based on the above information, the technical sustainability of the project is judged to be high.

<Financial Aspect>

Table 4 presents the annual budget (revenue) of CMAC. The main sources of CMAC operating expenses are international donors, subcontracting fees, and the Cambodian government. Funds have been continuously allocated from the time of project planning to the time of ex-post evaluation, and there is no tendency for the total annual budget to decrease. As the table provided below shows, more than half of CMAC's total budget comes from international donors. It is predicted that financial assistance from international donors will decrease with the downsizing of landmine clearance activities by 2025. In the CMAC Organizational Strategy, CMAC estimates the targeted area of removal, estimates the personnel and budget required to achieve the target, and indicates the funding required from foreign aid agencies to achieve the target. Based on this strategy, discussions have been held with the potential donors and efforts are being made to obtain the budget. While it has been recognized that increasing the Cambodian government budget will be important in the future, the economic growth rate has been declining due to the impact of Covid-19 and the prospects are uncertain at the time of the ex-post evaluation.

Table 4 Annual operational budget of CMAC for 2016-2020 (unit: 1,000 USD)

Item		2016	2017	2018	2019	2020
International donors	Actual	6,584	9,306	11,721	9,344	13,702
	%	63%	57%	84%	76%	88%
Subcontracting fees	Actual	1,351	2,863	523	575	331
	%	13%	18%	4%	5%	2%
Cambodian government	Actual	2,550	4,030	1,772	2,327	1,590
	%	24%	25%	12%	19%	10%
Total		10,485	16,199	14,016	12,246	15,623

Source: documents provided by CMAC

Table 5 Annual maintenance cost and total expenditure of CMAC for 2010-2015 (unit:1,000 USD)

	2016	2017	2018	2019	2020
Consumables' procurement costs (A)	1,668	3,459	2,665	2,055	1,913
Equipment maintenance cost (B)	2,028	2,004	1,630	1,550	2,851
Miscellaneous (C)	320	298	527	6	103
Total O&M cost (A+B+C)	4,016	5,761	4,822	3,611	4,866
Total expenditure (D)	12,394	24,860	15,256	13,648	13,395
Total O&M cost/total expenditure (%)	32%	23%	32%	26%	36%

Source: documents provided by CMAC

Table 5 shows the maintenance costs in CMAC's annual expenditures. When the equipments were procured in 2017, the maintenance cost was 23%, after that, it decreased once, but increased to 36% in 2020. At the time of the ex-post evaluation, there was no impact on maintenance due to budget constraints. However, it is necessary to pay close attention to the impact of the increase in maintenance costs due to the aging of equipments in the future.

As described above, financial sustainability is an issue in terms of securing a budget for the future.

<Current Status of Operation and Maintenance>

As mentioned in the "Constraints of the Ex-post Evaluation" section at the beginning of this report, the equipments procured under the project are generally in good working order as this survey has confirmed. In case of any problems, CAMC's central workshop and engineers at each demining unit are responsible for maintenance. There is no problem in the operation and maintenance of the equipments as there is a system available to contact the manufacturers whenever it is necessary to deal with any problem that CMAC is not able to handle by itself.

<Evaluation Result>

Therefore, the sustainability of the effects by this project is fair.

III. Recommendations & Lessons Learned

Recommendations to the Executing Agency

While most of the funding for CMAC comes from foreign aid agencies, the scale of funding is expected to decrease with the downsizing of demining activities by 2025. It is important to increase the budget of the Cambodian government in the future. However, due to the Covid-19 pandemic, the economic growth rate is declining and there are issues of financial sustainability that have arisen at the time of ex-post evaluation. In addition, the increase in maintenance costs due to the aging of equipments is another concern. Based on the above, it is necessary for CMAC to secure new financial resources.

There are two possible ways to secure these resources. One is to expand the demining human resource development program to other countries, which is mentioned in the Organizational Strategy of CMAC. To do this, TIMA and the International Cooperation Department should take the lead in creating a training program that consolidates the experience of south-south cooperation. Also, as the workforce continues to decrease due to their retirement, efforts should be made to retain the useful knowledge that has been accumulated in CMAC. At the same time, CMAC should build a relationship with ARMAC, who can be an important partner in the international training program. Using these training programs as a platform, it is necessary to formulate a strategy to increase revenue by sending CMAC instructors overseas, networking, and providing consulting services based on the training business as a platform.

Second, CMAC should focus on carrying out public relations activities through the Museum of Mine Action and Peace and other media to receive donations from the public and private sectors. In doing so, it is also necessary to establish a system to publicize the status of fund management and results of activities regularly and clearly.



Repairing of vehicles at the central workshop



Equipment checks carried out by local survey assistants