

Sri Lanka

FY2021 Ex-post Evaluation Report of  
Japanese ODA Loan Project  
“Project for Improvement of Basic Social Services Targeting Emerging Regions” and  
Technical Cooperation Project

“Project for Enhancement of Non-communicable Diseases Management”

External Evaluator: Tomoko Tamura, Kaihatsu Management Consulting, Inc.

## 0. Summary

This ex-post evaluation evaluates two projects: an ODA Loan Project “Project for Improvement of Basic Social Services Targeting Emerging Regions” (hereinafter referred to as the “ODA Loan Project”), and a technical cooperation project “Project for Enhancement of Non-communicable Diseases Management” (hereinafter referred to as the “Technical Cooperation Project”). The latter was implemented to supplement the ODA Loan Project in an integrated manner.

These two projects were implemented with the objectives of strengthening measures against non-communicable diseases (hereinafter referred to as “NCDs”<sup>1</sup>) and improving health care services. These objectives and project contents are consistent with the development policies and development needs of Sri Lanka from the time of planning<sup>2</sup> to the time of ex-post evaluation of these projects. These projects are also consistent with the development aid policy of Japan at the time of planning. These projects were implemented promptly based on the results of the “Project on Health Promotion and Preventive Care Measures of Chronic-NCDs” (hereinafter referred to as the “Preceding Technical Corporation Project”), which had been implemented prior to these projects. This allowed JICA to continuously support the strengthening of NCD prevention and management. The Technical Corporation Project was implemented in coordination with a World Bank-supported project and a survey conducted by the World Health Organization (WHO), to ensure that there was no overlap between them, and the expected results of collaboration were achieved. Therefore, relevance and coherence of these projects are high.

The ODA Loan Project developed facilities and equipment in four secondary health care facilities (hereinafter referred to as “BHs”<sup>3</sup>), the State Pharmaceutical Manufacturing Corporation (hereinafter referred to as “SPMC”), and provided 86 ambulances. This is largely in line with the plans. Although the project cost slightly exceeded the plan, it was within a reasonable range considering the increased output in the provision of equipment at the four BHs. Therefore, it is

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<sup>1</sup> Non-Communicable Diseases (NCDs) is a general term for cardiovascular diseases, cancer, diabetes, chronic respiratory diseases, and others. They are also sometimes referred to as lifestyle-related diseases. In this report, NCD is used without “s” when it is used as an adjective – for example, “NCD prevention and management.”

<sup>2</sup> The situation prior to project implementation is often described as “at the time of appraisal” for ODA loan projects and “at the time of planning” for technical cooperation projects. “At the time of planning” is used in this report to describe the situation prior to these two projects.

<sup>3</sup> Abbreviation of “base hospitals.”

considered that the project cost was within the plan. However, the efficiency of the project is moderately low, since the project period significantly exceeded the plan.

The ODA Loan Project has produced the expected effects, including enhancement of clinical laboratory functions and operation of diabetes clinics at the four BHs, increased manufacturing capacity of SPMC, and improvement in the fulfillment rate of supply of ambulances. The outputs of the Technical Corporation Project have also contributed to these effects. The synergistic effects of these projects have been recognized. Consultant specialists and laboratory technicians have been assigned to, and surgical operations and imaging tests were available at the four BHs in the target year. The number of surgical operations, inpatients, outpatients, participants in clinics and deliveries have also increased, indicating that hospital functions have expanded by utilizing the facilities and equipment of the ODA Loan Project. The expected impacts of these projects, such as the four BHs accepting NCD patients identified at NCD health checkups, more convenient examination and treatment for local residents, continuous provision of medicine to patients in public hospitals, and a reduced burden on health financing through promotion of domestic production of medicines, were also realized. Furthermore, these projects have contributed to the formation of the World Bank-supported Primary Healthcare System Strengthening Project (hereinafter referred to as “PSSP”),<sup>4</sup> and to the response to COVID-19. Therefore, the effectiveness and impacts of these projects are very high.

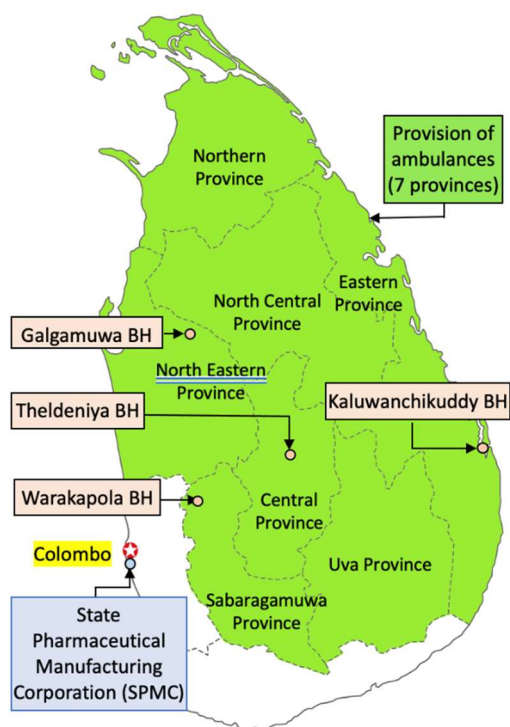
Regarding the sustainability of the project, there are no problems with policy/systems, institutional/organizational, technical, environmental, and social aspects, and risk responses. However, it is possible that operation and maintenance (hereinafter referred to as “O&M”) of health services at the four BHs will be disrupted in the future because the economy of the country is seriously deteriorating. The Ministry of Health is going to scale down activities for NCD prevention and control. There is no prospect of resolving these problems at the time of the ex-post evaluation. Therefore, sustainability of the project effects is moderately low.

In light of the above, this project is evaluated to be satisfactory.

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<sup>4</sup> The Primary Health Care System Strengthening Project (PSSP) has been implemented in Sri Lanka since 2018 with the following aims: (a) develop policies and standards necessary for the implementation of primary health care, (b) strengthen the capacity and services of primary health care facilities for comprehensive and quality care, (c) improve primary health care services with a focus on NCDs, (d) strengthen the health care system and responsiveness to the needs of the population, and (e) identify and actively follow up on NCDs.

## 1. Project Description



Project Location Map



Operating theatre constructed at Galgamuwa BH



Pharmaceutical manufacturing equipment installed at SPMC

Sources: The project location map and the photo of Galgamuwa BH were prepared and taken by the external evaluator, and the photo of SPMC was provided by SPMC.

### 1.1 Background

The Sri Lankan government provides free healthcare services to its citizens with a policy that emphasizes social welfare. Health indicators, such as maternal mortality rate and average life expectancy, have continued to be at a good level, comparable to those of developed countries. However, since the 1980s the number of NCDs has increased due to the aging of the population and changes in diet and lifestyle. In 2012 and 2013, when these two projects were planned, the five top leading causes of death in hospitals were all due to NCDs.<sup>5</sup> When a family breadwinner dies or becomes unable to work due to NCDs, their family faces serious economic problems. NCDs also increase the burden on health care finances, because they require long-term treatment. Thus, the increase in NCDs was a serious socioeconomic problem, and the system for NCD prevention and control in the country was insufficient.

JICA has provided cooperation to the health care sector in Sri Lanka for many years. JICA conducted the Preceding Technical Cooperation Project over five years from 2008 to establish a

<sup>5</sup> According to the Annual Health Bulletins of 2012 and 2013, the five major leading causes of death in hospitals were ischemic heart disease, neoplasms, pulmonary heart disease, cerebrovascular disease, and diseases of the respiratory system excluding upper respiratory tract, all attributable to NCDs.

model for implementing NCD health checkups and providing health guidance. The Ministry of Health of Sri Lanka has established “Healthy Lifestyle Centers” (hereafter referred to as “HLCs”<sup>6</sup>) throughout the country to disseminate the model. During the implementation of the Technical Cooperation Project, it was recognized that, even when NCD patients were identified at HLCs, many secondary healthcare facilities, the centers for regional health care, did not have the capacity to receive, examine, and treat these patients, because they didn’t have necessary facilities and equipment, and that follow-up of the identified patients was insufficient. In addition, there was an urgent need to strengthen the capacity of pharmaceutical manufacturing, because the demand for medical drugs was increasing as the number of NCD patients increased. These projects were formed to address these issues.

## 1.2 Project Outline

<ODA Loan Project>

### Project for Improvement of Basic Social Services Targeting Emerging Regions

To improve the health and medical system and strengthen the production capacity of essential drugs by improving facilities and equipment in secondary-level hospitals and the SPMC, thereby contributing to the enhancement of NCD management.

Loan Approved Amount/ Disbursed Amount	3,935 million yen/ 3,874 million yen												
Exchange of Notes Date/ Loan Agreement Signing Date	March 2012/ March 2012												
Terms and Conditions	<table border="0"> <tr> <td>Interest Rate</td> <td>Equipment and civil engineering: 0.2%</td> </tr> <tr> <td></td> <td>Consulting services: 0.01%</td> </tr> <tr> <td>Repayment Period</td> <td>40 years (Grace Period: 10 years)</td> </tr> <tr> <td>Conditions for Procurement</td> <td>Japan tied aid (Special Terms for Economic Partnership (STEP))</td> </tr> <tr> <td>• Civil construction &amp; procurement of equipment</td> <td>Japan tied (Bilateral tied for Japan or Sri Lanka for the four BHs)</td> </tr> <tr> <td>• Consultant</td> <td>Japan tied</td> </tr> </table>	Interest Rate	Equipment and civil engineering: 0.2%		Consulting services: 0.01%	Repayment Period	40 years (Grace Period: 10 years)	Conditions for Procurement	Japan tied aid (Special Terms for Economic Partnership (STEP))	• Civil construction & procurement of equipment	Japan tied (Bilateral tied for Japan or Sri Lanka for the four BHs)	• Consultant	Japan tied
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• Consultant	Japan tied												
Borrower / Executing Agency	Democratic Socialist Republic of Sri Lanka / Ministry of Finance, Government of Sri Lanka												
Project Completion	November 2018												

<sup>6</sup> Healthy Lifestyle Centers provide health checkups and health guidance to identify high-risk individuals and patients with NCDs. As of 2022, 1,002 centers have been established nationwide (Page 118, Performance progress report 2021, Ministry of Health).

Target Area	<ul style="list-style-type: none"> <li>• Four BHs: Galgamuwa BH - Kurunegala District, North Western Province Theldeniya BH – Kandy District, Central Province Kaluwanchikuddy BH - Batticaloa District, Eastern Province Warakapola BH – Kegalle District, Sabaragamuwa Province</li> <li>• SPMC: Colombo</li> <li>• Ambulances: Northern, Eastern, Central, Uva, Sabaragamuwa, North Central and North Western Provinces</li> </ul>
Main Contractor(s) (Over 1 billion yen)	Kanematsu Corporation (Japan)
Main Consultant(s) (Over 100 million yen)	System Science Consultants Co., Ltd. (Japan)
Related Studies (Feasibility Studies, etc.)	Preparatory Survey, 2012
Related Projects	<p>[Technical Cooperation]</p> <p>Project on Health Promotion and Preventive Care Measures of Chronic-NCDs (2008-2013, the Preceding Technical Cooperation Project)</p> <p>Project for Enhancement of Non-communicable Diseases Management (2014-2018) (the Technical Cooperation Project)</p>

<Technical Cooperation Project>

Project for Enhancement of Non-communicable Diseases Management

Overall Goal	Enhancement of the national NCD program
Project Purpose	Strengthening of NCD management at the four BHs and primary care institutions in their catchment areas as clusters. <sup>7</sup>
Outputs	1 Improved monitoring of NCD patients in the catchment areas of the four BHs.
	2 Improved availability of laboratory services for NCD clients of primary care institutions in the catchment areas of the four BHs.
	3 Enhanced pharmaceutical supply management at the four BHs.
Project cost on the Japanese side	330 million yen
Project period	February 2014 - January 2018
Project area	Colombo (Ministry of Health), four BHs and surrounding areas
Implementing agency	• Directorate of Medical Services, Department of Health (Planning

<sup>7</sup> This refers to a cluster of related medical facilities. In the Technical Cooperation Project, activities were conducted by defining a cluster as six to nine primary health care facilities in a region where the target BH is located. The concept of clusters was continued at the time of the ex-post evaluation.

	Division, NCD unit) <ul style="list-style-type: none"> <li>• Offices of the Regional Department of Health Services in the project provinces</li> <li>• The four BHs</li> </ul>
Other Cooperating institutions in Sri Lanka	None
Cooperating Organizations in Japan	Global Link Management Inc.
Related Projects	[Technical cooperation project] Project on Health Promotion and Preventive Care Measures of Chronic-NCDs (2008-2013) (the Preceding Technical Cooperation Project) [ODA loan project] Project for Improvement of Basic Social Services Targeting Emerging Regions (2012 - 2018) [World Bank] Second Health Sector Development Project (SHSDP): 2013-2018; Primary Health Care System Strengthening Project (PSSP): 2018-2023 [WHO] “Non-Communicable Disease Risk Factor Survey, Sri Lanka” 2015

[Integrated Evaluation]

The two projects were evaluated together in this ex-post evaluation. For the criterion of relevance, consistency, and sustainability, both projects were evaluated and analyzed together, and sub-ratings were provided. This was because these two projects had common objectives of strengthening NCD management and improving health services, were implemented at the same time, and have the same O&M agencies. For the criteria of efficiency, a sub-rating was provided based on an analysis of the differences between planned and actual outputs, the project period, and project cost of the ODA Loan Project. Output, project period, and project cost of the Technical Cooperation Project was studied but not evaluated, since it was implemented in association with the ODA Loan Project. The effectiveness of the project was evaluated mainly by studying the effectiveness of the ODA Loan Project. For the Technical Cooperation Project, status of achievement of outputs and the project purpose at the time of completion, and the status of continuation of those achievements were studied. The contribution of the Technical Cooperation Project to the improvement of health services aimed at by the ODA Loan Project was verified and considered in the judgment of evaluation.

For impact, the synergistic effects of these two projects and their contribution to strengthening NCD management, which was the objective of the ODA Loan project, were verified, and the status of achievement of the Overall Goal of the Technical Cooperation Project was also confirmed.

An overall evaluation and overall rating were provided for these two projects as a whole, based on evaluation results of the six criteria.

## 2. Outline of the Evaluation Study

### 2.1 External Evaluator

Tomoko Tamura, Kaihatsu Management Consulting, Inc.

### 2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted with the following schedule.

Duration of the Study: September 2021 - October 2022

Duration of the Field Study: December 6, 2021 - December 18, 2021, and March 28, 2022 - April 9, 2022

## 3. Results of the Evaluation (Overall Rating: B<sup>8</sup>)

### 3.1 Relevance/Coherence (Rating: ③<sup>9</sup>)

#### 3.1.1. Relevance (Rating: ③)

##### 3.1.1.1 Consistency with the Development Plan of Sri Lanka

The medium- and long-term national development policies of the Sri Lankan government, as well as health sector policies and master plans, emphasized the need for NCD prevention and management at the time of planning and ex-post evaluation. They aimed to prevent NCDs through lifestyle improvement, improving health services, enhancing hospital facilities and human resource allocation, and ensuring availability of pharmaceuticals. The objectives and contents of these projects are consistent with these development policies of the country.

##### 3.1.1.2 Consistency with the Development Needs of Sri Lanka

- Needs for enhancement of NCD prevention and management

As described in “1.1 Background of the Project”, the need to strengthen NCD prevention and control was high at the time of planning these projects because the increase in the number of deaths due to NCDs and the economic and social problems caused by NCDs were serious issues for the country. NCDs remain a serious problem, and the need for NCD prevention and control continues to be high at the time of the ex-post evaluation, because NCDs are still the 7 of the top 10 leading causes of death in hospitals in the country, which is the same as at the time of planning.<sup>10</sup>

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<sup>8</sup> A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

<sup>9</sup> ④: Very High, ③: High, ②: Moderately Low, ①: Low

<sup>10</sup> WHO statistics (2018). During the discussions of the ex-post-evaluation, officers in charge of NCDs in the Ministry of Health and the provincial health department mentioned that the number of high-risk persons and patients of NCDs had increased in recent years. Data supporting this increase was not available. Statistics to monitor the prevalence and increase of NCDs are not available in the country, other than causes of death in hospitals. The Ministry of Health had recognized this issue as a challenge.

- Need to improve facilities and equipment of BHs  
At the time of project planning, four BHs were not able to accept seriously ill patients, perform surgical operations, or provide specialized tests and treatment due to a lack of consultant specialists and laboratory technicians, and delays in the improvement of facilities and medical equipment. As a result, local residents had to visit distant tertiary care facilities for examination and treatment, resulting in a heavy financial burden and loss of time. To solve these problems, there was a need to improve BHs. At the time of the ex-post evaluation, BHs are still the core of healthcare facilities in the regions, and their roles and importance have continued.
- Need to improve facilities and equipment of the SPMC  
At the time of planning, there was a need for SPMC to expand its manufacturing capacity because the demand for pharmaceuticals, including NCD drugs, was expected to increase, due to the growing number of NCD patients. Ensuring adequate stocks of pharmaceuticals in public hospitals was essential for the continued treatment of NCDs. At the time of the ex-post evaluation, SPMC was supplying approximately 69% of the demand for pharmaceuticals in public hospitals (2021), indicating the continued role and importance that SPMC plays in pharmaceutical manufacturing in the country.
- Need for provision of ambulances  
At the time of planning, the need for ambulances was high because there was a shortage of ambulances at primary and secondary medical facilities, which sometimes prevented the rapid transfer of urgent and critical patients to higher-level hospitals. At the time of the post-evaluation, the need to transport patients for heart muscle infraction, traffic accidents, and COVID-19 to higher level and specialized hospitals remained high, and the role and importance of the ambulances provided by the ODA Loan Project continued to be significant.
- Consideration of socially vulnerable groups and fairness  
The four BHs were selected because they were most in need of improvement, according to the status and usage of the facilities and equipment they owned. The institutes receiving the ambulances were selected according to the number of existing ambulances, shortages, and requirements in each province. The selection was made with consideration of needs and equity of the country. The project plan and approach were appropriate, and no problems were found with them.

### 3.1.2 Coherence (Rating: ③)

#### 3.1.2.1 Consistency with Japan's ODA Policy

When these projects were planned, the Country Assistance Plan (April 2004) and the Country Assistance Policy of the Japanese Government for Sri Lanka (June 2012) stated that Japan would provide assistance to the healthcare sector, particularly to expand social welfare



services in light of the aging population, and to improve facilities and strengthen capacity, mainly in the healthcare sector. The objectives of these projects were consistent with Japan's aid policy.

#### 3.1.2.2 Internal Coherence

As described in “1.1 Background of the Project”, these projects were promptly formulated and initiated to overcome issues identified in the Preceding Technical Cooperation Project. Therefore, the expected results of collaboration between the Preceding Technical Cooperation Project and these projects were achieved, and continued support for strengthening prevention and control of NCDs was realized.

#### 3.1.2.3 External Coherence

As planned, the Technical Corporation Project was implemented in coordination and collaboration with the activities and surveys conducted by the World Bank and the WHO, to avoid duplication. As a result, the project implemented the activities effectively without any duplication; and the expected collaborative effect was created.

Therefore, relevance and coherence of these projects are high.

### 3.2 Efficiency (Rating: ②)

#### 3.2.1 Project Outputs

It was concluded that the outputs of the project were slightly more than planned, according to the evaluation of the outputs of the three components of the ODA Loan Project as a whole. The details of the outputs of each component are as follows.

##### (1) Improvement and expansion of functions of the four BHs

Facilities and medical equipment at the four BHs were improved as planned. A new hospital building equipped with an operating theater, Intensive Care Unit (ICU), neonatal unit, clinical laboratories, hospital wards, outpatient consultation rooms, emergency treatment room, delivery room, central sterilization unit, blood bank, etc., and a mortuary, sewage treatment facility, and medical oxygen supply plant were constructed at each BH as planned. For medical equipment, items needed to provide medical services in these facilities were selected, procured, and installed. It was planned that all medical equipment would be procured by the ODA Loan Project. However, the total amount of required equipment exceeded the planned budget for the Project. At the time of the appraisal, there were no plans to procure equipment from the provincial budget, and this equipment procurement can be considered to have exceeded the

original plan.<sup>11</sup> Therefore, the Ministries of Health of the provincial governments, which operate the four BHs, partially covered the cost. As a result, it was judged that the output of equipment provision was slightly more than planned.



New hospital building at Galgamuwa BH



New hospital building at Theldeniya BH



New hospital building at Kaluwanchikuddy BH



New hospital building at Warakapola BH



X-ray machine at Theldeniya BH



Patients receiving intensive care at Warakapola BH

Photos: Taken by the External Evaluator

## (2) Enhancement of pharmaceutical manufacturing capacity of the SPMC

The construction and renovation of the facilities, and procurement and installation of pharmaceutical manufacturing equipment of the SPMC, were carried out as planned.

The output for the facilities was more than planned, as shown in Table 1, because the floor space was increased. This was increased so that the facilities would be the appropriate size for

<sup>11</sup> For example, the mobile X-ray machine, clinical laboratory chemistry analyzer, and beds for the High Dependency Unit (HDU) at Galgamuwa BH, and ward beds, examination tables, and delivery tables at Warakapola BH were procured from the provincial government budget. The provincial government covered 25% of the procurement equipment cost for Kaluwanchikuddy BH.

manufacturing 3.2 billion tablets per year, according to the target of the project. Therefore, the change was appropriate.

Table 1: Construction and Renovation of Facilities of the SPMC - Plan and Actual

Items		Plan	Actual	Difference
Construction of Warehouse	Building	Two-storied building	Three-storied building	More than planned
	Floor space	540m <sup>3</sup>	949m <sup>3</sup>	
Renovation of existing facilities	Floor space	1,153m <sup>2</sup>	1,704m <sup>2</sup>	More than planned

Source: Documents provided by JICA.

The following equipment for enhancing the manufacturing capacity was selected, procured and installed: Mixing granulator, tablet compression machines, punches and dies, film and sugar-coating machine, automatic filling, capping and labeling machines, high performance liquid chromatograph system, dissolution apparatus, forklift, double cone blender, container blender, fluid bed dryer, capsule filling machine, multi-milling machine with pneumatic conveyor, and weighing scale. Items and the number of units of the equipment were changed partly during the detailed design to optimize the manufacturing plan and expand the manufacturing capacity based on the results of the detailed study about the existing equipment and needs. Therefore, these changes were appropriate. From the above, it can be said that the output of procurement and installation of the equipment was almost in line with the plan.



Sugar-coating machine



Double cone blender



Fluid bed dryer



New warehouse

Photos: Provided by SPMC

### (3) Provision of Ambulances

It was decided to equip the ambulances with automated external defibrillators (AEDs) with monitors, oxygen inhalers, and oxygen therapy kits to meet the increasing emergency medical needs of cardiac patients. As a result, the unit cost of the ambulances increased, and the number provided was reduced from 124 to 86. The provision of the additional equipment and change in the number of units were reasonable and based on need, although the number of units was reduced as mentioned above. The institutions that would receive the ambulances were re-selected in an appropriate and fair manner. There have been no problems caused by the reduction in numbers, since more ambulances were procured by the Ministry of Health and other supporting agencies later.



An ambulance provided by the ODA Loan Project

### (4) Consulting Services

Consultancy services were provided as planned. The team of Japanese consultants mainly supervised the procurement of equipment and construction of the SPMC. With the BHs, the provincial government found local consultants for the design and supervision of construction, and the Japanese consultancy team monitored progress and prepared reports.

#### 3.2.2 Project Inputs

(For details, see “Comparison of the Original and Actual Scope of the Project” on the last page of the report.)

##### 3.2.2.1 Project Cost

The planned total project cost of the ODA Loan Project was 4,760 million yen (3,935 million yen from Japan and 825 million yen from Sri Lanka). It was actually 4,799 million yen (3,874 million yen from Japan and 925 million yen from Sri Lanka), which was 101% of the plan.

Since the increase in project cost is within a reasonable range considering the increase in output, it is judged that the project cost was within the plan.

##### 3.2.2.2 Project Period

The project period for the ODA Loan Project was planned as 51 months (from March 2012 to May 2016<sup>12</sup>). It was actually 81 months (from March 2012 to November 2018), which

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<sup>12</sup> Although the ex-ante project evaluation report and other documents provided by JICA indicated that the project would start in April 2012, the Loan Agreement was scheduled for March 2012. Therefore, the planned month for the start of the project was defined as March 2012.

significantly exceeded the plan (159% of the plan). The main reasons for the delay of the project were that the establishment of a procurement evaluation committee in the Ministry of Health for the SPMC component and evaluation of bid proposals took more time than planned. Civil works in the four BHs also took a longer time than planned due to rock removal (two BHs) and suspension of work due to prolonged rains (three BHs).

### 3.2.3 Results of Calculations for Internal Rates of Return (reference only)

Re-recalculation of the financial and economic internal rates of return for the ODA Loan Project was not conducted at the time of the ex-post evaluation, because they were not calculated at the time of the project appraisal.

### 3.2.4 Inputs for the Technical Cooperation Project (reference information)

The planned cost for the Technical Cooperation Project was 332 million yen and the actual cost was 351 million yen. The project period, both planned and actual, was 48 months. Inputs from Japan were provision of eight JICA experts, training in Japan for six participants, and provision of equipment necessary for technical transfer. Inputs from Sri Lanka were assignment of counterpart staff and provision of a project office.

As mentioned above, although the project cost was within the plan, the project period significantly exceeded the plan. Therefore, efficiency of the project is moderately low.

## 3.3 Effectiveness and Impacts<sup>13</sup> (Rating: ④)

### 3.3.1 Effectiveness

#### 3.3.1.1 Quantitative Effects (Operation and Effect Indicators)<sup>14</sup>

##### (1) Improvement and expansion of functions of the four BHs

It was expected that the facilities and equipment improved by the ODA Loan Project would enable the four BHs to perform (a) total cholesterol tests, (b) X-ray tests, and (c) abdominal ultrasound scan tests. As shown in Table 2, these tests were available at all four BHs one year after the provision of the facilities and equipment, and have been continuously performed up to the time of the ex-post-evaluation; (d) a diabetes outpatient clinic was regularly held at the three BHs in the target year two years after the completion; and the annual number of participants exceeded the target (Figure 1). In this manner, indicators of (a), (b) and (c) have been achieved, and indicator (d) has been generally achieved.

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<sup>13</sup> Sub-rating for Effectiveness is to be put with consideration of Impacts.

<sup>14</sup> For the ODA Loan Project, the target year for the indicators was set as two years after project completion. For BHs the target year is 2019, since the facilities and equipment were available to use in 2017. For SPMC it is 2020, since the facilities and equipment were available to use in 2018. For ambulances the target year is the year they were supplied, since the operational indicator was set to evaluate the status just after supply.

Table 2: Operation and Effect Indicators for Improvement and Expansion of Functions of the Four BHs

Indicators	Baseline	Target	Actual					
			2017	2018	2019	2020	2021	2022
	2011	2 years after completion	Completion year	1 year after completion	2 years after completion	3 years after completion	4 years after completion	5 years after completion
(a) Number of hospitals that can conduct total cholesterol tests	0	4	3	4	4	4	4	4
(b) Number of hospitals that can carry out X-rays	1	4	2	4	4	4	4	4
(c) Number of hospitals that can conduct abdominal ultrasound scans	1	4	1	4	4	4	4	4
(d) Number of hospitals with diabetes outpatient clinics which are regularly operating <sup>15</sup>	No data	4	4	4	3	3	3	4

Sources: Baseline and target values are from the ex-ante evaluation report. Actual figures were provided by the four BHs.

Notes: 2022 is data from January to March 2022.

Theldeniya BH closed its diabetes clinic in 2019 due to a shortage of doctors, and diabetic patients were treated in the medical clinic. The diabetes clinic reopened in January 2022 when the number of doctors increased.

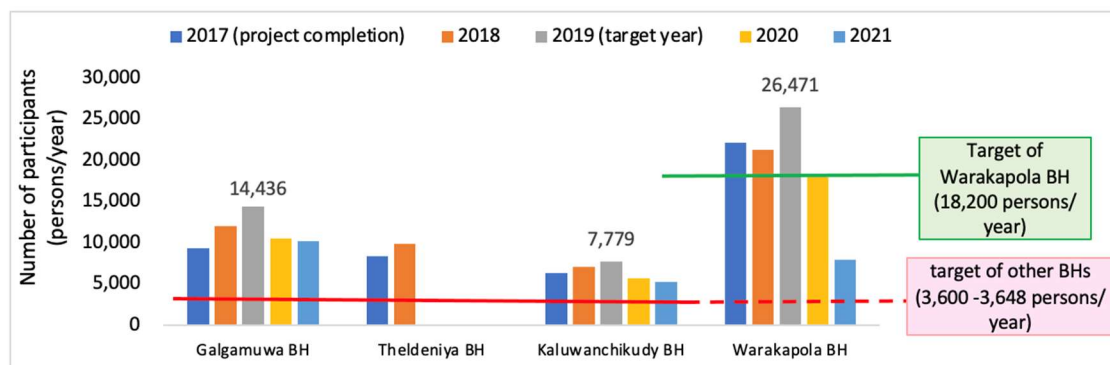


Figure 1: Annual Number of Participants at the Diabetes Clinics at the four BHs

Source: The target values are from page 67 of the Preparatory Survey Report. Actual figures were provided by the four BHs.

Note: The decrease in the number of participants in 2020 and 2021 was due to the COVID-19 pandemic. No outpatient clinics were held, or fewer participants attended during the period as curfews and travel restrictions were imposed in these years.

<sup>15</sup> At the time of planning the ODA Loan Project, the indicator was “the number of hospitals where NCD clinics are regularly held.” However, at the time of the ex-post evaluation there were no clinics that were called this. Therefore, the status of diabetes clinics, one of the major NCDs in the country, was used as an indicator to represent the objective of the project of strengthening NCD management.

As shown in the figure below, the number of surgical operations, inpatients, specialized clinic participants, and deliveries also increased from the completion year to the target year, indicating the facilities and equipment of the ODA Loan Project were utilized, and hospital functions expanded. Note that the decrease in the number of specialized participants and inpatients in 2020 and 2021 is due to COVID-19 (See note on Figure 1). When we visited these hospitals in March 2022 COVID-19 had been contained, and these hospitals were functioning normally.

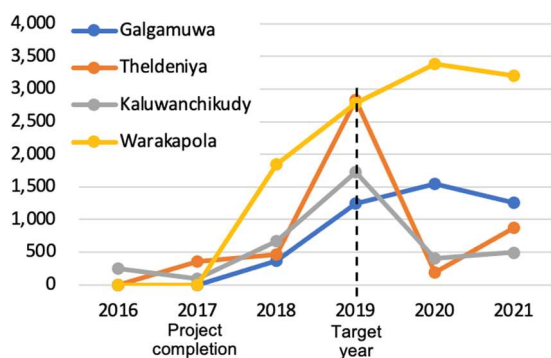


Figure 2: Number of Surgical Operations at the Four BHs

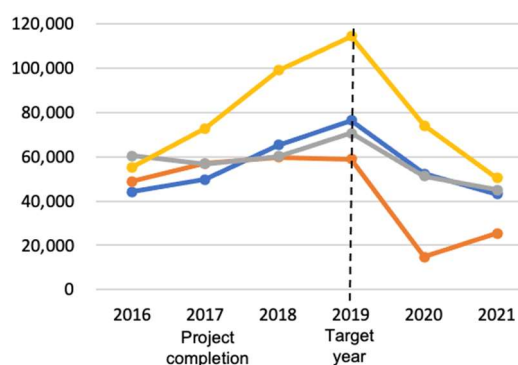


Figure 3: Number of Participants in the Specialized Clinics of the Four BHs

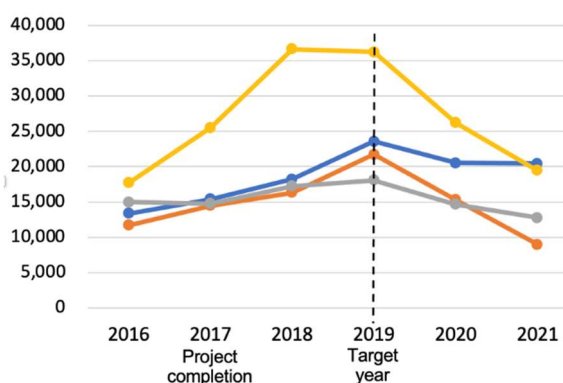


Figure 4: Number of Inpatients at the Four BHs

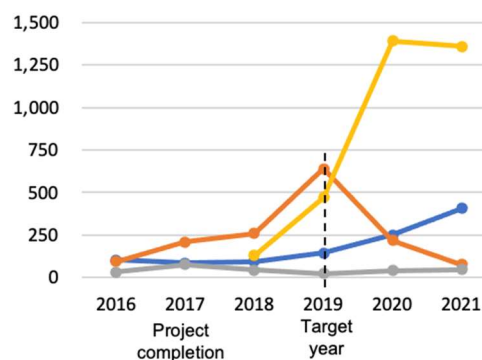


Figure 5: Number of Deliveries at the Four BHs

Source: Documents provided by the four BHs.

Note: The number of operations and deliveries did not decrease at Warakapola BH because the earlier building was used as a dedicated COVID-19 ward, and operations and deliveries were conducted in the new hospital building constructed under the ODA Loan Project.

The number of deliveries was low in Kaluwanchikuddy BH due to the absence of an obstetrician and gynecologist. However, by the end of 2021, an obstetrician and gynecologist were appointed, and the number of deliveries increased.

## (2) Enhancement of the pharmaceutical manufacturing capacity of SPMC

As Table 3 shows, operation and effect indicators for the enhancement of the pharmaceutical manufacturing capacity of the SPMC were: (a) Pharmaceutical manufacturing capacity of the

SPMC of 3.2 billion tablets per year, and (b) a fulfillment rate of the SPMC to the demand of the Medical Supplies Division (MSD) of the Ministry of Health of 70%.<sup>16</sup>

(a) Pharmaceutical Manufacturing Capacity of the SPMC

The production volume of the SPMC was approximately 3 billion tablets in the target year (2020). Therefore, the target of 3.2 billion tablets was largely achieved. The volume of production in 2021 was also stable, at approximately 3 billion tablets. In 2022, the production line for Thyroxin agents, which has been in preparation for some time, will start operation; annual production volume will then increase to 3.5 billion tablets.

(b) Fulfillment rate of the SPMC to the demand of the MSD

In the target year, the fulfillment rate of the SPMC to the demand from the MSD was as low as 49.9%, which did not reach the target of 70%. However, the delivery volume to MSD by SPMC in the same year was higher than the previous year and the following year, and there is no problem with the volume. The reason for the low demand-fulfillment ratio in the year was that MSD's demand forecast for that year was excessive.<sup>17</sup> In other words, if MSD's demand forecast had not been excessive, the actual fulfillment rate would have been higher than 49.9%. The fulfillment rate in 2021 was 68.7%, which almost reached the target of 70.0%. This indicator is judged to have been largely achieved, taking into account the level of achievement in 2021.<sup>18</sup>

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<sup>16</sup> Fulfillment ratio: SPMC's annual deliveries to MSD / MSD's annual demand for pharmaceuticals x 100. The SPMC had limited manufacturing capacity, and there were no local private companies producing pharmaceuticals at the time of planning. This indicator was set as the target of the ODA Loan Project because MSD needed to import pharmaceuticals which were not delivered from the SPMC. At the time of the ex-post evaluation, local private companies were also manufacturing pharmaceuticals. The procurement of pharmaceuticals by MSD, on a volume basis, consisted of SPMC (58.7%), other local private manufacturing companies (25.0%), and imports (16.3%) (2021; data provided by SPMC).

<sup>17</sup> The projected demand values for MSD in 2020, the target year, are extremely high: 144% over the previous year and 157% over the following year.

<sup>18</sup> For information: in addition to supplying MSD, the SPMC supplies pharmacies in the market.



Table 2: Operation and Effect Indicators for Enhancement of Pharmaceutical Manufacturing Capacity of the SPMC

Indicators		Baseline	Target	Actual			
				2018	2019	2020	2021
		2011	2 years after completion	Completion year	1 year after completion	2 years after completion	3 years after completion
(a) Capacity of pharmaceutical manufacturing	Manufacturing volume (million tablets)	1,800	3,200	1,889	2,403	3,015	3,044
	Achievement rate of the indicator (%)	-	-	59	75	94	95
(b) Fulfillment rate to demand from MSD	Demand of MSD (million tablets)	2,873	-	3,354	4,038	5,815	3,711
	Delivery volume of SPMC to MSD (million tablets)	1,253	-	1,889	2,220	2,903	2,550
	Fulfillment rate (%)	43.6	70.0	56.3	54.9	49.9	68.7

Sources: Baseline and target values are from the ex-ante evaluation report; actuals were provided by the SPMC.

Note: "Demand from MSD" means volume of annual demand of the MSD in the relevant year.

As described above, the two indicators regarding the SPMC were generally achieved.

### (3) Provision of ambulances

It was expected that as a result of the provision of ambulances by the ODA Loan Project, the fulfillment rate of ambulances required in the seven provinces, where the ambulances would be provided, would be 84%. Eighty-six ambulances were provided to these seven provinces by the project, bringing the fulfillment rate to 77%. Therefore, it is judged that the target was largely achieved.

Table 3: Fulfillment Rate of Ambulances in the Seven Provinces which received the Ambulances

Indicators	Baseline	Target	Actual	
	2011	At the time of provision	2014	January 2022
Number of ambulances owned	365	489	451	624
Number of ambulances required	582	582	582	-
Fulfillment rate (%)	62	84	77	-

Sources: Baseline and target values were from page 25 of the ex-ante evaluation report; actual values were from the documents provided by JICA; actual values of January 2022 were provided by Provincial Ministries of Health.

Note: It was calculated with assumptions that there was no change in the number of ambulances owned by the seven provinces (excluding ambulances provided by the ODA Loan Project) and the number of ambulances needed between the time of planning and the time of provision.

### 3.3.1.2 Qualitative Effects (Other Effects)

#### (1) Improvement and expansion of functions at the four BHs

The improvement of facilities and equipment by the ODA Loan Project, and appointment of consultant specialists and laboratory technicians, enabled the establishment of specialized clinics, performance of surgical operations, imaging tests, endoscopic examinations, clinical tests, dialysis, care of premature infants, and acceptance of seriously ill patients in ICU and HDU. In this way, as expected, the project has improved and expanded the functions of the four BHs, and enabled them to provide specialized medical services.

#### (2) Enhancement of the pharmaceutical manufacturing capacity of the SPMC

Annual manufacturing volume of the SPMC was 1.9 billion tablets in 2018, and was increased to 3 billion tablets in 2020 – increased by a factor of about 1.6. However, the number of staff increased only by a factor of about 1.2, from 99 to 123, indicating that manufacturing is being conducted efficiently. The facilities and equipment provided by the ODA Loan Project has contributed to the above-mentioned improvement in efficiency, and quality control, as follows.

Table 4: Contribution to Manufacturing Efficiency and Quality Improvement  
by the Facilities and Equipment Provided by the ODA Loan Project

Facilities and equipment provided by the ODA Loan Project	Contribution to manufacturing efficiency and quality control
Manufacturing equipment	Increased precision in manufacturing operations with the programmable local controller (PLC) function. <sup>19</sup>
Tablet compression machine	Thorough and efficient quality control by automatic weighing function.
Mixing granulator	Improved work efficiency by increased operation speed.
Automatic filling, capping, and labeling line	Doubled the speed of filling operations with an automatic label pasting function (previously, labels were pasted manually). Quality assurance through the function of blowing air to remove foreign matter from inside the bottles (previously bottles were washed, which created the risk of moisture residue).
New warehouse	Ensuring the quality of raw materials through proper control of humidity and temperature using air-conditioning facilities. The old warehouse was located outside the factory premises, but the new one is on the premises, facilitating easy transport of raw materials.

Source: Conversation with the Deputy Managing Director, Manufacturing, SPMC, and observation of the factory made by the external evaluator.

<sup>19</sup> A PLC is a kind of computerized system, an electronic control device developed for industrial use. Pharmaceutical manufacturing involves processes such as mixing raw materials, granular formation, and coating. PLCs can be used to manage these processes, including automatic and manual operation, abnormal value alarms, and data collection and management of the processing results.

SPMC is also actively engaged in the manufacture and marketing of new drug items. The number of items manufactured by the SPMC has increased significantly from 36 at the time of planning (2011) to 62 at the time of ex-post-evaluation (2021). Six new items are planned to be manufactured and marketed in 2022. The facilities and equipment provided by the ODA Loan Project are being used for manufacturing of the new items.

(3) Provision of ambulances

At the time of the ex-post evaluation, all 86 ambulances provided to the seven provinces by the ODA Loan Project were in operation, apart from seven that were undergoing repairs. They were being used to transport emergency patients and blood, and playing an important role in saving life.

(4) Status of achievement of the Outputs and achievement and continuation of the Project Purpose of the Technical Cooperation Project

The status of production of the Outputs and achievement of the Project Purpose of the Technical Cooperation Project at the time of its completion were as follows.

Table 5: Status of Achievement of the Outputs of the Technical Cooperation Project at its completion

Outputs of the Technical Cooperation Project	Status of achievement
1. Improved monitoring of NCD patients in the catchment areas of the four BHs.	Largely achieved
2. Improved availability of laboratory services for NCD clients of primary care institutions in the catchment areas of the four BHs	Largely achieved
3. Enhanced pharmaceutical supply management at the four BHs.	Partly achieved

Source: Analysis made by the external evaluator based on the Terminal Evaluation Report of the Technical Corporation Project and other sources.

- Output 1: Regarding the monitoring of NCD patients, the project conducted collection of morbidity information for the patients attending medical and diabetes outpatient clinics on a larger scale than planned. Tracking high-risk individuals, identified in primary health care facilities, on action taken for their medical tests and treatment, was conducted as planned in two of the four clusters of the project. The methodology introduced for HLC supervision was also conducted in the expected manner.
- Output 2: The project introduced a “laboratory service network system” for NCD patients to have their total cholesterol and glucose profile tests at primary healthcare facilities without visiting a higher-level hospital or private laboratory. Under this system, samples, not the patients, are sent from the primary medical facility to laboratories at higher-level institutions such as BHs. This system operated almost as planned in three of the four clusters of the

project.

- Output 3: The Medical Supplies Management Information System (MSMIS), introduced in the four BHs to improve the efficiency of pharmaceutical inventory management, was only in operation for new stocks at the time of completion of the project.

The Project Purpose of the Technical Cooperation Project is “Strengthening of NCD management at the four target BHs and primary care institutions in their catchment areas as clusters.” The three indicators had been achieved at completion, as shown in Table 7. As noted above, some of the Outputs were partially achieved, but based on the overall status of achievement of the Project Purpose and the Outputs, the Project Purpose was judged to have been generally achieved.

Table 7: Status of Achievement of the Project Purpose of the Technical Cooperation Project at its completion

Indicators of the Project Purpose	At the time of planning	Target	Status of achievement
1. Percentage of patients referred from primary care facilities who visited the medical or diabetes clinics at the referring hospital	No data	80% or more	93% (Achieved)
2. Availability of data on patients attending medical and diabetes clinics of the public hospitals in the project area	None	Available	Available (Achieved)
3. Availability of tool packages for cluster-based NCD management in the four target districts	None	Available	Available (Achieved)

Source: Analysis made by the external evaluator based on the Terminal Evaluation Report of the Technical Corporation Project and other documents provided by JICA.

The following items from (a) to (d) were studied to find out the status of continuation of the Outputs of the Technical Corporation Project at the time of the ex-post evaluation. It was found that except for (a), all others were continued and operated in a developed way.

- (a) Tracking of the high-risk individuals, who were identified in primary health care facilities, on their actions taken for medical tests and treatment

The Ministry of Health has incorporated the referral and referral record forms proposed by the Technical Cooperation Project in the Personal Medical Record Books. Tracking of high-risk individuals identified in primary health care facilities on action taken for their medical tests and treatment can be done using these forms. However, the four BHs and lower-level hospitals visited during the ex-post-evaluation did not track patients through these record forms because recording and reporting by the forms required time and effort.

(b) Laboratory service network system

The laboratory service network system continues in the cluster of the four BHs. The system has been introduced in other areas by the PSSP, and is being used more widely.

(c) Utilization of the tool package for NCD management introduced in the Technical Cooperation Project

The following tools introduced by the Technical Cooperation Project, or similar tools created with reference to the tools, have been introduced and are being used throughout the country.

- HLC supervision and monitoring checklist
- Referral and tracking register
- Laboratory sample register and transaction record

(d) MSMIS

MSMIS was introduced at the four BHs. Using this staff can order pharmaceuticals and consumables, deliver them to the pharmacies and wards within the hospital, place additional orders, and manage inventory lists and order status online. Previously, they used to do all this manually. This has greatly improved the efficiency and accuracy of inventory management. According to the staff in charge, the function for checking the inventory of other hospitals online and requesting transfers in the event of a shortage is particularly useful, and has contributed to a significant increase in speed and reduction of workload in obtaining items that are needed.

### 3.3.2 Impacts

#### 3.3.2.1 Intended Impacts

(1) Contribution to strengthening NCD prevention and control

Both projects had contributing to strengthening NCD prevention and control as their impact and Overall Goal. The ex-post evaluation found that the collaborative effects of these two projects made the following contributions to NCD prevention and control.

- The laboratory service network system supported by the Technical Cooperation Project continues to operate, and the ODA Loan Project has strengthened the clinical laboratory functions of the four BHs, allowing them to accept samples from lower-level hospitals and perform testing. As a result, local residents can now obtain test results for total cholesterol levels at primary health care facilities and HLCs without visiting higher-level hospitals, which is more convenient for patients and contributes to early detection of NCDs.<sup>20</sup>

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<sup>20</sup> Implementation of total cholesterol testing in primary health care facilities and HLCs has been promoted as a result of the Ministry of Health introducing a system to conduct total cholesterol and glucose testing using simple test kits in HLCs nationwide, strengthened laboratory functions in some primary health care facilities through the PSSP, and continued operation of the laboratory service network system.

- The health checkup and referral system at HLCs supported by the Technical Cooperation Project has continued, and the functions of the four BHs have been expanded through the ODA Loan Project, so that high-risk persons and NCD patients identified through health checkups can receive specialized examinations and consultations at the BHs.
- The expansion of manufacturing capacity of the SPMC through the ODA Loan Project and the efficiency of drug inventory management by MSMIS, which was introduced by Technical Corporation Project, have helped to ensure the continued provision of drugs to NCD patients in the four BHs and to promote continuous treatment.

The achievement of the indicators of the Overall Goal of the Technical Cooperation Project was also studied. Indicator 1, “Number and percentage of districts using tools developed by the project” was achieved in full with an actual result of 26 compared to a target of 26. The tools developed in the Technical Cooperation Project, such as the register for recording referrals and back-referrals in HLCs, and checklists for supervision and monitoring of HLCs, have been introduced and used in all districts, either as is or with updated formats. Indicator 2, “Availability of national data on outpatients of medical and diabetes clinics in public hospitals” has not been achieved. The Ministry of Health planned to conduct a survey in 2020 to collect the data nationwide; it was cancelled due to COVID-19, and has not been conducted since.

## (2) Contribution to domestic production of pharmaceuticals

The expansion of production capacity of the SPMC by the ODA Loan Project has also promoted the domestic production of pharmaceuticals. The share of domestically produced medicines delivered to the MSD has increased significantly - from 44% at the time of planning, to 86% after completion of the project. The SPMC supplies 55% of the domestically produced medicines of the MSD, and plays an important role in domestic production. As domestically produced medicines are cheaper than imported ones, domestic production has also helped reduce the burden on health financing.

SPMC also contributes to the supply of medicines in the country by providing high quality medicines at reasonable prices, adjusting market prices of major medicines, avoiding products going out-of-stock by manufacturing and supplying products according to demand. SPMC manufactures all major medicines for the treatment of NCDs, except anti-cancer drugs, and plays a crucial role in the treatment of NCDs in the country. The expansion of manufacturing capacity through the ODA Loan Project has facilitated this contribution and role.

## (3) Contribution to national goals for NCD prevention and control

The national goal for NCD prevention and control is to reduce mortality caused by NCDs among younger people (under 60 years old) by 2% annually. The project's contribution to the

achievement of this goal was studied in the ex-post evaluation. However, it was not possible to analyze the current status and progress of this goal, and the contribution of these projects to it, since mortality statistics by age and diseases have not been compiled in recent years.

### 3.3.2.2 Other Positive and Negative Impacts

#### (1) Impacts on the Natural Environment

These projects were considered to fall under Category C of the “JICA Guidelines for Environmental and Social Considerations” (established in April 2010), as they were considered to have minimal or no undesirable impacts on the environment and society. There was no environmental impact and there were no complaints from the surrounding community during the construction and renovation of the facilities of the BHs and the SPMC. Medical waste generated at the four BHs is properly disposed of at the incineration facility installed by the ODA Loan Project, or at an incineration facility at a nearby hospital.

#### (2) Resettlement and Land Acquisition

Resettlement and land acquisition were not anticipated for these projects at the time of planning and did not occur.

#### (3) Gender

Medical services for pregnant and nursing mothers and infants were improved through the construction of obstetrics and gynecology wards, delivery rooms, premature baby rooms, and operating theaters, as well as the provision of related equipment. For example, the establishment of an obstetrics and gynecology wards and delivery rooms, and the assignment of obstetricians and gynecologists have made it possible to deliver babies at BHs without having to travel to distant tertiary care facilities. In addition, while previously it was not possible to care for premature infants at the BHs, this project has made it possible to do so, thereby reducing the burden on families who frequently visit premature infants in hospital, especially mothers immediately after delivery.

#### (4) Socially vulnerable groups and human rights

The fact that the projects enabled local residents to receive specialized examinations and treatment, to be hospitalized and receive surgical operations at the BHs without visiting distant tertiary care facilities, has benefited the poor, disabled, elderly, and other vulnerable peoples of society (see column below).

< Interviews with users of Warakapola BH >

Today, I am going to have an endoscopy. I had to go to the Kegalla Teaching Hospital to undergo such specialized tests and surgeries in the past. It took about an hour and a half by bus. The waiting time was sometimes so long that I had to take the day off work to go to the hospital. Now that this hospital has been newly constructed, I can have the tests and see my doctor here. It is very helpful. It is good that the consultation rooms and waiting rooms have become larger, cleaner, and brighter.

(Source: Interviews with patients conducted at the hospital during the ex-post-evaluation)

(5) Contribution to the formation of the PSSP of the World Bank

In Sri Lanka, the PSSP assisted by the World Bank (see footnote 4) was implemented in several different areas of the country at the time of the ex-post evaluation. It was confirmed that the laboratory service network system implemented by the PSSP, with a focus on the divisional hospitals, is an expansion of the activities of the Technical Corporation Project, and was formed utilizing the Outputs of the Preceding Technical Corporation Project and this project. The director in charge of the Projects at the Ministry of Health was also in charge of the World Bank project at the time, and the JICA experts of the Technical Corporation Project occasionally exchanged information with the consultants of the World Bank. The JICA Sri Lanka office also ensured coordination among donors all the time, avoided duplication of activities, and encouraged the Ministry of Health to utilize the results and experiences of JICA projects in other projects. These factors seem to have led to the collaboration between these projects.

(6) Contribution to Response to COVID-19

The ODA Loan Project also made a significant contribution to testing and treatment of COVID-19 patients. The representatives of the Provincial Department of Health and the four BHs stated, “The four BHs were able to make a significant contribution to the COVID-19 response because of the facilities and equipment provided by the ODA Loan Project.” The Medical Superintendent of Theldeniya BH, which was a designated COVID-19 hospital for about two years, stated that the following equipment and facilities provided by the project were particularly useful in the response to COVID-19.

- ICU (treatment of critically-ill COVID-19 patients)
- Movable X-ray machine (lung function test)
- Clinical laboratory equipment (PCR tests)
- Medical gas supply facility (oxygen supply)
- Incinerator (disposal of personal protective equipment)

(Statements in brackets indicate how this equipment and facilities were used in response to the COVID-19.)



As mentioned above, ambulances provided by the project were also utilized to transport COVID-19 patients.



ICU constructed by the ODA Loan Project was converted into a COVID-19 ICU (Theldeniya BH)



PCR tests using testing equipment provided by the Project (Theldeniya BH)

Photos: Taken by external evaluator in December 2021.

All three components implemented through the ODA Loan Project are showing the expected impact, and the contribution of the Technical Corporation Project is also recognized in the realization of the effect. The expected impacts of the Projects were also produced, such as acceptance of high-risk persons and patients identified through NCD health checkups in the BHs, improved convenience for local residents for examination and treatment, domestic production of pharmaceuticals, continuous provision of major pharmaceuticals for NCD treatment, and contributing to a reduction in the burden of health financing through promotion of domestic production of pharmaceuticals. Furthermore, the Projects have contributed to the formation of the World Bank's project for NCD prevention and control, and to the COVID-19 response. Therefore, it can be said that the impact of these projects has been greater than planned.

As described above, these projects achieved their objectives more than planned. Therefore, effectiveness and impacts of these projects are very high.

### 3.4 Sustainability (Rating: ②)

#### 3.4.1 Policy and System

Sri Lanka is committed to NCD prevention and control as a national policy, and all policies and systems at the time of the ex-post evaluation that support the sustainability of the effects of the Projects are expected to continue. The Ministry of Health intends to continue NCD health checkups and health guidance, and recognizes the need to track actions taken by NCD patients who are identified in the checkups. According to the Ministry, they are planning to establish a system to share patient data within clusters, using dedicated software to track actions taken by

them for medical treatment after they were referred, because manual tracking using personal health record books requires a lot of time and effort.

The Sri Lankan government is focusing on the domestic production of pharmaceuticals to ensure the continuous provision of medicines, reduce the burden on health finances, and prevent outflow of foreign currency. It is expected that policies to promote domestic production and other incentives, such as tax exemption on import of pharmaceutical raw materials and manufacturing facilities and reduction of corporate tax for pharmaceutical companies, will be continued.

As described above, policies and systems to support the sustainability of the effects of the Projects are in place.

#### 3.4.2 Institutional/Organizational Aspects

Roles and responsibilities assigned to the four BHs and the SPMC in O&M of the facilities and equipment provided by the ODA Loan Project are clear, and they have established systems for O&M. Every BH has a maintenance contract with the agencies of the manufacturers for equipment requiring specialized maintenance, such as imaging equipment and precision instruments. Maintenance and simple repairs of the buildings and interiors of the BHs are performed by maintenance staff. For the hospital building, structural repairs and updates that require budgetary provision are inspected by staff of the provincial engineering department, and repaired or replaced by the department or a contractor. They have concluded maintenance contract agreements with specialized firms for sewage treatment facilities, central air conditioning systems, elevators, generators, etc.

Since the completion of the ODA Loan Project, consultant specialists, doctors, nurses, and other personnel necessary for the expansion of hospital functions have been gradually assigned to the four BHs. However, further staffing is needed. In particular, there is an urgent need to assign a histopathologist to Theldeniya BH, and to increase the number of doctors and nurses at Kaluwanchikuddy BH. The applications requesting the staff assignments have already been submitted.

As described above, the institution and systems necessary for O&M are generally in place.

#### 3.4.3 Technical Aspect

Training programs for O&M of the medical equipment and facilities are conducted as needed at the four BHs and the SPMC. No facilities are unused or underutilized due to technical issues. Provincial and district health officials were conducting various training programs on techniques for NCD prevention and control, and have also developed training materials and handbooks, by utilizing things they have learned from the Technical Cooperation Project and training programs in Japan. No technical problems were found regarding the sustainability of the Projects.

#### 3.4.4 Financial Aspect

##### (1) Provincial Ministry of Health and the four BHs

The actual expenditure of the Provincial Departments of Health, which are responsible for the four BHs, increased year by year for both capital and recurrent expenditure until 2021. Funds were also allocated as needed for maintenance and repairs, and purchasing of reagents and spare parts for the equipment of the project in the four BHs. The national economy seriously deteriorated in 2022,<sup>21</sup> but the budget for the Provincial Ministries of Health has not been significantly reduced. This is due to the priority given to the health sector, and financial support provided by the World Bank and the Asian Development Bank.<sup>22</sup> As of April 2022, there were no major financial problems in the O&M of facilities and equipment provided by the ODA Loan Project in the four BHs. However, there are concerns that due to rapid inflation the cost of maintenance and purchasing of spare parts will no longer be covered by the budget, and that measures taken by the government to restrict imports will make it difficult to obtain imported parts needed to repair facilities and equipment. The Ministry of Finance has instructed ministries and departments to stop construction of new facilities and renovations, and therefore renewal of facilities and equipment at the four BHs may also be stopped or delayed. In addition, certain medicines and surgical equipment are becoming in short supply, especially at tertiary care facilities at the time of the ex-post evaluation, because import of these items has begun to be delayed due to the shortage of foreign currency reserves in the country. There is a possibility that the four BHs, too, may not be able to secure sufficient stocks of pharmaceuticals in the future, because there are no prospects for improvement in foreign currency reserves.

##### (2) SPMC

The financial situation of the SPMC in recent years has been favorable. Sales are increasing, and the company has secured budget for the O&M of its facilities and equipment. SPMC is self-financed, and has not been affected much by the budget reductions of the government.

Although the cost of imported raw materials increased in 2022 due to exchange rate fluctuations, the Government has approved price increases for several pharmaceutical products manufactured by SPMC in line with this. Therefore, the impact of higher material costs is limited. Based on these factors, SPMC's financial situation is expected to remain favorable in the future.

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<sup>21</sup> For example, a ban on imports of various items and restrictions on issuing letters of credit have been imposed due to a shortage of foreign currency reserves in the country. Imports of fuel for power generation and transportation have been delayed, hampering civilian life and economic activities (April 2022).

<sup>22</sup> The external evaluator studied the budget of the Provincial Ministry of Health of the Central Province, and found that it was Rs. 1.2 billion and Rs. 1.1 billion in 2021 and 2022 respectively (source: Ministry of Health of the Central Province). As an example of the budget for the four BHs, she studied the recurrent budget of the Kaluwanchikuddy BH and found that it was Rs. 230 million and Rs. 288 million in 2021 and 2022 respectively (Source: Kaluwanchikuddy BH).

On the other hand, SPMC is moving forward with a plan to construct a new plant near Colombo to meet a further need for domestic production of pharmaceuticals. The construction cost was planned to be covered by SPMC's own funds, but because the cost of imported construction materials and manufacturing equipment has increased due to exchange rate fluctuations, it will be difficult to build the new plant within the planned budget. Therefore, SPMC has applied to the Ministry of Health and Ministry of Finance to obtain official financial assistance from foreign countries.

### (3) Prevention and Control of NCDs

The budget for the NCD Unit of the Ministry of Health in 2022 is Rs. 70 million, a significant decrease from Rs. 150 million in 2021.<sup>23</sup> As a result, the unit has to scale back its activities in 2022. For example, the annual training program for new NCD staff of the provincial health departments has been cancelled, and the establishment of NCD prevention and management promotion committees in each province, which had been planned for the same year, by stakeholders from various fields, has become impossible. A nationwide survey that was scheduled to be conducted to establish an online data management system for causes of death has been postponed due to a budget shortfall that prevented the printing of the survey forms.<sup>24</sup>

The economic crisis has also affected NCD prevention and management at the provincial level: HLCs continue to be held, but the number of participants is much lower than in the past, and on some days there are no participants. This may be due to reduced bus service caused by lack of fuel for vehicles, which makes travel difficult, or due to the hardship caused by inflation, which has reduced interest and awareness of NCD prevention and management. There have also been problems with delays in budget allocation, inability to print personal health record books, and the distribution of total cholesterol and blood glucose testing kits to HLCs.<sup>25</sup>

Thus, although there are no problems with SPMC regarding financial sustainability, the country's severely deteriorating economy may hinder the O&M of medical services in the four BHs in the future. Several problems are happening to NCD prevention and control activities by the NCD Unit of the Ministry of Health. As of July 2022, the time of the ex-post evaluation, there is no prospect of resolving these problems.

#### 3.4.5 Environmental and Social Aspects

The sewage treatment plants and incinerators for waste materials in the four BHs, which were installed by the ODA Loan Project, are working in good condition in general. Waste, including infectious waste affected by COVID-19, is also being properly disposed of. The

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<sup>23</sup> National Budget 2022, website of the Ministry of Finance, Sri Lanka.

<sup>24</sup> Explanation given by the Director, NCD Unit, Ministry of Health (July 6<sup>th</sup>, 2022).

<sup>25</sup> Description of the staff in-charge of NCD in the North Western Province, Batticaloa district, Nursing officer in charge of HLCs in Theldeniya BH, and Kaluwanchikuddy BH as of July 2022.

SPMC has renewed its environmental license, and is properly disposing of its waste and wastewater. There is no complaint from the surrounding community regarding environmental and social considerations for either the four BHs or the SPMC.

#### 3.4.6 Preventative Measures to Risk

At the time of the ex-post evaluation, March 2022, Sri Lanka was experiencing many hours of planned power cuts due to fuel shortages. However, the four BHs had negotiated with the Ceylon Electricity Board to continue receiving electricity and were equipped with a large generator and enough fuel to generate power for several days. The SPMC is in an industrial area, and has also not been affected by the planned power cuts. The raw materials for pharmaceutical products are properly procured, considering the influence of logistical slowdowns caused by COVID-19, and the necessary amount of stock is always maintained.

#### 3.4.7 Status of Operation and Maintenance

The facilities and equipment in the four BHs provided by the ODA Loan Project are well utilized and properly maintained. The following unique efforts to improve medical services and patient care, which contribute to sustaining the effects of the Projects, have also been implemented.

#### <Effort Contributing to the Sustainability of the Project Effects>

The staff of Kaluwanchikuddy BH are committed to Kaizen and 5S activities and have received several awards. The photo on the right shows color-coded clinic books, which were introduced at the suggestion of staff members. These encourage patients to visit the specialized clinic at their assigned time. This innovation has enabled patients and staff to clearly see the visiting time allocated to each patient, reducing congestion, and shortening waiting time.



Theldeniya BH conducts in-service training at the hospital for doctors, nurses, and others to improve staff knowledge and patient care. The photo on the right shows a specialist from the Faculty of Medicine of the University of Peradeniya giving a lecture on pain management in April 2022. The next training session will focus on emergency medicine.



On the other hand, the following issues related to O&M were identified for some of the facilities and equipment of the four BHs.

Table 1: Issues Related to O&M of Facilities and Equipment of the Four BHs

Name of the BH	Issues	Countermeasures
Galgamuwa	There are problems with the pumps for feeding chlorine and other equipment at the sewage treatment facility.	Repairs have been requested.
	Medical and surgical clinics are over-crowded.	A waiting time survey will be conducted, and necessary measures for reducing the congestion be introduced.
Theldeniya	There are leakages onto the ceiling of the clinical laboratory due to a defect in sewerage pipes.	Scheduled to be repaired with the cooperation of the civil contractor of the building.
	A set of equipment for histopathology testing is not utilized due to the absence of a histopathologist.	The hospital has continued to apply to the Ministry of Health for placement of a histopathologist since the completion of the project.
	Blood gas electrolyte analyzer has a defect. The specifications are too high, and the cartridges are expensive.	The hospital plans to repair the defects in this equipment and transfer it to a higher-level hospital. <sup>26</sup>
Kaluwanchikuddy	The treatment capacity of the existing soakage pits and septic tanks has reached its limit, and sewage sometimes backflows during the rainy season.	The hospital has asked the provincial government to allocate a budget for constructing a sewage treatment facility, but has no prospect for the allocation.
	The HDU have not been opened due to a shortage of doctors and nurses.	Staff allocation has been applied for. The number of staff is increasing, but is not yet filled.
Warakapola	The following inconveniences have occurred due to the design of the hospital building: <ul style="list-style-type: none"> <li>• No toilets for patients or staff in the operating theater complex.</li> <li>• The room for the central sterile services department is too small, and sterilized bandages are folded in the open air.</li> <li>• The ceiling of some parts of the medical ward is heated by direct</li> </ul>	Improvement through renovation and expansion of facilities is desirable, but no concrete plan has been formulated, budgeted, or implemented.

<sup>26</sup> The hospital owns two units of the equipment with appropriate specifications, so the transfer will not cause any problems.

Name of the BH	Issues	Countermeasures
	sunlight, making the ward very hot. • The ICU was designed for four beds, but only three beds can be placed when medicine and supplies storage cabinets and work desks are in place.	
	The hospital building is located on a hill. Visitors coming on foot need to climb up a long steep hill or use stairs, which is difficult for elderly and sick patients.	There was an earlier discussion about introducing a shared-ride taxi service from the bus stop to the hospital. This has not been realized due to shortages of budget and manpower.

All facilities and equipment of the SPMC are being utilized and are well maintained. The ambulances provided have been maintained through periodic inspections, maintenance, and replacement of spare parts. The eight units under repair are expected to be operational upon completion of repairs.

Thus, regarding the status of O&M, no problems have been observed for the SPMC and the ambulances. However, there are several issues for the four BHs, some of which are unlikely to be improved soon.

From the above, several problems have been observed in terms of financial aspects, and status of O&M; and there are less prospects of improvement and resolution. Therefore, sustainability of the effects of these projects is moderately low.

#### 4. Conclusion, Lessons Learned and Recommendations

##### 4.1 Conclusion

This ex-post evaluation evaluates two projects: an ODA Loan Project “Project for Improvement of Basic Social Services Targeting Emerging Regions”, and a technical cooperation project “Project for Enhancement of Non-communicable Diseases Management.” The latter was implemented to supplement the ODA Loan Project in an integrated manner.

These two projects were implemented with the objectives of strengthening measures against NCDs and improving health care services. These objectives and project contents are consistent with the development policies and development needs of Sri Lanka from the time of planning to the time of ex-post evaluation of these projects. These projects are also consistent with the development aid policy of Japan at the time of planning. These projects were implemented promptly based on the results of the Preceding Technical Corporation Project, which had been

implemented prior to these projects. This allowed JICA to continuously support the strengthening of NCD prevention and management. The Technical Corporation Project was implemented in coordination with a World Bank-supported project and a survey conducted by the WHO, to ensure that there was no overlap between them, and the expected results of collaboration were achieved. Therefore, relevance and coherence of these projects are high.

The ODA Loan Project developed facilities and equipment in four secondary health care facilities (BHs), the SPMC, and provided 86 ambulances. This is largely in line with the plans. Although the project cost slightly exceeded the plan, it was within a reasonable range considering the increased output in the provision of equipment at the four BHs. Therefore, it is considered that the project cost was within the plan. However, the efficiency of the project is moderately low, since the project period significantly exceeded the plan.

The ODA Loan Project has produced the expected effects, including enhancement of clinical laboratory functions and operation of diabetes clinics at the four BHs, increased manufacturing capacity of SPMC, and improvement in the fulfillment rate of supply of ambulances. The outputs of the Technical Corporation Project have also contributed to these effects. The synergistic effects of these projects have been recognized. Consultant specialists and laboratory technicians have been assigned to, and surgical operations and imaging tests were available at, the four BHs in the target year. The number of surgical operations, inpatients, outpatients, participants in clinics and deliveries have also increased, indicating that hospital functions have expanded by utilizing the facilities and equipment of the ODA Loan Project. The expected impacts of these projects, such as the four BHs accepting NCD patients identified at NCD health checkups, more convenient examination and treatment for local residents, continuous provision of medicine to patients in public hospitals, and a reduced burden on health financing through promotion of domestic production of medicines, were also realized. Furthermore, these projects have contributed to the formation of the World Bank-supported Primary Healthcare System Strengthening Project (PSSP), and to the response to COVID-19. Therefore, the effectiveness and impacts of these projects are very high.

Regarding the sustainability of the project, there are no problems with policy/systems, institutional/organizational, technical, environmental, and social aspects, and risk responses. However, it is possible that O&M of health services at the four BHs will be disrupted in the future because the economy of the country is seriously deteriorating. The Ministry of Health is going to scale down activities for NCD prevention and control. There is no prospect of resolving these problems at the time of the ex-post evaluation. Therefore, sustainability of the project effects is moderately low.

In light of the above, this project is evaluated to be satisfactory.



## 4.2 Recommendations

### 4.2.1 Recommendations to the Executing Agencies

#### (1) Recommendations to the Ministry of Health

##### (a) Assignment of a histopathologist to Theldeniya BH

Although Theldeniya BH has been equipped with relevant equipment by the ODA Loan Project with the intention of conducting histopathological testing, it has not been able to conduct the tests using this equipment because a histopathologist has not yet been assigned. It is advisable to assign a histopathologist to the hospital as soon as possible.

##### (b) Assigning more doctors and nurses at Kaluwanchikuddy BH

Kaluwanchikuddy BH has not been able to operate the HDU due to understaffing, as the number of doctors and nurses assigned to the hospital is well below its cadre. An increase in the number of doctors and nurses is advisable.

##### (c) Sharing of knowledge on hospital facility design

The hospital facility in Warakapola BH has experienced some inconvenience caused by the facility design, such as the lack of toilets in the operating theater complex and an inability to accommodate the planned number of beds in the ICU. According to the project director at the time and a senior official of the Ministry of Health of the provincial government, the design drawing was prepared by a qualified architect, and was confirmed and approved by the parties concerned after collecting opinions from the users of the facility. The reason that these problems were not pointed out at that time is probably that the staff involved in the confirmation and approval process did not have sufficient expertise in hospital design, and may not have been able to identify practical issues in the design drawings. To prevent these problems from occurring in the future, it is important for the Ministry of Health to provide knowledge about the design of medical facilities at the time of staff training and to share lessons learned, including those from the above examples. It could also establish standards for the design of health care facilities or refer to the standards of the WHO.

##### (d) Support for construction of new plants of the SPMC

SPMC plans to further expand its pharmaceutical manufacturing capacity with the construction of new plants. Domestic production of pharmaceuticals is a priority issue for the country, contributing to a stable supply of medicines, reducing the burden on health finances, and reducing foreign currency outflows. However, due to recent drastic fluctuations in foreign exchange rates, it is likely that SPMC will not be able to cover the construction costs with its own funds. It is advisable that the Ministry of Health supports the SPMC as appropriate, including identifying the need for additional funds, to ensure that this plan is realized.

##### (e) Streamlining the establishment and operation of procurement evaluation committees within the Ministry of Health

In this ODA Loan Project, the procurement of consultants and contractors for the improvement of the SPMC was significantly delayed, resulting in a delay of about two and a half years in the start and completion of the construction of facilities and procurement of equipment. The main reason for the delay in procurement was that it took more time than planned to approve the establishment of the Procurement Evaluation Committee, appoint its members, and review proposals. The delay in procurement was also because the evaluation committee members changed several times due to personnel changes within the Ministry, and it was difficult to coordinate the dates of the committee meetings due to the many other duties and overseas business trips of the committee members. In future, the Ministry of Health is recommended to improve the efficiency of the establishment and operation of the procurement evaluation committees by, for example, minimizing the turnover of committee members and introducing a system that facilitates the committee to meet regularly to improve the efficiency of the projects and ensure that their effects are realized without delay.

(2) Recommendations to the Provincial Ministries of Health

Each Provincial Ministry of Health is expected to provide necessary support to the four BHs for studying and implementing the proposed solutions shown in Table 9, so that the major problems regarding the O&M of the facilities and equipment of the Project in the hospitals will be resolved promptly.

Table 9 : Problems in O&M of the Facilities and Equipment of the BHs and their Possible Solutions

Name of the Provincial Government and BH	Problems	Possible solutions
North Western Provincial Ministry of Health (Galgamuwa BH)	Defects in pumps for feeding chlorine and other equipment at the sewage treatment facilities.	Repair defects.
Central Provincial Ministry of Health (Theldeniya BH)	Water leaking from the ceiling of clinical laboratory.	Repair water leakages.
	Failure and infrequent use of blood gas electrolyte analyzers.	Defects and repairs and transfer to higher level hospitals.
Eastern Provincial Ministry of Health (Kaluwanchikuddy BH)	Backflow of sewage from sewage treatment facilities.	Construction of a new sewage plant with treatment function.
Sabaragamuwa Provincial Ministry of Health (Warakapola BH)	No toilets for patients or staff in the operating theater complex.	Construction of toilets for patients and staff.
	Conducting the processing of bandages after sterilization in the open air.	Operation of the processing indoors.

Name of the Provincial Government and BH	Problems	Possible solutions
	A part of the ceiling of the medical ward is heated by direct sunlight, making the ward very hot.	Installation of an air conditioner.
	Walking to the hospital entrance requires walking up a long steep slope or using stairs.	Introduced a shared-ride cab to transport visitors from the nearest bus stop to the hospital, and renovate the facility to allow visitors to use the elevator in the old building to get to the front door.

#### 4.2.2 Recommendation to JICA

##### (1) Monitoring of the problems at the four BHs

JICA is recommended to monitor progress on improvement of the problems stated in the “Recommendations to the Executing Agencies” regarding the allocation of personnel and problems with the O&M of the facilities and equipment in the four BHs, monitor the influence of the deteriorating financial situation of the Sri Lankan government on the effects in O&M of the facilities and equipment provided by the project, and provide the Ministry of Health and provincial governments with advice as appropriate.

#### 4.3 Lessons Learned

##### (1) Hospital design with consideration of accessibility

The hospital building of Warakapola BH constructed under the ODA Loan Project is located on a hill, and visitors have to climb up a long slope or use stairs when visiting on foot. This is very difficult for the elderly, the disabled, and those in poor physical condition. In projects for improving hospital facilities, it is important for the executing agency to keep in mind that the facility should be designed with accessibility, and for JICA to request the same of the executing agency.

##### (2) Identify scenarios for contribution to the ODA Loan Project at the time of formation of an associated technical cooperation project

A technical cooperation project associated with an ODA loan project is implemented with the aim of promoting the effects and ensuring sustainability of the ODA loan project. However, for this Technical Cooperation Project, specific plans or purposes were not defined about the ways the Technical Cooperation Project would contribute to the effectiveness of the ODA Loan Project at the time of its formation or during its implementation. Fortunately, the Technical Cooperation Project was effectively implemented, and synergistic effects were observed during

the ex-post evaluation, since the hospitals the project worked with were the same as those of the ODA Loan Project. Yet, the Technical Corporation Project could have made a greater contribution to the effectiveness of the ODA Loan Project if a scenario of the ways the former would contribute to the latter had been set up during its formation or implementation and reflected in its Project Design Matrix.

## **5. Non-Score Criteria**

### 5.1 Performance

#### 5.1.1 Objective Perspective

##### Active support by JICA for project management and revision of the plan

The former project director of the ODA Loan Project appreciated that JICA staff actively supported the operation of the Project and communicated well during the monthly progress review meetings, and approvals for revisions, etc. The General Manager of the SPMC and the Deputy General Manager in charge of production appreciated that JICA staff and consultants understood the needs of the SPMC well and cooperated with them, that the review of the procurement items for manufacturing equipment in the detailed design went smoothly, and that the Japanese company installed the manufacturing equipment, which requires a high level of technical skill to install, in a perfect manner.

### 5.2 Additionality

##### Seamless support for strengthening NCD Prevention and Control through the Preceding Technical Cooperation Project, the ODA Loan Project, and the Technical Cooperation Project

The prompt formation of the ODA Loan Project to overcome the challenges identified in the preceding Technical Corporation Project and the start of the Technical Corporation Project enabled JICA's continued support for strengthening NCD prevention and control. This continuous support ensured the continued involvement and commitment of the officials of the Ministry of Health to the JICA projects and led to the effective implementation of the Projects.

##### Effective support brought about by a long-standing working relationship of JICA with the SPMC

The SPMC was established in 1987 under the Japanese grant aid project "Project for Construction of the Essential Medicines Manufacturing Center." Since its establishment, SPMC staff have continued to learn about Japanese pharmaceutical manufacturing technology and quality control through training in Japan. The officials of the SPMC appreciate that its long-standing cooperative relationship with Japan has facilitated maintaining trust, understanding, and good communication during the planning and the selection of the equipment for the ODA Loan Project.

Some of the manufacturing equipment procured through the grant aid project in 1987 has been well maintained and is still used with great care. In the ODA Loan Project, the factory building constructed in the grant aid project was renovated, and the procured equipment was installed. The project has expanded the manufacturing capacity of the SPMC as expected, contributing to the domestic production of pharmaceuticals. This project deserves to be referred to as a good example of an ODA Loan Project that added value to the results of a previous grant aid project and produced the expected results, based on a longstanding cooperative relationship.

(end)

Comparison of the Original and Actual Scope of the Project

Items	Plan	Actual
1. Project Outputs	<p>Improvement and expansion of functions of the four BHs:</p> <ul style="list-style-type: none"> <li>• Construction and refurbishment of facilities</li> <li>• Provision of equipment</li> </ul> <p>Enhancement of pharmaceutical production capacity of the SPMC:</p> <ul style="list-style-type: none"> <li>• Construction and refurbishment of facilities</li> <li>• Provision of equipment</li> </ul> <p>Provision of ambulances: 124 units in total in 7 provinces</p>	<p>Improvement and expansion of functions of the four BHs:</p> <ul style="list-style-type: none"> <li>• As planned</li> <li>• Slightly more than planned</li> </ul> <p>Enhancement of pharmaceutical production capacity of the SPMC:</p> <ul style="list-style-type: none"> <li>• Slightly more than planned</li> <li>• As planned</li> </ul> <p>Provision of ambulances: 86 units in total in 7 provinces</p>
2. Project Period	March 2012 - May 2016 (51 months)	March 2012 - November 2018 (81 months)
3. Project Cost		
Amount Paid in Foreign Currency	1,958 million yen	3,853 million yen
Amount Paid in Local Currency	2,802 million yen (4,003 million rupees)	925 million yen (1,119 million rupees)
Total	4,760 million yen	4,799 million yen
ODA Loan Portion	3,935 million yen	3,874 million yen
Exchange Rate	1 rupee = 0.70 yen (As of November 2011)	1 rupee = 0.63 yen to 0.89 yen (Annual average IMF rates from 2012 to 2019)
4. Final Disbursement	July 2019	

(end)