

**Kingdom of Cambodia  
Ministry of Public Works and Transport  
Phnom Penh Capital Administration,  
Department of Public Works and Transport**

**Kingdom of Cambodia  
The Project for  
Capacity Development for  
Sewerage Management of  
Phnom Penh Capital Administration and Ministry  
of Public Works and Transport**

**Project Completion Report**

**April 2023**

**Japan International Cooperation Agency (JICA)**

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**ANNEX 1: Results of the Project**

**ANNEX 2: List of Products Produced by the Project**

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# Project Completion Report

**Project Title: The Project for Capacity Development for Sewerage Management of Phnom Penh Capital Administration and Ministry of Public Works and Transport**

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**Submission Date: 20th March 2023**

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## I. Basic Information of the Project

### 1. Country

The Kingdom of Cambodia

### 2. Title of the Project

The Project for Capacity Development for Sewerage Management of Phnom Penh Capital Administration and Ministry of Public Works and Transport

### 3. Duration of the Project

2<sup>nd</sup> April 2019 to 1<sup>st</sup> April 2023 (4 years: 48 months)

### 4. Background (from Record of Discussions(R/D))

Wastewater generated in Phnom Penh Capital City (PPCC), the capital city of the Kingdom of Cambodia (Cambodia), has been increasing mainly due to rapid urbanization and population increase. In general, wastewater is naturally purified in lakes and wetlands through drainage channels from septic tanks since the sewerage system is not yet equipped. However, the septic tanks are not properly maintained and, in reality, wastewater is discharged with incomplete treatment. In addition, in recent years, the natural purification function of swamps/lakes has deteriorated due to the reclamation of these areas led by land development projects. In particular, Cheung Aek Lake decreased its area especially from 2003 to 2015, and water quality has deteriorated significantly due to sewage discharges. In addition, bad odors from wastewater flowing through the drainage channels in the treatment area and wastewater from the waterways overflowing

into the surrounding area due to poor drainage systems during the rainy season are deteriorating the environmental health of the area.

The Government of Cambodia (GOC) places importance on the construction and sustainable operation of facilities related to sewerage management and drainage improvement in the major cities, including PPCC in such national strategies as National Strategic Development Plan (NSDP), 2014-2018” In addition, PPCC sets goals of “Prevention of water pollution” and “Promotion of sewage treatment” in “City Development Strategy (CDS), 2005” and places a priority on the development of sewerage facilities in the PPCC’s city development plan of “White Book on Development and Planning of Phnom Penh, 2015”.

Taking the above conditions into consideration, Japan International Cooperation Agency (JICA), implemented “The Study on Drainage and Sewerage Improvement Project in Phnom Penh Metropolitan Area” from the year 2014 to 2016, in response to the official request from the GOC. In this Study, Sewage Management and Drainage Improvement Master Plan (the M/P), was formulated for the target year of 2035. The M/P examined the current status of sewage treatment measures in PPCC from technical, organizational, institutional and financial perspectives and formulated a plan for the development of facilities, a plan for the development of a legal system, the establishment of an organizational system and a human resources development plan to ensure appropriate measures. In addition, the M/P recommends that in the sector of sewerage management, the development of a well-structured organization and legal system, both in terms of quality and quantity, be promoted in order to implement sewerage management projects in PPCC, and there is a strong need to strengthen the legal and institutional framework in the sector of sewerage management.

In 2017, the technical cooperation project was requested by the Department of Public Works and Transport (hereinafter called “DPWT”) of Phnom Penh Capital Administration (hereinafter called PPCA) in order to resolve the issues mentioned in M/P. Subsequently, the Ministry of Public Works and Transport (hereinafter called “MPWT”) also requested a technical cooperation project to support the development of the legal system. As a result of coordination with the Cambodian side, it was decided to implement a technical cooperation project combining requests from MPWT and DPWT.

The Project for Capacity Development for Sewerage Management of Phnom Penh Capital Administration and Ministry of Public Works and Transport (the

Project) aims to establish a fundamental framework for sewerage management in the MPWT and DPWT through strengthening the legal and institutional framework for sewerage management in both institutions, so that the laws, ministerial ordinances (Prakas), technical guidelines, and ordinances (Decca) developed in the Project will be referenced during planning, construction, operation and maintenance of sewage treatment facilities and will be implemented appropriately for future sewerage management.

## **5. Overall Goal and Project Purpose (from Record of Discussions(R/D))**

### **Overall Goal**

Regulations (Law and Prakas), technical guideline and ordinance (Decca) developed by the Project are referred to when sewerage facilities are planned, constructed and operated/maintained.

### **Project Purpose**

MPWT's and DPWT's foundation for sewerage management is strengthened.

## **6. Implementing Agency**

The Ministry of Public Works and Transport (MPWT)

The Department of Public Works and Transport (DPWT) of Phnom Penh Capital City (PPCC)

## **II. Results of the Project**

### **1. Results of the Project**

#### **1-1 Input by the Japanese side**

(1) Amount of input by the Japanese side:

Planned: 198.0 million Japanese Yen

Actual: 228.5 million Japanese Yen (Estimated as of Jan. 2023)

The amount of input was increased because of the modification of R/D. The modification was mainly the addition of the draft Law to the Overall Goal, Project Purpose and Outputs, and the addition of the training. The modification led to the expansion of the dispatch period of one JICA Experts supporting MPWT, and the training in Japan. In accordance with the additional activities, the amount of input was increased. The details of the modification

of R/D and factors of cost increase are shown in 'II.3. History of PDM Modification' and 'III. (3) Efficiency'.

- (2) Expert dispatch: Long term: Five (5) experts, Short term: not assigned  
 Long term: Five (5) experts, 142 M/M (Chief advisor/Legal and institutional development/Implementation system development, Legal and institutional development, and Project coordinator)  
 The list of experts dispatched from Japan is attached as **Annex 1**.

Short term: Short-term JICA Experts had not been dispatched as planned.

- (3) Receipt of training participants: Nine (9) persons, 4.3 million Japanese Yen  
 Training in Japan and training in the third country were planned in 2020 and 2021. Due to the travel restrictions related with COVID-19, the planned training in Japan was conducted online in October 2021 for teaching theories. The project organized a study trip to Japan in 2022. The summary of trainings in Japan and the number of participants is shown below. The list of trainees is shown in **Annex 1**.

**Summary of the training**

Date	In Japan/ Third country	Number of participants	Summary of training
25th November 2022	In Japan	9	Training for Capacity Development (Plan)

- (4) Equipment Provision: In-kind contributions  
 One vehicle was provided from Japanese side. The Project spent no expense for the car because the car was handed over after JICA Cambodia purchased and used it as the official car for 10 years.

### List of the equipment

No.	Asset Name	Spec	QTY	Price (USD)	Date of acquisition	Place
1	Car	Toyota Prado, 2011	1	-	2020/1/9	MPWT

(5) Overseas Activities Cost: 301,957 US dollars (42.9 million Japanese Yen, estimated as of Feb. 2023)

The table below shows a list of Expense items and Overseas Activities Cost (herein after called 'OAC').

The Miscellaneous and Business trip expenses amounted to approximately US\$18,000 to 50,000. The amount in FY 2020 was smaller because from April to September 2020, there was no expenditure of OAC due to the temporary evacuation of JICA Experts for COVID-19 measures.

Agent Service Expenses were used for the four(4) contracts aiming to draft the Law, ministerial ordinances(Prakas), ordinances(Decca) and technical guidelines utilizing the experience and knowledge of the local law firm and sewerage consultant company.

The quarterly breakdown of OAC is shown in **Annex 1**.

The properties purchased by OAC were donated to C/P. The main donated properties are shown in the below table.

### List of Expense items and Overseas Activities Cost

Unit: USD

Expense item			FY 2019	FY 2020	JFY 2021	FY 2022
			Executed	Executed	Executed	Estimated <sup>*3</sup>
Overseas Activities Cost	Miscellaneous (External Experts)	Maintenance of printer	1,270	216	832	2,663
		Communication expenses	208	367	505	470
		Salary for PJ staff	13,851	13,402	24,094	24,206
		Personal accident and health insurance, Ret payment	748	1,189	1,422	1,441
		Gasoline for the project car	48	239	650	750
		Car insurance, repair for the project car	1,121	704	2,409	1,410
		Rental Car	9,168		621	0
		Stationary	1,032	131	406	366
		Interpretation, Translation etc.	1,517		2,038	1,230



	Equipment, Facilities, Repair for equipment and facilities	13,379	1,477	2,398	616
	JCC, Handover ceremony	1,590		94	9,432
	Biz Trip(Air Fare)(External Experts)	271			4,002
	Biz Trip(Non Air Fare)(External Expert)	528		1,940	2,975
	<b>Subtotal<sup>*1</sup></b>	<b>44,730</b>	<b>17,725<sup>*2</sup></b>	<b>37,408</b>	<b>49,561</b>
Agent Service Expense	Basic Study on Sewerage Laws of Cambodia and its Neighbor Countries	15,848			
	Drafting Law on Wastewater and Drainage System		31,960	25,540	
	Development of the Cambodian Technical Guidelines for the Project for Capacity Development for Sewerage Management of PPCA and MPWT			5,945	13,871
	Drafting Prakas and Decca on Wastewater and Drainage System for Capacity Development for Sewerage management of PPCA and NPWT				59,370
	<b>Subtotal</b>	<b>15,848</b>	<b>31,960</b>	<b>31,485</b>	<b>73,240</b>
<b>Total (yearly)</b>		<b>60,578</b>	<b>49,685</b>	<b>68,892</b>	<b>122,801</b>
<b>Total</b>					<b>301,957</b>

Note:

\*1: The amount paid in local currency is calculated for convenience by converting it uniformly into dollars at the rate of 1 dollar = 4,100 riel, since the exchange rate differs depending on the store and shop where the payment is made. And amounts of change received in local currency are not included in this spreadsheet because they are small amounts. Therefore, the quarterly totals do not equal the amounts reported in the quarterly estimation fund reports.

\*2: From April to September 2020, there was no expenditure for Overseas Activities Cost because the experts were temporarily evacuated and returned to Japan to take measures against COVID-19.

\*3: The amount in FY 2022 is an estimated amount as of Feb. 2023.



### List of the main donated properties

No.	AssetNameSafe	Spec	QTY	Price (USD)	Date of acquisition	Place
1	(Strongbox)	CS	1	138.60	2019/5/8	DPWT/PPCA
2	Laptop computer	Dell Vostro 5481	1	1,012.00	2019/6/13	DPWT/PPCA
3	Laptop computer	Dell Vostro 5481	1	1,072.50	2019/7/16	MPWT
4	Multi-function photocopier	SC2022	1	3,410.00	2019/7/16	DPWT/PPCA
5	Multi-function photocopier	SC2022	1	4,125.00	2019/8/27	MPWT
6	Projector	Sony VPL-EX450	1	561.00	2021/3/11	MPWT
	Total amount			10,319.10		

### 1-2 Input by the Cambodia side

#### (1) Counterpart assignment:

The number of managers, officers and engineers of the Working Group (herein after called 'WG') is shown in the below table. The total number of member were 84 persons; 41 persons from MPWT, 26 persons from PPCA, and 17 persons from DPWT in Phnom Penh. Of the member, 39 persons were officers/engineers whose positions were not management level.

The member lists of the Joint Coordination Committee (JCC), Technical committee (TC) and Working Group (WG) are shown in **Annex 1**.

### Number of managers, officers and engineers

C/P	No.	Department	Manager	Officer / Engineer*	Total
MPWT	1	MPWT	5		5
	2	Cabinet of Senior Minister	1		1
	3	GDSWM	6	9	15
	4	GDPW	1		1
	5	GDT	1		1
	6	GDAF	1		1
	8	GDAF and Cabinet of Senior Minister	1		1
	9	Road Infrastructure Department	1	2	3
	10	Public Infrastructure Department	2	1	3
	11	Public Technical Works and Transport	2		2
	12	Legal Department	1	1	2
	13	Litigation Department	1		1
	14	IT and Public Relation Department	2	1	3
	15	Planning Department		1	1
	16	Public Works Office		1	1
		<b>Subtotal</b>		<b>25</b>	<b>16</b>

C/P	No.	Department	Manager	Officer / Engineer*	Total
PPCA	1	PPCA	4		4
	2	Administration	4		4
	3	DLMUPC in Phnom Penh	1		1
	4	Phnom Penh Water Resource and Meteorology	1		1
	5	DoE in Phnom Penh	1		1
	6	Urbanization Division	2		2
	7	Legal Affair and Human Resource Division	1		1
	8	Waste Management Division	1		1
	9	Financial Bureau	1		1
	10	Public Relation and International Cooperation	1	2	3
	11	Procurement Office		1	1
	12	DoEF in Phnom Penh	1		1
	13	Accounting Office		1	1
	14	Development and Construction Office		4	4
<b>Subtotal</b>			<b>18</b>	<b>8</b>	<b>26</b>
DPWT	1	DPWT in Phnom Penh	2	1	3
	2	Technical Office		1	1
	3	Road Safety		1	1
	4	DSO		10	10
	5	Public Works Office		1	1
	6	Accounting Office		1	1
<b>Subtotal</b>			<b>2</b>	<b>15</b>	<b>17</b>
<b>Total</b>			<b>45</b>	<b>39</b>	<b>84</b>

Note:

Manager means that the position of the member is management level and Office / Engineer means that the position of the member is officer or engineer who is not management level

(2) Equipment Provision:

One vehicle had been lent by MPWT after the car was handed over to MPWT from JICA.

(3) Provision of offices etc.:

Office space for JICA Expert at MPWT was provided with A/C, electricity, water supply, and internet.

Office space for JICA Expert at DPWT/PPCA was provided with A/C, electricity and water supply.

The meeting rooms for the WG, Technical Committee at MPWT, PPCA and DPWT/PPCA were provided.

### **1-3 Activities**

#### **Output 1: Legal and institutional framework for sewerage management is strengthened at MPWT**

##### **Activity 1-1: Formulate working group for strengthening legal framework.**

The first WG meeting was held on 12th July 2019. The contents of the R/D, PDM, and PO were confirmed, and it was agreed. Due to the reorganization of the Department of Sewerage Management and Construction into the General Directorate of Sewerage and Wastewater Management at MPWT, the list of new members of JCC, TC, and WG was shown in December 2020.

WG has been held 70 times, including collaboration WG with DPWT and site visits to flood protection phase 4.

##### **Activity 1-2: Assess C/Ps' current knowledge level of sewerage related legal framework (baseline)**

A questionnaire was distributed to collect needs and issues for the project. The questionnaire was collected and analyzed. According to the questionnaire, there is a Sub decree on sewerage, but it is not enough. There is a lot of recognition that Law and ministerial ordinances (Prakas), which provides more details, are urgently needed. It is also mentioned that the budget, staff and training system are not enough, and the workflow is not in place.

##### **Activity 1-3: Review existing law, regulations and standards relating sewerage management.**

Sub decree No.235 is already in force. There are Draft Law and draft ministerial ordinance (Prakas) created by the Cambodian side, which have been reviewed by JICA project team. The contents are checked to see if they are appropriate and consistent. (The Draft Law developed by MPWT prior to the start of the PJ is here in after called "Draft Law (MPWT)")

As for Sub decree No.235, the effluent discharge standard is established, and the standards of nitrogen and phosphorus are especially very strict values. It was discussed why the Sub decree was enacted and whether it is necessary.

According to Ministry of Environment's drafted amendment of Sub decree No.27 (water pollution control), the effluent standards for discharges to public water bodies would also regulate sewerage treatment plant. Two standards for sewage

treatment plant should be consistent.

Explanatory materials on the comparison of effluent standard between Japan and other countries are made, and explanatory materials on the water environment of Japan were prepared. The effluent standard was discussed in the WG on the basis of these materials and information. In view of the current situation and economic situation in Cambodia, it was proposed to lower the standard temporarily and raise the standard in stages.

As a result of MPWT's letter discussion with MOE on the effluent standards, MOE indicated its intention that the effluent standards for sewage treatment plants shall be complied with Sub decree No. 27 Annex 2. In November 2020, the JICA project team received a letter from MPWT informing them of this.

On 29th June 2021, MOE issued Sub-Decree No. 103, which partially revises Sub-Decree No. 27. The Effluent Standard (adding total nitrogen, total phosphorus, etc.), Type of pollution sources, and Water Quality Standard etc., were revised.

#### **Activity 1-4: Review other countries' legal framework for sewerage management**

Information of other countries' laws has been collected from JICA headquarters, JICA experts in other countries and the Internet.

The compilation of laws and regulations of other countries was outsourced. During the preparation, the outsourced result was presented to the counterparts in the WG to hear their opinions and the project team finalized the result. The WG members will use this material to proceed with drafting regulations.

#### **Activity 1-5: Analyze the points to strengthen legal framework for sewerage management**

At the 15th WG, the contents that should be included in the law were confirmed. A comparison was made between the items to be included in the law extracted in "Basic study on sewerage laws of Cambodia and its neighbor counties" and the provisions of the Draft Law (MPWT).

In order to improve the efficiency of the drafting process and the need for knowledge of the Cambodian legal system, the contract was concluded with a local legal consultant, taking into account the past experience in drafting laws and regulations.

Since December 2020, the project team has exchanged opinions with the legal

consultant, MPWT WG to compile a framework to be included in the Law.

**Activity 1-6: Prepare draft regulation for sewerage management**

The Draft Law (MPWT) may not be very accurate because translation between Khmer and English is insufficient. The project team continued to formulate the Draft Law with reference to other countries, including Japan.

The project team, together with the legal consultant, checked MPWT's draft for inaccuracies and duplications, and referred to other national laws and regulations. The project team & consultant proposed the first Draft Law in early July 2021. The contents of the first Draft Law were reviewed and questions were raised by the 31st WG. Based on this, a revised draft was presented in mid-September. The review was completed by WG in March 2022 and reported as WG draft to the Ad-hoc meeting within MPWT.

The Handover Ceremony of the Draft Law drafted by MPWT/ General Department of Sewerage Management (hereinafter called "GDSWM") and JICA Project team was held on 16th May 2022, with handover by Ms. Miyahara, Senior Representative, JICA Cambodia Office to H.E. Pal Chandara, Secretary of State, MPWT.

At the 60th WG in August 2022, the outline of the draft ministerial ordinance (Prakas) to be formulated was reviewed with MPWT. Based on this outline, the JICA Project team and the consultant team developed the first draft of ministerial ordinance (Prakas). This was discussed in the WG in November 2022, and the sub-decree and ministerial ordinance (Prakas) categories and wording were confirmed. Final compilation will be done by the end of January 2023 and handover will be done at the JCC in February 2023.

**Activity 1-7: Assess C/P's understanding level of draft regulation (end line)**

As planned, the End line will be confirmed in February 2023. A verbal or paper questionnaire will be conducted.

**Activity 1-8: Formulate working group for developing technical guideline of planning, design and O&M for sewerage facilities**

The first WG was formulated with Activity 1-1 Legal framework.

**Activity 1-9: Assess C/Ps' current knowledge level of technical guideline (baseline)**

A questionnaire was distributed to collect needs and issues for the project. The questionnaire was collected and analyzed. According to the questionnaire, recognition that technical manuals are insufficient. There is not enough strategy, roadmap and master plan. It was also pointed out that the accumulation of information, the lack of various devices, and the need to provide guidance and enlightenment to local staff, businesses and residents. In addition, there is an O&M manual made by GIZ and GGGI in 2018, but it seems that it is not widely used.

**Activity 1-10: Review other countries' technical guideline for planning, design and O&M for sewerage management.**

The Operation & Maintenance guideline formulated in 2018 was reviewed to explain the contents to provincial officers.

The part of 'Guideline for Planning and Design in Sewerage' of Japan were translated into English, which was referred to in the WG, and edited in a form suitable for Cambodia.

**Activity 1-11: Prepare draft technical guideline for sewerage management**

MPWT requested the project team to make guidelines for the Sewer Construction General Specification and flood control. The former English version draft has been provided. The latter, flood control, is in preparation.

The technical guidelines required by MPWT were confirmed at the 15th and 16th WG. The items in the existing guidelines developed by MPWT and the items proposed by the project team were compiled, which were used as a reference in order to identify areas that MPWT needs and to develop the following technical guidelines. The draft table of contents and part of the draft guidelines for Planning were prepared and discussed at the 18th, 22nd and 24th WG meetings.

A contract with a local consultant was begun on 12th November 2021. Since April 2022, the WG has held 12 meetings as of the end of December 2022 to confirm and discuss the contents to make the Technical guideline appropriate to the current situation in Cambodia.

The final review will be conducted in January 2023 to finalize the draft. Handover is planned at the JCC in February.

**Activity 1-12: Assess C/P's understanding level of draft technical guideline (end line)**

As planned, the End line will be confirmed in February 2023. A verbal or paper questionnaire will be conducted.

## **Output 2: Legal and institutional framework is strengthened at DPWT/PPCC.**

### **Activity 2-1: Formulate working group for strengthening legal framework at DPWT/PPCC**

We conducted a questionnaire in advance with DPWT staff and Drainage Pumping Station and Sewage Treatment Plant Office (hereinafter called “DSO”) staff involved in sewerage regarding needs and challenges that need to be strengthened with regard to the legal framework for sewerage management. The results showed that there are many needs and challenges, including human resources, budget management, maintenance and management techniques, issues related to decentralization from the national to the local level, and awareness regarding sewerage management and waste management. We established a WG consisting of staff members who could consider legal responses to these issues.

We conducted a questionnaire in advance with DPWT staff and DSO staff involved in sewerage regarding needs and challenges that need to be strengthened with regard to the legal framework for sewerage management. The results showed that there are many needs and issues, such as securing human resources, budget management, maintenance and management techniques, issues related to decentralization from the national to the local level, and awareness regarding sewerage management and waste management. A WG was established consisting of staff who could consider legal responses to these issues.

### **Activity 2-2: Assess C/Ps' current knowledge level of sewerage related legal framework (baseline)**

Before discussing the contents of the legal framework related to sewerage, members of the WG were asked to fill out a questionnaire and give their free opinions on the current challenges and needs for the Project. Based on this, the issue items were categorized, evaluated and analyzed. It was found that there was little interest in sewage management regarding the maintenance and operation of wastewater treatment plants (hereinafter called “WWTPs”), especially with regard to the demand for water quality inspections.



At the WG meeting, the members were asked to freely express their opinions on the current issues and the needs to the project team. Based on this, the items of issues were classified, and the measures to be tackled in the Project were organized. There was no opinion from the counterparts, regarding the issues and needs related to the O&M of the sewage treatment plant constructed under Japanese grant aid.

The issues and needs related to the management and operation of the sewage treatment plant have not been raised; however, the important aspect was presented by the project team to have a common recognition.

### **Activity 2-3: Review existing ordinance (Decca) relating wastewater management**

The members of the WG worked to understand the existing ministerial regulations (Sub-Decree 235) on wastewater management and to identify the points that should be addressed in the ordinance (Decca). The points of difference and improvements between the existing ordinance and the current sewer management were identified as the lack of a process for technical review and advice at the time of house connection, lack of clarity on the use of collected sewerage fees, and the persistence of lack of confirmation of completion inspections for sewerage infrastructure construction.

Activity has been implemented to clarify understanding of Sub decree No. 235 on the management of drainage and wastewater treatment systems and the points addressed in the ordinance in order to grasp the understanding of the current knowledge level of the counterparts.

The following points are raised as problems that the counterparts currently understand.

In the approval process for application procedures for house connection, the role of districts (Khan) of Phnom Penh and DPWT to conduct the inspection on house connection are necessary to be organized. (Related to Article 9)

Phnom Penh capital administration is not defined as the authority which receives revenues after collecting sewage fees. (Related to Article 29)

It is necessary to define the organization that conducts construction inspections in Phnom Penh capital administration (related to Article 31)

Regarding water quality standards, DPWT has not operated a sewage treatment plant, so it seems that the awareness of problems regarding water quality

regulations is low. Information on water quality standards is scheduled to be compiled in the future, and it is necessary to improve knowledge on water quality based on compiled information.

#### **Activity 2-4: Review other countries' ordinance for sewerage management**

In March 2020, outsourcing was conducted to study other countries' ordinances on sewerage management. The countries referenced were Japan, Vietnam, and the U.S. ordinances.

The contents of the ordinances of other countries were outsourced to the consultants as follows and compiled for reference in future discussions. Outsourcing was completed and the legal and ordinance documents were put together. At the WG meeting, the counterparts were consulted for their opinions, and the results were compiled. In the future, the project team plans to use the material for further discussion of the regulations.

#### **Activity 2-5: Analyze the points to strengthen legal framework for sewerage management**

Points for strengthening the legal framework for sewerage management were discussed with the DPWT. The main point was to improve the water quality environment by creating appropriate rules for sewerage management when residents connect to the public sewerage system. The system of administrative agencies was also positioned in the legal framework, and establishing on-site inspections and examinations were identified as points to be strengthened.

Firstly, discussions are underway on the rules for house connection to public sewers, handling of septic tanks and fee collection. These were addressed by a joint WG meeting of MPWT and DPWT for discussion, including determining their role in ministerial ordinances (Prakas) and ordinances (Decca). In the future, discussions will be conducted not only for house connections but also for the whole, based on the contents of the regulations of other countries. The main conclusions and opinions of the discussions are as follows.

Application window: SWSO (Single Window Service Office): Municipal, District, Khan,

Technical consultant: the role of DPWT is expanded and is basically involved in all reviews.

Inspection: DPWT is basically involved in all inspections

Septic tank: opinions are divided on the obligation to install a septic tank

in the sewerage treatment area, and it is necessary to continue discussions. It was discussed to remove installation obligations only when the quality of treated water is ensured in the sewage treatment area. Fee: all areas with drainage systems are subject to sewerage charges. MPWT is considering a policy to collect treatment costs outside the treatment area and use the sewerage charges for cleaning septic tanks. Connecting obligation: Stipulate the connecting obligation to the sewage system, including factory wastewater. Licensed company: Introduce a licensing system as a company that can construct the private sewer. Pretreatment facilities: At the time of technical consulting of house connection, drawings inspection will be conducted. (Standards will be discussed at a later date) On-site inspection: DPWT(DSD) or Khan administrative will inspect the connection between the public sewer and private sewer before backfilling.

#### **Activity 2-6: Prepare draft ordinance for sewerage management**

Using materials that compiled ordinances from other countries, the Project promoted understanding of the contents of the sewerage ordinance and discussion of the contents that should be applied to Phnom Penh Metropolitan Government. In order to draft an ordinance (Decca), a high level ministerial ordinances (Prakas) is required. The draft law on which the Prakas was drafted was handed over to the MPWT in May2022, and a review of the ordinance was conducted. In preparing the draft ordinance, a joint meeting was held with the WG members plus officials from the Phnom Penh City Hall and the law firm to submit the 2<sup>nd</sup> draft ordinance (Decca) for future drafting.

Utilizing the documents that summarize the ordinances of other countries, the project team promoted DPWT's understanding of the contents of the sewerage ordinance and discussed the contents that should be applied to Phnom Penh, leaving some details discussed and prepared the first draft ordinance. In the future, it is necessary to discuss mainly the contents of licensed companies and pretreatment facilities, including MPWT. In discussions with Vice-Governor H.E.Koeut Chhe in charge of legal affairs and finance in January 2021, the WG requested PPCA to review the draft ordinance to understand its role, format, and procedure for enactment.

Since the draft law was handed over to the MPWT, the past draft ordinance

started to be reviewed in June 2022. C/P members and JICA team Discussed what should be contained in the ordinance (Decca) to promote the future sewerage project efficiently. In addition, it was decided to include an outsourced law firm as our member for discussion.

**Activity 2-7: Assess C/P's understanding level of draft ordinance (endline)**

After the baseline survey conducted in July 2019, the counterpart members discussed the legal issues and needs again in the WG during the WG from November 2020 to January 2021 to assess their own understanding of the draft ordinance of C/P.

Through the framework of the ordinance, a better understanding of the issues and needs, as well as the project activities were gained.

As a result, compared to the baseline, the counterpart members:1) came to understand the need to develop a financial plan for the WWTP constructed by the Japanese grant aid project, as well as the management of the drainage pipelines. 2)Recognized the importance of requesting the MPWT to develop a Ministerial ordinance (Prakas) on penalties to better manage their sewerage facilities in the future. 3)Must also request the MPWT to formulate a ministerial ordinance (Prakas) on technical standards that would be uniform throughout Cambodia. 4) Recognized the lack of technical officers for inspection in charge of inspecting whether buildings, offices, and factories are properly connected to the public sewage system. 5) Recognized that through the ordinance, it will be necessary for them to negotiate rules and regulations for the training on administration affair, documentation forms, safety standards, maintenance drainage/sewer and pumping station in the future. 6) Need to be given clear authority for technical inspections in the field of sewerage. 7) Need to seek the roles and responsibilities from the PPCA to make specific plans and budgets for prevention from inundation. 8) Recognized that priority should be given to flood prevention measures such as the installation of more rainwater inlets and penalties for illegal landfill in Phnom Penh.

**Activity 2-8: Define necessary roles, responsibilities and number of personnel of new/revised offices/sections in charge of sewerage management at DPWT/PPCC, referring to proposals identified in Sewerage Management Master Plan**

In addition to the proposed organization proposed in the Master Plan for

Sewerage Management, the personnel and their roles required to operate and manage sewerage management, especially treatment plants, within the DPWT were discussed, referring to the preparatory study review documents. As a result, in December 2021 and October 2022, the Director of DPWT submitted letters to the Minister of MPWT regarding additional staffing requests to establish the organization.

The project team confirmed the content of organizational strengthening activities in the project. In addition to examining the medium and long-term sewerage organization, the project team have considered the operation organization of the treatment plant in collaboration with the Grant Aid Project to construct a sewage treatment plant.

#### **Activity 2-9: Prepare preliminary draft of new/revised structure in charge of sewerage management**

The structure of the new organization needed to take charge of future sewer management was drafted as proposed in the Master Plan. As a result, a treatment plant section will be added to the DSO organization under DPWT to provide operational and administrative staffing at the treatment plants to be constructed. The first draft of the organization was prepared as follows in the discussion within DPWT. It was taken from "The study on drainage and sewerage improvement project in Phnom Penh, Dec. 2016, JICA".

In addition, the DSO, will be added to the treatment plant section. In order to secure operational and administrative staff at the new WWTP, DPWT/PPCA submitted a personnel request to MPWT in December 2021 for personnel recruitment for WWTP.

DPWT submitted a draft employment agreement to the PPCA in May 2022.

#### **Activity 2-10: Formulate working group for financial plan for sewerage facilities to be constructed by Japanese grant aid project**

In February 2021, a WG was established for financial planning of sewerage facilities to be constructed under the Japanese grant aid project. The WG meetings held a wide range of discussions, from the proposed budget for the operation of the treatment plant, to the personnel required for the operation, sludge disposal, and sewerage usage fees.

The WG was established by Vice-Governor H.E. Koeut Chhe, who is in charge of legal affairs and finance, and the roles and members of the WG were decided

on 22th February 2021, which was the first Financial WG meeting. The 2nd meeting was held on 15th July 2021, the 3rd meeting on 17th September 2021, the 4th meeting on 12th November 2021, the 5th meeting on 12th December 2021, and the 6th meeting on 29th March 2022.

**Activity 2-11: Assess C/Ps' current knowledge level of financial planning (baseline)**

Questionnaires were administered through the July 2021 working meeting to gauge the level of knowledge with respect to financial planning. While the importance of the project for the operation and management of WWTP was recognized, many respondents expressed the need for human resources, strategic planning, and administrative policies related to sewage systems rather than the level of financial planning.

In the Financial WG (hereinafter called “F-WG”) meeting on 22nd February 2021, it was noted that PPCA and DPWT still do not have any experience in developing the budget for O&M of WWTP, and it was requested to consider how much budget is needed for personnel, electricity, sludge treatment, chemicals, etc. through the WG. According to the F-WG questionnaire conducted on July 2021, all members recognized the importance of the project regarding wastewater treatment, but on the other hand, they requested the necessity of human resources, strategic planning, and administrative policies regarding sewerage rather than financial planning level. The F-WG team also tended to focus first on how to collect fees from wastewater users in order to secure the necessary funds for the O&M of the WWTP.

However, through the previous WG meetings, C/P members have found that it is essential to clarify expenditures for sewerage projects rather than collecting fees. They discussed the maintenance cost of the sewer facilities, the expansion plan and the maintenance plan, then it would be essential to explain the need to increase the fee to the residents. Therefore, it was their recognition that it would be a very time-consuming process.

**Activity 2-12: Discuss and deepen understandings of financial plan for sewerage facilities to be constructed by Japanese grant aid project**

Overview of the sewerage facilities to be constructed by the Japanese grant aid project and what kind of work is involved in the WWPTs were shared with the attendees. In order to increase awareness of financial planning, the F-WG

meeting discussed what work will be done at the WWTP and the number of people needed to work there, labor costs, electricity rates, and sludge disposal. WG team members shared with each other at the 30th WG meeting an overview of the WWTP to be built in Phnom Penh and what kind of work will be done at the sewage treatment plant. They discussed what work would be done at the WWTP, the number of people required to work there, and the personnel costs at the 31st WG meeting and at the 2nd F-WG meeting. According to a questionnaire from the meeting participants, many mentioned that it is important to start as soon as possible to recruit human resources.

WG team members discussed the facilities used at the treatment plant and the cost of electricity at the 33rd WG meeting. They also discussed at the 34th WG meeting methods of treating sludge generated from sewage treatment plants and costs related to sludge transportation. They discussed training plans for newly hired technical staff at the 35th WG meeting. The members also discussed labor and electricity usage fees and staff training plans of WWTP at the 3rd F- WG meeting with relevant departments. In addition, WG team members discussed the cost of chemicals used at the treatment plant and the cost of water quality monitoring at the 37th and 38th WG meetings. They discussed and decided on a policy for the sludge disposal program, which accounts for a high cost in the maintenance budget, at the 4th Financial WG meeting. They then discussed at the 40th, 41st WG and 5th Financial WG meetings regarding the operating costs of WWTP, and were able to put together an estimated budget for 2023.

The WG team members shared with the departments concerned that Phnom Penh Metropolitan Government will secure the budget required for the WWTP in the future at the 5th F-WG meeting. At the 6th F-WG meeting, it was decided to start discussing the case studies of fee collection in each city and the review of fee setting.

Meanwhile, in the closed-door meeting participated by MPWT, MoEF, MISTI, PPWSA, PPCA/DPWT, and other relevant departments, it was proposed to be held the inter-ministries meeting as "the meeting to study relevant laws and regulations on 10% revenue usage of the sewerage fee collection and environmental funds" to discuss more on how to manage sewerage fees, environmental and social funds, and penalties, not by immediately increasing the sewerage fee.



**Activity 2-13: Assess C/P's level of knowledge on financial planning (endline)**

Questionnaires on the financial aspects of the project were administered through the WG meetings. With each meeting, the group began to focus on the income of the financial plan.

**2. Achievements of the Project**

**2-1 Outputs and indicators**

**Output 1: Legal and institutional framework for sewerage management is strengthened at MPWT.**

OVI	Achievement
OVI1-1.Draftregulation(lawandprakas)forseweragemanagement MPWT.	Achieved
OVI 1-2. Draft technical guideline of planning, design and MPWT.	Achieved

**1-1 Draft regulation (law and prakas) for sewerage management is submitted to MPWT.**

**Draft Law on Sewerage System:**

The project team proposed the first Draft Law in early July 2021. The revised draft was presented in mid-September. The review was completed by WG in March 2022 and reported as WG draft to the Ad-hoc meeting within MPWT. The Handover Ceremony of the Draft Law drafted by MPWT/ GDSWM and JICA Project team was held on 16th May 2022, with handover by Ms. Miyahara, Senior Representative, JICA Cambodia Office to H.E. Pal Chandara, Secretary of State, MPWT.

The Draft Law consists of 17 Chapters, 115 Articles and a Technical Terms.

**Table of Contents:**

- Chapter 1 General Provisions
- Chapter 2 Competent Authority
- Chapter 3 Principles
- Chapter 4 Determination of Prioritized Sewerage System Development Zones,  
Sewerage System Master Plan and Development Plan of  
Sewerage System
- Chapter 5 Development of Sewerage System
- Chapter 6 Management of Works Concerning Sewerage System
- Chapter 7 Operation and Maintenance of Sewerage System, Inventories and  
Sewerage Information System
- Chapter 8 Technical Standards and Qualifications
- Chapter 9 Business Operation in Sewerage Sector
- Chapter 10 Rights and obligations of operators and users
- Chapter 11 Fee Charge for Sewerage System Services
- Chapter 12 Budget for Development, Construction and maintenance of  
Sewerage System
- Chapter 13 Inspection on Sewerage System
- Chapter 14 Disputes Mediation
- Chapter 15 Penalty
- Chapter 16 Transitional Provisions
- Chapter 17 Final Provisions
- Technical Terms for Uses in Draft Law on Sewerage

**Draft ministerial ordinance (Prakas):**

The project team proposed the outline of the draft ministerial ordinances (Prakas) be formulated was reviewed with MPWT in August 2022. The first draft was presented by the WG in November.

Of the legal contents to be delegated to ministerial ordinances (Prakas) in the Draft Law, selected items are under the jurisdiction of MPWT only. Although the 10 provisions below are initially listed, there is a possibility of consolidation of items or changes in style, depending on preliminary coordination with the MPWT Legal Department.

**Draft Provision:**

- 1: General Provision
- 2: Development and Management of Sewerage System
- 3: Connection to the Public Sewerage System
- 4: Conditions and Procedures to Obtain Qualifications of Engineers or Technicians
- 5: License for Business related to Sewerage System
- 6: Technical Standard for Sewerage System
- 7: Technical Requirement, Standards and Management of Sludge
- 8: Private Sewer Networks, Pre-treatment tanks, Purification tanks and septic tanks
- 9: Transitional Provisions
- 10: Final Provisions

**1-2 Draft technical guideline of planning, design and operation and maintenance (O&M) of sewerage facilities is submitted to MPWT.**

Since April 2022, the WG has held 12 meetings at the end of December 2022 to confirm and discuss the contents. The part of "Guideline for Planning and Design in Sewerage" of Japan was translated into English, which was referred to in the WG, and edited in a form suitable for Cambodia. The structure is divided into eight major chapters, each of which is subdivided into sections. Each section has an essential part and an explanatory part. The English version is the entire version, and only the essential parts have been translated into Khmer.

**Table of Content:****Part I: ESSENTIAL PARTS IN KHMER**

Chapter 1 Planning the Sewerage System

Chapter 2 Pipeline Facilities

Chapter 3 Pumping station facilities

Chapter 4 Wastewater treatment facilities

Chapter 5 Wastewater treatment method

Chapter 6 Sludge Treatment Facilities

Chapter 7 Electrical instrumentation equipment

Chapter 8 Environmental conservation facilities and testing facilities, etc.

## **Part II: FULL CONETENTS IN ENGLISH**

Chapter 1 Planning the Sewerage System

Chapter 2 Pipeline Facilities

Chapter 3 Pumping station facilities

Chapter 4 Wastewater treatment facilities

Chapter 5 Wastewater treatment method

Chapter 6 Sludge Treatment Facilities

Chapter 7 Electrical instrumentation equipment

Chapter 8 Environmental conservation facilities and testing facilities, etc.

### **Output 2: Legal and institutional framework is strengthened at DPWT/PPCC.**

OVI	Achievement
OVI2-1.Draftordinanceonseweragemanagementissubmittedto PPCA	Achieved
OVI2-2.Draftstructureofnewoffices/sectionsforseweragemanagen summarized.	Achieved

#### **2-1 Draft ordinance on sewerage management is submitted to PPCA**

In October 2020, the first draft of the ordinance was submitted to the PPCA, reflecting the draft regulations. The second draft was (will be) submitted in February 2023.

#### **2-2 Draft structure of new offices/sections for sewerage management is summarized.**

Discussions within the DPWT on the short-, medium-, and long-term organizational plans for the sewerage system were held during the WG meetings, and a first draft was prepared in October 2020. In addition, DPWT/PPCA submitted a personnel request to MPWT for the recruitment of personnel for the WWTP planned in the short-term plan in December 2021.

The DSO would add a treatment plant section.

Short-term	Medium-term	Long-term
<b>The following 3 sections DPWT</b>	<b>DPWPO / DPWT has 8 sections.</b>	<b>3 sections added to Khan works</b>
Sewerage Project Section	Project Section	–
	Administration Section	–
	Finance and Marketing Section	Marketing Section
Technical Section	Planning and Design Section	–
WWTP Section	Facilities Management Section	–
	Water Quality Monitoring Section	–
–	OperationSection + Service Section	OperationSection + Service Section

In addition, the DSO, under DPWT, will be added to the treatment plant section. In order to secure operational and administrative staff at the new WWTP, DPWT/PPCA submitted a personnel request to MPWT in December 2021 for personnel recruitment for WWTP.

DPWT submitted a draft employment agreement to the PPCA in May 2022.

## 2-2 Project Purpose and indicators

The purpose of this project is that MPWT's and DPWT's foundation for sewerage management is strengthened.

OVI	Achievement
OVI1.MPWT'sstaffinchargeofseweragemanagementunderstar guideline	Achieved
OVI2.DPWT'sstaffinchargeofseweragemanagementunderstar ordinance	Achieved

**A. MPWT's staff in charge of sewerage management understands the draft regulation and technical guideline**

We have been working with MPWT WG members to discuss the Draft Law, Draft ministerial ordinance (Prakas),, and Draft Technical Guidelines.

The development of the Law was suddenly added to the project scope because the MPWT considers it particularly necessary and important, as there is only Sub decree and no law for sewerage. Therefore, a multilayered and in-depth discussion was held on everything from a single term to the larger purpose of the Law.

Ministerial ordinance (Prakas) and technical guidelines were also discussed in detail, including areas that are necessary for daily operations and areas that are an issue for each donor's project.

The discussions and the references used in the progress of the meeting helped MPWT and the project team to deepen their mutual understanding of each other. As a result, we were able to formulate a high-quality respective proposal and achieved capacity development.

**B. DPWT's staff in charge of sewerage management understands the draft ordinance**

The challenges and needs were evaluated in view of what had been discussed during the November 2020 - January 2021 WG meetings and in the current management of sewerage facilities. As a result, it was recognized that the ordinance (Decca) should include the following provisions: data management for facility management, development of maintenance plans, dissemination of business plans, human resources, and the right to monitor privately developed land, and therefore the draft ordinance (Decca) is considered to be well understood. The issues discussed were the following.

Items (Sub-item)	Issues	Needs	Project Activities
Maintenance (Planning)	Drainage and sewer are clogged 30-70%  Manhole, rainwater inlets, and waste.  Planning of cleaning sewer	Drainage and Sewer maintenance (drainage/sewer and pumping 3-4 times/year)  Repairing and maintenance of broken sewer and	<b>Ordinance (Decca) development -maintenance plan formulation.</b>

Items (Sub-item)	Issues	Needs	Project Activities
	trained by CTI is not applied.	pumping station. Annual maintenance plan sup DPWT.	
(Budget)	Budget limitation in the maintenance stations	Budget secure for maintenance station	Understandings of the financial project. (Including calculation of required budget)
(Flood)	Flooding occurs due to waste Ponds.  Managing drainage and natural water body	Removing soil from on manhole  Regular maintenance of rainwater inlets  Increase in water storage underground.  Taking out waste properly	Ordinance (Decca) development. -Request Law affair/PPCA to clarify the function, purpose, and (Decca) -Request MPWT to formulate a ministerial ordinance penalties
(Data management)	Lack of data on new sewer/drainage permission.	Creating a network for inspection drainage/sewer at local government department	<b>Ordinance (Decca) development.</b> <b>-Construction companies are obligated to submit the data</b>
(Other)	No specific technical standard  Irregular dredging  Maintenance is not implemented well.	Impose the responsibility on a standard.  Improving self-management and motivation	Requiring MPWT to formulate standard
<b>Sewerage development plan</b>  (Planning)		Specific planning (annual, 3-year, 5-year planning)	Building up a strong organization plan.
(Other)	Waste management is not proper.	Necessary to install automatic station.	
<b>House connection</b>  (Authority)	There is an unclear obligation connection		Ordinance (Decca) development (procedure of sewer connection; monitoring and inspection planning development)
(Technical standard)	There is no standard in house connection.	Specific principles/guideline for public	



Items (Sub-item)	Issues	Needs	Project Activities
		sidewalk.	
(Septic tank)	Insufficient inspection before the discharge		
(License company)	Lack of technical officers for inspection		
<b>Human resource</b>  (Engineer)	The head of each pumping station has a degree.		Defining necessary roles, responsibilities, and new/revised offices/sections in DPWT/PPCC
(Labor)	Insufficient skill/professional	it is necessary to give a training to improve skills	
(Training)		Requiring safe tools under the working conditions  New technologies related to wastewater drainage/sewer.	
(Awareness)		Providing awareness of water quality to the citizen.	
(Other)	Much technical staff including contract staff/workers are retired.  Lack of knowledge and skill on WWTP  Lack of knowledge of safety work	Skilled engineer on drainage/sewer, irrigation, pump and maintenance of WWTP.  Workshop on managing drainage/sewer, canal, pumping station and safety.	
<b>Institution</b> (Administration)	Capacity on law and compliance is low.  Lack of capacity on the management of equipment	Training HR on administration, law, drainage/sewer, and maintenance of drainage/sewer and pumping station.	Defining necessary roles, responsibilities, and new/revised offices/sections in DPWT/PPCC
(Construction)	There is no work flow chart for management	Having authority on technical inspection	
(O & M)	Lack of labor for collecting wastewater at stations.	Sufficient number of vehicles, equipment	
(Other)		The new organization chart for drainage and sewer	

Items (Sub-item)	Issues	Needs	Project Activities
		management	
<b>Inundation</b> (Planning)	No inundation planning.  Lack of measurement in case of inundation.	Specific planning and budget for inundation  Installing more rainwater inlets  Dredging main drainage/ canals  Preventing abuse on drainage/canals	Defining necessary roles, responsibilities
(Illegal landfill)	Self-benefit but public benefit	Regulation for a penalty on illegal landfill  A deep study on regional rainwater discharge	Requiring MPWT to formulate penalties
(Extending city area)	Rapid city developing and expansion	Proper planning and finance	<b>Ordinance (Decca) development</b> <b>-Requiring companies to construct properly.</b> <b>-Have the company submit the construction plan to DPWT.</b>
(Other)	Waste clogs manhole and pumping station  Drainage/sewer is clogged during transport.  Main drainage/canals are shrunk and shallowed.  Installing drainage-box instead of drainage	Managing waste properly  Regulation for a penalty on waste transport.  Conservation of main drainage/canals and water box capacity	

### 3. History of PDM Modification

PDM has been modified from ver.0 to ver.2, 2 times. PDMs are attached as **Annex 3**.

PDM ver.0 is the original PDM signed on 30th October 2018.

PDM ver.1 was requested in 1st JCC on 9th October 2019, and signed on 23rd November 2019.

PDM ver.2 was requested throughout the Project Report on Amendment of Record of Discussions from the Project team, and signed on 19th February 2021.

#### List of main modifications in PDMs

Item	Before	Amended Version	Reason
<b>Modifications in PDM ver.1</b>			
<u>PO</u> Output2 Activity 2-8, 2-9 in I strengthening	Activities 2-8 and 2-9 were planned for the first year of 2019.	Activities 2-8 and 2-9 were planned for the second year of 2020.	- The Project team requested to focus on stre framework.
<b>Modifications in PDM ver.2</b>			
<u>Overall Goal</u> Narrative Summary	Regulations (prakas), technical guideline and ordi and operated/maintained.	Regulations ( <u>law and</u> prakas), technical guideline and ordinan and operated/maintained.	- As MPWT requested the JICA Expert team from activity. - Ministerial ordinances (Prakas) and technical gui be
<u>Project Purpose</u> Important Assumptions	Regulations (prakas), technical guideline and ordi the	Regulations ( <u>law and</u> prakas), technical guideline and ordinan authorities.	

	relevant authorities.		consistent with the draft
<u>Output1</u> Objectively Verifiable 1-1	1-1 Draft regulation for sewerage management issued by MPWT.	1-1 Draft regulation ( <u>law and prakas</u> ) for sewerage management issued by MPWT.	law.
<u>Output1</u> Means of Verification 1-1	Draft regulation, monitoring C/Ps	Draft regulation ( <u>law and prakas</u> ) issued by C/Ps	
<u>Input</u> Training	N/A	Training in Japan Local government implementing Japan Sewage Works Agency  Training in Third country Pre-treatment site	- MPWT and PPCA/DPWT requested to be implemented in future.

### **III. Results of Joint Review**

#### **1. Results of Review based on DAC Evaluation Criteria**

##### **(1) Relevance: High**

##### **1) MPWT**

##### **Relevance is high.**

The scope of this project and the policies, plans, and needs in Cambodia are highly relevant. As described in detail below, there is a need to strengthen the foundations of Cambodia's sewerage sector for sound urban development and the preservation of a healthy water environment, and the development and strengthening of the most fundamental legal and technical guideline are essential elements for the future development of sewerage management in the country.

##### **a) Consistency with Development Policies**

The Royal Government of Cambodia has positioned the importance of wastewater and sanitation management as well as other urban infrastructure in the Sustainable and Inclusive Development section of the Rectangular Strategy-Phase IV and has also stated the continued development of sewerage systems in the National Strategic Development Plan 2019-2023. Upon the ministry management structural reform in 2016 in response to the government policy reform and the objective to achieve the Cambodia Sustainable Development Goals (SDGs) 2025 as well as the United Nations Sustainable Development Goals 2030, GDSWM of MPWT. Thus, the implementation of this project is in the same direction as the development of this sector in Cambodia.

##### **b) Consistency with Development Needs**

There are multiple projects underway with government budgets and various donors. Every project must be implemented under a unified set of rules for the sewerage system, but at present those rules are no-existent or weak. While projects proceed based on the individual standards and other criteria of each DPs, MPWT is struggling to provide individual responses, but there is no documented basis for them. In this context, unified regulations and technical basis are quite important in the handling of each project and ultimately in the benefit of Cambodia's sewerage and water environment.

### **c) Appropriateness of the project plan and approach**

Currently, Cambodia has Sub-decree on sewerage system, but there is no law on which to base it, and there is a lack of more detailed ministerial ordinances (Prakas). In order to develop sewerage administration in the future, it is necessary to have a legal basis for the purpose of sewerage, the division of roles, and the obligation to connect and collect fees, etc., not only by government decree but also by a law approved by the National Assembly. The original legal output of the Project covered only ministerial ordinances (Prakas), but the addition of Draft Law was a change in scope consistent with the current situation of Cambodia.

## **2) DPWT/PPCC**

### **Relevance is high.**

The consistency of the project framework with the policies and measures of Cambodia and Japan is extremely high. Since the counterpart's department is mainly in charge of maintenance and management of drainage facilities, there were opinions on improvements and innovations regarding the work at the field level.

In addition, the discussion of their challenges and improvements in the work helped for the counterpart members to enhance their understanding of the legal position on which their work is based.

### **a) Consistency with Development Policies**

For the Royal Government of Cambodia, it is one of the key national issues measures to provide equitable economic inclusion and social protection, including access to safe water supply and sanitation, to all Cambodians, and it will not change. Side 4; Ensuring the Environmental Sustainability and Pre-emptive Response to the Climate Change of the Rectangular Strategy - Phase 4, states that the management of solid waste, wastewater, gas and lethal substances, as well as pollution monitoring and control mechanism and control must be strengthened. According to Japan's "Country Development Cooperation Policy for the Kingdom of Cambodia," in order to achieve Cambodia's current goal of becoming a high- and middle-income country by 2030, the Japanese government would provide assistance in areas that contribute to the improvement of the urban living environment, including water supply, sewage, drainage, electricity, and urban transportation, from the

perspective of improving the quality of life of the people. The Japan government intends to provide assistance in the areas of water supply, sewage, drainage, electric power, and urban transportation. Therefore, all activities, such as basic system strengthening of sewerage management, would be addressed in the project.

**b) Consistency with Development Needs**

The capital city of Phnom Penh approved in 2015 the "Implementation of Master Plan for Phnom Penh Land Use" with a vision to 2035 as a land use plan and master plan. It defines Phnom Penh's land use policies and zoning map until 2035. Meanwhile, to address the challenges of rapid urbanization, the "Phnom Penh Sustainable city Plan 2018-2030" is a roadmap for Phnom Penh to address poverty reduction and environmental protection beside economic growth. Improvement of the water environment is considered a priority issue as a measure against environmental pollution caused by urbanization in Phnom Penh.

According to "The study on drainage and sewerage improvement project in Phnom Penh, Dec. 2016", developed with JICA support, the PPCA has been working on the construction of the wastewater treatment plant and drainage systems, and it is also necessary to improve urban sanitation based on the development of laws and institutions in order to establish and strengthen the sewerage systems as soon as possible.

**c) Appropriateness of the project plan and approach**

It does not appear to be any efforts by other donors or other institutions in Phnom Penh that conflict with the project. In addition, the counterpart is constructing the first wastewater treatment plant in Phnom Penh is to be constructed under a Japanese grant aid project, and it is necessary to establish an organizational structure with the staffing, costs, and know-how to operate and maintain this facility.

**(2) Coherence: High**

**1) MPWT**

**Coherence is high.**

As described below, the project is highly coherent with the Cambodian and Japanese context in this field.

**a) Synergistic and complementary effects with other projects and international frameworks**

As written in (1) Relevance, the goals and outputs of this project are strongly coherent with Cambodia's policies and needs.

It is also consistent with WB's project (connection and tariff setting), City Wide Inclusive Sanitation advocated by WB and ADB, and cost recovery being considered by the Ministry of Economy and Finance and the Australian Embassy. Also, it does not appear efforts by other donors or other institutions that are inconsistent with the project.

In addition, it is the result of the project that is coherent with the UN and Cambodia's SDGs policies and complementary to achieving these goals.

**b) Consistency with the development cooperation policies of the Japanese government and JICA**

The basic policy and priority issues of the Cabinet decision on the Development Cooperation Charter include infrastructure development and the establishment of laws and institutions, and the priority area (2) Quality of Life of the Kingdom of Cambodia's Country Development Cooperation Policy also explicitly includes water supply and sewage systems. Therefore, this project is in line with these policies and issues.

Since the project is consistent in some policies and activities of MLIT and Japan Sewage Works Agency in the sewerage sector or the Ministry of the Environment related to the Infrastructure Systems Overseas Development Strategy 2025, Asia Wastewater Management Partnership, Water Environment Partnership in Asia, etc., there was cooperation and information exchange.

**2) DPWT/PPCA**

**Coherence is high.**

According to Japan's "Country Development Cooperation Policy for the Kingdom of Cambodia," in order to achieve Cambodia's current goal of becoming a high- and middle-income country by 2030, the Japanese government will provide assistance in areas that contribute to improving the urban living environment, including water supply, sewage, drainage, electricity, and urban transportation, from the perspective of improving the quality of life of the people. The



Government of Japan intends to provide assistance in the areas of water supply, sewage, drainage, electric power, and urban transportation.

Therefore, all activities, such as strengthening the basic sewerage management systems of the project are suited to the foreign aid policies of Japan.

In addition, this project is coordinated and related to another JICA project, The Project for Sewerage System Development in the Phnom Penh Capital City in the Kingdom of Cambodia under a Japanese grant aid project.

The project also suits to 6.2 and 6.3 of Goal 6 of the SDGs.

### **(3) Effectiveness: High**

#### **1) MPWT**

##### **Effectiveness is high.**

The project outputs in MPWT are achieved as follows, and the effectiveness is high.

##### **a) The project goals are achieved.**

The Draft Law as GDSWM has been completed and handed over in May 2022, and work on the draft ministerial ordinance (Prakas) and Technical Guideline have been developed by the end of January 2023. As for the Draft Law, it is already being utilized in the next phase by committees within the MPWT and at higher levels. GDSWM shall continue to follow up on this status. Draft ministerial ordinance (Prakas) should be established in sequence with the Draft Law. The Technical Guideline are approved by MPWT.

These were not only drafted by the JICA project side, but also developed through 33 WG meetings for the Draft Law and more than a dozen WG meetings for each draft ministerial ordinance (Prakas) and Technical Guideline, where opinions were exchanged. This will have led to discussions directly related to actual MPWT work, and also to a better understanding of the contents. This contributes to the strengthening of MPWT's administrative capacity.

##### **b) The outputs contribute to the achievement of the project goals and linkages.**

The Draft Law has started to be utilized in the Ministry after the handover. Specific procedures will be mentioned in IV, and it is expected that the MPWT will follow up on them. This law will be an important basis for sewerage

administration in Cambodia.

It may be realistic to utilize and enact the draft ministerial ordinance (Prakas) after the Draft Law is enforced. On the other hand, we have made it possible to separate the high-priority items so that we can proceed with discussions on implementation.

For the Technical Guideline, the MPWT was approved during the project period. It is expected to be utilized in each project in the future.

## **2) DPWT/PPCC**

### **Effectiveness is high.**

During the pandemic period, we had also minimized the impact of the pandemic by conducting remote activities online. As a result, the ongoing discussion of the ordinance (Decca), the availability of personnel, and securing the expenses related to the O&M of the wastewater treatment plant have already been fulfilled in the project.

#### **a) The outputs are being produced.**

The outputs are expected to be implemented as planned. The draft ordinance (Decca) would be divided into two parts: the one where the legal basis of the ministerial ordinance (Prakas) has already been promulgated, and another one prepared after the development of a new ministerial ordinance (Prakas) based on the draft law in the future. The draft ordinance (Decca) is to be submitted specifically in the manner that has been prepared. The proposed new organizational structure for sewage management was also helpful in establishing a new department for the operation and maintenance of the wastewater treatment plant being constructed under the Japanese grant aid assistance.

#### **b) The outputs contribute to the achievement of the project goals and linkages.**

The process of comparing the draft ordinance (Decca) with the existing ministerial regulations (Sub-Decree 235 and ministerial ordinance (Prakas) 398) was conducted during the WG meetings. In addition, a technical meeting was held to discuss the content of the ordinance (Decca) with the relevant Phnom Penh Metropolitan Department. This process was important to submit the draft ordinance (Decca) to the Phnom Penh Metropolitan Administration.

As a result, the discussions for submitting the draft ordinance (Decca) to the Phnom Penh Metropolitan Administration and the process of discussing the financial aspects related to sewerage management have deepened the understanding of the ordinance (Decca).

**c) The project goals are expected to be achieved.**

During the November 2020-January 2021 WG meetings, challenges and needs were evaluated regarding what had been discussed and the current management of sewer facilities. As a result, it was recognized that the proposed ordinance (Decca) should include the following provisions: facility data management for sewerage projects, development of the facilities maintenance plan, knowledge of the development plan, securing human resources, and the rule to monitor private development areas.

**(4) Efficiency: High**

**Project Cost:**

The amount of input by the Japanese side was 228.5 million Japanese Yen (Estimated as of Jan. 2023), and the amount increased by 30.5 million Japanese Yen compared with the planned cost; of 198.0 million Japanese Yen. The increase rate is 15.4%, less than 25%.

The increase in the Project cost is mainly led by the R/D modification that added the draft Law for sewerage management to the Overall Goal, Project Purpose and Outputs, and expanded the dispatch period of the JICA Expert on Legal development, and added training to the Project Inputs.

The main factors of the cost increase led by the amendment of R/D were as follows;

- Draft Law

- a. Expenditure for one JICA Experts on Legal development dispatched to MPWT during the expanded period from July 2021 to March 2023,
- b. Expenditure for the assistant staff at MPWT during the expanded period from July 2021 to March 2023,
- c. Agent Service Expense for drafting Law,
- d. Expenditure for the binding book of the draft Law,

- Training

- a. Expenditure for the training in Japan for nine (9) trainees,
- b. Expenditure for the business trip of two JICA experts to accompany the trainees to instruct them in Japan.

In addition, external factors affected the cost increase and the decrease as follows.

- Cost increase led by external factors

- a. Expenditure for the business trip of one additional JICA Expert to accompany with the training in Japan in order to go to the hospital with the trainee and provide food in the case that the trainee would have COVID-19,
- b. Increase in Yen-basis costs due to the exchange rate fluctuations; the weaker Yen against the US dollar after April 2022. Details of the exchange rate fluctuations are shown below.

- Cost decrease led by external factors

- a. No expenditure for OAC from April 2020 to September 2020 due to the temporary evacuation and return of JICA Experts for COVID-19 measures,
- b. In FY 2020, the JCC was not able to hold because the JCC was postponed two times due to the explosive spread of COVID-19 infections in the city.

**Project Period:**

The Project was completed within the planned period, four (4) years from April 2019 to March 2023. In accordance with the modification of R/D, the dispatch duration of the JICA Expert for MPWT has been extended by one (1) year and nine (9) months. Details are shown below.

**Causal Relationship:**

The activities were necessary to produce outputs and the inputs were quantitatively and qualitatively appropriate. Also, those inputs were provided timely. Details are given below.

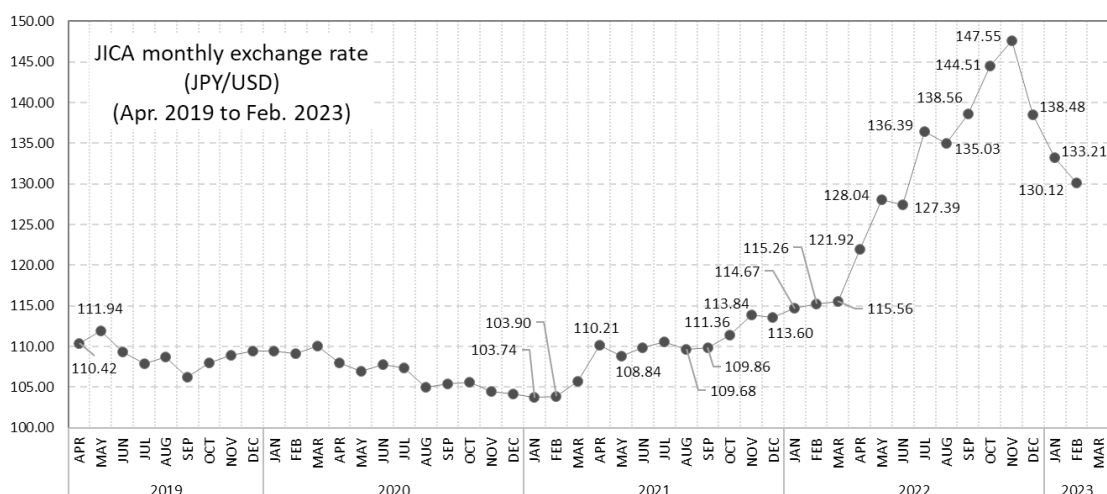
**The exchange rate fluctuations**

The OAC is provided using the JICA exchange rate for the month in which the budget is paid, converted from Japanese Yen to US dollar. The JICA monthly

exchange rate from April 2019 to March 2023 is shown in the below figure.

The exchange rate from April 2019 to January 2021 ranged from 103 to 111 yen to US dollar. Then, from February 2021, the exchange rate progressively increased from 103 to 115 yen to US dollar until March 2022. The exchange rate rose sharply in April 2023, peaked at 147.55 yen in November, and has declined.

The budget request for FY 2022 was estimated in February 2022 to be 127,515 US dollars, of 1.4 million Japanese Yen. According with the exchange rate increase, the actual OAC were estimated to be 4,713 US dollars less but 2.9 million Japanese Yen more than the requested budget amount in February 2022. The difference between the budget request for OAC in Feb. 2022 and the actual OAC for FY2022 is shown in the table below. The detail is shown in **Annex 1**.



Source: Monthly exchange rate, JICA Web site

### The exchange rate fluctuations (JICA monthly exchange rate)

### The difference between the budget request for OAC if FY 2022 and the actual OAC comaring in US dollars and Japanese Yen

	Unit	Budget request for FY 2022 (as of Feb. 2022)	Actual cost for FY 2022 (as of Feb. 2023)	Difference
		(a)	(b)	(b) – (a)
OAC	USD	127,515	122,801	-4,713
OAC	JPY	14,026,595	16,902,993	+2,876,398

## **1) MPWT**

### **Efficiency is high.**

As described below, the project was completed efficiently and highly while responding to MPWT's additional requirement.

#### **a) Achievement of outputs**

With the arrival of the expert, MPWT asked for the Draft Law, which was added to the output as it is what MPWT needs the most, as there must be the Law to make the ministerial ordinance (Prakas) effective. MPWT side of the project was initially for two (2) years, but due to the addition of the Draft Law for the output, the project was extended for one (1) year and nine (9) months (to be the same as the original DPWT side project). In the resulting project, the development of legal and technical outputs was completed and contributed to the strengthening of MPWT's capacity.

#### **b) Relationship with Inputs**

At the start of the project, JICA explained that the PJ team would work with ADB and be able to utilize ADB consultants, but as a result, this was not possible due to differences in scope and schedule. The PJ team had to adapt to this change and decided to utilize local consultants. In addition, due to the corona disaster, there was a situation where the project had to be done remotely from Japan. Although online meetings with MPWT were underway, there was a need for manpower to be able to operate in Cambodia. As a result, we were able to work with experienced Cambodian engineers and legal experts to implement the project and achieve results.

## **2) DPWT/PPCC**

### **Efficiency is high.**

It is commendable that the project was able to achieve some results despite the modification of the PDM and the impact of the pandemic. The delay in the deployment of experts due to the pandemic had little impact on the project because of the online teleconferencing.

#### **a) Project Budget**

The overall budget showed no increase or decrease in activities. However, there was a need for an increase due to exchange rate fluctuations compared

to the start of the project.

**b) Project Period**

The pandemic delayed approval of these PDM changes by the highest decision-making body. Although originally expected in December 2020, the approval was granted in February 2021, at the midpoint of the project. In addition, the acceptance of Japanese trainees to Japan was prohibited from April 2020 until August 2022. Therefore, we chose to conduct the training in Japan in November 2022, the final year of the project. During the pandemic period, the impact of the pandemic was minimized through online remote activities. As a result, the project was not extended and will be completed as planned. The pandemic caused the dispatched experts to return to Japan in the middle of their term of office or caused delays in re-transportation. As an alternative, project activities were promptly shifted to online teleconferencing, which is a unique feature of this project.

**c) Human resource concerns.**

The counterpart wanted to start the initial advice and discussion on the planning and operation of the wastewater treatment plant at the beginning of the Project, but the experts dispatched did not have enough knowledge to do so, so there was a period of about 5 months from January to July 2020 when the discussions were focused on only some facility management rather than the overall management of the sewage facilities. Therefore, there was a delay in compiling the draft of the draft ordinance (Decca), and there was no opportunity to discuss the contents with the officials of the Phnom Penh Metropolitan Government.

It should have been determined early on that the counterpart was a department specializing in maintenance and had limited knowledge of the ordinance and that discussions with other Officials would be necessary to implement the project.

**d) Proper project progress management during the implementation process.**

In the first half of the Project, the objective was to submit a draft ordinance (Decca) within a limited time frame. The project side submitted the draft unilaterally without discussing each of the provisions one by one. As a result,

it did not pass internal approval at the PPCA and remained pending. Therefore, in the latter half of the Project, in order to deepen the counterpart's understanding of sewerage management, we communicated the technology and legal system step by step based on Japanese management methods at WG meetings, and established an annual meeting schedule with a certain target date to clarify the contents to be discussed at the WG meetings. Participants in the meetings also had questions about the content prepared in advance. In addition, at meetings held online, we always took a questionnaire and evaluated feedback from participants. It was also required that a preview of the previous meeting be conducted at the next meeting.

**(5) Impact: High**

**1) MPWT**

**Impact is high.**

The development of Regulations and Technical Guideline, which are essential for the implementation of sewage works, has had a significant impact. The following are described from three aspects.

**a) Contribution to the achievement of the overall goal**

It is expected that the Draft Law, ministerial ordinance (Prakas), and Technical Guideline will be used effectively at each level and that the overall goal will be achieved.

As noted above, we have developed Draft Law, which was not in the initial output. This is the most important legislation in the implementation of sewerage administration.

**b) Contribution to policy and community**

Sewerage legislation needs to provide a legal basis for sewerage, determine the division of administrative roles, and impose strong obligations and fee collection on citizens in order to achieve the protection of public health and the water environment. In Cambodia, this has been done at the administrative decree level, but preparing this law is a very significant step forward. With these, a successful sewerage administration will enable everyone to live in a healthy city and have access to a good water environment. In combination with the water supply system, which is ahead in Cambodia, it is also expected to improve people's quality of life by improving kitchens, bathrooms, toilets,



etc., in households.

On the other hand, legislation related to the environment will impose restrictions on the private sector. Although stipulated in the MPWT and MoE Sub-decree originally, this law will make the following more explicit, such as obligations to connect and charge fees, and private companies will be obliged to install facilities to protect the quality of sewage discharged into the sewage system by their factories, etc. These things can have a negative impact on the private sector and the economy. Penalties for not complying with the regulations will also be stipulated. However, these are not just strict regulations, but are also the opposite side of what is expected of private-sector awareness reform. This is because sewage systems cannot be achieved by efforts from the public-sector alone.

### **c) Contribution to other projects**

Fee collection and individual connections are also a concern for cities with existing sewage systems and for MPWT and DPs projects. The development of regulations does not mean that the problems will be solved uniformly, but it is a basis for action.

It is expected that the Technical Guideline will be utilized in any planning, design, and construction project; it will be one that is used by MPWT and stakeholders in project progression, and may serve as a starting point for discussion of specific issues as they arise.

The Waste Stabilization Ponds utilized in provincial areas of Cambodia and the Pre-treated Trickling Filter System adopted by the Phnom Penh WWTP under the JICA grant project are additionally included in the Guideline. We have also included a link to “Standards of Pipe Jacking Method for Cambodia” being promoted by the Japan Ministry of Land, Infrastructure, Transport, and Tourism.

### **1) DPWT/PPCC**

#### **Impact is high.**

Since there had been no law regarding the management of sewerage facilities, the Project would be a good example of how the government can play a role in sewerage projects, and how the private sector can be regulated and penalized, leading to the preservation of the wastewater environment. Although it would take some time to enact laws and regulations, there are high expectations for the

conservation of the water environment by strengthening regulations on polluted wastewater in the future.

**a) Overall Goal Achievement**

It is estimated that it would take several years to promulgate a draft law among the regulations developed by the Project. After the promulgation of the draft law, ministerial ordinance (Prakas) and ordinances (Decca) delegated for its operation would begin to be prepared. Therefore, once the lawmaking process is underway and close to promulgation and implementation, it would be possible to begin enacting ministerial ordinance (Prakas) and ordinances (Decca). However, since it takes time to reach that stage, it is expected that it will be some time before the draft law is referenced.

**b) Causal Relationship between Overall Goals and Project Goals**

The project goal "MPWT's and DPWT's foundation for sewerage management is strengthened." clarifies the roles and duties of the organizations, and since they would be based on a system of laws and regulations, the rules, guidelines, and ordinances (Decca) developed by the project would be the basis for planning, construction, operation, and maintenance of sewerage facilities.

**c) Ripple Effects**

Through the WG meetings, the counterpart partners deepened their technical knowledge on the operation of the wastewater treatment plant to be constructed under the Japanese grant aid assistance project. In addition, they had shared common issues with senior officials of the Phnom Penh Metropolitan Government regarding the lack of financial resources for the maintenance and management of the current wastewater treatment plant. This led to the establishment of an internal study group to revise the current sewerage fees. As a result of the Project's survey and report on the status of sewerage fee collection in the country, it was decided that Phnom Penh Metropolitan Government would continue to collect sewerage fees jointly with water charges.

**(6) Sustainability: High**

**1) MPWT**

**Sustainability is high.**

Although there are some external factors involved, the organizational strengthening of the implementing organization has taken place at the same time as the progress of this project, and its sustainability is considered to be high.

**a) Policy and Institutional Aspects**

As mentioned in Relevance, both the Royal Government and MPWT believe that sewerage system is essential for Cambodia's development. It is clear that MPWT needs regulations and Technical Guideline for this reason.

However, as an external factor, it is necessary to take careful attention to the national election for the National Assembly.

**b) Organization of Implementing Agencies**

The Department of Sewerage Management and Construction was reorganized into GDSWM in 2019 after the project started, and its status within the MPWT was increased; the organizational structure was strengthened with the creation of three departments within GDSWM. The importance of management of regulations and Technical Guideline is also well understood, and the organizations, General Affairs and Information Department and Sewerage Techniques and Research Department, has been formed.

Due to the role of the MPWT, it is intended that the regulations and Technical Guideline developed in this project will be informed to the Sub National Levels and utilized in actual work.

Not only within this project, but also based on “the signing of the Memorandum of Cooperation between the Ministry of Public Works and Transport, MPWT and the Ministry of Land, Infrastructure, Transport and Tourism, MLIT Japan” in February 2017, the company has been actively exchanging views with MLIT and the Japan Sewage Works Agency to promote sewerage development, and its attitude toward strengthening sewerage management capacity is strongly observed.

**c) Technology of the implementing agency**

The following actions are being taken with the aim of early implementation of each draft.

The Draft Law was discussed in an internal committee of the MPWT called Ad-hoc meeting, and an Inter-Ministerial Committee including relevant

ministries was held in September 2022.

The draft ministerial ordinance (Prakas) was discussed in the WG, including the MPWT legal department, for smooth coordination among the Ministry.

The Technical Guideline has been sent to the MPWT technical committee for review and the Senior Minister has approved it.

#### **d) Finances of the Implementing Agency**

There seems to be no major financial problem regarding the enforcement of the drafted regulations and Technical Guideline in this project. However, it would be desirable to update the Technical Guideline after some actual use, as well as to translate the entire Khmer ver. and publish it in large numbers, and it is considered necessary to have a budget arrangement for this.

We have drafted a provision on user fees, and since the actual implementation of sewerage projects is quite budgetary, we also drafted a provision on budget sources.

## **2) DPWT/PPCC**

### **Sustainability is high.**

In the policy aspect, The Cambodian Sustainable Development Goals Framework (2016-2030) aims to treat 50% of wastewater by 2030 from a baseline of 12%. The Sub-Decree 235 and Prakas 398 specify the roles and responsibilities of agencies for sewerage projects.

In the DSO under the DPWT in Phnom Penh, new sector has already been established and the level of technology of the implementing agency is sufficient to sustain the effects of the project.

#### **a) Policy and Institutional Aspects**

The Royal Government of Cambodia adopted the Rectangular Strategy Phase IV (RSIV) in 2018 to implement its socio-economic policies. It outlines key measures and actions to achieve upper-middle-income country status by 2030, with the vision of transitioning as a nation from a low-middle-income country to a high-income country. This strategy is not expected to change significantly after 2024.

It consists of four priority areas focused on inclusive and sustainable development to address challenges related to urbanization and the need to improve capacity to cope with the impacts of climate change, and to provide

equitable economic inclusion and social protection, including access to safe water supply and sanitation for all Cambodians ambition. Additionally, The Cambodian Sustainable Development Goals Framework (2016-2030) was approved by the Council of Ministers in November 2018. It adapts and aligns with the Sustainable Development Goals to the country. It aims to treat 50% of wastewater by 2030 from a baseline of 12%. In the capital city of Phnom Penh, the National Council for Sustainable Development (NCSD) and the Ministry of Environment (MoE) also developed the Phnom Penh Sustainable City Plan 2018-2030 in 2018, which will guide the sustainable city planning master plan on land use, transportation, drainage, and waste management, an important It plays an important role. These national policies and urban planning policies will promote long-term and sustainable sewerage technologies. In other words, through policy management and urban planning visions at the national level, the necessary policy and institutional backup for project effectiveness is established. In addition, since the project would help solve urbanization issues related to wastewater treatment and the water environment, it is expected that the project would be continued and developed in line with the development needs of society.

**b) Organization of Implementing Agencies**

Sub-Decree 235 and ministerial ordinance (Prakas) 398 specify the roles and responsibilities of agencies for sewerage projects.

In particular, in the Phnom Penh Metropolitan Administration, the delegation of authority clearly states the tasks of the national agency, the capital administration, and the Khan administrative.

As an implementing agency, the role of the DPWT has been established, and its charge consists of a deputy director level. The field office under the deputy director (Drainage and Sewerage Office: DSO) would also be staffed, and a sustainable organizational structure established. Ownership of the implementing agency has been adequately ensured by asserting its contribution to the project at JCC meetings, and DPWT actively sharing information with the higher-ranking organization, the Phnom Penh Metropolitan Administration.

**c) Technology of the implementing agency**

The counterpart, DPWT, has been operating the drainage pumping stations

and maintaining the drainage facilities. In addition, in the DSO under the DPWT in Phnom Penh, new section for WWTP has already been established and the level of technology of the implementing agency is sufficient to sustain the effects of the project.

As members of the WG are expected to be assigned to the section in charge of the WWTP, it is expected that the technology will be transferred to the new section.

The F-WG also discussed the possibility of including a five-year employment period as a condition of employment for new hires and to considering a training plan, so it is expected that the project will continue to be implemented.

#### **d) Finances of the Implementing Agency**

The MPWT, which is a national agency, would secure personnel expenses for the implementing the infrastructure systems. Sewerage fees, the current source of income for the continuation of the project, would begin to be reviewed in the future. It is highly likely that the financial resources necessary to sustain the effectiveness of the project would be secured.

The budget for the operation and maintenance of the WWTP, which requested through the activities of this project, was approved in December 2022 as the state budget for FY2023. In addition, at the 3rd JCC meeting held in October 2022, the accounting officer of the PPCA stated that the operating expenses had already been included in the budget for this matter.

Regarding the employment of staff, the Director General of the DPWT, as the project counterpart, stated that 17 contract employees would be hired by the DPWT in 2023, in addition to applying to the MPWT for newly hired civil servants.

## **2. Key Factors Affecting Implementation and Outcomes**

### **2-1 COVID-19**

Due to the spread of COVID-19, the three Japanese experts temporarily returned to Japan in early April 2020 and re-traveled in September 2020. After the return, the spread of COVID-19 was still citywide, making it difficult to hold in-person meetings. The restriction under COVID-19 postponed the second JCC scheduled in December 2020 to March 2021. However, the situation had not changed better. And in April 2021, Phnom Penh had a lockdown with strict restrictive measures. The restriction was extended with partial relaxation until October 2021. The

second JCC was allowed to be held in November 2021. Especially, PPCA has been avoiding having meetings in person in order to prevent the spread of COVID-19. The in-person meeting with PPCA was restarted in May 2022. In addition, the dispatch of the Chief Advisor, scheduled to be dispatched in June 2021, was postponed to October 2021.

## **2-2 Modification of PDM regarding the draft Law**

MPWT had prepared the draft Law, but this draft law had many issues and specific discussions had not progressed. Since ministerial ordinance (Prakas) and technical guidelines, which are the outputs of the Project, need to be consistent with the Law, MPWT prioritized support for drafting the Law and requested that the draft Law be added to its activities. The PPCA/DPWT and JICA expert team agreed to extend the MPWT's activity period from June 2021 to March 2023 and to add the drafting of the Law into output and submitted a project report on this request in December 2020. JICA agreed to this request. And the PDM was modified on 19th February 2021.

After PDM was modified, it was necessary to temporarily suspend activities for the development of the draft ministerial ordinance (Prakas) and technical guidelines and give priority to the development of the draft Law because the draft ministerial ordinance (Prakas) needed to be based on the Law and because the limited number of the Project Team members didn't allow to conduct activities for drafting Law and technical guidelines at the same time.

## **3. Evaluation on the results of the Project Risk Management**

### **3-1 Use of online communication methods under COVID-19**

The lack of in-person meetings occurred a lack of communication between the JICA experts and their counterparts. Information needed to be shared with counterparts and discussed as necessary to move the Project forward. Therefore, the Project team decided to 1) use the SNS (telegram) that had been in use before covid-19 as the basis for information sharing platform and to share all information with counterparts through this platform; 2) hold meetings once every 1-2 weeks using online meetings (Google Meet). Google Meet is free of charge in Cambodia with no time limit, so no additional cost was incurred.

### **3-2 Use of local consulting outsourcing for the modification of PDM**

In order to complete the development of the draft ministerial ordinance (Prakas)



and technical guidelines in the period between the resumption of activities and the end of the Project, only the members of the Project Team did not have the technical and necessary workload, which had to be supplemented by outsourcing the work to a local consulting firm. Therefore, budgetary arrangements were made for local consultant outsourcing services, and the contract was adjusted so that work could begin at an appropriate time according to the progress and workload of the draft Law development, as follows. The development of the draft guidelines was contracted with a local consultant and activities resumed in November 2021, when the first draft of the Law was submitted. The development of the draft ministerial ordinance (Prakas) was also contracted with a local consultant and activities resumed in June 2022, after the handover of the Law in May 2022.

#### **4. Lessons Learnt**

##### **4-1 Expanding the effects of joint projects implemented by ministry and sub national administrator**

This project had a special setup, with two counterparts in one project. Logistical aspects, such as holding meetings, were sometimes difficult. However, each of the counterparts has a different position, role, and information, and cooperation and communication between them are necessary for the future development of sewerage administration. It would have been effective for the project to play the role of connecting these relationships.

##### **4-2 Need for needs assessment on law development at the time of detailed planning survey**

We agree that PDM may be changed as appropriate. In fact, we believe that the addition of training in Japan has resulted in a significant achievement. On the other hand, the expansion of the scope of coverage may be possible for the same or lower level of the target, but we think that there may have been a lack of prior coordination in expanding the scope to include laws two ranks above the ministerial ordinance (Prakas). It should be ensured that the counterpart needs and project scope are identified during project formulation.

##### **4-3 Responsibilities in charge of staff related to the ordinance**

The capacity and number of staff who should refer to the draft ordinance (Decca) at the start of the project should be estimated, the roles and stakeholders of the



WG should be clarified, and whether sufficient personnel resources have been allocated should be confirmed. At the start of the project, it should be determined that the relevant departments should add to the content of the draft ordinance (Decca); it would be possible to find the best way for the region and administrative organization by changing the WG members or creating opportunities to report widely on activities, such as holding a separate study session.

#### **4-4 Research on the process of development the ordinances across sectors**

In addition to referring to the ministerial regulations of other countries, it would be possible to collect and organize information on laws and ministerial regulations not only for sewage management but also for waste management, environment, and construction in the project implementation phase (or planning phase) currently being implemented in Cambodia, in order to implement more effective activities.

#### **4-5 Risk Management**

Even after entering the project implementation phase, risk management must be carried out in a timely manner. In the case of the project, the precondition is written that sufficient counterparts should be assigned to implement the project activities, and the condition of the agreement process between the project and counterparts to control each activity may be lacking. Due to the ambiguous wording of 'sufficient counterparts being in place,' there were activities where the project side only considered countermeasures at its own discretion.

#### **4-6 The timing of order placement and period of performance when outsourcing**

When outsourcing part of a project, a period of time is required for the contracting process, so specifications should be drawn up early at the start of the project, and the division of roles, use of deliverables, and bidding criteria should be properly established. In particular, for those parts of the project where the work may require time to request and confirm materials from counterparts, the timing of order placement, budget execution, a carryover from year to year, and other administrative processes should be fully considered at the start of the project.

#### **4-7 Conduct a study of the process for appropriate law passage**

When planning a project, there should have been more research on the conditions necessary to create ministerial ordinance (Prakas) and ordinances

(Decca), such as information on the necessity of delegated clauses from each ministerial ordinance and the determination of terms to be used as essential conditions in the process of passing laws, ministerial ordinance (Prakas), and ordinances (Decca).

## **5. Performance**

### **5-1 Handling environmental changes of the pandemic**

Since the JICA project team had built a great relationship with the counterparts before the pandemic broke out, the remote online activities were carried out without any problems. Therefore, the JICA project team successfully handled environmental changes, such as a pandemic in the middle of project implementation and minimized the impact on the project. It once again reminded the JICA project team of the importance of building good relationships with the counterparts, which is the positive outcome.

### **5-2 Creating terminology for new concepts in the sewerage sector supported by local legal and sewerage experts**

In Cambodia, there is no law or technical guideline for sewerage system prepared in the Khmer language. Therefore, the translation of technical terms related to sewerage system into Khmer was not unified, and the situation differed among people and organizations.

The Project Outputs were the development of draft Law, draft Prakas, draft Decca, and technical guidelines. Therefore, local experts familiar with the Cambodian legal system and expertise in the field of sewerage were needed. To this end, the Project hired experts from a law firm with experience in developing draft law on water supply and a consulting firm in the sewerage sector.

The JICA experts held preliminary meetings with these local consultants and confirmed the structure, contents, and wording of the draft Law etc., using English documents. The meeting materials were prepared in Khmer, and the local consultant and the counterparts discussed in Khmer at the meeting and exchanged opinions with the JICA expert, interpreting into Japanese as necessary. By using Khmer as the basic language, in-depth discussions could be held in a short time, and the counterparts were able to confirm and unify the different terminology among the counterparts and create terminology for new

concepts, with the advice of local legal experts and local sewerage experts.

In addition, in the meetings with DPWT and PPCA, the local assistants translated the English materials into Khmer and distributed them in advance to suit the participants' understanding of English.

Similarly, in the training in Japan, a training supervisor accompanied the counterparts to provide Khmer language interpretation and assist in the operation of the training, and JICA Experts requested the JICA Tokyo Center, which had jurisdiction over the training programs, to translate the teaching materials into Khmer language. Through these efforts, JICA contributed to improving the understanding of the conference participants and counterparts on the operation of sewerage systems.

## **IV. For the Achievement of Overall Goals after the Project Completion**

### **1. Prospects to achieve Overall Goal**

#### **1-1 MPWT**

**Law:** Referred to as Draft Law by MPWT. We recognize the GDSWM as that which developed the draft Law together approved its content, and received a handover. The WG has also had participation and discussion from the legal sector, but due to the legislative procedure it will be further reviewed by a committee within the MPWT. It should be noted that the MPWT's draft is largely beyond the jurisdiction of the GDSWM, however, it is important and expected that the GDSWM in charge of the sewerage system and the implementing entity of the project take the necessary actions and follow up until the Draft Law is enforced.

**Ministerial ordinance (Prakas):** Referred to as a draft ministerial ordinance (Prakas) of the MPWT. As with the Law, ministerial ordinance (Prakas) must be enacted after review by the law department and other relevant. GDSWM shall take necessary actions and follow up until ministerial ordinance (Prakas) is established as the competent department for sewerage and the implementing entity of the project.

**Technical Guideline:** Referred to as the Technical Guideline of the MPWT. After review by the technical department, the Senior Minister approved it and established as the Technical Guideline. GDSWM shall take necessary actions ensure actual use and to inform the provinces and stakeholders.

#### **1-2 DPWT/PPCC**

**Ordinance (Decca):** Regarding the enforcement of the ordinance (Decca), the PPCA would review the draft ordinance (Decca) and submit it to the council committee. This whole process is the responsibility of the legal department of PPCA. In addition, the PPCA would progress with the process of the ordinance (Decca) after the Law and the ministerial ordinance (Prakas) were approved.

However, it may be necessary to separate the articles of the draft ordinance and partly shift some of the articles to an internal notification. The implementing agencies, PPCA and DPWT, should communicate with MPWT until the ordinance (Decca) is approved, monitor the progress of the passage of Draft Law and ministerial ordinances (Prakas), and take necessary actions and follow-up.

After these are enacted and the law is delegated authority, it is expected that the Decca will be promulgated and implemented as soon as possible.

## **2. Plan of Operation and Implementation Structure of the Cambodia side to achieve Overall Goal**

### **2-1 MPWT**

The discussion on the draft Laws started among members of the Inter-Ministerial WG on 20th September 2022 at MPWT in order to make a final draft.

As for the next steps, there are the following phases;

- Council of Jurist & Economic, Social and Cultural Council review
- Review by the Ministry of Justice (penalties)
- Review by the Council of Ministers
- Review and approval by the National Assembly
- Review and approval by the Senate
- Signed by the King and promulgated

Ministerial ordinances (Prakas) and technical guideline are developed mainly by the GDSWM in consultation with the relevant departments and Committee of the MPWT (legal, technical) and approved by H.E. Senior Minister.

### **2-2 DPWT/PPCC**

In order for an ordinance (Decca) to be referenced in the planning, construction, and operation and maintenance of the wastewater treatment plants, a higher-level ministerial ordinance (Prakas) must be promulgated first and have a delegated provision. The ministerial ordinance (Prakas) is also prepared with the promulgation of the draft law prepared by the Project. The indicator of the Project's goal is supposed to be the frequency with which the ordinance (Decca) is referred to. However, the process of passing the draft law is long, taking from several years. In the future, it should be requested to promulgate ministerial ordinance (Prakas) referring to "Sub-Decree 235 on the Management of Drainage and Wastewater Treatment Systems", with the aim to refer to the part of the ordinance (Decca). The implementing agencies, PPCA and DPWT, should communicate with MPWT until the ordinance (Decca) is approved, monitor the progress of the passage of Draft Law and ministerial ordinances (Prakas), and take necessary actions and follow-up. After these are enacted and the law is delegated authority, it is expected that the Decca will be promulgated and implemented as soon as possible.

### **3. Recommendations for the Cambodia side**

#### **3-1 MPWT**

As the implementing entity for the project and as the Ministry in charge of sewerage sector, it is expected to take the necessary action and follow-up until the Draft Law is enacted.

It is necessary to revise the regulations and technical guidelines in accordance with the changing times and situations. It is desirable to identify the department in charge of each clearly, and to monitor, discuss, and revise them. Sub-decrees not included in this scope need to be reviewed and consistent with the Law and the ministerial ordinance (Prakas).

In addition, although joint ministerial ordinance (Prakas) with other ministries is not the subject of this work, it is an important regulation for implementing sewerage systems. We hope that discussions with other ministries will begin as soon as possible.

Regarding the Technical Guideline, the English version can be sufficient for use by the MPWT. However, in consideration of its expansion to the provinces, it is desirable that the entire (explanatory sections) be translated into Khmer as well. In the process, it is also essential to determine the Khmer terminology that corresponds to the English.

The Japanese Ministry of Land, Infrastructure, Transport and Tourism is currently developing technical standards for the Pipe Jacking methods for Cambodia. The technical guideline does not include a detailed description of the Pipe Jacking methods, but there is a statement that relates to this standard. We would like to utilize this standard as well.

#### **3-2 DPWT/PPCC**

DPWT should communicate with MPWT until the ordinance (Decca) is approved, monitor the progress of the passage of Draft Law and ministerial ordinances (Prakas), and take necessary actions and follow-up. After these are enacted and the law is delegated authority, it is expected that the Decca will be prepared for promulgation and implementation as soon as possible.

A new/revised office to manage the operation and maintenance of the WWTP should be organized and properly staffed in the future. The duties and responsibilities of the assigned personnel should be clearly defined.

Review the existing rules for the maintenance and management of sewerage facilities with relevant departments and analyze what needs to be

strengthened in the future management system of sewerage facilities.  
Develop the draft maintenance plan for the management of sewage facilities.  
Hold regular workplace workshops such as human resource development necessary for operating sewage treatment plants and sharing the results of water quality inspections.

Through the wastewater treatment facilities constructed with the Japanese grant aid, publicize the operation of the wastewater treatment plant to the local residents and initiate environmental education programs in educational institutions.

### **3-3 PPCA**

PPCA should communicate with MPWT and DPWT until the ordinance (Decca) is approved, monitor the progress of the passage of Draft Law and ministerial ordinances (Prakas), and take necessary actions and follow-up. After these are enacted and the law is delegated authority, it is expected that the Decca will be promulgated and implemented as soon as possible.

Establish a planning and supervision department for sewerage projects in the Phnom Penh Metropolitan Administration. The department aims to come up with a project plan and a budget for organizing financial expenditures for sewerage systems and would be separated from the department that implements the work. The department would be concentrated on analytical and planning work, such as setting up projects, including maintenance and management. Then, they require each administrative district (Khan) and maintenance office to work according to the instruction sheet prepared by the planning and supervision department.

The actual cost and human resources for annual maintenance and management of sewerage facilities (pumping stations and pipeline facilities) should be compiled.

Hold liaison and study meetings on a regular basis to strengthen coordination of maintenance and management of sewer facilities, including DPWT and the 14 Khans. By having several people meet in person on a regular basis and continue to discuss, exchange information and opinions, and examine pending issues, it will be easier to understand the other organization's position and make adjustments when the need arises.

Develop new human resource development planning guidelines for sewer facilities.

#### **4. Monitoring Plan from the end of the Project to Ex-post Evaluation**

The Project is supposed to have Ex-post Evaluation three (3) years after the end of the Project in 2026. MPWT and DPWTPPCC are required to report the status of the achievement of the Overall Goal, and also to proceed steadily with the necessary procedures to ensure that regulations (Law and Prakas), technical guideline and ordinance (Decca) are when sewerage facilities are planned, constructed and operated/maintained.

Next Three-Year Plan of Operation is shown in the below table, including activities of MPWT and DPWT/PPCC and monitoring plan to Ex-Post Evaluation. MPWT and DPWT/PPCC are responsible for proceeding with each activity in accordance with the plan described in the table. MPWT and DPWT/PPCC could take advantage of meetings, seminars, and other opportunities with donor agencies for sewerage projects to check the progress of their respective activities. In case of confirmed delays in activities, MPWT and DPWT/PPCC could consult with JICA about the issues. In Ex-post Evaluation, JICA will check the achievement of the Overall Goal through interviews and/or questionnaires.

##### **4-1 MPWT**

As for the Draft Law, there are many stakeholders, and there is a high possibility of changes in the draft law. We would appreciate a timely follow-up and necessary action to proceed the legislative procedure.

The Senior Minister and the Secretary of State have mentioned that MPWT expect to complete review of the Draft Law within the MPWT in the near future, and will move on to the next step.

As for the next steps, there are the following phases;

- Council of Jurist & Economic, Social and Cultural Council review
- Review by the Ministry of Justice (penalties)
- Review by the Council of Ministers
- Review and approval by the National Assembly
- Review and approval by the Senate
- Signed by the King and promulgated

MPWT shall monitor and follow up on these progress.

GDSWM shall take necessary actions and follow up until ministerial ordinance (Prakas) is established as the competent department for sewerage and the



implementing entity of the project. After the Law is effective, the ministerial ordinance (Prakas) will follow the process for approval. Before the Law is effective, MPWT will make the priority part of the Prakas issued by Senior Minister of MPWT for conducting in advance based on the current need of Cambodia in sewerage sector.

GDSWM shall take necessary actions ensure actual use of ministerial ordinance (Prakas) and Technical Guideline and to inform the provinces and stakeholders. The Ex-post Evaluation for these will be conducted after three years.

#### **4-2 DPWT/PPCC**

Refer to the schedule below.

**Next Three - Year Plan of Operation**

Project Title: The Project for Capacity Development for Sewerage Management of Phnom Penh Capital Administration and Ministry of Public Works and Transport

Activities	implementation bodies	April 2023 to March 2024				April 2024 to March 2025				April 2025 to March 2026										
		I	II	III	IV	I	II	III	IV	I	II	III	IV							
Ministry internal discussions with stakeholders begin on <u>Draft Law for sewerage management</u> developed by the Project.	MPWT																			
Ministry internal discussions begin on <u>ministerial ordinance (Prakas)</u> for sewerage management developed by the Project.	MPWT																			
PPCA internal discussions begin on <u>draft ordinance (Decca)</u> for sewerage management developed by the Project.	DPWT																			
The officials are assigned to a new office/section for sewerage management	DPWT																			
The part of the Prakas that developed by the project are promulgated and referred to when sewerage facilities are planned, constructed and operated/maintained.	MPWT																			
GDSWM takes necessary actions ensure actual use of <u>Technical Guideline</u> and to inform the provinces and stakeholders.	MPWT																			
The technical guideline that developed by the project are referred to when sewerage facilities are planned, constructed and operated/maintained.	MPWT																			
Some provisions of the <u>draft ordinance (Decca)</u> that developed by the project are referred to when sewerage facilities are planned, constructed and operated/maintained.	DPWT																			
The Internal meetings and workshops are held frequently or regularly to strengthen cooperation in the maintenance and management of sewerage facilities.	DPWT																			

Monitoring Plan	1st year				2nd year				3rd year				
	I	II	III	IV	I	II	III	IV	I	II	III	IV	
Post Monitoring (including ex-post evaluation)													
Interview or assessment questionnaire with C/Ps													

**ANNEX 1: Results of the Project**

**ANNEX 2: List of Products Produced by the Project**

**ANNEX 3: PDM (version0, version1, version2)**

## Results of the Project

### List of the JICA experts

Name	Long term/ Short term	Field	Dispatch period (MM: Man Month)
<b>By JICA</b>			
Hirano Satoshi	Long Term Expert	Chief Advisor/Legal and institutional development/Implementation system development	From 8th April 2019 to 7th April 2021 (24MM)
Komatsu Kairi	Long Term Expert	Advisor/Legal development	From 1st July 2019 to 1st April 2023 (45MM)
Hayashi Takaaki	Long Term Expert	Project Coordinator	From 2nd April 2019 to 9th August 2021 (28MM)
Kitagawa Keiichi	Long Term Expert	Chief Advisor/Legal and institutional development/Implementation system development	From 8th April 2021 to 31st March 2023 (24MM)
Takahashi Atsushi	Long Term Expert	Project Coordinator	From 6th July 2021 to 1st April 2023 (21MM)

### List of Project Directors and Project Managers

Name	Position	Project Director / Project Manager	Assigned period
<b>By MPWT</b>			
H.E. Sourn Phearith	Director General of GDSWM, MPWT	Project Director	The C/P has been arranged by MPWT From May 2022 to April 2023
H.E. Sammrangdy Nam	Director General of GDSWM, MPWT	Project Director	The C/P has been arranged by MPWT From December 2020 to April 2022
H.E. Heng Rath Piseth	Director General of GDPW, MPWT	Project Director	The C/P has been arranged by MPWT From April 2019 to September 2020
Mr.Chao Sopheak Phibal	Deputy Director General of GDSWM, MPWT	Project Manager	The C/P has been arranged by MPWT From April 2019 to April 2023
<b>By DPWT</b>			
H.E.Nuon Pharath	Deputy Governor, PPCA	Project Director	The C/P has been arranged by PPCA From April 2019 to April 2023
Mr. Sam Piseth	Director of DPWT in PPCA	Project Manager	The C/P has been arranged by DPWT From April 2019 to April 2023

**List of trainees of training in Japan**

No.	Name of Applicants	Mr./ Ms.	Affiliation organization	Job title
1	IM Vibol	Mr.	Ministry of Public Works and Transport (MPWT)	Director
2	POU Manith	Mr.	Ministry of Public Works and Transport (MPWT)	Director
3	NONG Sambathvathna	Mr.	Ministry of Public Works and Transport (MPWT)	Deputy Director
4	KEM Sokuntheary	Ms.	Department of Public Works and Transport of Battambang Province	Deputy Director of DPWT
5	SAY Pichenda	Mr.	Department of Public Works and Transport of Siem Reap Province	Chief Office
6	LIM Sran	Mr.	Department of Public Works and Transport of Sihanouk Ville Province	Technical Chief
7	SO Vuthy	Mr.	Department of Public Works and Transport of PPCA	Deputy Chief
8	LAK Sivcheng	Ms.	Ministry of Public Works and Transport (MPWT)	Deputy Chief
9	HEU Reaksmeyvatana	Mr.	Department of Public Works and Transport of PPCA	Technical Officer

**Summary of Member List of JCC, TC and WG  
(MPWT)**

No.	Name	Mr./Ms.	Position	Department	Manager /Officer or Engineer	JCC	TC	WG
1	Tauch Chankosal	H.E.	Secretary of State	MPWT	M	•		
2	Ros Vanna	H.E. Dr.	Secretary of State	MPWT	M	•		
3	Kem Borey	H.E.	Under Secretary of State	MPWT	M	•	•	
4	Vong Pisith	H.E.	Under Secretary of State	MPWT	M	•		
5	Samrangdy Namou	H.E.	Under Secretary of State	MPWT	M	•	•	
6	Heng Rathpiseith	H.E.	Director General	GDPW	M	•	•	
7	Heang Voutha	H.E.	Director General	GDT	M	•		
8	Ken Ratha	H.E.	Director General	GDAF	M	•		
9	Sourn Phearith	H.E.	Director General	GDSWM	M	•	•	
10	Chao Sopheak Phibal	Mr.	Deputy Director General	GDSWM	M	•	•	•
11	Nop Saophandara	Mr.	Deputy Director General	GDAF and Cabinet of Senior Minister	M	•		
12	Im Vibol	Mr.	Director	GDSWM	M	•	•	•
13	Chhem Phalla	Mr.	Director	Road Infrastructure Department	M	•		
14	Tan Thira	Mr.	Director	Public Infrastructure Department	M	•		
15	Koun Buntheun	Mr.	Director	Public Technical Works and Transport	M	•		
16	Prosae Molika	Mrs.	Director	Litigation Department	M	•	•	
17	Heang Sotheayuth	Mr.	Director	IT and Public Relation Department	M	•		
18	Heng Phoury	Mr.	Deputy Director	GDSWM	M	•		
19	Chea Socheat	Mr.	Deputy Director	Cabinet of Senior Minister	M		•	
20	Pou Manith	Mr.	Deputy Director	GDSWM	M		•	
21	Long Chirina	Mr.	Deputy Director	Public Infrastructure Department	M		•	
22	Tes Dararoth	Mr.	Deputy Director	IT and Public Relation Department	M		•	
23	Tep Virith	Mr.	Deputy Director	Public Technical Works and Transport	M		•	
24	Doung Dany	Ms.	Chief	GDSWM	O			•
25	Chheng Sovandy	Mr.	Chief	GDSWM	O		•	•
26	Chheav Sokkhim	Mr.	Chief	GDSWM	O		•	•
27	Vath Visal	Mr.	Chief	GDSWM	O		•	•
28	Earp Ngonheng	Mr.	Chief	Planning Department	O		•	
29	Chea Samnang	Mr.	Chief	Public Works Office	O		•	
30	Ngin Koysaophak	Mr.	Deputy Chief	GDSWM	O		•	
31	Sok Sam On	Mr.	Deputy Director	GDSWM	M			•
32	Nara Vithou Kalyan	Mr.	Deputy Director	Legal Department	M			•
33	Neak Phak Kdey	Mr.	Chief	Legal Department	O			•
34	Thou Saory	Mrs.	Deputy Chief	Road Infrastructure Department	O			•
35	Eung Kimhok	Mr.	Deputy Chief	Public Infrastructure Department	O			•
36	Peng Seyha	Mr.	Officer	GDSWM	O			•

No.	Name	Mr./Ms.	Position	Deputy	Department	Manager / or Engineer	JCC	TC	WG
37	Keo Sovannara	Mr.	Chief		IT and Public Relation Department	O			•
38	Vong Cheaputhea	Mr.	Officer		GDSWM	O			•
39	Sin Sivling	Ms.	Officer		GDSWM	O			•
40	San Dara	Mr.	Officer		GDSWM	O			•
41	Chhouk Socha	Mr.	Officer		Road Infrastructure Department	O			•

**Note:**

- Manager /Officer or Engineer: 'M' means that the position of the member is management level and 'O' means that the position of the member is officer or engineer who is not management level.
- 'JCC': Joint Coordination Committee, "TC": Technical Committee, "WG": Working Group
- JCC, TC and WG: '•' means that the member is belong to each group.

**Summary of Member List of JCC, TC and WG  
(PPCA)**

No.	Name	Mr./Ms.	Position	Department	Manager /Officer or Engineer	JCC	Sub-TC	Sub-CC	F-WG	WG
1	Khoung Sreng	H.E.	Governor	PPCA	M	•				
2	Suy Serith	H.E.	Deputy Governor	PPCA	M	•				
3	Nuon Pharath	H.E.	Deputy Governor	PPCA	M	•		•		
4	Koeut Chhe	H.E.	Deputy Governor	PPCA	M				•	
5	Seng Vannak	Mr.	Director	Administration	M	•				
6	Hok Holim	Mr.	Deputy Director	Administration	M	•		•		
7	Long Sokhom	Mr.	Deputy Director	Administration	M	•				
8	Kae Punlork	Mr.	Deputy Director	Administration	M				•	
9	Sarin Vanna	Mr.	Director	DLMUPC in Phnom Penh	M	•				
10	Mao Bunthoeun	Mr.	Director	Phnom Penh Water Resource and Meteorology	M	•				
11	Keat Rangsey	Mr.	Director	DoE in Phnom Penh	M	•		•		
12	Sin Boramey	Mr.	Director	Urbanization Division	M	•				
13	Kang Leangkre	Mr.	Director	Legal/Affair and Human Resource Division	M	•			•	
14	Noun Samnavuth	Mr.	Director	Waste Management Division	M	•			•	
15	Ok Sophal	Mr.	Director	Financial Bureau	M					•
16	Hok Kimeang	Mr.	Deputy Director	Urbanization Division	M	•				
17	Phan Sopheaknita	Mrs.	Deputy Director	Public Relation and International Cooperation	M	•				
18	Bot Sareth	Mr.	Chief	Procurement Office	O					•
19	Kim Seth	Mr.	Deputy Director	DoEF in Phnom Penh	M					•
20	Sous Chhur Mony	Mr.	Chief	Accounting Office	O					•
21	So Phara	Mr.	Chief	Development and Construction Office	O	•				
22	Leng Thida	Mr.	Deputy Chief	Development and Construction Office	O	•				•
23	Soam Meak Boramey	Mr.	Officer	Development and Construction Office	O	•				•
24	Neang Monyroth	Mr.	Officer	Development and Construction Office	O	•				•
25	Theam Ridthy Deka	Mrs.	Officer	Public Relation and International Cooperation	O	•				•
26	Mab Sokcha	Mr.	Officer	Public Relation and International Cooperation	O	•				

Note:

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- JCC, Sub-TC, Sub-CC, F-WG and WG: '•' means that the member is belong to each group.



**Summary of Member List of JCC, TC and WG  
(DPWT in Phnom Penh)**

No.	Name	Mr./Ms.	Position	Department	Manager / or Engineer	JCC	Sub- TC	Sub- CC	F-WG	WG
1	Sam Piseth	Mr.	Director	DPWT in Phnom Penh	M	•	•		•	•
2	Chou Kimtry	Mr.	Deputy Director	DPWT in Phnom Penh	M	•	•		•	•
3	Doung Chansarath	Mr.	Chief	DSO	O	•	•			•
4	Chim Chea	Mr.	Chief	Technical Office	O					•
5	Pheng Pharinet	Mrs.	Deputy Chief	Road Safety	O					•
6	Chhorng Vantha	Mr.	Deputy Chief	DSO	O					•
7	Men Sokhen	Mr.	Deputy Chief	DSO	O	•	•		•	•
8	Sim Lyda	Mr.	Deputy Chief	DSO	O					•
9	Nou Piseth	Mr.	Technical officer	DSO	O					•
10	Khiev Tha	Mr.	Chief	DSO	O					•
11	So Vuthy	Mr.	Technical officer	DSO	O				•	•
12	Kes Sokhuntheary	Mrs.	Technical officer	DSO	O					•
13	Sem Tha	Mr.	Technical officer	DSO	O					•
14	Leang Chunhour	Mr.	Technical officer	DSO	O					•
15	Eng Kimbora	Mr.	Technical officer	Public Works Office	O					•
16	Mao Tit	Mr.	Accountant	Accounting Office	O					•
17	Moeung Sophan	Mr.	Assistant	DPWT in Phnom Penh	O					•

**Note:**

- Manager /Officer or Engineer: 'M' means that the position of the member is management level and 'O' means that the position of the member is officer or engineer who is not management level.

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- JCC, Sub-TC, Sub-CC, F-WG and WG: '•' means that the member is belong to each group.

**Breakdown of Overseas Activities Cost**

Unit: USD

Overseas Activities Cost	Expense Item	FY 2019												FY 2020				FY 2021				FY 2022				Notes	
		Executed			Executed			Executed			Executed			Executed			Executed			Executed			Executed				
		1Q (Apr-Jun)	2Q (Jul-Sep)	3Q (Oct-Dec)	4Q (Jan-Mar)	1Q (Apr-Jun)	2Q (Jul-Sep)	3Q (Oct-Dec)	4Q (Jan-Mar)	1Q (Apr-Jun)	2Q (Jul-Sep)	3Q (Oct-Dec)	4Q (Jan-Mar)	1Q (Apr-Jun)	2Q (Jul-Sep)	3Q (Oct-Dec)	4Q (Jan-Mar)	1Q (Apr-Jun)	2Q (Jul-Sep)	3Q (Oct-Dec)	4Q (Jan-Mar)	1Q (Apr-Jun)	2Q (Jul-Sep)	3Q (Oct-Dec)	4Q (Jan-Mar)		
Miscellaneous (External Experts)	Maintenance of printer		30	905	334		61	114	41	108	27	556	141	291	432	941	1,000										
	Communication expenses	34	49	65	59		277	45	45	375	45	40	45	183	45	196	45										
	Salary for PJ staff	643	3,607	4,445	5,156		1,912	5,751	5,739	5,910	5,902	6,034	6,247	5,986	6,022	5,988	6,210										
	Personal accident and health insurance, Retirement payment	55			693					171				1,189	80	150	199	221									
	Car insurance, repair for the project car				48				82	157																	
	Rental Car				1,121		2	702		1,446	20	258	685														
	Stationary	817	2,641	3,503	2,208		4	17	110	2	77	185	142	206	60	380	400										
	Interpretation, Translation etc. Equipment, Facilities, Repair for equipment and facilities	226	522	95	189			737	780																		
	JCC, Handover ceremony	1,921	10,652	689	117		30	441	1,007	286		2,072	40	616													
				1,590																							
	Biz Trip(Air Fare)(External Experts)																										
	Biz Trip(Non Air Fare)(External Expert)		238	65	271																						
	Total (quarterly) <sup>1</sup>	3,696	17,738	12,095	11,201	0 <sup>2</sup>	2,286	7,152	8,287	8,379	6,635	10,069	12,325	9,700	7,805	17,412	14,645										
	Total (yearly)		44,730		17,725						37,408					49,561											
Agent Service Expense	Basic Study on Sewerage Laws of Cambodia and its Neighbor Countries				15,848																						
	Drafting Law on Wastewater and Drainage System												31,960														
	Development of the Cambodian Technical Guidelines for the Project for Capacity Development for Sewerage Management of PPCA and MPWT																										
	Drafting Prakas and Decca on Wastewater and Drainage System for Capacity Development for Sewerage management of PPCA and MPWT																										
	Total (quarterly)	0	0	0	15,848	0	31,960	40,247	8,379	6,635	19,239	34,640	22,315	0	8,885	30,727	33,629										
	Total (yearly)		15,848							31,485					73,240												
	Total (quarterly)	3,696	17,738	12,095	27,049	0	2,286	7,152	40,247	8,379	6,635	19,239	34,640	9,700	16,689	48,139	48,274										
	Total		60,578		68,892					68,892					122,801												

Note:

\*1: The amount paid in local currency is calculated for convenience by converting it uniformly into dollars at the rate of 1 dollar = 4,100 riel, since the exchange rate differs depending on the store and shop where the payment is made. And amounts of change received in local currency are not included in this spreadsheet because they are small amounts. Therefore, the quarterly totals do not equal the amounts reported in the quarterly estimation fund reports.

\*2: From April to September 2020, there was no expenditure for Overseas Activities Cost because the experts were temporarily evacuated and returned to Japan to take measures against COVID-19.

\*3: The amount in FY 2022 is an estimated amount as of Feb. 2023.

**Difference between budget request and actual OAC for FY2022**

Expense item	Unit	Budget request for FY 2022 (as of Feb. 2022)						Actual cost for FY 2022 (as of Feb. 2023)						Notes
		2022		2022		2022		2022		2022		Estimated 4Q (Jan.-Mar.)		
		Estimated 1Q (Apr.-Jun.)	Estimated 2Q (Jul.-Sep.)	Estimated 3Q (Oct.-Dec.)	Estimated 4Q (Jan.-Mar.)	Executed 1Q (Apr.-Jun.)	Executed 2Q (Jul.-Sep.)	Executed 3Q (Oct.-Dec.)	Executed 4Q (Jan.-Mar.)					
Miscellaneous (External Experts) / Biz Trip (Non Air Fare)(External Expert) / Biz Trip (Air Fare)(External Experts)	USD	12,445	11,765	9,545	8,069	9,700	7,805	17,412	14,645					
Agent Service Expense	USD		41,824				49,561							
Subtotal (quarterly)	USD	0	0	0	85,691	0	8,885	30,727	33,629					
Subtotal (quarterly)	USD		85,691				73,240							
Subtotal (yearly)	USD	12,445	11,765	9,545	93,760	9,700	16,689	48,139	48,274					
Subtotal (yearly)	USD		127,515				122,801							
Total (quarterly)	USD	The difference between the budget request for OAC in Feb. 2022 and the actual OAC for FY2022												
Total	USD	-4,713												
Periodical budget allocation	USD	Requested / Received	Requested	Requested	Requested	Requested	Requested	Requested	Requested	Requested	Requested	Requested	Requested	Notes
Additional budget allocation, 1st	USD	Requested / Received	12,445	11,765	9,545	8,069	10,460	11,855	12,355	12,645				
Additional budget allocation, 2nd	USD	Requested / Received				2,160			800					
Periodical budget allocation	USD	Requested / Received	110	110	110	110	121.92	136.38	144.50	133.21				The average JICA monthly exchange rate from Apr 2019 to Feb. 2022 is 110 JPY/USD.
Exchange Rate Base Month	JPY	Requested / Received	1,368,950	1,294,150	1,049,950	887,590	1,275,283	1,616,785	1,785,298	1,684,440				
JICA monthly exchange rate (USD - JPY)	JPY	Requested / Received				127.38		144.50						
Exchange Rate Base Month	JPY	Requested / Received				275,141		115,600	0					
JICA monthly exchange rate (USD - JPY)	JPY	Requested / Received						147.54						
Exchange Rate Base Month	JPY	Requested / Received				0		29,508	0					
Subtotal (quarterly)	JPY	Requested / Received	1,368,950	1,294,150	1,049,950	887,590	1,550,424	1,616,785	1,930,406	1,684,440				
Subtotal (yearly)	JPY	Requested / Received				4,600,640		6,782,055						
Development of the Cambodian Technical Guidelines for the Project for Capacity Development for Sewerage Management of PPCA and MPWT	USD	Requested / Received								13,871				
Drafting Prakas and Decca on Wastewater and Drainage System for Capacity Development for Sewerage management of PPCA and MPWT	USD	Requested / Received												
Development of the Cambodian Technical Guidelines for the Project for Capacity Development for Sewerage Management of PPCA and MPWT	JPY	Requested / Received												The rate in February 2023 are used as provisional rate.
Drafting Prakas and Decca on Wastewater and Drainage System for Capacity Development for Sewerage management of PPCA and MPWT	JPY	Requested / Received												The rate in February 2023 is used as provisional rate.
Subtotal (quarterly)	JPY	Requested / Received	0	0	0	9,425,955	0	1,211,727	4,533,470	4,375,741				
Subtotal (yearly)	JPY	Requested / Received	0	0	0	9,426,065	0	1,211,727	4,533,470	4,375,741				
Total	JPY	The difference between the budget request and the actual OAC for FY2022												
Total	JPY	16,902,993												
Total	JPY	+2,876,398												

ANNEX 2 List of Products Produced by the Project

List of Products Produced by the Project

No.	Name	Counterpart
1-1	Draft Law on Sewerage System	MPWT
1-2	Draft Prakas on Sewerage System - Management of Sewerage System and Determination of Tec -	MPWT
1-3	Technical Guideline for Planning and Design of Sewerage System in Cambodia	MPWT
2-1	The Decree on Sewerage System Management in Phnom Penh Capital (Draft)	DPWT/PPCA
2-2	Personnel recruitment request for operation and maintenance Ek.	DPWT/PPCA
2-3	Estimated Budget for operation and maintenance of wastewater 2027	DPWT/PPCA


## PDM: Project Design Matrix

Project Name: Project for Capacity Development for Sewerage Management of Phnom Penh Capital Administration and Ministry of Public Works and Transport

Version 0

Implementing Agency: Ministry of Public Works and Transport (MPWT), and Department of Public Works and Transport (DPWT) of Phnom Penh Capital City (PPCC)

Target Group: Staff of MPWT and DPWT/PPCC  
 Period: MM 201x to MM 202x (tentatively four years)  
 Project site: Cambodia

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p><b>Overall Goal</b>            Regulations (prakas), technical guideline and ordinance (decca) developed by the Project are referred to when sewerage facilities are planned, operated/maintained.</p>	1. Frequency of referring to these documents	1. Interview with staff of MPWT, DPWT/PPCC, contractors, or private companies	
<p><b>Project Purpose</b>            MPWT's and DPWT's foundation for sewerage management is strengthened.</p>	1. MPWT's staff in charge of sewerage management (guideline) 2. DPWT's staff in charge of sewerage management (under ordinance)	1-1. Monitoring sheets 1-2. Interview or assessment test with C/Ps 2-1.M sheets 2-2. Interview or assessment test with C/Ps	Regulations (prakas), technical guideline and ordinance authorities.
<p><b>Outputs</b></p> <p>1. Legal and institutional framework for sewerage management is strengthened at MPWT.</p> <p>2. Legal and institutional framework is strengthened at DPWT/PPCC.</p>	1-1. Draft regulation for sewerage management is submitted to MPWT. 1-2. Draft technical guideline of planning, design and operation and maintenance (O&M) of sewerage facilities submitted to MPWT. 2-1. Draft ordinance on sewerage management is submitted to PPCC 2-2. Draft structure of new offices/sections for sewerage management is summarized.	1-1. Draft regulation, monitoring sheets and interview with C/Ps 1-2. Draft technical guideline, monitoring sheets and interview with C/Ps 2-1. Draft ordinance, monitoring sheets and interview with C/Ps 2-2. Draft structure of new offices/sections, monitoring sheets and interview with C/Ps	
Activities	Inputs		Important Assumptions
<p>&lt;Output 1: Legal and Institutional Framework at MPWT&gt;            [Legal framework]            1-1. Formulate working group for legal framework            1-2. Assess C/Ps' current knowledge level of sewerage related legal framework (baseline)            1-3. Review existing law, regulations and standards relating sewerage management.            1-4. Review other countries' legal framework for sewerage management            1-5. Analyze the points to strengthen legal framework for sewerage management            1-6. Prepare draft regulation for sewerage management            1-7. Assess C/Ps' understanding level of draft regulation (endline)            [Technical guideline]            1-8. Formulate working group for developing technical guideline of planning, design and O&amp;M for sewerage facilities            1-9. Assess C/Ps' current knowledge level of technical guideline (baseline)            1-10. Review other countries' technical guideline for planning, design and O&amp;M for sewerage management.            1-11. Prepare draft technical guideline for sewerage management            1-12. Assess C/Ps' understanding level of draft technical guideline (endline)</p> <p>&lt;Output 2: Legal and institutional framework at DPWT/PPCC&gt;            [Legal framework]            2-1. Formulate working group for strengthening legal framework at DPWT/PPCC            2-2. Assess C/Ps' current knowledge level of sewerage related legal framework (baseline)            2-3. Review existing ordinance (Decca) relating wastewater management            2-4. Review other countries' ordinance for sewerage management            2-5. Analyze the points to strengthen legal framework for sewerage management            2-6. Prepare draft ordinance for sewerage management            2-7. Assess C/Ps' understanding level of draft ordinance (endline)            [Institutional strengthening]            2-8. Define necessary roles, responsibilities and number of personnel of new/revised offices/sections in charge of sewerage management at DPWT/PPCC, referring to proposals identified in Sewerage Management Plan            2-9. Prepare preliminary draft of new/revised structure in charge of sewerage management            [Financial aspect]            2-10. Formulate working group for financial plan for sewerage facilities to be constructed by Japanese grant aid project            2-11. Assess C/Ps' current knowledge level of financial planning (baseline)            2-12. Discuss and deepen understandings of financial plan for sewerage facilities to be constructed by Japanese grant aid project            2-13. Assess C/Ps' knowledge level of financial planning (endline)</p>	<p>Japanese side</p> <p>Assignment of Experts            &lt;Long-term experts&gt;            - Legal and institutional framework strengthening for sewerage management            - Legal and technical guideline development for sewerage management</p> <p>Operation Costs</p>	<p>Cambodian side</p> <p>Assignment of Counterpart Personnel            1. Project Directors            2. Project Managers            3. Counterparts</p> <p>Facilities            - Office Spaces for JICA Experts at MPWT and DPWT/PPCC respectively</p> <p>Others            - Operation Costs (travel expense for counterparts, etc.)</p>	<p>Assigned counterpart personnel is committed to activities.</p> <p>Pre-conditions</p> <p>Counterpart personnel is assigned to activities.</p> <p style="text-align: center;"></p> <p>&lt;Problems and Measures&gt;</p>

PDM: Project Design Matrix

Project Name: Project for Capacity Development for Sewerage Management of Phnom Penh Capital Administration and Ministry of Public Works and Transport

Version 1

Implementing Agency: Ministry of Public Works and Transport (MPWT), and Department of Public Works and Transport (DPWT) of Phnom Penh Capital City (PPCC)

Target Group: Staff of MPWT and DPWT/PPCC

Period: April 2019 to March 2023

Project site: Cambodia

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p><b>Overall Goal</b> Regulations (prakas), technical guideline and ordinance (decca) developed by the Project are referred to when sewerage facilities are planned, operated/maintained.</p>	1. Frequency of referring to these documents	1. Interview with staff of MPWT, DPWT/PPCC, contractors, or private works	
<p><b>Project Purpose</b> MPWT's and DPWT's foundation for sewerage management is strengthened.</p>	<p>1. MPWT's staff in charge of sewerage management guideline</p> <p>2. DPWT's staff in charge of sewerage management under ordinance</p>	<p>1-1. Monitoring sheets</p> <p>1-2. Interview or assessment test with C/Ps</p> <p>2-1. Monitoring sheets</p> <p>2-2. Interview or assessment test with C/Ps</p>	Regulations (prakas), technical guideline, authorities.
<p><b>Outputs</b></p> <p>1. Legal and institutional framework for sewerage management is strengthened at MPWT.</p> <p>2. Legal and institutional framework is strengthened at DPWT/PPCC.</p>	<p>1-1. Draft regulation for sewerage management is submitted to MPWT.</p> <p>1-2. Draft technical guideline of planning, design and operation and maintenance (O&amp;M) of sewerage facilities submitted to MPWT.</p> <p>2-1. Draft ordinance on sewerage management is submitted to PPCC</p> <p>2-2. Draft structure of new offices/sections for sewerage management is summarized.</p>	<p>1-1. Draft regulation, monitoring sheets and interview with C/Ps</p> <p>1-2. Draft technical guideline, monitoring sheets and interview with C/Ps</p> <p>2-1. Draft ordinance, monitoring sheets and interview with C/Ps</p> <p>2-2. Draft structure of new offices/sections, monitoring sheets and interview with C/Ps</p>	
Activities	Inputs		Important Assumptions
	Japanese side	Cambodian side	
<p>&lt;Output 1: Legal and Institutional Framework at MPWT&gt; [Legal framework]</p> <p>1-1. Formulate working group for legal framework</p> <p>1-2. Assess C/Ps' current knowledge level of sewerage related legal framework (baseline)</p> <p>1-3. Review existing law, regulations and standards relating sewerage management.</p> <p>1-4. Review other countries' legal framework for sewerage management</p> <p>1-5. Analyze the points to strengthen legal framework for sewerage management</p> <p>1-6. Prepare draft regulation for sewerage management</p> <p>1-7. Assess C/Ps' understanding level of draft regulation (endline)</p> <p>[Technical guideline]</p> <p>1-8. Formulate working group for developing technical guideline of planning, design and O&amp;M for sewerage facilities</p> <p>1-9. Assess C/Ps' current knowledge level of technical guideline (baseline)</p> <p>1-10. Review other countries' technical guideline for planning, design and O&amp;M for sewerage management.</p> <p>1-11. Prepare draft technical guideline for sewerage management</p> <p>1-12. Assess C/Ps' understanding level of draft technical guideline (endline)</p>	<p>Assignment of Experts &lt;Long-term experts&gt; - Legal and institutional framework strengthening for sewerage management</p> <p>- Legal and technical guideline development for sewerage management</p> <p>Operation Costs</p>	<p>Assignment of Counterpart Personnel</p> <p>1. Project Directors</p> <p>2. Project Managers</p> <p>3. Counterparts</p> <p>Facilities - Office Spaces for JICA Experts at MPWT and DPWT/PPCC respectively</p> <p>Others - Operation Costs (travel expense for counterparts, etc.)</p>	Assigned counterpart personnel is carried out activities.
<p>&lt;Output 2: Legal and Institutional Framework at DPWT/PPCC&gt; [Legal framework]</p> <p>2-1. Formulate working group for strengthening legal framework at DPWT/PPCC</p> <p>2-2. Assess C/Ps' current knowledge level of sewerage related legal framework (baseline)</p> <p>2-3. Review existing ordinance (Decca) relating wastewater management</p> <p>2-4. Review other countries' ordinance for sewerage management</p> <p>2-5. Analyze the points to strengthen legal framework for sewerage management</p> <p>2-6. Prepare draft ordinance for sewerage management</p> <p>2-7. Assess C/Ps' understanding level of draft ordinance (endline)</p> <p>[Institutional strengthening]</p> <p>2-8. Define necessary roles, responsibilities and number of personnel of new/revised offices/sections in charge of sewerage management at DPWT/PPCC, referring to proposals identified in Sewerage Management Plan</p> <p>2-9. Prepare preliminary draft of new/revised structure in charge of sewerage management</p> <p>[Financial aspect]</p> <p>2-10. Formulate working group for financial plan for sewerage facilities to be constructed by Japanese grant aid project</p> <p>2-11. Assess C/Ps' current knowledge level of financial planning (baseline)</p> <p>2-12. Discuss and deepen understandings of financial plan for sewerage facilities to be constructed by Japanese grant aid project</p> <p>2-13. Assess C/Ps' knowledge level of financial planning (endline)</p>			<p>Pre-conditions</p> <p>Counterpart personnel is assigned to carry out activities.</p> <p style="text-align: center;">↓</p> <p>&lt;Problems and Measures&gt;</p>

PDM: Project Design Matrix

Project Name: Project for Capacity Development for Sewerage Management of Phnom Penh Capital Administration and Ministry of Public Works and Transport

Version 2

Implementing Agency: Ministry of Public Works and Transport (MPWT), and Department of Public Works and Transport (DPWT) of Phnom Penh Capital Administration (PPCA)

Target Group: Staff of MPWT and DPWT/PPCC

Period: April 2019 to March 2023

Project site: Cambodia

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p><b>Overall Goal</b> Regulations (law and prakas), technical guideline and ordinance (decca) developed by the Project are referred to when sewerage facilities are operated/maintained.</p>	1. Frequency of referring to these documents	1. Interview with staff of MPWT, DPWT/PPCC, contractors, or private works	
<p><b>Project Purpose</b> MPWT's and DPWT's foundation for sewerage management is strengthened.</p>	<p>1. MPWT's staff in charge of sewerage management guideline</p> <p>2. DPWT's staff in charge of sewerage management under ordinance</p>	<p>1-1. Monitoring sheets</p> <p>1-2. Interview or assessment test with C/Ps 2-1.M sheets</p> <p>2-2. Interview or assessment test with C/Ps</p>	Regulations (law and prakas), technical authorities.
<p><b>Outputs</b></p> <p>1. Legal and institutional framework for sewerage management is strengthened at MPWT.</p>	<p>1-1. Draft regulation (law and prakas) for sewerage management is submitted to MPWT.</p> <p>1-2. Draft technical guideline of planning, design and operation and maintenance (O&amp;M) of sewerage facilities at MPWT.</p>	<p>1-1. Draft regulation (law and prakas), monitoring sheets and interview with C/Ps</p> <p>1-2. Draft technical guideline, monitoring sheets and interview with C/Ps</p>	
<p>2. Legal and institutional framework is strengthened at DPWT/PPCC.</p>	<p>2-1. Draft ordinance on sewerage management is submitted to PPCC</p> <p>2-2. Draft structure of new offices/sections for sewerage management is summarized.</p>	<p>2-1. Draft ordinance, monitoring sheets and interview with C/Ps</p> <p>2-2. Draft structure of new offices/sections, monitoring sheets and interview with C/Ps</p>	
Activities	Inputs		Important Assumptions
	Japanese side	Cambodian side	
<p>&lt;Output 1: Legal and Institutional Framework at MPWT&gt;</p> <p>[Legal framework]</p> <p>1-1. Formulate working group for legal framework</p> <p>1-2. Assess C/Ps' current knowledge level of sewerage related legal framework (baseline)</p> <p>1-3. Review existing law, regulations and standards relating sewerage management.</p> <p>1-4. Review other countries' legal framework for sewerage management</p> <p>1-5. Analyze the points to strengthen legal framework for sewerage management</p> <p>1-6. Prepare draft regulation for sewerage management</p> <p>1-7. Assess C/P's understanding level of draft regulation (endline)</p> <p>[Technical guideline]</p> <p>1-8. Formulate working group for developing technical guideline of planning, design and O&amp;M for sewerage facilities</p> <p>1-9. Assess C/Ps' current knowledge level of technical guideline (baseline)</p> <p>1-10. Review other countries' technical guideline for planning, design and O&amp;M for sewerage management.</p> <p>1-11. Prepare draft technical guideline for sewerage management</p> <p>1-12. Assess C/P's understanding level of draft technical guideline (endline)</p>	<p>Assignment of Experts</p> <p>&lt;Long-term experts&gt;</p> <ul style="list-style-type: none"> <li>- Legal and institutional framework strengthening for sewerage management</li> <li>- Legal and technical guideline development for sewerage management</li> </ul> <p>Training</p> <p>&lt;Training in Japan&gt;</p> <ul style="list-style-type: none"> <li>- Local government implementing sewerage projects by the Sewerage Works Agency (JS)</li> </ul> <p>&lt;Training in Third country&gt;</p> <ul style="list-style-type: none"> <li>- Pre-treated Tricking Filter implementation site</li> </ul> <p>Operation Costs</p>	<p>Assignment of Counterpart Personnel</p> <ol style="list-style-type: none"> <li>1. Project Directors</li> <li>2. Project Managers</li> <li>3. Counterparts</li> </ol> <p>Facilities</p> <ul style="list-style-type: none"> <li>- Office Spaces for JICA Experts at MPWT and DPWT/PPCC respectively</li> </ul> <p>Others</p> <ul style="list-style-type: none"> <li>- Operation Costs (travel expense for counterparts, etc.)</li> </ul>	Assigned counterpart personnel is conducted activities.
<p>&lt;Output 2: Legal and institutional framework at DPWT/PPCC&gt;</p> <p>[Legal framework]</p> <p>2-1. Formulate working group for strengthening legal framework at DPWT/PPCC</p> <p>2-2. Assess C/Ps' current knowledge level of sewerage related legal framework (baseline)</p> <p>2-3. Review existing ordinance (Decca) relating wastewater management</p> <p>2-4. Review other countries' ordinance for sewerage management</p> <p>2-5. Analyze the points to strengthen legal framework for sewerage management</p> <p>2-6. Prepare draft ordinance for sewerage management</p> <p>2-7. Assess C/P's understanding level of draft ordinance (endline)</p> <p>[Institutional strengthening]</p> <p>2-8. Define necessary roles, responsibilities and number of personnel of new/revised offices/sections in charge of sewerage at DPWT/PPCC, referring to proposals identified in Sewerage Management Plan</p> <p>2-9. Prepare preliminary draft of new/revised structure in charge of sewerage management</p> <p>[Financial aspect]</p> <p>2-10. Formulate working group for financial plan for sewerage facilities to be constructed by Japanese grant aid project</p> <p>2-11. Assess C/Ps' current knowledge level of financial planning (baseline)</p> <p>2-12. Discuss and deepen understandings of financial plan for sewerage facilities to be constructed by Japanese grant aid project</p> <p>2-13. Assess C/P's knowledge level of financial planning (endline)</p>			<p>Pre-conditions</p> <p>Counterpart personnel is assigned to conduct activities.</p> <p style="text-align: center;"></p> <p>&lt;Problems and Measures&gt;</p>