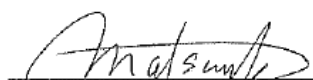


Minutes of Discussions
on the 2nd Preparatory Survey for the Project for
Expansion of Water Supply System in Pursat in the Kingdom of Cambodia


With reference to the minutes of discussions signed between Ministry of Industry and Handicraft (hereinafter referred to as "MIH") and the Japan International Cooperation Agency (hereinafter referred to as "JICA") on 24th August, 2017 and on 28th June 2018 and in response to the request from the Government of Kingdom of Cambodia (hereinafter referred to as "Cambodia") dated on 26th June, 2017, JICA dispatched the 2nd Preparatory Survey Team (hereinafter referred to as "the Team") in order to discuss design change for cost reduction for the Project for Expansion of Water Supply System in Pursat (hereinafter referred to as "the Project").

As a result of the discussions, both sides agreed on the main items described in the attached sheets.

Phnom Penh, Feb 14, 2019



Dr. Shigeyuki Matsumoto
Leader
Preparatory Survey Team
Japan International Cooperation Agency



H.E. Say Phirum
Secretary of State
Ministry of Industry and Handicraft
Kingdom of Cambodia

ATTACHMENT

1. Necessity of design change for cost reduction

Japanese side explained that because of budgetary constraint, the Project cost needed to be reduced.

Cambodian side understood the necessity of cost reduction.

2. Cost reduction items

In order to reduce the Project cost, Japanese side proposed cost reduction items as follows;

(1) Change of pipe design

- Change of procurement country from Japan to third country or Cambodia
- Reduction of pipe diameter considering demand fluctuation and time coefficient

(2) Change of intake facility

- Change to pontoon type from pump station by reinforced concrete

(3) Size reduction of component in the water treatment plant (hereinafter referred to as "WTP")

- Size reduction of sedimentation basin
- Size reduction of clear water reservoir
- Change of procurement of material from Japan to third country or Cambodia

(4) Reduction of assessment rate and spare parts

(5) Modification of coverage area

- Northern area of Pursat city will be eliminated from water supply area considering population density, as a result, pipe length will be reduced. In addition to that, area which population density is low, pipe may be cut in urban area.

Cambodian side commented on proposed items as follows;

- (1) Capacity of intake (7,260m³/day) and WTP (6,600m³/day) should keep original capacity. In addition to that, coverage ratio of urban area should also maintain original idea as much as possible. Those three points are top priorities for Cambodian side. Cambodian side explained that reduction should be done in following order;

- 1) Change of procurement country of pipe and reduction of assessment rate and

spareparts

- 2) Modification of coverage area
- 3) Change of intake facility
- 4) Change of pipe specification (pressure durability and flow coefficient)
- 5) Size reduction of sedimentation basin
- 6) Change of pipe specification (time coefficient)
- 7) Size reduction of clear water reservoir

- (2) Revised implementation schedule should be shortened as much as possible, considering that present WTP in Pursat has been operated in over capacity. Cambodian side are ready to cooperate with the Team to shorten the schedule.
- (3) Quality of pipe should be maintained even though procurement country would change.
- (4) It could be another option of cost reduction that size of WTP would be much larger considering future demand and pipe length could be further cut, since Cambodian side could lay pipe by themselves.
- (5) Regarding type of intake facility, "rail rolling intake station" could be another option. "Rail rolling intake station" is adopted by private water operators in Kampong Speu and public WTP project in Stung Treng etc. It is better to make comparison between "Pontoon type" proposed by the Team and "rail rolling intake station" to make final decision.
- (6) Sub-contractor should be Cambodian, considering cost and technical transfer.

Regarding comments from Cambodia, Japanese side took note on(1), (3) , (5) and (6). As for (2), Japanese side answered that they would also make best effort to shorten schedule as much as possible. As for (4), Japanese side agreed with the idea to attach importance to WTP rather than pipes, but explained that change of the size of WTP would be difficult due to the reasons below;

- proposed capacity (6,600m³/day) has been decided on demand estimation
- cost of construction of WTP is rather expensive, so the cost for other portion should be cut drastically in order not to change the total cost
- if size of WTP would change, the Team have to start from design, which means it would need more time.

Cambodian side understood the above reasons.

Both sides agreed that items indicated below would be additionally considered to be

reduced, when the Project cost could not be reduced within the target amount after detailed cost estimation in Japan.

(1) Further modification of coverage area (reduction of pipe length)

Japanese side explained that the other items would remain same as both sides agreed on 28th June 2018.

3. Cost estimation

Both sides confirmed that the cost estimation including the contingency explained by the Team is provisional and will be examined further by the Government of Japan for its approval. The contingency would cover the additional cost against natural disaster, unexpected natural conditions, etc.

4. Confidentiality of the cost estimate and technical specifications

Both sides confirmed that the cost estimate and technical specifications of the Project should never be disclosed to any third parties until all the contracts under the Project are concluded.

5. Timeline for the project implementation

The Team explained to the Cambodian side that the expected timeline for the project implementation is as attached in Annex 1.

6. Expected outcomes and indicators

Both sides agreed that key indicators for expected outcomes were as follows in June 2018. However due to design change mentioned above, Japanese side will re-examine the indicators for served population as water supply capacity remains same. Japanese side also mentioned that survey team will make best effort not to reduce served population drastically. Both sides confirmed that qualitative indicators would not change.

[Quantitative indicators]



Indicator	Baseline Data (Year 2016)	Original Target (Year 2025) 【4 years after completion of the new facilities】	Revised Target (Year 2025) 【3 years after completion of the new facilities】
Water Supply Capacity (m ³ /day)	5,464	10,900	10,900
Served Population	38,436	77,800	to be determined

[Qualitative indicators]

- Improving living environment of the residents
- Increasing house connections for the poor household

Annex 1: Project Implementation Schedule (revised)

No.	Item	2017					2018					2019									
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Current OD																				
1	Preparation in Japan																				
2	First Field Survey in Cambodia																				
3	Work in Japan																				
4	Second Field Survey in Cambodia																				
5	Analysis and Cost Estimation in Japan																				
6	Briefing Outline Design to Cambodian Side																				
7	Submission of Preparatory Survey Report																				
8	Key Meetings with Cambodian Side																				
	OD change for cost reduction																				
9	Preparation in Japan																				
10	Discussion with MH & P/r WVs for design change policy																				
11	Work in Japan for preparation of 2nd field survey																				
12	Field Survey for design change in Cambodia																				
13	Analysis and Cost Estimation in Japan																				
14	Briefing Outline Design to Cambodian Side																				
15	Submission of Preparatory Survey Report																				
16	Key Meetings with Cambodian Side																				

Note:  shows the suspension by election in Cambodia, UXO survey and land preparation.  shows current stage.

Annex 1: Project Implementation Schedule (revised)

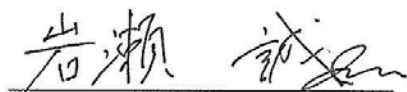
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Minutes of Discussions
on the Preparatory Survey for the Project for
Expansion of Water Supply System in Pursat in the Kingdom of Cambodia
(Explanation on Draft Preparatory Survey Report)

With reference to the minutes of discussions signed between Ministry of Industry & Handicraft (hereinafter referred to as "MIH") and the Japan International Cooperation Agency (hereinafter referred to as "JICA") on 24th August, 2017, on 28th June, 2018 and on 14th February, 2019 and in response to the request from the Government of Kingdom of Cambodia (hereinafter referred to as "Cambodia") dated on 26th June, 2017, JICA dispatched the Preparatory Survey Team (hereinafter referred to as "the Team") for the explanation of Draft Preparatory Survey Report (hereinafter referred to as "the Draft Report") for the Project for Expansion of Water Supply System in Pursat (hereinafter referred to as "the Project").

As a result of the discussions, both sides agreed on the main items described in the attached sheets.

Phnom Penh, September 03, 2019



Mr. Makoto Iwase
Leader
Preparatory Survey Team
Japan International Cooperation Agency



H.E. Oum Sotha
Secretary of State
Ministry of Industry & Handicraft
Kingdom of Cambodia

ATTACHMENT

1. Draft Report and Design Change from 1st Preparatory Survey Report

After the explanation of the contents of the Draft Report by the Team, the both sides agreed to its contents and confirmed the design change from 1st preparatory survey report confirmed in the minutes of discussion on 28th June, 2018 as shown in Annex 1. The final report will be sent to the Cambodian side around December 2019.

Both sides confirmed the project outline as follows:

Intake Facility: 7,260m³/day, Floating pipe with elevated tank for sand basin

Conveyance pipe: Length 8.3km

Water Treatment Plant: 6,600m³/day

Distribution Pipe Length: Length 81.5km

Procurement equipment such as laboratory equipment, service pipe material for poor house holds 257 sets

[Plan of Total Water Supply Capacity and Distribution Pipe Network in Pursat city]

	Year 2018	In the End of Year 2022
Water Supply Capacity (m ³ /day)	5,760	12,360
Distribution Pipe Network (km)	113	194.5

2. Contingency Cost


Both sides reconfirmed that the contingency cost will be included in the project amount. The contingency would cover the additional cost against natural disaster, unexpected natural conditions, etc.

3. Confidentiality of the cost estimate and technical specifications

Both sides reconfirmed that the cost estimate and technical specifications of the Project should never be disclosed to any third parties until all the contracts under the Project are concluded.

4. Procedures and Basic Principles of Japanese Grant

The Cambodian side reagreed that the procedures and basic principles of Japanese Grant as described in Annex 2 shall be applied to the Project. In addition, the

Cambodian side reagreed to take necessary measures according to the procedures.

5. Timeline for the project implementation

The Team explained to the Cambodian side that the expected timeline for the project implementation is as attached in Annex 3. Cambodian side requested Japanese side to shorten the project implementation duration.

6. Expected outcomes and indicators

Both sides agreed that key indicators for expected outcomes are as follows. The Cambodian side will be responsible for the achievement of agreed key indicators targeted in year 2025 utilizing the provided facilities and shall monitor the progress based on those indicators.

[Quantitative indicators]

Indicator	Baseline Data (Year 2018)	Target (Year 2025) 【3 years after completion of the new facilities】
Daily Average Water Supply Amount (m ³ /day)	5,607	11,386
Served Population	37,661	75,033

[Qualitative indicators]

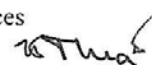
- Improving living environment of the residents
- Increasing house connections for the poor household
- Reduction of water borne disease

7. Ex-Post Evaluation

JICA will conduct ex-post evaluation after three (3) years from the project completion, in principle, with respect to five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact, Sustainability). The result of the evaluation will be publicized. The Cambodian side is required to provide necessary support for the data collection.

8. Technical assistance (“Soft Component” of the Project)

Considering the sustainable operation and maintenance of the products and services

granted through the Project, following technical assistance is planned under the Project. The Cambodian side reconfirmed to deploy necessary number of counterparts who are appropriate and competent in terms of its purpose of the technical assistance as described in the Draft Report.

Soft Component

- Operation and Maintenance of Water Treatment Facilities
- Maintenance of Distribution Facilities
- Production Management

9. Undertakings of the Cambodian Side

Both sides reconfirmed the undertakings of the Cambodian side as described in Annex 4, which would be used as an attachment of G/A.

The Cambodian side reassured to take the necessary measures and coordination including allocation of the necessary budget which are preconditions of implementation of the Project. It is further agreed that the costs are indicative, i.e. at Outline Design level. More accurate costs will be calculated at the Detailed Design stage.

10. Monitoring during the implementation

The Project will be monitored by MIH and reported to JICA by using the form of Project Monitoring Report (PMR) attached as Annex 5. The timing of submission of the PMR is described in Annex 4.

11. Project completion

Both sides confirmed that the Project completes when all the facilities constructed and equipment procured by the Grant are in operation. The completion of the Project will be reported by MIH to JICA promptly, but in any event not later than six months after completion of the Project.


12. Environmental and Social Considerations

Both sides reconfirmed the matters on environmental and social consideration and to take necessary actions for it as follows;

12-1 General Issues

12-1-1 Environmental Guidelines and Environmental Category

The Team explained that 'JICA Guidelines for Environmental and Social



Considerations (April 2010)' (hereinafter referred to as "the Guidelines") is applicable for the Project. The Project is categorized as B because the Project is not located in a sensitive characteristics, nor falls into sensitive sectors under the JICA guidelines for environmental and social considerations (April 2010), and its potential adverse impacts on the environment are not likely to be significant.

12-1-2 Environmental Checklist

The environmental and social considerations including major impacts and mitigation measures for the Project are summarized in the Environmental Checklist attached as Annex 6. Both sides confirmed that in case of major modification of the content of the Environmental Checklist, the Cambodian side shall submit the modified version to JICA in a timely manner.

12-2 Environmental Issues

12-2-1 Initial Environmental Impact Assessment (IEIA)

Both sides confirmed the IEIA report has been approved by Ministry of Environment in March, 2019. Since the project design is modified, MIH will take a necessary action on IEIA by a month after the signing of grant agreement.

12-2-2 Environmental Management Plan and Environmental Monitoring Plan

Both sides confirmed Environmental Management Plan (EMP) and Environmental Monitoring Plan (EMoP) of the Project are as Annex 7 and Annex 8, respectively. Both sides agreed that environmental mitigation measures and monitoring shall be conducted based on the EMP and EMoP, which may be updated during the detailed design stage.

12-3 Social Issues

12-3-1 Land Acquisition

Both sides confirmed the 1.27 ha (0.27 ha for intake facility and 1 ha for water treatment plant) of land has been already acquired by the Cambodian side.

12-4 Environmental and Social Monitoring

12-4-1 Environmental Monitoring

Both sides agreed that the Cambodian side will submit results of environmental monitoring to JICA with PMR by using the monitoring form attached as Annex 8. The timing of submission of the monitoring form is described in Annex 4.

W. Thea

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12-4-2 Social Monitoring

The Cambodian side and the Team agreed that MIH will submit results of social monitoring to JICA with PMR by using the monitoring form attached as Annex 8.

12-4-3 Information Disclosure of Monitoring Results

Both sides confirmed that the Cambodian side will disclose results of environmental and social monitoring to local stakeholders through their website and/or in their field offices.

The Cambodian side agreed JICA will disclose results of environmental and social monitoring submitted by the Cambodian side as the monitoring forms attached as Annex 8 on its website.

13. Other Relevant Issues

13-1. Disclosure of Information

Both sides confirmed that the Preparatory Survey Report from which project cost is excluded will be disclosed to the public after completion of the Preparatory Survey. The comprehensive report including the project cost will be disclosed to the public after all the contracts under the Project are concluded.

13-2. Increasing water service connections

Cambodian side will be expected to connect seven thousand six hundred twenty five (7,625) service connections including poor household, under the Project. Both sides confirmed that it is important to carry out the connections as planned. For smooth implementation, the Cambodian side agreed to increase the construction teams from 2022 to 2025. Expected number of connections for each year is written in (3) - 4 of Annex 4. Both sides also confirmed that facilitating connections also means increasing revenue for provincial waterworks, which is important for sound management of waterworks. Japanese side requested and Cambodian side agreed to take necessary measures for installation of pipe connection for poor households.

13-3. Recruitment of new staff

Considering the sustainable operation and maintenance of the provided new facility, the Cambodian side is requested to recruit twenty-one (21) new staff by 2025. Break down of the new staff are described in Annex 9.

The Cambodian side agreed to secure enough staff and budget for appropriate operation and maintenance of the facilities.



13-4. Access bridges for laying water pipes

The Japanese side mentioned that one (1) access bridges would be built before the laying water pipes under the Project. The Cambodian side explained that building bridges in the sites are required to get permit from each local community, and MIH takes necessary action to get permit for construction of access bridges. The Cambodian side also requested to remain access bridges after the Project for the convenience for local communities and agreed that the Cambodian side has all responsibility of bridges after handing-over.

13-5. Land elevation work at the proposed sites for water treatment plant and intake facility

The Japanese side requested the Cambodian side to work for land elevation at the proposed sites by the tender of the contractor. The required earthwork volume for the land elevation at the site of water treatment plant is 22,740 m³ and at the site of intake facility is 7,030 m³. The Cambodian side agreed on it.

13-6. Land of temporary use for construction

Both sides confirmed that MIH will prepare land of temporary use necessary for construction and storage, and the land should be cleared for UXO.

13-7. Specification of customer meters procured in the Project

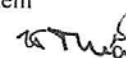
Regarding the request on the specification of customer meter on the minutes of June 28, 2018, the Japanese side explained that the customer meter of impeller type, class C made by Japanese manufacture will be procured.

13-8. Number of flow meters

Regarding the request on the number of flow meters for zoning on the minutes of June 28, 2018, the Japanese side explained that since zoning for water distribution will be conducted by two blocks of the existing block and the new block, two flow meters will be installed in the new block so that the water flow into the blocks can be grasped properly.

13-9 Introducing remote control system for intake facility

Regarding the request on a remote control system in new treatment plant on the minutes of June 28, 2018, the Japanese side explained that a remote control system



for intake facility will be provided to the new water treatment plant, but not for the remote control system for water treatment plant due to the budget limitation. A monitoring system for water treatment plant and distribution network will be installed in water treatment plant.

13-10 Further consideration to prevent from any materials' inflow into intake pipe.

Both sides confirmed that the measure to prevent from any materials' inflow into intake pipe will be considered further in detailed design survey.

13-11 Expansion plan for intake site

Cambodian side requested that intake site usage will be considered for future expansion. Japanese side agreed further discussion will be implemented in the detailed design survey.

Annex 1 Contents of Design Change

Annex 2 Japanese Grant

Annex 3 Project Implementation Schedule

Annex 4 Major Undertakings to be taken by the Government of Cambodia

Annex 5 Project Monitoring Report (template)

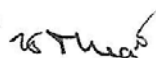
Annex 6 Environmental Check List

Annex 7 Environmental Management Plan/Environmental Monitoring Plan

Annex 8 Environmental and Social Monitoring Form

Annex 9 Organization Chart

Annex 10 Site Map with Project Information



Annex1 Contents of Design Change

Items	Detail Items	Original Design	Design Change
Intake Facilities	Sand Basin	<p>Rectangular reinforced concrete structure with basement room</p> <p>Dimension : B4.90m x L21.90m x H8.20m</p> <p>Water Depth in case of design water level : 6.10m</p> <p>Equipment : Intake gate, Trash bar screen, Crane (1t) for sand drain, Drainage sand pump (5.5kW), pipe laying for intake side and water level meters</p>	<p>Reinforced Concrete <u>Circular Elevated Tank</u></p> <p>Size: Tank Diameter 7.0m</p> <p>Height: 19.7m on GL</p> <p>Depth: 4.0m</p> <p>Equipped facility: Crane (0.5 ton) for Maintenance, Inlet Pipe, Outlet Pipe, Drainage Pipe and Water Gauge</p>
	Intake Pump Station	<p>Rectangular reinforced concrete structure with basement room</p> <p><u>First floor (under beam): B7.50m x L18.00m x H4.00m</u> (measuring between center of walls)</p> <p><u>Basement room (under beam): B7.50m x L10.50m x H6.93m</u> (measuring between center of walls)</p> <p>Equipped facility: incoming panel, control panels, valve control panel, auxiliary machine panel, emergency generator, intake pump (2.52m³/m, 34m, 30kW x 3sets), pipe laying for intake and outlet side, crane (3t) for maintenance and floor drain pumps</p>	<p><u>Floating type intake pipe</u></p> <p>Rectangular reinforced concrete structure with basement room</p> <p><u>First floor (under beam): B7.00m x L14.00m x H3.10m</u> (measuring between center of walls)</p> <p><u>Basement room (under beam): B7.50m x L6.00m x H1.5m</u> (measuring between center of walls)</p> <p>Equipped facility: incoming panel, control panels, valve control panel, auxiliary machine panel, emergency generator, intake pump (5.04m³/m, 34m, 45kW x 2sets), pipe laying for intake and outlet side, crane (3t) for maintenance and floor drain pumps</p>
	Temporary works	<p>Double steel sheet-pile cofferdam</p> <p>IV type sheet-pile: L=15.0m (embedded length:7.3m), total extension: 103.35m</p>	<p>Large size sand bag</p> <p>H=4.0m, L=60m</p>
	Distribution Pipe	<p><u>DCIP : 20.3km</u></p> <p>Straight Pipe: T type, Thrust Blocking: Retainer Gland</p> <p>Diameter : φ450mm L= 5.8km</p>	<p><u>DCIP : 7.3km</u></p> <p>Straight Pipe: T type, Thrust Blocking: Retainer Gland</p> <p>Diameter :φ400mm L= 0.1km</p>

Items	Detail Items	Original Design	Design Change
Distribution Facilities		<p>φ400mm L= 1.6km φ350mm L= 5.5km φ300mm L= 0.8km φ250mm L= 6.6km</p>	<p>φ350mm L= 5.8km φ300mm L= 1.4km</p>
		<p>HDPE : 95.2km Diameter : φ200mm L= 8.9km φ150mm L= 27.5km φ100mm L= 18.6km φ 80mm L= 11.7km φ 50mm L= 28.5km</p>	<p>HDPE : 74.2km Diameter : φ250mm L= 5.4km φ200mm L= 11.2km φ150mm L= 10.3km φ100mm L= 16.5km φ 80mm L= 7.7km φ 50mm L= 23.1km</p>
		<p>Water Main Bridge SP : <u>4 places</u> Diameter : φ200mm 3 places φ 80mm 1 places</p>	<p>Water Main Bridge SP : <u>1 places</u> Diameter : φ 80mm 1 places</p>
		<p>Bridge-piggybacked Water Main SP : <u>49 places</u> Diameter : φ400mm 3 places φ350mm 8 places φ300mm 1 places φ250mm 8 places φ200mm 2 places φ150mm 11 places φ100mm 6 places φ 80mm 9 places φ 50mm 1 places</p>	<p>Bridge-piggybacked Water Main SP : <u>40 places</u> Diameter : φ300mm 3 places φ250mm 4 places φ200mm 8 places φ150mm 10 places φ100mm 6 places φ 80mm 8 places φ 50mm 1 places</p>
Procurement of Equipment	Monitoring equipment of water distribution	<p>Central monitoring station: data receiver, data transmitter, monitoring computer, printer & ancillary equipment</p> <p>Street monitoring station: 5 sites (2 flow meter φ250, data transmitter & ancillary</p>	<p>Central monitoring station: data receiver, data transmitter, monitoring computer, printer & ancillary equipment</p> <p>Monitoring station (inside WTP) : data receiver, monitoring computer, printer & ancillary equipment</p> <p>Street monitoring station: 5 sites (2 flow meter φ250, data transmitter & ancillary equipment / 3 water pressure meters, data transmitter &</p>

Am

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Items	Detail Items	Original Design	Design Change
		equipment / 3 water pressure meters, data transmitter & ancillary equipment)	ancillary equipment)
	Equipment and materials for house connection to poverty households	Water supply pipes, water meters and accessories_ <u>(2,469sets)</u>	Reduce the number <u>(257sets)</u> : only for Poor Level 1)

in

to that

Annex 2

JAPANESE GRANT

The Japanese Grant is non-reimbursable fund provided to a recipient country (hereinafter referred to as "the Recipient") to purchase the products and/or services (engineering services and transportation of the products, etc.) for its economic and social development in accordance with the relevant laws and regulations of Japan. Followings are the basic features of the project grants operated by JICA (hereinafter referred to as "Project Grants").

1. Procedures of Project Grants

Project Grants are conducted through following procedures (See "PROCEDURES OF JAPANESE GRANT" for details):

(1) Preparation

- The Preparatory Survey (hereinafter referred to as "the Survey") conducted by JICA

(2) Appraisal

-Appraisal by the government of Japan (hereinafter referred to as "GOJ") and JICA, and Approval by the Japanese Cabinet

(3) Implementation

Exchange of Notes

-The Notes exchanged between the GOJ and the government of the Recipient

Grant Agreement (hereinafter referred to as "the G/A")

-Agreement concluded between JICA and the Recipient

Banking Arrangement (hereinafter referred to as "the B/A")

-Opening of bank account by the Recipient in a bank in Japan (hereinafter referred to as "the Bank") to receive the grant

Construction works/procurement


-Implementation of the project (hereinafter referred to as "the Project") on the basis of the G/A

(4) Ex-post Monitoring and Evaluation

-Monitoring and evaluation at post-implementation stage

2. Preparatory Survey

(1) Contents of the Survey

The aim of the Survey is to provide basic documents necessary for the appraisal of the the Project made by the GOJ and JICA. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of relevant agencies of the Recipient necessary for the implementation of the Project.
- Evaluation of the feasibility of the Project to be implemented under the Japanese Grant from a technical, financial, social and economic point of view.
- Confirmation of items agreed between both parties concerning the basic concept of the Project.
- Preparation of an outline design of the Project.
- Estimation of costs of the Project.
- Confirmation of Environmental and Social Considerations

The contents of the original request by the Recipient are not necessarily approved in their initial form. The Outline Design of the Project is confirmed based on the guidelines of the Japanese Grant.

JICA requests the Recipient to take measures necessary to achieve its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the executing agency of the Project. Therefore, the contents of the Project are confirmed by all relevant organizations of the Recipient based on the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Survey, JICA contracts with (a) consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

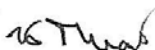
(3) Result of the Survey

JICA reviews the report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the feasibility of the Project.

3. Basic Principles of Project Grants

(1) Implementation Stage

1) The E/N and the G/A



After the Project is approved by the Cabinet of Japan, the Exchange of Notes (hereinafter referred to as "the E/N") will be signed between the GOJ and the Government of the Recipient to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Recipient to define the necessary articles, in accordance with the E/N, to implement the Project, such as conditions of disbursement, responsibilities of the Recipient, and procurement conditions. The terms and conditions generally applicable to the Japanese Grant are stipulated in the "General Terms and Conditions for Japanese Grant (January 2016)."

2) Banking Arrangements (B/A) (See "Financial Flow of Japanese Grant (A/P Type)" for details)

- a) The Recipient shall open an account or shall cause its designated authority to open an account under the name of the Recipient in the Bank, in principle. JICA will disburse the Japanese Grant in Japanese yen for the Recipient to cover the obligations incurred by the Recipient under the verified contracts.
- b) The Japanese Grant will be disbursed when payment requests are submitted by the Bank to JICA under an Authorization to Pay (A/P) issued by the Recipient.

3) Procurement Procedure

The products and/or services necessary for the implementation of the Project shall be procured in accordance with JICA's procurement guidelines as stipulated in the G/A.

4) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the Recipient to continue to work on the Project's implementation after the E/N and G/A.


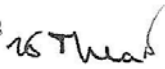
5) Eligible source country

In using the Japanese Grant disbursed by JICA for the purchase of products and/or services, the eligible source countries of such products and/or services shall be Japan and/or the Recipient. The Japanese Grant may be used for the purchase of the products and/or services of a third country as eligible, if necessary, taking into account the quality, competitiveness and economic rationality of products and/or services necessary for achieving the objective of the Project. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm, which enter into contracts with the Recipient, are limited to "Japanese nationals", in principle.

6) Contracts and Concurrence by JICA

The Recipient will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be concurred by JICA in order to be verified as eligible for using the Japanese Grant.

7) Monitoring

The Recipient is required to take their initiative to carefully monitor the progress of the Project in order to ensure its smooth implementation as part of their responsibility in the G/A, and to regularly report to JICA about its status by using the Project Monitoring Report (PMR).

8) Safety Measures

The Recipient must ensure that the safety is highly observed during the implementation of the Project.

9) Construction Quality Control Meeting

Construction Quality Control Meeting (hereinafter referred to as the "Meeting") will be held for quality assurance and smooth implementation of the Works at each stage of the Works. The member of the Meeting will be composed by the Recipient (or executing agency), the Consultant, the Contractor and JICA. The functions of the Meeting are as followings:

- a) Sharing information on the objective, concept and conditions of design from the Contractor, before start of construction.
- b) Discussing the issues affecting the Works such as modification of the design, test, inspection, safety control and the Client's obligation, during of construction.

(2) Ex-post Monitoring and Evaluation Stage

1) After the project completion, JICA will continue to keep in close contact with the Recipient in order to monitor that the outputs of the Project are used and maintained properly to attain its expected outcomes.

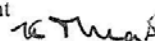
2) In principle, JICA will conduct ex-post evaluation of the Project after three years from the completion. It is required for the Recipient to furnish any necessary information as JICA may reasonably request.

(3) Others

1) Environmental and Social Considerations

The Recipient shall carefully consider environmental and social impacts by the Project and must comply with the environmental regulations of the Recipient and JICA Guidelines for Environmental and Social Considerations (April, 2010).

2) Major undertakings to be taken by the Government of the Recipient



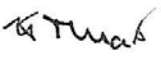

For the smooth and proper implementation of the Project, the Recipient is required to undertake necessary measures including land acquisition, and bear an advising commission of the A/P and payment commissions paid to the Bank as agreed with the GOJ and/or JICA. The Government of the Recipient shall ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the Recipient with respect to the purchase of the Products and/or the Services be exempted or be borne by its designated authority without using the Grant and its accrued interest, since the grant fund comes from the Japanese taxpayers.

3) Proper Use

The Recipient is required to maintain and use properly and effectively the products and/or services under the Project (including the facilities constructed and the equipment purchased), to assign staff necessary for this operation and maintenance and to bear all the expenses other than those covered by the Japanese Grant.

4) Export and Re-export

The products purchased under the Japanese Grant should not be exported or re-exported from the Recipient.



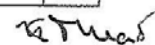
Attachment 1

PROCEDURES OF JAPANESE GRANT

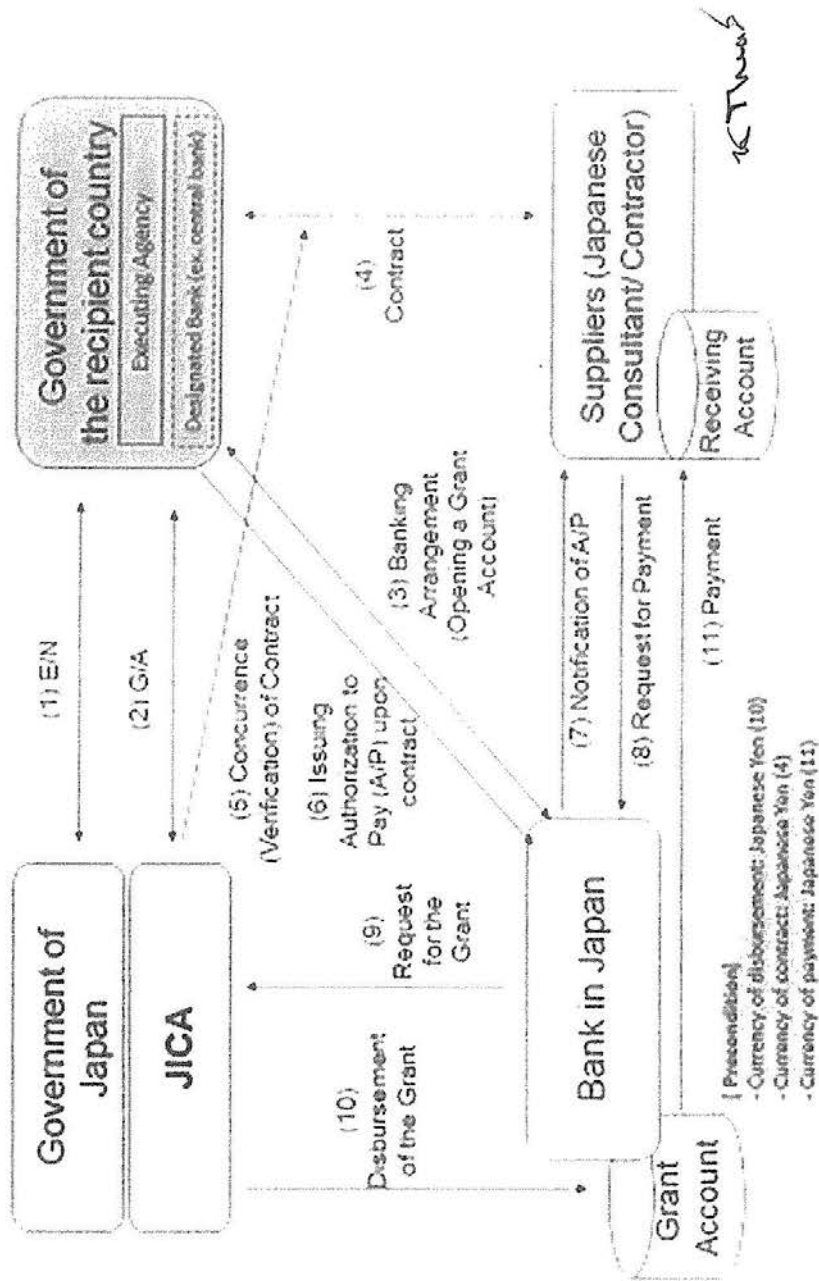
Stage	Procedures	Remarks	Recipient Government	Japanese Government	JICA	Consultants	Contractors	Agent Bank
Official Request	Request for grants through diplomatic channel	Request shall be submitted before appraisal stage	x	x				
1. Preparation	(1) Preparatory Survey Preparation of outline design and cost estimate		x		x	x		
2. Appraisal	(2) Preparatory Survey Explanation of draft outline design, including cost estimate, undertakings, etc.		x		x	x		
	(3) Agreement on conditions for implementation	Conditions will be explained with the draft notes (E/N) and Grant Agreement (G/A) which will be signed before approval by Japanese government	x	x (E/N)	x (G/A)			
	(4) Approval by the Japanese cabinet			x				
3. Implementation	(5) Exchange of Notes (E/N)		x	x				
	(6) Signing of Grant Agreement (G/A)		x		x			
	(7) Banking Arrangement (B/A)	Need to be informed to JICA	x					x
	(8) Contracting with consultant and issuance of Authorization to Pay (A/P)	Concurrence by JICA is required	x			x		x
	(9) Detail design (D/D)		x			x		
	(10) Preparation of bidding documents	Concurrence by JICA is required	x			x		
	(11) Bidding	Concurrence by JICA is required	x			x	x	
	(12) Contracting with contractor/supplier and issuance of A/P	Concurrence by JICA is required	x					x
	(13) Construction works/procurement	Concurrence by JICA is required for major modification of design and amendment of contracts	x			x	x	
(14) Completion certificate		x			x	x		
4. Ex-post monitoring & evaluation	(15) Ex-post monitoring	To be implemented generally after 1, 3, 10 years of completion, subject to change	x		x			
	(16) Ex-post evaluation	To be implemented basically after 3 years of completion	x		x			

notes

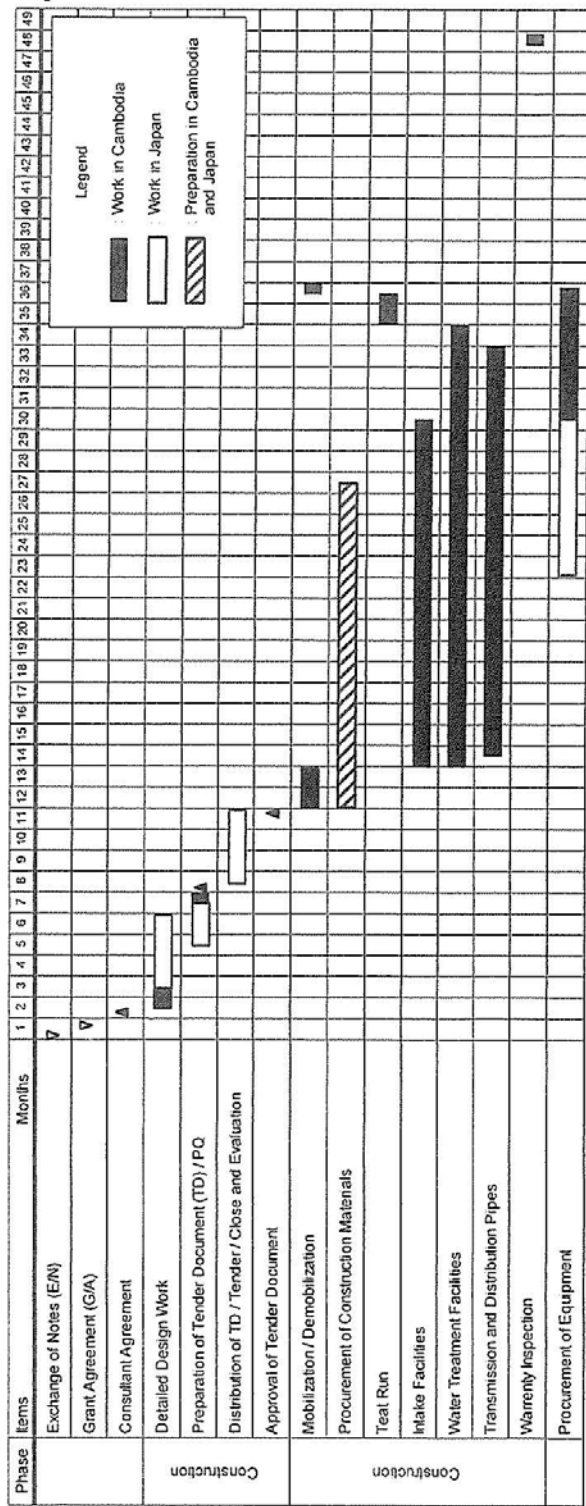
- Project Monitoring Report and Report for Project Completion shall be submitted to JICA as agreed in the G/A.
- Concurrence by JICA is required for allocation of grant for remaining amount and/or contingencies as agreed in the G/A.

Financial Flow of Japanese Grant (A/P Type)



Annex3 Project Implementation Schedule



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Annex 4

Major Undertakings to be taken by the Government of Cambodia

1. Specific obligations of the Government of Cambodia which will not be funded with the Grant

(1) Before the Tender

NO	Items	Deadline	In charge	Estimated Cost	Ref.
1	To open bank account (B/A)	within 1 month after the signing of the G/A	MEF	\$4,463	
2	To issue A/P to a bank in Japan (the Agent Bank) for the payment to the consultant	within 1 month after the signing of the contract(s)	MIH		
3	To approve IEIA (Conditions of approval should be fulfilled, if any) and secure the necessary budget for implementation	within 1 month after the signing of the G/A	MIH		
4	To contract land lease in order to secure the temporary yard	before notice of the bidding document(s)	MIH	\$49,978	
5	To obtain the planning, zoning, building permit	before notice of the bidding document(s)	MIH		
6	To clear, level and reclaim the following sites 1) Embankment at proposed water treatment plant site and intake pump station site 2) To explore landmines and UXO at construction site and temporary yard	before notice of the bidding document(s)	MIH MIH	\$437,305 \$20,527	
7	To submit Project Monitoring Report (with the result of Detail Design)	before preparation of bidding document(s)	MIH		

(2) During the Project Implementation

NO	Items	Deadline	In charge	Estimated Cost	Ref.
1	To issue A/P to a bank in Japan (the Agent Bank) for the payment to the Supplier(s)	within 1 month after the signing of the contract(s)	MIH	\$4,463	
2	To bear the following commissions to a bank in Japan for the banking services based upon the B/A 1) Advising commission of A/P	within 1 month after the signing of the contract(s)	MIH		
	2) Payment commission for A/P	every payment	MEF	\$13,387	
3	To ensure prompt unloading and customs clearance at ports of disembarkation in Cambodia and to assist the Supplier(s) with internal transportation therein	during the Project	MIH		

NO	Items	Deadline	In charge	Estimated Cost	Ref.
4	To accord Japanese physical persons and/or physical persons of third countries whose services may be required in connection with the supply of the products and the services such facilities as may be necessary for their entry into Cambodia and stay therein for the performance of their work	during the Project	MEF		
5	To ensure that customs duties, VAT, internal taxes and other fiscal levies which may be imposed in Cambodia with respect to the purchase of the products and/or the services be exempted by its designated authority without using the Grant;	during the Project	MEF		
6	To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project	during the Project			
7	1) To submit Project Monitoring Report	every month	MIH		
	2) To submit Project Monitoring Report (final)	within one month after signing of Certificate of Completion for the works under the contract(s)	MIH		
8	To submit a report concerning completion of the Project	within six months after completion of the Project	MIH		
9	To get permit for construction of temporary access bridges for laying water pipes and lease necessary land for approach road to the temporary access bridges (if necessary)	1 month before the start of the construction	Local Communities, MIH		
10	To provide facilities for distribution of electricity, water supply and drainage and other incidental facilities necessary for the implementation of the Project outside the site(s)				
	1) Electricity The distributing line to the site	before start of the construction	MIH	\$51,763	
	2) Information System Contracting process of broadband LAN connection for the distribution information system	2 months before completion of the construction	MIH	\$4,463	
11	To take necessary measure for safety construction - traffic control - rope off	during the construction	MIH		
12	To implement EMP and EMoP	during the construction	MIH		
13	To submit results of environmental monitoring to JICA, by using	during the	MIH		

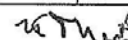
NO	Items	Deadline	In charge	Estimated Cost	Ref.
	the monitoring form, on a quarterly basis as a part of Project Monitoring Report	construction			
14	To obtain permission for occupancy of roads for the pipe laying work	before start of the construction for conveyance, transmission and distribution pipes	MIH (PWW ¹)		
15	To obtain all permissions required for the project implementation such as construction permission for intake facility and water treatment facility	before start of the construction	MIH (PWW)		
16	To recruit new staff members who are necessary for the operation of new system	up to the end of 2025	MIH (PWW)		
17	To establish the construction scheme for the new service pipe connections, including hiring temporary work force. To carry out the technical guidance, budgeting, planning and publicity for enhancing new connections.	up to the end of 2025	MIH (PWW)		
18	To identify poor household (planning households is 257) ²	up to the end of 2025	MIH (PWW)		

(3) After the Project

NO	Items	Deadline	In charge	Estimated Cost	Ref.
1	To implement EMP and EMoP	for a period based on EMP and EMoP	MIH	\$8,925	
2	To submit results of environmental monitoring to JICA, by using the monitoring form, semiannually - The period of environmental monitoring may be extended if any significant negative impacts on the environment are found. The extension of environmental monitoring will be decided based on the agreement between MIH and JICA.	for 3 years after the Project	MIH		
3	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid 1) Allocation of maintenance cost 2) Operation and maintenance structure 3) Routine check/Periodic inspection	after completion of the construction	MIH		

¹ PWW: Provincial Waterworks² Planning household number of 257 is an estimation referable in the section of 2-5-1-1 in the draft final report. At the construction, PWW shall identify the target household.

4	<p>To work for service pipe connection (planned number of households (HHs) is 7,625)</p> <p>The implementation plan is about 1,906 connections per year after completion. (Maximum is 2,112 connections per year). (in 2019: 78HHs, in 2020: 78HHs, in 2021: 79HHs, in 2022: 1,054HHs, in 2023: 2,112HHs, in 2024: 2,112HHs, in 2025: 2,112HHs)</p> <p>1) Establishment of construction scheme including hiring temporary staff for service connection work, providing guidance, budgeting, planning and publicity for enhancing new connections</p> <p>2) Connection for the poor level 1 household (257 HHs) and 40% of poor level 2 household (885 HHs)</p> <p>- Material for poor level 1 is procured by Japanese side, material for 40% of poor level 2 and connection work for poor level 1 and 40% of poor level 2 is conducted by Cambodian side.</p> <p>3) Connection for household without poverty group (6,483households including 60% of poor level 2 HHs)</p> <p>- Material and connection work is under responsibility of Cambodian side. The material and connection cost are born by beneficiaries.</p>	up to the end of 2025	MIH (PWW)	\$65.890	
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Annex 5
G/A NO. XXXXXXXX
PMR prepared on DD/MM/YY

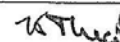
<p><u>Project Monitoring Report</u></p> <p>on</p> <p><u>Project Name</u></p> <p>Chapter 1. <u>Grant Agreement No. XXXXXXXX</u></p> <p>20XX, Month</p>
--

Organizational Information

1) Signer of the G/A (Recipient)	_____ Person in Charge (Designation) _____ _____ Contacts _____ Address: _____ _____ Phone/FAX: _____ _____ Email: _____
Executing Agency	_____ Person in Charge (Designation) _____ _____ Contacts _____ Address: _____ _____ Phone/FAX: _____ _____ Email: _____
Line Ministry	_____ Person in Charge (Designation) _____ _____ Contacts _____ Address: _____ _____ Phone/FAX: _____ _____ Email: _____

General Information:

Project Title	
E/N	Signed date: Duration:
G/A	Signed date: Duration:
Source of Finance	Government of Japan: Not exceeding JPY _____ mil. Government of (_____): _____

G/A NO. XXXXXXXX

PMR prepared on DD/MM/YY

1: Project Description	
-------------------------------	--

1-1 Project Objective

--

1-2 Project Rationale

- Higher-level objectives to which the project contributes (national/regional/sectoral policies and strategies)
- Situation of the target groups to which the project addresses

--

1-3 Indicators for measurement of "Effectiveness"

Quantitative indicators to measure the attainment of project objectives		
Indicators	Original (Yr)	Target (Yr)
Qualitative indicators to measure the attainment of project objectives		

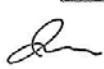
2: Details of the Project

2-1 Location

Components	Original <i>(proposed in the outline design)</i>	Actual
1.		

2-2 Scope of the work

Components	Original* <i>(proposed in the outline design)</i>	Actual*
1.		



is there

G/A NO. XXXXXXXX

PMR prepared on DD/MM/YY

Reasons for modification of scope (if any).

(PMR)

2-3 Implementation Schedule

Items	Original		Actual
	(proposed in the outline design)	(at the time of signing the Grant Agreement)	

Reasons for any changes of the schedule, and their effects on the project (if any)

2-4 Obligations by the Recipient

2-4-1 Progress of Specific Obligations

See Attachment 2.

2-4-2 Activities

See Attachment 3.

2-4-3 Report on RD

See Attachment 11.

2-5 Project Cost

2-5-1 Cost borne by the Grant (Confidential until the Bidding)

Components			Cost (Million Yen)	
	Original (proposed in the outline design)	Actual (in case of any modification)	Original ^{1),2)} (proposed in the outline design)	Actual
	1.			
Total				

Note: 1) Date of estimation:

2) Exchange rate: 1 US Dollar = Yen

2-5-2 Cost borne by the Recipient

Components			Cost (1,000 Taka)	
	Original (proposed in the outline design)	Actual (in case of any)	Original ^{1),2)} (proposed in	Actual

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G/A NO. XXXXXXXX

PMR prepared on DD/MM/YY

		<i>modification)</i>	<i>the outline design)</i>	
	1.			

Note: 1) Date of estimation:
2) Exchange rate: 1 US Dollar =

Reasons for the remarkable gaps between the original and actual cost, and the countermeasures (if any)

(PMR)

2-6 Executing Agency

- Organization's role, financial position, capacity, cost recovery etc,
- Organization Chart including the unit in charge of the implementation and number of employees.

<p>Original (<i>at the time of outline design</i>)</p> <p>name:</p> <p>role:</p> <p>financial situation:</p> <p>institutional and organizational arrangement (organogram):</p> <p>human resources (number and ability of staff):</p>
<p>Actual (PMR)</p>

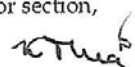
2-7 Environmental and Social Impacts

- The results of environmental monitoring based on Attachment 5 (in accordance with Schedule 4 of the Grant Agreement).
- The results of social monitoring based on in Attachment 5 (in accordance with Schedule 4 of the Grant Agreement).
- Disclosed information related to results of environmental and social monitoring to local stakeholders (whenever applicable).

3: Operation and Maintenance (O&M)

3-1 Physical Arrangement

- Plan for O&M (number and skills of the staff in the responsible division or section, availability of manuals and guidelines, availability of spareparts, etc.)

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PMR prepared on DD/MM/YY

Original (at the time of outline design)
Actual (PMR)

3-2 Budgetary Arrangement

- Required O&M cost and actual budget allocation for O&M

Original (at the time of outline design)
Actual (PMR)

4: Potential Risks and Mitigation Measures

- Potential risks which may affect the project implementation, attainment of objectives, sustainability
- Mitigation measures corresponding to the potential risks

Assessment of Potential Risks (at the time of outline design)

Potential Risks	Assessment
1. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
2. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
Contingency Plan (if applicable):	

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G/A NO. XXXXXXXX

PMR prepared on DD/MM/YY

3. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
	Contingency Plan (if applicable):
Actual Situation and Countermeasures	
(PMR)	

5: Evaluation and Monitoring Plan (after the work completion)

5-1 Overall evaluation

Please describe your overall evaluation on the project.

5-2 Lessons Learnt and Recommendations

Please raise any lessons learned from the project experience, which might be valuable for the future assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability.

5-3 Monitoring Plan of the Indicators for Post-Evaluation

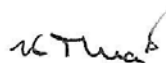
Please describe monitoring methods, section(s)/ department(s) in charge of monitoring, frequency, the term to monitor the indicators stipulated in 1-3.

G/A NO. XXXXXXXX

PMR prepared on DD/MM/YY

Attachment

1. Project Location Map
2. Specific obligations of the Recipient which will not be funded with the Grant
3. Monthly Report submitted by the Consultant
- Appendix - Photocopy of Contractor's Progress Report (if any)
 - Consultant Member List
 - Contractor's Main Staff List
4. Check list for the Contract (including Record of Amendment of the Contract/Agreement and Schedule of Payment)
5. Environmental Monitoring Form / Social Monitoring Form
6. Monitoring sheet on price of specified materials (Quarterly)
7. Report on Proportion of Procurement (Recipient Country, Japan and Third Countries) (PMR (final)only)
8. Pictures (by JPEG style by CD-R) (PMR (final)only)
9. Equipment List (PMR (final)only)
10. Drawing (PMR (final)only)
11. Report on RD (After project)



Attachment 6

Monitoring sheet on price of specified materials

1. Initial Conditions (Confirmed)

Items of Specified Materials	Initial Volume A	Initial Unit Price (¥) B	Initial total Price C=A×B	1% of Contract Price D	Condition of payment Price (Decreased) E=C-D	Price (Increased) F=C+D
Item 1	●●t	●	●	●	●	●
Item 2	●●t	●	●	●		
Item 3						
Item 4						
Item 5						

2. Monitoring of the Unit Price of Specified Materials

(1) Method of Monitoring : ●●

(2) Result of the Monitoring Survey on Unit Price for each specified materials

Items of Specified Materials	1st month, 2015	2nd month, 2015	3rd month, 2015	4th	5th	6th
Item 1	●	●	●			
Item 2						
Item 3						
Item 4						
Item 5						

(3) Summary of Discussion with Contractor (if necessary)

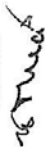
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Attachment 6

Report on Proportion of Procurement (Recipient Country, Japan and Third Countries)
(Actual Expenditure by Construction and Equipment each)

	Domestic Procurement (Recipient Country) A	Foreign Procurement (Japan) B	Foreign Procurement (Third Countries) C	Total D
Construction Cost	(A/D%)	(B/D%)	(C/D%)	
Direct Construction Cost	(A/D%)	(B/D%)	(C/D%)	
others	(A/D%)	(B/D%)	(C/D%)	
Equipment Cost	(A/D%)	(B/D%)	(C/D%)	
Design and Supervision Cost	(A/D%)	(B/D%)	(C/D%)	
Total	(A/D%)	(B/D%)	(C/D%)	

Annex6 Environmental Check List

Category	Environmental Item	Main Check Items	Yes: Y No: N	Specific Environmental and Social Considerations (Reason for Yes or No, rationale, mitigation measures, etc.)
1 Approvals, explanations	(1) EIA and Environmental Permits	(a) Have EIA reports been already prepared in official process? (b) Have EIA reports been approved by authorities of the host country's government? (c) Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied? (d) In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	(a) Y (b) Y (c) Y (d) Y	(a) IEIA is required. Preparation is in the process. It will be submitted in May 2018. (b) It will be approved after submission. (c) MOE will give all consents at approval of IEIA. (d) MIH obtained the permission of water extraction from Pursat River by MOWRAM.
	(2) Explanation to the Local Stakeholders	(a) Have contents of the project and the potential impacts been adequately explained to the Local stakeholders based on appropriate procedures, including information disclosure? Is understanding obtained from the Local stakeholders? (b) Have the comment from the stakeholders (such as local residents) been reflected to the project design?	(a) Y (b) N	(a) All related departments of city hall understood the project purpose and contents, and they agreed on the implementation. At the public hearing, the villagers welcomed the project. They wished for the affordable price setting of connection and assistance to poor. There is no particular objection. (b) Disturbance on traffic was suspected, it will be solved by the setting of detour and information sharing of construction program.
	(3) Examination of Alternatives	(a) Have multiple alternative plans for the Project been analyzed? (Including analysis of items related to the environment/society.)	(a) Y	(a) Alternatives have been examined for the site selection of intake and WTP, and extent of the supply area.
2 Pollution Measures	(1) Air Quality	(a) Is there a possibility that chlorine from chlorine storage facilities and chlorine injection facilities will cause air pollution? Are any mitigating measures taken? (b) Do chlorine concentrations within the working environments comply with the country's occupational health and safety standards?	(a) N (b) Y	(a) The Project plans to use breaching power for disinfection. This reagent is stable, and occurrence of air pollution is considered less. The exhaust fan will be situated at the facilities of disinfection. (b) The above measures serve to keep appropriate working condition.

Category	Environmental Item	Main Check Items	Yes: Y No : N	Specific Environmental and Social Considerations (Reason for Yes or No, rationale, mitigation measures, etc.)
	(2) Water Quality	(a) Do pollutants, such as SS, BOD, COD contained in effluents discharged by the facility operations comply with the country's effluent standards?	(a) N/A	Discharge generated at the treatment process will be recycled, and sludge will be dried. Therefore, any effluent from treatment process will not be generated without emergency case. Sewage will be treated by septic tanks and clear upper portion will be infiltrated into ground. Therefore, the discharge water is not generated.
	(3) Wastes	(a) Are wastes, such as sludge generated by the facility operations properly treated and disposed in accordance with the country's regulations?	(a) Y	(a) Sludge will be treated and dried at dry-bed, then dumped to the dumping yard prepared by the PWW.
	(4) Noise and vibration	(a) Do noise and vibrations generated from the facilities, such as pumping stations comply with the country's standards?	(a) Y	(a) The pump will be installed at basement made by the RC with the noise reducing walls. The noise will be controlled within the limit of RGC requirement. There is no standards of vibration, but it is controlled in permissible limit by the above measures.
	(5) Subsidence	(a) In the case of extraction of a large volume of groundwater, is there a possibility that the extraction of groundwater will cause subsidence?	(a) N	(a) The Project does not use groundwater.
	3 Natural Environment	(1) Protected areas	(a) Is the project site or discharge area located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas?	(a) N
(2) Ecosystems		(a) Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)? (b) Does the project site or discharge area encompass the protected habitats of endangered species designated by the	(a) N (b) N (c) N (d) N	(a) The site does not contain any virgin forests, tropical old-growth forests, or important ecological habitats. (b) No habitats for any rare species are present in the site.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Specific Environmental and Social Considerations (Reason for Yes or No, rationale, mitigation measures, etc.)
		country's laws or international treaties and conventions? (c) If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem? (d) Is there a possibility that the amount of water used (e.g., surface water, groundwater) by project will adversely affect aquatic environments, such as rivers? Are adequate measures taken to reduce the impacts on aquatic environments, such as aquatic organisms?		(c) No major concerns. (d) No major concerns
	(3) Hydrology	(a) Is there a possibility that the amount of water used (e.g., surface water, groundwater) by the project will adversely affect surface water and groundwater flows?	(a) N	(a) At the time of serious draught, the Pursat River had enough discharge to cover the intake amount for the project. Therefore, the hydrological impact is not significant.
4.Social Environment	(1) Resettlement	(a) Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement? (b) Is adequate explanation on compensation and resettlement assistance given to affected people prior to resettlement? (c) Is the resettlement plan, including compensation with full replacement costs, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement? (d) Is the compensation going to be paid prior to the resettlement? (e) Are the compensation policies prepared in document? (f) Does the resettlement plan pay particular attention to vulnerable groups or people, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples? (g) Are agreements with the affected people obtained prior to resettlement? (h) Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan? (i) Are any plans developed to monitor the	(a)N (b) N/A (c) N/A (d) N/A (e) N/A (f) N/A (g) N/A (h) N/A (i) N/A (j) N/A	(a) There will be no involuntary settlement, meaning that questions (b)-(j) are not applicable.

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Category	Environmental Item	Main Check Items	Yes: Y No : N	Specific Environmental and Social Considerations (Reason for Yes or No, rationale, mitigation measures, etc.)
		impacts of resettlement? (j) Is the grievance redress mechanism established?		
	(2) Living and Livelihood	(a) Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary? (b) Is there a possibility that the amount of water used (e.g., surface water, groundwater) by the project will adversely affect the existing water uses and water area uses?	(a) N (b) N	(a) The project has positive impact to improve basic human needs. There is no particular negative impact. (b) The Pursat River has enough discharge capacity and the intake of water supply does not affect significantly.
	(3) Heritage	(a) Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage? Are adequate measures considered to protect these sites in accordance with the country's laws?	(a) N	(a) No anthropological, historical, cultural, religiously important heritages or historical remains have been identified in the project site.
	(4) Landscape	(a) Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	(a) N	(a) The building location is in paddy field and residents are rare in the vicinity, therefore the impact on landscape is not significant.
	(5) Ethnic Minorities and Indigenous Peoples	(a) Are considerations given to reduce impacts on the culture and lifestyle of ethnic minorities and indigenous peoples? (b) Are all of the rights of ethnic minorities and indigenous peoples in relation to land and resources respected?	(a) N/A (b) N/A	(a)(b) There are no ethnic minorities or indigenous peoples living near the project site.
	(6) Working Conditions	(a) Is the project proponent not violating any laws and ordinances associated with the	(a) Y (b) Y	(a) Adherence to laws concerning working

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Category	Environmental Item	Main Check Items	Yes: Y No : N	Specific Environmental and Social Considerations (Reason for Yes or No, rationale, mitigation measures, etc.)
		<p>working conditions of the country which the project proponent should observe in the project?</p> <p>(b) Are tangible safety considerations in place for individuals involved in the project, such as the installation of safety equipment which prevents industrial accidents, and management of hazardous materials?</p> <p>(c) Are intangible measures being planned and implemented for individuals involved in the project, such as the establishment of a safety and health program, and safety training (including traffic safety and public health) for workers etc.?</p> <p>(d) Are appropriate measures taken to ensure that security guards involved in the project not to violate safety of other individuals involved, or local residents?</p>	<p>(c) Y (d) Y</p>	<p>conditions will be made explicit in contracts with contractors and managed.</p> <p>(b) Countermeasures such as installation of safety handrail are taken.</p> <p>(c) It will be achieved to set as an obligation of contractor in contract document.</p> <p>(d) Security guards will be included in target members of worker training.</p>
5 Others	(1) Impacts during Construction	<p>(a) Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)?</p> <p>(b) If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts?</p> <p>(c) If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts?</p> <p>(d) If the construction activities might cause traffic congestion, are adequate measures considered to reduce such impacts?</p>	<p>(a) Y (b)N (c) Y (d)N</p>	<p>(a) Mitigation measures will be taken under EPM for managing all noise, vibration, turbid water, dust, gas emissions, and waste discharged from the work site.</p> <p>(b) Particular negative impact is not expected.</p> <p>(c) Temporary traffic disturbance will occur. The negative effect will be minimized by the measures such as setting of detour, assignment of traffic guide, installation of signboard, appropriate information sharing.</p> <p>(d) This is an expansion of the water supply and construction site is out of the city center. Therefore, serious traffic congestion is not expected.</p>

Category	Environmental Item	Main Check Items	Yes: Y No : N	Specific Environmental and Social Considerations (Reason for Yes or No, rationale, mitigation measures, etc.)
	(2) Monitoring	(a) Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts? (b) What are the items, methods and frequencies of the monitoring program? (c) Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)? (d) Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?	(a) Y (b) Y (c) Y (d) Y	(a) MIH is responsible for the monitoring as in previous similar project which they are experienced. (b) It will be determined in EMoP. (c) Monitoring by proponent is a part of usual operation activities. The training will be given as a part of soft component. (d) It is stipulated in the EMP.
6 Focal points	Reference to Checklist of Other Sectors	(a) Where necessary, pertinent items described in the Dam and River Projects checklist should also be checked.	(a) N	(a) The intake amount is not much, and the intake structure is small scale at the upper flow of existing headwork. Therefore, it is not necessary to refer the checklist of Dam and River Projects
	Precautions when using the environmental checklist	(a) If necessary, the impacts to transboundary or global issues should be confirmed (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, or global warming).	(a) N	(a) None

Annex7 Environmental Management Plan / Environmental Monitoring Plan

Impact	Parameter	Monitoring Method	Monitoring Point	Frequency	Responsibility
Construction					
Air Pollution	Dust	Visual observation	Vicinity of construction site	Daily	Contractor
	Exhaust gas	Inspection of registered vehicle	Construction Office	Monthly	Contractor
Noise and vibration	Working time	Working record	Construction site	Daily during construction	Contractor
	Management of vehicles	Inspection of registered vehicles	Construction Office	Monthly	Contractor
	Guidance to operator	Training record	Construction Office	Once during construction	Contractor
Water Pollution and sediment	Turbidity, oil	Visual inspection	Inlet of discharge	Weekly but daily during construction of foundation	Contractor
	Water quality	pH, EC, BOD, turbidity, oil	Inlet of discharge	When abnormal incident is observed	Contractor
Solid Waste (domestic)	Proper management	Visual inspection	Domestic waste	Weekly	Contractor
Solid Waste (Construction)	Proper dumping	Visual inspection	Temporary dumping yard	At the time of dumping	Contractor
	Preparation of dumping site	Contract document	Dumping site for soil waste	At the time of contract	PWW, MIH
Ecosystem	Ban of hunting and fishing	Training record	Construction Office	Monthly	Contractor
Hydrology	Construction schedule in rainy season	Monthly construction report	Construction Office	Monthly during rainy season	Contractor
Land and local resource usage	Lease of land	Contract document	Construction Office	At the time of contract of lease	PWW, MIH
Existing social infrastructure and services	Mitigation measures to prevent traffic disturbance	Monthly construction report	Construction Office	Monthly	Contractor
HIV/AIDS and other infectious disease	Management of occupational safety and hygiene	Monthly construction report	Construction Office	Monthly	Contractor
Working condition	Management of occupational safety and hygiene	Monthly construction report	Construction Office	Monthly	Contractor
Accident	Traffic plan of construction vehicle	Plan	Construction Office	At planning	Contractor
	Safety training	Monthly construction report	Construction Office	Monthly	Contractor

Impact	Parameter	Monitoring Method	Monitoring Point	Frequency	Responsibility
Miscellaneous	Complaint management	Analysis of complaint	Construction Office	Monthly	Contractor
Operation					
Waste	Appropriate treatment of sludge	Monitoring record	WTP	Every three months	PWW
	Preparation of dumping site for sludge	Contract document	PWW	At the time of contract	PWW
Water quality	Water quality (pH, EC, BOD, Turbidity, Grease and oil)	Laboratory test	Outlet of discharge	Only case of emergent discharge	PWW
Noise and vibration	Monitoring with standard operating procedure (SOP)	SOP and monitoring record	Pumping station	Every three months	PWW
	Guidance for operators	Training record	Pumping station	Every three months	PWW

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Annex8 Environmental and Social Monitoring Form

Monitoring Form (Construction)

Construction site (Daily monitoring)

Monitoring Item	Procedure	Result	Measures to be taken	Reference standard	Frequency	
Dust	Visual inspection			Acceptable or not	Daily	
Noise	Sensory inspection			Acceptable or not	Daily	
	Operation time check			Stated operation time in EMP	Daily	
Water Quality (turbidity, oil)	Visual inspection			Acceptable or not	Daily (during foundation work)	
Water Quality	Laboratory test			5 - 7	Determined by the monitoring result	In case of abnormal observation of turbidity or oil
				80		
				10		
				250		

Construction site (Weekly monitoring)

Monitoring Item	Procedure	Result	Measures to be taken	Reference standard	Frequency
Waste (Domestic)	Patrol			Acceptable or not	Weekly

Construction site (Monthly monitoring)

Monitoring Item	Procedure	Result	Measures to be taken	Reference standard	Frequency
Condition of construction machinery and vehicles	Maintenance record check			Acceptable or not (Exhaust gas, noise, vibration, and usual safety check)	
Traffic management	Patrol			Stated procedure in EMP	Monthly
Accident	Patrol			Acceptable or not	Monthly
Training and educational meeting to worker	Report check			Stated procedure in EMP (frequency, contents, target, etc.)	
Claim and comment	Report check			Acceptable or not	Monthly

Others

Monitoring Item	Procedure	Result	Measures to be taken	Reference standard	Frequency
Land for waste dumping Land for temporary use	Lease condition			Appropriate or not	Contract of lease
Plan of safety transportation	Plan check			Acceptable or not	At planning

Source: JICA Survey Team

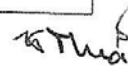
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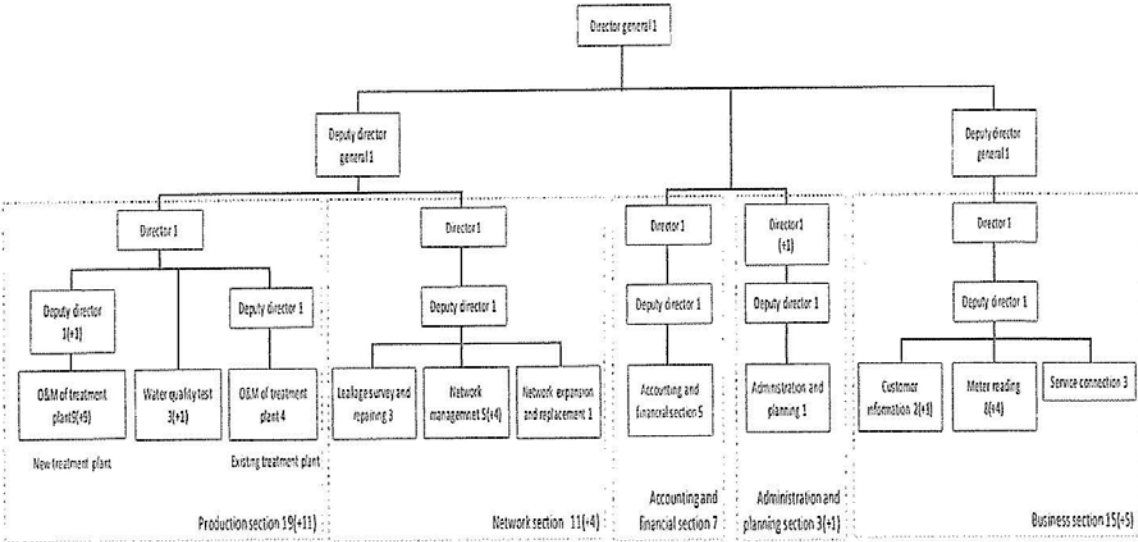
Monitoring Form (Operation)

Monitoring Item	Procedure	Result	Measures to be taken	Reference standard	Frequency
Waste (treatment sludge)	Patrol			Appropriate or not	Monthly
Water quality	Laboratory test			Appropriate or not	Only case of emergent discharge
Land for waste dumping	Procedure check			Appropriate or not	At contract agreement
Noise and vibration*	Patrol and maintenance			Normal condition or not	Daily

*Noise and vibration of pump shall be checked in an operation record every day

Annex9 Organization Chart of Pursat Waterworks



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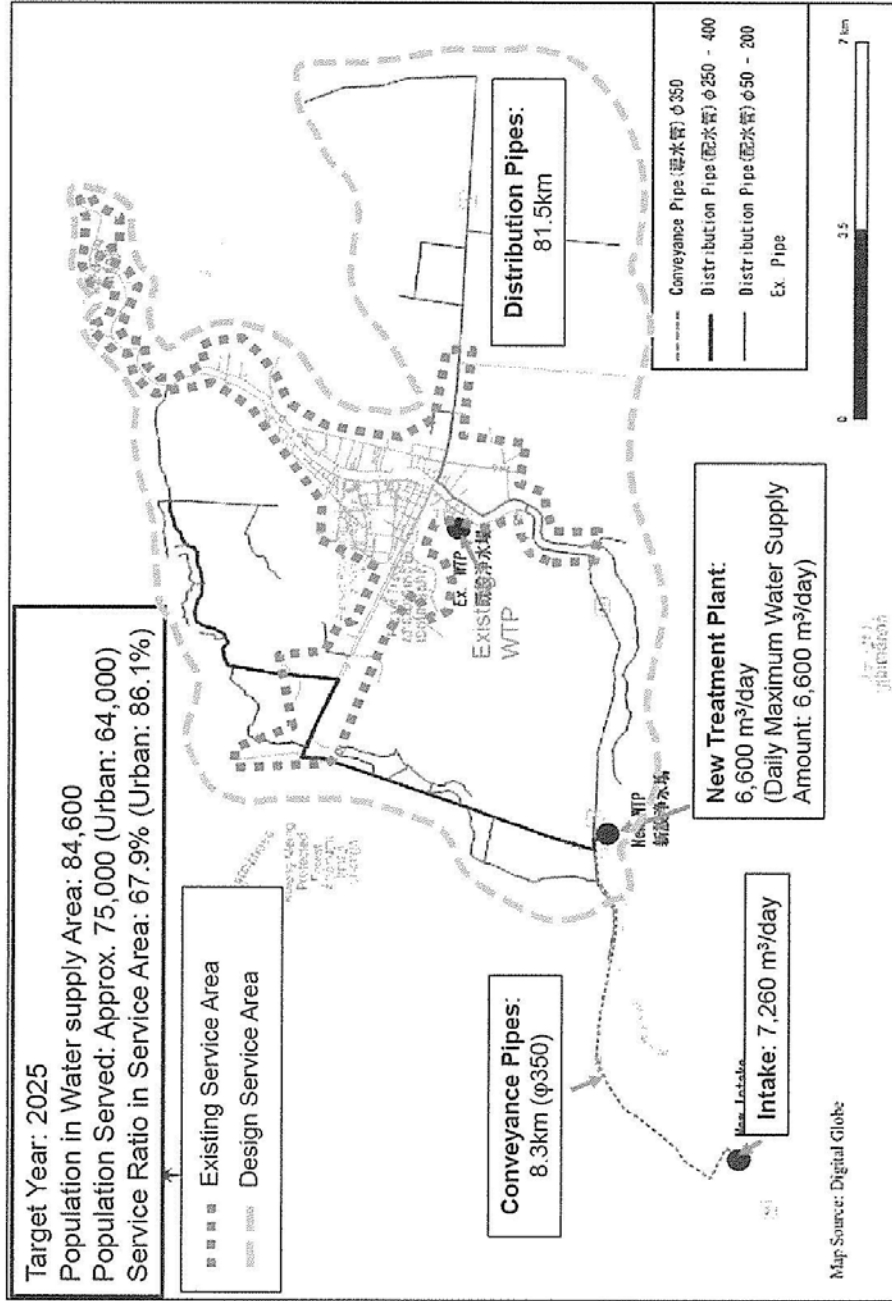
*Highlighted sections/positions are expected to increase the number of staff.

**Proposed increased number of staff is noted in brackets.

[Signature]

Annex 10 Map with Project Information

General Description of the Project



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