

RECORD OF DISCUSSIONS

FOR

THE PROJECT FOR
WATER SUPPLY MASTER PLAN FOR CITY OF KIGALI

AGREED UPON BETWEEN

WATER AND SANITATION CORPORATION

OF

THE REPUBLIC OF RWANDA

AND

JAPAN INTERNATIONAL COOPERATION AGENCY

Dated 5 December 2017

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In response to the official request of the Government of the Republic of Rwanda to the Government of Japan, the Japan International Cooperation Agency (hereinafter referred to as "JICA") held a series of discussions with Water and Sanitation Corporation of the Republic of Rwanda (hereinafter referred to as "the Counterpart") and relevant organizations to develop a detailed plan of the Project for Water Supply Master Plan for City of Kigali (hereinafter referred to as "the Project").

The purpose of this record of discussions (hereinafter referred to as "the R/D") is to establish a mutual agreement for its implementation by both parties and to agree on the detailed plan of the Project as described in the followings and the Annexes, which will be implemented within the framework of the Agreement on Technical Cooperation signed on 14th January 2005 (hereinafter referred to as "the Agreement") and the Note Verbales exchanged on 20th September 2017 between the Government of Japan and the Government of the Republic of Rwanda.

The Counterpart will be responsible for the implementation of the Project in cooperation with JICA, coordinate with other relevant organizations and ensure that the self-reliant operation of the Project is sustained during and after the implementation period in order to contribute toward social and economic development of the Republic of Rwanda.

Both parties also agreed that the Project will be implemented in accordance with the "Basic Principles for Technical Cooperation" published in December 2016 (hereinafter referred to as "the BP"), unless other arrangements are agreed in the R/D.

The R/D is delivered at Kigali as of the day and year first above written. The R/D may be amended by a minutes of meetings between both parties, except the plan of operation to be modified in monitoring sheets. The minutes of meetings will be signed by authorized persons of each side who may be different from the signers of the R/D.

For

JAPAN INTERNATIONAL
COOPERATION AGENCY

For

永瀬朝

Hiroyuki TAKADA

Chief Representative
Japan International Cooperation
Agency Rwanda Office
Japan



For

WATER AND SANITATION
CORPORATION

Handwritten signature of Eng. Aimé MUZOLA in blue ink.

Eng. Aimé MUZOLA

Chief Executive Officer
Water and Sanitation Corporation
The Republic of Rwanda



- Annex 1 Main Points Discussed
- Annex 2 Project Description
- Annex 3 Implementation Structure
- Annex 4 List of Proposed Members of Joint Coordinating Committee
- Annex 5 Tentative Schedule
- Annex 6 Minutes of Meeting Signed on 9th November 2017
- Annex 7 Provisional Terms of Reference for Environmental and Social Considerations

MAIN POINTS DISCUSSED

1. Background

The Sustainable Development Goals (SDGs), in particular Goal 6, set 2030 as the target timeframe to achieve universal and equitable access to safe and affordable drinking water for all. Rwanda has made significant efforts to increase water coverage over the past years and remains committed to 100% coverage by 2020. Even after 2020, it seems that Rwanda would continue to challenge to increase universal and equitable access to safe and affordable drinking water for the people aiming at achieving SDGs.

The population of Rwanda is around 12.4 million (2015), and 28.8% of it concentrates in the urban areas (WHO/UNICEF Joint Monitoring Programme). It is anticipated that the population of City of Kigali will increase rapidly from around 1.13 million in 2012 to 4.3 million in 2040 due to large migration from rural areas (Kigali City Master Plan 2013. Population projection growth scenario: Medium). In addition, seven sectors surrounding City of Kigali, i.e. Shyorongi, Runda, Rugarika, Ntarama, Muyumbu, Gahengeri, Nyakaliro, are being developed rapidly as mainly residential purpose because of more land availability with lower cost compared to those in City of Kigali.

According to the Fourth Integrated Household Living Conditions Survey (EICV4, 2013/14) in Rwanda, the coverage of water supply in City of Kigali is 85%. However, the water supply service cannot meet the demand by the rapid-growing population in City of Kigali and adjacent seven sectors, and its quality has not reached satisfactory level yet.

For example, in City of Kigali, insufficient water production and large volume of water leakage cause restriction of the water supply. The quality of water resources creates an adverse impact on the water production due to high turbidity. The average duration of water supply is eight hours per day. It is estimated that the non-revenue water (NRW) ratio is 25 to 38% (2015) in City of Kigali.

WASAC has developed the water supply facilities, such as three main water treatment plants, total of 4,150 km water pipes, etc. However, they do not work efficiently. One of the geographic features of City of Kigali is large difference in elevation. The existing facilities were planned without well-consideration about the difference in elevation and usage of gravity in water supply. As a result, WASAC cannot manage water distribution pressure well. Operation of some water reservoirs is unstable and water cannot reach some areas in City of Kigali. In addition, the water supply in City of Kigali was developed without a comprehensive water supply plan and design criteria, so the current water supply facilities have shaped too complicated networks which cause difficulty in the operation and maintenance. There is also a concern that City of Kigali may face a lack of water resources due to the rapid increase of water demand in near future.

Under the circumstances, in order to meet the rapid increase of water demand in City of Kigali, it is indispensable for WASAC to have one comprehensive master plan for the improvement of the existing water supply

facilities and new facilities under more efficient and effective manner. Therefore, WASAC officially requested JICA to support to develop the Water Supply Master Plan for City of Kigali and the seven adjacent sectors (hereinafter referred to as "Water Supply MP").

2. Project Description

Both sides agreed with the project description attached as Annex 2.

3. Counterpart Organization and Relevant Organization

- Counterpart Organization: Water and Sanitation Corporation (WASAC) (responsible section is Urban Water and Sanitation Services (UWSS)) including six branches of WASAC in City of Kigali, i.e. Kacyiru, Nyamirambo, Remera, Gikondo, Kanombe, Nyarugenge Branch
- Line Ministry of Counterpart Organization: Ministry of Infrastructure (MININFRA)
- Relevant Organization: Rwanda Water and Forest Authority, Rwanda Transport Development Agency, Rwanda Energy Group, Rwanda Utilities Regulatory Authority, City of Kigali, Rulindo District, Kamonyi District, Bugesera District, Rwamagana District

4. Major Points of Concern in the Project

(1) Water Supply Master Plan for City of Kigali

The Project will produce Water Supply MP which consists of the Master Scenario until 2050 and the 15-Year Investment Plan.

The Master Scenario consists of, aiming at meeting the water demand until 2050, the most appropriate plan about water resource utilization (increase of water intake from existing water resources and/or development of new intake from new water resources) and a plan of water treatment plant, water transmission from the water resources up to water distribution areas in the project site.

The 15-Year Investment Plan includes a water facility plan, plan about water distribution areas and major water distribution blocks, operation maintenance plan, implementation plan including a list of necessary projects, cost estimation and budgeting plan, etc. Contents of each necessary project are considered to the extent which can lead to indicative cost estimation.

The more details of the Master Scenario, the 15-Year Investment Plan, and the Water Supply MP are described in Annex 2.

(2) Feasibility Study about Prioritized Projects

Among the list of necessary projects proposed in the 15-Year Investment Plan, two prioritized projects will be selected. Feasibility study (F/S) will be conducted about them. Contents of F/S are equivalent to those produced in a preparatory survey for a JICA's loan project.

(3) Survey on Existing Water Pipes

The Project will survey the water pipes in the project site to identify their situation by referring to the WASAC's GIS database and site surveys. The information of water pipes needs to be enough for planning of improvement and/or repair of existing pipes and water distribution areas. The Project will

not update the WASAC's GIS database.

(4) Water Distribution Areas and Water Distribution Blocks

Aiming at achieving efficient water distribution and appropriate water pressure management, the Project will consider re-arrangement of water distribution areas in the project site. The project site will be divided into several water distribution areas, e.g. water distribution area for high elevation, one for middle elevation, one for low elevation, etc., taking consideration of local water demands, geographic conditions, locations of water resources and water treatment plants, etc.

In addition, the Project will consider a plan to divide the water distribution areas into some water distribution blocks based on elevation, area of water supply service, etc. The water distribution blocks will be proposed in some major and important areas, not in the all project site.

(5) Increase of Intake from Existing Water Resources and/or Development of New Intake from New Water Resources

The Project will plan increase of intake from current water resources, i.e. Nyabarongo River, Yanze River and Mugesera Lake, and/or development of new intake from new water resources to meet the water demand until 2050. Targets of water resources include surface water as well as groundwater. In terms of groundwater, the Project will survey the Nyabarongo River floodplain, mainly around Kanzenze and Nzove areas. If needed, however, the survey in other areas will be conducted. In the consideration, necessary field measurement about river water flow, pumping discharge of wells, etc. will be conducted.

(6) National Water Supply and Sanitation Master Plan by African Development Bank

WASAC will start the Project for National Water Supply and Sanitation Master Plan from March 2018 through the support from the African Development Bank. WASAC plans to combine the Water Supply MP and the National Water Supply and Sanitation Master Plan into one comprehensive national master plan.

The Project will share necessary data, information, progress of study, etc. with the Project for National Water Supply and Sanitation Master Plan. On the other hand, it is WASAC's responsibility to keep consistency between the two master plans. Thus, WASAC will do necessary coordination between the two projects.

5. Environmental and Social Considerations

With regard to the Section 10.1 of the BP, since the Project is categorized as "B" under the "JICA Guidelines for Environmental and Social Considerations (April 2010)" (hereinafter referred to as "the Guidelines"), the necessary procedures are taken in accordance with the Guidelines.

The Project conducts Strategic Environmental Assessment (hereinafter referred to as "SEA") in accordance with the Guidelines. SEA includes impact prediction and assessment of the Water Supply MP at Initial Environmental Examination (IEE) level, stakeholder meetings, and assessment of several

alternatives. Regarding the prioritized projects, necessary environmental and social considerations are conducted in their F/S based on regulations in Rwanda as well as the Guidelines.

Provisional terms of reference for the environmental and social considerations is described in Annex 7.



PROJECT DESCRIPTION

(1) Title of the Project

The Project for Water Supply Master Plan for City of Kigali.

(2) Expected Goals which will be Attained after Implementing the Proposed Plan
To provide safe and affordable drinking water in City of Kigali and seven adjacent sectors, i.e. Shyorongi, Runda, Rugarika, Ntarama, Muyumbu, Gahengeri, and Nyakaliro.

(3) Project Site

City of Kigali and seven adjacent sectors, i.e. Shyorongi, Runda, Rugarika, Ntarama, Muyumbu, Gahengeri, and Nyakaliro.

(4) Duration

Two (2) years from arrival of the first JICA Missions

- One and half (1.5) years for development of Water Supply Master Plan for City of Kigali, and
- Half (0.5) year for feasibility study about prioritized projects

(5) Outputs

Output 1 : Current conditions of existing water supply facilities and water supply services in the project site are assessed.

Output 2 : Water demand in the project site is forecasted, and water resource utilization plan is developed.

Output 3 : Water Supply Master Plan for City of Kigali is developed.

Output 4 : Prioritized projects are identified from 15-Year Investment Plan, and their feasibility studies are conducted.

Output 5 : Capacity of WASAC's staffs about water supply planning is strengthened.

(6) Activities

Output 1 : Current conditions of existing water supply facilities and water supply services in the project site are assessed.

- To survey water supply situation such as water service areas, population and coverage, water supply hours, non-revenue water ratio, water resources, water quality, water distribution pressure, etc.
- To survey conditions of water supply facilities such as water intake facilities, water treatment facilities, water pipes, water reservoirs, etc.
- To survey socio-economic and natural conditions
- To study relevant laws, regulations and policies about water supply, infrastructure development, environmental and social considerations, etc.
- To study relevant projects for city development, water supply, etc.
- To study organizational and institutional structure for water supply
- To study WASAC's financial conditions

Output 2 : Water demand in the project site is forecasted, and water resource utilization plan is developed.

- Referring to relevant socio-economic development plans, statistics, etc., to develop socio-economic development stories including economic and population growth, etc. until 2050
- Through evaluation based on criteria, to select the most appropriate socio-economic development story
- Based on the most appropriate socio-economic development story and framework of MP considered in Output 3, to forecast water demand until 2050
- To review existing plans and surveys about water resources, data about current water resources used for water supply in City of Kigali
- To identify new possible water resources (surface water and/or groundwater) through site survey and measurement
- To develop scenarios to meet water demand until 2050. The scenarios include plans about increase of intake from existing water resources and/or development new intake from new water resources, and plans about water treatment plan and water transmission from water resources up to water distribution areas in the project site
- Through evaluation based on criteria, to select the most appropriate scenario, as a Master Scenario, to meet water demand until 2050

Output 3 : Water Supply Master Plan for City of Kigali is developed.

- To develop a framework of MP including vision of water supply until 2050, phased targets (water supply coverage, water supply hours, leakage water quality, etc.), policy on facility planning, design criteria (unit water demand, design loading rate, etc.), etc.
- Based on the Master Scenario, to develop a 15-Year Investment Plan for the most recent next 15 years. The 15-Year Investment Plan includes a water facility plan (improvement and/or repair of existing facilities and/or new facilities), plan for water distribution areas with distribution trunk mains, plan for major water distribution blocks, operation maintenance plan, organization structure to supply water in the project site, capacity development plan for WASAC, implementation plan including a list of necessary projects for the 15-Year Investment Plan, cost estimation and budgeting plan (including the most appropriate proposal about a tariff system), etc.
- To conduct financial and economic analysis about the 15-Year Investment Plan
- To conduct strategic environmental assessment (SEA), including alternative analysis, on the Water Supply MP
- To develop Water Supply MP for City of Kigali which includes the Master Scenario until 2050 and the 15-Year Investment Plan

Output 4 : Prioritized projects are identified from 15-Year Investment Plan, and their feasibility studies are conducted.

- From the list of necessary projects in the 15-Year Investment Plan, two prioritized project are identified based on criteria

- To conduct feasibility studies, including necessary environmental and social considerations, on the prioritized projects

Output 5 : Capacity of WASAC's staffs about water supply planning is strengthened.

- To prepare a simple capacity development plan mainly by on the job trainings (OJT) through the project activities
- To conduct OJT through co-working with members of JICA Missions

(7) Input

(1) Input by JICA

(a) Specialists

- Team leader / Water supply planner
- Water supply pipeline planner
- Water treatment plant planner
- Hydraulic analysis specialist
- Water resource / water quality / hydrogeology specialist
- Mechanical and electrical facility planner
- Cost estimator / construction planner
- Organization / institution specialist
- Economic and financial specialist
- Environment and social consideration specialist
- GIS database specialist
- Other specialists, if necessary

(b) Equipment

JICA will provide equipment necessary to implement the Project.

Input other than indicated above will be determined through mutual consultations between WASAC and JICA during the implementation of the Project.

(2) Input by WASAC and Related Organizations

Both sides agreed that WASAC will provide the services, facilities and local-cost articulated in Section IV, BP.

(8) Beneficiaries

People in City of Kigali and seven adjacent sectors.

(9) Other details

Other details are described in the Annexes as attached.

IMPLEMENTATION STRUCTURE

(1) WASAC

- 1) Project Director: Chief Executive Officer
- 2) Project Manager: Director of Urban Water and Sewerage Services
- 3) Counterpart Personnel including Director of Water and Sanitation Development, Manager of Infrastructure Planning, etc.

(2) Members of JICA Missions

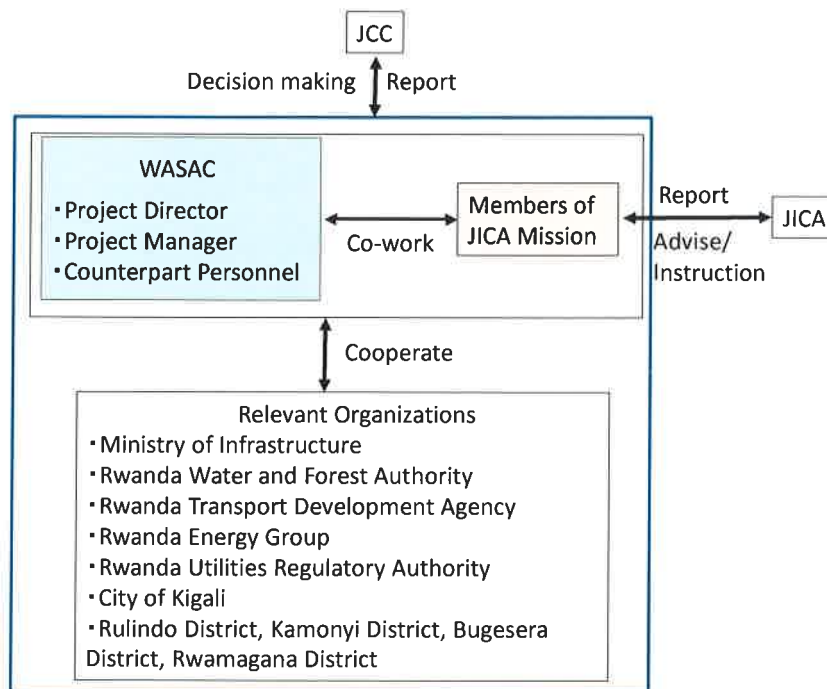
Members of JICA missions will conduct studies in cooperation with the Counterpart.

(3) Relevant Organizations

- 1) Ministry of Infrastructure (MININFRA) *Line Ministry of WASAC
- 2) Rwanda Water and Forest Authority
- 3) Rwanda Transport Development Agency
- 4) Rwanda Energy Group
- 5) Rwanda Utilities Regulatory Authority
- 6) City of Kigali
- 7) Rulindo District, Kamonyi District, Bugesera District, Rwamagana District

(4) Joint Coordinating Committee

Joint Coordinating Committee (hereinafter referred to as "JCC") will be established in order to review progress of the Project and facilitate inter-organizational coordination. JCC will be held whatever deems it necessary. A list of proposed members of JCC is shown in Annex 4.



**List of Proposed Members of Joint Coordinating Committee for
the Project for Water Supply Master Plan for City of Kigali**

1. Composition

(1) Project Team

- 1) Project Director: Chief Executive Officer
- 2) Project Manager: Director of Urban Water and Sewerage Services
- 3) Members of JICA Missions
- 4) Personnel from the Counterpart
- 5) Others whom are to be agreed by WASAC and JICA

(2) Other Members from Rwanda Side

- 1) African Development Bank
- 2) Other members that Rwanda side might consider necessary

(3) Other Members from Japanese Side

- 1) Chief Representative, representative and staff of JICA Rwanda Office
- 2) Staff from JICA Headquarters, other domestic and foreign offices
- 3) Staff from the Embassy of Japan
- 4) Other persons that Japanese side might consider necessary

Tentative Schedule

	1st Year				2nd Year			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Output 1 Current conditions of existing water supply facilities and water supply services in the project site are assessed.								
Output 2 Water demand in the project site is forecasted, and water resource utilization plan is developed.								
Output 3 Water Supply Master Plan for City of Kigali is developed.								
Output 4 Prioritized projects are identified from 15-Year Investment Plan, and their feasibility studies are conducted.								
Output 5 Capacity of WASAC's staffs about water supply planning is strengthened.								
Report	▲ ICR	▲ PrR	▲ ITR	▲ Water Supply MP	▲ DFR	▲ FR		

**MINUTES OF MEETING
BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND
WATER AND SANITATION CORPORATION,
THE REPUBLIC OF RWANDA
ON
THE JAPANESE TECHNICAL COOPERATION
FOR
THE PROJECT FOR WATER SUPPLY MASTER PLAN
FOR CITY OF KIGALI**

In response to the official request of the Government of the Republic of Rwanda to the Government of Japan, the Japan International Cooperation Agency (hereinafter referred to as "JICA") held a series of discussions with Water and Sanitation Corporation of the Republic of Rwanda (hereinafter referred to as "the Counterpart") and relevant organizations to develop a detailed plan of the Project for Water Supply Master Plan for City of Kigali (hereinafter referred to as "the Project").

As a result of the discussions, the Counterpart and JICA came to understanding concerning the matters referred to in the document attached hereto.

Kigali, 9th November 2017



Takashi KAJI

Deputy Director
Water Resources Team 2
Water Resources Group
Global Environment Department
Japan International Cooperation Agency



Eng. Aimé MUZOLA

for
Chief Executive Officer
Water and Sanitation Corporation
The Republic of Rwanda

THE ATTACHED DOCUMENT

1. Draft of Record of Discussions

Both sides agreed on the draft of Record of Discussions (hereinafter referred to as "R/D"), which stipulates the basic framework of the Project, shown in the Attachment. After discussion and approval in the JICA headquarter, JICA and the Government of Rwanda will finalize and sign it before the commencement of the Project.

JICA explained that the attached R/D is draft and is subject to change in finalization and authorization processes.

2. Major Discussed Points

(1) Increase of Intake from Existing Water Resources and/or Development of New Intake from New Water Resources

The water resource utilization plan (expansion of current water resources and/or new development of water resources) to meet the water demand until 2050 is one of the most important components of the Project.

JICA has gathered some existing data about water resources in City of Kigali so far, e.g. Rwanda National Water Resources Master Plan, Technical Feasibility Report for Kigali Bulk Water Supply Project, data of surface water level, monitoring data on wells, etc. However, especially about groundwater, there seem not enough data regarding groundwater level, pumped groundwater volume, location of aquifer, groundwater capacity in aquifer for the project site.

Under the circumstances, Water and Sanitation Corporation (hereinafter referred to as "WASAC") and JICA need a time to decide how detail water resource utilization plan the Project can prepare, and how detail surveys the Project needs for it.

JICA will scrutinize these points again and inform WASAC of its result before middle of November 2017. Then, after having discussion, WASAC and JICA will revise the draft R/D shown in the Attachment.

(2) National Water Supply and Sanitation Master Plan Supported by African Development Bank

WASAC will start the Project for National Water Supply and Sanitation Master Plan from March 2018 through the support from the African Development Bank. Although it is WASAC's responsibility to combine the Water Supply Master Plan for City of Kigali and the National Water Supply and Sanitation Master Plan into one comprehensive national master plan, JICA raised concerns as follows:

a) Consistency in Target Year

The target year of Water Supply Master Plan for City of Kigali is 2050. On the other hand, the target year of the National Water Supply and Sanitation Master Plan is 2043. If it will be combined into one national master plan, it seems reasonable that the two master plans would have the same target year.

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b) Consistency in Socio-Economic Development Story and Water Demand Forecast

The socio-economic development story and water demand forecast in City of Kigali must be a basis to develop both of the Water Supply Master Plan for City of Kigali and the National Water Supply and Sanitation Master Plan (especially the Sanitation Master Plan for City of Kigali). Therefore, it seems reasonable that the two master plans would have the same socio-economic development story and water demand forecast.

WASAC and JICA agreed that WASAC will do necessary coordination between the two projects to keep the consistency of the two master plans before/after the Project starts.

(3) Official Approval Process of Water Supply Master Plan for City of Kigali
Soon after the Project will prepare the Water Supply Master Plan for City of Kigali (draft), WASAC will start its official approval procedures. Main steps for the approval are as follows:

1. Presentation to the relevant organizations
2. Validation in Sector Working Group
3. Official approval by WASAC

The procedures take around three months. The official approval will be obtained within the project period. WASAC and JICA agreed that WASAC will take full responsibility and do necessary arrangement in this process.

ATTACHMENT: Draft Record of Discussions

ATTACHMENT

DRAFT

RECORD OF DISCUSSIONS

FOR

**THE PROJECT FOR
WATER SUPPLY MASTER PLAN FOR CITY OF KIGALI**

AGREED UPON BETWEEN

WATER AND SANITATION CORPORATION

OF

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AND

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Dated xx December 2017

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Under the circumstances, in order to meet the rapid increase of water demand in City of Kigali, it is indispensable for WASAC to have one comprehensive master plan for the improvement of the existing water supply

facilities and new facilities under more efficient and effective manner. Therefore, WASAC officially requested JICA to support to develop the Water Supply Master Plan for City of Kigali and the seven adjacent sectors (hereinafter referred to as "Water Supply MP").

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not update the WASAC's GIS database.

(4) Water Distribution Areas and Water Distribution Blocks

Aiming at achieving efficient water distribution and appropriate water pressure management, the Project will consider re-arrangement of water distribution areas in the project site. The project site will be divided into several water distribution areas, e.g. water distribution area for high elevation, one for middle elevation, one for low elevation, etc., taking consideration of local water demands, geographic conditions, locations of water resources and water treatment plants, etc.

In addition, the Project will consider a plan to divide the water distribution areas into some water distribution blocks based on elevation, area of water supply service, etc. The water distribution blocks will be proposed in some major and important areas, not in the all project site.

(5) Increase of Intake from Existing Water Resources and/or Development of New Intake from New Water Resources

The Project will plan increase of intake from current water resources, i.e. Nyabarongo River, Yanze River and Mugesera Lake, and/or development of new intake from new water resources to meet the water demand until 2050. Targets of water resources include surface water as well as groundwater. In the consideration, necessary field measurement about river water flow, pumping discharge of wells, etc. will be conducted.

(6) National Water Supply and Sanitation Master Plan by African Development Bank

WASAC will start the Project for National Water Supply and Sanitation Master Plan from March 2018 through the support from the African Development Bank. WASAC plans to combine the Water Supply MP and the National Water Supply and Sanitation Master Plan into one comprehensive national master plan.

The Project will share necessary data, information, progress of study, etc. with the Project for National Water Supply and Sanitation Master Plan. On the other hand, it is WASAC's responsibility to keep consistency between the two master plans. Thus, WASAC will do necessary coordination between the two projects.

5. Environmental and Social Considerations

With regard to the Section 10.1 of the BP, since the Project is categorized as "B" under the "JICA Guidelines for Environmental and Social Considerations (April 2010)" (hereinafter referred to as "the Guidelines"), the necessary procedures are taken in accordance with the Guidelines.

The Project conducts Strategic Environmental Assessment (hereinafter referred to as "SEA") in accordance with the Guidelines. SEA includes scoping (to identify critical environmental and social items during decision making for policy, plan and programs, and their assessment methods) and assessment of several alternatives based on environmental and social impacts. If prioritized projects are proposed in a master plan, the scoping is conducted about them.

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PROJECT DESCRIPTION

(1) Title of the Project

The Project for Water Supply Master Plan for City of Kigali.

(2) Expected Goals which will be Attained after Implementing the Proposed Plan
To provide safe and affordable drinking water in City of Kigali and seven adjacent sectors, i.e. Shyorongi, Runda, Rugarika, Ntarama, Muyumbu, Gahengeri, and Nyakaliro.

(3) Project Site

City of Kigali and seven adjacent sectors, i.e. Shyorongi, Runda, Rugarika, Ntarama, Muyumbu, Gahengeri, and Nyakaliro.

(4) Duration

Two (2) years from arrival of the first JICA Missions

- One and half (1.5) years for development of Water Supply Master Plan for City of Kigali, and
- Half (0.5) year for feasibility study about prioritized projects

(5) Outputs

Output 1 : Current conditions of existing water supply facilities and water supply services in the project site are assessed.

Output 2 : Water demand in the project site is forecasted, and water resource utilization plan is developed.

Output 3 : Water Supply Master Plan for City of Kigali is developed.

Output 4 : Prioritized projects are identified from 15-Year Investment Plan, and their feasibility studies are conducted.

Output 5 : Capacity of WASAC's staffs about water supply planning is strengthened.

(6) Activities

Output 1 : Current conditions of existing water supply facilities and water supply services in the project site are assessed.

- To survey water supply situation such as water service areas, population and coverage, water supply hours, non-revenue water ratio, water resources, water quality, water distribution pressure, etc.
- To survey conditions of water supply facilities such as water intake facilities, water treatment facilities, water pipes, water reservoirs, etc.
- To survey socio-economic and natural conditions
- To study relevant laws, regulations and policies about water supply, infrastructure development, environmental and social considerations, etc.
- To study relevant projects for city development, water supply, etc.
- To study organizational and institutional structure for water supply
- To study WASAC's financial conditions

Output 2 : Water demand in the project site is forecasted, and water resource utilization plan is developed.

- Referring to relevant socio-economic development plans, statistics, etc., to develop socio-economic development stories including economic and population growth, etc. until 2050
- Through evaluation based on criteria, to select the most appropriate socio-economic development story
- Based on the most appropriate socio-economic development story and framework of MP considered in Output 3, to forecast water demand until 2050
- To review existing plans and surveys about water resources, data about current water resources used for water supply in City of Kigali
- To identify new possible water resources (surface water and/or groundwater) through site survey and measurement
- To develop scenarios to meet water demand until 2050. The scenarios include plans about increase of intake from existing water resources and/or development new intake from new water resources, and plans about water treatment plan and water transmission from water resources up to water distribution areas in the project site
- Through evaluation based on criteria, to select the most appropriate scenario, as a Master Scenario, to meet water demand until 2050

Output 3 : Water Supply Master Plan for City of Kigali is developed.

- To develop a framework of MP including vision of water supply until 2050, phased targets (water supply coverage, water supply hours, leakage water quality, etc.), policy on facility planning, design criteria (unit water demand, design loading rate, etc.), etc.
- Based on the Master Scenario, to develop a 15-Year Investment Plan for the most recent next 15 years. The 15-Year Investment Plan includes a water facility plan (improvement and/or repair of existing facilities and/or new facilities), plan for water distribution areas with distribution trunk mains, plan for major water distribution blocks, operation maintenance plan, organization structure to supply water in the project site, capacity development plan for WASAC, implementation plan including a list of necessary projects for the 15-Year Investment Plan, cost estimation and budgeting plan (including the most appropriate proposal about a tariff system), etc.
- To conduct financial and economic analysis about the 15-Year Investment Plan
- To develop Water Supply MP for City of Kigali which includes the Master Scenario until 2050 and the 15-Year Investment Plan
- To conduct strategic environmental assessment (SEA) on the Water Supply MP

Output 4 : Prioritized projects are identified from 15-Year Investment Plan, and their feasibility studies are conducted.

- From the list of necessary projects in the 15-Year Investment Plan, two prioritized project are identified based on criteria

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- To conduct feasibility studies on the prioritized projects

Output 5 : Capacity of WASAC's staffs about water supply planning is strengthened.

- To prepare a simple capacity development plan mainly by on the job trainings (OJT) through the project activities
- To conduct OJT through co-working with members of JICA Missions

(7) Input

(1) Input by JICA

(a) Specialists

- Team leader / Water supply planner
- Water supply pipeline planner
- Water treatment plant planner
- Hydraulic analysis specialist
- Water resource / water quality / hydrogeology specialist
- Mechanical and electrical facility planner
- Cost estimator / construction planner
- Organization / institution specialist
- Economic and financial specialist
- Environment and social consideration specialist
- GIS database specialist
- Other specialists, if necessary

(b) Equipment

JICA will provide equipment necessary to implement the Project.

Input other than indicated above will be determined through mutual consultations between WASAC and JICA during the implementation of the Project.

(2) Input by WASAC and Related Organizations

Both sides agreed that WASAC will provide the services, facilities and local-cost articulated in Section IV, BP.

(8) Beneficiaries

People in City of Kigali and seven adjacent sectors.

(9) Other details

Other details are described in the Annexes as attached.

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IMPLEMENTATION STRUCTURE

(1) WASAC

- 1) Project Director: Chief Executive Officer
- 2) Project Manager: Director of Urban Water and Sewerage Services
- 3) Counterpart Personnel including Director of Water and Sanitation Development, Manager of Infrastructure Planning, etc.

(2) Members of JICA Missions

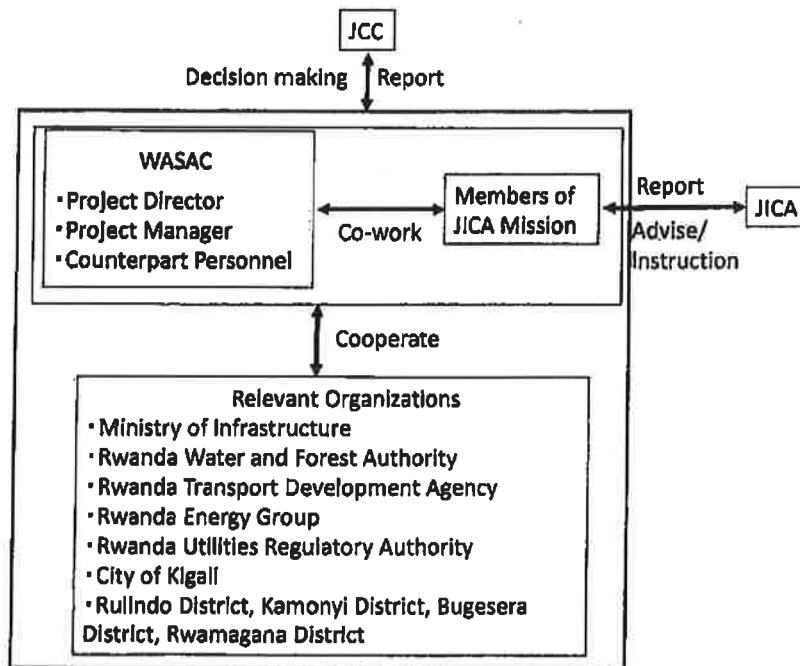
Members of JICA missions will conduct studies in cooperation with the Counterpart.

(3) Relevant Organizations

- 1) Ministry of Infrastructure (MININFRA) *Line Ministry of WASAC
- 2) Rwanda Water and Forest Authority
- 3) Rwanda Transport Development Agency
- 4) Rwanda Energy Group
- 5) Rwanda Utilities Regulatory Authority
- 6) City of Kigali
- 7) Rulindo District, Kamonyi District, Bugesera District, Rwamagana District

(4) Joint Coordinating Committee

Joint Coordinating Committee (hereinafter referred to as "JCC") will be established in order to review progress of the Project and facilitate inter-organizational coordination. JCC will be held whatever deems it necessary. A list of proposed members of JCC is shown in Annex 4.



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**List of Proposed Members of Joint Coordinating Committee for
the Project for Water Supply Master Plan for City of Kigali**

1. Composition

(1) Project Team

- 1) Project Director: Chief Executive Officer
- 2) Project Manager: Director of Urban Water and Sewerage Services
- 3) Members of JICA Missions
- 4) Personnel from the Counterpart
- 5) Others whom are to be agreed by WASAC and JICA

(2) Other Members from Rwanda Side

- 1) African Development Bank
- 2) Other members that Rwanda side might consider necessary

(3) Other Members from Japanese Side

- 1) Chief Representative, representative and staff of JICA Rwanda Office
- 2) Staff from JICA Headquarters, other domestic and foreign offices
- 3) Staff from the Embassy of Japan
- 4) Other persons that Japanese side might consider necessary

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PROVISIONAL TERMS OF REFERENCE FOR ENVIRONMENTAL AND SOCIAL CONSIDERATIONS

1. Review of existing development plans, development projects, studies, and public and private investments relevant to the water supply sector in Rwanda;
2. Consideration on goal and/or purpose, and contents of the master plan;
3. Analysis of alternatives for achieving goal and/or purpose of the master plan;
4. Conducting of scoping of the master plan;
5. Conducting of baseline surveys including land use, natural environment, socio-economic conditions in the project area;
6. Review of institution and organization about environmental and social considerations in Rwanda;
 - 1) Collecting information on laws, regulations and standards, such as environmental impact assessment, pollution control, resettlement, public participation, information disclosure to the public, etc.;
 - 2) Confirming legal and organizational framework on environmental and social considerations;
 - 3) Review of previous Strategic Environmental Assessment (SEA) Study reports and/or experiences which were conducted in Rwanda;
 - 4) Gap analysis between these legal frameworks and JICA Environmental Guidelines;
7. Based on the concept of SEA, at Initial Environmental Examination (IEE) level, conducting;
 - Prediction and evaluation of impact of the master plan;
 - Evaluation of alternatives including zero-option scenario;
 - Consideration of mitigation measures; and
 - Consideration of monitoring plan.
8. Support for Rwanda side to hold stakeholder meetings and information disclosure in SEA; and
9. Conducting of necessary environmental and social considerations, including stakeholder meetings and information disclosure, on prioritized projects in their FS.