THE PROJECT FOR WATER SUPPLY MASTER PLAN FOR CITY OF KIGALI

Outline of the Kigali Water Supply Masterplan

August 2021
Kigali, Rwanda

JICA STUDY TEAM

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Water and Environmental Consultants

YACHIYO ENGINEERING CO.,LTD.
Consulting Engineers & Architects

Agenda

- Objectives of the Strategic Environmental Assessment (SEA)
- Introduction of:
  - Demand forecast and Policies and Plans to follow
  - Mater Plan, and
  - 15 years Investment Plan
- Conclusion
- Request for Comment

Strategic Environmental Assessment (SEA)

Objective of SEA study is to achieve the followings:

- To identify and assess potential environmental and social impacts,
- To recommend measures for mitigation,
- To develop an alternative plan, scoping of social environmental consideration, baseline survey, and assessment of environmental impact, preparation of mitigation measures and monitoring plans for the Projects,
- **Support and prepare a public consultation**

Applied Guideline for SEA

- Rwandan Guidelines and Procedures for Developing a Strategic Environment Assessment;
- JICA guidelines for Environmental and Social Considerations April 2010;
- UNEP (2004), EIA and SEA: Towards an Integrated Approach;
- World Bank (2011), SEA in Policy and Sector Reform: Conceptual Model and Operational Guidance

Conclusion of SEA

As an overall conclusion:

- **The "no project option" can not be taken as an alternative**
- We must carry out development projects based on MP which is planned with consideration (minimize potential environmental and social impacts)
- Based on such understanding **recommendations, mitigation measures and monitoring plans are prepared for MP and 15 Years Investment Plan**

In phase 2, MP and 15 Years Investments Plan were updated based on policies, and regulations updates or detailed study on 15 Years Investment Plan.

- Climate change adaptation

There were no major changes in MP and 15 Years Investment Plan, and recommendations but minor changes on mitigation measures and monitoring plans.

Chap1: Introduction

Population of Rwanda is around 12.4 million (2015)	28.8% of it is concentrated in the urban areas	Population of City of Kigali increase rapidly from 1.1 mil. in 2012 to 3.8 mil. in 2050 (1.3 to 4.3 icld. 7 sectors)	Adjacent Seven sectors from City of Kigali, are being developed rapidly as residential purpose

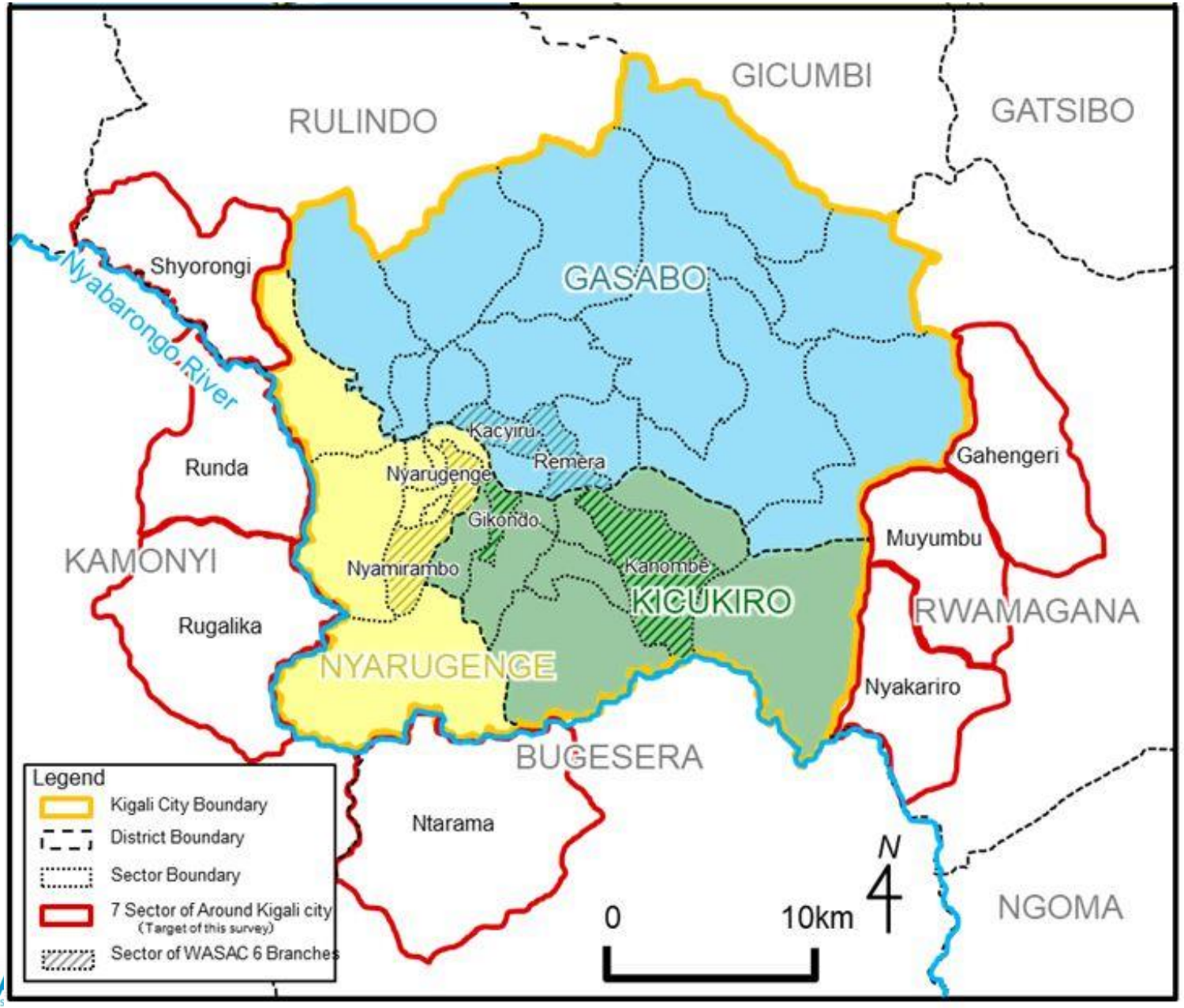
Under these situation

Universal Access to Safe Water by 2024
(The National Strategy for Transformation in line with SDGs)

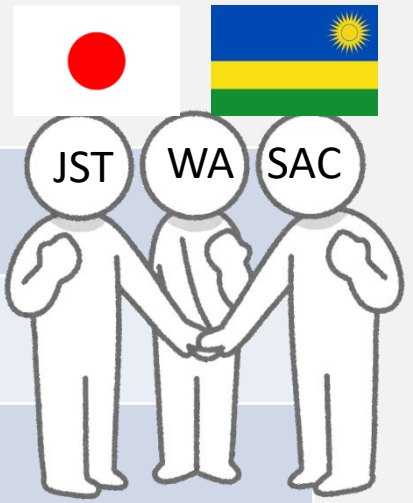
Beyond Goals

Sustainable Water Supply toward 2050

Chap1: Target Area (Greater Kigali Area)

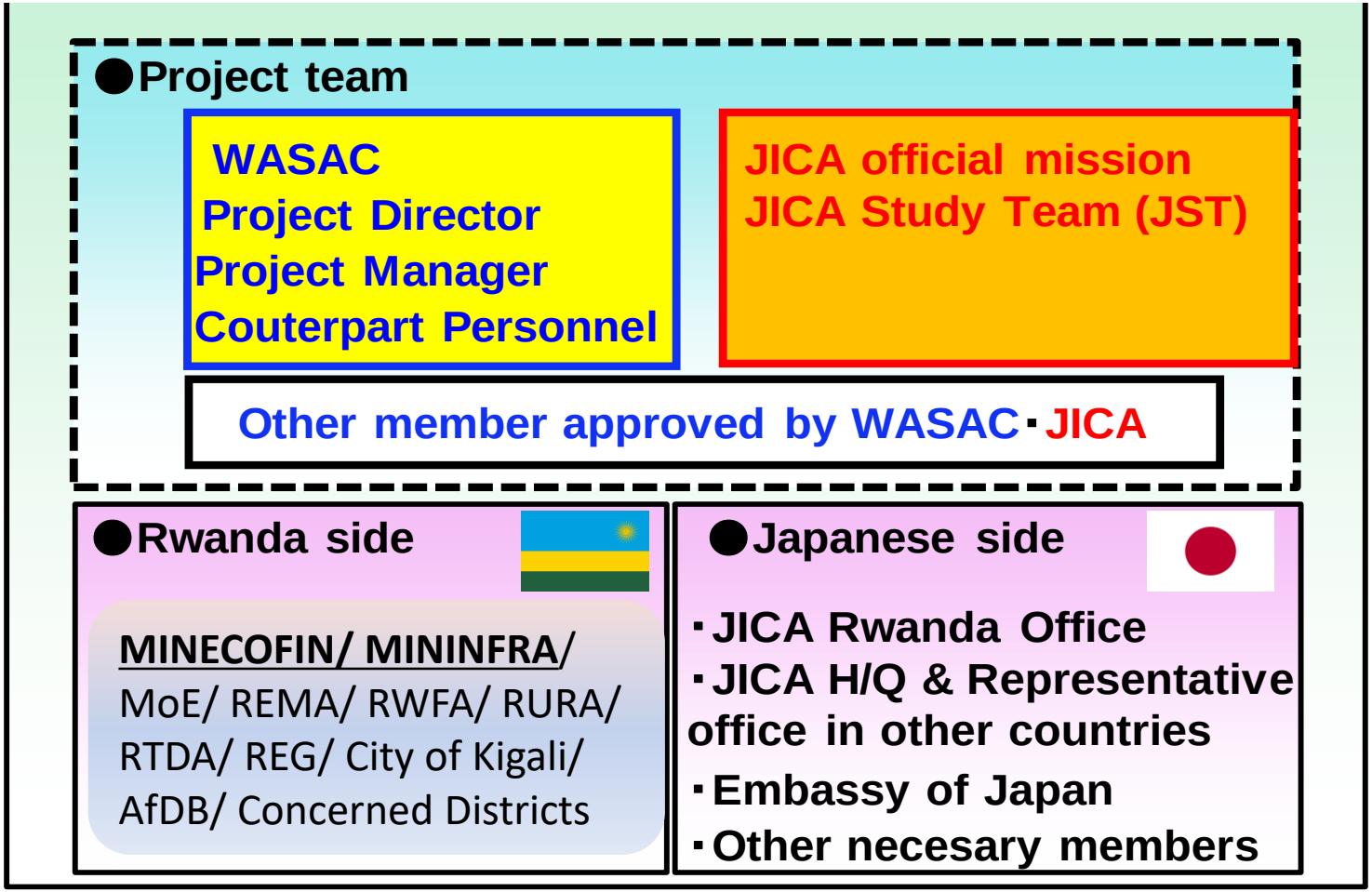


Working Team for M/P Formulation



1	PM Team	Planning Management
2	WRD Team	Water Resource Development
3	WTP Team	Water Treatment Plant
4	RTD Team	Reservoirs, Transmission/Distribution
5	ESC Team	Environment and Social Consideration
6	TSFI Team	Tariff System and Financial Improvement
7	OMHRD Team	Operation and Maintenance, Human Resource Development

Joint Coordinating Committee (**JCC**) Members



JCC: Joint Coordinating Committee,
the decision-making organization for the project

Stakeholder Members

JCC members

+

- **Rwanda Housing Authority**
- **Univ. of Rwanda**
- **Local Administrative Entities Development Authority**
- **Institute of Engineers Rwanda**
- **NGO's (e.g., Water Aid, Water for People)**
- **Development Partners**
- **Rwanda Development Board**

Structure of DFR: Vol. 1 (Masterplan part)

1 ***Discussed up until IT/R (JCC in Feb/2020)***

- Chap 1. Introduction
- Chap 2. Study Procedures
- Chap 3. General Features of Study Area
- Chap 4. Government And Related Development Plans
- Chap 5. Condition Of Existing Water Supply Systems
- Chap 6. WASAC's Financial Situation
- Chap 7. Ongoing Project
- Chap 8. Capacity Development
- Chap 9. MP's Framework (& Demand Forecast)
- Chap 10. Water Resources Development Plan
- Chap 11. Socio-Eco Survey
- Chap 12. SEA
- Chap 13. Master Scenario

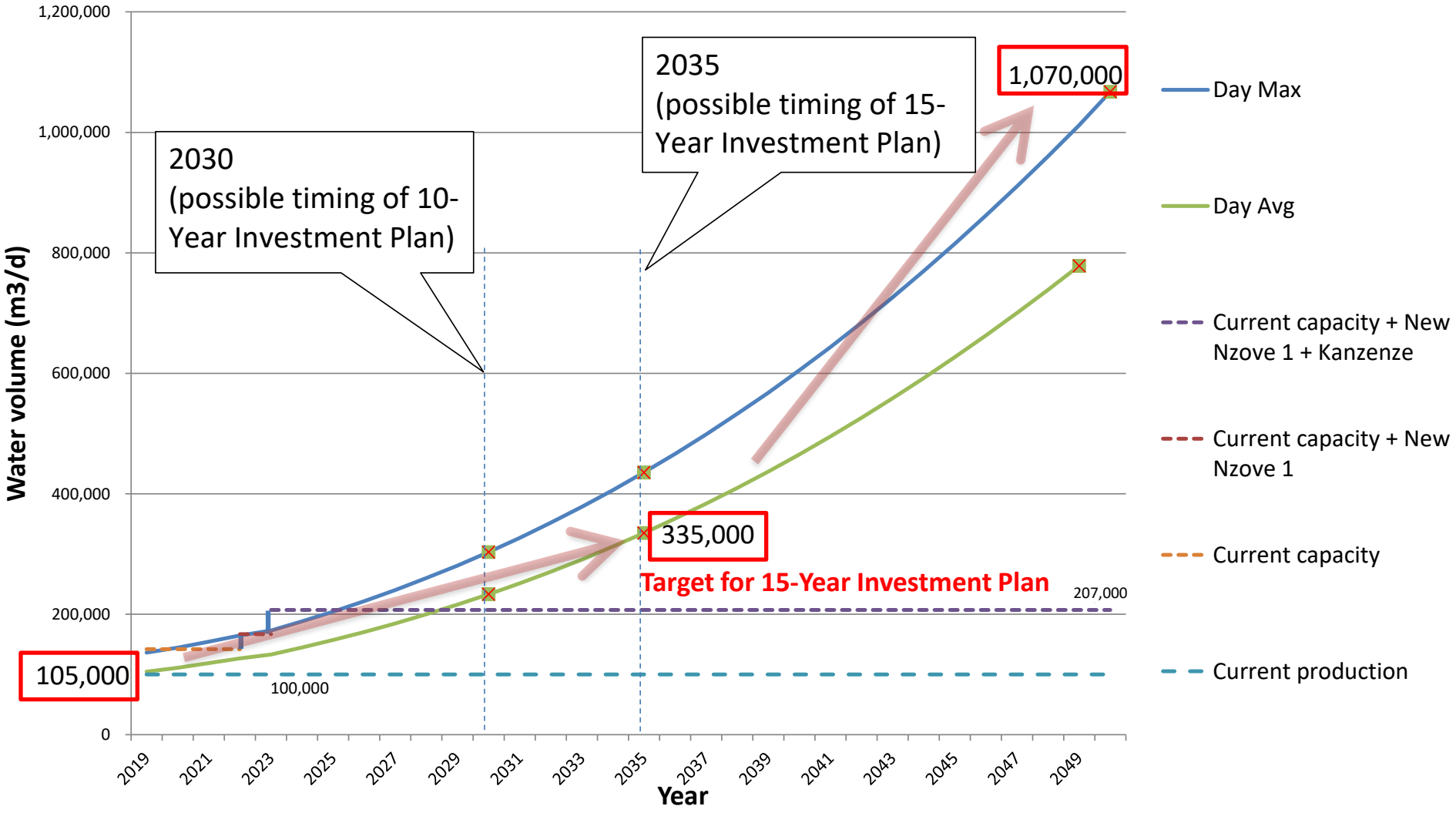
3 ***Updated and discussed at the meeting with ministers including MININFRA/ MINECOFIN & CoK Mayor in (Jun/2021)***
(meeting with MININFRA's Minister in May/2021)

2 ***Added until MP/R (JCC in Nov/2020)***

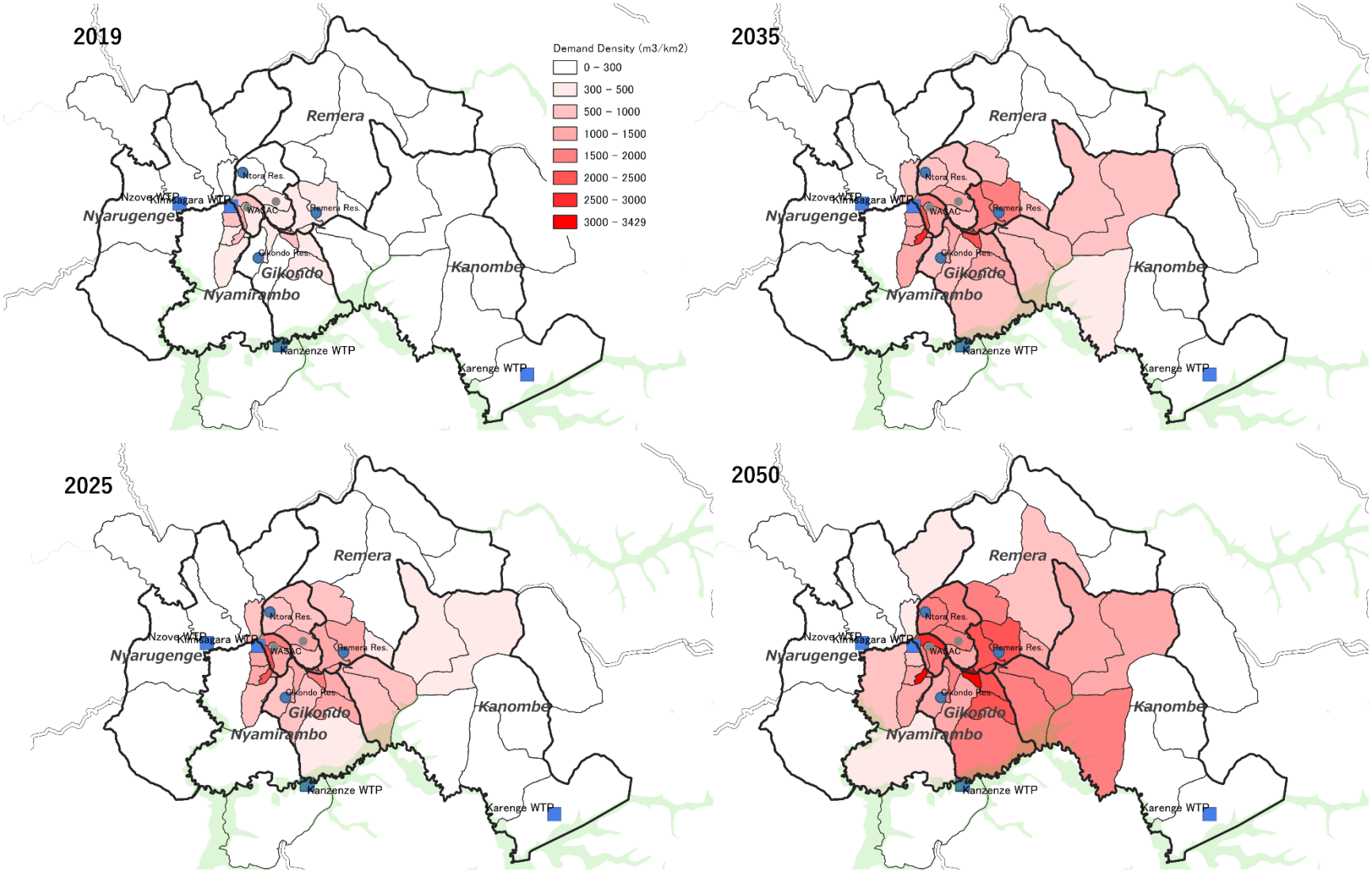
- Chap 14. 15-YIP
- Chap 15. Economic & Financial Evaluation
- Chap 16. Implementation Strategy
- Chap 17. Recommendations

JICA STUDY TEAM

Result of Demand Forecast



Demand Growth by sectors from 2019 to 2050 in line with **the City of Kigali Masterplan (2019, updated)**



Water Demand Distribution by Sectors

Water Supply Vision toward 2050 *for people*

*Dramatically **increase coverage** and **decrease rationings** by enhancing the **efficiency of water and energy**.*

Year 2024
NRW: 25%
Basic Service* : 100%
Piped on-plot: 87%**

Year 2050 (1,070 MLD)
NRW: 20%
Piped on-plot: 100%**
Production Capacity: Day-max

Year 2025
(158 MLD)

Year 2035
(335 MLD)

Year 2019 (105 MLD)
NRW: 38%
Basic Service*: 80%
Piped on-plot: 64%**

Year 2030
NRW: 23%
Piped on-plot: 92%**

***Full achievement** of inclusive access to piped water supply with ample water capacity*

***Safe and stable** water supply with continuously expanded facilities and based on more **reliable and sustainable management**.*

2019 2025 2035 2050

Note: *Basic Service; Access to Improved drinking water sources within 200 m (in the city area).
** Sum of individual connections and shared connections (Public taps are not included).

Figure. Water Supply Roadmap toward 2050

Water Supply Vision toward 2050 *for utility*

- ✓ **Reduce NRW and generate water from leakages.**
- ✓ **Invest in efficiency measures** for no-regret at the time of future expansion.
- ✓ **Expand services to unserved areas**

- ✓ **Large expansion based on efficient system and sound cash-flow.**
- ✓ **Progressive achievement of water supply systems with no interruption.**

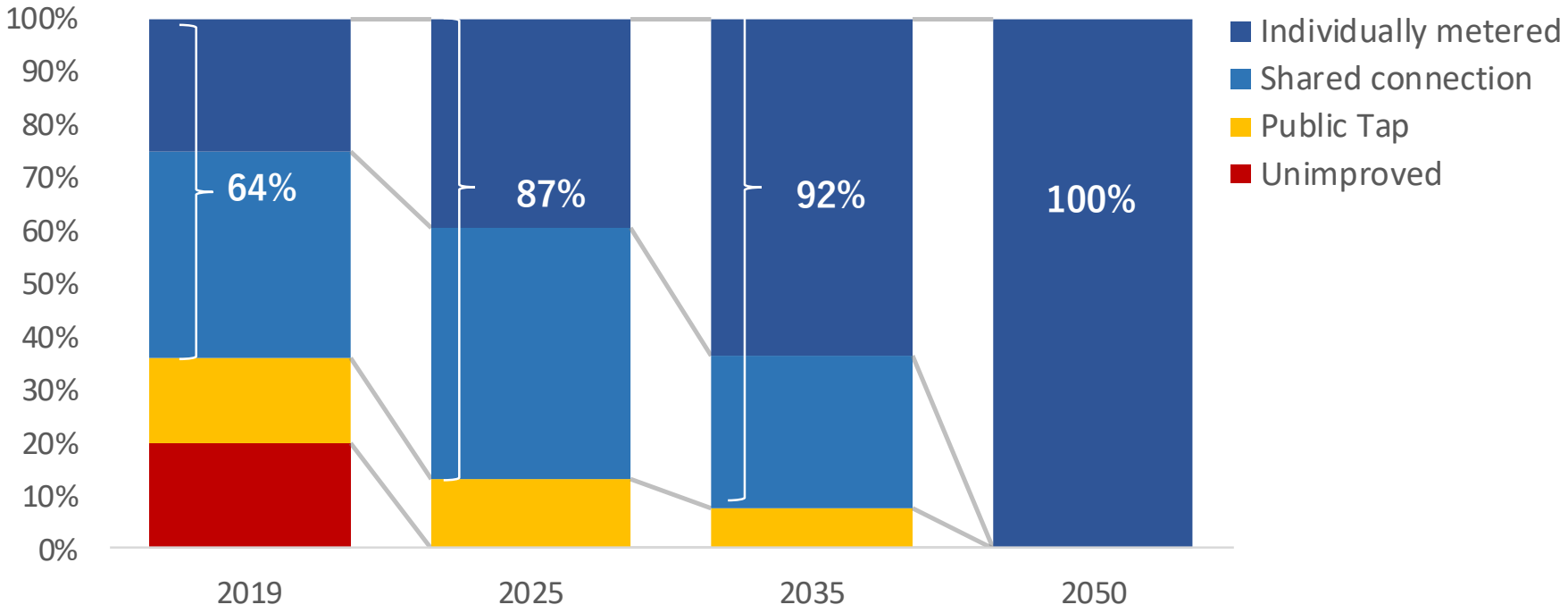


Figure. Roadmap of water supply coverages toward 2050

Analysis of Existing Problems (Example)
Transmission and Distribution Systems

Comprehension of current issues

1. **Water Shortage**, especially in the eastern and the southern area.
2. **Inappropriate distribution system** and resulting low pressure causes intermittent water supply and high energy cost (>50% of operation cost).
3. **Aged pipes**, faulty arrangements, no valves causes leakages and water supply interruption.
4. **Lack of pressure management** causes high pressure area and energy inefficiency.
5. **Actively working NRW team is the best opportunity,** but it is a long way to achieve the target and keep it sustainably.

General Strategies

A) Expand water supply capacities

B) **Block System Establishment** for pressure/flow management

C) Intensive **pipe replacement**

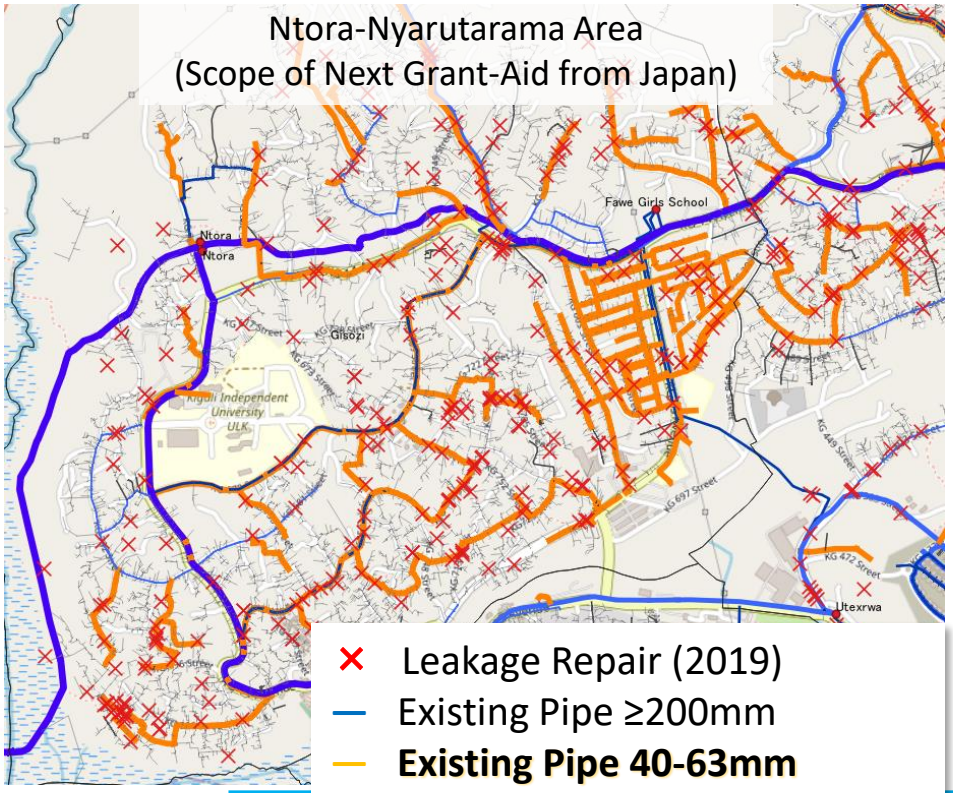
D) **Integrate SCADA system**

E) Enhance policy and guidelines for **NRW reduction**

Specific project formulation

Principles: NRW Reduction Strategy (1): Status quo. in Kigali

- Most of Leakages occur in at many location at **small pipes (25-48mm) and customer connections** which are sometimes not visible on ground and overlooked.
- **Large volume of replacement works are required to reduce leakages**: The work necessarily covers large areas and cannot be solved by pin-point replacement.



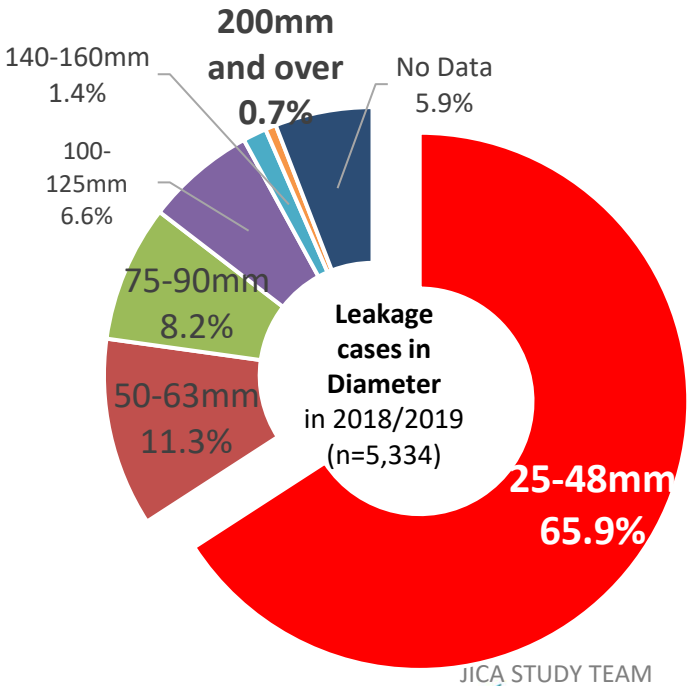
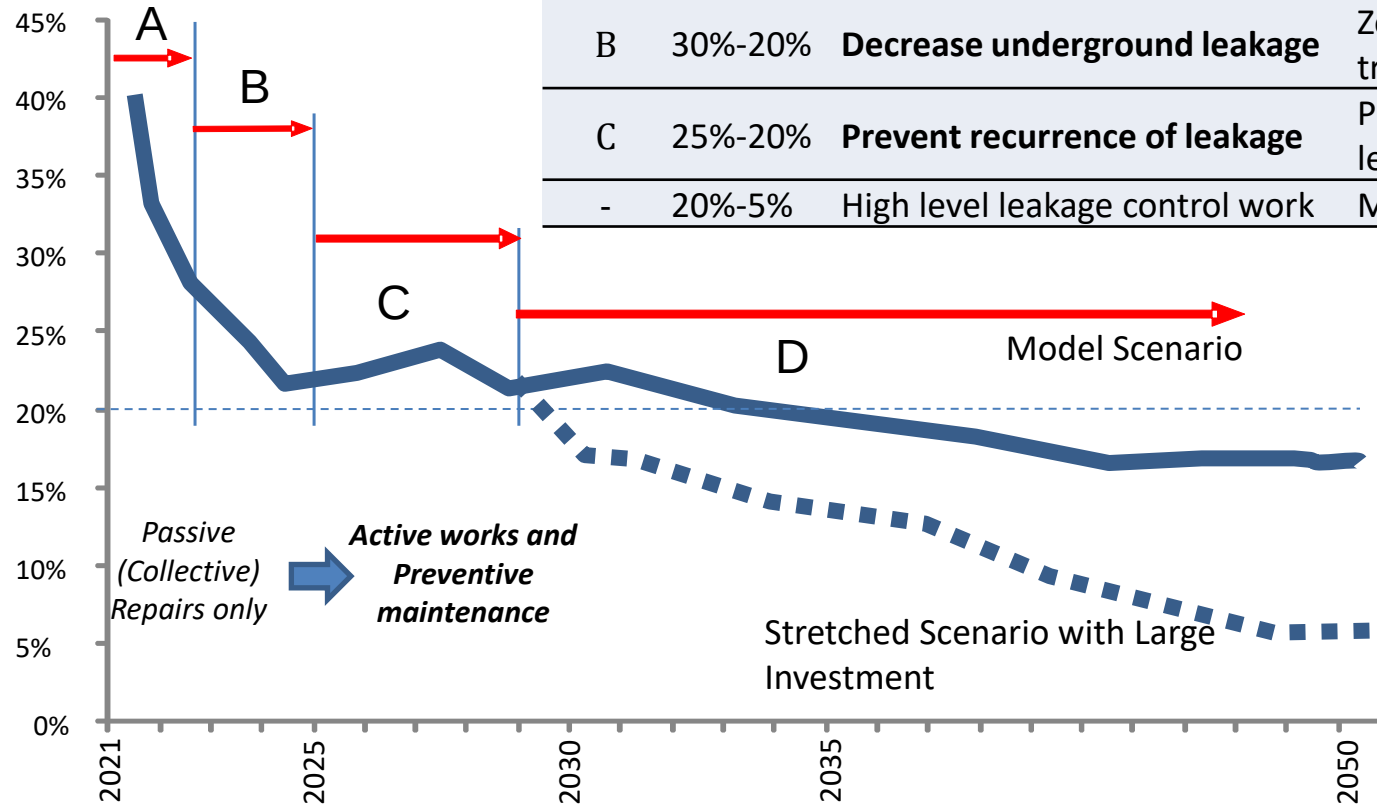


Figure: Percentage of Leakage Repair Cases in Kigali by diameter of pipes

Principles: NRW Reduction Strategy (2): Learning from Experiences

- Extensive replace and repair works are required in the Stage A to B to reduce NRW by 20% then t**he NRW will increase due to the leakage recovery in Stage C.**
- **Achievement of 20% is an important benchmark** before we make expensive stretched measures. **Continuous preventive maintenance activity** is important to keep NRW in an acceptable level.

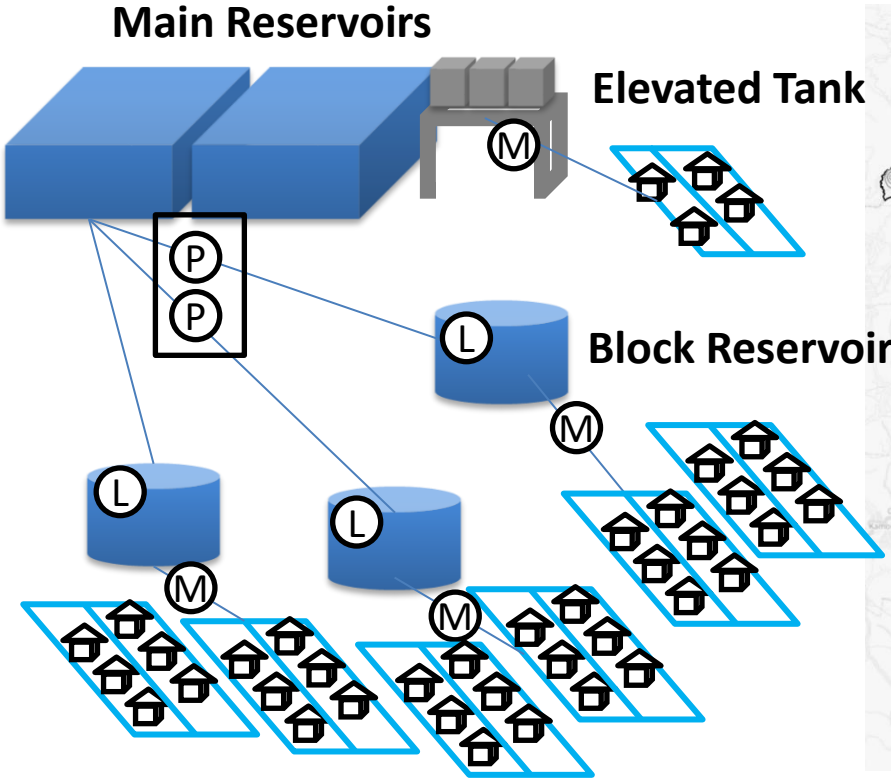
Stage	Leakage	Leakage control work	Method
A	>30%	**Decrease visible leakage**	Intensive repair activities
B	30%-20%	**Decrease underground leakage**	Zoning, accurate piping maps, training & detection
C	25%-20%	**Prevent recurrence of leakage**	Preventive measures for Increase in leakage control work
-	20%-5%	High level leakage control work	More costly measures…

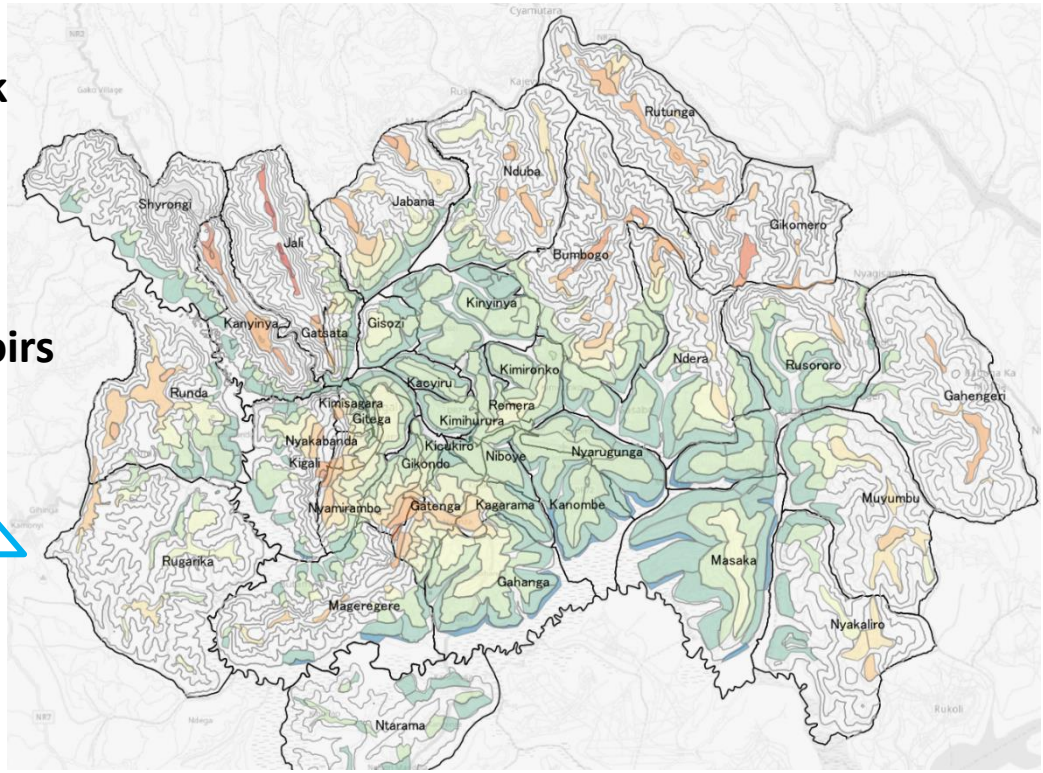


All Stainless Steel connections e.g. 3,000-5,000 USD/connection

Principles: Distribution Blocks for Pressure Control

- Service Blocks: Control Pressures by “Block Reservoirs”
  - A block: Maximum Static Pressure of **70-100 m**
  - Approx. 600 Blocks in the Study Area



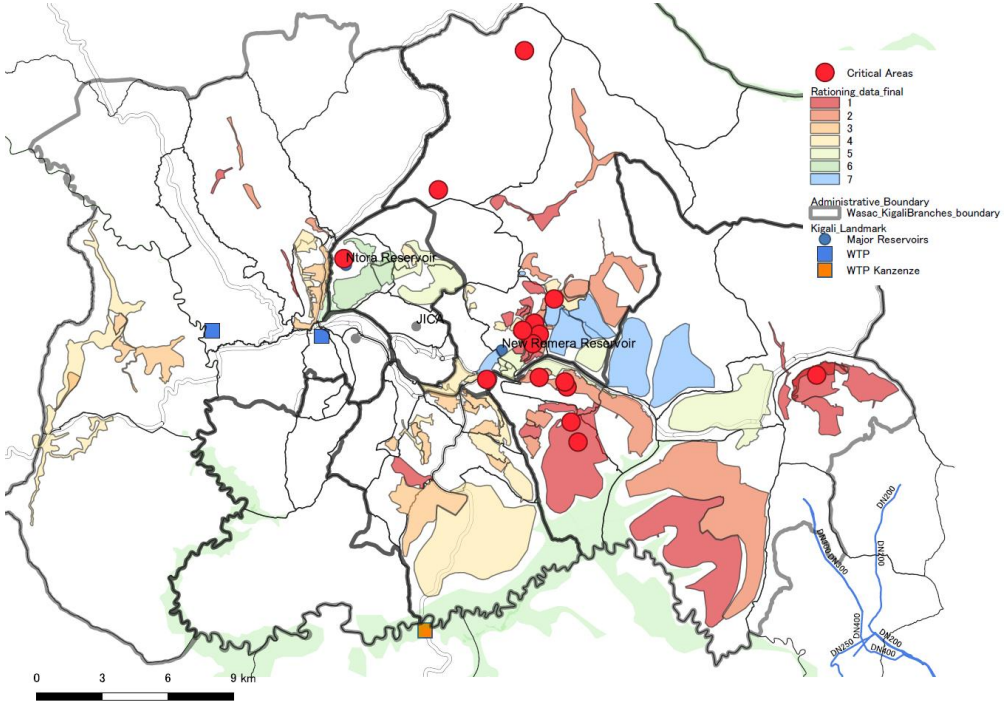


Reducing serious water shortages towards 24/7 water supply

- **To achieve inclusive water supply services;** it is necessary to focus on water supply continuity which is directly connected to the public health security.
- **Measures**; Need to monitor and mitigate the serious water shortages by the intentional (rationing) and un-intentional (low pressure) to progressively achieve 24/7 supply.

Proposed PI for Monitoring

Number of Customers with **Severe Water Shortages:** water supply restriction for more than four (4) days a week (supplying water only for three days a week), and the no-supply - days continue for three (3) successive days

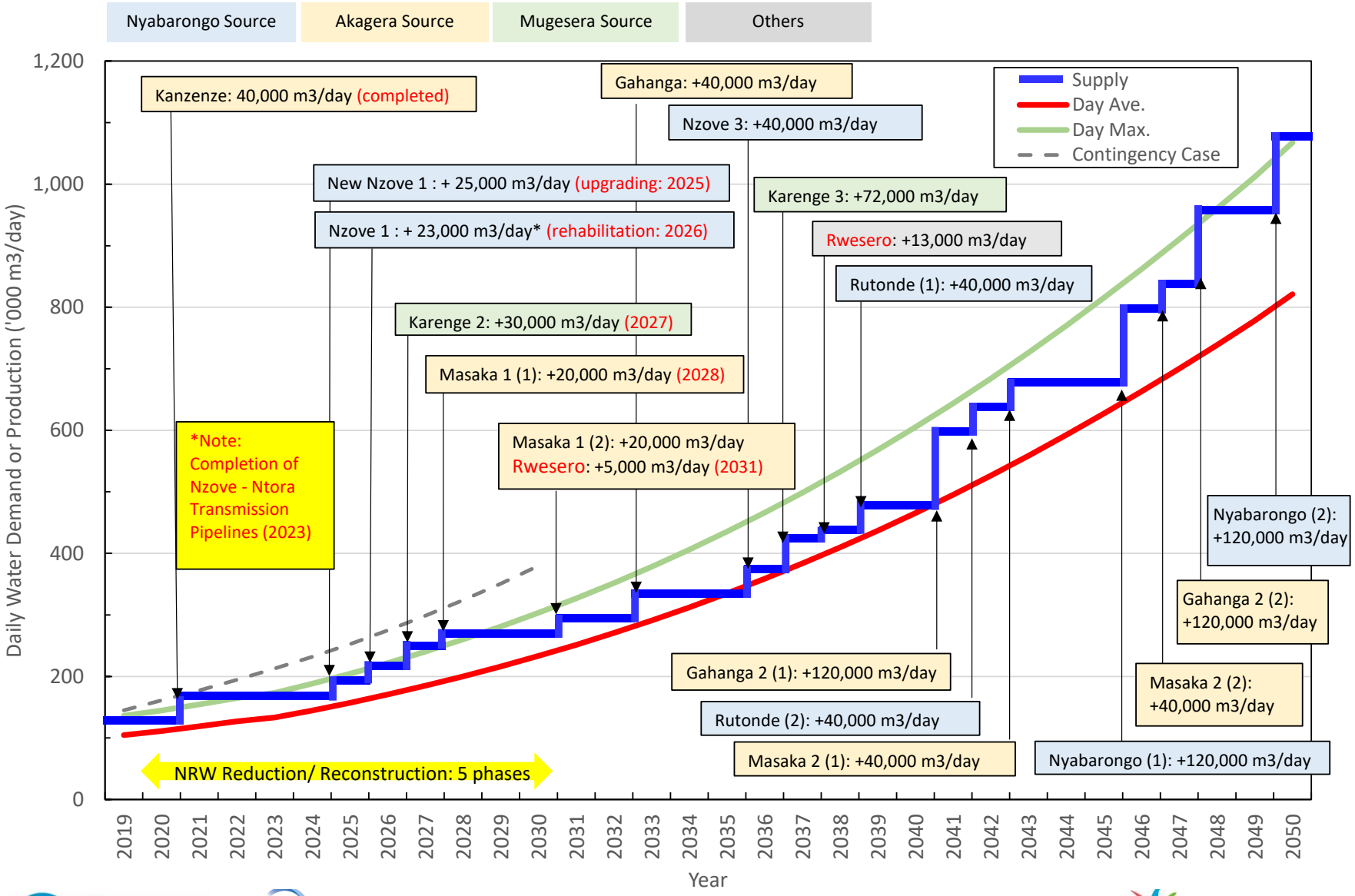


Areas affected by rationing program and Critical Areas

Summary of Water Resources Development for Kigali Water Supply in 2050

- Water Sources are still available after the development by Kigali water supply in 2050.
- River water taken from Nyaborongo / Akagera by Kigali water supply is main water source and will reach 27% of available water at the river in 2050.
- Domestic water supply (urban and rural) and irrigation will be main water users of the Study area in 2050 and give a certain degree of impact to water resources at catchment level. Therefore, in order to achieve the sustainable water resource development, appropriate management of water resources is needed by all water users

Proposed Demand-Supply Diagram



List of Water Supply Expansion

m3/day

Location	WTP	2019 (Existing)		2021	2025/	2027/	2030/	2035	2040	2045	2050	Total	Areawise
		Capacity	Actual	(Ongoing)	2026	2028	2031					Capacity	Capacity
Nzove	Nzove 1	25,000	17,000	17,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000		
	Nzove 2	40,000	41,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	185,000	
	New Nzove 1	40,000		40,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000		505,000
	Nzove 3								40,000	40,000	40,000		
Nyabarongo-upstream/ Upcountry	Rutonde								40,000	40,000	80,000	80,000	
	Nyabarongo								120,000	120,000	240,000	240,000	
Kimisagara	Kimisagara	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000
Gahanga/ Kanzenze	Kanzenze			40,000	40,000	40,000	40,000	40,000	40,000	40,000	22,000		
	Gahanga							40,000	40,000	40,000	40,000	302,000	302,000
	Gahanga 2									120,000	240,000		
Masaka	Masaka 1					20,000	40,000	40,000	40,000	40,000	40,000	120,000	120,000
	Masaka 2									40,000	80,000		
Karenge	Karenge	12,000	15,000	15,000	15,000	12,000	12,000	12,000	12,000	12,000	12,000		
	Karenge 2					36,000	36,000	36,000	36,000	36,000	36,000	120,000	120,000
	Karenge 3										72,000		
Others	Independent	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	7,000	7,000	7,000
	Rwesero						5,000	5,000	5,000	5,000	13,000	13,000	13,000
Total Capacity		144,000	100,000	179,000	227,000	280,000	305,000	345,000	545,000	705,000	1,089,000	1,089,000	1,089,000
Demand outside Study Area				10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
ter Supply Amount in Study A		144,000	100,000	169,000	217,000	270,000	295,000	335,000	535,000	695,000	1,079,000	1,079,000	1,079,000

* Red fonts: Timing of Expansion and Construction

* Value shown in m3/day as production capacity of treated water (up to 10% surpluss is necessary for water intake)

Chapter 8: The 15 Years Investment Plan (15YIP)

- The investment plan to achieve the water demand in accordance with the master scenario.
- **Period: 15 years** (from the year 2021 to 2035)
- **Set 5 Stages* of Investment**: Stage 1 to 4 for financial evaluation.

Investment Stage	Objectives	Fund Agreement/ Procurement	Detail Design/Tenders	Construction
(On-going Projects)	Nzove Rehabilitation	(until 2020/2021)	(until 2022)	(until 2023)
Emergent/Priority Projects: **Stage 1**	Emergent Expansion and NRW Reduction	2020/2021 and 2021/2022	2021 to 2023	2022 to 2026
Future Project: **Stage 2**	Major NRW Reduction	2022/2023	2022/2023	2023 to 2026
Future Project: **Stage 3**	Accelleration of NRW Reduction	2023/2024	2024/2025	2026 to 2028
Future Project: **Stage 4**	Completion of NRW Reduction and Further Expansion	2025/2026 to 2028/2029	2026 to 2030	2028 to 2030
Future Project: **Stage 5**	Central Transmission Main and Expansion	2031/2032	2032/2033	2034 to 2036

**Stage* is defined as a batch of various investment package while *Phase* refers to an investment period of a project.

Schedule of 15YIP

Type, Source	Name of Project	2020-2025						2026-2030					2031-2035					2036-
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
On-going Projects																		
Nyabarongo	Nzove 1 Rehabilitation																	
Nyabarongo	New Nzove 1																	
Emergent/Priority Projects: **Stage 1**																		
NRW /Pipelines	Kacyiru/Remera (North)																	
Akagera	Masaka																	
Karenge	Karenge 2																	
Future Project: **Stage 2**																		
NRW /Pipelines	Kanombe/Masaka																	
NRW /Pipelines	Runda/Rugalika																	
Future Project: **Stage 3**																		
NRW /Pipelines	Kacyiru/Remera (South)																	
NRW /Pipelines	Gikondo																	
Future Project: **Stage 4**																		
Independent	Rutunga/Gikomero (Phase 1)																	
NRW /Pipelines	Nyamirambo																	
NRW /Pipelines	Ndera-Rusororo																	
NRW /Pipelines	Nyarugenge CBD																	
Akagera	Masaka Expansion																	
Akagera	Gahanga																	
Future Project: **Stage 5**																		
Nyabarongo	Nzove 3																	
NRW /Pipelines	Central Main																	

Fund Agreement /Procurement

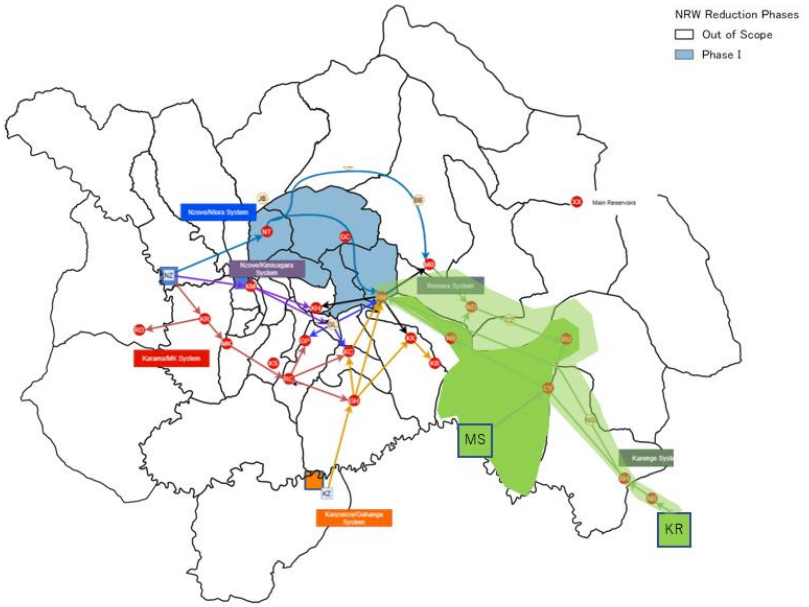
Detail Design/Tenders

Construction

Stage 1 | Priority and Emergency Projects (From 2021 to 2026)

- Prioritize NRW Reduction model project and expansion at the eastern areas.

Stage 1 Investment



1. NRW/Pipelines (Phase 1) North-Central Kigali (Ntora-Remera)
2. Karenge Water Treatment Plant Rehabilitation and Expansion (up to 48,000 m3/day)
3. Masaka New Water Treatment Plant (Phase 1: 20,000 m3/day)

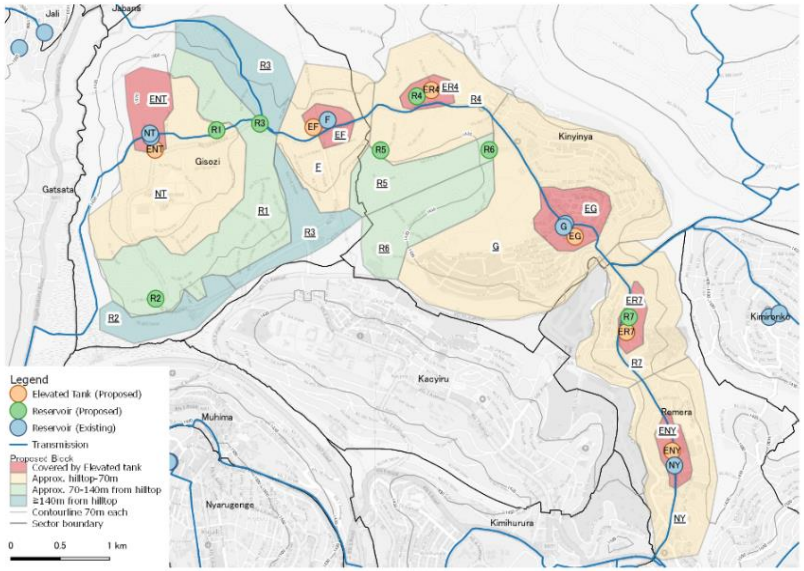
Type, Source	Name of Project	2020-2025						2026-2030					2031-2035				
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Emergent/Priority Projects: Stage 1																	
NRW /Pipelines	Kacyiru/Remera (North)																
Akagera	Masaka																
Karenge	Karenge Rehabilitation																
Karenge	Karenge 2																

Fund Agreement/Procurement
Detail Design/Tenders
Construction

Stage 1-1

The Project for Improvement of Water Supply Services in North-Central Kigali (Ntora-Remera)

(Pressure control and pipe renewal)

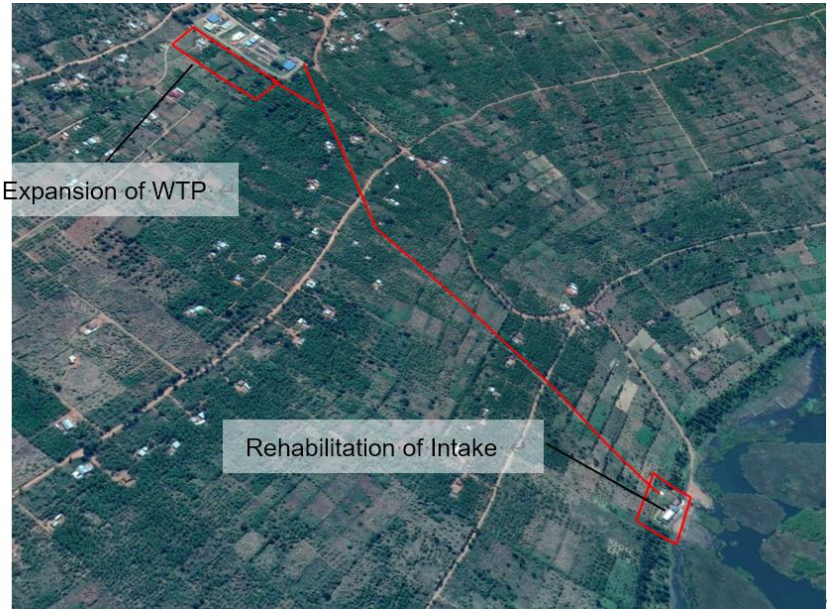


Backgrounds:

- Clearwater transmission capacity from Nzove to Ntora is being upgraded by Japan's Grant Aid. However, the water is not effectively utilized because of the poor distribution facilities from Ntora to the Remera sector.
- Introduction of appropriate zoning of the distribution systems (as Japanese Technology "Block System") and service pipe rehabilitation will reduce NRW and leverage scaling up the success of the Technical Cooperation.
- By reducing NRW, additional water can be transmitted to the Remera (Golf 8) reservoir, which is strategically important to supply water to rapidly developing areas.

Project Components and Facilities	(1) Construction of Service Reservoirs ✓ Service reservoirs (V=100-500m3, 7 nos.), Elevated Tanks (V=50-100m3, 6 Nos) ✓ Flow meters (ND150-200, 15 nos.)), Appurtenant facilities (Pipes, Valves and misc.) (2) Modification of existing/on-going SCADA system (3) Construction of Transmission & Distribution Pipelines ✓ Transmission Main (ND500: 3.5 km) ✓ Distribution Mains (ND63-200: 62 km) (4) Procurement of service pipes and meters ✓ Service pipes (ND13-25: 200 km) ✓ Secondary distribution pipes (ND 63-110: 90km)

Karenge Water Treatment Plan (Rehabilitation and Expansion)



Backgrounds:

- The intake pumps are damaged, overloaded and vulnerable to the flooding risk. An old raw water intake pipe (ND300) is damaged and not working properly.
- The existing treatment processes are in over-load operation
- Current capacity cannot meet the large demand in the eastern area.

Project Components and Facilities	**(1) Rehabilitation of intake facility** ✓ Rehabilitation of Raw Water Transmission pipes (ND300) ✓ Relocation of the pump house and upgrading the capacity of pumps and motors **(2) Expansion of Karenge WTP and Forwarding Infrastructure** ✓ **Expansion of Karenge WTP and forwarding** infrastructures Expansion of Intake and WTP for 36,000 m^3/d (In total 48,000 m3/d including Ext.Plant) (Intake pumps, Treatment facilities, Clearwater reservoirs and pumps) ✓ Construction of New Transmission Pipelines (ND700, L= 33 km)

Stage 1-3

Masaka Water Treatment Plant

Backgrounds:

- Water demand growth on the eastern side of the city is urgent (i.e., Masaka, Ndera, Rusororo) and the residents are hard to access safe and steady water supply service due to the lack of water supply capacity.
- It is more efficient to utilize water source at Masaka near the demand area instead of conveying water from other existing WTPs.

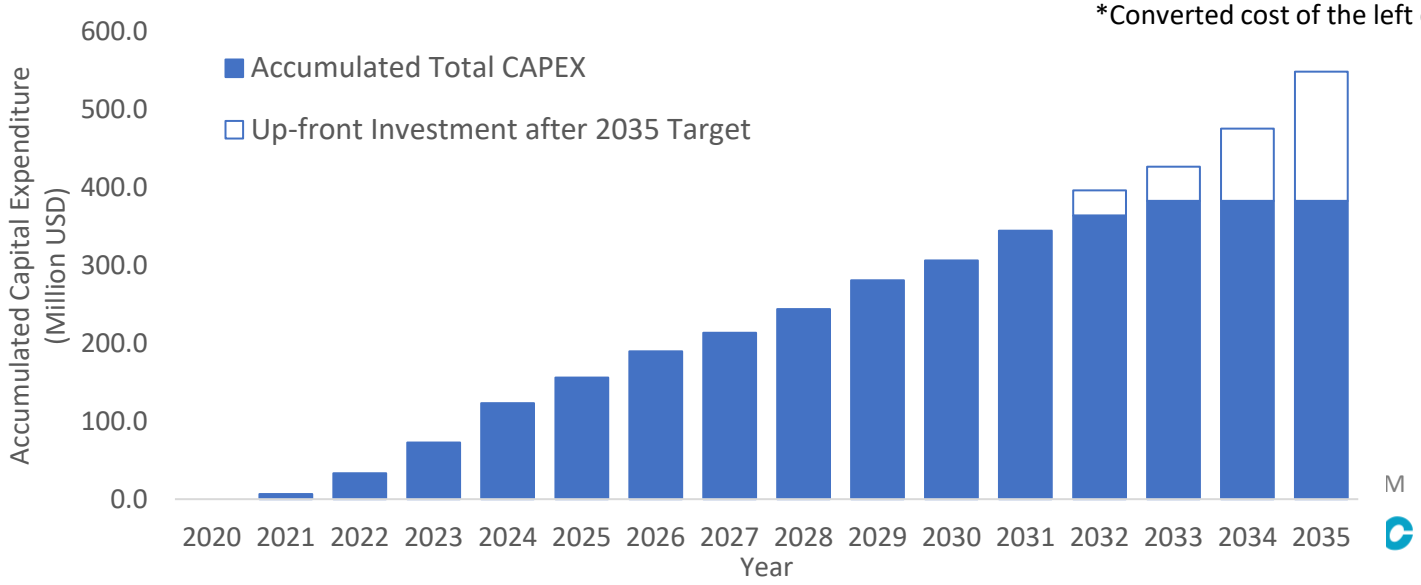
Project Components and Facilities	**(1) Construction of Well fields and Water Treatment Facilities** (Phase 1: 20,000 m^3/d, Phase 2: 20,000 m^3/d) **(2) Transmission pipelines and reservoirs** Clearwater transmission pipeline to Masaka (L=6 km, ND500 x2) Reservoir, Block distribution reservoirs (3 nos.) Clearwater transmission pipeline and a reservoir in Ndera (L=6km, ND400) **(3) Construction of distribution network in Masaka Area**

Cost for 15 Years Investment Plan

- Approx. 353 Billion RWF until 2035, which is equivalent to 330 USD/capita investment.
- The average annual CAPEX will be tripled after the Year 2035 as the population rapidly increases.

Period	Estimated Cost	
	million USD	(Billion RWF)*
Total Cost subject to 2035 evaluation	**382.7**	**(353.4)**
Total Cost until 2035	**548.9**	**(506.9)**
Total Cost until 2050	1,968.8	(1,818.2)
Average Annual CAPEX from 2020 until 2035	34.3	(31.7)
Average Annual CAPEX from 2036 to 2050	94.7	(87.4)

*Converted cost of the left column



Chapter 15: Economic Evaluation (15.1)

4. Results of Economic Evaluation

The economic evaluation is carried out on the basis of the above economic costs and benefits. From the evaluation, the projects are concluded to be **economically feasible** as the EIRR of the projects exceed 10% of the opportunity of cost of capital.

EIRR (Economic Internal Rate of Return)	**: 12.0%**
NPV (Net Present Value)	: 22,390 million RWF
B/C (Benefit-to-Cost ratio	:1.11

Chapter 15: Financial Consideration (15.2)

(2) Financial Cost

Capex and Opex: Same as estimated in the study on the Economic Evaluation

(3) Revenues

= Incremental Consumption with Projects (X) Present water tariff (840 RWF/m^3)*

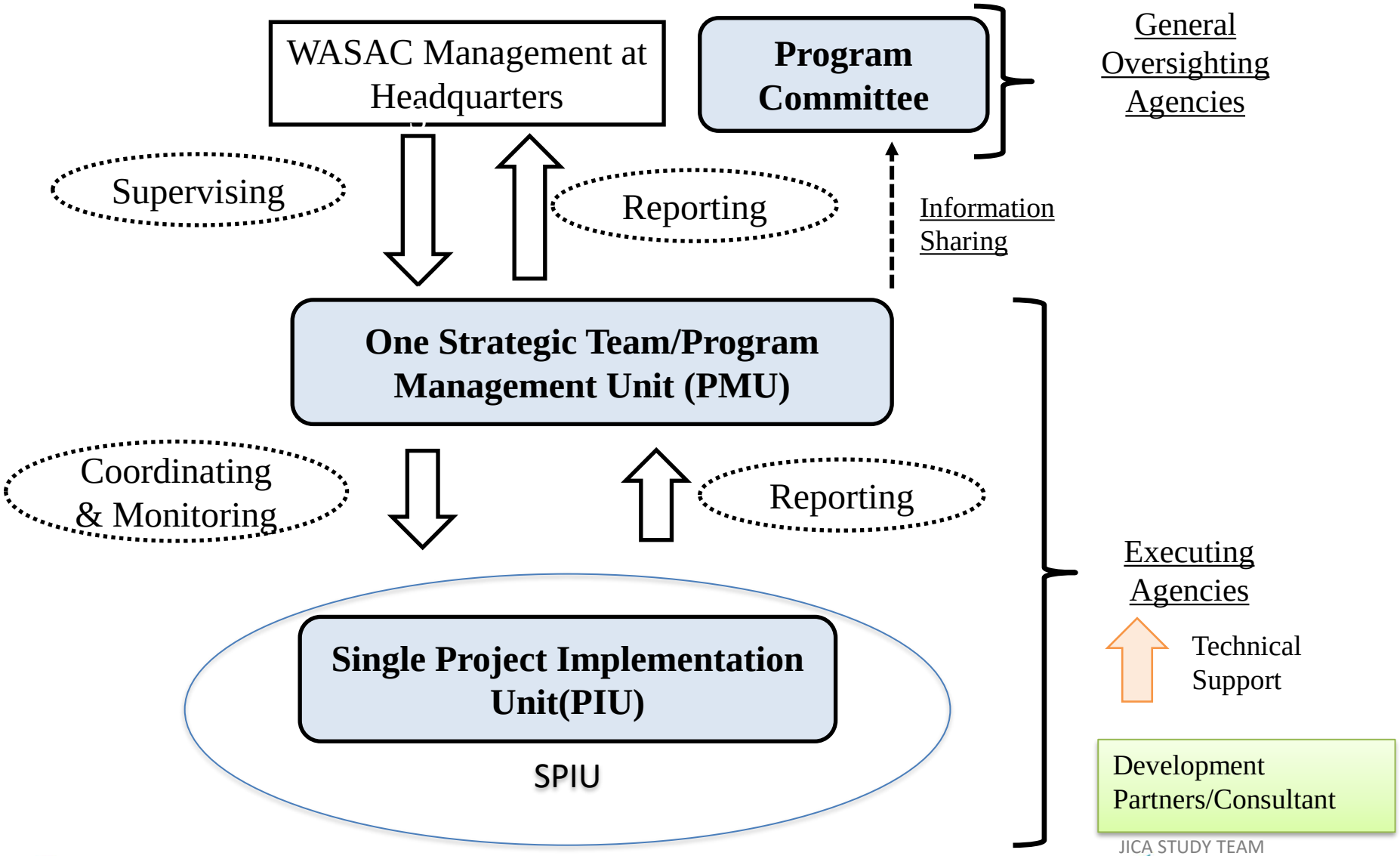
** : the base rate of case-2 studied in the MP by the JST*

(4) Results of Financial Evaluation

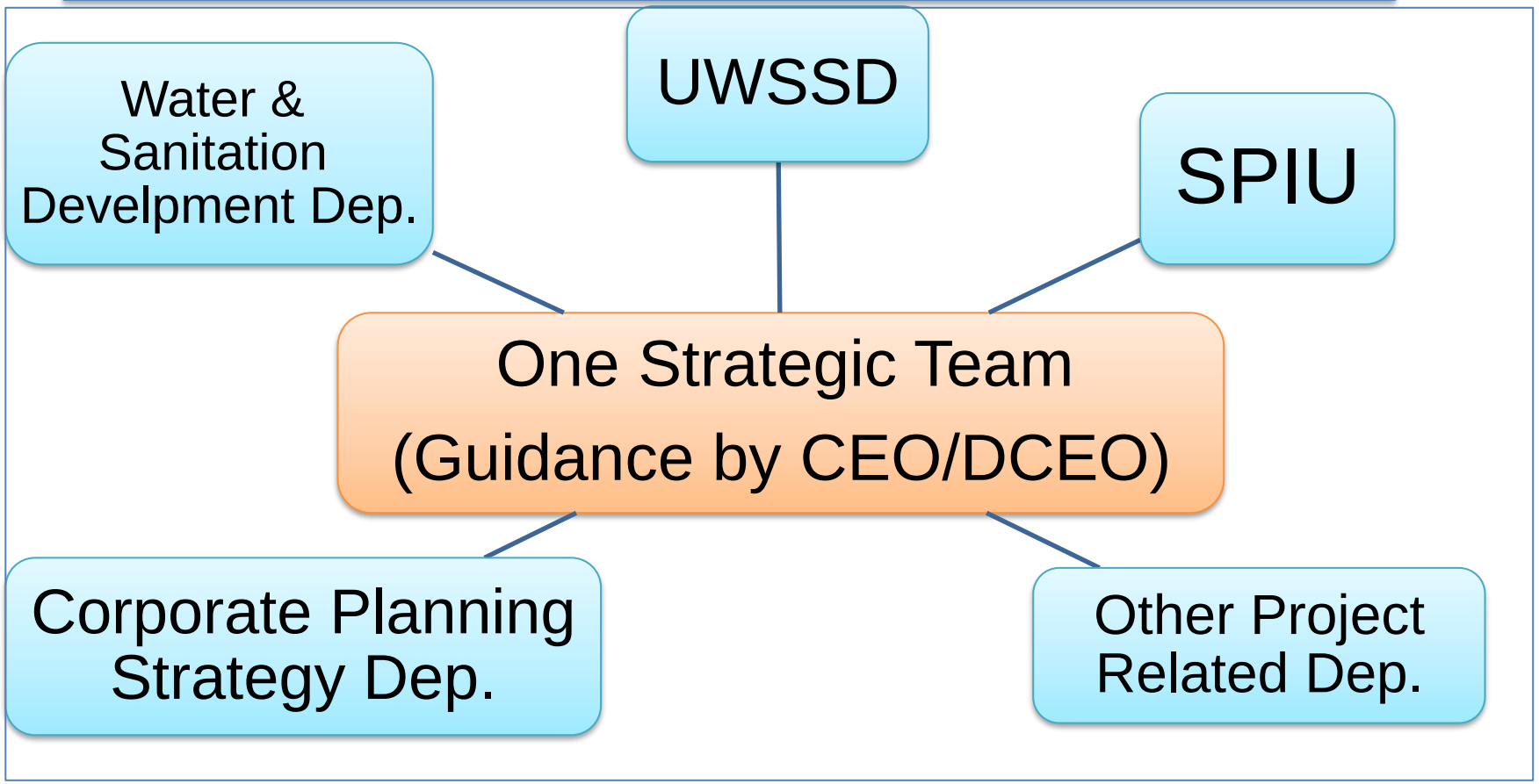
The projects are judged to be financially feasible as the FIRR of the projects exceeds 6.3% of the opportunity cost of capital

FIRR (Financial Internal Rate of Return	: 6.8%
NPV (Net Present Value)	: 12,520 million RWF
B/C (Benefit-to-Cost ratio	: 1.04

Implementation Structure of Masterplan



Making One Strategic Team for Cross Department Issues



Prioritizing Organizational Strengthening Measures

By forming One Strategic Team to tackle following urgent issues;

- Strengthening Financing Management Capability
- Enhance NRW Reduction
- Reduce Production Cost
- Data (GIS) Utilization for Pipe Maintenance and Service Record
- Enhance Water Source Maintenance Capability
- Enhance Capability of Water Supply and Distribution Pipelines

Chap17: Recommendations

- 10 recommendations are summarized in **three pillars on a foundation** which supports the vision of the utility.

"the most sustainable Water and Sanitation Utility in Africa"

Accelerate investment and Monitor improvement	***Secure safe water through resilient O&M***	***Sustainable Financing and ensure affordability***
3. Implement 15 YIP to expand and reconstruct the infrastructure: Quality Investment	5. Strengthen institutional coordination on water sources	8. Dissemination of contents: Accelerate investment and through cooperation
4. Monitor and improve the efficiency of water and energy, and equality of water supply	6. Establishment of water source monitoring system	9. Affordability measures for low-income customers
	7. Establish resilient systems considering operation under crisis	10. Tariff revision considering the long-term development

1. Establishment of OST and PC

2. Institutional Capacity Building of WASAC with Dev. Partner's Aid

Establish a firm implementation scheme of M/P and 15YIP

Chap17: Recommendations (continued…)

Foundation

1. Establishment of OST and PC
~~ for Proper Monitoring of M/P Including 15-YIP implementation

2. Implementation of organizational strengthening measures together with Development Partners
~~ for Realizing/Facilitating M/P and 15-YIP

Pillar (Accelerate investment and Monitor improvement)

3. Implement 15 YIP to expand and reconstruct the infrastructure
~~ Through Quality Investment and Distribution Block System

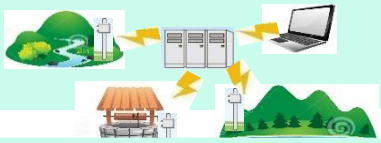
4. Monitor and improve the efficiency of water and energy, and equality
~~ Smart Flow/Pressure Monitoring to Tackle NRW Reduction & Intermittent Supply

Chap17: Recommendations (continued…)

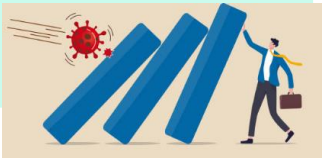
Pillar (Secure safe water through resilient O&M)

5. Discussion among MININFRA/ WASAC & RWB on water source
~~ Eyeing Future Water Source Development at Right Timing

6. Establishment of water source monitoring system
~~ For Proper Water Resource Management



7. Establish resilient systems considering operation under crisis
~~ Financial & Asset Management, Emergency Response and BCP



Pillar (Sustainable Financing and ensure affordability)

8. Dissemination of content of M/P including 15 YIP
~~ For Attracting Potential Investors

9. Discussion among MININFRA/ WASAC & RURA/ regional Govts
~~ For Facilitating Low-income Group to Join WASAC User in Future

10. Discussion among MININFRA/ WASAC & RURA on tariff revision
~~ So That WASAC Can Maintain Stable Profit for Its O&M

Chap11: Recommendations (extracted)

1. Dedicated unit (e.g., OST & PC) that gives direction and monitors the progress of the 15-Year Investment Plan & KPI should be established.
2. Discussion on permission for abstracting water resource for itemized projects in the 15-Year Investment Plan should be started.
   (among MININFRA/WASAC/RWB)
3. Establishment of water sources monitoring system is needed. Borehole management for sustainable yield, regular investigation … are necessary.
4. Dissemination of the contents of the 15-Year Investment Plan and M/P should be necessary to draw attention of the potential development partners and/or investors.
5. Pro-poor measures to support low-income groups to join WASAC's service should be discussed concerned authorities (CoK/MININFRA/RURA).
6. Tariff revision should be discussed among concerned authorities (MININFRA/WASAC/RURA) in line with the increase of new facilities for sustainable utility's business operation.
7. Strengthening the organizational and institutional capacity of WASAC is necessary. Cost for Human Resource development should also be secured.

Conclusion

- Through Master Plan Study
  - Demand Forecast Has Carried Out
    - 15 years later required water volume become 3 times (335,000 m3/d)
    - 30 years later it's going to be 10 times (1,070,000 m3/d)
  - To meet this demand
    - Plans to expand water supply capacities are prepared
    - Plans to realize short term target (5 stages of investment plan)
    - Recommendations, mitigation measures and monitoring plans are prepared
- As a Conclusion
    - The "no project option" can not be taken as an alternative
    - We must carry out development projects based on MP which is planned with consideration (minimize potential environmental and social impacts)

Request for Comment

- We want to collect opinion and concerns further improvement
  - Data Shall be available from following link：
    - https://..
  - Please use following link for comments:
    - https://..