

REPUBLIC OF RWANDA



MINISTRY OF INFRASTRUCTURE

# National Water Supply Policy

Kigali, December 2016

## FOREWORD

Access to safe and clean water plays a vital role in social and economic development, poverty reduction and public health. For that reason, the Government of Rwanda has made sustainable water supply one of priorities of the National Development Agenda and is establishing supportive policies and legislation.

The Ministry of Infrastructure has developed the National Water Supply Policy to provide clear direction for the implementation of activities in the water supply sub-sector. The Policy outlines initiatives to overcome challenges and exploit existing opportunities in an integrated manner, and will effectively contribute towards achieving the goals of the National Development Agenda.

The Government of Rwanda will ensure increased sustainability and access to safe and clean water through improving operations and maintenance of existing water supply infrastructure and providing new water facilities.

The Government of Rwanda is also encouraging the active participation of local private service providers and operators in the water supply sub-sector and will ensure that the principles advocated by the Policy are adhered to in the entire process of water supply services provision.

Further, the Government strongly recognizes the initiatives of international and regional communities and will continue to cooperate with them to achieve the Sustainable Development Goals under the 2030 Agenda.

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## Acronyms

AfDB	African Development Bank
CAPEX	Capital Expenditure
CoK	City of Kigali
EDPRS	Economic Development and Poverty Reduction Strategy
EIA	Environmental Impact assessment
EICV	Integrated Households Living Conditions Survey
GIZ	Gesellschaft für Internationale Zusammenarbeit
ICT	Information and Communication Technology
IPRCs	Integrated Polytechnic Regional Centres
JICA	Japan International Cooperation Agency
LODA	Local Development Agency of Rwanda
M&E	Monitoring and Evaluation
MINALOC	Ministry of Local Government
MINECOFIN	Ministry of Finance and Economic Planning
MINEDUC	Ministry of Education
MININFRA	Ministry of Infrastructure
MINIRENA	Ministry of Natural Resources
MIS	Management Information System
MoH	Ministry of Health
NAPA	National Adaptation Plan
NGO	Non-Governmental Organization
NRW	Non-Revenue Water
O&M	Operation and Maintenance
PPP	Public-Private Partnership
RBC	Rwanda Biomedical Centre
RDB	Rwanda Development Board
DHS	Demographic and Health Survey
RECO	Rwanda Electricity Corporation
REMA	Rwanda Environment Management Authority
RNRA	Rwanda Natural Resources Authority
RSB	Rwanda Standards Board
RURA	Rwanda Utilities Regulatory Authority

RWASCO	Rwanda Water and Sanitation Corporation
RWSS	Rural Water and Sanitation Services
SDGs	Sustainable Development Goals
SWAp	Sector-Wide Approach
TVET	Technical and Vocational Education Training
UNICEF	United Nations Children’s Fund
UR-CST	University of Rwanda-College of Science and Technology
WASAC	Water and Sanitation Corporation
WASH	Water, Sanitation and Hygiene
WDA	Workforce Development Authority
WHO	World Health Organization
WRM	Water Resources Management
WSS	Water Supply and Sanitation

## 1. INTRODUCTION

### 1.1. Rationale for an updated policy document

Recognizing the key role of water and sanitation in protection of public health, socio-economic development and gender empowerment, the Government of Rwanda has committed itself to reaching very ambitious targets in water supply and sanitation, with the vision to attain 100 per cent service coverage by 2017/18, as per the Economic Development and Poverty Reduction Strategy (EDPRS) 2. The importance of adequate water supply and sanitation services as drivers for social and economic development, poverty reduction and public health is also fully acknowledged in Rwanda's flagship policy documents and national goals.

To achieve the overall Water Supply sub-sector goals, the Government of Rwanda adopted the National Policy and Strategy for Water Supply and Sanitation Services in 2010. The revised Policy presents the sector's approach on how to achieve the Vision 2020, Sustainable Development Goals (SDGs) and EDPRS objectives and breaks them down into concrete principles, objectives and statements through effective coordination among all the key players. Such players include, in particular, Districts; Ministry of Health (MoH); Ministry of Local Government (MINALOC); Ministry of Education (MINEDUC); Ministry of Natural Resources (MINIRENA); Water and Sanitation Corporation Limited (WASAC); Rwanda Utilities Regulatory Agency (RURA); private sector; civil society and development partners.

The Water Supply sub-sector context in Rwanda has changed considerably since the adoption of the 2010 National Policy and Strategy for Water Supply and Sanitation Services, which set the target of 100 per cent coverage of rural and urban water supply and 100 per cent coverage of household sanitation by 2020. The EDPRS 2, which was adapted after the approval of the Policy, has set the target of attaining 100 per cent water and sanitation service coverage by 2017/18. Major institutional reforms have also been implemented since then. Rwanda Electricity Corporation (RECO), Rwanda Water and Sanitation Corporation (RWASCO) and the Energy, Water and Sanitation Authority (EWSA) are no longer in existence. The main implementing agency for the Water Supply sub-sector is now WASAC Ltd which was separated from Energy Group.

Moreover, several of the targets set in the Policy needed to be critically assessed and revised, based on the current performance, with due consideration to current coverage, gaps/disparities within urban and rural areas (and even within individual districts), functionality and reliability and potential impacts of climate change.

A number of emerging issues were identified in the 2010 Policy but have to be yet fully addressed. These include:

- 1) Decentralization of water and sanitation services;
- 2) Sector financing mechanisms and access to funding for decentralized actors (district, communities, private operators);
- 3) Performance of public-private partnership arrangements
- 4) Further sector harmonization towards a sector-wide approach (SWAp); and
- 5) The emerging challenge of increased per capita costs to serve the remaining unserved population to reach the target of 100 per cent.

Keeping the above in view, the Government of Rwanda decided to update the current Policy and Strategy to align it with EDPRS 2 as well as the SDGs, with due consideration to the changed context, emerging issues and best practices and lessons learned.



## 1.2. The updating process

The revised policy document is the result of a comprehensive desk review of key sector documents (*refer to the bibliography in the Annex*) as well as a broad discussion and stakeholder consultation process led by a dedicated task force and supported by a team of international consultants. The consultation process followed the following main phases:

Phase 1: Learning from the past and defining the challenges for the future

Phase 2: Developing a broad consensus on the way to go forward in the water supply and sanitation sector

Phase 3: Formalizing and operationalizing the consensus

Two sector working group meetings, five task force meetings and five provincial consultation workshops and a national validation workshop were held to ensure adequate participation of all sector stakeholders, including those external to the sector.

More specifically, the following key stakeholders have been consulted at the national level:

- a) Government ministries/agencies: Ministry of Infrastructure (MININFRA), MINIRENA, MINALOC, MoH, Ministry of Finance and Economic Planning (MINECOFIN) and MINEDUC
- b) Rwanda Environment Management Authority (REMA), RURA, WASAC and Rwanda Natural Resources Authority (RNRA)
- c) Development partners: United Nations Children’s Fund (UNICEF), Japan International Finance Corporation (JICA), African Development Bank (AfDB), Water Aid, Gesellschaft für Internationale Zusammenarbeit (GIZ), SNV Netherlands Development Organisation, Water for People
- d) Universities: College of Science and Technology (CST); University of Rwanda
- e) Forum of private operators in water and sanitation

In addition, the following stakeholder groups have been consulted at provincial and district levels during five provincial consultation workshops (each one in the four provinces and in the City of Kigali):

- f) Representatives of the provincial administration
- g) Members of district executive committees and representatives from the district water, health and education offices
- h) Representative from the Kigali City Council
- i) Selected representatives from secondary cities, towns and Imidugudu
- j) Selected representatives from water user associations and local water operators

## 1.3. Scope of the policy and definitions

For the purpose of this policy document, the term ‘water supply services’ means the abstraction from a water resource, conveyance, treatment, storage and distribution of potable water, including all the organizational and sensitization arrangements necessary to ensure sustainable services and benefits. This includes domestic water supply (drinking water and other household uses) as well as the provision of water for economic activities through public piped networks and protected point water sources in rural and urban areas.

The coverage indicators – access to safe water supply in rural and urban areas – are the single most important indicators of the WSS services sector. They represent the sector in Rwanda’s flagship development documents (EDPRS 2, Vision 2020) as well as a target for SDG 6: ‘Achieve universal and equitable access to safe and affordable drinking water for all’. It is therefore important to provide a clear definition of these indicators. The following definitions are currently used in Rwanda:

**Access to safe water supply:** Per cent of people with access to an improved source of drinking water within 500 metres in rural areas and 200 metres in urban areas. This access should be reliable and affordable, and provide an adequate quantity (minimum 20 litres/person/day in rural and 80 litres/person/day in urban areas) within a reasonable amount of time<sup>1</sup>. Improved water sources are piped water, protected wells and springs. Water quality is assumed to be acceptable for improved water sources but shall be tested for compliance with national and World Health Organization (WHO) standards for potable water.

Rainwater harvesting is not considered as a safe source of water supply in Rwanda.

## 2. POLICY CONTEXT AND PROBLEM STATEMENT

The following paragraphs highlight the importance of water supply in the larger context of human and social economic development and place the National Water Supply Policy and Strategy in the larger policy context for the overall development of Rwanda. This chapter concludes with a summary of the key challenges that the Policy and Strategy tries to address.

### 2.1. The importance of water supply services for development

Water supply affects broad areas of human life. The provision of adequate WSS services plays a crucial role in preventive health care and is more generally a prerequisite and indicator for socio-economic development. Access to drinking water is also a basic amenity, ranked among the highest priority public services by Rwanda's population<sup>1</sup>. It reduces time spent on fetching water and has a positive impact on school enrolment and attendance, particularly for girls. The lives of women are strongly affected by unsafe, distant water supply, as women are generally responsible for water collection and handling, for household hygiene and for caring of the sick.

Poor water supply and sanitary conditions due to the lack of adequate water supply promote diarrhoea, intestinal parasites and environmental enteropathy, and have complex and reciprocal links to malnutrition in children. Existing evidence demonstrates that water, sanitation and hygiene (WASH) can affect a child's nutritional status via at least three direct pathways: (i) diarrhoeal diseases, (ii) intestinal parasites and (iii) environmental enteropathy. Moreover, lack of adequate WASH services also impacts the nutritional status indirectly through increased workload (walking long distances in search of water facilities) and diverting mothers' time from child care<sup>2</sup>. Malnutrition weakens the body's defences and makes children more vulnerable to disease. At the same time, diarrhoea and intestinal parasites contribute to malnutrition by causing decreased food intake, impaired nutrient absorption and direct nutrient losses. Studies pointed out that even a relatively mild infestation of parasites can consume 10 per cent of a child's total energy intake as well as interfere with digestion and absorption. Unsanitary environments due to a lack of adequate water supply also contribute to malnutrition by challenging children's immune systems; nutrients that would otherwise support growth instead support the immune response. Some research has demonstrated a strong relation between diarrhoeal infections in the first two years of life and cognitive functioning when children are between 6 years old and 9 years old. Numerous studies have also reported that malnutrition and stunting have been found to be related to children's mental and social development, in both the short and longer terms. Children who have suffered from early malnutrition have lower intelligence quotients and school achievement levels and more behavioural problems in later ages.

<sup>1</sup> Economic Development and Poverty Reduction Strategy, para.2.42.

<sup>2</sup> World Health Organization, United Nations Children's Fund and United States Agency for International Development, 'Improving Nutrition Outcomes with Better Water, Sanitation and Hygiene: Practical solutions for policies and programmes, WHO, Geneva, 2015, available at <[www.who.int/water\\_sanitation\\_health/publications/washannutrition/en/](http://www.who.int/water_sanitation_health/publications/washannutrition/en/)>.

Closely interlinked with other development sectors, the provision of adequate water supply services therefore continues to be a core element of development strategies and indicators, including Rwanda's Vision 2020 and EDPRS 2, as well as the recently endorsed SDGs. It is well known that several SDGs, not just the targets directly related to water supply, are linked to the improvement of water supply.

The Government of Rwanda fully acknowledges the importance of water supply services for human and economic growth and has significantly increased sector funding threefold since 2014 to address the existing investment backlog. It counts on its development partners to match these efforts by increasing targeted support to the sector.

## 2.2. Coherence with development flagships

Rwanda is politically committed to achieving long-term aspirations and targets in sustainable socio-economic development. The related targets and principles are defined in the national development flagship documents.

### 2.2.1. Vision 2020

The Vision 2020 aspiration is that all Rwandans will have access to safe drinking water in 2020. The directly relevant paragraph is quoted below.

**Water:** Rwanda will continue to invest in protection and efficient management of water resources, as well as water infrastructure development to ensure that by 2020 all Rwandans have access to clean water.

### 2.2.2. EDPRS 2 (2013–2018)

The water supply policy will be coherent with EDPRS 2, Rwanda's medium-term framework for achieving its long-term development aspirations. Improved water supply service delivery is directly related to the following EDPRS 2 Thematic Area priorities:

**Rural Development – Priority 4:** 'Connect Rural Communities to Economic Opportunity through Improved Infrastructure'. This explicitly includes full coverage of quality water and sanitation, to be achieved by 2017/18. 'Water supply and sanitation play a critical role in preventive health care and socio-economic development in rural areas'.

**Rural Development – Priority Area 1:** 'Integrated Approach to Land Use and Human Settlements'. Access to safe water and sanitation is identified as one of the 'pull factors' and social benefits of living in a formal settlement. 'To ensure attractive pull factors for formal settlements, government will utilise district land use plans to coordinate public infrastructure (such as water and electricity) with growing settlements (both existing and new)'.

**Economic Transformation – Priority Area Priority 4:** 'Transform the economic geography of Rwanda by facilitating urbanisation and promoting secondary cities'. Urbanization is an explicit priority in EDPRS 2 because of its importance in economic transformation and moving to a high productivity economy. Among the strategic objectives are integrated development planning and management and the development of six secondary cities as poles of growth. Access to basic infrastructure at the urban level should rise to 100 per cent by 2017/18.

Water supply-related EDPRS 2 outcomes and indicators are as follows:

**Rural Development – Outcome 4.5:** Increased access to water and sanitation facilities  
**3.82:** ... The goal for EDPRS 2 is to ensure universal access to water and sanitation.  
**3.83:** The quality of water delivery will be improved. This will be achieved by assisting districts to plan, design, finance and implement water infrastructure projects. The possibilities for community involvement and private sector management in distribution will be further explored alongside increased public investment. The aim is to ensure that households across rural areas in Rwanda are within 500m of an improved water source.

**Table 1: Extract from EDPRS2 Monitoring Matrix**

EDPRS outcome	Indicators	Baseline value (2012)	2017/18 target
<b>8 – Increased access to basic infrastructure at the urban level</b>	(b) Urban households within 200m of an improved water source	86.4%	100%
<b>12 – Increased access to basic infrastructure for rural households</b>	(b) Rural households within 500m of an improved water source	72.4%	100%

It should be noted, however, that the baseline values of 2012 (based on Integrated Households Living Conditions Survey (EICV) 3 results) did not take distance into account. The more recent EICV 4 and RDHS (2016) results show that actual coverage is considerably lower if the agreed distance criteria are applied. For example, 55 per cent of households in rural areas take 30 minutes or longer to obtain drinking water, whereas 19 per cent of households in urban areas take 30 minutes or longer to obtain drinking water, according to the latest RDHS (2016).

### 2.2.3. Seven-Year Government Programme (2010–2017)

The targets of the Seven-Year Government Programme further reinforce the EDPRS targets.

*Quote from Government Programme (2010–2017), p. 39:*

In regard to water and sanitation, the number of Rwandans using clean water will be 100%, whereas the number of those with proper sanitation infrastructure will increase from 45% to 100% by 2017.

### 2.2.4. Sustainable Development Goals (SDGs)

In September 2015, countries adopted the 2030 Agenda for Sustainable Development to end poverty and promote prosperity for all while protecting the environment and addressing climate change.

The new 2030 Agenda has water and sanitation at its core, with a dedicated SDG 6 on water and sanitation and clear linkages to goals relating to health, food security, climate change, resiliency to disasters and ecosystems, among many others.

Reaching the ambitious objectives of the 2030 Agenda demands that we address universal and equitable access to drinking water and sanitation along with issues of quality and supply, in tandem

with improved water management to protect ecosystems and build resiliency. They include two main goals:

**Goal 6** Ensure availability and sustainable management of water and sanitation for all

**Goal 17** Strengthen the means of implementation and revitalize the global partnership for sustainable development, in the context of water and sanitation.

This policy will be followed by development of the national strategic plans and master plans. During the formulation and updating process of these plans, special attention will be paid to ensure that national targets are aligned to the SDG targets (*refer to Annex 1*).



**Figure 1: SDG 6 and related targets**

### 2.2.5. Health Policy 2014 and Health Sector Strategic Plan (2012–2018)

This objective of the Health Policy is centred on the reduction of burden of disease of the most important health problems in Rwanda – i.e., maternal and child health problems, infectious diseases and non-communicable diseases through access to primary health care. Both prevention and treatment and care services are included in these programmes, as well as interventions aimed at improving important health-determining factors, such as behaviour change communication, promotion of adequate nutrition, environmental health and sanitation, and access to safe water.

Policy directions with relevance to the water supply sub-sector include:

- a) The health cross-sector collaboration has to be strengthened to tackle multi-factorial determinants affecting the health of the population (poverty reduction, nutrition and food security, water and sanitation, human rights, education and social protection, empowerment of youth and vulnerable populations).
- b) Environmental health interventions will be strengthened from the national to the village levels. Hygiene inspections will be decentralized to empower districts and sectors and the Community-Based Environmental Health Promotion Programme will be scaled up to be implemented country-wide.
- c) Inter-sectoral collaboration between non-health departments and the MoH is essential for interventions targeting health determinants: water distribution and sanitation systems to meet

essential health needs, public hygiene activities (domestic and health-care waste management, health inspections).

### 2.2.6. Water Resource Policy 2011 and Water Resources Management Sub-Sector Strategic Plan (2011 – 2015)

According to the Water Resources Management Sub-Sector Strategic Plan (2011–2015), the main drivers for water demand in Rwanda are rapid population growth, poverty and climate change. Environmental degradation in wetlands is high due to uncontrolled poor settlements, and water pollution is abundant especially when it comes to floods, as storm water protection systems and disaster management is barely existent.

Historically, water resources management and water supply and sanitation were managed by one ‘water unit’; however, since the separation of water supply and sanitation (under MININFRA) and water resources management (under MINIRENA, established in 2011) the different mandates are clearly defined and anchored in relevant enabling policies and strategies for each water sub-sector.

*Quote from the Water Resources Policy 2011:*

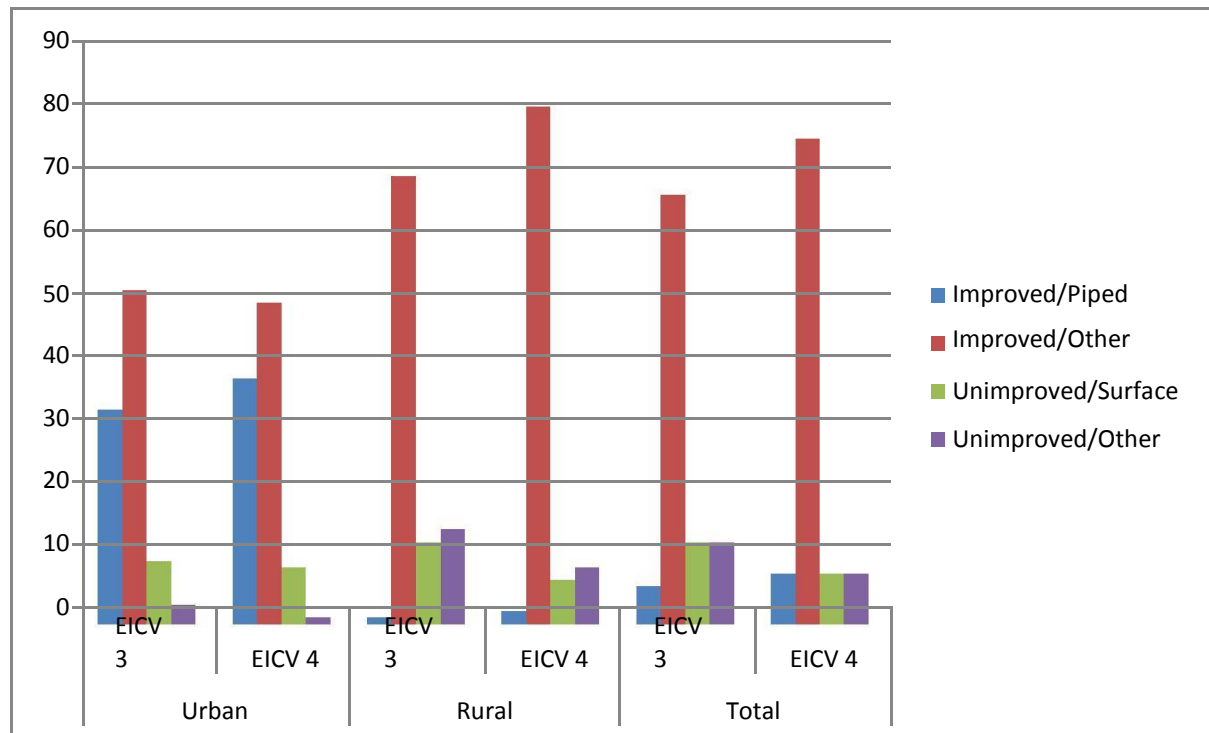
Efficient and equitable water allocation and utilization framework: Under this outcome, sectoral plans for water demand and utilization will be formulated and implemented; Catchment-based Water Allocation Master plan reflecting rights and obligations of water users developed and implemented; a comprehensive strategy for promoting water use efficiency, will be developed. A key target in water conservation and efficient use will be to ensure that all institutions and at least 50% of households have rainwater harvesting facilities.

### 2.3. Status of Rwanda’s water supply sub-sector

The long-term Vision 2020 of the Government of Rwanda has been converted into a series of medium-term strategic plans, where the first phase of the Economic Development and Poverty Reduction Strategy (EDPRS I) covered the period 2008–2012 and marked a distinct change in the approach to development. Priority was given to accelerating economic growth, creating employment and generating exports. During that time, remarkable socio-economic progress was made. Rwandans have benefited from rapid economic growth, reduced poverty, more equality and increased access to services delivery. Consequently, Rwanda has continued to achieve remarkable gains across service delivery sectors such as health, education, business environment, energy, mining and agriculture. The Strategic Capacity-Building Initiative that started in 2010 has further increased Rwanda’s ability to translate intended priority policies into reliable day-to-day implementation.

Other key achievements include the review and update of the existing Water Supply and Sanitation Policy and Strategy (2010); data reconciliation within the sector in order to harmonize the concept and definition of water supply; and the establishment of a SWAp Secretariat whose structure has been agreed on by all the partners, with the next step being its operationalization. The Secretariat has already started playing a bigger role in the sector coordination.

The EICV 4 survey (2013/14) indicates that 85 per cent of Rwanda's population use an improved drinking-water source.



**Figure 2: Drinking-water trends where source: Integrated Household Living Conditions Survey (EICV 3 – 2010/11 and EICV 4 – 2013/14)**

According to the most recent RDHS (2014/15), 91 per cent of the urban households and 69 per cent of rural households use an improved drinking-water source. Out of the 31 per cent of rural households that had no access to an improved drinking-water source, 16 per cent collect their water from unprotected springs, 13 per cent collect it from surface water and 2 per cent retrieve it from an unprotected well. Regarding the time spent round-trip to obtain drinking water, 55 per cent of households in rural areas take 30 minutes or longer to obtain drinking water.

#### 2.4. Key sector issues and problems to be addressed

Despite the remarkable achievements mentioned in the sector status summary above, the sector is facing several challenges. These challenges include: i) the access gap and the related funding gap for increasing access, particularly in unplanned and scattered settlements in difficult, hilly terrain; ii) depleting water resources, resulting in high costs of service provision; iii) gaps in human resource capacity in areas of planning, project management and operation and maintenance; iv) consolidation and strengthening of institutional responsibilities in the sector; and v) low level of sustainability of WASH services, particularly in rural areas.

In the following sections, these overall challenges are broken down into more specific issues and problems to be addressed in the urban and rural sub-sectors, as well as in the overall enabling environment domains of sector development and institutional capacity. The policy directions in chapter 7 will follow the same structure and are proposed as a direct response to address the problems and key issues.

### 2.4.1. Water supply service delivery in rural areas

The following list highlights key areas which were considered by the sector stakeholders as key issues to be addressed in the current policy/strategy:

- a) Need for a clear strategy and regional master plans how to achieve 100 per cent rural water supply coverage: The sector is clearly off-track with respect to the key EDPRS 2 target of reaching 100 per cent coverage by 2017/18. Given the extremely short timespan remaining this requires a systematic, planned approach towards serving the unserved in the most effective and efficient manner. The proposed strategy would consist of the following key elements:
  - i. A complete **set of master plans** that identify the investment needs as well as the individual projects needed to fill the gaps, particularly to serve all the Imidugudu sites that are not yet served. Master plans should include a clear categorization and prioritization of projects and should be directly linked to other development plans (in particular Imidugudu development and electrification).
  - ii. A **financing plan** that can be submitted to both government and development partners, to make the cost of reaching the EDPRS 2 target transparent and mobilize additional funding.
  - iii. An **implementation concept** consisting of a mix of WASAC-led implementation of large-scale, high-impact projects combined with strengthened implementation support to the districts for the smaller projects.
  - iv. A **sanitation and hygiene programme** that is linked to water supply implementation, to make use of the implementation dynamics (synergies) and of the demand for water infrastructure for achieving lasting improvements in sanitation and behaviour change. This is also to ensure maximum health gains due to the provision of an integrated WASH service package.
- b) Review and reorganize the management structure of rural water supply schemes: The new policy and strategy considers the following aspects:
  - i. Promote the creation of **economies of scale** by clustering service areas, in order to attract professional private operators and improve the available technical and managerial capacities; the option of establishing regionalized (e.g., district level) public utilities could also be considered as an alternative model.
  - ii. Build an effective **operation and maintenance (O&M) support structure** for the management of piped water schemes. Regulation by RURA is not sufficient and, more importantly, does not solve the capacity problem. Direct support and close monitoring are needed to compensate for the weaknesses of decentralized capacities. These cannot be provided by the districts nor by WASAC/rural with the current capacities. An effective O&M support structure should have regional (e.g., provincial) offices and should provide services such as technical advice, spare parts supply, credits for major repairs or scheme extensions, capacity building (training), and water quality monitoring.
  - iii. Strengthen the **presence/monitoring frequency of RURA** in rural areas.
  - iv. Ensure that funding is available for **scheme rehabilitation, upgrades and extensions**. Rural water supply tariffs do not cover the full costs of capital maintenance and infrastructure renewal. It is therefore essential to provide adequate funding to maintain the functionality of the existing infrastructure.
  - v. Incorporate relevant **performance indicators** in districts' performance contracts. Districts should be **licensed and trained as asset holders**.



- vi. Improve **reporting, performance monitoring and benchmarking** of rural water supply schemes, possibly developing the Management Information System (MIS) into a Web-based system that can be accessed by the different stakeholders (WASAC, RURA, districts, operators, the general public) from different locations. This could significantly enhance transparency and reporting.
- c) Develop an effective pro-poor approach: This should be done to ensure that piped water is affordable and that vulnerable groups have access to safe water as payment for water becomes mandatory. This should include aspects such as:
  - i. Clear definition of policy measures in favour of the poor, vulnerable and disabled;
  - ii. Review of water tariff guidelines from a pro-poor perspective;
  - iii. Better regulation of water vendors;
  - iv. Coordination through social clusters at the decentralised level; and
  - v. Maintain subsidies of CAPEX costs to keep rural water tariffs affordable

#### 2.4.2. Water supply service delivery in urban areas

Similar to the key issues identified for rural WSS, the following list of issues highlights key areas that should be addressed in the current policy/strategy:

- a) Need for a strategic plan for how to achieve 100 per cent urban water supply coverage in each of WASAC's urban service areas: The EDPRS 2 target of reaching 100 per cent coverage by 2017/18 requires clear prioritization of the actions to achieve the target. The strategic plan should clearly map the unserved areas and identify the options and financing needs to extend services to these areas. Given the extremely short timespan available, this requires a systematic, planned approach towards serving the unserved in the most effective and efficient manner.
- b) Intensify efforts to attract private-sector investment for bulk water supply: The mobilization of private investment is needed to finance the substantial investments required and is a promising option, as demonstrated by the recent agreement reached.
- c) The thematic complexity of tariff, cost recovery, financial viability, affordability and pro-poor policies: This needs to be addressed in the policy and strategy update process, but further analysis is needed to come up with guiding suggestions. This will have to include the past experience and future policies with programmes targeting the urban poor, including management of public kiosks, prepaid water and social connections.

#### 2.4.3. Overall sector development and management

The following list of issues related to the overall sector development can be considered as a summary of issues and concerns that the sector policy undertakes to address, as well as successes to build on:

- a) Financing: The lack of an overall investment plan does not really allow establishing a proper base to estimate the funding gap to achieve the sector targets. It is therefore imperative to develop a sector investment plan to guide the balance of investment to each of the sub-sectors, as urban water supply is currently significantly underfunded relative to the requirements.
- b) Monitoring and evaluation (M&E): The sectors' M&E and performance measurement framework needs to be strengthened, with a view to create the basis for results-oriented management, planning and budgeting. Disaggregated data need to be collected to capture effects on gender equality and social equity.

A more comprehensive and analytical Sector Performance Report should be prepared to support sector performance review. The current briefs for the Joint Sector Review are not detailed enough for an analysis and discussion of the underlying causes and constraints to be addressed. There should be a well-defined set of sector performance indicators, with clear definitions and calculation methods, which are used for regular performance monitoring and review. Modern communication technologies (for example, a user-friendly website) should be used to promote a standard and 'official' harmonized set of figures for output-based performance assessments.

**Capacity-building requirements:** These need to be addressed in a systematic manner and at all levels. District capacities and ownership are generally growing as the decentralization process progresses. However, the nature of WSS projects involves activities and levels of technology that call for specific expertise, if the high implementation standards developed by the national rural WSS programmes are to be maintained. Therefore, decentralized implementation will be supported by sector-specific backup and training arrangements that will eventually replace the existing project implementation units. It is one of Rwanda's strengths that Technical and Vocational Education and Training (TVET) receive considerable attention. Two new bodies have been created under the MINEDUC: the Workforce Development Authority (WDA) and the Integrated Polytechnic Regional Centres (IPRCs). The water sector should carry out a sector capacity needs assessment with specific emphasis at the district level, and coordinate its capacity development strategies with these institutions, including the Kigali College of Science and Technology (CST) for academic education and research and development.

#### 2.4.4. Institutional responsibilities and capacities

The magnitude of the challenges described above calls for consolidation of the institutional roles and responsibilities. Each of the actors – WASAC/Rural Water and Sanitation Services (RWSS), RURA, districts and private operators – needs strengthening to achieve significant improvements.

Given the double challenge of accelerating implementation of new infrastructure and strengthening the management systems of existing schemes, the current capacities of WASAC's Directorate of Rural Water and Sanitation Services are not sufficient. The districts need intensive support in both areas and, in addition, direct support and monitoring should be provided to the scheme operators, as mentioned above.

The Directorate of RWSS in WASAC is an entity with development objectives aimed at strengthening decentralized capacities, implementing projects and reaching strategic targets in rural areas. It is not a water supply operator, nor does it have revenue and channels or monitor the use of government subsidies for water and sanitation in rural areas. This focus is different from WASAC/Urban, which is a water supply and Sewerage Corporation that operates based on commercial principles. A stronger focus on rural water supply is needed, and this could be promoted by a stronger institutional status of Rural Water Services.

### 3. VISION

The vision of the Water Supply Policy is to:

Ensure sustainable, equitable, reliable and affordable access to safe drinking water for all Rwandans, as a contribution to improving public health and socio-economic development.

## 4. MISSION

The mission of the water supply sector and its key stakeholders (national, local, public and private) is to:

Plan, build and operate water and sanitation services in a sustainable, efficient and equitable manner. Core instruments, capacities and administrative processes will be established/ revised to ensure effective sector programme management and water sector programme steering.

## 5. POLICY PRINCIPLES

The review and update of this water supply policy and strategy is guided by several principles, including:

- a) Priority to basic services: Each person and community has equal right to access basic water services. In order to address the disparities in coverage, priority will be given to the areas having low access to water supply. Due attention will also be given to affordability considerations.
- b) WASH services delivered as an integrated package to ensure maximum health outcomes<sup>3</sup>: The provision of accessible and safe drinking water infrastructure by itself does not necessarily result in the health and poverty reduction outcomes for the communities being served unless it is also fully integrated with improved sanitation and hygiene behaviour change. These three crucial elements “Water – Sanitation – Hygiene (WASH)”, are all equally important for achieving an overall balance (like the three legs of a stool) and sustainability. If one or more ‘leg(s)’ is weak or missing, then the benefits of the other(s) will automatically be severely constrained and the potential for reducing poverty and increasing preventive health outcomes will have been missed. On the other hand, when an appropriate hygiene behaviour change methodology is used strategically ahead of water and sanitation interventions, then a synergy (the sum being greater than the individual constituent parts) results in terms of value for money, sustainability (operation, management and maintenance), improved inter-sectoral collaboration, integration and health and poverty-reduction outcomes. Providing reliable and easily accessible safe drinking water to the tap or public outlet is clearly an important objective of the WSS sector. But unless this water is still ‘safe’ when it goes down the throat of the consumer, or is properly used for hand washing and personal and domestic hygiene practices, gains in infrastructure development will not necessarily translate to the overall important positive health and poverty reduction outcomes.
- c) Decentralization: The responsibility for service delivery is vested at the decentralized level. The Government of Rwanda is committed to building and strengthening decentralized planning, implementation and management capacities.
- d) Community participation: The beneficiaries of water supply and sanitation services shall be actively involved in planning, decision-making and oversight throughout the project implementation cycle. In particular, they will choose the service level that responds to their needs and capacities.
- e) Cost recovery and financial sustainability: Operation and maintenance costs of water supply infrastructure shall be borne by the users, in order to ensure sustainable service delivery. Affordability shall be addressed by the choice of appropriate technologies and by enhancing efficiency, not usually by granting subsidies.
- f) Private-sector participation: The sector will continue to promote delegated management through private operators, which is the key strategy to enhance the sustainability of rural water

<sup>3</sup> Important note: While separate policy/strategy documents for water supply and for sanitation have been prepared that pay adequate attention to the distinct nature and institutional responsibilities for the implementation of the respective sub-sector activities, a close collaboration and coordination mechanism has to be established to ensure the delivery of an integrated WASH service package at the community and household levels.

infrastructure. The private sector will also be encouraged and supported in developing capacities for investment, construction and service delivery in water supply.

Operational efficiency and strengthening of accountability: These are seen as priorities in both urban and rural infrastructure development and management, in order to improve financial viability, minimize fiduciary risk (checks and balances) and optimize the use of available resources.

- h) Interests of women and children: The crucial roles and the particular interests of women and children are fully acknowledged. All sector activities shall be designed and implemented in a way that ensures equal participation and representation of men and women, and that pays due attention to the viewpoints, needs and priorities of women (*see section 7.6.2 for details on the implication*).
- i) Grouped settlements: The Water Supply sub-sector gives preferential consideration to service delivery in grouped settlements, taking into account the changing habitat structure.
- j) Environment and water resources protection: Water supply will be developed in close coordination with water resources management, based on an integrated approach. Water use should be rational and sustainable and shall abide with environmental regulations and safeguards.
- k) Inclusive programme approach: The water supply sector aims to develop a consistent, national approach, to harmonize financing and implementation modalities and to optimize stakeholder coordination. The SWAp as well as the sector's capacity-building efforts will consider all sector stakeholders, including non-governmental organizations (NGOs) and the private sector.
- l) Results-based management: M&E systems will be developed in conjunction with planning and budgeting procedures, involving decentralized actors (in particular the districts), in order to ensure that the activities and investments are in line with the defined sector objectives and priorities. The latest information and communication technologies will be used for real-time monitoring to allow for evidence-based decision-making.

## 6. POLICY OBJECTIVES

The objectives of the policy are formulated to be directly used for strategic planning and monitoring. Each sub-sector objective will be associated with its indicators, time-bound targets and implementation responsibilities (**Table 2**).

**Table 2: Summary table – Policy objectives**

Sub-sector	Objective
Rural – coverage	1. Raise rural water supply coverage to 100 per cent by fast-tracking implementation of a strategic investment programme.
Rural – functionality	2. Ensure affordable rural water supply services and sustainable functionality of rural water supply infrastructure.
Urban	3. Ensure safe, reliable and affordable urban water supply services for all (100 per cent service coverage by 2018) while striving for full cost recovery.
Schools and health centres	4. Ensure safe, affordable and reliable water supply services for schools, health facilities and other public places.
Institutional sector Framework	5. Strengthen the sector's institutional and capacity-building framework.

**Table 3: Baseline and EDPRS 2 targets for rural and urban water supply coverage by 2018**

Specific objective	Indicator (as per EDPRS 2)	EDPRS 2 Target (by 2018)	EDPRS 2 Baseline (based on EICV 3, 2011)	EICV 4 Baseline (2014)	
				without distance	with distance
1. Raise rural water supply coverage to 100 per cent by 2018	Rural Households within 500m of an improved water source	100%	72.4%	83.7%	47.3%
3. Ensure safe urban water supply services for all (100 per cent Service coverage by 2018)	Urban Households within 200m of an improved water source	100%	86.4%	90.0%	60.5%

## 7. POLICY DIRECTIONS

Providing universal access to safe water supply is the overarching sector goal. Improving rural service coverage is decisive for its achievement, as 83 per cent of the population are still living in rural areas<sup>4</sup>. On the other hand, improving service delivery in urban areas is an essential component of urbanization, which is a key element of Rwanda's strategy to foster socio-economic development.

### 7.1.OBJECTIVE 1: Raise rural water supply access to 100 per cent by fast-tracking implementation of a strategic investment programme

Recent progress in increasing rural water supply coverage was insufficient to achieve the sector and EDPRS development goals. In 2014, 84.8 per cent of the rural population used an improved water source, but only 47.3 per cent had access to an improved source within 500 meters distance<sup>5</sup>, which is the distance used for defining EDPRS 2 targets<sup>6</sup>. There are also significant disparities in coverage between districts and provinces.

An outstanding effort and considerable resources – both financial and management resources – will thus be required to attain universal access within a very short period of time.

<sup>4</sup> Fourth Population and Housing Census 2012 (Census Atlas, January 2014, p.43).

<sup>5</sup> EICV4-Integrated Household Living Conditions Survey, Main Indicators Report, August 2015.

<sup>6</sup> Low access within 500 meters was confirmed by the detailed inventory carried out for the Rural water Supply Master plan for the Eastern Province, which found an access rate of 53 per cent (2011; for comparison: 52 per cent according to EICV 4 in 2013/14).

The Government of Rwanda is committed to mobilizing the necessary resources. However, even with sufficient funding, the challenges to cope with the task in terms of planning, procurement and implementation are extraordinary.

The following policy statements are therefore centred on the investment planning, financing and implementation requirements to substantially increase rural water supply coverage in a short period of time. As this cannot be achieved through 'business as usual' in a decentralized implementation framework, it is necessary to develop a systematic, planned approach towards serving the unserved in the most effective and efficient manner. This includes the following key elements:

- A complete set of master plans that identify the investment needs as well as the individual projects, by project categories;
- A financing plan that can be submitted to both government and development partners, in order to make the cost of reaching the EDPRS2 target transparent and mobilize additional funding;
- An implementation concept, consisting of a mix of large-scale projects to be implemented by WASAC and smaller projects by the districts or authorized civil society groups with support from WASAC.

Each of these elements is further elaborated in the following sub-sections:

#### 7.1.1. Develop a set of master plans that define, for the entire national territory, the projects and investment needs to achieve 100 per cent access to water supply in rural areas

Achieving universal access to safe water in a short time is only possible if project selection, financing and implementation are targeted according to a master plan that identifies the necessary infrastructure projects as well as investment needs.

The sector will therefore develop a set of master plans that will guide both central implementation of large projects and district-led implementation of smaller projects. The master plans will be prepared for the entire territory of Rwanda using the same set of design criteria and planning parameters, based on a maximum acceptable distance of 500 meters and 200 meters from an improved water source in rural and urban areas, respectively. In line with rural development policies, the supply strategy will focus on providing access to safe water for all existing and planned settlements (Imidugudu) sites. It is expected that the percentage of scattered rural households, which cannot be served according to the targeted standards, will continue to decrease<sup>7</sup>. Convenient access to safe water will be one of the incentives (pull factors) for people to move to formal settlements.

The emphasis of the supply strategy will be on piped water systems. Replacement or rehabilitation of deteriorated existing infrastructure will also be included. In addition to serving the unserved areas, this will raise service levels for both households and public institutions.

Unit costs to serve the remaining population are expected to be relatively high as the 'low-hanging fruits are taken'; most schemes will involve pumping and many will have to cover long distances between water source and water users.

The water supply master plans will be closely coordinated with other relevant plans, including land use and water resources planning.

WASAC will provide technical support to districts to ensure efficient and high-quality implementation of the smaller schemes.

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<sup>7</sup> EDPRS 2 target: 70 per cent of rural households living in enhanced rural settlements that facilitate access to basic services by 2018

### 7.1.2. Develop a financing plan for achieving 100% access to rural water supply and establish funding channels for projects to be implemented in rural areas

The ambitious goal of achieving 100 per cent coverage in a short time requires a significant, coordinated effort to mobilize the required funds by both the Government of Rwanda and its development partners. The bulk of the necessary investments will have to be funded from public sources, as global evidence suggests that private-sector investment in rural water supply continues to be limited.

It is important to make known the costs and the funding gap for achieving the goal of universal access to safe water. This information will reveal the fact that the sector will only be able to achieve its flagship goal if the necessary funding is made available.

Based on the types of projects identified in the master plans, the funding needs will be allocated to WASAC (for large<sup>8</sup> projects) and the districts (for smaller projects).

Funding for the district projects will be partly provided through earmarked budget allocations or through Local Administrative Entities Development Agency (LODA). It is furthermore desirable to establish a pooled funding mechanism for donor funds. If this is not viable, donor funds will be channelled through parallel, coordinated projects with harmonized implementation procedures. Financial management, implementation and reporting will follow the same government procedures, irrespective of the source of funding. Decentralized funding shall be linked to appropriate arrangements for technical support and monitoring.

### 7.1.3. Empower districts for effective project implementation

The Districts will take the lead in planning and implementing the smaller projects of the rural water supply programme, applying their regular procurement, contract management, and financial and reporting procedures. The overall coordination at the District level will be ensured by the District Water, Sanitation and Hygiene Boards (DWASHB). Water supply performance indicators will be incorporated in the Districts' performance contracts.

In addition, a support framework consisting of earmarked funding, technical support, capacity building and monitoring will be needed to enable the Districts to efficiently implement a programme of the required scope.

Capacity building will target the District Water Engineers as well as other District and Sector officers to strengthen their implementation, supervision and monitoring capacities. Sufficient means of transport need to be provided for these officers to ensure adequate project follow-up and supervision.

Monitoring will include both implementation progress of the projects and progress towards achieving the universal access goal. To this end, the existing MIS needs to be improved to:

- Include indicators that measure the level of sustainability and functionality, such as an operational tool for monitoring implementation progress;
- Make it accessible at the decentralized (district) level, in line with the districts' important role in implementation.

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<sup>8</sup> The current threshold for a 'large' scheme is more than 20 kilometers pipeline length or 9 litres per second water production

#### 7.1.4. Ensure effective technical support and monitoring of rural water services

The Directorate of Rural Water Services needs to be present in the districts to fulfil the tasks stated above.

The Directorate of Rural Water Services will have the mandates of:

- a) Technical support to Districts for planning, design and implementation of projects and quality assurance (adherence to guidelines, standards and procedures);
- b) Monitoring of implementation progress and coherence with investment plans and strategic targets;
- c) Assessments and monitoring related to earmarked grant funding for water supply projects;
- d) Support districts to put in place water facilities management;
- e) Capacity building and training of local government staff and water services providers;
- f) Follow-up of the District WASH Boards and other local stakeholders;
- g) Monitoring of the water services management to ensure effective O&M support for rural water supply and service level;
- h) Creating an enabling framework for improved water supply services; and
- i) Ensure reporting of water supply activities.

#### 7.1.5. Develop harmonized design and implementation guidelines for rural areas

The choice of affordable technology, appropriate design and good workmanship are important prerequisites for the sustainability and financial viability of rural water infrastructure. WASAC will therefore develop, disseminate and continuously update a technical implementation manual that provides guidance for Districts, the private sector, NGOs and other partners involved in the development of rural water systems.

The manual will provide planning tools, design and quality standards for a range of technologies, service levels, types of settlement (habitat structure) and natural environment (climate, geology), with a clear preference for low-cost technologies such as gravity schemes. Higher upfront investments are acceptable if they lead to lower operation and maintenance costs (life cycle costs approach). The use of diesel generators shall be discouraged in favour of grid extension or the use of solar power for pumping. Rainwater catchment systems will be promoted as a complementary source of water for both households and public buildings.

The potential to use groundwater will be established in cooperation with MINIRENA. As a priority, better understanding for groundwater availability (sustainable yield, quality) shall be developed for the areas where natural springs are lacking.

The implementation manual will also include guidance on environmental, social and gender issues to be taken into account during all stages of planning and execution.

#### 7.1.6. Promote household connections to improve service levels, increase water consumption and improve the financial viability of water supply schemes

New investments will aim at improving service levels in addition to universal coverage. Water to be carried from a distant point water source is not in line with the service levels to be provided in Imidugudu, where higher service levels are expected to contribute to socio-economic development.

Existing rural water supply schemes in Rwanda have few household connections, other than those of public institutions. This leads to very low consumption, typically of the order of 5 litres per capita per day. This situation is not desirable from a hygiene promotion point of view and keeps the revenue base



for scheme operation at a very low level. Schemes are designed and planned based on far higher per capita consumptions.

The construction of private connections shall therefore be actively encouraged at the planning stage, and one-off subsidies to make the connection costs affordable shall be considered.

#### 7.1.7. Encourage and mobilize private-sector investments in new infrastructure

The potential and interest for private-sector investments in rural water supply is limited. However, such investments shall be encouraged and supported. The Government of Rwanda shall consider options to leverage private capital investments by providing low-interest loans, through output-based aid or co-financing. The importance of this type of model is expected to grow in the future, once the sector develops beyond basic service delivery. The available options shall be studied and piloted as soon as possible, in cooperation with Rwanda Development Board (RDB) and other stakeholders.

Among the types of non-government investments to be encouraged and co-financed are:

- a) Investments by private operators (in particular, system extensions, rehabilitations and service-level upgrades);
- b) Investments by religious communities that are in the public interest;
- c) Community self-help initiatives (e.g., to install rainwater harvesting facilities, self-supply, scheme expansions), to be financed through 'Ubudehe' programme and
- d) Participatory approach (in kind contribution through community activities ('Umuganda'), where water material expertise is to be financed by a third party).

Private investments will be subject to the same standards and regulations as public investments with respect to service standards, design principles, tariffs (affordability) and customer protection.

Global evidence suggests that blended finance (a combination of grants with loans and equity from public and private sources) and pooled financing mechanisms based on public-private partnerships (PPPs) shows potential for application in Rwanda. However, the feasibility of such arrangements to be applied at scale still needs to be established in the water sector in Rwanda.

#### 7.2.OBJECTIVE 2: Ensure sustainable functionality of rural water supply infrastructure by strengthening operation and maintenance management arrangements

Rwanda's model of introducing PPP arrangement in WSS management seemed to be successful initially. The percentage of rural water supply schemes operated through delegated management has reached 63.8 per cent and the current model has shown significant improvement.

Some operators have reached a minimum level of professional standards in terms of staff qualification, preventive maintenance, financial management, cost recovery and customer care.

RURA has developed 'Regulations on Minimum Required Service Level for Water Service Provision' (2013), which will be based on licencing, monitoring and benchmarking water service providers.

Rural water supply and sanitation service areas will be clustered by Districts to ensure that economies of scale professionalize service delivery, trigger private investment in scheme improvements and extensions, and result in better monitoring and regulation.

Other factors affecting sustainability, such as the choice of technology, the quality of design and execution, adequate user involvement (ownership), and the sustainable use of water resources, will be considered in project implementation guidelines.

### 7.2.1. Cluster service areas to create economies of scale, professionalize service delivery and trigger private investment

The delegated management model – which is based on management contracts with private operators – will be maintained but modified in order to allow for economies of scale and create commercially viable units that are attractive for professional service providers.

The remaining schemes under community-based management will also be included in the new, larger service areas. Interested operators will have to demonstrate their technical and managerial capacities to acquire a license. To participate in competition, contract between districts and operators will include agreed performance indicators and targets to be monitored.

Well-performing private operators will receive contracts of longer durations of at least five years, dependent on a good performance record to be confirmed by the regulator. Interested contractors will submit a business plan outlining the investments planned during the contract period.

For some schemes, in particular very large and inter-district schemes, WASAC – as a public commercial utility – may directly act as an operator instead of contracting a private operator.

In addition to clustering service areas, it is necessary to strengthen regulation and to build District capacities as asset holders and contract managers, including support and monitoring to be provided by WASAC/Rural Water Services. These aspects will be treated in the following sections.

### 7.2.2. Strengthen regulation of private water service providers

With a reduced number of operators, the role of the regulator will become more viable. Nonetheless, RURA's resources to ensure adequate field monitoring and follow-up need to be strengthened. This means strengthening capacities for the day-to-day regulation and supervision of:

- a) Private operator licensing;
- b) Adherence to minimum service standards;
- c) Monitoring of agreed performance targets/benchmarks; and
- d) Adherence to agreed tariffs.

In many of these areas, RURA will cooperate with WASAC/Rural Water Services, where WASAC will mainly play a supporting role and RURA a regulatory role.

User associations/committees shall be involved in the oversight arrangements and shall have the role to represent consumer interests and user rights; their rights and obligations will be firmly established in the contractual and regulatory arrangements.

### 7.2.3. Develop district capacities as asset holders and contract managers with support from WASAC/Rural Water Services

In the future O&M setup, the Districts will have to play an important role as asset managers and contract managers. Districts will handle scheme extensions and major repairs/rehabilitations, and will also handle the funds set aside for this purpose. Districts will act as the contracting party for management contracts with private operators and will ensure day-to-day supervision of contract compliance.

Each District will have a District Water Board in charge of these (and other) tasks. District Water Boards will also be the contact point for water user committees, as the consumers' voice, as well as for reports and complaints received at lower decentralized levels (village to sector level).

WASAC/Rural Water Services will provide technical and managerial support and build the Districts' capacities as required. During the initial phase, this will also include support and capacity building for

the new private operators, as the professionalization of service providers will take some time. Districts will also be in charge of upgrading existing schemes that are not yet fit to be included in private operator management contracts.

A training programme for District and private operator staff should comprise different modules addressing technical, managerial, regulatory, asset management, financial management and reporting aspects. Other services to be provided or supported by WASAC include the provision of specialist technical expertise, non-standard spare parts, training programmes, water quality monitoring and possibly credits for major repairs and scheme extensions.

These will be among the key tasks to be ensured by the WASAC decentralized units, which will have to be staffed and equipped accordingly.

WASAC and Districts will jointly use the O&M monitoring system to be developed (*refer to the following chapter*).

#### 7.2.4. Set up an operation and maintenance performance monitoring framework, including a Web-based information system

The sector will put in place a monitoring framework consisting of indicators, reporting and benchmarking procedures, as well as a Web-based information system to monitor the delegated management of water supply infrastructure by private operators. As a first step, a baseline inventory of the status of all existing piped water schemes will be re-established.

The main stakeholders in O&M – Districts, WASAC, RURA and the private operators – all need up-to-date information on service provision and operational performance to play their respective roles effectively. A monitoring and information system will therefore be set up to capture key information on operational performance, quality of service delivery, contract status, and achievement of performance targets, cost recovery and the condition of key assets. The system should be Web-based to make the information accessible from different locations.

The private operators will submit regular technical and financial reports to be stored in the system for use by Districts, WASAC and RURA, as well as the private operators themselves (self-monitoring).

The system is expected become a key tool in particular for performance monitoring and benchmarking, but it may also be designed for a variety of other tasks, such as asset management, tariff determination, water quality monitoring and estimating investment needs. It will also allow the production of accurate reports on the status of service delivery for sector performance reporting and RURA reports. Finally, some of the information could be made accessible to the general public, including water consumers, to enhance the transparency of service delivery.

#### 7.2.5. Develop rural water tariffs that take into account financial viability and affordability considerations

The regulator, in cooperation with main stakeholders, will prepare tariff guidelines that reflect the O&M arrangements.

Tariffs will be set taking into account both O&M costs and affordability considerations. The prevailing high poverty rates in rural areas require a pro-poor approach that ensures access to safe water for the poor. Excessive tariffs would encourage the use of alternative, unsafe sources of water supply. However, the payment for water services shall be mandatory.

Tariff guidelines will recommend, as a general rule for rural water supply schemes, the recovery of the running costs (O&M including repair and replacement of electro-mechanical equipment). The rural

water tariffs shall exclude the depreciation of the initial capital investment. Within a service area, cross subsidies will be possible to make pumping schemes financially viable with affordable tariffs.

The guidelines will also provide guidance on the amount and use of the earmarked reserve to be set aside by the districts for major repairs, refurbishments and extensions.

Water sales at water kiosks and public stand-posts will be regulated to avoid excessive prices to be paid by the poor who buy water by jerrican. Specific exemptions will be offered for extremely poor or vulnerable households, based on guidance from concerned institutions. The cost for this free service will be compensated by other consumer categories.

#### 7.2.6. Provide funds and financing mechanisms for capital maintenance, rehabilitation and renewal investments for existing schemes

The sector will establish a budget line and funding mechanism for scheme rehabilitation, major repairs, upgrades and extensions.

For the reasons given above, rural water tariffs cannot be set to include the full cost of infrastructure depreciation/renewal. It is therefore essential to provide adequate funding to maintain the functionality of the existing infrastructure. Many of the older piped water schemes are coming close to the end of their design life and need substantial refurbishment and/or expansion. In many cases, this is even a precondition to make them viable for commercial operations by a private operator. Funding may also be needed to adapt existing water supply schemes to the new concentrated settlement structures.

In addition to these funds, the Districts will also keep separate, ring-fenced escrow accounts holding the monthly royalty ('redevance') paid by the scheme operators. This will be essential to finance major repairs, such as replacing electro-mechanical equipment, but will not be sufficient to cover other capital maintenance and rehabilitation costs as described above.

#### 7.2.7. Strengthen community-based organizations

The beneficiaries of water supply services shall be actively involved in identification, planning, design and project implementation. In addition, the communities will be actively involved in M&E of water service levels provided by service providers. In particular, they will choose the service level that responds to their needs.

Communities and user committees shall be supported and supervised by the Districts, sectors and cells, with technical assistance from the directorate in charge of rural water services. This support will include targeted capacity-building programmes.

In this context and as part of the efforts to cluster service areas to create economies of scale and professionalize service delivery, the feasibility of regular support through the District Water Boards and WASH officers will be provided to communities to effectively monitor water service provision within the service area of a private operator.

#### 7.2.8. Develop a water quality surveillance system for rural water supply

Rural water quality will be the responsibility of the private operators with oversight by the MoH and MININFRA, as well as external spot checks to be commissioned by RURA. Licensed operators will have to demonstrate water quality assurance capabilities.

RURA, in consultation with the MoH and RSB, will define the standards to be followed in terms of monitoring frequencies, parameters to be monitored, water quality standards to be observed, and analysis methods to be applied.

In addition to a regular sampling programme, districts will be encouraged to prepare water safety plans<sup>9</sup>, following guidance to be provided by the MoH.

As foreseen in the Draft National Food Safety Policy,<sup>10</sup> the Rwanda Biomedical Centre (RBC) conducts investigations, control and surveillance of food and water-borne diseases. In addition, District hospitals carry out rapid analysis of microbial and chemical contaminants in food and water.

### 7.3.OBJECTIVE 3: Ensure safe, reliable and affordable urban water supply services for all while striving for financial sustainability

Urbanization is a key element of Rwanda's development strategy, as laid out in EDPRS 2. Urbanization is widely associated with economic transformation, in particular increasing off-farm activity, which would alleviate some of the pressures on the land from rising population density.

While the urbanization rate is currently still low<sup>11</sup> compared with other countries, rapid urbanization will occur in Rwanda in the coming years, with 35 per cent of the population envisaged to live in urban areas by 2020 (Vision 2020)<sup>12</sup>. Six secondary cities<sup>13</sup> were selected to be developed as regional centres of growth and investment.

It is the Water sector's responsibility to support the urbanization process by adequate service delivery, in a way that is well harmonized with urbanization planning and keeps pace with the rate of urbanization.

At present, the urban water supply sub-sector still struggles with a number of challenges, including slow progress towards 100 per cent urban water supply coverage, high levels of non-revenue water, and insufficiency of production capacities leading to persistent water shortages and dry zones in urban areas. Each of these concerns will be addressed by the following policy measures:

#### 7.3.1. Extend urban water supply services to 100 per cent of the urban population

According to the EICV 4 survey (2014), 90 per cent of the urban population are using an improved water source, but only 60.5 per cent have access to it within 200 meters, which is the maximum distance considered to be acceptable for urban habitat in Rwanda. Only 39.4 per cent of urban households have piped water within their dwelling or yard<sup>14</sup>.

WASAC will develop and implement a strategic plan to achieve 100 per cent coverage in each of WASAC's urban service areas. The strategic plan will clearly map the unserved areas and identify the options to extend water supply services to these areas in the most efficient manner. It will finally define projects/work packages and financing needs.

<sup>9</sup> Water safety plans – an approach promoted globally by WHO – consist of: i) a system assessment to determine whether the water supply chain as a whole can deliver water of a sufficient quality; ii) a monitoring programme to control measures in the supply chain that are of particular importance in securing water safety; and iii) a management plan to describe the actions to be undertaken from normal conditions to extreme events.

<sup>10</sup> Ministry of Health, National Food Safety Policy: Validated Draft, MoH, January 2016.

<sup>11</sup> The rate was 17 per cent in 2012, according to the Population and Housing Census.

<sup>12</sup> DHS (2014/2015): 84 per cent of the country's residents still live in rural areas.

<sup>13</sup> Huye, Muhanga, Musanze, Nyagatare, Rubavu and Rusizi secondary cities

<sup>14</sup> According to DHS (2014/2015), which also contains information on time spent for walking/collecting water, 91 per cent of urban households had access to improved drinking water sources. Regarding the time spent round-trip to obtain drinking water, 19 per cent of households in urban areas take 30 minutes or longer to obtain drinking water. Only 42 per cent of the urban households have piped water within their dwelling or yard.

In cases where the unserved population lives in informal or non-authorized settlements<sup>15</sup>, a consultation process will be required to reach consensus on the measures to be taken. Encouraging settlement in line with urbanization plans is an important part of the strategy to improve service delivery.

The sector will support WASAC in its efforts to increase the number of individual household connections, in order to raise the standard of living, promote hygiene (by raising water use to international standards) and increase the revenue base. Policies regarding payment for new connections will be reviewed and a social connection programme targeting the poor and vulnerable will be considered.

### 7.3.2. Develop production and distribution capacities

The Government of Rwanda will continue its efforts to mobilize resources for investments in water production capacities and distribution systems. Water shortage due to insufficient water production has become a key issue of the urban water sub-sector that is receiving high-level attention. Strategies to mobilize private investment for bulk water production will be continued. WASAC will buy bulk water from a private investor who will be responsible for the financing, design, construction and O&M of the new production and treatment plant, including transmission mains and storage reservoirs.

WASAC will develop a plan identifying the production needs for each of the urban centres under its jurisdiction, based on medium-term projections of demand and harmonized with other relevant urbanization plans. This will include assessing and ranking the potential sources of supply for each urban centre and initiating programmes to monitor the water quality and quantity of the envisaged sources. Technologies and sources of supply that minimize the use of imported consumables for water purification will be preferred in order to avoid negative impacts on O&M costs, consumer tariffs and the national economy.

Investments will be funded by a mix of public grants, loans and internal cash generation as per a financial model. While external aid will still account for a large share in the short and medium term, the utility will endeavour to access loans and increase the share of investment financed by internal cash generation.

### 7.3.3. Set urban water tariff and ensure improved operational efficiency

The regulator, in cooperation with main stakeholders, will set urban tariff that will take into account cost recovery, financial viability and affordability considerations.

The urban water supply service provider will strive to optimize its operational efficiency in order to deliver high-quality services at cost-reflective tariffs. To this end, the urban water service provider will aim at achieving sector performance indicators.

Specifically, a strategy will be developed to reduce non-revenue water (NRW) by lowering both technical and commercial water losses.

### 7.3.4. Develop and implement a pro-poor strategy for urban water supply

Targeted policy measures will be taken to ensure affordable access to safe water services for low-income and vulnerable households, including those living in informal settlements.

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<sup>15</sup> According to EICV 4, 62.6 per cent of the urban population live in unplanned urban settlements.

The above-mentioned strategic plan on how to achieve 100 per cent service coverage in WASAC's urban supply areas (*refer to section 4.3.1*) will include dedicated mapping of current service coverage in the settlement areas of the urban poor.

In general, the operational costs of urban water services shall be fully covered by user fees and WASAC will operate on a commercial basis. However, the following measures will ensure affordable access to safe water supply services for the urban poor:

- a) An adequate number of public tap-stands (water kiosks) will make water available for those who cannot afford household connections;
- b) Water vending at these public tap-stands and by others will be regulated to avoid excessive prices for water sales per jerrican;
- c) Application of a pro-poor tariff;
- d) Prepaid water will be piloted as a means to eliminate the extra cost of water vending;
- e) Cross subsidies between types of connections will allow for low tariffs for public tap-stands as well as for the first block (0 to 5 m<sup>3</sup> per month) of the block tariff; and
- f) Subsidizing the installation of private connections will be considered to raise service levels for the urban poor.

#### 7.4.OBJECTIVE 4: Ensure safe and reliable water supply services for schools, health facilities and other public places

According to Education Statistics (2015), only 13 per cent of pre-primary schools had access to water through a tap water supply system and 9 per cent through a rainwater harvesting system. Some 51.9 per cent of primary schools use rainwater harvesting systems, whereas 35.7 per cent use tap water supplies and 53 per cent of secondary schools use rainwater harvesting systems, while 36 per cent use tap water supplies. The Rwanda Annual Health Statistics Booklet (2014) highlights that 55 per cent of health facilities have water supplied through rainwater reservoirs, whereas 51 per cent get water supplied by piped water supply facility. A WHO report (2015) portrays that water provision in health facilities had been at 71 per cent.

The sector will actively provide adequate water supply services to health facilities, schools and other public places, in cooperation with the ministries and other stakeholders concerned.

##### 7.4.1. Extend water supply services for schools, health facilities and other public places to 100 per cent

MININFRA will continue to partner with the ministries in charge of education and health as well as other sectors to undertake an assessment of water supply and demand through: (1) observing current water use; (2) examining the condition of existing facilities; and (3) identifying appropriate water supply technologies.

Well-built public water supply infrastructure and facilities and those that meet norms and standards and are convenient for disabled people in places of high frequencies, such as markets, car parks and local administrative offices shall allow promotion of public health and lower the risks for diseases. Special emphasis shall be given to the proper management of water supply facilities/infrastructure in public places, most especially by the beneficiaries and/or private sector.

The stocktaking of water supply in schools, health facilities and public places, as well as water availability and usage, will be essential to making informed policy decisions with respect to provision of water supply services.

Water supply service providers shall ensure sustainability of water supply services for schools and health facilities taking into consideration their social nature.

#### 7.4.2. Develop water supply plans for schools, health facilities and public places

Multi-year action plans for water supply in schools, health facilities and public places shall be developed by the concerned ministries and other stakeholders. Where such action plans are already available, there shall be updated with reference to the needs assessment results. Annual water supply needs shall be prepared and submitted to the ministry in charge of economic planning and the ministry in charge of water supply to enable informed and targeted planning. Water supply projects shall be designed in a way that schools, health facilities and other public places in the project intervention area are served.

#### 7.5.OBJECTIVE 5: Strengthen and consolidate the sector's institutional, legal and capacity-building framework

In the recent past, the WSS sector has undergone significant institutional changes including the creation of WASAC, the systematic introduction of delegated management (PPP), the emerging role of RURA in regulation, the overall move towards a SWAp with the creation of a SWAp Secretariat and the delegation of implementation responsibilities to the districts. In addition to ensuring the smooth cooperation of government entities, the sector is also further strengthening mechanisms to consult and involve non-government stakeholders, and to ensure sector-specific monitoring and knowledge management.

This section subsumes the institutional and legal undertakings needed to consolidate the recent gains of the institutional change and make this sector framework functional. Further work on an in-depth institutional gap analysis is recommended as part of the policy implementation action plan.

##### 7.5.1. Elaboration of a Water Supply Law

There is a consensus among key stakeholders in the Water Supply sub-sector that there is a need for a comprehensive review and update of the current legislation on water supply with the aim to publish a coherent and update date law on water supply. These needs for a water supply law can be summarised as follows:

- a) Establish legally binding services management requirements to ensure sustainability of water systems;
- b) Determine clear formal roles and responsibilities for policy implementation;
- c) Definition of the legal requirements for mandatory water safety plan implementation and water quality monitoring programmes/routines;
- d) Strict application of water tariffs, especially in rural areas by service providers, will only be possible with a Water Supply Law; and
- e) The elaboration of a Water Supply Law will also go a long way in strengthening the enabling legal framework for private-sector participation in the Water Supply sub-sector.

##### 7.5.2. Promote sector harmonization and aid effectiveness by developing a sector-wide approach

The implementation of the present policy for WSS services shall be based on a sectoral approach (SWAp). Formally agreed between MININFRA and its key development partners (multilateral agencies



and bilateral donors), the SWAp is understood as an inclusive process involving all relevant stakeholders, including government institutions, civil society (NGOs), the private sector and user communities.

In developing the SWAp a gradual approach will be adopted, based on successive steps, depending on the readiness of key partners and aligned with the build-up of national and decentralized capacities. Harmonized action will be advocated on the basis of its added value to sector stakeholders (efficiency, lesser transaction costs, coherent monitoring, etc.), but with a medium-term focus on the creation of sustainable structures and capacities, reducing parallel implementation arrangements and modalities. Special emphasis will be paid in the SWAp dialogue to ensure that districts will have access to predictable harmonized finance.

Partners agree on joint objectives, principles and operating procedures. A joint financing mechanism based on government systems will be created but does not exclude other aid modalities as long as the agreed principles are observed.

In the context of a SWAp, the WSS sector attaches importance to creating a sector community that involves all stakeholders including, but not limited to, central and local government institutions, development partners, NGOs, user communities, researchers and the private sector. Communication will be maintained through regular Sector Working Group meetings and annual joint sector reviews, as well as by a dedicated website maintained by the SWAp Secretariat. All sector actors, including NGOs, shall adhere to joint reporting standards and requirements.

The communication strategy addressing the general public will include messages on good practices, hygiene awareness and user rights and responsibilities, to be disseminated through different media and specific materials for schools.

### 7.5.3. Re-define and consolidate institutional roles and coordination mechanisms

The recent or undergoing changes of the sector's institutional setup call for a redefinition of each actor's roles and responsibilities, as well as for the establishment of effective coordination mechanisms. In particular, the sector undertakes to clarify the following aspects and initiate the related formal arrangements with regard to:

- a) Cooperation modalities with district local governments, including technical and financial support and monitoring arrangements;
- b) Cooperation with RURA regarding the regulation and oversight of PPP arrangements, regulation of urban utilities (currently WASAC) and surveillance of tariffs;
- c) Roles of REMA/MINERENA in authorizing water abstractions, setting water quality as well as environmental impact assessments, and RSB's role in setting discharge standards in collaboration with REMA/MINERENA and MININFRA;
- d) Coordination with urbanization, housing and other land use plans, including in particular the development of Imidugudu and cooperation between the City of Kigali and the utility in Kigali; and
- e) Institutional roles for water quality monitoring and the implementation of Water Safety Plans (WSPs).

### 7.5.4. Strengthen the existing Monitoring and Evaluation and performance measurement framework

A comprehensive M&E and performance measurement system is a sector priority and a basis for consistent results-oriented management and an evidence-based policy dialogue in the context of a SWAp. The system shall be linked to the overarching, cross-sectoral M&E systems (EDPRS/Common Performance Assessment Framework) on the one hand, and to district systems on the other. A small set

of representative ‘golden’ indicators will be defined to facilitate the communication and monitoring of overall sector performance. All relevant information, including in particular a national database of water supply facilities (including information on functionality), will be held in the MIS.

To strengthen the existing M&E system and to compile the necessary information, a reliable data collection and reporting protocol will be set up in cooperation with the districts and partners, aligning as far as possible with their regular reporting mechanisms. A reliable baseline will be established by conducting a national inventory of existing infrastructure. Definitions and calculation methods will be agreed with the National Institute of Statistics to make administrative data collection comparable with national household surveys.

In light of the recent adoption of the 2030 Agenda for Sustainable Development, the Government of Rwanda has committed itself to report on the progress made on achieving the SDGs. These international monitoring requirements can be also seen as an opportunity to revise and update the existing sector performance monitoring systems as mentioned above and in line with the aspirational SDG targets and definitions, which already formed the basis for the revision of the National Water Supply Policy and Strategy.

#### 7.5.5. Formulate a capacity development programme, including the development of professional training and education in water supply and sanitation-relevant fields

An overall capacity development programme will be developed based on an assessment of capacity gaps and training needs for the different sector actors. Among the levels to be considered are:

- a) Technical assistance and strengthening of MINIFRA and the SWAp Secretariat to effectively manage and oversee the implementation of the policy/strategy;
- b) Technical training for district, WASAC and private-sector staff (design, building and operation of WSS facilities);
- c) Training of trainers for participatory mobilization and sensitization activities;
- d) Advanced training for WSS sector officers (WASAC, RURA, District engineers, etc.); and
- e) Academic education in engineering, environmental health and other relevant fields at universities and research institutions (e.g., UR-CST).

However, training will only be one part of the overall capacity-building programme. Overall, the comprehensive capacity-building programme will also have to address: institutional, organizational and individual capacities.

The concept will be based on cooperation with existing training and educational institutions for academic education and research and development.

#### 7.5.6. Promote innovative technologies/approaches and develop knowledge management

The challenging sector targets have to be met with limited resources, using affordable technologies and in a sustainable way, while complying with environmental standards. To achieve this, it is crucial to use optimal, low-cost technologies and well-adapted implementation approaches.

Therefore, the WSS sector strives to develop, test and adapt innovative technologies and approaches. National universities and research institutions will be involved in applied research and development activities, under the overall coordination of MININFRA.

To enhance knowledge management, pilot experiences and case studies will be evaluated by the SWAp Secretariat and MININFRA, documented and shared systematically in order to establish the results and actual impacts and inform further decision-making.

### 7.5.7. Seek exchange of lessons learned and good practices through regional and international cooperation

Many of the concerns and potential solutions in Rwanda's WSS services sector are also found in other countries, particularly neighbouring ones. It is therefore important to exchange lessons learned. On the other hand, countries with emerging economies have developed approaches that may be more appropriate than those in high-income countries. International organizations are engaged in benchmarking, documenting good practices, organizing forums for debate and exchange, and regional capacity building.

Rwanda's WSS sector shall therefore seek international exchange, both within and outside of the East Africa region, and will play an active role in selected regional and international organizations/forums to seek the exchange of experience and to catch the interest of new actors and investors by presenting Rwanda's issues and successes.

## 7.6. Policy directions on cross-cutting issues

In addition to the policy directions related to rural and urban water supply as well as to institutional strengthening and capacity development, it is important to stress the importance of the cross-cutting mentioned below. It is only through the provision of adequate attention to these cross-cutting issues that sustainability of WSS services can be ensured in the long run.

### 7.6.1. Environment and water resources management

Water extraction may cause environmental impacts and depends itself on environmental factors. The extent of impacts and related risks varies considerably with the scope and type of intervention.

The WSS sector will ensure that all WSS projects and programmes abide by the relevant water resources and environmental laws of Rwanda. It will set up procedures and safeguards to make sure that all measures comply with the standards, permits and regulations defined by MINIRENA and REMA with respect to: (i) the rational and sustainable utilization of water resources; and (ii) environmental protection and conservation of water resources.

For medium to large-size projects, REMA requires an Environmental Impact Assessment (EIA). For smaller projects, the water sector will develop guidelines defining environmental safeguards, to be approved by REMA. For larger interventions, collaboration with REMA will also include monitoring of real impact during work and operations.

Water-quality monitoring needs to be strengthened and the development of water safety plans should be promoted. The Water Safety Plan approach is based on four principles:

- 1) Risk assessment: identification of hazard sources and prioritization of risks;
- 2) Definition of critical control points to be monitored;
- 3) Management of the water supply from catchment to consumer; and
- 4) Stakeholder engagement through specific communication at local and district levels.

Where all risks cannot immediately be addressed – for instance, as a result of limited resources – incremental improvements should systematically be implemented over time. The WSP approach introduces processes to validate and verify the effectiveness of management control systems in ensuring drinking-water quality and safety. Water safety plan success depends strongly on the involvement of the community and the water utility/service provider, and needs to be linked with sanitation master plans, including information on the location of sludge disposal and effluents of waste water treatment plants.

While the mandates for water supply services and water resources management have been separated and assigned to different ministries, adequate care should be taken that the interlinkages between these two sectors are well understood and managed in an inter-sectoral manner. As a tangible result of this inter-ministerial collaboration of MINIRENA with MININFRA, the establishment of a system and administration of water abstraction permits will be fast-tracked and the regular update of the water resources atlas will be ensured.

**Box 1: Addressing climate risks through the Water Safety Plan approach**

Water Safety Plans were developed as a tool to assess threats to the continuing supply of safe water. The approach is flexible and incorporates all steps in water supply, from catchment to consumer. The WHO water safety manual contains full details of the approach.

The WSP approach can be considered as a risk management approach whereby regular reviews and revisions of the WSPs ensure new risks are assessed and addressed. The flexibility of the WSP approach can be exploited to integrate climate risk screening as part of the WSP continuous improvement cycle.

### 7.6.2. Gender

In the Water Supply sub-sector, a gender-conscious approach assumes special significance because, according to the traditional division of labour, women are in charge of providing water in the household, hygiene and health care. Women are therefore most affected when water supplies fail and sanitation is poor. On the other hand, women are typically under-represented in decision-making, in the management of water and sanitation infrastructure, and in training and educational activities.

Water supply interventions are known to have a positive impact on women, by improving living conditions, reducing the workload (time to fetch water, caring of the sick), improving hygienic conditions in schools and potentially enhancing women's participation and empowerment. The strong involvement of women tends to be beneficial for the sustainability of water and sanitation infrastructure since for the cited reasons women have a strong and immediate interest in reliably functioning facilities.

Global experience also suggests that gender equality must go beyond addressing equal access to domestic water and sanitation services only. It is important that policies and strategies should target economic equality through water for productive uses, equality in decision-making, equality in contracts, employment opportunities in senior positions of water institutions, opportunities for consultancy and the general business opportunities around water and sanitation infrastructure development as a whole.

The WSS sector undertakes to ensure by appropriate guidelines and indicators that:

- a) Women have equal chances for employment and career opportunities in both public and private institutions;
- b) women are adequately represented in decision-making processes as well as in training programmes;
- c) participation of women in committees and in the management of water schemes, including in high-level positions, is promoted;
- d) the needs, priorities and interests of women are taken into account in all planning processes, implementation strategies, training materials, etc.; and
- e) local implementation partners are sensitized and trained on gender issues.

### 7.6.3. Social inclusion

Water Supply sub-sector development implies social responsibility, as access to safe water and basic sanitation concerns human rights and affects the living conditions of all. The planning and implementation guidelines will therefore take these implications into account rather than focusing on monetary or efficiency criteria alone.

The WSS sector will endeavour that all population groups, including vulnerable households, children, elderly and disabled persons benefit from its interventions. This implies that due attention is given to the aspect of affordability and that the specific needs of these disadvantaged population groups are taken into account.

The sector will actively provide adequate WSS services to health institutions and schools, in cooperation with the ministries concerned.

WSS interventions will contribute to socio-economic development by creating jobs in the private sector and by improving living conditions (in particular in rural areas, thus making them more attractive for investors, professionals, etc.). Implementation guidelines will promote local job generation, equal economic opportunities for women (and gender equality) and inclusion of disadvantaged groups of society.

### 7.6.4. Climate change and disaster risk reduction

There is a strong consensus that the WASH sector is already affected in different ways by weather and climate events (such as variability, seasonality and extreme events). This translates into negative impacts on drinking-water availability and quality. Future climate change will put an additional stress on delivering and sustaining outcomes related to health and well-being. More specifically, the National Adaptation Plan (NAPA 2006) and Green Growth and Climate Resilience Strategy (2011) highlight high vulnerabilities to climate change of the population and sectors of agriculture, water resources and energy due to mutual influences and the cumulative impacts of:

- a) High degradation of arable land due to erosion, following a torrential regime of rains, in particular in the mountainous northern and western provinces;
- b) Increased likelihood of flooding in their downhill slope;
- c) Desertification trend in agro-bioclimate regions of the east and south-east;
- d) The lowering of level of lakes and water flows due to pluviometric deficit and prolonged droughts; and
- e) Degradation of forests.

With respect to the WASH sector, increasing climate resilience and effective disaster risk reduction strategies require a focus on:

- f) A reduction in the likelihood that individuals feel the effects of climate change and related shocks. This can be achieved through programming that seeks to both understand the determinants of climate risk exposure to WASH services and act on them to minimize the exposure of individuals. **The concept of risk-informed planning, more priority to water resource conservation/protection, and water safety planning as a tool of risk-informed planning needs to become a mandatory requirement.**
- g) Strengthening the reliability of WASH services. A starting point for the integration of climate resilience into WASH service delivery is the prioritization and implementation of no/low regrets measures. These measures have a high chance of success against the full range of uncertainty in climate change and other future drivers. A number of no/low regrets measures will be those dealing with the existing level of climatic fluctuations, which many WASH systems are still not

well-protected against. The future larger projects planned in the water sector in Rwanda in particular would need to undergo such a **'climate proofing' process in the design stage.**

- h) Strengthening capacities of government agencies and communities to increase climate resilience over time. This can be achieved by helping agencies to design, deliver and sustain investments in WASH services that consider the additional risks posed by climate change, and also by strengthening multi-level WASH governance, strategies/plans and systems as well as building the adaptive capacity of communities to deal with climate-related shocks and stress.
- i) Along with food and shelter, safe water and sanitation are the highest priority interventions in emergency situations. Unless adequate water and sanitation services are quickly provided to emergency-affected populations and their families, disease and death will follow. And unless safe water is provided and good hygiene is consistently practiced by affected people, the danger of diarrhoea, cholera and other disease outbreaks will persist. Readiness is of critical importance when disaster strikes in and **emergency preparedness planning is an essential part of disaster risk reduction activities.** Preparedness planning includes the development of a roster for emergency staff deployment, pre-positioning of strategic supplies and preparation of pre-approved contracts with vendors (such as water trucking companies) and suppliers, as well as advance coordination arrangements led by the Government of Rwanda.

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**ANNEX: List of documents used for the policy review**

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