



MASTER PLAN FOR THE INTEGRATED DEVELOPMENT OF THE GAMBIA, KAYANGA-GEBA AND KOLIBA-CORUBAL RIVER BASINS

Phase 2 - Sectoral Plans - 4/6

**Drinking water supply - Sanitation - Health -
Education**

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MASTER PLAN FOR THE INTEGRATED DEVELOPMENT OF THE GAMBIA, KAYANGA-GEBA AND KOLIBA- CORUBAL RIVER BASINS

Phase 2 - Sectoral Plan - Drinking Water Supply - Sanitation - Health - Education

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ABBREVIATIONS

Acronym	Meaning
ADB	African Development Bank
AFD	French Development Agency
AIDS	Acquired immunodeficiency syndrome
ANSD	National Agency for Statistics and Demography
BHPP	Borehole with Human Powered Pump
CAD	Development Assistance Committee
CIMA	Inter-ministerial Water Council (Guinea Bissau)
CLTS	Community Led Total Sanitation
CNA	National Water Council (Guinea Bissau)
DGPPE	Directorate for Water Resources Management and Protection
DGRH	Directorate General of Water Resources (Guinea Bissau)
DGSP	Directorate General of Public Health (Guinea Bissau)
DH	Directorate of Hydraulics (Senegal)
DHIS2	District Health Information Software version 2
DOOR	Gambia Water Resources Department
DTP	Diphtheria, Tetanus and Poliomyelitis (combined vaccine)
DWSN	Drinking Water Supply Network
EAGB	Public Water and Electricity Company of Guinea Bissau
ECOWAS	Economic Community of West African States
EDS	Demographic and health surveys (ANSD)
EIB	European Investment Bank
EU	European Union
GBoS	The Gambia Bureau of Statistics
GDP	Gross Domestic Product
GIE	economic interest groups
Hbts	Residents
HDI	Human Development Index
HPP	Human Powered Pumps
IDB	Islamic Development Bank
INAS	National Water and Sanitation Agency of Guinea Bissau
INE	National Institute of Statistics of Guinea Bissau
INS	National Institute of Statistics of Guinea
IWRM	Integrated water resources management
LGA	Local Government Area (LGA)
MEHH	Ministry of Energy and Hydraulics
MHA	Ministry of Water and Sanitation
MWP	Moder Water Points
NAWEC	Gambia National Water & Electric Company
NGO	Non-Governmental Organisation
NHIS	National Health Information System
NTD	Neglected tropical diseases

Acronym	Meaning
OD	Open Defecation
OECD	Organisation for Economic Co-operation and Development
OFOR	Office des Forages Ruraux du Sénégal
OMVG	Organisation for the Development of the Gambia River
ONAS	Office National de l'Assainissement du Sénégal
PAGIRE	Action Plan for Integrated Water Resources Management
PC	Private connection
PDDI	Master Plan for Integrated Development
PGIRE	Integrated Water Resources Management and Multipurpose Use Development Programme in the Senegal River Basin
PMI	President's Malaria Initiative
PNA	Senegal's National Adaptation Plan
PNDES	National Economic and Social Development Plan
PPP	Public-Private Partnership
PRES	Economic and Social Resilience Programme (Senegal)
PSE	Emerging Senegal Plan
PURA	Public Service Regulatory Authority of The Gambia
R&D	Research & Development
RGPHE	General Census of Population and Housing, Agriculture and Livestock (Senegal)
SDC	Swiss Agency for Development and Cooperation
SDG	Sustainable Development Goals
SEG	Société des Eaux de Guinée
SNAPE	Water point development service (Guinea)
SNDD	Senegal's National Strategy for Sustainable Development
SONES	Société Nationale des Eaux du Sénégal
SP	Standpipes
SWOT	Strengths, Weaknesses, Opportunities, Threats (matrix)
TB	Tuberculosis
ToR	Terms of reference
UGP	Management and Planning Units
UNCDF	United Nations Capital Development Fund
UNDP	United Nations Development Programme
UNFCCC	Conference of the Parties to the United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WAEMU	West African Economic and Monetary Union
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

1 INTRODUCTION

1.1 BACKGROUND AND OBJECTIVE OF THE STUDY

The *Organisation pour la Mise en Valeur du fleuve Gambie* (OMVG) was created in 1978, and its member states are The Gambia, Guinea, Guinea-Bissau and Senegal. Its main mission is **the rational and harmonious exploitation of the common resources of the Gambia, Kayanga-Géba and Koliba-Corubal river basins**. To this end, the OMVG aims to achieve energy and food self-sufficiency, promote transport channels, reduce the vulnerability of the economies of the Member States to climate risks and preserve the balance of ecosystems in the sub-region, particularly in the river basins of the three rivers.

BRL Ingénierie, in association with COBA and IDEV, has been selected to carry out the Integrated Development Master Plan (IDMP) for the Gambia, Kayanga-Géba and Koliba-Corubal rivers. This project is financed by the United Nations Capital Development Fund (UNCDF) and is part of the Blue Peace initiative, which aims to promote peaceful cooperation in the sharing of water resources.

UNCDF is an agency that puts public and private finance at the service of the poor. It does this by offering innovative financing models that unlock public and private resources - particularly at the national level - with the central goal of reducing poverty and supporting local economic development.

UNCDF has partnered with the Swiss Agency for Development and Cooperation (SDC) to launch the Blue Peace Financing programme (also called Blue Peace). The programme aims to foster peaceful cooperation in the sharing of transboundary water resources. To this end, Blue Peace encourages "the development of common institutional and legal frameworks that bring countries together in their commitment to peacefully resolve disputes over water resources and to use their water as a basis for broader economic and diplomatic collaboration". (FENU, 2020). The aim is thus to transform competition over limited freshwater resources into transboundary collaboration.

The OMVG covers an area in which member states share common objectives and interests in water resources management. The **objectives of the OMVG** are to

- The **creation of economic development opportunities** that enable people to achieve viable and sustainable livelihoods in their communities;
- The **construction of infrastructure that promotes development** and is aligned with the infrastructure projects identified by ECOWAS and the African Union;
- **Integrated resource and ecosystem management** based on a sustainable development approach;
- **The promotion of large-scale agricultural and rural development programmes** to significantly improve the income and food security of the population.

Currently, OMVG draws its financial resources for its projects mainly from the individual contributions of its four member states. Indeed, there is no financial instrument capable of channelling funding directly to the supranational entity that is OMVG. This funding mechanism is slow and gives rise to a complex web of contracts and conditionalities making it inefficient. The **Blue Peace** funding mechanism **therefore seeks to innovate and create an enabling framework for funding and technical assistance** to promote transboundary water cooperation. This includes the **development of joint cross-border and multi-sectoral investment plans** that promote cross-border water cooperation.

To implement such joint investment plans, it is first necessary to develop and rely on a basin-wide Integrated Development Master Plan (PDDI) approved by the member countries. This PDDI should enable the OMVG to achieve the objectives listed above. It is in this context that UNCDF is supporting the development of the OMVG PDDI. The PDDI will produce an investment plan of bankable projects.

The PDDI preparation mission is led by the BRLi-COBA-IDEV Group, from May 2021 to August 2022.

The study is divided into three phases:

- **Phase 1: Diagnostic study**, to assess the baseline situation in the three OMVG basins and pre-identify the issues, threats and opportunities that will be used to develop the sectoral plans.
- **Phase 2: Development of sector plans**. Six sector plans will be developed:
 - Agro-sylvo-pastoral and fisheries development plan;
 - Energy, industry and mining development plan;
 - Transport and Communication Development plan;
 - Environmental and ecosystem protection and management plan;
 - Drinking water supply, sanitation, health and education development plan;
 - Institutional development plan.
- **Phase 3: Preparation of the OMVG basins Integrated Development Master Plan**

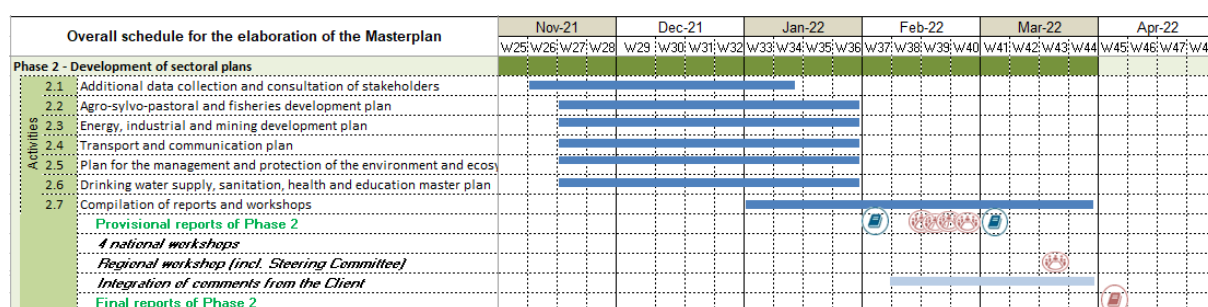
An inception report for the study was validated on 15 September 2021 at the Regional Validation Workshop held remotely and a final version of the inception report, incorporating the workshop recommendations, was submitted to OMVG and UNCDF on 30 September 2021.

A diagnostic report (Phase 1) was validated on 20 November 2021 at the Regional Validation Workshop held in Dakar and a final version of this deliverable, incorporating the workshop recommendations, was submitted to OMVG and UNCDF on 15 December 2021. This report was the subject of a broad consultation process. It was thus fed by the work carried out in national workshops in each of the four States, from 26 to 29 October 2021, as well as by the contributions of stakeholders from the three basins. In addition to the diagnostic analysis, this report includes an atlas of maps on all the themes covered in the diagnostic study.

A report containing six sectoral plans (Phase 2) was submitted to the OMVG on 9 February 2022, in a provisional version. This version of the report was the basis for consolidation work carried out in National Workshops and then in Regional Workshops, respectively in February and March 2022 (see next section).

Phase 2 of the study is now complete.

Figure 1-1 Timeline for Phase 2



1.2 THE PHASE 2 REPORT - PURPOSE AND CONTENT OF THE SECTOR PLANS

The sectoral plans are the main deliverable of Phase 2 of the study. They aim to summarise the major problems and issues identified in Phase 1, define the vision of the sector in 2040, structure the intervention strategy, define the necessary measures and develop the tools for implementing the action plans (timetable, budget, monitoring and evaluation, risks, social and environmental impacts).

The Phase 2 report thus consists of six volumes, structuring the intervention at the level of the three OMVG basins around the main groups of measures:

- Cross-sectoral measures to **improve water resources management**:
 - Plan for the development of knowledge, management and governance of water resources ¹;
 - Environmental and ecosystem protection and management plan;
- Measures to **strengthen basic services**:
 - Transport and Communication Development plan;
 - Water, sanitation, health and education development plan;
- **Sectoral socio-economic development** measures:
 - Agro-sylvo-pastoral and fisheries development plan;
 - Energy, industry and mining development plan.

Each of the six plans is structured in a similar way, around the elements required by the Terms of Reference:

- **Chapters 1 and 2** are introductory chapters that present the context for the drafting of the PDDI and of the sector in the OMVG area, and **summarize the diagnosis and assessing the evolution of the sector** including the estimated needs of the sector in 2040;
- **Chapters 3 and 4** are the **core of the intervention strategy** for each sector. These chapters cover elaboration of the vision of the sector for 2040, which is then broken down into strategic axes (Chapter 3). They also include a proposal of an intervention strategy with expected results and detailed measures to be undertaken following a logical framework (Chapter 4);
- **Chapter 5** prepares the implementation of the **sector plan**. An action plan proposes a programme of measures up to 2040, an analysis of the assumptions, risks and conditions necessary for the implementation of the action plan, and the definition of monitoring indicators;
- **Chapter 6** is dedicated to an **assessment of social and environmental impacts** and proposals for compensation, mitigation or avoidance measures;
- **Chapter 7** proposes a projection towards the preparation of the PDDI, identifying synergies between sectors and potential impacts that the PDDI will need to address.

This deliverable has been produced in 2 versions:

- **A provisional version**, a working document dated 9 February 2022, supporting the consolidation work carried out in the National Workshops held in February 2022, then at the Regional Validation Workshop held in Dakar on 16 and 17 March 2022, sanctioning the end of Phase 2 of the study;
- **A final version**, integrating the elements produced during the National Workshops and the recommendations of the Regional Workshop.

This document is the **final version of the development plan for drinking water supply, sanitation, education and health**.

¹ The title of this plan, initially dedicated solely to institutional development, has been expanded to include the knowledge, management and development of water resources in the basins.

1.3 DEVELOPMENT METHODOLOGY

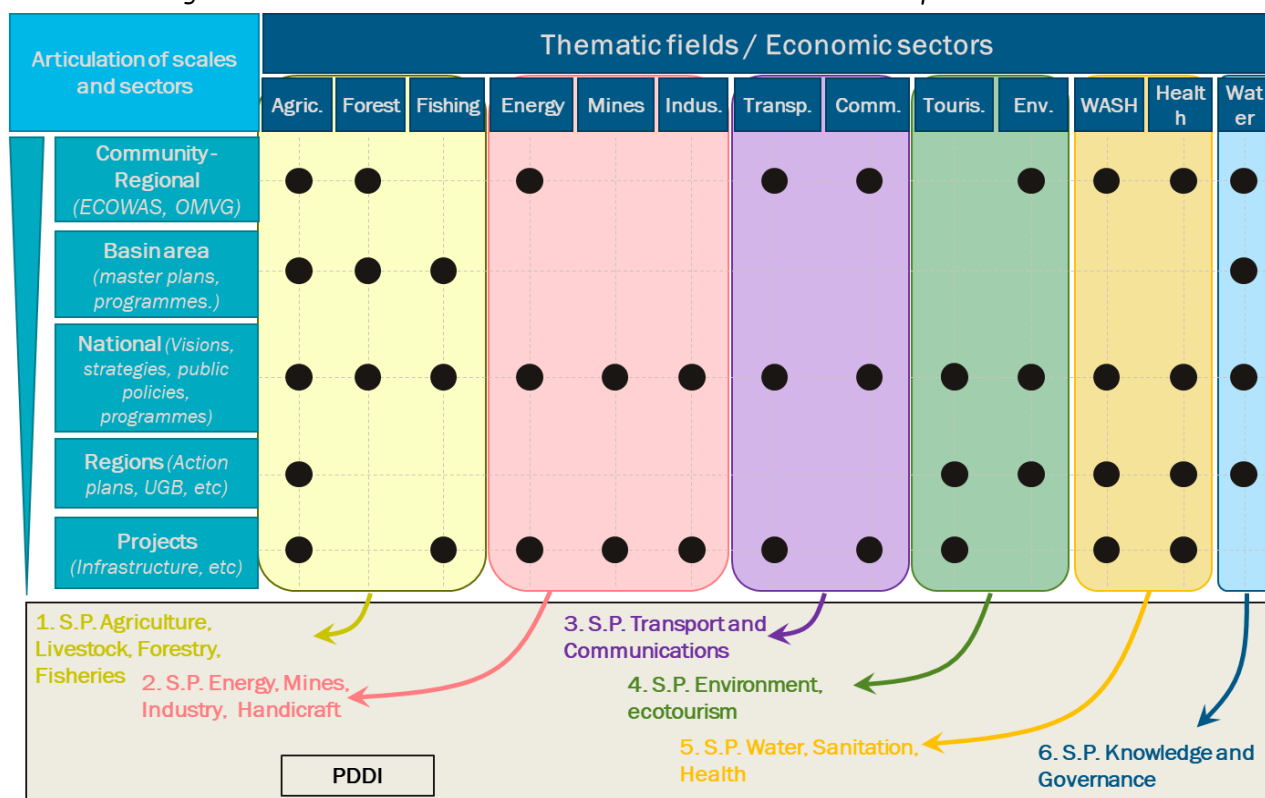
Each of the six sectoral plans presents the proposed intervention strategy for each sector, as well as the associated implementation tools. These strategies are an **aggregation of national and regional visions, policies and programmes, as well as the recommendations of the consortium.**

The elaboration of the development plan for drinking water supply, sanitation, education and health is based on the following actions:

- Taking into account the conclusions and recommendations of the Phase 1 diagnostic report in terms of strengthening legal, regulatory and institutional frameworks, improving water resources monitoring, development and management of basins and watersheds, and strengthening the capacities of stakeholders in the OMVG area on a transboundary scale;
- Collection and analysis of national sectoral policy and planning documents, as well as regional programming documents;
- The compilation and analysis of existing projects in the three river basins;
- Analysis of existing master plans for the Kayanga-Géba and Gambia rivers (in particular unimplemented actions).

On this basis, the identified actions have been selected and consolidated around priority objectives, in order to form a coherent programming of actions at the scale of the OMVG area. The proposed actions are located (including by country and by sub-basin) and presented/mapped according to a common format harmonised between the different sectors.

Figure 1-2 Articulation of scales and economic sectors in the development of the PDDI



Nota bene: The development of a Master Plan such as the PDDI aims at proposing **integrated and transversal solutions** to the technical, legal and institutional issues and challenges related to IWRM at the **basin level**. The level of analysis and planning is therefore the transboundary basins of the OMVG area. This is why the sectoral plans have been drafted on a regional scale.

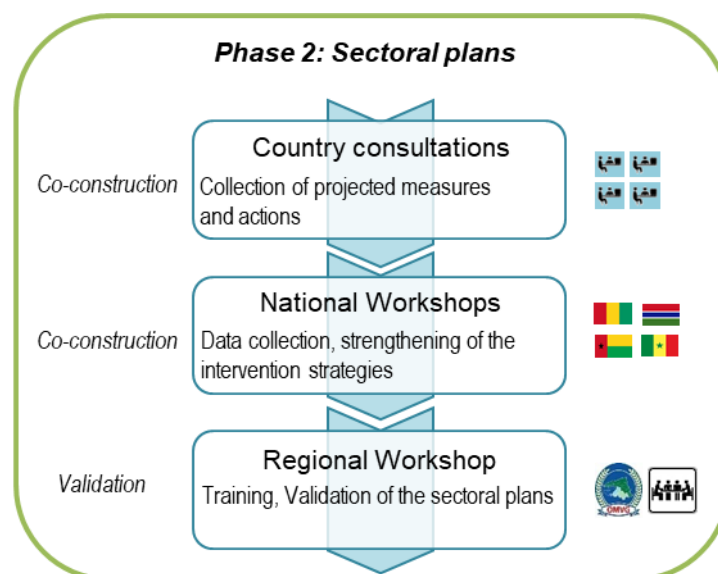
The necessary technical, legal and institutional interventions at national level were identified and analysed through the intervention of national experts in each of the 4 countries. The sectoral plans integrate these elements.

STAKEHOLDER CONSULTATION

The elaboration of the sectoral plans is largely based on the very broad data collection process carried out by the National Consultants mobilised by UNCDF and OMVG, then during the consultation missions, the national workshops and the regional workshop of Phase 1. In particular, the regional workshop was an opportunity to carry out group work aimed at formulating the need and actions to be planned within the framework of each of the six sectoral plans. The stakeholders of the river basins proposed a series of actions, listed in the Annex.

The development of the plans was also informed by the consultation stages planned in Phase 2 (see figure below). In addition to the national consultations in the four member states, field investigations and consultations were conducted in the rural areas of the national portions of the three basins. These took place in November 2021 for The Gambia and in February-March 2022 for Guinea, Guinea-Bissau and Senegal. National Workshops were organised remotely in February 2022 for each of the four member states, to finalise the collection of envisaged actions and to collect suggestions from stakeholders at national level. The process ended with a Regional Workshop, organised face-to-face, to harmonise the sectoral plans, validate their content and prepare the preparation of the Integrated Development Master Plan.

Figure 1-3 Stakeholder consultation steps in Phase 2



ACCESS TO SAFE WATER, SANITATION AND HEALTH

As part of the 2030 Agenda for Sustainable Development, SDG 6 calls for universal and equitable access to affordable drinking water by 2030 through target 6.1; and universal and equitable access to adequate sanitation and hygiene and an end to open defecation (OD) by 2030 through target 6.2, with particular attention to the needs of women and girls and people in vulnerable situations.

The Phase 1 diagnostic study framed the current situation of the drinking water supply and sanitation sub-sector in the regions of the OMVG basin member states. The diagnosis identified the main challenges to be addressed, particularly with regard to the population in rural areas, as they are the most disadvantaged in terms of access to an improved water source at or near the site and to adequate sanitation and hygiene.

In the OMVG basins, one quarter of the total population is urban and three quarters of the total population is rural. It is therefore **essential to ensure that the entire rural population has access to improved water sources and adequate sanitation and hygiene services.**

For the provision of universal, equitable and affordable drinking water, the global objectives that should contribute to their achievement are the following:

- **Ensure sustainable and affordable access, especially for the rural population, to safe drinking water** on site or close to households, accessible in 30 minutes or less (round trip);
- **Ensuring the quality of drinking water on an ongoing basis**, either through treatment (water chlorination, removal of iron and other chemicals) or removal of environmental contamination;
- **To ensure a high quality and sustainable drinking water service** through the development of professionalized service delivery models and systems for monitoring, controlling and evaluating the technical and financial performance of the service.

The actions to be taken to achieve the specific targets will vary from country to country, depending on the current capacities and service levels of each country. Countries with high rates of access to water from unimproved sources will strive to make progress in this direction by moving large percentages of their population from the "unimproved source" category to the "basic service" category, which corresponds to drinking water from an improved source with a collection time of 30 minutes or less for the round trip, including queuing.

Countries with the best levels of water services will seek to ensure near-universal access to a safely managed water supply that is drinking water from an improved, locally available source, free from contamination by faecal matter and priority chemicals.

In the case of sanitation in the OMVG basins, it is found that in all regions there are **high to very high percentages of access to unimproved toilets or practice of open defecation.**

For equitable and sustainable access to adequate sanitation and hygiene services the overall objectives are:

- **Ensure the elimination of open defecation;**
- **Ensure equitable access to sanitation and hygiene services for all**, with particular attention to the needs of women and girls and people in vulnerable situations;
- **Ensure that all households have access to handwashing facilities with soap and water;**
- **Ensure a quality and sustainable sanitation and hygiene service** through the development of professionalized service delivery models and systems for monitoring, control and technical and financial evaluation of the service.

All Member States should continue their efforts to provide improved sanitation solutions, adapted to the urban characteristics of the localities, to guarantee access to sanitation for all, ensuring the sustainability of the infrastructure and the service to be able to achieve the results of the 2030 Agenda.

HEALTH

The 2030 Agenda and its 17 Sustainable Development Goals provide a cross-cutting vision highlighting the importance of addressing the determinants of people's health. SDG 3 promotes a global approach to health and aims to "enable all people to live in good health and promote well-being for all at all ages". It mainly concerns mothers and children, the fight against epidemics, road safety and access to care.

The efforts made in recent years in the field of health in the OMVG Member States have resulted in an **overall improvement in health indicators**. Morbidity and mortality from AIDS, tuberculosis, malaria and neglected tropical diseases have fallen significantly over the past 10 years.

This decline is contrasted by **abnormally high rates of mortality and morbidity indicators** that are still far above the targets set by the World Health Organisation. Infant and child mortality is twice the target and maternal mortality is five times (405/100,000) the 2030 target (70/100,000). It remains clear that **further efforts are needed to achieve the expected targets**, and major challenges have been identified to have a resilient health system and health indicators in line with the expected results by 2040.

The health systems of the countries of the OMVG face a number of challenges, including the elimination of malaria, AIDS and tuberculosis; the control of maternal, neonatal and child mortality; the reduction of malnutrition; and the existence of a sufficiently strengthened, dynamic and resilient national health system in the face of external shocks.

Obstacles relating to the provision of care and the optimal use of this care, such as the quality of the technical facilities, or the availability of qualified personnel, equipment and quality medicines, mean that one of the major challenges in the OMVG basins is the **quality of the services provided**, which remains insufficient at all levels of the care pyramid. The **rate of financing of the health sector is very low**, less than 10% of national budgets, and constitutes an additional bottleneck for the sector.

The **gaps in health care coverage** are obvious in terms of human resources, with only 6 qualified health workers (nurses, midwives and doctors) per 10,000 inhabitants, compared with the norm of 23 per 10,000 inhabitants. Geographical and financial access to health services also needs to be improved, as the distances between health structures and the population's places of residence often exceed 30 km for health centres and more than 10 km for health posts. This will require the construction of new health structures, but also their equipment and provision of qualified personnel.

The **health information system**, despite the implementation of DHIS2 (*District Health Information Software* version 2), **needs to be strengthened** and staffed with well-trained staff so that reliable information can be produced that can help in decision-making.

Climate change and the context of COVID-19 have significant impacts on the health sector, and these two parameters must be taken into account in the planning of health policies and programmes. A resurgence of certain water-borne diseases such as cholera can be expected with the return of abundant rainfall, especially in certain areas of the urban peripheries. The decline in the performance of certain health programmes (tuberculosis, AIDS, immunisation, etc.) observed during the first three waves of COVID-19 still raises challenges to be met so that the results obtained in recent years do not fall into disrepair.

It is therefore important to identify priorities on the basis of the diagnostic analysis made in Phase 1 in order to achieve the sustainable development objectives.

To enable all people to live in good health and to promote the well-being of all people at all ages, the following overall objectives are proposed:

- **Ensure universal access to quality health care and services** by 2040 in all regions covered by the OMVG basins;
- **Ensure resilience of the health system** to threats and disasters;
- **Ensure a good health information system** in all regions of the OMVG basins, which can assist in rapid decision making adapted to the context.

It is clear that the priorities and actions to be undertaken to achieve these objectives will vary from country to country, and should be chosen on the basis of their feasibility, acceptability and impact on improving the health conditions of the people living in these regions.

LIST OF NATIONAL DOCUMENTS USED (PROJECTS / NATIONAL POLICIES / PROGRAMMES)

Table 1-1- Projects identified for the drinking water supply, sanitation and health sectors

Country	Studies and Projects
Gambia	MICS (Multiple Indicator Cluster Survey), 2018
	Population and Housing Census, Establishment Register, 2013
	Population and Housing Census, Dwelling and Household Characteristics, 2013
	Country Water Sector Profile - The Gambia, Water Security Overview, Nov 2020
	Rural Water Supply and Sanitation Programme Project Number: P-GM-E00-003
	Study on water supply and sanitation in The Gambia. Master Plan, 2005
	National Water Resources Assessment and Management Strategy, March 2015.
	Gambia national strategy for sanitation and Hygiene 2011-2016
	The Gambia national Health strategic plan 2014-2020
	Assessment of the health system in the Gambia, USAID 2019
	Country consultant report
	Additional data collection mission report
	Official websites of WHO, UNICEF and the World Bank
Guinea	MICS (Multiple Indicator Cluster Survey), 2016 and 2018
	Statistical Yearbook, 2018
	Consolidation of the 8th EDF Solar Water Supply Management in Upper Guinea and Forest Guinea, 2011
	National Strategy for the Development of Public Water Services in Rural and Semi-urban Areas, 2012
	National Rural Water Supply and Sanitation Programme Development Project, 2009
	SNAPE, Annual Report, Year in Review 2019
	SNAPE, Annual Report, Review of Activities for the year 2017
	National Health Development Policy 2015-2024
	Report of the complementary data collection mission
	Official websites of WHO, UNICEF and the World Bank
	Country consultant's report
	National Reproductive, Maternal, Newborn, Child and Adolescent Health and Nutrition Plan (SRMNIA-N) 2019
	National Community Health Policy 2017
Guinea Bissau	MICS (Multiple Indicator Cluster Survey), 2018/2019
	Master Plan for the Water and Sanitation Sector, 1998
	MDG-WSSD Action Plan for Drinking Water Supply and Sanitation (WSS), 2010
	National Water Policy for Drinking Water Supply and Sanitation (NWSS), 2011
	Official websites of WHO, UNICEF and the World Bank
	Guinea Bissau service delivery indicators. Report Health. June 2019
	Report on additional data collection mission in Guinea Bissau
	Country Consultant Report
	Unicef Guinea Bissau Report on COVID. Report N°24 December 2020

Senegal	SES 2017-2018. Chapter VIII: Water and Sanitation
	SES 2017-2018. Chapter I: State and Structure of the Population
	SES 2017-2018, Regional (Tambacounda, Kaffrine, Kaolack, Kédougou and Kolda)
	Sectoral Development Policy Letter, 2016-2025
	Action Plan for the Implementation of the National Rural Sanitation Strategy, 2016
	Feasibility study, Identification of potentially favourable areas
	Rural Water Project Manual, 2016
	DHS continues Demographic and Health Survey 2018 and 2019
	Country Consultant Report
	Report on the WAEMU Sustainable Development Goals. 2020
	Continuous Healthcare Provision Survey (CHPS) 2015
	Annual report on the monitoring of the health map of Senegal. 2019
	Population of Senegal 2020 (ANSD)
	National Review on the Sustainable Development Goals. Forum 2018
	Global reference list of 100 core health indicators. WHO 2015
	Study of user preference on strategies for developing universal health coverage. (2016)
	Economic and social situation of Senegal in 2016. ANSD
	National Health and Social Development Plan (2019-2028)
	Strategic Plan for Malaria Control in Senegal (PSN) 2021-2025
	Official websites of WHO, UNICEF and the World Bank

2 DRINKING WATER SUPPLY, SANITATION AND HEALTH IN THE OMVG AREA

This chapter aims to summarise the diagnosis of the drinking water supply, sanitation and health sectors, carried out during Phase 1 of the study, in order to prioritise the cross-border issues that will be the target of the sector plan.

2.1 CURRENT STATE OF THE SECTOR

2.1.1 Key figures for drinking water supply and sanitation

DRINKING WATER SUPPLY

The diagnosis of the existing situation in terms of drinking water supply was based on the key indicators obtained from the MICS (Gambia, Guinea Bissau and Guinea) and ANSD reports from Senegal, and shows that a great effort has already been made by the Member States to set up drinking water infrastructures in the regions of the OMVG river basins. However, in order to achieve the Sustainable Development Goals by 2030, Member States will need to continue their efforts to develop drinking water infrastructure as shown in the table below.

This table summarises the access rates to drinking water in the OMVG regions according to water accessibility service levels. The effort required to improve water supply infrastructure to enable universal coverage at a basic service level by 2030 increases from the right to the left of the table, from 6% in Kaffrine to 77% in Kolda.

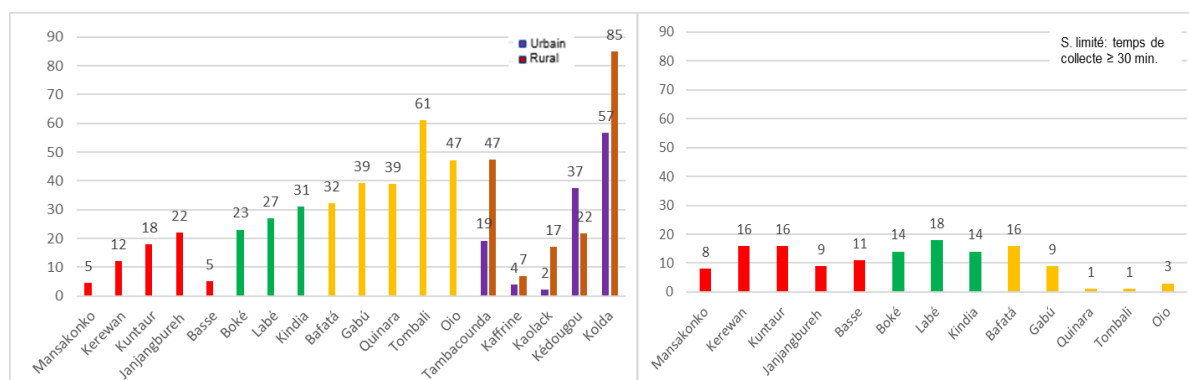
Table 2-1 Household access to drinking water by level of service (%)

Household access to drinking water (%)	Service Level	Regions in basins shared by OMVG member states															
		Kolda	Tombali	Bafatá	Gabu	Labé	Quinara	Tamba	Boké	Kuntaur	Janjanbureh	Kerewan	Kédougou	Low	Mansakonko	Kaolack	Kaffrine
	Basic service	23	20	52	52	55	62	60	63	66	69	72	74	84	88	89	94
	Limited Service	-	1	16	9	18	1	-	14	16	9	16	-	11	8	-	-
	Unimproved service	77	61	32	39	27	39	40	23	18	22	12	26	5	5	11	6
	Limited+unimproved	77	62	48	48	45	40	40	37	34	31	28	26	16	13	11	6

2. DRINKING WATER SUPPLY, SANITATION AND HEALTH IN THE OMVG AREA

The figure below illustrates for the regions of the member states that are part of the OMVG basins the weaknesses in access to drinking water: unimproved or limited service (with a collection time of more than 30 minutes). It highlights the need for households to have access to improved water sources and access to improved water sources on site or nearby (basic service).

Figure 2-1 Access rates to unimproved water sources (left) and access rates to improved sources for collection times ≥ 30 min (right).



DRINKING WATER SUPPLY, A CHALLENGE ESPECIALLY IN RURAL AREAS

The main issues in the OMVG basins are related to rural water supply, as shown in the summary table below.

In the OMVG basins a quarter of the total population is urban and three quarters of the total population is rural.

Table 2-2- Rate of access to unimproved sources or limited services in OMVG basins in the year 2020

Country	Urban population	Rural population	Total population BV OMVG	Urban population served	Rural population served	Urban population unserved	Rural population unserved	Access rate not improved/limited	
								Urban	Rural
Gambia	178 291	566 799	745 090	143 012	429 935	35 279	136 864	4,7%	18,4%
Guinea	89 232	995 134	1 084 366	68 277	559 228	20 955	435 906	1,9%	40,2%
Guinea Bissau	144 803	380 304	525 107	102 977	169 058	41 826	211 246	8,0%	40,2%
Senegal	444 626	1 306 311	1 750 937	316 023	738 359	128 603	567 952	7,3%	32,4%
Total	856 952	3 248 548	4 105 500	630 290	1 896 579	226 663	1 351 968	5,5%	31,9%

Given that 32% of the population in rural areas is supplied by unimproved water sources, compared to 5.5% of the urban population, it is **essential to intervene in the supply of drinking water to rural areas**.

SANITATION

Sanitation in the OMVG basin regions lags behind water supply. Comparison of key indicators shows that much greater efforts are needed for sanitation to achieve the Sustainable Development Goals by 2030.

The table below shows the effort needed to improve sanitation infrastructure and the elimination of open defecation, which increases for the regions indicated from right to left in the table, from 41% in Kaolack to 93% in Gabú. In the regions concerned, the percentages of open defecation are high in Senegal (with the exception of Kaolack) and Guinea; they are in an intermediate situation in Guinea-Bissau and are already very low in The Gambia.

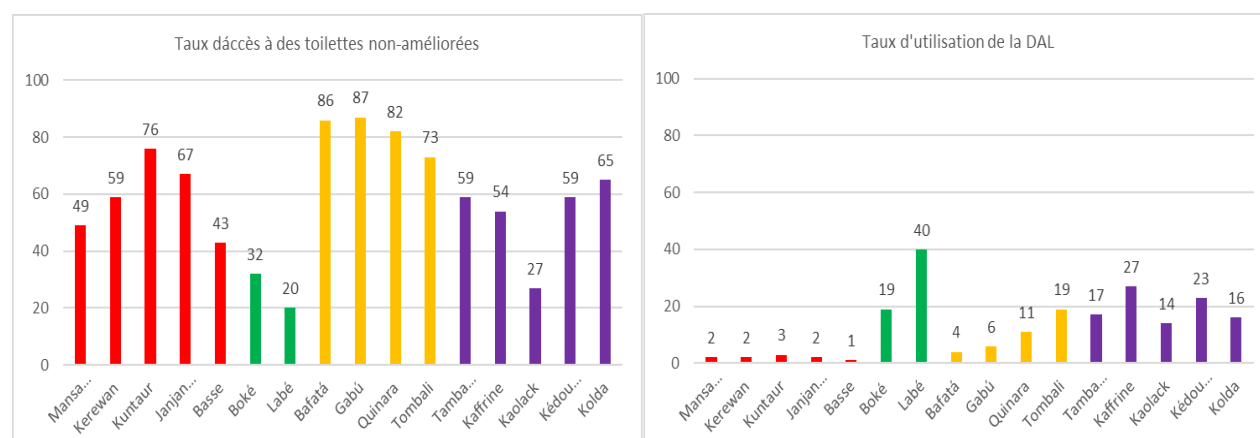
Table 2-3 Rate of household access to basic, limited and unimproved sanitation services and open defecation

Rate of access of households to sanitation (%)	Service Level	Regions in basins shared by OMVG member states															
		Gabu	Quinara	Tombali	Bafatá	Kédougou	Kolda	Kaffrine	Kuntaur	Tamba	Janjanbureh	Kerewan	Labé	Boké	Mansakonko	Low	Kaolack
	Basic Service	5	6	7	9	18	19	20	13	24	26	25	31	35	41	50	59
	Limited service	2	2	2	1	-	-	-	9	-	5	15	9	14	8	7	-
	Unimproved service	87	82	73	86	59	65	54	76	59	67	59	20	32	49	43	27
	OD	6	11	19	4	23	16	27	3	17	2	2	40	19	2	1	14
	unimproved + OD	93	93	92	90	82	81	81	79	76	69	61	60	51	51	44	41

The figure below illustrates the rates of access to an unimproved service and using open defecation.

The efforts to be developed in household sanitation in all countries of the OMVG basins in the decade 2020 to 2030 are about 4 times higher than those needed in the decade 2030 to 2040. Scenarios that will therefore be considered will allow Member States to make a gradual investment effort during the development period of this master plan.

Figure 2-2 Use of unimproved toilets and open defecation in areas within the OMVG basins



SUMMARY TABLES FOR DRINKING WATER SUPPLY AND SANITATION

The following summary tables provide an overview of the current water supply and sanitation situation in the OMVG basins.

The table below shows the household access rates for the different levels of water supply and sanitation services in the four Member States. The analysis of the table highlights the situation of the water supply and sanitation sector in each country and provides an overview of the acceleration needed to achieve the sustainable development goals of targets 6.1 and 6.2 by 2030.

Table 2-4 Rate of access of the household population to drinking water and sanitation services in the countries of the OMVG area

Service Level	Gambia		Guinea		Guinea-Bissau		Senegal	
	Drinking water	Sanitation	Drinking water	Sanitation	Drinking water	Sanitation	Drinking water	Sanitation
Basic Service	77%	35%	58%	32%	52%	7%	60% U(18) R(42)	29%
Limited Service	12%	8%	16%	12%	12%	2%	-	-
Unimproved Service	11%	56%	26%	25%	36%	85%	40% U(7,3) R(32,4)	52%
OD	-	2%	-	31%	-	6%	-	19%
Limited + unimproved + OD	23%	65%	42%	68%	48%	93%	40%	71%

The table below highlights the situation of the water supply and sanitation sector in the OMVG river basins.

Table 2-5 Rate of access of the household population to drinking water and sanitation services in the OMVG basins

OMVG basins	Sub-sector	Total pop. 2020	Density (inhabitants / km ²)	Population in 2020 (inhab)				Access rate			
				Basic	Limited	Unimproved	OD	Basic	Limited	Unimproved	OD
Gambia	Drinking water	2 655 602	34	1 810 593	162 193	682 816	-	68%	6%	26%	-
	Sanitation			819 836	104 652	1 293 497	437 618	31%	4%	49%	16%
Kayanga-Geba	Drinking water	667 439	44	268 266	49 553	349 620	-	40%	7%	52%	-
	Sanitation			80 824	6 869	512 420	67 327	12%	1%	77%	10%
Koliba-Corubal	Drinking water	782 459	33	448 009	113 461	220 989	-	57%	15%	28%	-
	Sanitation			211 159	81 596	294 533	195 172	27%	10%	38%	25%
Total	Drinking water	4 105 500	35	2 526 869	325 208	1 253 424	-	62%	8%	31%	-
	Sanitation			1 111 818	193 116	2 100 449	700 117	27%	5%	51%	17%

The results for drinking water supply show that the percentage of the total population served by at least one basic water service is 62% in the 3 OMVG basins; 68% in the Gambia basin, 40% in the Kayanga-Geba basin and 57% in the Koliba-Corubal basin.

The results for sanitation show that the percentage of the total population served by a basic and limited sanitation service is 32% in the 3 OMVG basins; 35% in the Gambia basin, 13% in the Kayanga-Geba basin and 37% in the Koliba-Corubal basin.

2.1.2 Key figures for Health

QUALIFIED HEALTH PERSONNEL NEEDS:

The situational analysis shows that there is a huge need for qualified health personnel, with an unbalanced deployment between rural and urban areas to the detriment of rural areas. It remains imperative to **restore territorial equity in terms of the availability and quality of health personnel** in the regions of the basin.

Table 2-6 Gaps in skilled health personnel

<u>Country</u>	Health professionals* per 10000 inhabitants	Population	Standards per 10,000 inhabitants	Difference
Senegal	5	1 750 937	23	3151
Guinea	6	1084 366	23	2385
Guinea Bissau	6	525108	23	892
Gambia	1	745 090	23	1266

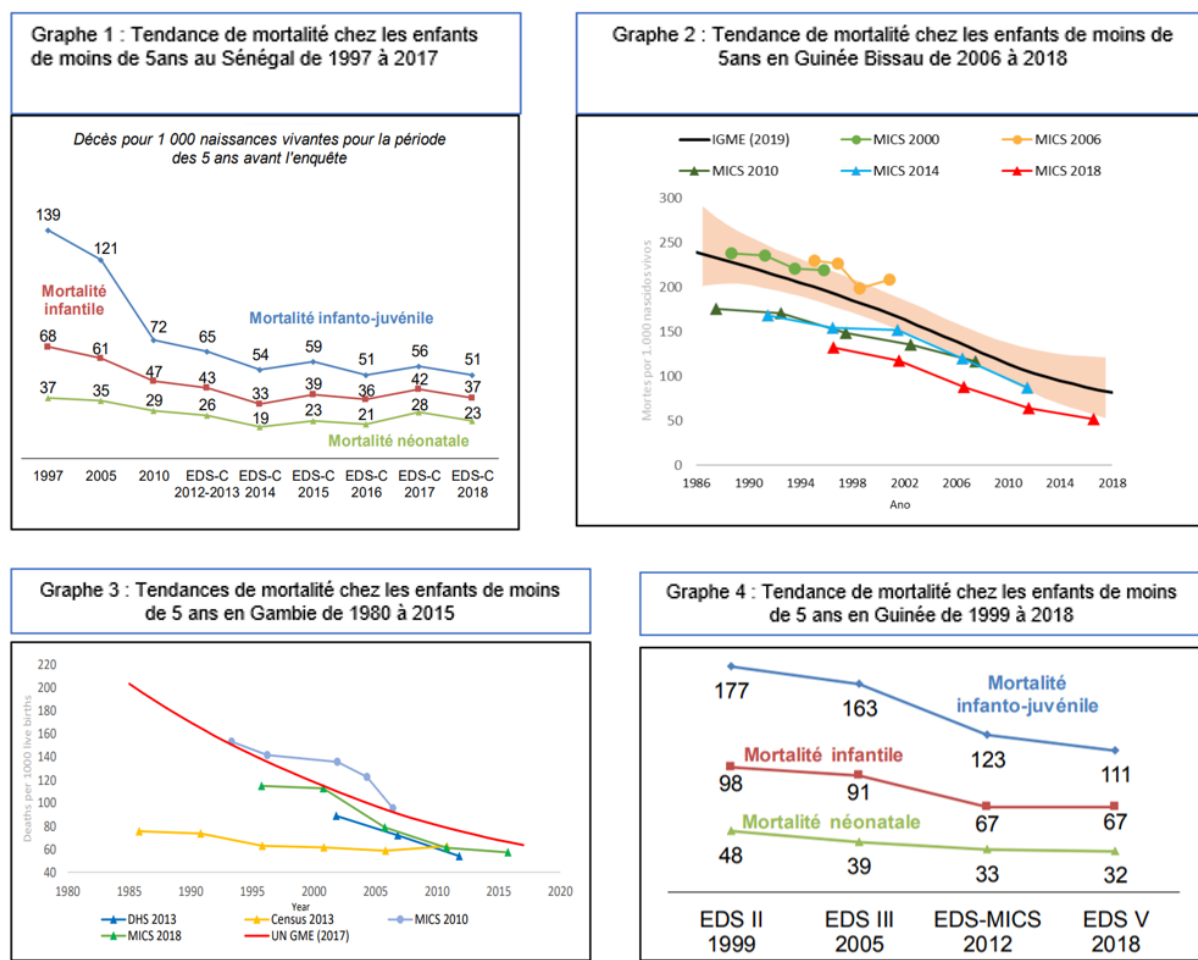
***Nurses/Midwives/Doctors**

Table 2-7 Situation of the child

Indicators	Senegal	Gambia	Guinea	Guinea Bissau	Targets ODD3
DTP vaccination coverage (12-23 months) %	93	95	93,5	87	100
Child mortality rate per 1000 live births	56	57	111	78,5	25
Prevalence rate of malnutrition among <5 years old %	18	19	31	28,1	0
Neonatal mortality rate per 1000 live births	28	31	30,4	36,6	12

Mortality trends for children under five have improved over the past 20 years in all countries, with remarkable reductions. Neonatal mortality is still worrying and leads to reflection on the implementation of strategies aimed at improving the conditions of children, such as the management of childhood diseases, immunisation coverage through the expanded plan for immunisation and the fight against malnutrition. Reducing or eliminating malnutrition must be a priority over the next ten years in order to improve early childhood health indicators.

Figure 2-3 Under-five mortality trends in Senegal, Guinea Bissau, The Gambia and Guinea



Sources: Demographic Health Survey 2018 Senegal, Multiple Indicator Cluster Survey 2018 Guinea Bissau, Gambia Multiple Indicator Cluster Survey 2018, Guinea Demographic and Health Survey 2018

2.1.2.1 Women's situation

Table 2-8: Some indicators on the situation of women

Indicators	Senegal	Gambia	Guinea	Guinea Bissau	SDG3 targets
Completion rate prenatal consultation %.	52,2	73	35,3	38	100
Rate of assisted deliveries %.	62,4	54	87,5	37	
Maternal mortality rate per 100,000 live births	296	440	437	457	70
Fertility rate (Children per woman)	5,3	4,7	4,8	4,5	

Sources: DHS 2018 - MICS 2018 - WHO 2017

The situation of women in the OMVG basins deserves **exceptional measures that can significantly reduce maternal mortality**, which is between 4 and 6 times higher than the target set by the SDGs. Strategies aimed at improving maternal care should also be implemented in order to reduce these trends by half or even two-thirds. This should involve birth control, as the number of children per woman is still very high (4.8 per woman), with completion rates for prenatal consultations hardly exceeding 50% and the percentage of births attended by qualified personnel standing at 60%, with a minimum of 37% for Guinea Bissau.

2.1.2.2 Situations of some diseases under surveillance

Table 2-9: Malaria, AIDS, TB and Trachoma Indicators

Indicators	Senegal	Gambia	Guinea	Guinea Bissau	SDG3 TARGETS
Malaria incidence rate per 1000 hbts	21,9	25,3	21,9	123,3	Elimination
Tuberculosis incidence rate per 100,000 hbts	122	174	176	361	Elimination
AIDS prevalence rate %.	0,5	1,7	1,8	5	Elimination
Trachoma prevalence rate %.	5*	0	3	19,5	Elimination

*Endemic districts

Diseases such as malaria, AIDS and tuberculosis have declined significantly in all countries of the OMVG basins. However, their elimination, one of the goals of SDG 3, is still a long way off. The gains made in the fight against these three diseases must be maintained and strengthened, particularly in prevention, management and the use of innovative strategies through operational research. The **cross-border fight against these diseases must be a reality** so that the border health districts adapt the same strategies for a better efficiency of the actions undertaken.

2.1.3 Situation of COVID-19 in the OMVG member countries:

The first cases were diagnosed from March 2020, with a higher incidence in large urban areas and a low rate of vaccination.

Table 2-10 Situation COVID-19

Country	Number of COVID-19 cases diagnosed	Number of deaths COVID-19	Case fatality rate	Deaths per million inhabitants	Number of tests performed	Percentage of people vaccinated
Senegal	73 987	1885	2,5%	109	873 259	5,51%
Guinea	30 770	387	1,25%	28	569 940	6,88%
Guinea Bissau	6 440	148	2,29%	73	106 886	22,2%
Gambia	9 989	342	3,42%	136	121 854	9,22%

Countries have signed up to the COVAX initiative to access the first vaccines and have set themselves the goal of vaccinating their entire population. To date, this rate seems utopian and considerable efforts must be made in the area of mass and local communication to reverse the trend towards vaccine hesitancy observed in all the OMVG countries.

COVID-19 has also led to a decline in the performance of national health programmes in Senegal, and this trend could also occur in other countries. It therefore remains relevant to provide contingency plans to minimise the collateral damage of COVID-19 on the health system in general, and on the functioning and functionality of national health programmes in particular.

EFFECTS OF COVID-19 ON THE PERFORMANCE OF HEALTH PROGRAMMES IN SENEGAL*Table 2-11 Comparative analysis of selected programme indicators*

Indicators	Achievements				Targets	Deviations	
	2019	2020	2020	Performance 2020	2020	Realization	Realization
		(Numerator)	(Denominator)			(2020-2019)	(2020-Target 2020)
Contraceptive prevalence rate	16,2 %	158045	1 020 863	15,40%	58% (EDS data)	-0.8	-42,6
Proportion of malnourished children cured	68 %	914	1763	51,8	59,2 %	-16 ,2 %	-0,074
Hepatitis B coverage rate < 24 h	77 %	93663	111552	84%	90%	7%	-6%
Percentage of Persons Living with HIV with undetectable viral load	42 %	3505	8098	43,28%	90%	1,28%	-46,72%
Tuberculosis detection rate for all forms	68,49%	4584	8442	54,29%	70%	-14,2	-15,71%
Malaria mortality rate	1,12%	71	5470	1,29%		0,17	
Average breakage time for medicines and tracers	13	3000	150	20	10	7	10
Number of people aged 60 and over who benefited from the Sesame Plan	49 080	-	-	25522	209875	-23558	-184353

Source: 2020 Joint Annual Review of the Response to COVID-19

Table 2-12: Situation Waterborne diseases

Waterborne diseases	Senegal	Guinea	Guinea Bissau	Gambia
Cholera	472 cases in 2012	678 cases in 2012	16 cases in 2012	41 cases in 2012
Gastroenteritis	Very prevalent but precise statistics are not available.	Very prevalent but precise statistics are not available	Very prevalent but precise statistics are not available	Very prevalent but precise statistics are not available
Arsenicosis	No statistics available	No statistics available	No statistics available	No statistics available
Shigellosis	No statistics available	No statistics available	No statistics available	No statistics available
Schistosomiasis	Present throughout the country with prevalence levels between 10 and 50%. Favoured by lack of water. Annual mass distribution campaigns with the national NTD programme	Endemic 50% prevalence	Endemic in the country, especially in the Cacheu valleys and the Geba rivers	Endemic in the country especially around the Gambia River
Lymphatic Filariasis	Prevalence of 14% detected in Kédougou in 2017 with villages up to 50% in the over 29s (Hubert et al, 20115)	10% prevalence	Endemic with periodic MTN campaigns	No cases reported since 2005
Onchocerciasis	150,000 are exposed to this disease and live in the Gambia River basin in about 590 villages.	Less than 1 per 1000 prevalence, being eliminated	Endemic with mass treatment implemented by the state	Not available

Statistics on waterborne diseases show that onchocerciasis persists in 590 villages in Senegal and is endemic in the Gambia. Schistosomiasis is endemic in the OMVG basins, and efforts are needed in the health information system to make data on gastroenteritis and water pollution-related diseases more reliable. Campaigns targeting neglected tropical diseases should be maintained and adjusted as necessary to achieve elimination of these diseases.

EFFECTS OF CLIMATE CHANGE

In the countries of the OMVG, climate change is affecting people's well-being through **increased flooding** that damages roads and infrastructure.

Increasing heat and drought threaten the health of populations and multiply existing health vulnerabilities. These impacts multiply the stresses associated with high levels of poverty and a fluctuating economy. Although there has been little research in this area, the main concerns are for **climate-sensitive diseases, such as malaria, which is endemic and peaks during the rainy season.** Climate change is likely to exacerbate the risks and impacts associated with water-borne and vector-borne diseases that are already prevalent in all parts of the OMVG.

2.1.4 Summary - SWOT matrices

The SWOT analyses highlight the strengths and weaknesses of the water supply, sanitation and health sector and provide a starting point for the strategy to strengthen the sector in the three OMVG basins.

Table 2-13 SWOT matrix for water supply in the river basins OMVG

Strenghts	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> • State priorities • Progress in all countries on access to safe water • Increased accessibility to solar energy that allows the use of electric pumps • Delegated management to ensure operation and maintenance of water supply infrastructure 	<ul style="list-style-type: none"> • Limited access to safe water in rural areas • Lack of operation/maintenance of water systems and boreholes equipped with human powered pumps • Long distances to collect good quality water • E. coli in improved water sources and in households • Lack of new plans to address sector priorities 	<ul style="list-style-type: none"> • Access for all to a good quality and sufficient quantity of water at home or nearby. • Reduction of water-related diseases • Improved school enrolment rates for girls Reduced poverty • Improved sustainability of the service • Creation of employment opportunities • Improved quality of life 	<ul style="list-style-type: none"> • Coordination not effective • Political uncertainties • Financial restrictions • Communities are not open to positive behavioural change • Changes in rainfall and water resources due to climate change

Table 2-14 SWOT matrix for sanitation and hygiene in the OMVG river basins

Strenghts	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> • Progress in CLTS to end OD • Capacity of NGOs on the ground to change sanitation and hygiene behaviour 	<ul style="list-style-type: none"> • Very limited access to adequate sanitation and hygiene in urban centres and rural areas • Low priority given by governments • Limited sectoral capacity • Insufficient funding • Lack of new plans to address sector priorities 	<ul style="list-style-type: none"> • Improved sanitation and hygiene services for all • Reduction of diseases due to faecal contamination • Improved quality of life for the population • Preservation of soil and water resources from wastewater discharge • Improvement of the environment 	<ul style="list-style-type: none"> • Coordination not effective • Political uncertainties • Financial restrictions • Communities are not open to positive behavioural change • Risks due to increased intense rainfall and flooding events due to climate change • High population growth

Table 2-15 SWOT matrix for health in the LVMO river basins

Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> • Existence of well-developed policy and programme plans consistent with the SDGs and international treaties • Free treatment for simple malaria, AIDS and TB • Dynamic immunisation programme • Existence of a dense community network of providers • Increasing community involvement in addressing health threats • Universal health coverage • Ongoing support from development partners in the fight against diseases 	<ul style="list-style-type: none"> • Worrying health indicators • Fragmented information system with some data missing • Difficulties in accessing medicines and certain essential products • Delay in making resources available, including reimbursement following the policy of free care for certain vulnerable groups • Lack or non-updating of patient care flowcharts • Insufficient funding • Lack of equity in the allocation of resources • Deficits in qualified personnel • Health system predominantly curative 	<ul style="list-style-type: none"> • Strong involvement of development partners in health financing (PMI, Global Fund, UNICEF, WHO, USAID...) • Mass media and new communication technologies • International commitments for the provision of drugs against NTDs • Existence of initiatives such as COVAX 	<ul style="list-style-type: none"> • Rampant demography • Insufficient or no border health surveillance • Insufficient vaccine stocks • Return of rainfall due to climate change • Persistence of malaria and tuberculosis • Increase in chronic diseases • Difficult access to medicines and lack of pharmaceutical industries • Problems of geographical and financial accessibility of health structures • Problems of equity in the health coverage of the population

2.2 EVOLUTION OF THE SECTOR

2.2.1 Key issues

The 2030 Agenda provides a reference framework for the development of the water and sanitation sector in the OMVG basins, to achieve universal and equitable access as targeted by the Sustainable Development Goals (SDGs). There are disparities in access rates across the 3 OMVG basins and the SDG6 may be more difficult to achieve in some areas or in some basins where lower access rates are currently observed.

The main challenges for Member States in implementing measures to meet the water and sanitation and hygiene SDGs are:

- **Improving governance of the sector** in the context of existing and emerging challenges by strengthening institutional frameworks for public services in the sector;
- **Sustainable funding for infrastructure investments** in the sector for the creation of new infrastructure or the rehabilitation/improvement of existing infrastructure;
- **Sustainable funding for operation and maintenance** to ensure the sustainability of the sector's infrastructure.

The main challenges identified for the achievement of SDG3 (health) lie in the **governance of the health sector, in the provision of health care services but also in social protection**:

- Strengthening the steering and coordination of the sector;
- The integration of preventive, curative and promotional care at the level of health centres and the recruitment and training of competent medical staff;
- Decentralisation and deconcentration of health services;
- The optimal functioning of health programmes in a pandemic context such as COVID-19;
- Increasing endogenous health financing and better involvement of the private sector;
- Availability of quality medicines and health products;
- Rationalisation of health services to be present where they are needed;
- Strengthening and sustaining community participation;
- The establishment of a health insurance system based on the principles of solidarity.

2.2.2 Scenarios for change in the water and sanitation sector

The available water supply and sanitation development plans developed for the countries of the OMVG basins need to be updated as they do not yet take into account the Sustainable Development Goals, especially targets 6.1 and 6.2. These plans include:

- NAWEC, 2005. Master Plan, Water Supply and Sanitation Study of The Gambia;
- SNAPE, 2009. National programme for drinking water supply and sanitation in rural areas in the Republic of Guinea by 2015;
- DGRH, 2010. Update of the Water and Sanitation Master Plan of Guinea-Bissau (2011-2020);
- SONES has a Master Plan from 2010. An update of this is planned for 2022.

The reference framework for the development of this sector study is the 2030 Agenda of the Sustainable Development Goals. This study can be seen as a preliminary study at the scale of the OMVG area that assesses the water and infrastructure needs of the sector and their financing until 2040, already integrating the SDG6 into the planning of the water, sanitation and hygiene sector.

The country consultations provided information on the needs, characteristics, condition and functioning of existing infrastructure and the main challenges, including ongoing projects in the water and sanitation sector. Annexes 1 and 2 present the data provided for the PDDI by NAWEC and SONES.

We have also taken into account the detailed project proposal - Mission 1 - "Maintenance of electromechanical and hydromechanical equipment in Conakry and inland towns", for Koundara, Mali, Gaoual and Lélouma, which are underway or completed. The Société des Eaux de Guinée (SEG) is the contracting authority for these works.

On the basis of the information acquired for this PDDI, scenarios have been established for the evolution of drinking water supply, sanitation and hygiene infrastructures for urban centres and rural areas in the OMVG area, in order to achieve the Sustainable Development Goals by 2040.

The current state of the sector has been considered as a starting point for the development of scenarios for the evolution of the WASH sector. These scenarios are described below and have been used as a basis for assessing the infrastructure needs and investments to be made for the construction, rehabilitation and strengthening of the sector's infrastructure in each of the OMVG Member States and basins up to 2040. The funding required for ancillary works, including studies and tender documents required for the implementation of sector infrastructure was also assessed.

2.2.2.1 Scenarios for the evolution of the population served by the drinking water supply

The scenarios envisaged for the evolution of access to drinking water at the basic service level in order to achieve the SDGs are quite ambitious, and envisage significant annual growth rates and therefore very high investments, especially until 2030.

GAMBIA

The rate of access to basic drinking water services in the Gambia OMVG area is currently 77%. In order to achieve the goal of universal access by 2030, it is necessary to provide access to a basic service to the currently unserved population and to provide access to a basic service to the future population. In the Gambian area of the OMVG space, the urbanisation rate in 2020 is 24% and will be 34% by 2040.

According to the proposed development scenario, the growth rates of population access to basic/safe drinking water services aim to achieve the objectives of equity and universality of drinking water service by 2030. The assumed growth rates are as follows:

- Growth rate of 4.1%/year between 2021 and 2025 and the population served is 126,400, of which 35,900 are from urban centres and 90,500 from rural areas;
- Growth rate of 4.8%/year between 2025 and 2030 and the population served is 182,800, 77,100 from urban centres and 105,700 from rural areas;
- Growth rate 1.4%/year between 2030 and 2040 and the population served is 136,300, 89,900 from urban centres and 46,400 from rural areas.

It was agreed that ongoing or programmed projects with funding continue to be implemented.

GUINEA

The rate of access to basic services in Guinea in the OMVG area is currently 58%. To achieve the goal of universal access in 2030, it is necessary to provide access to a basic service to the currently unserved population and to provide access to a basic service to the future population by 2040. In the OMVG basin area, the urbanisation rate in 2020 is 8% and will be 12% in 2040, leading to a greater dispersion of settlements and therefore infrastructure.

According to the proposed development scenario, the growth rates of population access to basic/safe drinking water services aim to achieve the objectives of equity and universality of drinking water service by 2030. The assumed growth rates are as follows:

- Growth rate of 7.9%/year between 2021 and 2025 and the population served is 291,000, i.e. 28,700 from urban centres and 262,300 from rural areas;
- Growth rate of 7.6%/year between 2025 and 2030 and the population served is 408,500, i.e. 32,800 from urban centres and 375,700 from rural areas;
- Growth rate 1.5%/year between 2030 and 2040 and the population served is 211,500, i.e. 56,200 from urban centres and 155,300 from rural areas.

A number of considerations, and in particular the recognition that Guinea has continued to make continuous efforts to improve the drinking water sector, have led to the adoption of an ambitious scenario for the growth of the population served:

- The key indicators for Guinea refer to the year 2016 (MICS, 2016) and therefore do not take into account the achievements in water supply systems in recent years, which are numerous, as evidenced by the 2018 and 2019 activity reports produced by the Service National des Points d'Eau (SNAPE), and one can therefore assume that the current access rate is already higher;
- The Société des Eaux de Guinée is currently rehabilitating the drinking water systems of the centres, including solar panels, generators and water treatment stations using HTH (calcium hypochlorite), within the framework of the "Securing the drinking water supply in the 26 SEG centres - Maintenance of electromechanical and hydromechanical equipment in Conakry and the towns in the interior" project. To date, the detailed projects and tender documents, some of which are within the OMVG area - such as for Koundara, Mali and Gaoual - have already been concluded.
- In addition, rural drinking water supply in Guinea is well structured:
 - The management of the public water service is communal: the communes identify the target villages, participate in the design of the projects, accept the works and delegate the management of the service to Management Units. These units contract a private operator established at regional level and approved by SNAPE. SNAPE is responsible for the supervision of artisanal repairers of human powered pumps, maintenance and repair of mechanical pumping systems and distribution networks;
 - SNAPE has a mission to support and advise the communes on access to drinking water and has a major role in the permanent and dynamic monitoring of the sector in rural areas.

GUINEA BISSAU

The rate of access to basic services in Guinea Bissau in the OMVG basin area is currently 52%. In the OMVG basin area the urbanisation rate in 2020 is 28% and will be 35% in 2040.

Guinea-Bissau is the country where the population has the least access to a basic drinking water service among the OMVG member states. A high satisfaction scenario is proposed for the population's access to drinking water, with an access rate of 75% by 2030.

According to the proposed development scenario, the growth rates of population access to basic/safe water services aim to achieve the objectives of equity and universality of drinking water service by 2040. The assumed growth rates are as follows:

- Growth rate of 4.9%/year between 2021 and 2025 and the population served is 74,000, i.e. 10,600 in urban centres and 63,400 in rural areas;

- Growth rate of 6.7%/year between 2025 and 2030 and the population served is 132,300, i.e. 45,900 in urban centres and 86,400 in rural areas;
- Growth rate 4.6%/year between 2030 and 2040 and the population served is 274,400, i.e. 104,300 in urban centres and 170,100 in rural areas.

SENEGAL

The rate of access to basic services in Senegal in the OMVG basin area is currently 61%. In the OMVG basin area the urbanisation rate in 2020 is 28% and will be 39% in 2040.

According to the proposed development scenario, the growth rates of population access to basic/safe drinking water services aim to achieve the objectives of equity and universality of drinking water service by 2030. The assumed growth rates are as follows:

- Growth rate of 6.6%/year between 2021 and 2025 and the population served is 394,000, i.e. 202,200 in urban centres and 191,800 in rural areas;
- Growth rate of 8.2%/year between 2025 and 2030 and the population served is 700,300, i.e. 114,900 in urban centres and 585,500 in rural areas;
- Growth rate 1.7%/year between 2030 and 2040 and the population served is 406,300, 247,200 in urban centres and 159,100 in rural areas.

This highly evolving scenario for improving water supply, with very high annual growth rates, especially over the period 2021-2030, will require significant efforts, but very comparable to projects already carried out in Senegal. This is the case, for example, of the PUDC (Programme d'Urgence de Développement Communautaire) in its third phase (PUDC Phase 3), which aimed to cover the needs of 500,000 inhabitants in rural areas, to bring families closer to water points and to significantly reduce water collection for women and children in rural areas.

This project, launched in April 2017, had a budget of 50,000 MFCFA, was to be completed in 16 months, and included the following components:

- Rehabilitation of 70 old boreholes;
- Construction of 181 complete drinking water supply systems: boreholes + water towers + network;
- Construction of 900 standpipes; and
- Construction of 803 km of linear network.

Generally speaking, this project corresponds to a typical multi-village water supply scheme consisting of the construction of boreholes equipped with water towers 20 m high under the invert to supply all the villages within a radius of 6 to 10 km².

Taking into account the above project data, we estimate an average value of 2,700 inhabitants per village system. This project covered 12 regions in Senegal, including the 4 regions of the OMVG area: Kafrine, Kaolack, Tambacounda and Kolda.

The IDB WAEMU Rural Water and Sanitation Project in the regions of Kédougou, Kolda, Matam and Tambacounda for a total population of 103,613 people, is completed or nearing completion. It started in January 2016 and is scheduled to be completed in July 2021. The project budget is 7,965.31 million FCFA.

The activities were as follows:

- 12 complete multi-village water supply systems in the regions of Kolda, Matam and Tambacounda, including four (04) for each region;
- 21 boreholes equipped with solar systems in the regions of Kédougou, Matam and Tambacounda, including ten (10) for the region of Kédougou, seven (07) for the region of Tambacounda and four (04) for the region of Matam;

² OFOR Bulletin N°03, page 37 | June 2017 | Website : <http://www.forages-ruraux.sn>

- 65 down-the-hole drill boreholes in the regions of Kédougou and Tambacounda, of which 35 in the Kédougou region and 30 in the Tambacounda region.

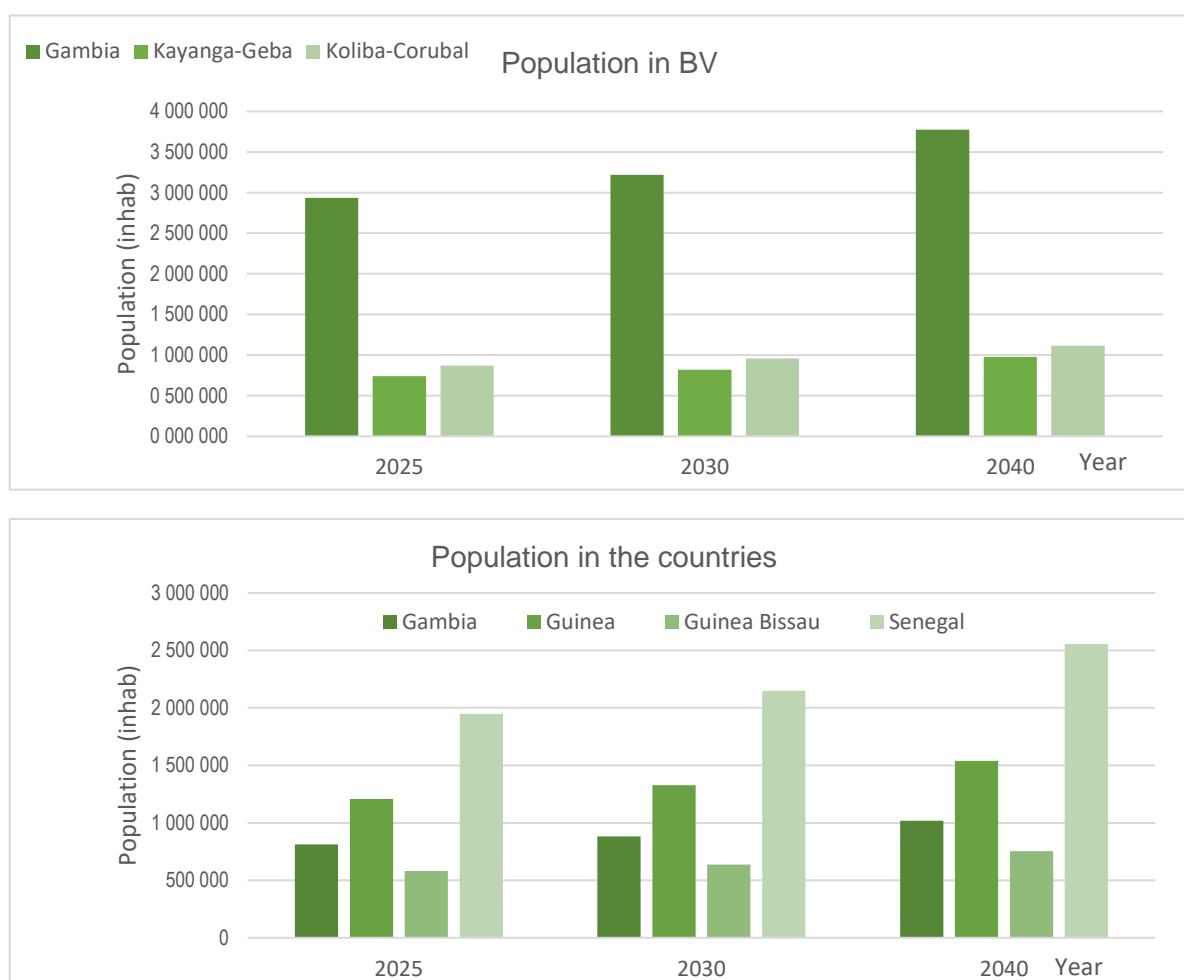
The key indicators for Senegal refer to the year 2017 (ANSD. DHS, 2017) and therefore did not take into account these particular large projects, which are expected to have served a population of about 200,000 people in the rural areas of the OMVG space. Thus, current access rates may be higher than assumed, and therefore the effort to improve population access rates to drinking water is lower than expected by 2030. However, as we do not have confirmation of the populations covered in the OMVG area by the projects carried out, the rates of access to a basic service provided by the ANSD, 2017, in the analyses below have been maintained.

OMVG AREA

The figures below illustrate the evolution of the population in the basins and countries of the OMVG area by 2025, 2030 and 2040.

It should be noted **that in the OMVG area the urban population will double by 2040 and the rural population will increase by about 30% by 2040.**

Figure 2-4: Population trends in the basins and countries of the OMVG area by 2025, 2030 and 2040



The following tables present projections of the total urban and rural population served and to be served, and of the access rates to basic drinking water services in the countries and basins of the OMVG for the scenarios described above and for the time horizons 2025, 2030 and 2040.

Table 2-16: Situation in the year 2020: Total population, urban and rural, served and unserved, and access rates to basic drinking water services in the OMVG countries and basins

Country/ by basin	Population 2020									Access rate to basic service		
	Urban	Rural	Total	Served Urban	Served Rural	Served Total	Unserved Urban	Unserved Rural	Unserved Total	Urban	Rural	Total
Gambia	178 291	566 799	745 090	143 012	429 935	572 947	35 279	136 864	172 143	19%	58%	77%
Guinea												
Gambia	35 831	405 400	441 231	26 994	224 385	251 379	8 837	181 015	189 852	6%	51%	57%
Kayanga-Geba	712	3 696	4 409	577	2 200	2 778	135	1 496	1 631	13%	50%	63%
Koliba-Corubal	52 689	586 037	638 726	40 707	332 642	373 348	11 982	253 395	265 377	6%	52%	58%
Totals	89 232	995 134	1 084 366	68 277	559 228	627 505	20 955	435 906	456 861	6%	52%	58%
Guinea Bissau												
Kayanga-Geba	103 023	278 351	381 375	73 410	123 964	197 374	29 612	154 387	184 000	19%	33%	52%
Koliba-Corubal	41 780	101 953	143 733	29 567	45 094	74 660	12 213	56 859	69 073	21%	31%	52%
Totals	144 803	380 304	525 108	102 977	169 058	272 035	41 826	211 246	253 073	20%	32%	52%
Senegal												
Gambia/SONES	250 390		250 390	250 390		250 390	0		0	19%	48%	67%
Gambia	103 511	1 115 380	1 218 892	26 349	709 528	735 878	77 162	405 852	483 014			
Kayanga/SONES	44 457		44 457	29 631		29 631	14 826		14 826	14%	10%	24%
Kayanga-Geba	46 268	190 931	237 199	9 653	28 831	38 483	36 615	162 100	198 715			
Totals	444 626	1 306 311	1 750 937	316 023	738 359	1 054 382	128 603	567 952	696 555	18%	42%	60%
Totals	856 952	3 248 548	4 105 500	630 290	1 896 579	2 526 869	226 663	1 351 968	1 578 632	15%	46%	62%

Table 2-17: Situation in 2025: Total urban and rural population served and to be served and projected access rates to basic drinking water services in the OMVG countries and basins

Country/ by basin	Population 2025									Access rate to basic service		
	Urban	Rural	Total	Served Urban	Served Rural	Served Total	To be served urban	To be served rural	To be served in full	Urban	Rural	Total
Gambia	215 261	597 971	813 232	178 911	520 469	699 380	35 899	90 534	126 433	22%	64%	86%
Guinea												
Gambia	43 254	447 843	491 097	39 288	333 946	373 234	12 294	109 561	121 855	8%	68%	76%
Kayanga-Geba	860	4 083	4 943	860	4 083	4 943	283	1 883	2 166	17%	83%	100%
Koliba-Corubal	63 605	647 392	710 997	56 880	483 478	540 357	16 173	150 836	167 009	8%	68%	76%
Totals	107 718	1 099 319	1 207 037	97 027	821 507	918 535	28 750	262 279	291 030	8%	68%	76%
Guinea Bissau												
Kayanga-Geba	121 171	300 599	421 771	80 136	168 708	248 845	6 726	44 744	51 470	19%	40%	59%
Koliba-Corubal	49 140	110 102	159 242	33 441	63 697	97 138	3 874	18 603	22 477	21%	40%	61%
Totals	170 312	410 701	581 013	113 577	232 405	345 982	10 600	63 347	73 948	18%	40%	58%
Senegal												
Gambia/SONES	301 794		301 794	301 794		301 794	51 404		51 404	26%	50%	76%
Gambia	121 745	1 209 448	1 331 193	121 745	816 493	938 238	95 396	106 965	202 361			
Kayanga/SONES	52 915		52 915	52 915		52 915	23 284		23 284	30%	36%	66%
Kayanga-Geba	55 662	207 033	262 695	41 768	113 620	155 388	32 115	84 789	116 904			
Totals	532 116	1 416 481	1 948 597	518 222	930 113	1 448 335	202 199	191 754	393 953	27%	48%	74%
Totals	1 025 407	3 524 472	4 549 879	907 738	2 504 494	3 412 232	277 448	607 915	885 363	20%	55%	75%

2. DRINKING WATER SUPPLY, SANITATION AND HEALTH IN THE OMVG AREA

Table 2-18: Situation in 2030: Total urban and rural population served and to be served and projected access rates to basic drinking water services in the OMVG countries and basins

Country/ by basin	Population 2030									Access rate to basic service		
	Urban	Rural	Total	Served Urban	Served Rural	Served Total	To be served urban	To be served rural	To be served in full	Urban	Rural	Total
Gambia	256 050	626 178	882 227	256 050	626 178	882 227	77 139	105 709	182 848	29%	71%	100%
Guinea												
Gambia	52 147	487 698	539 846	52 147	487 698	539 846	12 860	153 752	166 612	10%	90%	100%
Kayanga-Geba	1 037	4 447	5 484	1 037	4 447	5 484	177	363	540	19%	81%	100%
Koliba-Corubal	76 682	705 005	781 688	76 682	705 005	781 688	19 803	221 528	241 330	10%	90%	100%
Totals	129 867	1 197 150	1 327 017	129 867	1 197 150	1 327 017	32 839	375 643	408 482	10%	90%	100%
Guinea Bissau												
Kayanga-Geba	141 308	321 383	462 690	115 673	231 345	347 018	35 536	62 637	98 173	25%	50%	75%
Koliba-Corubal	57 306	117 714	175 021	43 755	87 510	131 265	10 314	23 813	34 128	25%	50%	75%
Totals	198 614	439 097	637 711	159 428	318 855	478 283	45 850	86 450	132 301	25%	50%	75%
Senegal												
Gambia/SONES	366 049		366 049	366 049		366 049	64 255		64 255	28%	72%	100%
Gambia	137 867	1 294 067	1 431 934	137 867	1 294 067	1 431 934	16 122	477 573	493 695			
Kayanga/SONES	63 488		63 488	63 488		63 488	10 573		10 573	37%	63%	100%
Kayanga-Geba	65 694	221 519	287 213	65 694	221 519	287 213	23 926	107 899	131 825			
Totals	633 098	1 515 585	2 148 683	633 098	1 515 585	2 148 683	114 876	585 472	700 348	29%	71%	100%
Totals	1 217 628	3 778 010	4 995 639	1 178 442	3 657 769	4 836 211	270 704	1 153 275	1 423 979	24%	73%	97%

Table 2-19: Situation in 2040: Total urban and rural population served and to be served and projected access rates to basic drinking water services in the OMVG countries and basins

Country/ by basin	Population 2040									Access rate to basic service		
	Urban	Rural	Total	Served Urban	Served Rural	Served Total	To be served urban	To be served rural	To be served in full	Urban	Rural	Total
Gambia	345 997	672 561	1 018 558	345 997	672 561	1 018 558	89 948	46 384	136 331	34%	66%	100%
Guinea												
Gambia	74 714	550 977	625 691	74 714	550 977	625 691	22 567	63 279	85 846	12%	88%	100%
Kayanga-Geba	1 485	5 024	6 509	1 485	5 024	6 509	449	577	1 026	23%	77%	100%
Koliba-Corubal	109 867	796 480	906 347	109 867	796 480	906 347	33 184	91 475	124 659	12%	88%	100%
Totals	186 066	1 352 481	1 538 547	186 066	1 352 481	1 538 547	56 199	155 331	211 530	12%	88%	100%
Guinea Bissau												
Kayanga-Geba	187 620	357 880	545 501	187 620	357 880	545 501	71 948	126 535	198 483	34%	66%	100%
Koliba-Corubal	76 088	131 083	207 171	76 088	131 083	207 171	32 333	43 572	75 905	37%	63%	100%
Totals	263 709	488 963	752 671	263 709	488 963	752 671	104 281	170 107	274 388	35%	65%	100%
Senegal												
Gambia/SONES	508 953		508 953	508 953		508 953	142 904		142 904	33%	67%	100%
Gambia	191 690	1 429 919	1 621 609	191 690	1 429 919	1 621 609	53 823	135 853	189 675			
Kayanga/SONES	88 273		88 273	88 273		88 273	24 785		24 785	42%	58%	100%
Kayanga-Geba	91 341	244 774	336 114	91 341	244 774	336 114	25 647	23 255	48 902			
Totals	880 256	1 674 693	2 554 949	880 256	1 674 693	2 554 949	247 158	159 108	406 266	34%	66%	100%
Totals	1 676 028	4 188 698	5 864 726	1 676 028	4 188 698	5 864 726	497 586	530 930	1 028 516	29%	71%	100%

2.2.2.2 *Drinking water infrastructure needs*

The previous scenarios of population growth with access to drinking water by 2040 correspond to scenarios of increasing production, treatment, transport, storage and distribution capacities through water towers and drinking water networks, and the gradual increase of individual connections in urban centres, but also in the most populated villages.

The drinking water supply development scenarios seek to integrate the measures proposed at country level at the Phase 1 Regional Workshop, including:

- **Village drinking water supply projects** with distribution networks based on groundwater catchment wells and solar pumps;
- **Monitoring, management, operation and maintenance of boreholes and drinking water distribution networks** to make them sustainable.

Taking into account the scenarios described and the medium and long term objectives (2030 - 2040) of universal and sustainable access to drinking water in the OMVG area, the following hypotheses have been accepted to estimate the infrastructure needs in access to drinking water:

- Types of access to drinking water :
 - Borehole with human powered pump (BHPP);
 - Drinking water supply network (DWSN), either for private connections (PC) or for standpipes (SP).
- The **population in urban centres will be supplied by drinking water supply networks**. In these centres, the construction of new production, treatment, transport, storage and distribution facilities through water towers and drinking water networks will be planned, as well as the rehabilitation/strengthening of existing facilities. The type of access will be through private connections and standpipes, with a tendency to replace standpipes with private connections to serve the urban population over time;
- In the **villages, the population will be supplied by boreholes equipped with human-powered pumps (BHPP) and drinking water supply networks**:
 - For approximately 30% of the village population in 2040, whose current population resides in villages with less than 400 inhabitants and is currently not served by improved water sources or is already served by improved water sources but far from households, it is proposed to construct BHPPs during the period of this plan, by 2040;
 - For 70% of the population of the villages in 2040, of which it is estimated that the current population resides in villages of 400 or more, it is proposed to build new facilities or rehabilitate existing ones in order to provide drinking water to the population, at or near households, with a borehole solution, treatment plant, water tower and drinking water supply network with standpipes, considering that in these villages the type of access, which at the beginning will be mainly by standpipes, will undergo a trend towards an increase in individual connections and a reduction in standpipes by 2040.

The estimate of the percentage of the population in villages with less than 400 inhabitants and 400 or more inhabitants was based on the GoBS, 2013, Directory of Settlement for The Gambia. For the other countries, this data was not available. For villages in The Gambia in the OMVG area, it was found that the population residing in villages with less than 400 inhabitants represents about 30% of the total village population, which approximates the population currently unserved by improved water sources or served by improved water sources distant from households.

New village water supply infrastructures must **favour multi-village supply** to allow for a better amortization of investments in deep boreholes and in treatment plants/disinfection stations, and to optimize management, operation and maintenance costs. For areas where the flow rates or quality of water resources do not allow the population's access to drinking water to be met in terms of quantity and quality, water transfer solutions (underground or surface) will have to be envisaged.

For the **treatment of surface water**, a conventional treatment process should be considered (coagulation/flocculation; sedimentation, filtration, treated water storage tank and disinfection (by calcium hypochlorite)).

All components of the village water supply, such as the borehole with a solar panel pump or linked to the electricity grid, the treatment plant/disinfection station, the storage tank and the water tower and network, must be sized for the population and water needs in the project horizon (2040). In the medium term, up to 2030, the drinking water supply network will be shorter and will include a few standpipes, e.g. 1 standpipe per 150 inhabitants. **The densification of public water points and the construction of private connections will be in line with the demand of the growing population.**

Existing drinking water supply networks in towns and villages are rehabilitated/strengthened and integrated into the drinking water supply systems. Strengthening existing systems may involve the construction of a water tower, the construction of new boreholes and pipelines, the installation of a treatment plant/disinfection station, the extension of the network or the increase of the diameter of sections of the network and the construction of standpipes and private connections.

In order to rehabilitate and strengthen existing drinking water supply infrastructures, it is **essential that the Member States have an inventory of the existing situation in the supply of drinking water in urban centres and villages**, namely: the current and projected population, the flows captured and distributed, the characteristics of the infrastructures, the mapping of the networks, the state of operation and the state of conservation. This should enable the diagnosis, design of solutions and infrastructure, projects and tender documents necessary for the execution of rehabilitation and strengthening.

The Consultant draws attention to the **careful determination of population and unit consumption by 2040 for the sizing of drinking water supply systems in towns and villages**, as the number of people who will want to have water in their homes in the future should not be underestimated. In this case, the unit consumption of people is higher than with the use of shared standpipes, as is commercial, industrial and public consumption in settlements. It is very important to carefully determine the population and its unit consumption in order to avoid under- or oversizing of drinking water supply systems.

In sizing the costs of the new BHPPs, an average population of 130-135 inhabitants/ borehole has been assumed to ensure closer access to drinking water for households. Existing BHPPs in rural areas will be rehabilitated and integrated into village water supply systems. These **boreholes can provide an alternative source of water for livestock and agriculture** in the case of villages that will be served by a drinking water supply system.

According to the information available, at present, **in all Member States, underground resources are exploited to supply water to the population, with a few exceptions**. This is the case for the town of Kédougou, in the basement zone, which benefits from surface water from the Gambia River, with a water intake at Itato. The transition from the use of groundwater resources, which are more limited in quantity and of very variable quality, to the use of surface water resources is envisaged by SONES, which has launched a call for tenders to update the master plan in the 8 urban areas it currently manages. This study, launched in early 2022, could favour surface water to supply the cities managed by SONES over groundwater, as surface water is of better quality and in greater quantity, and easier to mobilise than groundwater.

The table below shows the drinking water supply infrastructure needs by 2040 to ensure universal and equitable access to drinking water in the OMVG countries and basins, for the urban and rural population.

The estimate of the investments to be made was based on the urban and rural population assigned to each type of drinking water infrastructure and the estimated unit cost per capita. These per capita unit costs were obtained from the values of similar projects in Senegal and Guinea, but also from projects developed for other African countries.

SONES manages 5 cities in the OMVG area: Kounghoul, Nioro du rip, Tambacounda and Kédougou in the Gambia basin and Vélingara in the Kayanga basin. The cities of Kaffrine, Kaolack and Kolda are outside the OMVG area. SONES has provided estimates of the population served, the type of connection used and the annual consumption for the years 2021, 2030 and 2035. The scenarios established in this sector plan for the evolution of the population served in the cities of the OMVG area and their water needs are consistent with the data provided by SONES. The availability of this data has also enabled an assessment to be made specifically for the water supply systems managed by SONES of the investments to be made during the development period of this PDDI.

Table 2-20: Infrastructure needs for drinking water supply by 2040 in the OMVG countries and basins

Country/ by basin	Population 2020					Population 2040		Urban population to be served in 2040		Rural population to be served in 2040			
	Urban	Rural	Served Urban	Served Rural	Unserve d Rural	Urban	Rural	Urban water systems		Rural water supply networks		BHPP / Modern water point	
								Constructi on	Rehabilit ation/ Strengthen ing/ Restore	Constructi on	Rehabilitati on/ Strengtheni ng / Restore	Construction	Rehabilit ation
Gambia	178 291	566 799	143 012	429 935	136 864	345 997	672 561	202 985	143 012	406 717	128 980	136 864	300 954
Guinea													
Gambia	35 831	405 400	26 994	224 385	181 015	74 714	550 977	47 720	26 993	318 369	67 316	165 293	157 070
Kayanga- Geba	712	3 696	577	2 200	1 496	1 485	5 024	908	577	2 868	660	1 496	1 540
Koliba- Corubal	52 689	586 037	40 707	332 642	253 395	109 867	796 480	69 159	40 706	457 743	99 793	238 944	232 849
Totals	89 232	995 134	68 277	559 228	435 906	186 066	1 352 481	117 787	68 276	778 980	167 768	405 733	391 459
Guinea Bissau													
Kayanga- Geba	103 023	278 351	73 410	123 964	154 387	187 620	357 880	114 210	73 410	213 327	37 189	107 364	86 775
Koliba- Corubal	41 780	101 953	29 567	45 094	56 859	76 088	131 083	46 521	29 566	78 230	13 528	39 325	31 565
Totals	144 803	380 304	102 977	169 058	211 246	263 709	488 963	160 731	102 976	291 557	50 717	146 689	118 341
Senegal													
Gambia/SON ES	250 390	0	250 390	0		508 953		258 563	250 390				
Gambia	103 511	1 115 380	26 349	709 528	405 852	191 690	1 429 919	165 340	26 349	811 209	212 859	405 852	496 670
Kayanga/SO NES	44 457	0	29 631	0		88 273		58 642	29 631				
Kayanga- Geba	46 268	190 931	9 653	28 831	162 100	91 341	244 774	81 688	9 653	162 693	8 649	73 432	20 181
Totals	444 626	1 306 311	316 023	738 359	567 952	880 256	1 674 693	564 233	316 023	973 901	221 508	479 284	516 851
Totals	856 952	3 248 548	630 290	1 896 579	1 351 968	1 676 028	4 188 698	1 045 738	630 289	2 451 155	568 974	1 168 570	1 327 605

Table 2-21: Unit costs of construction/rehabilitation/strengthening of water supply infrastructure in urban centres and villages

Construction / rehabilitation of water supply systems in urban centres and rural areas	Unit costs (USD/capita)
Urban centres	
Construction of water supply systems (includes new water collection, treatment, water towers and storage tanks and networks – disinfection and de-ironing costs: 25 USD /capita (average cost))	320
Construction of SONES water supply systems (includes new facilities and surface water transfer – full treatment: 60 USD/capita (average cost))	350
Rehabilitation/strengthening of water supply networks (includes water treatment - chlorination and iron removal- 25 USD/capita average cost)	230
Rural areas	
Construction of water systems (includes treatment: 25 USD/capita average cost)	275
Rehabilitation/strengthening of water networks (includes treatment: 25 USD/capita average cost)	170
Construction of BHPPs/ modern water points	170
Rehabilitation of BHPPs/ modern water points	50

2.2.2.3 Scenarios for the evolution of the population served by sanitation

The scenarios for achieving universal access to basic sanitation by 2030 would imply very high annual growth rates of the population to be served, much higher than those foreseen for drinking water supply, which is not realistic given the past evolution of sanitation in all countries. In the context of the current situation in the countries, it seems that sanitation is not a priority, as shown by the responses of Group 2 “Harmonisation of the diagnosis and formulation of the 2040 vision” at the regional workshop of the PDDI phase 1. Indeed, in the ranking of transboundary problems identified in the OMVG basins, the lowest priority was given to the issue “low level of access to adequate sanitation”. **The priority of sanitation is strongly devalued compared to the provision of drinking water and energy**, as the direct impact on people's lives is perceived to be of lesser importance.

In this PDDI, **scenarios are proposed in which universal and equitable access to sanitation occurs in 2040 for all countries**. However, by 2030, it is expected that about 70% of the inhabitants of the OMVG basins will have adequate sanitation and hygiene services. By 2030, it is also expected that open defecation in all countries will be eliminated.

GAMBIA

The rate of access to basic/limited sanitation services in The Gambia in the OMVG area is currently 43%.

Under the proposed development scenario, the growth rates of the population with access to basic sanitation services are as follows:

- Growth rate of 5.8%/year between 2021 and 2025 and the population served is 104,400, i.e. 54,900 in urban centres and 49,500 in rural areas;
- Growth rate of 7.7%/year between 2025 and 2030 and the population served is 190,500, i.e. 77,100 in urban centres and 113,300 in rural areas;
- Growth rate 5.2%/year between 2030 and 2040 and the population served is 405,200, i.e. 89,900 in urban centres and 315,300 in rural areas.

GUINEA

The rate of access to basic sanitation services in Guinea in the OMVG area is currently 43%.

Under the proposed development scenario, the growth rates of the population with access to basic sanitation services are as follows:

- Growth rate of 6.5%/year between 2021 and 2025 and the population served is 174,400, i.e. 8,500 in urban centres and 165,900 in rural areas;
- Growth rate of 7.6%/year between 2025 and 2030 and the population served is 284,200, i.e. 32,800 from urban centres and 251,400 from rural areas;
- Growth rate 5.2%/year between 2030 and 2040 and the population served is 611,300, i.e. 56,200 in urban centres and 555,100 in rural areas.

GUINEA BISSAU

The rate of access to basic sanitation services in Guinea Bissau in the OMVG area is currently 9%.

Under the proposed development scenario, the growth rates of the population with access to basic sanitation services are as follows:

- Growth rate of 14.4%/year between 2021 and 2025 and the population served is 42,700, i.e. 24,700 from urban centres and 18,000 from rural areas;
- Growth rate of 24.4%/year between 2025 and 2030 and the population served is 172,800, i.e. 120,700 from urban centres and 52,100 from rural areas;
- Growth rate 11.2%/year between 2030 and 2040 and the population served is 492,800, i.e. 85,000 from urban centres and 407,800 from rural areas.

SENEGAL

The rate of access to basic sanitation services in Senegal in the OMVG area is currently 29%.

Under the proposed development scenario, the growth rates of the population with access to basic sanitation services are as follows:

- Growth rate of 10.1%/year between 2021 and 2025 and the population served is 312,300, 249,700 from urban centres and 62,600 from rural areas;
- Growth rate of 12.9%/year between 2025 and 2030 and the population served is 685,000, 155,417 from urban centres and 529,700 from rural areas;
- Growth rate 5.4%/year between 2030 and 2040 and the population served is 1,051,000, 247,200 from urban centres and 803,800 from rural areas.

OMVG SPACE

The following tables present projections of the total urban and rural population served and to be served, and of the access rates to basic sanitation services in the countries and basins of the OMVG for the scenarios described above and for the time horizons 2020, 2025, 2030 and 2040.

2. DRINKING WATER SUPPLY, SANITATION AND HEALTH IN THE OMVG AREA

Table 2-22: Situation in the year 2020: Total population, urban and rural, served and unserved, and access rates to basic sanitation in OMVG countries and basins

Country/ by basin	Population 2020									Basic/limited access rate		
	Urban	Rural	Total	Served Urban	Served Rural	Served Total	Unserved Urban	Unserved Rural	Unserved Total	Urban	Rural	Total
Gambia	178 291	566 799	745 090	124 015	194 425	318 440	54 277	372 374	426 650	17%	26%	43%
Guinea												
Gambia	35 831	405 400	441 231	35 108	149 808	184 916	723	255 592	256 315	8%	34%	42%
Kayanga-Geba	712	3 696	4 409	712	1 435	2 147	0	2 262	2 262	16%	33%	49%
Koliba-Corubal	52 689	586 037	638 726	52 689	228 833	281 522	0	357 204	357 204	8%	36%	44%
Totals	89 232	995 134	1 084 366	88 509	380 077	468 586	723	615 057	615 780	8%	35%	43%
Guinea Bissau												
Kayanga-Geba	103 023	278 351	381 374	24 814	8 380	33 194	78 209	269 971	348 181	7%	2%	9%
Koliba-Corubal	41 780	101 953	143 733	8 607	2 625	11 232	33 173	99 328	132 501	6%	2%	8%
Totals	144 803	380 304	525 107	33 420	11 006	44 426	111 382	369 299	480 681	6%	2%	9%
Senegal												
Gambia/SONES	250 390		250 390	162 754		162 754	87 637			14%	15%	29%
Gambia	103 511	1 115 380	1 218 892	30 502	248 870	279 371	73 010	866 510	1 027 157			
Kayanga/SONES	44 457		44 457	22 229		22 229	22 229			9%	9%	18%
Kayanga-Geba	46 268	190 931	237 199	12 459	29 828	42 287	33 809	161 103	217 141			
Totals	444 626	1 306 311	1 750 937	227 942	278 698	506 640	216 684	1 027 614	1 244 297	13%	16%	29%
Totals	856 952	3 248 548	4 105 500	473 886	864 205	1 338 091	383 066	2 384 343	2 767 409	12%	21%	33%

Table 2-23: Situation in the year 2025: Total urban and rural population served and to be served and access rates to basic sanitation in the OMVG countries and basins

Country/ by basin	Population 2025									Basic/limited access rate		
	Urban	Rural	Total	Served Urban	Served Rural	Served Total	To be served Urban	To be served Rural	To be served Total	Urban	Rural	Total
Gambia	215 261	597 971	813 232	178 911	243 970	422 881	54 896	49 545	104 441	22%	30%	52%
Guinea												
Gambia	43 254	447 843	491 097	39 288	216 083	255 371	4 180	66 274	70 454	8%	44%	52%
Kayanga-Geba	860	4 083	4 943	860	4 083	4 943	148	2 649	2 796	17%	83%	100%
Koliba-Corubal	63 605	647 392	710 997	56 880	325 825	382 705	4 191	96 992	101 182	8%	46%	54%
Totals	107 718	1 099 319	1 207 037	97 027	545 991	643 019	8 518	165 915	174 433	8%	45%	53%
Guinea Bissau												
Kayanga-Geba	121 171	300 599	421 771	42 177	21 089	63 266	17 364	12 708	30 072	10%	5%	15%
Koliba-Corubal	49 140	110 102	159 242	15 924	7 962	23 886	7 317	5 337	12 654	10%	5%	15%
Totals	170 312	410 701	581 013	58 101	29 051	87 152	24 681	18 045	42 726	10%	5%	15%
Senegal												
Gambia/SONES	301 794		301 794	301 794		301 794	139 041		139 041	25%	18%	43%
Gambia	121 745	1 209 448	1 331 193	106 453	293 938	400 390	75 951	45 068	121 019			
Kayanga/SONES	52 915		52 915	52 915		52 915	30 687		30 687	22%	15%	37%
Kayanga-Geba	55 662	207 033	262 695	16 519	47 342	63 861	4 060	17 514	21 574			
Totals	532 116	1 416 481	1 948 597	477 681	341 279	818 960	249 739	62 582	312 320	25%	18%	42%
Totals	1 025 407	3 524 472	4 549 879	811 721	1 160 291	1 972 012	337 834	296 086	633 921	18%	26%	43%

Table 2-24: Situation in the year 2030: Total urban and rural population served and to be served and access rates to basic sanitation in the OMVG countries and basins

Country/ by basin	Population 2030									Basic/limited access rate		
	Urban	Rural	Total	Served Urban	Served Rural	Served Total	To be served Urban	To be served Rural	To be served Total	Urban	Rural	Total
Gambia	256 050	626 178	882 227	256 050	357 302	613 352	77 139	113 332	190 471	29%	41%	70%
Guinea												
Gambia	52 147	487 698	539 846	52 147	323 907	376 055	12 860	107 825	120 684	10%	60%	70%
Kayanga-Geba	1 037	4 447	5 484	1 037	4 447	5 484	177	363	540	19%	81%	100%
Koliba-Corubal	76 682	705 005	781 688	76 682	469 013	545 695	19 803	143 188	162 990	10%	60%	70%
Totals	129 867	1 197 150	1 327 017	129 867	797 367	927 233	32 839	251 376	284 215	10%	60%	70%
Guinea Bissau												
Kayanga-Geba	141 308	321 383	462 690	127 177	60 150	187 326	85 000	39 061	124 061	27%	13%	40%
Koliba-Corubal	57 306	117 714	175 021	51 576	21 002	72 578	35 651	13 040	48 692	29%	12%	41%
Totals	198 614	439 097	637 711	178 752	81 152	259 905	120 651	52 102	172 753	28%	13%	41%
Senegal												
Gambia/SONES	366 049	0	366 049	366 049		366 049	64 255		64 255	28%	42%	70%
Gambia	137 867	1 294 067	1 431 934	137 867	755 153	893 020	31 414	461 215	492 630			
Kayanga/SONES	63 488	0	63 488	63 488		63 488	10 573		10 573	37%	33%	70%
Kayanga-Geba	65 694	221 519	287 213	65 694	115 731	181 425	49 175	68 390	117 565			
Totals	633 098	1 515 585	2 148 683	633 098	870 884	1 503 982	155 417	529 605	685 022	29%	41%	70%
Totals	¹ 217 628	3 778 010	4 995 639	1 197 767	2 106 705	3 304 472	386 046	946 414	1 332 461	24%	42%	66%

Table 2-25: Situation in the year 2040: Total urban and rural population served and to be served and access rates to basic sanitation in the OMVG countries and basins

Country/ by basin	Population 2040									Basic/limited access rate		
	Urban	Rural	Total	Served Urban	Served Rural	Served Total	To be served Urban	To be served Rural	To be served Total	Urban	Rural	Total
Gambia	345 997	672 561	1 018 558	345 997	672 561	1 018 558	89 948	315 259	405 207	34%	66%	100%
Guinea												
Gambia	74 714	550 977	625 691	74 714	550 977	625 691	22 567	227 070	249 637	12%	88%	100%
Kayanga-Geba	1 485	5 024	6 509	1 485	5 024	6 509	449	577	1 026	23%	77%	100%
Koliba-Corubal	109 867	796 480	906 347	109 867	796 480	906 347	33 184	327 467	360 651	12%	88%	100%
Totals	186 066	1 352 481	1 538 547	186 066	1 352 481	1 538 547	56 199	555 114	611 314	12%	88%	100%
Guinea Bissau												
Kayanga-Geba	187 620	357 880	545 501	187 620	357 880	545 501	60 444	297 731	358 174	34%	66%	100%
Koliba-Corubal	76 088	131 083	207 171	76 088	131 083	207 171	24 513	110 080	134 593	37%	63%	100%
Totals	263 709	488 963	752 671	263 709	488 963	752 671	84 956	407 811	492 767	35%	65%	100%
Senegal												
Gambia/SONES	508 953	0	508 953	508 953	0	508 953	142 904		142 904	33%	67%	100%
Gambia	191 690	1 429 919	1 621 609	191 690	1 429 919	1 621 609	53 823	674 766	728 589			
Kayanga/SONES	88 273	0	88 273	88 273	0	88 273	24 785		24 785	42%	58%	100%
Kayanga-Geba	91 341	244 774	336 114	91 341	244 774	336 114	25 647	129 043	154 689			
Totals	880 256	1 674 693	2 554 949	880 256	1 674 693	2 554 949	247 158	803 809	1 050 967	34%	66%	100%
Totals	1 676 028	4 188 698	5 864 726	1 676 028	4 188 698	5 864 726	478 261	2 081 993	2 560 254	29%	71%	100%

2.2.2.4 Sanitation and hygiene infrastructure needs

Taking into account the described scenarios and the medium and long term objectives, the envisaged solution is in line with **inclusive sanitation for the whole urban and rural population of the OMVG area** and aims at improving the living conditions of the people.

The availability of water allows for the **promotion of handwashing**, which is fundamental to improving sanitary conditions. But on the other hand, it gives rise to surface run-off of unsanitary water, which is a major source of disease transmission through direct contact (especially by children) and insect infestation. It is therefore **important to collect this wastewater**.

The solution for **urban centres** includes the **whole chain of sanitation services**, from domestic facilities to final disposal, and aims to improve the health and living conditions of the population in urban centres in the OMVG area.

In urban centres, the different distribution of the population in the urban area must be taken into account. In the city centre, where water is available at home, occupancy is more regular and population density is high, the proposed sanitation solution is the conventional one, i.e. a reticulated network with individual connections to houses or buildings. In the area around the city centre, where occupancy is less regular but also denser, where water is available at home and where the volume of wastewater produced tends to increase, a more simplified network is also proposed, adapted to the irregular distribution of houses.

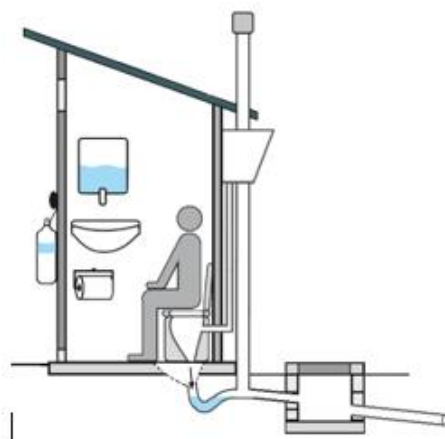
The wastewater produced in this central area of the city is conveyed by interceptors/pump stations to the treatment plant.

In the larger cities managed by SONES, the distribution of the current and future population by type of connection to the water supply networks shows that by 2035 almost all households (~100%) will have access to a private connection, with an average daily water consumption of 76 L/capita/day. Therefore, for these cities, conventional sewerage networks covering the whole city are needed to serve the whole population. Thus, in and around the city centre the solution envisaged is of the off-site type and includes:

- In the city centre: construction/rehabilitation of a conventional sewerage network and connections to houses or buildings. The population covered by this type of sewerage network in 2040 represents in the cities supplied by SONES 30% of the total urban population and in the other cities 10% of the total urban population;

Figure 2-5 Illustration of the typical flush toilet and washbasin solution

- In the areas around the city centre: construction/rehabilitation of flush toilets with washbasins, at a rate of one toilet per 15 inhabitants (see adjacent figure of the type of toilet) and construction of simplified networks and household connections. The population covered by this type of sanitation network in 2040 represents 70% of the urban population in the cities supplied by SONES, and 40% of the urban population in the other cities;
- Interceptors and pumping stations to convey the drained wastewater from the city centre and surrounding area to one or more treatment plants are planned.



Source: Graph produced by COBA

In **peri-urban areas**, which are those areas of cities where water supply is from standpipes, where a sewage disposal solution is not feasible because there is too little water, **on-site sanitation solutions** such as the following are suitable:

- Construction/rehabilitation of small flush toilets with washbasins at the rate of one toilet per 15 inhabitants;
- Construction or rehabilitation of sludge pits and infiltration wells for grey water;

- Construction of a sludge treatment plant and a sludge management system to collect sludge from houses and transport it to the plant. In addition to the sludge treatment plant, this solution also includes sludge transport vehicles (trucks and smaller vehicles) and sludge transfer stations. Sludge from the latrine pits will be collected by operators and transported to the transfer stations by smaller vehicles capable of reaching all households. Sludge from the transfer stations will be collected and transported by trucks to the sludge treatment plant.

The population of peri-urban areas covered by on-site sanitation solutions in 2040 represents 50% of the total population of cities in the OMVG area (cities managed by SONES are not included).

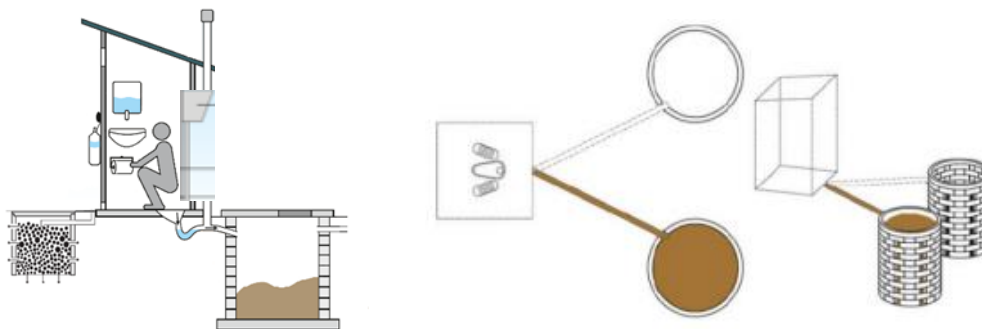
In **rural areas**, where little water is used, **on-site sanitation** solutions are suitable. The following solution is proposed for rural sanitation needs (see figure below):

- Construction/rehabilitation of low-flush or user-pour toilets (2 to 3 litres), with washbasin, at the rate of one toilet per 15 inhabitants;
- Construction of double sludge pits and infiltration wells for washbasin water.

This solution is most suitable when water is available from standpipes near households. A dual pit system is used, with only one pit being used at a time. When one pit is full, the toilet is connected to the other pit, while the previously used pit remains idle. While the pit is resting, the excrement dries and eventually the pit can be safely emptied manually. The dry matter can then be used for agriculture as fertiliser. It is recommended to wait at least one year before emptying the pit. It is the toilet users themselves who clean the sludge pits.

For villages where drinking water is supplied to households or is planned to be supplied to households through individual connections, the sanitation solution that was considered for urban centres needs to be adapted in these villages.

Figure 2-6 Illustration of the typical toilet and double sludge pit solution proposed for rural areas



Source: Graph produced by COBA

In order to end OD and to raise awareness of good hygiene practices and sanitation infrastructure, **information and awareness campaigns are planned for the population.**

2. DRINKING WATER SUPPLY, SANITATION AND HEALTH IN THE OMVG AREA

Table 2-26: Sanitation and hygiene infrastructure needs by 2040 in the OMVG countries and basins

Country/ by basin	Population 2020		Population 2040		Population in and around the city centre Construction / rehabilitation				Peri-urban population Construction / rehabilitation			Rural population Construction / rehabilitation		
	Served Urban	Served Rural	Urban	Rural	Conventional network		Intercept or/ pump stations	Wastewa ter treatment plant	Toilet	Infiltrati on pits and wells	Wastewa ter treatment /sludge manage ment	Toilet	Double pit/ infiltration well	Toilet
					Classi c	Simplif ied								
Gambia	124 015	194 425	345 997	672 561	34 600	138399	172 999	172 999	138399	172 999	172 999	172 999	672 561	672 561
Guinea														
Gambia	35 108	149 808	74 714	550 977	7 471	29 886	37 357	37 357	29 886	37 357	37 357	37 357	550 977	550 977
Kayanga-Geba	712	1 435	1 485	5 024	0	0	0	0	0	1 485	1 485	1 485	5 024	5 024
Koliba-Corubal	52 689	228 833	109 867	796 480	10 987	43 947	54 933	54 933	43 947	54 933	54 933	54 933	796 480	796 480
Totals	88 509	380 077	186 066	1 352 481	18 458	73 832	92 290	92 290	73 832	93 776	93 776	93 776	1 352 481	1 352481
Guinea Bissau														
Kayanga-Geba	24 814	8 380	187 620	357 880	18 762	75 048	93 810	93 810	75 048	93 810	93 810	93 810	357 880	357 880
Koliba-Corubal	8 607	2 625	76 088	131 083	7 609	30 435	38 044	38 044	30 435	38 044	38 044	38 044	131 083	131 083
Totals	33 420	11 006	263 709	488 963	26 371	105483	131 854	131 854	105483	131 854	131 854	131 854	488 963	488 963
Senegal														
Gambia/SONES	162 754	0	508 953	0	152 686	356267	508 953	508 953	356267					
Gambia	30 502	248 870	191 690	1 429 919	19 169	76 676	95 845	95 845	76 676	95 845	95 845	95 845	1 429 919	1 429919
Kayanga/SONE S	22 229	0	88 273	0	26 482	61 791	88 273	88 273	61 791					
Kayanga-Geba	12 459	29 828	91 341	244 774	9 134	36 536	45 670	45 670	36 536	45 670	45 670	45 670	244 774	244 774
Totals	227 942	278 698	880 256	1 674 693	207 471	531270	738 741	738 741	531270	141 515	141 515	141 515	1 674 693	1 674693
Totals	473 886	864 205	1 676028	4 188 698	286 899	848985	1 135 884	1 135 884	848985	540 144	540 144	540 144	4 188 698	4 188699

Table 2-27: Unit costs of construction/rehabilitation of sanitation and hygiene infrastructure in urban centres and rural areas

Construction / rehabilitation of infrastructure in urban centres and rural areas	Unit costs (USD/capita)
Central zone	
Conventional network (includes connections)	350
Simplified network	70
Interceptors and pumping stations	40
Wastewater treatment plant	180
Household sanitation facilities (*)	46
Peri-urban area	
Plant and sludge management systems	5
Infiltration pits and wells	10
Flush toilet facilities with washbasin (1 per 15 inhabitants) (*)	46
Rural areas	
Double pit and infiltration well	17
Flush toilet facilities with washbasin (1 per 15 inhabitants) (*)	46

(*) Materials provided, and construction/rehabilitation carried out by the families.

2.2.2.5 Scenarios of change in Health

The scenarios to be envisaged for an improvement in the health situation in the OMVG regions must take into account the reference situation described above, the economic and political context of the various countries, but also their capacity to carry out reforms to maintain the positive achievements observed, such as the reduction in mortality and the control of the progression of AIDS, tuberculosis and malaria. **The achievement of the SDGs requires the setting of intermediate targets to be reached with a dynamic monitoring system to measure the progress made.** These intermediate targets must take into account the evolution of the population with a natural growth rate of 4%. The projections made for 2040 allow the definition of the targets set out in the table below:

Table 2-28 Baseline and intermediate targets

Indicators	Senegal	The Gambia	Guinea	Guinea Bissau	Target 2025	Target 2030	Target 2040
DTP vaccination coverage (12-23 months) %.	93	95	93,5	87	100% (Gambia) 98% (Senegal) 98% (Guinea) 95% (Guinea Bissau)	100% (All countries)	100% (All countries)
Child mortality rate per 1000 live births	56	57	111	78,5	45 (Gambia) 45 (Senegal) 60 (Guinea) 45 (Guinea Bissau)	30 (Gambia) 30 (Senegal) 50 (Guinea) 40 (Guinea Bissau)	25 (Gambia) 25 (Senegal) 40 (Guinea) 30 (Guinea Bissau)
Prevalence rate of malnutrition among <5 years old %.	18	19	31	28,1	15% (Gambia) 15% (Senegal) 25% (Guinea) 20% (Guinea Bissau)	10% (Gambia) 10% (Senegal) 20% (Guinea) 15% (Guinea Bissau)	0 (Gambia) 0 (Senegal) <5% (Guinea) 0 (Guinea Bissau)
Neonatal mortality rate per 1000 live births	28	31	30,4	36,6	25 (Gambia) 20 (Senegal) 25 (Guinea) 25 (Guinea Bissau)	20 (Gambia) 15 (Senegal) 20 (Guinea) 20 (Guinea Bissau)	15 (Gambia) 10 (Senegal) 15 (Guinea) 15 (Guinea Bissau)
Completion rate prenatal consultation %.	52,2	73	35,3	38	80% (Gambia) 65% (Senegal) 50% (Guinea) 50% (Guinea Bissau)	90% (Gambia) 75% (Senegal) 70% (Guinea) 70% (Guinea Bissau)	100% (Gambia) >90% (Senegal) >90% (Guinea) >90% (Guinea Bissau)
Rate of assisted deliveries %.	62,4	54	87,5	37	80% (Gambia) 65% (Senegal) 50% (Guinea) 50% (Guinea Bissau)	80% (Gambia) 65% (Senegal) 50% (Guinea) 50% (Guinea Bissau)	80% (Gambia) 65% (Senegal) 50% (Guinea) 50% (Guinea Bissau)
Maternal mortality rate per 100,000 live births	296	440	437	457	300 (Gambia) 200 (Senegal) 300 (Guinea) 300 (Guinea Bissau)	200 (Gambia) 140 (Senegal) 200 (Guinea) 200 (Guinea Bissau)	140 (Gambia) 90 (Senegal) 140 (Guinea) 140 (Guinea Bissau)
Fertility rate (Children per woman)	5,3	4,7	4,8	4,5	3 (Gambia) 4 (Senegal) 3.5 (Guinea) 3 (Guinea Bissau)	2.5 (Gambia) 3 (Senegal) 3 (Guinea) 2.5 (Guinea Bissau)	2.5 (Gambia) 2.5 (Senegal) 2.5 (Guinea) 2.5 (Guinea Bissau)

2. DRINKING WATER SUPPLY, SANITATION AND HEALTH IN THE OMVG AREA

Indicators	Senegal	The Gambia	Guinea	Guinea Bissau	Target 2025	Target 2030	Target 2040
Malaria incidence rate per 1000 hbts	21,9	25,3	21,9	123,3	20 (Gambia) 10 (Senegal) 15 (Guinea) 60 (Guinea Bissau)	10 (Gambia) 5 (Senegal) 7.5 (Guinea) 30 (Guinea Bissau)	Elimination
Tuberculosis incidence rate per 100,000 hbts	122	174	176	361	140 (Gambia) 80 (Senegal) 150 (Guinea) 160 (Guinea Bissau)	70 (Gambia) 40 (Senegal) 75 (Guinea) 80 (Guinea Bissau)	30 Gambia <5 Senegal 30 Guinea 40 Guinea Bissau
AIDS prevalence rate %.	0,5	1,7	1,8	5	<1 (Gambia) <0.2 (Senegal) <1 (Guinea) 2.5 (Guinea Bissau)	<5 (Gambia) <0.2 (Senegal) <1 (Guinea) 2 (Guinea Bissau)	Elimination
Trachoma prevalence rate %.	5*	0	3	19,5	0 (Gambia) 2.5 (Senegal) 1.5 (Guinea) 10 (Guinea Bissau)	Elimination	Elimination

Achieving these targets will require addressing the challenges identified above, through **the recruitment of qualified health workers, the construction of health structures at the peripheral level, the deconcentration of health services and greater involvement of the community level.** The **revitalisation and strengthening of the health information system** will facilitate the monitoring of the performance of the health system and help in timely decision making. Certain aspects of governance also need to be updated, in particular decentralisation and deconcentration policies to reach the "last mile" and meet the needs of populations in the most remote areas.

The identified health workforce needs are set out in the table below, which will help to fill the health workforce gaps for adequate health care for the population based on WHO standards. It is clear that not everything can be done at once, but governments will need to plan for this in their future health development plans or integrate it, if possible, into existing plans at the mid-term performance review.

The recruitment of staff is also accompanied by the construction of new health structures (health posts) and the transformation of some posts into health centres.

With the increase in chronic diseases (diabetes, arterial hypertension, cancer, etc.) and the decrease in certain communicable diseases (malaria, AIDS), it will be necessary to anticipate the structure of morbidity by 2040 and **create optimal conditions for the correct management of chronic diseases** at the level of health posts. This will require the recruitment of doctors at health posts transformed into health centres and the setting up of functional laboratories capable of making a correct diagnosis of these diseases.

The lessons learnt from COVID-19 lead to better preparation of the medical regions in the face of such a threat, which is still latent. The establishment of health emergency operations centres at the decentralised level is an important issue in order to better train health personnel and to develop contingency plans for identified health risks specific to each region of the OMVG area.

Table 2-29: Health workforce gaps and intermediate targets to 2040

Country	Health professionals per 10000 hbts (2020 population)	Population 2020	Standards for 10,000 hbts	Gap	Target for 2025	Targets for 2030	Target for 2040
Senegal	5	1 750 937	23	3151	1000	1500	651
Guinea	6	1 084 366	23	2385	1000	1000	385
Guinea Bissau	6	525108	23	892	500	392	N/A
The Gambia	1	745 090	23	1266	500	500	266

2.2.3 Evolution of water needs in the sector

SONES has provided population and consumption projections for the period 2021 to 2035 for the towns it manages, including those in the Gambia and Kayanga-Geba basins (see table below).

The water needs of the population of the cities managed by SONES were estimated for 2025, 2030 and 2040 based on the average values of the allocations resulting from the quotient between consumption and the total population of the cities in the Gambia River basin and the value of the allocation obtained for the city of Vélingara.

Table 2-30: Designation and location of cities managed by SONES, demographic and consumption projections in the OMVG basins (Source: SONES)

Territorial Directorate	Region	Centres of the SONES leased perimeter	Population			Growth rate	Consumption [Mm³ /year]		
			2021	2030	2035	Average (2021-2035)	2021(*)	2030(**)	2035(**)
Gambia	Kaffrine	Koungheul	28 026	38 897	46666	3,7%	520	1340	1598
	Kaolack	Nioro du rip	27 738	38 897	45964	3,7%	501	1217	1449
	Tambacounda	Tambacounda	150 227	219 378	270 741	4,3%	2240	5934	7298
	Kédougou	Kédougou	44 399	68 877	87 907	5,0%	404	1652	2090
Kayanga-Geba	Kolda	Vélingara	44 457	63 488	77 386	4,0%	335	1118	1438

(*) Invoice; (**) Estimate.

The water needs of the urban and rural served population and the unserved population were estimated from the average unit allocations in the table below.

For the cities managed by SONES, the unit consumptions provided by SONES were adopted. For the other cities, it was considered that in 2040, 50% of the population would have private connections with a unit consumption of 76 L/capita/day (as in the cities managed by SONES) and that the rest of the population (50%) would use standpipes with a unit consumption of 44 L/capita/day, i.e. an average unit consumption of 60 L/capita/day.

For the population of the most populated villages, it was considered that 70% of the population would be served in 2040 by drinking water networks and standpipes close to households, with an average consumption of 44 L/capita/day; and that the rest of the population of the villages (30%) would be served by human-powered pumps with a unit consumption of 30 L/capita/day, i.e. an average consumption of 40 L/capita/day.

Physical losses in water treatment, transport and distribution processes, which have been estimated at 15% of the volume of water abstracted, should be added to the water requirements shown in the table below, assuming the same percentage by 2040.

Table 2-31: Unit consumption of towns managed by SONES and other towns and villages in the OMVG basins

Basin	Average unit supplies (L/day)		
	2025	2030	2040
Gambia (*)	58	76	76
Kayanga-Geba (*)	45	50	60
Served Urban	45	50	60
Served rural	30	35	40
Unserved	20	20	20

(*) Allocations for the population of the cities managed for SONES

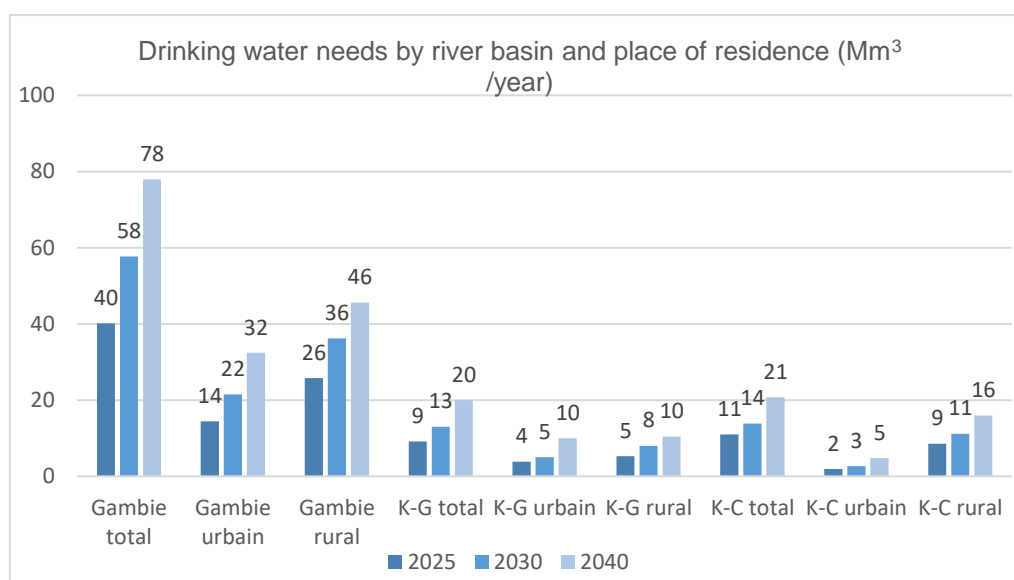
Based on the data provided by SONES, GIS mapping was also prepared for the annual volumes of water abstracted and treated, and the installed capacity per borehole and per city for the year 2020, including *shapefiles* resulting from the conversion of CAD data from the networks for each of the 5 cities.

The estimated drinking water needs in the OMVG area by 2025, 2030 and 2040 are shown below:

- **Total drinking water requirements: 60 Mm³ , 85 Mm³ and 119 Mm³ , for 2025, 2030 and 2040 respectively;**
- **Total rural drinking water needs: 39.7 Mm³ , 54.8 Mm³ and 71.9 Mm³ , for 2025, 2030 and 2040 respectively;**
- **Total drinking water needs of urban centres: 20.1 Mm³ , 29.7 Mm³ and 46.7 Mm³ , for 2025, 2030 and 2040 respectively.**

The figures below illustrate the evolution of the needs of the total, urban and rural population in the river basins and countries of the OMVG area by 2025, 2030 and 2040.

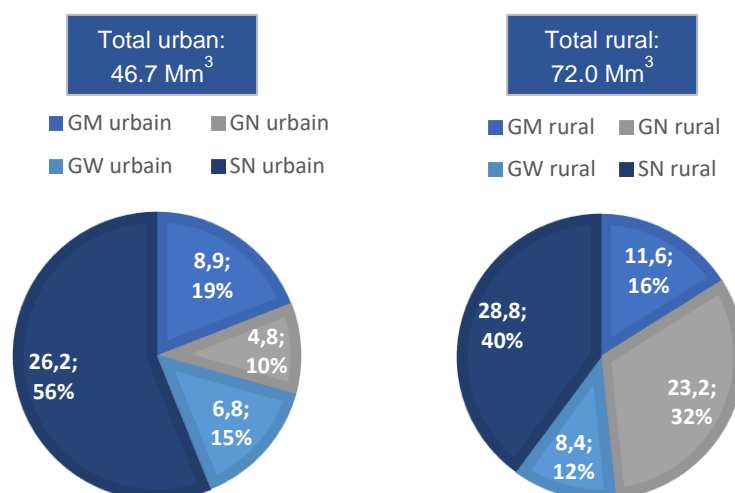
Figure 2-7: Evolution of the needs of the total urban and rural population in the river basins of the OMVG area by 2025, 2030 and 2040



Looking at the figures in the figure above, it can be seen that in 2040 the drinking water needs of the rural population are still higher than the needs of the urban population in the Gambia River basin (1.4 times higher) and the Koliba-Corubal River basin (3.3 times higher), while the needs are similar in the Kayanga-Geba basin. In the Koliba-Corubal basin, the importance of meeting the needs of the rural population is quite clear.

The figure below shows the distribution of drinking water needs for the urban and rural population in 2040 in each country. The relation between the drinking water needs of the rural and urban population are 1.30 for The Gambia, 4.85 for Guinea, 1.24 for Guinea Bissau and 1.10 for Senegal.

Figure 2-8 Needs of the urban and rural population in the countries of the OMVG area in 2040



The following tables present the projections of the total, urban and rural, urban served, rural and total unserved population and the respective drinking water needs in the 3 basins and countries of the OMVG area for the scenarios described above and for the horizons 2025, 2030 and 2040.

Table 2-32: Situation in 2025: Water needs of the urban and rural population, served and unserved in the OMVG countries and basins

Country/ by basin	Population 2025							Needs 2025 Mm ³ /year				
	Urban	Rural	Total	Served Urban	Served Rural	Served Total	Unserved Total	Urban utility unit allocation (L/day)	Served Rural unit allocation (L/day)	Served Total	Unserved Unit allocation (L/day)	Totals
								45	30		20	
Gambia	215 261	597 971	813 232	178 911	520 469	699 380	113 853	3,46	6,70	10,16	0,83	11,0
Guinea												
Gambia	43 254	447 843	491 097	39 288	333 946	373 234	117 863	0,76	4,30	5,06	0,86	5,92
Kayanga-Geba	860	4 083	4 943	860	4 083	4 943		0,02	0,05	0,07	0,00	0,07
Koliba-Corubal	63 605	647 392	710 997	56 880	483 478	540 357	170 639	1,10	6,23	7,33	1,25	8,57
Totals	107 718	1 099 319	1 207 037	97 027	821 507	918 535	288 502	1,87	10,6	12,5	2,11	14,6
Guinea Bissau												
Kayanga-Geba	121 171	300 599	421 771	80 136	168 708	248 845	172 926	1,55	2,17	3,72	1,26	4,98
Koliba-Corubal	49 140	110 102	159 242	33 441	63 697	97 138	62 104	0,65	0,82	1,47	0,45	1,92
Totals	170 312	410 701	581 013	113 577	232 405	345 982	235 030	2,19	2,99	5,19	1,72	6,90
Senegal								58				
Gambia/SONES	301 794		301 794	301 794		301 794		7,52		7,52		7,52
Gambia	121 745	1 209 448	1 331 193	121 745	816 493	938 238	392 954	2,35	10,5	12,9	2,87	15,7
Kayanga/SONES	52 915		52 915	52 915		52 915		1,02		1,0		1,0
Kayanga-Geba	55 662	207 033	262 695	41 768	113 620	155 388	107 308	0,81	1,46	2,3	0,78	3,05
Totals	532 116	1 416 481	1 948 597	518 222	930 113	1 448 335	500 262	11,70	11,98	23,68	3,65	27,3
Totals	1 025 407	3 524 472	4 549 879	897 137	2 504 494	3 412 232	1 137 647	19,2	32,3	51,5	8,30	59,8

Table 2-33: Situation in the year 2030: Water needs of the urban and rural population, served and unserved in the OMVG countries and basins

Country/ by basin	Population 2030							Needs 2030 Mm ³ /year				
	Urban	Rural	Total	Served Urban	Served Rural	Served Total	Unserved Total	Served Urban unit allocation (L/day)	Served Rural unit allocation (L/day)	Served Total	Unserved Unit allocation (L/day)	Total
								50	35		20	
Gambia	256 050	626 178	882 227	256 050	626 178	882 227	0	5,50	9,41	14,9	0	14,9
Guinea												
Gambia	52 147	487 698	539 846	52 147	487 698	539 846	0	1,12	7,33	8,45	0	8,45
Kayanga-Geba	1 037	4 447	5 484	1 037	4 447	5 484	0	0,02	0,07	0,09	0	0,09
Koliba-Corubal	76 682	705 005	781 688	76 682	705 005	781 688	0	1,65	10,60	12,24	0	12,24
Totals	129 867	1 197 150	1 327 017	129 867	1 197 150	1 327 017	0	2,79	18,0	20,8	0	20,8
Guinea Bissau												
Kayanga-Geba	141 308	321 383	462 690	115 673	231 345	347 018	115 673	2,48	3,48	5,96	0,84	6,80
Koliba-Corubal	57 306	117 714	175 021	43 755	87 510	131 265	43 755	0,94	0,35	1,29	0,32	1,61
Totals	198 614	439 097	637 711	159 428	318 855	478 283	159 428	3,42	3,83	7,25	1,16	8,42
Senegal								76				
Gambia/SONES	366 049		366 049	366 049		366 049	0	11,9		11,9	0	11,95
Gambia	137 867	1 294 067	1 431 934	137 867	1 294 067	1 431 934	0	3,0	19,4	22,4	0	22,41
Kayanga/SONES	63 488		63 488	63 488		63 488	0	1,4		1,4	0	1,36
Kayanga-Geba	65 694	221 519	287 213	65 694	221 519	287 213	0	1,41	3,33	4,7	0	4,74
Totals	633 098	1 515 585	2 148 683	633 098	1 515 585	2 148 683	0	17,7	22,8	40,5	0	40,5
Total	1 217 628	3 778 010	4 995 639	1 178 442	3 657 769	4 836 211	159 428	29,4	54,0	83,4	1,2	84,6

Table 2-34: Situation in the year 2040: Water needs of the urban and rural population, served and unserved in the OMVG countries and basins

Country/ by basin	Population 2040							Needs 2040 Mm ³ /year				
	Urban	Rural	Total	Served Urban	Served Rural	Served Total	Unserved Total	Served Urban unit allocation (L/day)	Served Rural unit allocation (L/day)	Served Total	Unserved Unit allocation (L/day)	Totals
								60	40		20	
Gambia	345 997	672 561	1 018 558	345 997	672 561	1 018 558	0	8,91	11,55	20,47	0	20,5
Guinea												
Gambia	74 714	550 977	625 691	74 714	550 977	625 691	0	1,92	9,46	11,4	0	11,39
Kayanga-Geba	1 485	5 024	6 509	1 485	5 024	6 509	0	0,04	0,09	0,12	0	0,12
Koliba-Corubal	109 867	796 480	906 347	109 867	796 480	906 347	0	2,83	13,68	16,5	0	16,51
Totals	186 066	1 352 481	1 538 547	186 066	1 352 481	1 538 547	0	4,79	23,2	28,0	0	28,0
Guinea Bissau												
Kayanga-Geba	187 620	357 880	545 501	187 620	357 880	545 501	0	4,83	6,15	11,0	0	10,98
Koliba-Corubal	76 088	131 083	207 171	76 088	131 083	207 171	0	1,96	2,25	4,21	0	4,21
Totals	263 709	488 963	752 671	263 709	488 963	752 671	0	6,79	8,40	15,2	0	15,2
Senegal								76				
Gambia/SONES	508 953		508 953	508 953		508 953		16,6		16,6	0	16,6
Gambia	191 690	1 429 919	1 621 609	191 690	1 429 919	1 621 609	0	4,9	24,6	29,5	0	29,5
Kayanga/SONES	88 273		88 273	88 273		88 273		2,3		2,3	0	2,3
Kayanga-Geba	91 341	244 774	336 114	91 341	244 774	336 114	0	2,35	4,20	6,56	0	6,6
Totals	880 256	1 674 693	2 554 949	880 256	1 674 693	2 554 949	0	26,2	28,8	54,9	0	54,9
Totals	1 676 028	4 188 698	5 864 726	1 676 028	4 188 698	5 864 726	0	46,7	71,9	118,6	0	118,6

3 VISION AND STRATEGIC DIRECTIONS

3.1 VISION TO 2040

The 4 OMVG Member States are among the 193 countries of the United Nations General Assembly that, in 25 September 2015, adopted the 2030 Agenda for Sustainable Development. The specific goals for the drinking water supply, sanitation and health sector are **SDG3 - Empower people to live healthy lives and promote well-being at all ages**, and **SDG6 - Ensure access to water and sanitation for all and ensure sustainable management of water resources**.

The Member States are well aware of the importance of social, economic and environmental development to improve the living conditions of the populations in the OMVG basins.

Thus, the proposed Vision for the sector is as follows:

- **A sustainable supply of drinking water and improved sanitation services for all inhabitants of the three basins by 2040.**
- **Equal access for all to quality health care and services in a resilient health system by 2040 in the OMVG area.**

3.2 PROPOSED STRATEGIC AXES

The strategic objectives are closely linked to the main issues of the sector and are developed in the light of the proposed vision.

Strategic Axis 1: Ensure equitable and sustainable access to affordable drinking water for all:

- Ensure access to safe water, in quantity, at home or near households and at an affordable cost for all urban and rural populations in the 3 OMVG basins;
- Ensure water quality by treating it in accordance with the microbiological and physico-chemical quality limits of the countries' legislation and WHO guidelines/recommendations;
- Ensure the establishment of a database for drinking water supply infrastructures in the OMVG area;
- Ensuring governance of the sector in the context of existing and emerging challenges;
- Ensure high quality and sustainable drinking water services with management, operation and maintenance by qualified professionals, and a monitoring system by the delegating entities for the technical and financial evaluation of their performance.

Strategic Axis 2: Ensure equitable and sustainable access to adequate sanitation and hygiene services for all and end open defecation:

- Ensure the elimination of open defecation;
- Ensure equitable access to sanitation and hygiene services for all, with particular attention to the needs of women and girls and people in vulnerable situations;
- Ensure that all households have access to handwashing facilities with soap and water;
- Ensure governance of the sector in the context of existing and emerging challenges;
- Ensure quality and sustainability of sanitation and hygiene services with management, operation and maintenance by qualified professionals, and a monitoring system by the delegating entities for technical and financial evaluation of their performance.

Strategic Axis 3: Ensure equitable access to quality health care and services for all and strengthen the prevention and management of communicable and non-communicable diseases:

- Ensure territorial equity in access to quality health care and services;
- Ensure the strengthening of prevention and management of communicable and non-communicable diseases;
- Ensure adequate health system preparedness for potential health threats.

4 INTERVENTION STRATEGY - EXPECTED RESULTS AND ACTIONS TO BE UNDERTAKEN

4.1 LOGICAL FRAMEWORK FOR SECTOR INTERVENTION UP TO 2040

To achieve the strategic objectives of the sub-sector, interventions will be implemented through three strategic axes. The following table recaps the strategic axes and provisions of Chapter 3, and lists the measures that will be detailed in the following sections.

Table 4-1 Logical framework for intervention in the drinking water supply, sanitation and health sector up to 2040

Strategic areas	Provisions	Measures
1. Ensure equitable and sustainable access to affordable drinking water for all	1.1 Ensure access to adequate drinking water services in urban areas, in quantity, at home or nearby, for the urban and rural population of the three OMVG basins	1.1.1 Construction / rehabilitation / strengthening and monitoring of catchment, supply, treatment and storage works and drinking water networks and connections for urban centres
		1.1.2 Construction / rehabilitation / strengthening and monitoring of the execution of drinking water infrastructure (borehole, solar pump/electrical network, chlorination and iron removal station, water tower, networks and individual connections and standpipes), for 70% of the village population
		1.1.3 Construction/rehabilitation and monitoring of BHPP implementation works for 30% of the village population. Existing boreholes are rehabilitated and strengthen drinking water points or can provide an alternative water source for livestock and agriculture.
		1.1.4 Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of drinking water supply infrastructure in urban centres.
		1.1.5 Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of drinking water supply infrastructure in the villages.
	1.2 Ensure the implementation of a geographic information system for drinking water supply infrastructures in the OMVG area	1.2.1 Development of a database of drinking water supply infrastructures in each of the OMVG river basins in liaison with the water resources agencies and the supervisory ministries of the four Member States
	1.3 Ensure sector governance in the context of existing and emerging challenges	1.3.1 Capacity building of institutions responsible for the drinking water sub-sector in each of the Member States and in the OMVG
		1.3.2 Training of managers of institutions responsible for the drinking water sub-sector in each of the Member States and in the OMVG
	1.4 Ensure access to a sustainable, quality drinking water service	1.4.1 Training of the private sector in each country for the management, operation and maintenance of drinking water systems and BHPP

4. INTERVENTION STRATEGY - EXPECTED RESULTS AND ACTIONS TO BE UNDERTAKEN

Strategic areas	Provisions	Measures
		1.4.2 Establishment/strengthening of systems for monitoring, control and technical and financial evaluation of management performance, operation and maintenance of drinking water networks and BHPP in rural areas
2. Ensure equitable and sustainable access to adequate sanitation and hygiene for all and end open defecation	2.1 Ensure access to adequate sanitation and hygiene services for the urban and rural population in the OMVG area	2.1.1 Construction/rehabilitation and monitoring of sanitation and hygiene infrastructure implementation, off-site in and around the city centre, and on-site in the peri-urban areas of cities for the population of urban centres
		2.1.2 Construction/rehabilitation and monitoring of on-site sanitation and hygiene infrastructure for the rural population
		2.1.3 Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of sanitation and hygiene infrastructure in urban centres
		2.1.4 Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of sanitation and hygiene infrastructure in rural areas
	2.2 End OD and raise awareness of good sanitation and hygiene practices in communities	2.2.1 Mobilise and raise awareness of the population to end OD
	2.3 Ensure sector governance in the context of existing and emerging challenges	2.3.1 Capacity building of institutions responsible for the sanitation and hygiene sub-sector in each of the Member States and in the OMVG
		2.3.2 Training of managers of institutions responsible for the sanitation and hygiene sub-sector in each of the Member States and in the OMVG
	2.4 Ensure access to sustainable and good quality sanitation and hygiene services in the OMVG area	2.4.1 Training of the private sector in each country for the management, maintenance and operation of sanitation infrastructure in urban centres
		2.4.2 Establishment/strengthening of a system for monitoring, control and technical and financial evaluation of the management, operation and maintenance performance of the sanitation service in urban centres
3. Ensure equitable access for all to quality health care and services and strengthen the prevention and management of communicable and non-communicable diseases	3.1 Ensure the availability of functional health structures with well-trained staff and sufficient quantity and quality of medicines for the effective care of all parts of the population	3.1.1 Construction and equipment of 30 new health posts, 10 health centres and 3 referral hospitals
		3.1.2 Annual recruitment of adequate health personnel (doctors, midwives, nurses, laboratory assistants, pharmacists)
		3.1.3 Establish a system for the supply of quality medicines and avoiding shortages of essential medicines in all health facilities
		3.1.4 Strengthen community-based health initiatives
	3.2 Ensure adequate financing of the health sector with the mobilisation of endogenous and external resources	3.2.1 Increase health expenditure to 15% of the national budget in line with the commitments made by the States
		3.2.2 Stimulate national initiatives for the mobilisation of endogenous resources (corporate social responsibility)
		3.2.3 Advocacy for greater mobilisation of international financial resources

4. INTERVENTION STRATEGY - EXPECTED RESULTS AND ACTIONS TO BE UNDERTAKEN

Strategic areas	Provisions	Measures
	3.3 Ensure the establishment of an efficient information system with dynamic collection of reliable health information	3.3.1 Strengthen the quality of health data with a DHIS2-based monitoring system
		3.3.2 Develop the skills of health workers through training in the collection, storage and maintenance of reliable and relevant health databases
	3.4 Ensure access to health information, disease prevention and effective care	3.4.1 Update and popularise guidelines for the management of diseases under surveillance
		3.4.2 Improve access to treatment for good patient care
		3.4.3 Improve access to means of prevention against communicable diseases (pandemics)
		3.4.4 Maternal and child health promotion
	3.5 Ensure an effective epidemiological surveillance system for early detection of epidemiological threats and a rapid and adequate response	3.5.1 Update and ensure implementation of disease surveillance guidelines
		3.5.2 Strengthen sentinel sites for epidemiological surveillance in the OMVG area
	3.6 Ensure the establishment of equipped health structures responsible for emergency health operations at the decentralised level	3.6.1 Establishment of health emergency operations centres in peripheral regions for better disaster and pandemic preparedness
		3.6.2 Establish cross-border surveillance of epidemics

4.2 STRATEGIC AXIS 1 - ENSURE EQUITABLE, SUSTAINABLE AND AFFORDABLE ACCESS TO SAFE DRINKING WATER FOR ALL

4.2.1 Provision 1.1 - Access to an adequate supply of drinking water in urban areas, in quantity, at home or nearby, for the urban and rural population of the three OMVG basins

GENERAL PRINCIPLE

A drinking water service in quantity, accessible to the entire urban and rural population, implies that the capacities of production, transport, treatment, storage (water towers) and of the drinking water networks in the urban centres and in the more populated villages are strongly increased. To this end, it is planned to build new drinking water distribution systems and to rehabilitate and strengthen existing drinking water systems/networks.

The less populated villages are served by boreholes with human powered pumps (HPP). The new HPP/MWPs will serve the currently unserved population of small villages and the existing rehabilitated HPP/MWPs will be integrated into the village water supply.

EXPECTED RESULTS

To considerably improve the situation regarding the supply of drinking water to the population of the OMVG area. The objective is therefore to improve access, quantity and quality of water consumed compared to the current situation, by setting up new infrastructures and rehabilitating and strengthening existing ones.

The results of the diagnosis for the supply of drinking water in the 3 OMVG basins showed that the percentage of the total population served by a basic service is 62% in all 3 OMVG basins; 68% in the Gambia basin, 40% in the Kayanga-Geba basin and 57% in the Koliba-Corubal basin.

AREA OF INTERVENTION

Interventions are carried out in urban centres and villages, on tracks for the implementation of water conveyances and transfers, and on selected sites for the construction of water intakes, treatment plants, reservoirs and water towers and pumping stations.

Measure 1.1.1 - Construction / rehabilitation / strengthening and monitoring of the implementation works of the water supply, treatment, storage and drinking water networks and connections in the urban centres

Measure 1.1.1	Construction / rehabilitation / strengthening and monitoring of the execution of water supply systems, treatment, storage and drinking water networks and connections in urban centres
Origin (institution / project / programme)	Target 6.1 of the 2030 Agenda's SDG6 is the reference for the development of this measure
Objective	To improve the drinking water service for urban centres in the OMVG area through the construction of new drinking water infrastructures and the rehabilitation / strengthening of existing infrastructures
Location	Urban centres in the OMVG area
Description of the action	<ul style="list-style-type: none"> ► Construction/rehabilitation/strengthening and monitoring of localized works: water catchment, treatment plants, pumping stations and reservoirs and water towers ► Construction/rehabilitation and monitoring of linear works: water transfers, conveyances and drinking water networks, including individual connections and standpipes
Ownership and implementation arrangements	Gambia: NAWEC; Guinea: SEG; Guinea Bissau: DGRH; Senegal: SONES
Duration	18 years (2023 to 2040)
Costs	Total estimated cost of USD 513.6 million <ul style="list-style-type: none"> - Gambia: USD 102.7 million - Guinea: USD 56.1 million - Guinea Bissau: USD 78.9 million - Senegal: USD 275.9 million <ul style="list-style-type: none"> - Cities managed by SONES: USD 184.2 million - Other cities: USD 91.7 million.
Financing	To be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Considerable improvement in the availability of and access to drinking water supply services for the entire population of urban centres in the OMVG area compared to the current situation.

Measure 1.1.2 - Construction / rehabilitation / strengthening and monitoring of the execution of drinking water infrastructures for 70% of the village population

Measure 1.1.2	Construction / rehabilitation / strengthening and monitoring of the execution of drinking water infrastructure (borehole, solar pump / electrical network, chlorination station, water tower, network and standpipe connections), for 70% of the village population
Origin (institution / project / programme)	Target 6.1 of the 2030 Agenda's SDG6 is the reference for the development of this measure
Objective	To improve the availability of and access to drinking water supply services for the most populated villages in the OMVG area through the construction of new drinking water infrastructures and networks and the rehabilitation / strengthening of existing infrastructures and networks
Location	Most populated villages with 400 or more inhabitants (2020) in the OMVG area
Description of the action	<ul style="list-style-type: none"> ► Construction / rehabilitation / strengthening and monitoring of localized works: water catchment, chlorination and iron removal plants and water towers, ► Construction/rehabilitation/strengthening and monitoring of linear works: water supply and drinking water networks, including individual connections and standpipes
Ownership and implementation arrangements	Gambia: DWR; Guinea: SNAPE; Guinea Bissau: DGRH; Senegal: OFOR
Duration	18 years (2023 to 2040)
Costs and funding	Total estimated cost of USD 799.2 million

4. INTERVENTION STRATEGY - EXPECTED RESULTS AND ACTIONS TO BE UNDERTAKEN

	<ul style="list-style-type: none"> - Gambia: USD 139.9 million - Guinea: USD 253.8 million - Guinea Bissau: USD 92.8 million - Senegal: USD 312.7 million
Financing	To be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Considerable improvement in the availability of and access to drinking water services for the entire population of the most populated villages in the OMVG areas compared to the current situation

Measure 1.1.3 - Construction/rehabilitation and monitoring of BHPP implementation works for 30% of the village population

Measure 1.1.3	Construction/rehabilitation and monitoring of BHPP implementation works for 30% of the village population. Existing boreholes are rehabilitated and strengthen drinking water points or can provide an alternative water source for livestock and agriculture.
Origin (institution / project / programme)	Target 6.1 of the 2030 Agenda's SDG6 is the reference for the development of this measure
Objective	Improve and serve the currently unserved populations in the least populated villages of the OMVG area through the construction and rehabilitation of BHPPs
Location	Small villages with less than 400 inhabitants (2020) in the OMVG area
Description of the action	► Construction/rehabilitation and monitoring of BHPPs. Existing boreholes are rehabilitated and strengthen village drinking water points or can provide an alternative water source for livestock and agriculture
Ownership and implementation arrangements	Gambia: DWR; Guinea: SNAPE; Guinea Bissau: DGRH; Senegal: OFOR
Duration	18 years (2023 to 2040)
Costs	Total estimated cost of USD 282.4 million <ul style="list-style-type: none"> - Gambia: USD 40.2 million - Guinea: USD 93.0 million - Guinea Bissau: USD 32.4 million - Senegal: USD 116.8 million
Financing	To be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Considerable improvement of drinking water services in terms of access, availability and quality of water consumed compared to the current situation

Measure 1.1.4 - Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of drinking water supply infrastructures in urban centres

Measure 1.1.4	Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of drinking water supply infrastructure in urban centres
Origin (institution / project / programme)	Target 6.1 of the 2030 Agenda's SDG6 is the reference for the development of this measure
Objective	Planning and detailing optimal solutions, and carrying out tender documents for the construction/rehabilitation/strengthening of drinking water infrastructure, including surveys and campaigns to collect relevant data and raise awareness of the population in urban centres for infrastructure construction
Location	In the urban centres of the OMVG area
Description of the action	<ul style="list-style-type: none"> ► Baseline studies, including campaigns and surveys ► Technical and economic feasibility studies and social and environmental impact assessments ► Preliminary design study of the selected variants ► Detailed design study ► Tender documents ► Land and property survey

Ownership and implementation arrangements	Gambia: NAWEC; Guinea: SEG; Guinea Bissau: DGRH; Senegal: SONES
Duration	3 years (2023 to 2025)
Costs	Total estimated cost USD 17.1 million <ul style="list-style-type: none"> - Gambia: USD 3.4 million - Guinea: USD 1.9 million - Guinea Bissau: USD 2.6 million - Senegal: USD 9.2 million <ul style="list-style-type: none"> - Cities managed by SONES: USD 6.1 million - Other cities: USD 3.1 million
Financing	SONES and remaining funding to be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Availability of all studies, projects and tender documents for the tendering and execution of drinking water infrastructure in urban centres

Measure 1.1.5 - Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of drinking water supply infrastructures in the villages

Measure 1.1.5	Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of drinking water supply infrastructure in the villages
Origin (institution / project / programme)	Target 6.1 of the 2030 Agenda's SDG6 is the reference for the development of this measure
Objective	Plan and detail optimal solutions and carry out tender documents for the construction/rehabilitation/strengthening of drinking water infrastructure, including surveys and campaigns to collect relevant data and sensitise the village population for the construction of the infrastructure
Location	In the villages of the OMVG area
Description of the action	<ul style="list-style-type: none"> ► Baseline studies, including campaigns and surveys ► Technical and economic feasibility studies and social and environmental impact assessments ► Preliminary design study of the selected variants ► Detailed design study ► Tender documents ► Land and property survey
Ownership and implementation arrangements	Gambia: DWR; Guinea: SNAPE; Guinea Bissau: DGRH; Senegal: OFOR
Duration	3 years (2023 to 2025)
Costs	Total estimated cost of USD 36.2 million <ul style="list-style-type: none"> - Gambia: USD 6.0 million - Guinea: USD 11.6 million - Guinea Bissau: USD 4.2 million - Senegal: USD 14.4 million
Financing	To be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Availability of all studies, projects and tender documents for the tendering and implementation of rural water infrastructure

4.2.2 Provision 1.2 - Establishment of a geographic information system for drinking water supply infrastructures in the OMVG area

GENERAL PRINCIPLE

An accurate, comprehensive and spatial database for mapping drinking water supply infrastructure is essential for both institutional decision-makers at central and local levels, for infrastructure planning as well as for catchment managers. Information on water supply is collected by various institutions in the Member States. However, the data may not be readily available for use, and valuable priority data sets are also missing. This measure aims to fill these information gaps and create a relational database to record information on infrastructure, facilities and developments in the OMVG area.

EXPECTED RESULTS

Improved storage, management and retrieval of information on drinking water infrastructure in urban centres and villages in the three OMVG basins.

AREA OF INTERVENTION

In the OMVG area.

Measure 1.2.1 - Development of a database of drinking water supply infrastructures in the three OMVG basins in liaison with the water resources agencies and the supervisory ministries of the four Member States

Measure 1.2.1	Development of a database of drinking water supply infrastructures in the three OMVG basins in liaison with the water resources agencies and the supervisory ministries of the four Member States
Origin (institution / project / programme)	OMVG
Objective	Improving the storage, management and retrieval of information on drinking water infrastructure in urban centres and villages in the three OMVG basins
Location	The whole of the OMVG area
Description of the action	► Collection and processing of information and insertion in the database and processing of geographical information
Ownership and implementation arrangements	OMVG
Duration	2 years (2023 and 2024)
Costs	Total estimated cost of USD 2.5 million
Financing	To be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Availability of a database of village and urban water infrastructures in each of the OMVG basins

4.2.3 Provision 1.3 - Sector governance in the context of existing and emerging challenges

GENERAL PRINCIPLE

The implementation of all the measures foreseen in this action plan over the next 18 years (2023-2040) in the OMVG area will require effective institutional, technical and financial coordination between OMVG, the ministries and institutions of the Member States and donors, as well as project management at regional level, in liaison with regional authorities and local communities in the three shared basins. It will be necessary to build the capacity of the institutions responsible for drinking water supply in each of the Member States, and to promote the training of their legal, technical and financial frameworks.

The OMVG and all institutions related to the drinking water sector should be empowered to intervene in the studies and projects foreseen in this strategic axis and ensure their effective coordination until 2040.

EXPECTED RESULTS

Effective institutional, technical and financial coordination between all institutions and technical and financial partners, in order to have an increased capacity to implement the measures foreseen in the action plan of this very demanding strategic axis, especially for the period between 2022 and 2030.

AREA OF INTERVENTION

In the OMVG area.

Measure 1.3.1 - Capacity building of institutions responsible for the drinking water sector in each of the Member States and in the OMVG

Measure 1.3.1	Capacity building of the institutions responsible for the drinking water sector in each of the member states and in the OMVG
Origin (institution / project / programme)	Requested at the PDDI Phase 2 national workshops
Objective	Effective institutional, technical and financial coordination between all the institutions of the drinking water sub-sector and the technical and financial partners, to implement the measures foreseen in this action plan
Location	The OMVG area
Description of the action	► Capacity building of the institutions of the Member States and the OMVG in the legal, technical and financial aspects for the implementation of the measures of the action plan
Ownership and implementation arrangements	OMVG and the institutions responsible for the drinking water supply sector in the Member States
Duration	18 years (2023 and 2040)
Costs and funding	Cost and funding to be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Increased capacity of the institutions of the Member States and the OMVG to ensure the implementation of the measures foreseen in this action plan

Measure 1.3.2 - Training of managers of institutions responsible for the drinking water sector in each of the Member States and in the OMVG

Measure 1.3.2	Training of managers of institutions responsible for the drinking water sector in each of the member states and in the OMVG
Origin (institution / project / programme)	Requested at the PDDI Phase 2 national workshops
Objective	To have the managers of the institutions trained to manage the legal, technical and financial aspects of implementing the measures in this action plan
Location	The whole of the OMVG area
Description of the action	► Training of institutional and OMVG managers on the legal, technical and financial aspects of implementing the measures
Ownership and implementation arrangements	OMVG and the institutions responsible for the water supply sector in the Member States
Duration	5 years (2023 and 2027)
Costs and funding	Cost and funding to be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Improving the training of managers of the institutions of the Member States and of the OMVG to ensure the implementation of the measures provided for in this action plan

4.2.4 Provision 1.4 - Access to a sustainable drinking water service of good quality

GENERAL PRINCIPLE

To ensure a sustainable, high quality drinking water service, management, operation and maintenance must be carried out by qualified professionals and the operator must have a system for monitoring and evaluating the technical and financial performance of management, operation and maintenance.

As is already the case in the countries of the OMVG basins, the management, operation and maintenance of the urban water utility is carried out by qualified operators. Extending this type of service provision to rural areas will improve the efficiency and performance of the drinking water service in rural areas, and reduce disparities in service quality between urban and rural areas.

In the absence of good management, operation and maintenance of drinking water infrastructure, as well as without evaluation of their performance by the competent entities in rural areas, equipment failures are not resolved and the population has to resort to unimproved water sources traditionally used in the villages.

In order to ensure the management, operation and sustainability of facilities, it is absolutely necessary that users pay for the water they consume. The principle of cost recovery aims to ensure that water users bear as much as possible of the costs of their use of water services. As a minimum, users should cover the recurrent costs of operation and maintenance.

EXPECTED RESULTS

To significantly improve the sustainability and quality of drinking water services provided to the population in rural areas of the OMVG area by delegating the management of the public drinking water service to qualified contracted operators, and by ensuring the monitoring, control and evaluation of this management, operation and maintenance.

AREA OF INTERVENTION

In rural areas of the OMVG area.

Measure 1.4.1 - Training of the private sector in each country for the management, operation and maintenance of drinking water networks and village BHPP

Measure 1.4.1	Training of the private sector in each country for the management, maintenance and operation of village drinking water systems and BHPPs
Origin (institution / project / programme)	Target 6.1 of the 2030 Agenda's SDG6 is the reference for the development of this measure
Objective	Significantly improve the quality and sustainability of drinking water supply services in the OMVG area
Location	The whole OMVG area
Description of the action	► Training, capacity building of 500 operators for the management, operation and maintenance of drinking water services in rural areas, rehabilitation techniques and maintenance of water networks and boreholes, management and operation of treatment and pumping stations
Ownership and implementation arrangements	Gambia: DWR; Guinea: SNAPE; Guinea Bissau: DGRH; Senegal: OFOR NGOs
Duration	2 years
Costs	Total estimated cost of USD 2 million
Financing	To be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Professionals for the management, operation and maintenance of village water supply services

Measure 1.4.2 - Establishment/strengthening of systems for monitoring, control and technical and financial evaluation of the management, operation and maintenance performances of drinking water networks and BHPP in rural areas

Measure 1.4.2	Establishment/strengthening of systems for monitoring, control and technical and financial evaluation of management performance, operation and maintenance of drinking water networks and BHPP in rural areas
Origin (institution / project / programme)	Target 6.1 of the 2030 Agenda's SDG6 is the reference for the development of this measure
Objective	Improving the quality and sustainability of drinking water supply services in rural areas of the OMVG area
Location	OMVG area
Description of the action	Establishment/strengthening of a system for monitoring, controlling and evaluating the performance of drinking water services in rural areas
Ownership and implementation arrangements	Gambia: DWR; Guinea: SNAPE; Guinea Bissau: DGRH; Senegal: OFOR
Duration	3 years (2023 to 2025)
Costs	Total estimated cost of USD 3 million
Financing	To be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Improvement of drinking water supply services, in terms of sustainability and quality of service provided to the population of the villages

4.2.5 Means for implementing the actions and measures for the strategic axis 1

In order to achieve the expected results of the different provisions and measures indicated for strategic axis 1, legal, financial and technical frameworks will have to be put in place in the OMVG over the next 18 years (2023-2040).

OMVG will require strong legal and financial project management capacity, in liaison with member state ministries and donors, as well as institutional and financial project management at the regional level, in liaison with regional authorities and local communities in the three shared basins.

Still within the OMVG, it is important to create a technical project management unit for the drinking water supply sub-sector (a secretariat + two public works engineers + a project management officer) to ensure the technical monitoring of projects and support to donors and institutions in the member states.

Given the high level of investment in the drinking water sub-sector, it will be necessary to identify and examine the different sources of finance that can be mobilised, such as:

- Revenue from water user charges;
- Member States' public funds from taxes;
- Transfers from donors and international solidarity organisations;
- Financing of investments through medium or long-term debt with credit institutions or on the capital market;
- Use of innovative financing strategies by creating the necessary environment for effective private sector participation. For example, public-private partnership (PPP).

4.3 STRATEGIC AXIS 2 - ENSURE EQUITABLE AND SUSTAINABLE ACCESS TO ADEQUATE SANITATION AND HYGIENE SERVICES FOR ALL AND END OPEN DEFECATION

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4.3.1 Provision 2.1 - Access to adequate sanitation and hygiene services for the urban and rural population in the OMVG area

For urban centres, in and around the city centre, with a higher population density and where water is available at home or will be in the near future, with the consequent increase in the volume of wastewater produced, the sanitation solution proposed until 2040 is the conventional solution, i.e. a reticulated/simplified network with special connections to houses or buildings. The construction/rehabilitation of flush toilets with washbasins is also proposed in the areas around the city centre. The wastewater generated in these areas of the urban centres is conveyed by interceptors/pump stations to the treatment plant.

This conventional solution is planned for the entire population of the cities managed by SONES, as it is expected that the entire population will be supplied with drinking water through private connections by 2040. For the other towns in the OMVG area, it has been assumed that only half of the population will have a domestic water supply, and for this population the conventional solution is considered.

The reuse of wastewater after treatment could be considered for various non-domestic uses, the most appropriate being the irrigation of agricultural land and green areas close to the respective urban centres and groundwater recharge.

On-site sanitation solutions that include small flush toilets with sinks near houses, at a rate of one toilet per 15 inhabitants, and sludge pits and greywater infiltration wells are suitable for peri-urban areas of cities with more anarchic construction and where drinking water is provided by standpipes. Sludge is emptied from the pits by operators using hand pumps or electromechanical pumps mounted on appropriate vehicles that transport it to transfer stations. The sludge from the transfer stations is transported by truck for treatment.

In rural areas where little water is used, the general solution envisaged to meet rural sanitation needs is the construction of small flush toilets with washbasins, at a rate of one toilet per 15 inhabitants, and double sludge pits and infiltration wells for the grey water from the washbasin.

After treatment, the sludge will be used for agronomic purposes as a fertiliser for agricultural land and green spaces. However, in order to protect against potential health risks from residual pathogens, the sludge should not be applied to soils where fruit and vegetable crops are growing, and livestock should not have access to pasture or forage land for less than three weeks after sludge application.

Drainage and treatment variants such as wastewater and sludge treatment schemes, the possible use of individual or collective septic tanks, or the consideration of different types of toilets, will be identified and dimensioned in the variant studies in a way that takes into account the specific aspects of each town or village (availability of drinking water at home, availability of electricity, groundwater level, soil type, topography, groundwater catchment,...)

No information has been received on the need to strengthen stormwater drainage, especially in cities. When carrying out the feasibility studies, it will be necessary to integrate the stormwater drainage component, mainly for urban centres.

EXPECTED RESULTS

To considerably improve the sanitation and hygiene situation of the population of the OMVG area compared to the current situation by the installation of new infrastructure and the rehabilitation of existing infrastructure, as well as the drainage of rainwater, mainly in urban centres.

The results of the diagnostic for sanitation in the 3 OMVG basins showed that the percentage of the total population served by a basic/limited service is 32% in all 3 OMVG basins, i.e. 35% in the Gambia basin, 13% in the Kayanga-Geba basin and 37% in the Koliba-Corubal basin.

AREA OF INTERVENTION

Interventions are carried out in urban centres and villages, and on sites selected for the construction of interceptors/pump stations and wastewater and sludge treatment plants around urban centres.

Measure 2.1.1 - Construction/rehabilitation and monitoring of sanitation and hygiene infrastructure implementation works, off-site in and around the city centre, and on-site in the peri-urban areas of cities for the population of urban centres

Measure 2.1.1	Construction/rehabilitation and monitoring of sanitation and hygiene infrastructure implementation works, off-site in and around the city centre and on-site in the peri-urban areas of the cities for the population of the urban centres
Origin (institution / project / programme)	Target 6.2 of the 2030 Agenda's SDG6 is the reference for the development of this measure
Objective	Improving sanitation and hygiene services in urban centres in the OMVG area
Location	Urban centres in the OMVG area

4. INTERVENTION STRATEGY - EXPECTED RESULTS AND ACTIONS TO BE UNDERTAKEN

Description of the action	<ul style="list-style-type: none"> ► Construction/rehabilitation and monitoring in the city centre with a conventional reticulated/simplified network solution and individual connections to houses or buildings. The wastewater generated in this area is conveyed by interceptors/pump stations to the treatment plant to be built around the town centres; ► Construction/rehabilitation and monitoring in peri-urban areas of small flush toilets with washbasins, one toilet per 15 inhabitants, sludge pits and infiltration wells, sludge treatment plant and a sludge management system for transporting sludge to the plant.
Ownership and implementation arrangements	Gambia: NAWEC; Guinea: MHA/DGA; Guinea Bissau: DGRH; Senegal: ONAS
Duration	18 years (2023 to 2040)
Costs	Total estimated cost of USD 505.8 million <ul style="list-style-type: none"> - Gambia: USD 80.6 million - Guinea: USD 43.1 million - Guinea Bissau: USD 61.4 million - Senegal: USD 320.7 million <ul style="list-style-type: none"> - The 5 cities (SONES): 254.7 MUSD - Other cities: USD 65.9 million
Financing	To be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Considerable improvement in sanitation and hygiene service compared to the current situation in urban centres

Measure 2.1.2 - Construction/rehabilitation and monitoring of on-site sanitation and hygiene infrastructures for the population in rural areas

Measure 2.1.2	Construction/rehabilitation and monitoring of the implementation of on-site sanitation and hygiene infrastructures for the population in rural areas
Origin (institution / project / programme)	Target 6.2 of the 2030 Agenda's SDG6 is the reference for the development of this measure
Objective	Improving sanitation and hygiene services in rural areas in the OMVG area
Location	The villages of the OMVG area
Description of the action	<ul style="list-style-type: none"> ► Construction/rehabilitation and monitoring in rural areas of small flush toilets with washbasins at the rate of one toilet per 15 inhabitants, double sludge pits and infiltration wells for washbasin water
Ownership and implementation arrangements	Gambia: DWR; Guinea: SNAPE; Guinea Bissau: DGRH; Senegal: ONAS
Duration	18 years (2023 to 2040)
Costs and funding	Total estimated cost of USD 277.1 million <ul style="list-style-type: none"> - Gambia: USD 44.5 million - Guinea: USD 89.5 million - Guinea Bissau: USD 32.3 million - Senegal: USD 110.8 million
Financing	To be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Considerable improvement in sanitation and hygiene service compared to the current situation in rural areas

Measure 2.1.3 - Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of sanitation and hygiene infrastructures in urban centres

Measure 2.1.3	Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of sanitation and hygiene infrastructure in urban centres
Origin (institution / project / programme)	Target 6.2 of the 2030 Agenda's SDG6 is the reference for the development of this measure
Objective	Planning and detailing optimal solutions, and carrying out tender documents for the construction/rehabilitation of sanitation and hygiene infrastructure, including surveys and campaigns to collect relevant data and raise awareness of the population in urban centres for infrastructure construction
Location	Urban centres in the OMVG area
Description of the action	<ul style="list-style-type: none"> ► Baseline studies, including campaigns and surveys ► Technical and economic feasibility studies and social and environmental impact assessments ► Preliminary design study of the selected variants ► Detailed design study ► Tender documents ► Land and property survey
Ownership and implementation arrangements	Gambia: NAWEC; Guinea: MHA/DGA; Guinea Bissau: DGRH; Senegal: ONAS
Duration	3 years (2023 to 2025)
Costs	Total estimated cost of USD 16.9 million <ul style="list-style-type: none"> – Gambia: USD 2.7 million – Guinea: USD 1.4 million – Guinea Bissau: USD 2.1 million – Senegal: USD 10.7 million
Financing	To be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Availability of studies, projects and tender documents for the tendering and implementation of sanitation infrastructure in urban centres

Measure 2.1.4 - Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of sanitation and hygiene infrastructure in rural areas

Measure 2.1.4	Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of sanitation and hygiene infrastructure in rural areas
Origin (institution / project / programme)	Target 6.2 of the 2030 Agenda's SDG6 is the reference for the development of this measure
Objective	Plan and detail optimal solutions and carry out tender documents for the construction/rehabilitation of sanitation and hygiene infrastructure, including surveys and campaigns to collect relevant data and raise awareness of the village population for infrastructure construction
Location	Rural areas in the OMVG area
Description of the action	<ul style="list-style-type: none"> ► Baseline studies, including campaigns and surveys ► Technical and economic feasibility studies and social and environmental impact assessments ► Preliminary design study of the selected variants ► Detailed design study ► Tender documents ► Land and property survey
Ownership and implementation arrangements	Gambia: DWR; Guinea: SNAPE; Guinea Bissau: DGRH; Senegal: ONAS
Duration	3 years (2023 to 2025)

Costs	Total estimated cost USD 13.2 million – Gambia: USD 2.1 million – Guinea: USD 4.3 million – Guinea Bissau: USD 1.5 million – Senegal: USD 5.3 million
Financing	To be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Availability of all studies, projects and tender documents for the tendering and implementation of rural sanitation infrastructure

4.3.2 Provision 2.2 - End OD and raise community awareness of good sanitation and hygiene practices

GENERAL PRINCIPLE

Prepare and conduct information and awareness campaigns for good sanitation and hygiene practices of OD communities, ensuring sustainability of the results achieved through community-led total sanitation (CLTS), WASH-based sanitation in schools and basic health centres, and menstrual hygiene management promotion.

Communities also need to be sensitised to the provision of new sanitation and hygiene facilities.

EXPECTED RESULTS

Elimination of OD in the OMVG area, as well as achieving positive behavioural change through the acquisition of good hygiene practices by communities, while improving health and the environment.

The results of the sanitation diagnostic showed that the percentage of the population using OD is 17% in all 3 OMVG basins, i.e. 16% in the Gambia basin, 10% in the Kayanga-Geba basin and 25% in the Koliba-Corubal basin.

AREA OF INTERVENTION

Mainly in the rural areas of the OMVG area.

Measure 2.2.1- Mobilisation and awareness raising of the population to end OD

Measure 2.2.1	Mobilising and raising awareness of the population to end OD
Origin (institution / project / programme)	Target 6.2 of the 2030 Agenda's SDG6 is the reference for the development of this measure
Objective	Ending open defecation and positive behaviour change
Location	Mainly in rural areas of the OMVG area
Description of the action	► Implement, as part of the new Community Led Total Sanitation (CLTS) strategy, communication activities for positive and sustainable behaviour change to end OD by 2030
Ownership and implementation arrangements	Gambia: DWR; Guinea: SNAPE; Guinea Bissau: DGRH; Senegal: ONAS; NGOs
Duration	8 years (2023 to 2030)

Costs	Total estimated cost USD 5 million
Financing	To be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Elimination of OD by 2030 in the OMVG area

4.3.3 Provision 2.3 - Sector governance in the context of existing and emerging challenges

GENERAL PRINCIPLE

The implementation of all the measures foreseen in this action plan over the next 18 years (2023-2040) in the OMVG area will require effective institutional, technical and financial coordination between OMVG, the ministries and institutions of the Member States and donors, as well as project management at regional level, in liaison with regional authorities and local communities in the three shared basins. It will be necessary to build the capacity of the institutions responsible for sanitation in each of the Member States and to promote the training of their legal, technical and financial frameworks.

The OMVG and all institutions related to the sanitation sector should be empowered to intervene in the studies and projects foreseen in this strategic axis and ensure their effective coordination until 2040.

EXPECTED RESULTS

Effective institutional, technical and financial coordination between all institutions and technical and financial partners, in order to have an increased capacity to implement the measures foreseen in the action plan of this very demanding strategic axis, especially for the period between 2022 and 2030.

AREA OF INTERVENTION

In the OMVG area.

Measure 2.3.1 - Capacity building of institutions responsible for the sanitation and hygiene sub-sector in each of the Member States and in the OMVG

Measure 2.3.1	Capacity building of institutions responsible for the sanitation and hygiene sub-sector in each of the Member States and in the OMVG
Origin (institution / project / programme)	PDDI Phase 2 national workshops
Objective	Effective institutional, technical and financial coordination between all institutions in the sanitation and hygiene sub-sector and technical and financial partners to implement the measures in this action plan
Location	The whole of the OMVG area
Description of the action	Capacity building of the institutions of the Member States and the OMVG in the legal, technical and financial aspects for the implementation of the measures of the action plan
Ownership and implementation arrangements	OMVG and the institutions responsible for the sanitation and hygiene sector in the Member States
Duration	5 years (2023 and 2030)
Costs and funding	Cost and funding to be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Increased capacity of the institutions of the Member States and the OMVG to ensure the implementation of the measures foreseen in this action plan

Measure 2.3.2 - Training of managers of institutions responsible for the sanitation and hygiene sub-sector in each of the Member States and in the OMVG

Measure 2.3.2	Training of managers of institutions responsible for the sanitation and hygiene sub-sector in each of the Member States and in the OMVG
Origin (institution / project / programme)	PDDI Phase 2 national workshops
Objective	To have the staff of institutions trained to manage the legal, technical and financial aspects of implementing the measures
Location	The whole of the OMVG area
Description of the action	► Training of the institutions' managers on the legal, technical and financial aspects of the implementation of the measures
Ownership and implementation arrangements	OMVG and the institutions responsible for the water supply sector in the Member States
Duration	5 years (2023 and 2030)
Costs and funding	Cost and funding to be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Improving the training of managers of the institutions of the Member States and of the OMVG to ensure the implementation of the measures provided for in this action plan

4.3.4 Provision 2.4 - Access to sustainable and good quality sanitation and hygiene services in the OMVG area

GENERAL PRINCIPLE

A good quality and sustainable sanitation and hygiene service in the urban centres of the OMVG area implies that the management, operation and maintenance are ensured, on the one hand, by qualified professionals and, on the other hand, that there is a system of technical and financial monitoring and evaluation of the performance of this management, operation and maintenance of sanitation services.

To ensure the management, operation and sustainability of the facilities, it is absolutely necessary that users pay for sanitation services.

EXPECTED RESULTS

To significantly improve the quality and sustainability of sanitation services in the urban centres of the OMVG area, by delegating the management, operation and maintenance of the service to qualified operators under contract and by ensuring the monitoring, control and evaluation of this management, operation and maintenance.

AREA OF INTERVENTION

In the urban centres of the OMVG area.

Measure 2.4.1 - Training of the national private sector for the management, maintenance and operation of sanitation infrastructures in urban centres

Measure 2.4.1	Training of the national private sector for the management, maintenance and operation of sanitation infrastructure in urban centres
Origin (institution / project / programme)	Target 6.2 of the 2030 Agenda's SDG6 is the reference for the development of this measure
Objective	Significantly improve the sustainability and quality of sanitation and hygiene services provided to the population in urban centres in the OMVG area

Location	Urban centres in the OMVG area
Description of the action	► Training, capacity building of 400 people for the management, operation and maintenance of urban sanitation services, cleaning techniques and maintenance of sewerage networks, management and operation of pumping stations and wastewater and sludge treatment plants and pit sludge management systems
Ownership and implementation arrangements	Gambia: NAWEC; Guinea: MHA/DGA; Guinea Bissau: DGRH; Senegal: ONAS NGOs
Duration	2 years, 2025 and 2028
Costs	Total estimated cost of USD 2 million
Financing	To be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Availability of professionals for the management, operation and maintenance of urban sanitation services

Measure 2.4.2 - Establishment/strengthening of a system of monitoring, control and technical and financial evaluation of the management, operation and maintenance performance of the sanitation service in urban centres

Measure 2.4.2	Establishment/strengthening of a system for monitoring, control and technical and financial evaluation of the management, operation and maintenance performance of the sanitation service in urban centres
Origin (institution / project / programme)	Target 6.2 of the 2030 Agenda's SDG6 is the reference for the development of this measure
Objective	Improving the quality and sustainability of sanitation services in urban centres
Location	Urban centres in the OMVG area
Description of the action	Setting up a system for monitoring, controlling and evaluating the performance of urban sanitation services
Ownership and implementation arrangements	Gambia: NAWEC; Guinea: MHA/DGA; Guinea Bissau: DGRH; Senegal: ONAS
Duration	3 years
Costs	Total estimated cost of USD 3 million (2023 to 2025)
Financing	To be identified
Risks envisaged	Adequate funding for the implementation of the measure
Expected results	Improving the quality and sustainability of urban sanitation services

4.3.5 Means for implementation of the actions and measures for the strategic axis 2

In order to achieve the expected results of the different provisions and measures indicated for strategic axis 2, legal, financial and technical frameworks will have to be put in place in the OMVG over the next 18 years (2023-2040).

OMVG will require strong legal and financial project management capacity, in liaison with member state ministries and donors, as well as institutional and financial project management at the regional level, in liaison with regional authorities and local communities in the three shared basins.

Also within the OMVG, it is important to create a technical project management unit for the sanitation and hygiene sub-sector (a secretariat + two public works engineers + a project management officer) to ensure the technical follow-up of projects and support to donors and institutions in the member states.

Given the high level of investment in the sanitation sub-sector, it will be necessary to identify and examine the different sources of finance that can be mobilised, such as:

- Revenue from sewerage user charges;

- Member States' public funds from taxes;
- Transfers from donors and international solidarity organisations;
- Financing of investments through medium or long-term debt with credit institutions or on the capital market;
- Use of innovative financing strategies by creating the necessary environment for effective private sector participation. For example, public-private partnership (PPP).

4.4 STRATEGIC AXIS 3 - ENSURE EQUITABLE ACCESS TO QUALITY HEALTH CARE AND SERVICES FOR ALL AND STRENGTHEN THE PREVENTION AND MANAGEMENT OF COMMUNICABLE AND NON-COMMUNICABLE DISEASES

4.4.1 Provision 3.1 - Ensure the availability of functional health structures with well-trained staff and sufficient quantity and quality of medicines for the effective treatment of all parts of the population

GENERAL PRINCIPLE

Quality health services and the availability of sufficient health personnel in terms of quality and quantity will allow for proper health care of the population. The availability of essential medicines at the last mile of the health pyramid will contribute to an improvement in health indicators at the level of the OMVG river basins and a reduction in morbidity and mortality from all causes.

EXPECTED RESULTS

The construction of 20 health centres, 30 health posts and 3 referral hospitals is expected, as well as the recruitment of 400 qualified health personnel per year for a period of 17 years. The commissioning of these health structures will make it possible to reduce the gaps in the availability of services and improve the geographical accessibility of health structures. The average distance between a health post and a health centre will be less than 30 km in some localities, which will restore territorial equity in terms of health coverage. Better health personnel/population ratios are expected, as the current ratios do not exceed 6/10000 inhabitants for a standard set at 23/10000 inhabitants. A reduction in morbidity and mortality is expected, as well as a reduction in the time taken to treat patients.

AREA OF INTERVENTION

The regions of Kolda (Senegal), Boké (Guinea) and the Lower River (LLR, Gambia) must, as a matter of priority, set up reference hospitals to fill the gaps. The health development plans of the various countries have already identified certain shortages in terms of health personnel and infrastructure. In rural areas, it will be necessary to act on the distance between health posts and villages, and to bring health posts closer to the population.

The 30 health posts will be divided into 5 health posts in Senegal, 10 in Guinea and Guinea Bissau and 5 in Gambia. As for the health centres, there will be 2 in Senegal in Kolda and Kaffrine; 3 in Guinea in Boké and Labé; 3 in Guinea Bissau in Quinara, Bafatá and Tombali; and 2 in Gambia in the regions of Basse and Janjanbureh.

Throughout the OMVG area, the recruitment of the missing personnel should be a priority and not wait until the new health infrastructures are in service. It is indeed recommended that it should begin as early as 2024, and that the staff recruited should be assigned to the existing structures. The deployment of staff will then be gradual.

Measure 3.1.1 - Construction and equipment of 30 new health posts, 10 health centres and 3 reference hospitals

Measure 3.1.1	Construction and equipment of 30 new posts, 10 health centres and 3 referral hospitals
Origin (institution / project / programme)	The SDG3 target
Objective	Improving the geographical accessibility of health infrastructures in the OMVG area
Location	Urban and rural centres
Description of the action	<ul style="list-style-type: none"> ► Construction/rehabilitation/ of health posts, health centres and referral hospitals ► Equipping the built health structures and strengthening the existing ones
Ownership and implementation arrangements	Ministry of Health of the different countries, national agency in charge of the built heritage of the States
Duration	5 years
Costs and funding	Total estimated cost USD 30 million Funding to be identified
Risks envisaged	Lack of funding
Expected results	All populations, regardless of where they live in the basin, have easy access to health facilities

Measure 3.1.2 - Annual recruitment of adequate health personnel (doctors, midwives, nurses, laboratory assistants, pharmacists)

Measure 3.1.2	Annual recruitment of adequate health personnel (doctors, midwives, nurses, laboratory assistants, pharmacists)
Origin (institution / project / programme)	SDG3, National Development Plans
Objective	Improving health coverage and quality of care
Location	Departments and villages covered by the OMVG basin
Description of the action	<ul style="list-style-type: none"> ► Recruitment of 80 doctors per year ► Recruitment of 320 nurse-midwives and laboratory assistants per year
Ownership and implementation arrangements	Ministry of Health / Ministry of Public Service of the OMVG countries
Duration	17 years (2024 to 2040)
Costs and funding	Total estimated cost USD 65 million Funding to be identified
Risks envisaged	Lack of funding
Expected results	Considerable improvement in patient care

Measure 3.1.3 - Establish a system for the supply of quality medicines and avoiding shortages of essential medicines in all health structures

Measure 3.1.3	Establish a system for the supply of quality medicines and avoidance of shortages of essential medicines in all health facilities
Origin (institution / project / programme)	SDG3
Objective	Improve the availability of essential medicines in health facilities in the OMVG basin regions

4. INTERVENTION STRATEGY - EXPECTED RESULTS AND ACTIONS TO BE UNDERTAKEN

Location	All health structures, national supply pharmacies, regional supply pharmacies, drug control laboratories
Description of the action	<ul style="list-style-type: none"> ▶ Work with national and regional pharmacies to ensure the availability of quality medicines in line with the epidemiological characteristics of each locality ▶ Good estimation of the quantities of medicines ▶ Contract with regional pharmacies and drug distributors in each region ▶ Training pharmacy managers ▶ Establish a good stock management system for medicines ▶ Rehabilitation of drug depots ▶ Quality control of medicines
Ownership and implementation arrangements	Ministry of Health, National Supply Pharmacy, Regional Supply Pharmacy, Drug Control Laboratory
Duration	17 years (2024 to 2040)
Costs and funding	Total estimated cost USD 10M Funding to be identified
Risks envisaged	Lack of funding
Expected results	Improving the quality and availability of medicines

Measure 3.1.4 - Strengthen community-based health initiatives

Measure 3.1.4	Strengthen community-based health initiatives
Origin (institution / project / programme)	SDG3
Objective	<ul style="list-style-type: none"> ▶ Improving community-based management of malaria patients at home ▶ Strengthening networks of home care providers ▶ Strengthening adherence to AIDS and TB treatment ▶ Promoting health at the community level ▶ Strengthening community surveillance and alerts for epidemics
Location	At the village level
Description of the action	<ul style="list-style-type: none"> ▶ Recruitment of community volunteers. Lump sum motivation of CFAF 15,000 for 10,000 community workers per year ▶ Training of volunteers and community relays ▶ Formative supervision
Ownership and implementation arrangements	Ministries of health, regional chief doctors, district chief doctors, head nurses, midwives
Duration	17 years (2024 to 2040)
Costs and funding	Total estimated cost USD 41M Funding to be identified
Risks envisaged	Missing funding
Expected results	Strengthening community surveillance, early detection of epidemics, better compliance with treatment

4.4.2 Provision 3.2 - Ensure adequate financing of the health sector by mobilising endogenous and external resources

GENERAL PRINCIPLE

The resolution of the 58th World Health Assembly, adopted unanimously, recommends that WHO member countries develop health financing systems to provide access to quality health services for all their populations. Endogenous financing of health to the level of the commitments made by the member states of the OMVG (15% of the national budget) will make it possible to increase investment in health and will facilitate the granting of foreign financing. States must become more concerned about health and redouble their efforts to mobilise domestic resources.

The participation of local and regional authorities, currently estimated at 1%, should be increased to reduce the cost of health care borne by households.

Support from development partners is also expected with continued or increased grants from the Global Fund, USAID for the purchase of drugs, UNICEF and its partners for vaccines, the President's Malaria Initiative (PMI) for mosquito nets and drugs for seasonal malaria chemoprevention, and the Japanese Cooperation for the payment of providers

EXPECTED RESULTS

Health expenditure accounts for 15% of national budgets, and this expenditure is used to improve technical facilities, combat malnutrition and recruit health workers.

AREA OF INTERVENTION

OMVG area.

Measure 3.2.1 - Increase health expenditure to 15% of the national budget in accordance with the commitments made by the States

Measure 3.2.1	Increase health expenditure to 15% of the national budget in line with commitments made by states
Origin (institution / project / programme)	States, ministries of health
Objective	<ul style="list-style-type: none"> ▶ Increase national health spending to at least 15% of countries' national budgets ▶ Strengthening universal health coverage ▶ Reducing the cost of health care to households
Location	Guinea, Guinea Bissau, Gambia, Senegal
Description of the action	<ul style="list-style-type: none"> ▶ Advocate for an increase in the health budget at the level of national and local assemblies, particularly at meetings of heads of state ▶ Hold 2 meetings with MPs per year and per country
Ownership and implementation arrangements	Civil society, opinion leaders, Heads of State Conference, national assemblies
Duration	17 years (2024 to 2040)
Costs and funding	Total estimated cost USD 1M Funding to be identified
Risks envisaged	Insufficient funding
Expected results	Increasing the contribution of states to health expenditure and setting up funding to fight diseases

Measure 3.2.2 - Stimulation of national initiatives for the mobilisation of endogenous resources (corporate social responsibility)

Measure 3.2.2	Stimulation of national initiatives for the mobilisation of endogenous resources (corporate social responsibility)
Origin (institution / project / programme)	Ministries of Health
Objective	Improving national contributions to health expenditure
Location	Urban and rural areas
Description of the action	<ul style="list-style-type: none"> ▶ Advocacy with companies for a contribution in the field of health, contracting with consultants for the implementation of advocacy ▶ Organising fundraising events ▶ Financial contribution of companies that may have a negative impact on workers' health ▶ Developing public-private partnerships to improve health indicators
Ownership and implementation arrangements	Communication unit of the Ministry of Health, civil society
Duration	17 years (2024 to 2040)
Costs and funding	Total estimated cost USD 1M Funding to be identified
Risks envisaged	Missing funding
Expected results	Improving the participation of the domestic private sector in health financing

Measure 3.2.3 - Implementation of advocacy for greater mobilisation of international financial resources

Measure 3.2.3	Implementation of advocacy for greater mobilisation of international financial resources
Origin (institution / project / programme)	Heads of State Organisation, Ministries of Cooperation and/or Foreign Affairs
Objective	<ul style="list-style-type: none"> ▶ Strengthening health-oriented development assistance ▶ Maintain international funding for health
Location	Embassies and diplomatic missions, WHO, Ministry of Health, Ministry of Cooperation
Description of the action	<ul style="list-style-type: none"> ▶ Advocacy at embassy and chancery level ▶ Participation in international meetings to raise international funds
Ownership and implementation arrangements	Civil society, Ministry of Health, NGOs working in health
Duration	17 years (2024 to 2040)
Costs and funding	Total estimated cost USD 3 million Funding to be identified
Risks envisaged	Insufficient funding
Expected results	Increasing external funding for health

4.4.3 Provision 3.3 - Ensure the establishment of an efficient information system with a dynamic collection of reliable health information

GENERAL PRINCIPLE

A good health information system will allow dynamic collection of health data and relevant evaluation of the performance of the health system, without which an objective measurement of the results achieved could not be made. It will involve equipping health structures with computer equipment and training actors in the processing, analysis and management of health data. The health information systems in the OMVG regions have shown weaknesses linked to the non-availability of all the data, and poor data quality is often deplored.

EXPECTED RESULTS

- Better quality health data for evidence-based decision-making.
- Early detection of outbreaks and a rapid and effective response to health threats.
- Better measurement of the performance achieved by the different strategies implemented.

AREA OF INTERVENTION

At the level of health centres, hospitals and health posts covered in the OMVG area.

Measure 3.3.1 - Strengthening the quality of health data with a monitoring system based on the DHIS2

Measure 3.3.1	Strengthening the quality of health data with a monitoring system based on DHIS2
Origin (institution / project / programme)	SDG3
Objective	Improving the quality of health data for evidence-based decision making
Location	Health centres, hospitals and health posts
Description of the action	<ul style="list-style-type: none"> ▶ Audit of DHIS2 functionality ▶ Implementation of DHIS2 in all health districts ▶ Equipping health centres with computer equipment (purchase of 200 computers) ▶ Training of 300 actors per year in good health data management practices
Ownership and implementation arrangements	National Health Information System (NHIS) of the different countries
Duration	17 years (2024 to 2040)
Costs and funding	Total estimated cost 10M Funding to be identified
Risks envisaged	Missing funding
Expected results	Improving the completeness, timeliness and quality of health data

Measure 3.3.2 - Development of health workers' skills through training in the collection, storage and updating of reliable and relevant health databases

Measure 3.3.2	Development of the skills of health workers through training in the collection, storage and maintenance of reliable and relevant health databases
Origin (institution / project / programme)	SDG3
Objective	Strengthen the capacity of health workers in good health data management practices
Location	Health centres, hospitals and health posts

Description of the action	<ul style="list-style-type: none"> ▶ Training in data entry and analysis ▶ Organisation of data entry and processing workshops ▶ Organisation of data quality monitoring visits ▶ Organisation of strengthening sessions on personal data management
Ownership and implementation arrangements	National Health Information System (NHIS) of the different countries
Duration	17 years (2024 to 2040)
Costs and funding	Total estimated cost 6M Funding to be identified
Risks envisaged	Missing funding
Expected results	100% of health staff involved in data collection, processing, analysis and archiving, and trained in good health data management practices

4.4.4 Provision 3.4 - Ensure access to health information, disease prevention and effective care

GENERAL PRINCIPLE

Access for all to preventive means such as insecticide-treated mosquito nets, vaccines and preventive treatments will contribute to having health indicators in line with the SDGs. The reduction of morbidity and mortality, which is very high among children under five, requires the strengthening of immunisation programmes and the proper management of childhood illnesses through compliance with the guidelines and treatment programmes in force. Better management of pregnancies and mother-to-child transmission is also an essential element of this provision. One of the essential parameters for the reduction of maternal mortality is the respect of the directives relating to the management of pregnancies, but also the completeness of prenatal consultations.

EXPECTED RESULTS

- All eligible persons are provided with effective means of disease prevention;
- More than 90% of children under 5 years of age, residing in eligible areas, receive the drugs for seasonal malaria prevention chemo;
- All eligible children are fully and correctly vaccinated;
- More than 95% of pregnant women have at least 4 prenatal visits;
- Universal coverage with insecticide-treated nets, with a renewal every three years;
- Disease management guidelines are followed by health care providers.

AREA OF INTERVENTION

OMVG area.

Measure 3.4.1 - Update and popularise guidelines for the management of diseases under surveillance

Measure 3.4.1	Update and popularise guidelines for the management of diseases under surveillance
Origin (institution / project / programme)	Ministry of Health
Objective	<ul style="list-style-type: none"> ▶ Improving the management of diseases ▶ Have management flowcharts in line with the current state of medical knowledge
Location	All health facilities
Description of the action	<ul style="list-style-type: none"> ▶ Review and training workshop on care guidelines ▶ Formative supervision at decentralised level
Ownership and implementation arrangements	Ministries of health, health research institutes, health programmes
Duration	17 years (2024 to 2040)
Costs and funding	Total estimated cost USD 4M Funding to be identified
Risks envisaged	Missing funding
Expected results	Correct management of diseases in accordance with validated guidelines and flowcharts

Measure 3.4.2 - Improve access to treatment for good patient care

Measure 3.4.2	Improve access to treatment for good patient care
Origin (institution / project / programme)	SDG3
Objective	Improving access to essential medicines
Location	All health facilities
Description of the action	<ul style="list-style-type: none"> ▶ Strengthening the distribution circuit of medicines to avoid shortages ▶ Strengthening the management of drug stocks with the fitting out of pharmacies in health facilities ▶ Improved storage conditions for medicines in temperature-controlled warehouses ▶ Rehabilitation of pharmacy depots ▶ Implementation of subsidies for identified drugs (antiretroviral, non-tuberculous mycobacteria, etc.)
Ownership and implementation arrangements	Ministry of Health, national supply pharmacies, regional supply pharmacies and pharmacy depots at health facilities
Duration	17 years (2024 to 2040)
Costs and funding	Total estimated cost USD 10M Funding to be identified
Risks envisaged	Missing funding
Expected results	<ul style="list-style-type: none"> ▶ Quality medicines available at all pharmacy depots in health facilities ▶ No stock-outs for essential medicines

Measure 3.4.3 - Improve access to means of prevention against communicable diseases

Measure 3.4.3	Improve access to means of prevention against communicable diseases (pandemics)
Origin (institution / project / programme)	SDG3
Objective	<ul style="list-style-type: none"> ▶ Improving access to means of prevention against communicable diseases

4. INTERVENTION STRATEGY - EXPECTED RESULTS AND ACTIONS TO BE UNDERTAKEN

	<ul style="list-style-type: none"> ▶ To make available the quantity and quality of preventive means necessary for the control of diseases ▶ Reducing the incidence of preventable diseases through prevention
Location	OMVG area
Description of the action	<ul style="list-style-type: none"> ▶ Correct estimation of prevention needs: nets, drugs, vaccines ▶ Adequate storage of inputs for disease prevention ▶ Optimal management of sanitary inputs ▶ Purchase of insecticide-treated bednets ▶ Purchase of drugs for malaria prevention ▶ Purchase of sulfadoxine-pyrimethamine for pregnant women ▶ Purchase of vaccines
Ownership and implementation arrangements	Country pharmacy directorates, medical regions, pharmacy managers
Duration	17 years (2024 to 2040)
Costs and funding	Total estimated cost of USD 100 million Funding to be identified
Risks envisaged	Missing funding
Expected results	<ul style="list-style-type: none"> ▶ Decline in the incidence of preventable diseases ▶ Increased protection of populations from communicable diseases ▶ Reduced mortality and morbidity ▶ Elimination of malaria, AIDS and TB by 2040

Measure 3.4.4 - Promotion of mother and child health

Measure 3.4.4	Promotion of maternal and child health
Origin (institution / project / programme)	SDG3
Objective	Improving maternal and child health
Location	Health structures
Description of the action	<ul style="list-style-type: none"> ▶ Provision of care to prevent nosocomial infections in mothers and children ▶ Provision of essential newborn care ▶ Social mediation to strengthen community-based emergency obstetric and neonatal care ▶ Awareness raising, e.g. through community radio stations ▶ Promotion of family planning
Ownership and implementation arrangements	Ministries of health, health system actors, national health education and information services
Duration	17 years
Costs and funding	Total estimated cost USD 10M Funding to be identified
Risks envisaged	Missing funding
Expected results	Improving maternal and child health

4.4.5 Provision 3.5 - Ensure an effective epidemiological surveillance system for early detection of epidemiological threats and a rapid and adequate response

GENERAL PRINCIPLE

Epidemiological surveillance makes it possible to monitor the evolution of diseases, identify risk factors and thus put in place prevention and control measures to reduce the incidence and prevalence of diseases. It is a weak link in the health system of the OMVG countries, particularly in rural areas, and must be strengthened for early detection of epidemic outbreaks in order to provide adequate responses before they spread.

EXPECTED RESULTS

- Rapid and early detection of epidemics
- Rapid and adequate response to epidemics
- Improving the health status of populations
- An early break in the chain of transmission of communicable diseases

AREA OF INTERVENTION

The OMVG area.

Measure 3.5.1 - Update and implement disease surveillance guidelines

Measure 3.5.1	Update and implement disease surveillance guidelines
Origin (institution / project / programme)	Country Health Surveillance Guidelines
Objective	<ul style="list-style-type: none"> ▶ To have health surveillance guidelines that are in line with the situation on the ground ▶ Early detection of epidemics in the OMVG area ▶ Limiting the spread of epidemics
Location	OMVG area
Description of the action	<ul style="list-style-type: none"> ▶ Workshop to review disease surveillance guidelines ▶ Training in the use of the guidelines ▶ Supervision and evaluation of implementation
Ownership and implementation arrangements	Ministries of health, national health programmes
Duration	17 years (2024 to 2040)
Costs and funding	Total estimated cost USD 8M Funding to be identified
Risks envisaged	Missing funding
Expected results	Improved detection of epidemics Decline in diseases with high epidemic potential

Measure 3.5.2 - Strengthen sentinel sites for epidemiological surveillance in the OMVG area

Measure 3.5.2	Strengthen sentinel sites for epidemiological surveillance in the OMVG area
Origin (institution / project / programme)	SDG3
Objective	<ul style="list-style-type: none"> ▶ Strengthen epidemiological surveillance sites ▶ Improving the network of sentinel sites for better geographical coverage
Location	Urban centres in the OMVG area
Description of the action	<ul style="list-style-type: none"> ▶ Establishment of new health posts as sentinel sites for epidemiological surveillance ▶ Training in epidemiological surveillance ▶ Equipping sentinel sites with high-performance diagnostic tools for better disease detection ▶ Extension of points of care with the use of molecular biology for routine diagnosis of diseases
Ownership and implementation arrangements	National disease control programmes, medical regions, health districts, regional and departmental laboratories
Duration	17 years (2024 to 2040)
Costs and funding	Total estimated cost USD 10M Funding to be identified
Risks envisaged	Missing funding
Expected results	Have sentinel sites that are representative of the OMVG area and functional

4.4.6 Provision 3.6 - Ensure the establishment of equipped health structures responsible for emergency health operations at the decentralised level

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GENERAL PRINCIPLE

The advent of Covid-19 should prompt a new organisation of health emergency operations in all OMVG countries. The negative impact of Covid-19 on health programmes must motivate a new organisation of care and the setting up of structures that can deal with these threats in complete safety for the staff and the populations that use the health structures. Faced with these emerging diseases that threaten the stability of countries and the world economy, states are obliged to set up structures capable of dealing with them in complete safety. The Gambia River Basin region lacks such facilities and should fill this gap to avoid the adverse health consequences that can result from fast-spreading diseases such as Covid-19.

EXPECTED RESULTS

- Emergency health operations are properly implemented without negative impacts on health programmes
- Functional emergency operation centres are set up at the peripheral level
- Cross-border surveillance of diseases with high epidemic potential is in place

AREA OF INTERVENTION

The OMVG area.

Measure 3.6.1 - Establishment of health emergency operation centres in peripheral regions for better preparation against disasters and pandemics

Measure 3.6.1	Establishment of emergency health operations centres in peripheral regions for better preparedness against disasters and pandemics
Origin (institution / project / programme)	SDG3
Objective	<ul style="list-style-type: none"> ▶ Improving the conduct of health emergencies ▶ Minimising the negative health impacts of pandemics ▶ Decentralising the implementation of health emergency operations
Location	Regional capitals in the basins area
Description of the action	<ul style="list-style-type: none"> ▶ Construction of emergency operation centres in regional capitals ▶ Equipment of the centres ▶ Training of centre staff ▶ Preventive maintenance of equipment
Ownership and implementation arrangements	Ministry of Health
Duration	17 years (2024 to 2040)
Costs and funding	Total estimated cost 20 M Funding to be identified
Risks envisaged	Missing funding
Expected results	Improved management of emergency operations

Measure 3.6.2 - Establishment of cross-border surveillance of epidemics

Measure 3.6.2	Establishment of cross-border surveillance of epidemics
Origin (institution / project / programme)	SDG3
Objective	<ul style="list-style-type: none"> ▶ Contribute to the prevention of the introduction of health threats from neighbouring countries ▶ Setting up mechanisms for cross-border epidemic control
Location	OMVG Space
Description of the action	<ul style="list-style-type: none"> ▶ Establishment of a steering committee for cross-border control of diseases with high epidemic potential. ▶ Organisation of international meetings and seminars ▶ Development of cross-border disease control guidelines.
Ownership and implementation arrangements	Ministries of Health of the 4 OMVG countries
Duration	17 years (2024 to 2040)
Costs and funding	Total estimated cost USD 10M Funding to be identified
Risks envisaged	Political problems between states
Expected results	<ul style="list-style-type: none"> ▶ Effectiveness of cross-border disease control ▶ Decline in the introduction of health threats from neighbouring countries

5 PROGRAMME OF MEASURES

5.1 SUMMARY OF THE SECTORAL PLAN AND RESULTS FRAMEWORK

Strategic axes/objectives	Overall results (provisions)	Specific results (measures)
1. Ensure equitable and sustainable access to affordable drinking water for all	1.1 Access to adequate drinking water in urban areas, in quantity, at home or nearby, for the urban and rural population of the three OMVG basins has been assured	1.1.1 Drinking water supply, treatment, storage and networks and connections in urban centres have been constructed/ rehabilitated/ strengthened and the implementation works have been monitored.
		1.1.2 Drinking water infrastructure (borehole, solar pump/electrical network, chlorination station, water tower, networks and standpipe connections) for 70% of the village population has been built/rehabilitated/ strengthened and the execution works have been monitored.
		1.1.3 BHPPs for 30% of the village population have been constructed/rehabilitated and the implementation works have been monitored. Existing boreholes have been rehabilitated and are either strengthening drinking water points or can provide an alternative water source for livestock and agriculture.
		1.1.4 Studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of drinking water supply infrastructure in urban centres have been completed
		1.1.5 Studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of drinking water supply infrastructure in the villages have been completed
	1.2 The implementation of a geographic information system for drinking water infrastructures in the OMVG area has been ensured	1.2.1 A database of drinking water supply infrastructures in each of the OMVG river basins has been developed in liaison with the water resources agencies and the supervisory ministries of the four Member States
	1.3 Governance of the sector in the context of existing and emerging challenges has been ensured	1.3.1 The capacities of the institutions responsible for the drinking water sub-sector in each of the Member States and in the OMVG have been strengthened

Strategic axes/objectives	Overall results (provisions)	Specific results (measures)
	1.4 Access to a sustainable quality drinking water service is ensured	1.3.2 The managers of the institutions responsible for the drinking water sub-sector in each of the member states and in the OMVG have been trained
		1.4.1 The private sector in each country for the management, operation and maintenance of drinking water systems and WDFs has been trained
		1.4.2 The systems for monitoring, control and technical and financial evaluation of management performance, operation and maintenance of drinking water networks and BHPPs in rural areas have been set up/strengthened
2. Ensure equitable and sustainable access to adequate sanitation and hygiene for all and end open defecation	2.1 Access to adequate sanitation and hygiene services for the urban and rural population in the OMVG area has been ensured	2.1.1 Sanitation and hygiene infrastructure, off-site in and around the city centre and on-site in the peri-urban areas of the cities for the population of the urban centres have been constructed/rehabilitated and the implementation works have been monitored
		2.1.2 On-site sanitation and hygiene infrastructure for the rural population constructed/rehabilitated and implementation monitored
		2.1.3 Studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of sanitation and hygiene infrastructure in urban centres have been completed
		2.1.4 Studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of sanitation and hygiene infrastructure in rural areas were completed
	2.2 OD elimination completed and communities sensitised on good sanitation and hygiene practices	2.2.1 The population has been mobilised and sensitised to end OD
	2.3 Governance of the sector in the context of existing and emerging challenges has been ensured	2.3.1 The capacities of the institutions responsible for the sanitation and hygiene sub-sector in each of the Member States and in the OMVG have been strengthened
		2.3.2 The managers of the institutions responsible for the sanitation and hygiene sub-sector in each of the Member States and in the OMVG have been trained
	2.4 Access to sustainable, quality sanitation and hygiene services in the OMVG area is ensured	2.4.1 The private sector in each country for the management, maintenance and operation of sanitation infrastructure in urban centres has been formed

5. PROGRAMME OF MEASURES

Strategic axes/objectives	Overall results (provisions)	Specific results (measures)
		2.4.2 Systems for monitoring, control and technical and financial evaluation of the performance of management, operation and maintenance of the sanitation service in urban centres have been established/strengthened
3. Ensure territorial equity in the availability of quality health care and services and strengthen the management of communicable and non-communicable diseases	3.1 Health facilities built, functional, with well-trained staff and sufficient quantity and quality of medicines	3.1.1 30 new health posts, 10 health centres and 3 referral hospitals built and operational
		3.1.2 400 quality health personnel (doctors, midwives, nurses, laboratory assistants, pharmacists) recruited and put into service each year
		3.1.3 A system for the supply of medicines put in place and shortages of essential medicines avoided
		3.1.4 Community-based initiatives such as home-based malaria case management, networks of home-based care providers, community watch and alert cells established and strengthened
	3.2 Adequate financing of the health sector with effective mobilisation of endogenous and external resources is ensured	3.2.1 Increasing health expenditure to 15% of the national budget in line with the commitments made by the States
		3.2.2 An increase in domestic (endogenous) resources mobilised for health financing (corporate social responsibility)
		3.2.3 Advocacy for greater mobilisation of international financial resources at chancery and embassy level
	3.3 The establishment of an efficient information system with dynamic collection of reliable health information is ensured	3.3.1 Availability of reliable and quality health data with completeness and timeliness exceeding 95%.
		3.3.2 100% of health personnel involved in the collection, processing, analysis and archiving of health data well trained in good health data management practices
	3.4 Access to health information, disease prevention and proper care is provided	3.4.1 Guidelines for the management of diseases under surveillance updated, disseminated and used in all OMVG health structures
		3.4.2 The entire population has access to essential medicines wherever they are for proper management in accordance with validated treatment regimens
		3.4.3 Means of prevention against communicable diseases are available in all urban and rural health structures with a coverage of more than 95% of the population

Strategic axes/objectives	Overall results (provisions)	Specific results (measures)
		3.4.4 Maternal and child health is promoted in all health facilities with the implementation of community-based emergency obstetric and neonatal care
	3.5 An effective epidemiological surveillance system for early detection of epidemiological threats and a rapid and adequate response is provided	3.5.1 Updated disease surveillance guidelines are in place and their application documented
		3.5.2 Epidemiological surveillance sentinel sites in the OMVG basins are strengthened/created and functional
	3.6 Well-equipped structures for emergency health operations at the decentralised level are in place	3.6.1 4 health emergency operation centres are set up and functional in one region within the OMVG area in each country.
		3.6.2 Cross-border disease surveillance is implemented in border districts of the OMVG area

5.2 TIMELINE OF MEASUREMENTS

Strategic Axes, Provisions, Measures			Horizons																	
			2025				2030					2040								
			2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Strategic Axis 1 - Ensure equitable, sustainable and affordable access to safe drinking water for all																				
Provision 1.1 - Ensure access to adequate drinking water services in urban areas, in quantity, at home or nearby, for the urban and rural population of the three OMVG basins																				
Measure 1.1.1	Construction / rehabilitation / strengthening and monitoring of the execution of water supply systems, treatment, storage and drinking water networks and connections in urban centres																			
Measure 1.1.2	Construction / rehabilitation / strengthening and monitoring of the execution of drinking water infrastructure (borehole, solar pump/electrical network, chlorination station, water tower, networks and standpipe connections), for 70% of the village population																			
Measure 1.1.3	Construction/rehabilitation and monitoring of BHPP implementation works for 30% of the village population. Existing boreholes are rehabilitated and strengthen drinking water points or can provide an alternative water source for livestock and agriculture																			
Measure 1.1.4	Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of drinking water supply infrastructure in urban centres																			
Measure 1.1.5	Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of drinking water supply infrastructure in the villages																			
Provision 1.2 - Ensure the implementation of a geographic information system for drinking water supply infrastructures in the OMVG area																				
Measure 1.2.1	Development of a database of drinking water supply infrastructures in each of the OMVG catchment areas in liaison with the water resources agencies and the supervisory ministries of the four Member States																			
Provision 1.3 - Ensuring governance of the sector in the context of existing and emerging challenges																				
Measure 1.3.1	Capacity building of the institutions responsible for the drinking water sub-sector in each of the member states and in the OMVG																			
Measure 1.3.2	Training of managers of institutions responsible for the drinking water sub-sector in each of the member states and in the OMVG																			
Provision 1.4 - Ensure access to a sustainable quality drinking water service																				
Measure 1.4.1	Training of the private sector in each country for the management, operation and maintenance of drinking water networks and BHPP																			
Measure 1.4.2	Establishment/strengthening of systems for monitoring, control and technical and financial evaluation of management performance, operation and maintenance of drinking water networks and BHPP in rural areas																			

Strategic Axes, Provisions, Measures			Horizons																	
			2025				2030					2040								
			2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Strategic Axis 2 - Ensure equitable and sustainable access to adequate sanitation and hygiene services for all and end open defecation																				
Provision 2.1 - Ensure access to adequate sanitation and hygiene services for the urban and rural population in the OMVG area																				
	Measure 2.1.1	Construction/rehabilitation and monitoring of sanitation and hygiene infrastructure implementation works, off-site in and around the city centre, and on-site in the peri-urban areas of the cities for the population of the urban centres																		
	Measure 2.1.2	Construction/rehabilitation and monitoring of the implementation of on-site sanitation and hygiene infrastructures for the population in rural areas																		
	Measure 2.1.3	Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of sanitation and hygiene infrastructure in urban centres																		
	Measure 2.1.4	Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of sanitation and hygiene infrastructure in rural areas																		
Provision 2.2 - End OD and educating communities on good sanitation and hygiene practices																				
	Measure 2.2.1	Mobilise and raise awareness of the population to end OD																		
Provision 2.3 - Ensure governance of the sector in the context of existing and emerging challenges																				
	Measure 2.3.1	Capacity building of institutions responsible for the sanitation and hygiene sub-sector in each of the Member States and in the OMVG																		
	Measure 2.3.2	Training of managers of institutions responsible for the sanitation and hygiene sub-sector in each of the Member States and in the OMVG																		
Provision 2.4 - Ensure access to sustainable quality sanitation and hygiene services in the OMVG area																				
	Measure 2.4.1	Training of the private sector in each country for the management, maintenance and operation of sanitation infrastructure in urban centres																		
	Measure 2.4.2	Establishment/strengthening of a system for monitoring, control and technical and financial evaluation of the management, operation and maintenance performance of the sanitation service in urban centres																		

5. PROGRAMME OF MEASURES

Strategic Axes, Provisions, Measures			Horizons																	
			2025				2030					2040								
			2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Strategic Axis 3 - Ensure equitable access to quality health care and services for all and strengthen the prevention and management of communicable and non-communicable diseases																				
Provision 3.1 - Ensure the availability of functional health structures with well-trained staff and sufficient quantity and quality of medicines for the effective treatment of all sections of the population																				
Measure 3.1.1	Construction and equipping of 30 new posts, 10 health centres and 3 referral hospitals																			
Measure 3.1.2	Annual recruitment of adequate health personnel (doctors, midwives, nurses, laboratory assistants, pharmacists)																			
Measure 3.1.3	Establish a system for the supply of quality medicines and avoidance of shortages of essential medicines in all health facilities																			
Measure 3.1.4	Strengthen community-based health initiatives																			
Provision 3.2 - Ensure adequate financing of the health sector by mobilising endogenous and external resources																				
Measure 3.2.1	Increase health expenditure to 15% of the national budget in line with commitments made by states																			
Measure 3.2.2	Stimulate national initiatives for the mobilisation of endogenous resources (corporate social responsibility)																			
Measure 3.2.3	Implement advocacy for greater mobilisation of international financial resources																			
Provision 3.3 - Ensure the establishment of an efficient information system with a dynamic collection of reliable health information																				
Measure 3.3.1	Strengthen the quality of health data with a monitoring system based on DHIS2																			
Measure 3.3.2	Develop the skills of health workers through training in the collection, storage and maintenance of reliable and relevant health databases																			
Provision 3.4 - Ensure access to health information, disease prevention and effective care																				
Measure 3.4.1	Update and disseminating guidelines for the management of diseases under surveillance																			
Measure 3.4.2	Improve access to treatment for good patient care																			
Measure 3.4.3	Improve access to means of prevention against communicable diseases (pandemics)																			
Measure 3.4.4	Promotion of maternal and child health																			
Provision 3.5 - Ensure an effective epidemiological surveillance system for early detection of epidemiological threats and a rapid and adequate response																				
Measure 3.5.1	Update and implementation of disease surveillance guidelines																			
Measure 3.5.2	Strengthen sentinel sites for epidemiological surveillance in the OMVG area																			
Provision 3.6 - Ensure the establishment of equipped health structures responsible for emergency health operations at the decentralised level																				
Measure 3.6.1	Establishment of emergency health operations centres in peripheral regions for better preparedness against disasters and pandemics																			
Measure 3.6.2	Establish cross-border surveillance of epidemics																			

5.3 COST OF THE MEASURES

The investments required to implement the water supply, sanitation and health sector plan are estimated at USD 2,818 million, including USD 2,479 million for water supply and sanitation and hygiene in the period 2023-2040, at current costs.

As part of the measures proposed in this sectoral plan with regard to the Sustainable Development Goals, which constitute the reference framework for development, the **most important investments to be made are aimed at building, rehabilitating and strengthening drinking water supply, sanitation and hygiene infrastructures in the towns and villages** of the OMVG zone.

A more detailed investment plan for the water and sanitation sector for the urban and rural population and by country is presented below.

These amounts are indicative and may vary depending on the feasibility studies and the design of the solutions to be validated by each Member State. Furthermore, there are no harmonised strategies for the development of the drinking water and sanitation sector in the Member States.

The framework for the development of scenarios and solutions is the 2030 Agenda of Sustainable Development Goals. For some Member States, the scenarios and solutions considered may be quite demanding, especially for sanitation and hygiene services, while for others, the projects implemented already incorporate the sanitation scale of SDG 6.2.

INVESTMENT PLAN FOR WATER SUPPLY IN THE OMVG AREA

Drinking water supply in urban centres: USD 513.6 million

- **Period 2022-2025** - During this period, studies, projects and tender documents will be prepared for the planning, design and detailing of validated solutions for the implementation of drinking water supply infrastructure in urban centres. Contracts for the construction/rehabilitation of the infrastructure and monitoring of the works will be launched. Ongoing or already programmed and/or financed projects in the field of drinking water supply will continue to be implemented over the period 2022-2025. In the course of the studies, priority projects may be identified and developed, with implementation starting in 2024 (e.g. new boreholes, water towers). The construction and rehabilitation of priority drinking water infrastructure must not compromise future new construction. The planned investments for this period are USD 17 million for studies and tender documents and USD 65 million for interventions in drinking water infrastructure.
- **Period 2025-2030** - During this period it is planned to build the central components of the drinking water supply systems of the urban centres, i.e.: surface and/or groundwater catchments, water treatment plants, water conveyors, pumping stations, reservoirs and water towers, as well as drinking water supply networks and individual connections and standpipes, which should be sized for the project horizon (2050 - horizon to be defined, consider beyond 2040). It is also planned to carry out strengthening work on existing systems, such as: strengthening water sources, building towers and reservoirs, strengthening and meshing water supply networks. The planned investments for new infrastructure have been estimated at USD 253 million (75% of the total investment in new infrastructure) and for rehabilitation and strengthening at USD 76 million (50%), i.e. a total of approximately USD 330 million.
- **Period 2030-2040** - During this period, it is planned to carry out the extensions of the drinking water supply networks and the individual connections and standpipes to serve the population of the new urbanisations, as well as the consolidations and rehabilitations still required. The investments planned for the new infrastructures have been estimated at USD 76 million and for the rehabilitation and strengthening at USD 43 million, i.e. a total of USD 119 million.
- The total investment in drinking water infrastructure for urban centres in the OMVG area and per country is estimated at:

- OMVG area: 513.6 MUSD
 - Gambia: USD 102.7 million
 - Guinea: USD 56.1 million
 - Guinea Bissau: USD 78.9 million
 - Senegal: USD 275.9 million
 - Cities managed by SONES: USD 184.2 million
 - Other cities: USD 91.7 million

Water supply to the most populated villages (70% of the rural population): 799 MUSD

- Period 2022-2025 - During this period, studies, projects and tender documents will be prepared for the planning, design and detailing of validated solutions for the implementation of drinking water supply infrastructure in the most populated villages. Contracts for the construction/rehabilitation and strengthening of the infrastructure and monitoring of the works will be launched. Ongoing or already programmed and/or financed projects in the field of drinking water supply will continue to be implemented over the period 2022-2025 (in particular the PEAMIR, AADEPA/G2G and IDB-WAEMU projects in Senegal for drinking water and sanitation in rural areas in the OMVG area). In the course of the studies, priority projects may be identified and developed, which could be implemented from 2024 onwards (e.g. new boreholes, water towers, chlorination stations, etc.). The construction, rehabilitation and strengthening of priority drinking water infrastructures must not compromise future new constructions. The planned investment in drinking water infrastructure is USD 65 million. Other investments planned for this period are USD 30 million for studies and tender documents, USD 2.5 million for the development of a database and USD 5 million to ensure access to a sustainable quality drinking water service in rural areas.
- Period 2025-2030 - During this period, it is planned to build the core elements of the drinking water supply networks, i.e.: groundwater boreholes or other types of catchment, water treatment plants/chlorination stations, water conveyances, reservoirs and water towers, as well as supply networks and individual connections and standpipes, which must be sized for the project horizon (2050 - horizon to be defined, consider a horizon higher than 2040). Investments for the construction of new infrastructures in the OMVG area have been estimated at 490 MUSD (70% of the total investment in new infrastructures) and 50 MUSD (50%) for rehabilitation and strengthening, i.e. a total of 540 MUSD.
- Period 2030-2040 - During this period, it is planned to carry out extensions to drinking water supply networks and individual connections and standpipes to serve the population of the new urbanisations, as well as the consolidations and rehabilitations still needed, and the construction of complete new networks for Guinea-Bissau. Investments for new infrastructure were estimated at USD 176 million (25% of the total investment in new infrastructure) and for rehabilitation and strengthening works at USD 18 million, for a total of USD 194 million.
- The total investment in drinking water infrastructure for the most populated villages in the OMVG area and per country is estimated at:
 - OMVG area: 799 MUSD ;
 - Gambia: USD 139.9 million
 - Guinea: USD 253.8 million
 - Guinea Bissau: USD 92.8 million
 - Senegal: USD 312.7 million

Provision of drinking water to the least populated villages (30% of the rural population): USD 282 million

- **Period 2022-2025** - During this period, studies, designs and tender documents will be carried out for the planning, design and detailing for the implementation of the BHPP or other types of drinking water collection infrastructure for less populated villages. Contracts for the construction/rehabilitation of BHPPs and monitoring of the works will be launched. Ongoing or already programmed and/or financed projects for the supply of drinking water to villages will continue to be implemented over the period 2022-2025. It is planned to carry out the rehabilitation of existing BHPPs for drinking water in less populated villages and the construction of new BHPPs in villages where the population does not have access to improved water sources or where improved water sources are far from the houses. The investments planned for this period in the OMVG area have been estimated at USD 100 million, i.e. USD 75 million for the construction of new BHPPs and USD 25 million for rehabilitation. The planned investment for this period in studies and tender documents is USD 6 million.
- **Period 2025-2030** - During this period, it is planned to continue the construction of new BHPPs and the rehabilitation of existing BHPPs. Infrastructure investments in the OMVG area have been estimated at USD 100 million, including USD 75 million for new BHPPs and USD 25 million for rehabilitation.
- **Period 2030-2040** - During this period, it is planned to continue the construction of new BHPPs and the rehabilitation of existing BHPPs. Infrastructure investments in the OMVG area have been estimated at USD 82 million, of which USD 62 million for new infrastructure and USD 20 million for rehabilitation.
- The total investment in drinking water infrastructure for the least populated villages in the OMVG area and per country is estimated at:
 - OMVG area: 282.4 MUSD
 - Gambia: USD 40.2 million
 - Guinea: USD 93.0 million
 - Guinea Bissau: USD 32.4 million
 - Senegal: USD 116.8 million

INVESTMENT PLAN FOR SANITATION AND HYGIENE IN THE OMVG AREA
Sanitation and hygiene in urban centres: USD 506 million

- **Period 2022-2025** - During this period, studies, projects and tender documents will be prepared for the planning, design and detailing of validated solutions for the implementation of sanitation and hygiene infrastructure in urban centres. Contracts for the construction/rehabilitation and strengthening of the infrastructure and the monitoring of the works will be launched. Ongoing or already programmed and/or financed projects in the field of sanitation will continue over the period 2022-2025. In the course of the studies, priority projects may be identified and developed, with implementation starting in 2024 (e.g. toilets and wastewater networks). The construction, rehabilitation and strengthening of priority sanitation and hygiene infrastructure must not compromise future new construction. The planned investments for this period are USD 17 million for studies and tender documents, USD 60 million for sanitation and hygiene infrastructure interventions, and USD 4 million to ensure access to sustainable sanitation services in urban centres.

- Period 2025-2030 - During this period, it is planned to build/rehabilitate the sanitation and hygiene infrastructure in and around the city centre, with a conventional reticulated/simplified network solution and individual house connections. The urban sanitation network is the first intervention to be carried out and must go hand in hand with the drinking water supply network to the houses. Meanwhile, in parallel, the toilets, connections to the network and the treatment plant are also built, as well as the interceptors/pump stations to transport the wastewater to the treatment plant. In peri-urban areas where households only have access to public standpipes, the construction/rehabilitation of an on-site sanitation solution is planned (small flush toilets with washbasins at the rate of one toilet per 15 inhabitants, sludge pits and infiltration wells for washbasin water). In parallel, the sludge treatment plant will be built and a sludge management system will be set up to collect and transport the sludge from households to the plant. The planned investments for construction/rehabilitation have been estimated at USD 350 million (70% of the total investment in urban sanitation infrastructure) and 1 MUSD to train the national private sector for the management, operation and maintenance of urban sanitation services.
- Period 2030-2040 - During this period, it is planned to complete the interceptor systems/pump stations and wastewater and sludge treatment plants, and to carry out network extensions to serve the population of the new urbanisations. The investments planned for the construction/rehabilitation of the infrastructures have been estimated at 96 MUSD.
- The total investment in sanitation and hygiene infrastructure for cities in the OMVG area and per country is estimated at:
 - OMVG area: 505.8 MUSD
 - Gambia: USD 80.6 million
 - Guinea: USD 43.1 million
 - Guinea Bissau: USD 61.4 million
 - Senegal: USD 320.7 million
 - the 5 cities SONES: 254.7 MUSD
 - Other cities: USD 65.9 million

Village sanitation and hygiene: USD277 million

- Period 2022-2025 - During this period, it is planned to carry out the rehabilitation of existing sanitation and hygiene infrastructure and to continue the construction of infrastructure with ongoing projects (notably the PEAMIR, AADEPA/G2G and IDB-WAEMU projects in Senegal for rural sanitation). The construction, rehabilitation and strengthening of priority sanitation and hygiene infrastructures must not compromise future new constructions. The planned investment in sanitation infrastructure is USD 40 million. The other investments are USD 13.2 million for studies and tender documents, and USD 1 million for mobilising and sensitising the population to put an end to OD.
- Period 2025-2040 - During this period, sanitation and hygiene infrastructure is planned to be built/rehabilitated progressively and at a constant pace over the 15-year period from 2025 - 2040. The infrastructure envisaged in this sectoral plan is small flush toilets with washbasins at a rate of one toilet per 15 inhabitants, accompanied by double sludge pits and infiltration wells for washbasin water. The studies to be carried out will specify the solutions to be implemented in the villages. The investments planned for the period 2025 - 2030 are estimated at USD 100 million for sanitation infrastructure interventions and USD 4 million for mobilising and raising awareness among the population to put an end to OD. In the period 2030-2040, investments in infrastructure are estimated at USD 137 million.
- The total investment in village sanitation infrastructure in the OMVG area and per country is estimated at:
 - OMVG area: 277.1 MUSD
 - Gambia: USD 44.5 million
 - Guinea: USD 89.5 million

- Guinea Bissau: USD 32.3 million
- Senegal: USD 110.8 million

DETAILED INVESTMENT PLAN

Activities	Details	Budget (MUSD)	2025	2030	2040
Drinking Water Supply, Sanitation and Health Sector		2 818,0	573,5	1 525,8	628,1
Strategic Axis 1	Ensure equitable and sustainable access to affordable drinking water for all	1 656,0	290,8	970,0	395,2
			18%	59%	24%
Provision 1.1	Ensure access to adequate drinking water services in urban areas, in quantity, at home or nearby, for the urban and rural population of the three OMVG basins	1 648,5	283	970	395
Measure 1.1.1	Construction / rehabilitation / strengthening and monitoring of the execution of water supply systems, treatment, storage and drinking water networks and connections in urban centres	513,6	65,0	330,0	118,6
Measure 1.1.2	Construction / rehabilitation / strengthening and monitoring of the execution of drinking water infrastructure (borehole, solar pump / electrical network, chlorination station, water tower, networks and standpipe connections), for 70% of the village population	799,2	65,0	540,0	194,2
Measure 1.1.3	Construction/rehabilitation and monitoring of BHPP implementation works for 30% of the village population. Existing boreholes are rehabilitated and strengthen drinking water points or can provide an alternative water source for livestock and agriculture	282,4	100,0	100,0	82,4
Measure 1.1.4	Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of drinking water supply infrastructure in urban centres	17,1	17,1	-	-
Measure 1.1.5	Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of drinking water supply infrastructure in the villages	36,2	36,2	-	-
Provision 1.2	Ensure the implementation of a geographic information system for drinking water supply infrastructures in the OMVG area	2,5	2,5		
Measure 1.2.1	Development of a database of drinking water supply infrastructures in each of the OMVG catchment areas in liaison with the water resources agencies and the supervisory ministries of the four Member States	2,5	2,5	-	-
Provision 1.3	Ensure governance of the sector in the context of existing and emerging challenges	0	0	0	0
Measure 1.3.1	Capacity building of the institutions responsible for the drinking water sub-sector in each of the member states and in the OMVG				
Measure 1.3.2	Training of managers of institutions responsible for the drinking water sub-sector in each of the member states and in the OMVG				
Provision 1.4	Ensure access to a sustainable, quality drinking water service	5,0	5,0	0	0
Measure 1.4.1	Training of the private sector in each country for the management, operation and maintenance of drinking water networks and BHPP	2,0	2,0	-	-
Measure 1.4.2	Establishment/strengthening of systems for monitoring, control and technical and financial evaluation of management performance, operation and maintenance of drinking water networks and BHPP in rural areas	3,0	3,0	-	-
TOTAL Strategic Axis 1	Ensure equitable and sustainable access to affordable drinking water for all	1 656,0	290,8	970,0	395,2

Activities	Details	Budget (MUSD)	2025	2030	2040
Strategic Axis 2	Ensure equitable and sustainable access to adequate sanitation and hygiene services for all and end open defecation	823,0	139,1	451,0	232,9
			17%	55%	28%
Provision 2.1	Ensure access to adequate sanitation and hygiene services for the urban and rural population in the OMVG area	813	130	450	233
Measure 2.1.1	Construction/rehabilitation and monitoring of sanitation and hygiene infrastructure implementation works, off-site in and around the city centre, and on-site in the peri-urban areas of the cities for the population of the urban centres	505,8	60,0	350,0	95,8
Measure 2.1.2	Construction/rehabilitation and monitoring of the implementation of on-site sanitation and hygiene infrastructures for the population in rural areas	277,1	40,0	100,0	137,1
Measure 2.1.3	Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of sanitation and hygiene infrastructure in urban centres	16,9	16,9	-	-
Measure 2.1.4	Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of sanitation and hygiene infrastructure in rural areas	13,2	13,2	-	-
Provision 2.2	End OD and educate communities on good sanitation and hygiene practices	5	5,0		
Measure 2.2.1	Mobilise and raise awareness of the population to end OD	5	5,0	-	-
Provision 2.3	Ensure governance of the sector in the context of existing and emerging challenges				
Measure 2.3.1	Capacity building of institutions responsible for the sanitation and hygiene sub-sector in each of the Member States and in the OMVG				
Measure 2.3.2	Training of managers of institutions responsible for the sanitation and hygiene sub-sector in each of the Member States and in the OMVG				
Provision 2.4	Ensure access to sustainable, quality sanitation and hygiene services in the OMVG area	5	4,0	1,0	
Measure 2.4.1	Training of the private sector in each country for the management, maintenance and operation of sanitation infrastructure in urban centres	2	1,0	1,0	
Measure 2.4.2	Establishment/strengthening of a system for monitoring, control and technical and financial evaluation of the management, operation and maintenance performance of the sanitation service in urban centres	3	3,0		
TOTAL Strategic Axis 2	Ensure equitable and sustainable access to adequate sanitation and hygiene services for all and end open defecation	823,0	139,1	451,0	232,9

5. PROGRAMME OF MEASURES

Activities	Details	Budget (MUSD)	2025	2030	2040
Strategic Axis 3	Ensure equity of access for all to quality health care and services and strengthen the prevention and management of communicable and non-communicable diseases	339	146	107	87
			43%	32%	26%
Provision 3.1	Ensure the availability of functional health structures, with well-trained staff and sufficient quantity and quality of medicines for the effective care of all sections of the population	146	64	41	41
Measure 3.1.1	Construction and equipping of 30 new posts, 10 health centres and 3 referral hospitals	30	30		
Measure 3.1.2	Annual recruitment of adequate health personnel (doctors, midwives, nurses, laboratory assistants, pharmacists)	65	15	25	25
Measure 3.1.3	Establish a system for the supply of quality medicines and avoidance of shortages of essential medicines in all health facilities	10	5	3	2
Measure 3.1.4	Strengthen community-based health initiatives	41	14	13	14
Provision 3.2	Ensure adequate financing of the health sector with the mobilisation of endogenous and external resources	5	1,6	1,8	1,6
Measure 3.2.1	Increase health expenditure to 15% of the national budget in line with commitments made by states	1	0,3	0,4	0,3
Measure 3.2.2	Stimulation of national initiatives for the mobilisation of endogenous resources (corporate social responsibility)	1	0,3	0,4	0,3
Measure 3.2.3	Implement advocacy for greater mobilisation of international financial resources	3	1,0	1,0	1,0
Provision 3.3	Ensure the implementation of an efficient information system with a dynamic collection of reliable health information	16	7	7	2
Measure 3.3.1	Strengthen the quality of health data with a DHIS2-based monitoring system	10	5	5	-
Measure 3.3.2	Development of the skills of health workers through training in the collection, storage and maintenance of reliable and relevant health databases	6	2	2	2

Provision 3.4	Ensure access to health information, disease prevention and effective care	124	45	43	36
Measure 3.4.1	Update and disseminate guidelines for the management of diseases under surveillance	4	2	2	-
Measure 3.4.2	Improve access to treatment for good patient care	10	4	3	3
Measure 3.4.3	Improve access to means of prevention against communicable diseases (pandemics)	100	35	35	30
Measure 3.4.4	Promotion of maternal and child health	10	4	3	3
Provision 3.5	Ensure an effective epidemiological surveillance system for early detection of epidemiological threats and a rapid and adequate response	18	8	6	4
Measure 3.5.1	Update and implementation of disease surveillance guidelines	8	3	3	2
Measure 3.5.2	Strengthen sentinel sites for epidemiological surveillance in the OMVG area	10	5	3	2
Provision 3.6	Ensure the establishment of equipped health structures responsible for emergency health operations at the decentralised level	30	20	8	2
Measure 3.6.1	Establishment of health emergency operations centres in peripheral regions for better preparedness against disasters and pandemics	20	15	5	-
Measure 3.6.2	Establish cross-border surveillance of epidemics	10	5	3	2
TOTAL Strategic Axis 3	Ensure equity of access for all to quality health care and services and strengthen the prevention and management of communicable and non-communicable diseases	339	146	107	87
TOTAL BUDGET Programme		2 818	576	1 528	715

5.4 OWNERSHIP OF THE MEASURES

Project owner	List of provisions / measures	Estimated cost MUS\$	2022-2025	2025-2030	2030-2040	Planned / anticipated financing
Strategic Axis 1 - Ensure equitable, sustainable and affordable access to safe drinking water for all						
MoEn/ NAWEC; MHA/SEG; MERN/DGRH; MHA/SONES	1.1.1	514	65	330	118	-
MoFWR/ DWR; MHA/SNAPE; MERN/DGRH; MHA/OFOR	1.1.2	799	65	540	194	-
MoFWR/ DWR; MHA/SNAPE; MERN/DGRH; MHA/OFOR	1.1.3	282	100	100	82	-
MoEn/ NAWEC; MHA/SEG; MERN/DGRH; MHA/SONES	1.1.4	17	17	-	-	-
MoFWR/ DWR; MHA/SNAPE; MERN/DGRH; MHA/OFOR	1.1.5	36	36	-	-	-
OMVG	1.2.1	2,5	2,5	-	-	-
OMVG and MoEn/NAWEC; MoFWR/DWR; MHA/SEG / SNAPE; MERN/DGRH; MHA/SONES/OFOR	1.3.1	-	-	-	-	-
OMVG and MoEn/ NAWEC; MoFWR/ DWR; MHA/SEG / SNAPE; MERN/DGRH; MHA/SONES/OFOR	1.3.2	-	-	-	-	-
MoFWR/ DWR; MHA/SNAPE; MERN/DGRH; MHA/OFOR	1.4.1	2	2	-	-	-
MoFWR/ DWR; MHA/SNAPE; MERN/DGRH; MHA/OFOR	1.4.2	3	3	-	-	-
Strategic Axis 2 - Ensure equitable and sustainable access to adequate sanitation and hygiene services for all and end open defecation						
MoEn/ NAWEC; MHA; MERN/DGRH; MHA/ONAS	2.1.1	506	60	350	96	-
MoFWR/ DWR; MHA/SNAPE; MERN/DGRH; MHA/OFOR	2.1.2	277	40	100	137	-
MoEn/ NAWEC; MHA; MERN/DGRH; MHA/ONAS	2.1.3	17	17	-	-	-
MoFWR/ DWR; MHA/SNAPE; MERN/DGRH; MHA/OFOR	2.1.4	13	13	-	-	-
MoFWR/ DWR; MHA/SNAPE; MERN/DGRH; MHA/OFOR	2.2.1	5	5	-	-	-
OMVG and MoEn/NAWEC; MoFWR/DWR; MHA/ SNAPE; MERN/DGRH; MHA/ONAS	2.3.1	-	-	-	-	-
OMVG and MoEn/NAWEC; MoFWR/DWR; MHA/ SNAPE; MERN/DGRH; MHA/ONAS	2.3.2	-	-	-	-	-
MoEn/ NAWEC; MHA; MERN/DGRH; MHA/ONAS	2.4.1	2	1	1	-	-
MoEn/ NAWEC; MHA; MERN/DGRH; MHA/ONAS	2.4.2	3	3	-	-	-
Strategic Axis 3 - Ensure equitable access to quality health care and services for all and strengthen the prevention and management of communicable and non-communicable diseases						
Ministry of Health (MoH) National Agencies	3.1.1	30	30	-	-	-
MoH, Ministry of Public Service	3.1.2	65	15	25	25	-

Strategic Axis 3 - Ensure equitable access to quality health care and services for all and strengthen the prevention and management of communicable and non-communicable diseases						
Health facilities (HF)/National Supply Pharmacies (NSP), Regional Pharmacies (RP), Drug Control Laboratory	3.1.3	10	5	3	2	-
MoH/ Regional Medical Officers (RMOs), District Medical Officers (DMOs), Chief Nursing Officers (CNOs), State Midwives (SMs)	3.1.4	41	14	13	14	-
Civil Society (CS), Opinion Leaders, Heads of State Conference	3.2.1	1	0.3	0.4	0.3	-
Communication Unit of the Ministries of Health, SC	3.2.2	1	0.3	0.4	0.3	-
CS /MoH/NGO	3.2.3	3	1	1	1	-
CS /Hospitals/PrS	3.3.1	10	5	5	-	-
MoH/National Health Information System/RMOs/DMOs	3.3.2	6	2	2	2	-
MoH /Research Institute/Health Programmes (PrS)	3.4.1	4	2	2	-	-
MoH / RP / NSP /Pharmacy Depots	3.4.2	10	4	3	3	-
Health structures/ MoH /Development partners	3.4.3	100	35	35	30	-
Health structures	3.4.4	10	4	3	3	-
MoH /PrS	3.5.1	8	3	3	2	-
PrS /Medical regions/Health districts/Regional laboratories/Health facilities laboratory	3.5.2	10	5	3	2	-
MoH	3.6.1	20	15	5	-	-
MoH	3.6.2	10	5	3	2	-

5.5 IMPLEMENTATION FRAMEWORK

	Description	IOV indicator (Baseline)	Budget (MUSD)	Actors	Period (years)	sources verification	Risks and assumptions
Strategic areas	Strategic Axis 1 - Ensure equitable, sustainable and affordable access to safe drinking water for all						
	Strategic Axis 2 - Ensure equitable and sustainable access to adequate sanitation and hygiene services for all and end Lack of access to sanitation						
	Strategic Axis 3 - Ensure equitable access to quality health care and services for all and strengthen the prevention and management of communicable and non-communicable diseases						
Action Plan 1 Drinking water supply	Project sheet 1.1 : measure 1.1.1 Construction / rehabilitation / strengthening and monitoring of the implementation works of water supply, treatment, storage and drinking water networks and connections in urban centres	Water infrastructure for the population of urban centres	514	MoEn/ NAWEC; MHA/SEG; MERN/DGRH; MHA/SONES	2023-2040	Annual report of the OMVG institutions and Ministries by Member State	Member States and Donors funds have mobilised the funds
	Project fiche 1.2 : measure 1.1.2 Construction / rehabilitation / strengthening and monitoring of the execution of drinking water infrastructure (borehole, solar pump / electrical network, chlorination station, water tower, networks and standpipe connections), for 70% of the village population	Water infrastructure for 70% of the village population	799	MoFWR/ DWR; MHA/SNAPE; MERN/DGRH; MHA/OFOR	2023-2040	Annual report of the OMVG institutions and Ministries by Member State	Member States and Donors funds have mobilised the funds
	Project fiche 1.3 : measure 1.1.3 Construction/rehabilitation and monitoring of BHPP implementation works for 30% of the village population. Existing boreholes are rehabilitated and reinforce drinking water points or can provide an alternative water source for livestock and agriculture	Water infrastructure for 30% of the village population	282	MoFWR/ DWR; MHA/SNAPE; MERN/DGRH; MHA/OFOR	2023-2040	Annual report of the OMVG institutions and Ministries by Member State	Member States and Donors funds have mobilised the funds
	Project fiche 1.4 : measure 1.1.4 Conducting studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of drinking water supply infrastructure in urban centres	Studies/projects/ tender documents for urban centres	17	MoEn/ NAWEC; MHA/SEG; MERN/DGRH; MHA/SONES	2023-2025	Annual report of the OMVG institutions and Ministries by Member State	Member States and Donors funds have mobilised the funds

	Description	IOV indicator (Baseline)	Budget (MUSD)	Actors	Period (years)	sources verification	Risks and assumptions
	Project fiche 1.5: Measure 1.1.5 Carrying out studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of drinking water supply infrastructure in the villages	Studies/projects/ tender documents for villages	36	MoFWR/ DWR; MHA/SNAPE; MERN/DGRH; MHA/OFOR	2023-2025	Annual report of the OMVG institutions and Ministries by Member State	Member States and Donors funds have mobilised the funds
	Project fiche 1.6 : measure 1.2.1 Development of a database of drinking water supply infrastructures in each of the OMVG river basins in liaison with the water resources agencies and the supervisory ministries of the four Member States	Water supply database for each of the 3 OMVG basins	2,5	OMVG MoEn/NAWEC; MoFWR/ DWR; MHA/SEG/ SNAPE MERN/DGRH; MHA/SONES/ OFOR	2023 and 2024	Annual report of the OMVG institutions and Ministries by Member State	Member States and Donors funds have mobilised the funds
	Project fiche 1.7 : measure 1.3.1 Capacity building of the institutions responsible for the drinking water sub-sector in each of the member states and in the OMVG	Capacity building of institutions responsible for the drinking water sector	-	OMVG and MoEn/NAWEC; MoFWR/DWR; MHA/SEG / SNAPE; MERN/DGRH; MHA/SONES/ OFOR	2023-2030	Annual report of the OMVG institutions and Ministries by member State	Member States and Donors funds have mobilised the funds
	Project fiche 1.8 : measure 1.3.2 Training of managers of institutions responsible for the drinking water sub-sector in each of the member states and in the OMVG	Training of managers in the institutions responsible for the drinking water sector	-	OMVG and MoEn/NAWEC; MoFWR/DWR; MHA/SEG / SNAPE; MERN/DGRH; MHA/SONES/ OFOR	2023-2030	Annual report of the OMVG institutions and Ministries by Member State	Member States and Donors funds have mobilised the funds
	Project fiche 1.9 : measure 1.2.1 Training of the private sector in each country for the management, operation and maintenance of drinking water networks and BHPP	Training of 500 people for the operation and maintenance of water supply in rural areas	2	MoFWR/ DWR; MHA/SNAPE; MERN/DGRH; MHA/OFOR NGOs	2024 and 2025	Annual report of the OMVG institutions and Ministries by Member State	Member States and Donors funds have mobilised the funds
	Project sheet 1.10: measure 1.2.2 Establishment/strengthening of systems for monitoring, control and technical and financial evaluation of management performance, operation and maintenance of drinking water networks and BHPP in rural areas	Establishment/strengthening of a system for monitoring and controlling the performance of drinking water services in rural areas	3	MoFWR/ DWR; MHA/SNAPE; MERN/DGRH; MHA/OFOR	2023-2025	Annual report of the OMVG institutions and Ministries by Member State	Member States and Donors funds have mobilised the funds

5. PROGRAMME OF MEASURES

	Description	IOV indicator (Baseline)	Budget (MUSD)	Actors	Period (years)	sources verification	Risks and assumptions
Action Plan 2 Sanitation and hygiene	Project sheet 2.1: Measure 2.1.1 Construction/rehabilitation and monitoring of sanitation and hygiene infrastructure implementation works, off-site in and around the city centre and on-site in the peri-urban areas of the cities for the population of the urban centres	Sanitation and hygiene infrastructure for urban centres	506	MoEn/NAWEC; MHA/DGA MERN/DGRH; MHA/ONAS	2023-2040	Annual report of the OMVG institutions and Ministries by Member State	Member States and Donors funds have mobilised the funds
	Project sheet 2.2 : measure 2.1.2 Construction/rehabilitation and monitoring of the implementation of on-site sanitation and hygiene infrastructures for the population in rural areas	Sanitation and hygiene infrastructure for villages	277	MoFWR/ DWR; MHA/SNAPE; MERN/DGRH; MHA/ONAS	2023-2040	Annual report of the OMVG institutions and Ministries by Member State	Member States and Donors funds have mobilised the funds
	Project sheet 2.3 : measure 2.1.3 Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of sanitation and hygiene infrastructure in urban centres	Studies/projects/ tender documents for urban centres	17	MoEn/NAWEC; MHA/DGA MERN/DGRH; MHA/ONAS	2023-2025	Annual report of the OMVG institutions and Ministries by Member State	Member States and Donors funds have mobilised the funds
	Project sheet 2.4 : measure 2.1.4 Conduct studies, projects and tender documents for the planning, design and detailing of solutions for the implementation of sanitation and hygiene infrastructure in rural areas	Studies/projects/ tender documents for villages	13	MoFWR/ DWR; MHA/SNAPE; MERN/DGRH; MHA/ONAS	2023-2025	Annual report of the OMVG institutions and Ministries by Member State	Member States and Donors funds have mobilised the funds
	Project sheet 2.5 : measure 2.2.1 Mobilise and raise awareness of the population for the elimination of OD	Mobilising and raising awareness of the population for the elimination of OD	5	MoFWR/ DWR; MHA/SNAPE; MERN/DGRH; MHA/ONAS NGOs	2023-2030	Annual report of the OMVG institutions and Ministries by Member State	Member States and Donors funds have mobilised the funds
	Project sheet 2.6: Measure 2.3.1 Capacity building of institutions responsible for the sanitation and hygiene sub-sector in each of the Member States and in the OMVG	Capacity building of institutions responsible for the sanitation and hygiene sector	-	OMVG and MoEn/NAWEC; MoFWR/DWR; MHA/SNAPE; MERN/DGRH; MHA/ONAS	2023-2030	Annual report of the OMVG institutions and Ministries by Member State	Member States and Donors funds have mobilised the funds
	Project sheet 2.7 : Measure 2.3.1 Training of managers of institutions responsible for the sanitation and	Training of managers of institutions responsible for the	-	OMVG and MoEn/NAWEC; MoFWR/DWR;	2023-2030	Annual report of the OMVG institutions and	Member States and Donors funds have mobilised

	Description	IOV indicator (Baseline)	Budget (MUSD)	Actors	Period (years)	sources verification	Risks and assumptions
	hygiene sub-sector in each of the Member States and in the OMVG	sanitation and hygiene sector		MHA/SNAPE; MERN/DGRH; MHA/ONAS		Ministries by Member State	the funds
	Project sheet 2.8: Measure 2.4.1 Training of the private sector in each country for the management, maintenance and operation of sanitation infrastructures in urban centres	Training of the private sector for the operation and maintenance of sanitation and hygiene in urban centres	2	MoEn/NAWEC; MHA/DGA MERN/DGRH; MHA/ONAS	2025 and 2028	Annual report of the OMVG institutions and Ministries by Member State	Member States and Donors funds have mobilised the funds
	Project sheet 2.9 : measure 2.4.2 Establishment/strengthening of a system for monitoring, control and technical and financial evaluation of the management, operation and maintenance performance of the sanitation service in urban centres	Establishment/strengthening of a monitoring and control system for sanitation services in urban centres	3	MoEn/NAWEC; MHA/DGA MERN/DGRH; MHA/ONAS	2023-2025	Annual report of the OMVG institutions and Ministries by Member State	Member States and Donors funds have mobilised the funds
Action Plan 3 Health	Project sheet 3.1: Measure 3.1.1 Construction and equipment of 30 new health posts, 10 health centres and 3 referral hospitals	Number of functional health posts built in 2024 and 2040 Number of functional health centres built between 2024 and 2040 Number of functional reference hospitals built between 2024 and 2040 in the OMVG basin	30	Ministry of Health of the different countries, national agency in charge of the built heritage of the states	2023-2025	Tender documents Minutes of reception Invoices for equipment purchases	-
	Project sheet 3.2: Measure 3.1.2 Annual recruitment of adequate health personnel (doctors, midwives, nurses, laboratory assistants, pharmacists)	Number of qualified health personnel per 10,000 inhabitants	65	Ministry of Health / Ministry of Public Service of the OMVG countries	2023-2040	Call for applications Job descriptions Employment contract List of health personnel in the OMVG medical regions	Member States and Donors funds have mobilised the funds
	Project sheet 3.3 measure 3.1.3 Establishment of a system for the supply of quality medicines and avoidance of shortages of essential medicines in all health structures	% of shortage of essential medicines in all health facilities	10	All health facilities - National supply pharmacy - Regional supply pharmacy	2023-2040	Stock cards of the pharmacies of the health facilities Pharmacy Management Sheet	Member States and Donors funds have mobilised the funds

5. PROGRAMME OF MEASURES

	Description	IOV indicator (Baseline)	Budget (MUSD)	Actors	Period (years)	sources verification	Risks and assumptions
	Project fiche 3.4 : Measure 3.1.4 Strengthen community-based health initiatives	Number of home-based care providers recruited Number of community watch and alert cells set up	41	Ministries of Health, Regional Chief Doctors, District Chief Doctors; Head Nurses, Midwives	2023-2040	List of community staff by health post	Member States and Donors funds have mobilised the funds
	Project fiche 3.5 : Measure 3.2.1 Increase health expenditure to 15% of the national budget in accordance with the commitments made by the States	% of health expenditure in relation to the national budget of countries	1	Civil society, opinion leaders, heads of state conference, national assembly	2023-2040	Budget by ministry voted by the national assembly	-
	Project sheet 3.6: Measure 3.2.2 Stimulate national initiatives for the mobilisation of endogenous resources (corporate social responsibility)	Number of advocacy actions carried out at the local business level Rate of increase of the national contribution to health expenditure	1	Communication unit of the Ministry of Health, civil society	2023-2040	Minutes of meetings Mission reports Attendance sheet for advocacy meeting	-
	Project fiche 3.7: Measure 3.2.3 Implement advocacy for greater mobilisation of international financial resources	Rate of increase of international contribution on health expenditure	3	Civil society, Ministry of Health, NGOs working in health	2023-2040	Minutes of meetings Mission reports Attendance sheet for advocacy meeting	-
	Project fiche 3.8: Measure 3.3.1 Strengthen the quality of health data with a monitoring system based on DHIS2	% of timeliness and completeness of health data at the level of health facilities % of report entered in DHIS2	10	National Health Information System (NHIS) of the different countries	2023-2040	Supervision report DHIS2 Audit Report	-

	Description	IOV indicator (Baseline)	Budget (MUSD)	Actors	Period (years)	sources verification	Risks and assumptions
	Project sheet 3.9: Measure 3.3.2 Development of health workers' skills through training in the collection, storage and maintenance of reliable and relevant health databases	Develop the skills of health workers through training in the collection, storage and maintenance of reliable and relevant health databases.	6	National Health Information System (NHIS) of the different countries	2023-2040	Supervision report	
	Project sheet 3.10 : measure 3.4.1 Update and disseminate guidelines for the management of diseases under surveillance	Number of health facilities where updated national guidelines are available	4	Ministry of Health - Institute for Health Research - Health Programmes	2023-2040	Report on supervision missions	-
	Project sheet 3.11 : measure 3.4.2 Improve access to treatment for good patient care	Quantity of drugs (anti-malarials, anti-tuberculosis, HIV-AIDS) available compared to the estimated need	10	Ministry of Health, National Supply Pharmacies, Regional Supply Pharmacies and pharmacy stockists at health facilities.	2023-2040	Stock sheet Supervision mission report	-
	Project sheet 3.12 : measure 3.4.3 Improve access to means of prevention against communicable diseases (pandemics)	Insecticide-treated net coverage rate. Coverage rate of seasonal malaria prevention chemo in children under 120 months (SPC) Coverage rate Neglected Tropical Disease Campaign Coverage rate of intermittent preventive treatment during pregnancy (IPTp) Vaccination coverage among children Vaccine coverage rate COVID	100	All health facilities in the Gambia River Basin area - Ministry of Health - Development Partners	2023-2040	Mass distribution campaign report	Withdrawal of partner funding

5. PROGRAMME OF MEASURES

	Description	IOV indicator (Baseline)	Budget (MUSD)	Actors	Period (years)	sources verification	Risks and assumptions
		Coverage rate for in-house spraying Hepatitis B vaccination coverage of children at birth.					
	Project fiche 3.13 : measure 3.4.4 Promotion of maternal and child health	Prenatal consultation coverage among pregnant women of births attended by trained personnel of home births Number of Social Mediations to strengthen community-based emergency obstetric and neonatal care carried out	10	Ministries of health - health system actors - national health education and information service	2023-2040	Health Structures Report DHS surveys MICS surveys	Member States and Donors funds have mobilised the funds
	Project fiche 3.14 : measure 3.5.1 Update and implement disease surveillance guidelines	Number of updated monitoring guidelines of health workers using good surveillance guidelines	8	Ministries of Health - National Health Programmes	2023-2040	Workshop report Workshop attendance list	-
	Project fiche 3.15 : measure 3.5.2 Strengthen sentinel sites for epidemiological surveillance in the OMVG area	Number of sentinel sites established in the OMVG region Number of sentinel sites with adequate equipment for epidemiological surveillance	10	National disease control programmes - Medical regions - Health districts	2023-2030	Health centre report Annual work plan of the Medical Regions Epidemiological bulletins	Member States and Donors funds have mobilised the funds
	Project fiche 3.16 : measure 3.6.1 Establish health emergency operations centres in peripheral regions for better preparedness against disasters and pandemics	Number of health emergency operation centres (HEOCs) built in the OMVG basin area Number of functional HEOCs	20	Ministry of Health	2023-2030	Tender documents Acceptance report Equipment invoices	Member States and Donors funds have mobilised the funds

	Description	IOV indicator (Baseline)	Budget (MUSD)	Actors	Period (years)	sources verification	Risks and assumptions
	Project sheet 3.17 : measure 3.6.2 Establish cross-border surveillance of epidemics	Number of meetings of the Cross-Border Monitoring Steering Committee	10	Ministries of Health	2023- 2040	Minutes of the meeting Decision to appoint the members of the steering committee	-

6 ASSESSMENT OF THE SOCIAL AND ENVIRONMENTAL IMPACTS OF THE SECTOR PLAN

This chapter does not replace the detailed impact assessments that will be carried out for the various measures, but it gives an overview of the possible impacts and the avoidance, mitigation or compensation measures.

DRINKING WATER SUPPLY

The main environmental and social impacts of the implementation of the drinking water supply infrastructure are fundamentally positive due to the nature of the works envisaged, notably, access to a safely managed drinking water service for 4,696,000 people (80% of the population in 2040) through the production, treatment, transport and distribution of drinking water from an improved source located on or near the site and available when needed, free of faecal and priority chemical contamination and access to a safe drinking water supply for all, transport and distribution of drinking water from an improved source located on or near the site and available when needed, free from contamination by faecal matter and priority chemicals, and access to a basic service from improved sources near households for 1,169,000 people (20% of the population in 2040) who live in small villages of less than 400 inhabitants, so that the entire population of the OMVG basins is served by 2040. This translates into very significant positive socio-economic impacts of reducing water-borne diseases among the population, as well as creating jobs for women market gardeners and improving school enrolment rates for girls, and will contribute to poverty reduction and improved quality of life for people.

The expected negative impacts will occur mainly during the execution of the construction/rehabilitation and strengthening of the drinking water supply infrastructure. They include damage to roads, sedimentation of watercourses and storm water drainage systems, water pollution, air and noise pollution, destruction of flora and fauna and occupational health and safety risks.

Improvement and mitigation measures will have to be put in place in order to strengthen the positive effects and mitigate possible negative environmental and social impacts. As part of the studies and projects for the drinking water supply infrastructure, environmental and social management plans will be prepared to ensure the effective implementation of mitigation measures.

Projects must include a monitoring programme to assess the effectiveness of the mitigation and compensation measures implemented. Contractors are responsible for implementing these measures defined in the Environmental and Social Management Plan (ESMP) in order to limit negative social and environmental impacts and ensure the long-term social and environmental sustainability of the project. The project owner will be responsible for monitoring any observed impacts and ensuring the implementation of the proposed measures.

SANITATION AND HYGIENE

The main environmental and social impacts of the provision of sanitation and hygiene infrastructure are also fundamentally positive. The projects will provide access to a sanitation and hygiene service through safely managed conventional network infrastructure for the population of urban centres (1,676,000 people in 2040) and for the 4,189,000 people in villages in 2040. This translates into positive and very significant socio-economic and environmental impacts in terms of improving the health conditions of the population and reducing the risk of faecal contamination, improving the productive capacity of women market gardeners and improving the quality of life of the population in general, as well as preserving the soil and water resources in the face of wastewater discharges.

As with drinking water supply, the expected negative impacts will occur mainly during the execution of the construction/rehabilitation and strengthening of sanitation and hygiene infrastructure. These include damage to roads, sedimentation of watercourses and storm water drainage systems, water pollution, air and noise pollution, destruction of flora and fauna, and occupational health and safety risks.

Improvement and mitigation measures will have to be put in place in order to enhance the positive effects and mitigate possible negative environmental and social impacts. Environmental and social management plans will be prepared as part of the studies and projects for water supply and sanitation infrastructure to ensure effective implementation of mitigation measures.

Projects must include a monitoring programme to evaluate the effectiveness of the mitigation measures implemented. Contractors are responsible for implementing the mitigation measures defined in the Environmental and Social Management Plan (ESMP) to ensure the long-term social and environmental sustainability of the project. The project owner will be responsible for monitoring any observed impacts and ensuring the implementation of the proposed mitigation measures.

HEALTH

The expected impacts are positive overall and will result in a significant reduction in morbidity and mortality. The implementation of the sectoral plan will make it possible to restore territorial equity in terms of the availability of quality health care and services. The life expectancy of the population will increase, and the promotion of attitudes and practices allowing good health will be carried out by community networks of health actors.

Vaccination coverage will improve, which will have a positive impact on disease prevention. Functional sentinel sites and emergency operations management centres will be established in the OMVG regions, enabling countries to strengthen their capacity to respond to health threats. The availability of quality medicines will improve patient care and prevent drug resistance. The effective establishment of a steering committee for cross-border control will facilitate the implementation of a coherent strategy to avoid the reintroduction of certain diseases that are being eliminated in some countries.

7 CONCLUSIONS AND RECOMMENDATIONS

The Drinking Water Supply, Sanitation and Health Sector Plan for the three OMVG basins aims to achieve the Sustainable Development Goals (SDGs) by 2030, and to continue until 2040. This plan builds on previous strategies and plans of member states, integrating the 2030 Agenda into the sub-sector.

As part of the 2030 Agenda for Sustainable Development, SDG6 calls for universal and equitable access to safe and affordable drinking water by 2030 through target 6.1, and for equitable access to adequate sanitation and hygiene and an end to open defecation for all through target 6.2, with particular attention to the needs of women and girls and people in vulnerable situations.

The Phase 1 diagnostic study framed the current situation of the drinking water supply and sanitation sub-sector in the regions of the Member States in the OMVG area. The diagnosis identified the main challenges to be addressed, particularly with regard to the access of the population in rural areas to adequate drinking water and sanitation and hygiene services.

In the OMVG basins, a quarter of the total population is urban and three quarters of the total population is rural. It is therefore **essential to ensure that the entire rural population of the area has access to adequate services.**

The diagnosis of the drinking water supply service in the 3 OMVG basins showed that the percentage of the total population served by a basic water service is 62% in the 3 basins, i.e. 68% in the Gambia river basin, 40% in the Kayanga-Geba river basin and 57% in the Koliba-Corubal river basin.

The diagnosis of the sanitation service in the 3 OMVG basins showed that the percentage of the total population served by a basic and limited sanitation service is 32% in the 3 basins, i.e. 35% in the Gambia River basin, 13% in the Kayanga-Geba River basin and 37% in the Koliba-Corubal River basin.

The percentages of households with handwashing facilities are high in The Gambia (although there is often no water or soap available). In contrast, in Guinea and Guinea-Bissau, in the regions of Labé, Tombali and Quinara, there are virtually no handwashing facilities installed; and in Boké, Gabú and Bafatá, around 40% of households have handwashing facilities, but the percentage with water and soap is around 20%.

Within the framework of this sector plan, and taking into account the fact that the national sector plans have not yet been updated, model solutions have been considered in order to make an approximate assessment of the investments in the drinking water supply and sanitation sector up to 2040. The actual solutions that will be implemented will be the result of the in-depth and detailed studies that will be carried out as a follow-up to this sector plan. The typical solutions envisaged for the supply of drinking water and sanitation and hygiene in urban centres and villages integrate targets 6.1 and 6.2 of the sustainable development goals.

For sustainable and adequate drinking water services in urban and rural areas in the OMVG area in sufficient quantity, at or near households, 10 priority lines of action were identified. The following solutions were then proposed:

- Construction of new drinking water infrastructure and rehabilitation and strengthening of existing infrastructure for production, treatment, transport, storage and supply by drinking water networks in urban centres and the most populated villages, for 4,696,000 people (80% of the population) in 2040;
- Construction of new human-powered boreholes (HWPBs) in less populated villages for the population not yet served by improved water sources or served by improved water sources far from households, and rehabilitation of existing drinking water boreholes, for 1,169,000 people (20% of the population) by 2040.

For sustainable and adequate sanitation and hygiene services and the elimination of OD, for the urban and rural population in the OMVG area, 9 priority lines of action were identified. The following solutions have therefore been proposed:

- For city centres and their peripheries, the construction/rehabilitation of a conventional solution with a reticulated/simplified network and connections to houses where water is currently available in the home or will be in the future due to the development of the water supply is planned. In peripheral areas of city centres, the construction/rehabilitation of flush toilets with washbasins is also proposed. The wastewater generated in the city centres and their peripheries will be conveyed by interceptors/pump stations to the treatment plants. The population served by this solution will be approximately 1,136,000 people in 2040;
- For peri-urban areas with more anarchic construction and where access to water is through public standpipes, the construction/rehabilitation of on-site sanitation and hygiene infrastructure is planned. This solution includes small flush toilets and washbasins at a rate of one toilet per 15 inhabitants, sludge pits and infiltration wells for washbasin water, sludge treatment plants, and a sludge management system to transport the sludge to the plant. The population served by this solution is 540,100 people in 2040;
- For rural areas where little water is used, it is planned to build/rehabilitate on-site sanitation and hygiene infrastructures consisting of small flush toilets with washbasins at the rate of one toilet per 15 inhabitants, twin sludge pits, and infiltration wells for washbasin water, for the entire population of the villages (4,189,000 people in 2040).

The amount of funding required for the programme would be in the order of US\$2,479 million, including US\$1,656 million for drinking water supply and US\$823 million for sanitation and hygiene.

The amount of funding required for drinking water infrastructure in urban centres is USD 514 million and for sanitation and hygiene is USD 506 million, for a total of USD 1,019 million. The amount of funding required for village drinking water supply infrastructure is USD 1,082 million and for sanitation and hygiene is USD 277 million, for a total of USD 1,359 million.

The **health component** of the Sector Plan translates over a period of 17 years a vision that will restore territorial equity in terms of availability of quality services and care. It will enable the governments of the OMVG countries to improve their health indicators with a view to achieving SDG3. This plan will contribute to universal health coverage and will be based on **two major axes: health supply and resilience to health threats**.

16 priority lines of action have been identified in the field of health and their implementation requires the commitment of all actors (ministries of health, donors, and communities).

The infrastructures that will be built must be well maintained so that the expected results can be achieved. An important monitoring and evaluation component must be developed as well as good communication to facilitate its appropriation by the actors.

At a cost of US\$339 million, this plan will relieve the populations living in the three OMVG basins and create the conditions for emergence by 2040.

In this sector plan, the following actions are recommended:

- Priority completion of studies, projects and tender documents for drinking water supply and sanitation and hygiene services for urban centres;
- Priority completion of studies, projects and tender documents for drinking water supply and sanitation and hygiene services for villages;
- Construction/rehabilitation/enhancement and monitoring of the implementation of drinking water supply, sanitation and hygiene infrastructure in urban centres, considering the possible simultaneous implementation of water and sanitation networks in and around the city centres;
- Construction / rehabilitation / strengthening and monitoring of the execution of infrastructure for drinking water supply networks, BHPP and sanitation and hygiene infrastructure in the villages;

- Encourage Community Led Total Sanitation (CLTS) to achieve the end of open defecation which is a reality in rural areas of Guinea, Guinea Bissau and Senegal;
- Implement hygiene education, as the construction of sanitation facilities is only a partial response to the problem of poor sanitation and hygiene. It is essential to promote good hygiene practices, including hand washing with soap;
- The management, operation and maintenance of infrastructure and the monitoring, control and evaluation of the performance of the drinking water supply and sanitation service;
- Implementation of the 16 priority action lines identified in the health field;
- Good maintenance of the health infrastructure that will be built so that the expected results can be achieved;
- An important monitoring and evaluation component on health must be developed as well as good communication to facilitate its appropriation by the actors.

ANNEXES

Annexe 1. The Gambia - Data provided to the Consultant by NAWEC

Sub-sector	Type of data required	Specific data / indicator NAWEC Response (water)	NAWEC Response (Water)	Answer Qualification
General	Documentation	Any documentation of Strategies Policies and plans for water supply and sanitation	Water Supply and Sanitation Study of the Gambia	Document attached
Drinking Water		<ul style="list-style-type: none"> Geo- referenced mapping and characteristics of existing drinking water system <p><u>Water abstraction point:</u></p> <ul style="list-style-type: none"> Location, <ul style="list-style-type: none"> Village(s) and population served, <ul style="list-style-type: none"> Current and projected water demand (m³/hr or equiv.) <p><u>Water supply system:</u></p> <ul style="list-style-type: none"> Pumping stations, Tanks/storage Domestic and standpipe connections. Number per settlement and LGA 	<ul style="list-style-type: none"> N/A Various locations across the country Refer to GBOS for current population figures 38,400,057m³ (Data as at December 2020 -collected from sources where there are operable meters) There are 6 pumping stations 27,460m² 225 people per standpipe (20% of the 	<ul style="list-style-type: none"> In progress Fajara, Serekunda, Sukuta, Brikama, Gunjur, Mandinary, Jambur, Yundum, Kerr Serign, Kanifing, Kembujeh, Brufut, Brusubi, Salagi, Bwiam, Abuko, Jambanjelly, Sanyang, Tanji, Tujereng, Latriya, Jabang, Banyaka, Mamuda, Kasakunda, Kanuma, Jufureh, Sabaa, Farafenni, Mansakonko, Janjanbureh, Bansang and Basse, etc (see attached file: borehole details for specific borehole locations) Villages served include: Fajara, Serekunda, Sukuta, Brikama, Gunjur, Mandinary, Jambur, Yundum, Kerr Serign, Kanifing, Kembujeh, Brufut, Brusubi, Salagi, Bwiam, Abuko, Jambanjelly, Sanyang, Tanji, Tujereng, Latriya, Jabang, Banyaka, Mamuda, Kasakunda, Kanuma, Jufureh, Sabaa, Farafenni, Mansakonko, Janjanbureh, Bansang and Basse, etc NAWEC is undergoing assessment to determine its true demand at that time we will be able to comment on current and projected water demand Fajara, Serekunda, Sukuta, Brikama, Gunjur and Mile II Pumping Stations This is the design capacity Data from SNC Lavalin study (Water Supply and Sanitation

		<ul style="list-style-type: none">Wells by District and DistrictHand pumps by District LGA <p><u>Type of water treatment facilities</u></p> <ul style="list-style-type: none">Type of technology,Energy used in the systems (from the electrical grid, solar, thermal etc); typeOperating condition/statusOperating capacity	<p>population served), versus a total population of 656,027 in 2003</p> <ul style="list-style-type: none">N/AN/AAeration and DisinfectionElectrical gridRanges112,728m³/day	<p>Study of the Gambia - December 2005)</p> <ul style="list-style-type: none">Not under NAWEC roles and responsibilitiesNot under NAWEC roles and responsibilitiesChlorine used as disinfectionNAWEC uses electrical grid for its operationGood, fair and some need rehabilitation <p>This is the design capacity .NAWEC is currently undergoing assessment to determine its true demand at that time we will be able to comment on required capacity.</p>
Ongoing and planned projects in each town or LGA	<p>Characteristics of the drinking water supply systems as per the above</p> <ul style="list-style-type: none">Identification of towns/villages that do not yet have drinking water supply systems;Identification of problems in existing drinking water systems, including needs in capacity increase or extension to be taken into account in investments;Monitoring of water quality	<ul style="list-style-type: none">Refer to Village(s) and population servedVariousRefer to PURA	<ul style="list-style-type: none">Apart from the mentioned towns/villages, NAWEC does not have in record towns/ villages that do not yet have drinking water supply system. Contact Water ResourcesIron and nitrate, salt water intrusion, aging infrastructure and network, construction problems for exampleNAWEC rely on PURA's quarterly water quality monitoring	
Towns/villages that do not have drinking water systems	<ul style="list-style-type: none">List of settlements and population	<ul style="list-style-type: none">Refer to (Identification of towns/villages that do not yet have drinking water supply system)		
Issues, problems, challenges	<p>Identification of problems in existing drinking water systems with respect to:</p> <ul style="list-style-type: none">Existing capacityEnergy (cost/availability)	<ul style="list-style-type: none">Demand Challenges13,900,929 kwh	<ul style="list-style-type: none">Currently, there is a demand gap of 40% deficit between supply and demand (Reference: SNC Lavalin Study - December 2005)Energy consumption of water facilities excluding Fajara Office, Mandinary and Bwiam. Also	

		<ul style="list-style-type: none"> • Operation and maintenance • Water quality (including monitoring) • Payment/cost/sustainability issues/challenges 	<ul style="list-style-type: none"> • Inadequate supply of materials • Salt water intrusion, iron and nitrate 	<p>excluded are Banjul and Kotu Sewerage stations. (Figure obtained from our monthly station reading as at Dec. 2020). With regards to availability, we rely on generator in the event of power outages.</p> <ul style="list-style-type: none"> • Inadequate supply of required materials for operation and maintenance, Lack of competence in lower cadre of staff, aging network resulting in frequent failures, lot of firefighting approaches
Sanitation	For existing sanitation systems Banjul and any others/)	Characteristics of existing wastewater treatment infrastructure <ul style="list-style-type: none"> • Length, condition and other characteristics of collection network • Pumping stations • Treatment system (Type, capacity, operating status) • Stormwater drainage challenges 	<ul style="list-style-type: none"> • At Kotu Sewerage, discharge is from pump to the treatment plant • Banjul Sewerage has 2 pumping stations and Kotu Sewerage 4 pumping stations and 4 lagoons. <p>Treatment at Kotu Sewerage is aerobic using stabilization ponds - 4 ponds in series</p> <p>At Banjul there is no treatment. Disposal is direct pumping via a 600mm pipe outlet to approximately 1km in the sea</p> <ul style="list-style-type: none"> • Unable to comment 	<ul style="list-style-type: none"> • Kotu Sewerage waste disposal is normally received from septic tank trucks and the hotels through a pipe network. The 4 wet stations are in a relay form, meaning pump station no.1 discharged to pump station 2, that way up to pump station 4 and finally to Kotu treatment plant <p>Currently, the sewerage system in Banjul consist of 90km of pipes varying from 150 to 600mm size.</p> <ul style="list-style-type: none"> • Banjul Sewerage network is in a bad condition and is currently contracted to the Banjul Rehabilitation Project Contractor. • Not under the roles and responsibilities of NAWEC

		<ul style="list-style-type: none"> Disposal systems/infrastructure for faecal sludge (on site sanitation systems) 	<ul style="list-style-type: none"> Unable to comment 	<ul style="list-style-type: none"> Not under the roles and responsibilities if NAWEC
	Level of access in Banjul and other settlements	<ul style="list-style-type: none"> Level of access to sanitation (by settlement and LGA) Open defecation rates (by LGA) 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Not under the roles and responsibilities of NAWEC
Planning	Strategies	Any water supply and sanitation strategies at national or LGA level	Water Supply and Sanitation Study of the Gambia	Document Attached
	Plans	Any water supply and sanitation plan at the national, LGA or settlement level	Water Supply and Sanitation Study of the Gambia	Document Attached
Projects		Details/documentation on ongoing water supply and sanitation projects at settlement and LGA level	<ul style="list-style-type: none"> ICO Asbestos Pipe Replacement Project Water Supply in Greater Banjul Area (WASIB) World Bank Additional Financing 	<p>Refer to attached file (Ongoing projects) for details</p> <p>These are projects where NAWEC is implementing</p>

Annexe 2. Senegal - Data provided to PDDI by SONES

SONES PLANNING AND STUDIES DIRECTORATE PLANNING AND GENERAL STUDIES DEPARTMENT

ADDITIONAL DATA TO BE OBTAINED FOR THE PDDI PHASE 1 - DIAGNOSTIC STUDY

Within the framework of the development of the Integrated Development Master Plan (PDDI) for the OMVG, the BRLi-IDEV-COBA consortium is currently preparing Phase 1 - Diagnostic Study on the natural resources and on the different sectors of water use of the Gambia River and Kayanga-Geba River basins, particularly in the drinking water supply and sanitation sector.

The PDDI is partially active in 5 regions of Senegal, namely: Tambacounda (Departments of Goudiry, Tambacounda, Koumpentoum), Kédougou (Salemata, Kédougou), Kaffrine (Koungheul south, a small part of Malème Hodar and Birkilane, and kaffrine south), Kaolack (Nioro du Rip and a small part of Kaolack), Kolda (Vélingara, Médina Yoro Fouta, and a small part of Kolda).

The objectives of the PDDI for this sector are based on Senegal's national objectives, which aim to establish, rehabilitate or operate water supply systems offering a good quality service and to ensure a supply for all, with water of good chemical and bacteriological quality and in sufficient quantity. The programming of the investments of the works in the framework of the PDDI will be carried out until the year 2040.

Overview of the status and prospects of water supply from SONES in the regions concerned.

a) *Data on cities whose water supply systems are the responsibility of SONES (e.g. Excel files):*

- i. Designation and location of cities :

SONES response: see Table 2. NB: SONES projections are to 2035.

- ii. Current population and current population broken down by type of connection to the system (home, yard, neighbour, standpipe);

SONES response: See Table 1.

- iii. Demographic projections to 2030 and 2040

SONES response: see Table 2. NB: SONES' financial model projections are for 2035.

- iv. Consumption of the current population and an estimate of its evolution in 2030 and 2040

SONES response: See Table 3. NB: SONES' financial model projections are for 2035.

Table 1: Designation and location of cities, Population, Population projections

Territorial Directorate	Region	Centres of the SONES leased perimeter	Population			Population growth rate
			2021	2030	2035	Average (2021-2035)

Kaolack	Kaffrine	Kaffrine	56 800	80 625	97944	4%
	Kaffrine	Koungheul	28 026	38 897	46666	3.7%
	Kaolack	Kaolack	300 809	386 090	443 373	2.8%
	Kaolack	Nioro du rip	27 738	38 897	45964	3.7%
Tambacounda	Tambacounda	Tambacounda	150 227	219 378	270 741	4.3%
	Kédougou	Kédougou	44 399	68 877	87 907	5.0%
Ziguinchor	Kolda	Kolda	109 124	152 386	87 907	3.8%
	Kolda	Vélingara	44 457	63 488	183 449	4.0%

Source: SONES financial model updated in September 2021

Table 2: Population by type of connection

Territorial Directorate	Region	Centres of the SONES leased perimeter	Category	2021	2030	2035
Kaolack	Kaffrine	Kaffrine	PC	37 966	80 624	97 944
	Kaffrine	Koungheul	PC	24 295	38 896	46 666
	Kaolack	Kaolack	PC	300 809	386 009	443 372
	Kaolack	Nioro du Rip	PC	24 460	38 378	45 964
Tambacounda	Tambacounda	Tambacounda	PC	122 409	219 378	270 740
	Kedougou	Kédougou	PC	26 153	68 877	87 907
Ziguinchor	Kolda	Kolda	PC	60 021	152 386	183 448
	Kolda	Vélingara	PC	29 175	63 488	77 386
Kaolack	Kaffrine	Kaffrine	SP	14 149	2 418	94
	Kaffrine	Koungheul	SP	3 406	1 166	408
	Kaolack	Kaolack	SP	45 506	7 720	547
	Kaolack	Nioro du Rip	SP	3 385	1 014	488
Tambacounda	Tambacounda	Tambacounda	SP	9 262	2 583	1 281
	Kedougou	Kédougou	SP	1 023	468	240
Ziguinchor	Kolda	Kolda	SP	701	300	145
	Kolda	Vélingara	SP	456	240	117

Source: SONES financial model updated in September 2021 PC: Private connection; SP: standpipes

Table 3: Consumption [km³/year]

Centres of the SONES leased perimeter	Consumption [km ³ /year]		
	2020	2030	2035
	Billing	Estimate	
Kaffrine	926	2899	3480
Koungheul	520	1340	1598
Kaolack	5677	11 343	13 028
Nioro du rip	501	1 217	1449
Tambacounda	2 240	5 934	7298
Kédougou	404	1 652	2090

Kolda	990	3 643	4441
Vélingara	335	1 118	1438

Source: SONES financial model updated in September 2021

b) Characterisation of the Water Supply Systems already in place:

- v. Inventory and geo-referenced mapping of existing water systems;

SONES response: Collection of georeferenced AEP plans. They will be transmitted later.

- vi. Characterisation of each of the systems: water resources (groundwater, surface water), maximum flows collected and treated, annual volumes of water collected, treated and consumed, components of each of the water systems and their condition (equipment, civil engineering), extension of the networks, type of connection;

SONES response: See Table 4. For the type of connection, refer to Table 2. Collection of inventory files including the characterisation of the works is in progress. They will be transmitted at a later date.

- vii. Monitoring of the chemical and bacteriological quality of the water at source;

SONES response: See the appendix for SEN'EAU data on monitoring the physico-chemical quality of the water distributed in 2020 in the centres concerned by this study. For raw water, we have the SDE data up to 2019, as the 2020 data from SEN'EAU are not yet available.

- viii. Operating constraints of SONES systems (water quality and quantity of water available for distribution, flow rates and pressure, network extension, frequent pipe breaks,)

SONES response: SONES is not in charge of operations. It will be necessary to contact the current operator, SEN'EAU, to obtain operating data (flow rates, pressure, pipe breaks, network extensions, etc.)

Table 4: Annual volumes of water abstracted and treated

Centres of the SONES leased perimeter	List of boreholes	Volume produced [m ³ /year]-2020	Installed capacity [m ³ /h]
Kaffrine	Kaffrine F2	955 570	119
	Kaffrine F3	1 935 230	241
Koungheul	Koungheul F1	425 590	53
	Koungheul F2	240 535	659
Kaolack	Kaolack F1 bis	1 051 930	2131
	Kaolack F2 bis	256 960	32
	Kaolack F3 bis	1 373 130	171
	Kaolack F4	1 051 930	131
	Kaolack F5	1 405 250	175
	Kaolack F6	1 292 830	161
Kahone	Kahone F1	1 100 110	137
Nioro du Rip	Nioro du Rip F2	297 110	37

	Nioro du Rip F3	144 540	18
	Nioro du Rip F5	433 620	54
Tambacounda	Tambacounda F1 bis	990 610	2714
	Tambacounda F2	455 520	1248
	Tambacounda F4	673 425	123
	Tambacounda F5	941 700	117
Kédougou	Kédougou F1	56 940	7
	Kédougou F2	105 120	13
	Kédougou F3	39 785	5
	Kédougou K1	59 130	7
	Kédougou F4	263 165	32
	Kédougou F8	34 310	4
	Kédougou F9	150 015	18
	Kédougou-Usine	722 700	90
Kolda	Kolda F1 bis	534 360	66
	Kolda F1	0	
	Kolda F2	788 035	98
Vélingara	Vélingara F1	472 310	58
	Vélingara F4	585 460	73

Source: SONES financial model updated in September 2021

c) *Prospects for the evolution of water supply systems to cope with changing consumption patterns*

- ix. Cities with programming to increase the production capacity of the existing system and cities where the increase in capacity will be made from a new system. Planning to implement new systems for a new water source; characterisation of systems and planned investments?

SONES response: SONES has a provisional investment programme up to 2035. By 2025, it is planned to:

in Kolda, the construction of three new 150 m³/hour boreholes, the construction of a new 500 m³/hour deferrisation station, the laying of a DN 400 mm water transfer pipe over 13 km and the construction of two new water towers with a unit capacity of 1500 m³

in Kaolack, the construction of three new 200 m³/h wells, two chloride and fluoride treatment plants with a total capacity of 1800 m³/h, the construction of two water towers with a unit capacity of 3200m³

The study to update the urban water master plan planned for 2022 will make it possible to specify the overall investments to be planned in these centres and in all the centres within the leased area up to 2040.

- x. In the regions concerned, water resources generally come from underground water sources, but for example in Kédougou, and perhaps in Kolda, underground water sources are not very productive or of good quality. Are transfers from the Gambia River or other rivers already

planned in the future to supply towns in the PDDI regions that do not have good quality and abundant groundwater resources?

SONES response: The city of Kédougou is already supplied by the Gambia River thanks to a water intake located at Itato. As far as Kolda is concerned, the underground resource is productive but the water is ferruginous. The possibility of transferring water from the Gambia River is actually being considered by SONES with the implementation of the Sambangalou dam. The OMVS/OMVG unit has even sent a letter to SONES listing the projected water needs in this regard.

- xi. Does SONES have master plans defining water transfers to supply urban systems?

SONES response: A master plan drawn up in 2010 exists. An update is planned for 2022.

- xii. Does SONES have studies on alternatives for the construction of surface water treatment plants: for example, is it defined whether it is a plant for each city or a large treatment plant upstream, next to the water intake, for several cities or an intermediate situation?

SONES response: This type of study is not yet available. However, SONES is considering this new approach of large-scale transfer of raw water and then treatment at delivery points or consumption areas. The update of the master plan planned for 2022 will allow this reflection to be refined.

- xiii. It is planned to supply water to small towns or even villages along the route of the treated water supply.

SONES response: This option is considered on a case-by-case basis, according to the guidelines of the line ministry.

- d) Would it be possible for SONES to provide for the PDDI documents on the National Strategy for the Development of Public Water Services in Urban Centres, and the Master Plans for transfers and also elements of the Projects to implement, rehabilitate and increase the capacity of existing water supply systems in urban centres?

SONES response: SONES remains open to any exchange of documents, however, as indicated above, the drinking water master plans for the leased centres are being updated in 2022.

- d) Does SONES directly operate the systems it owns or does it establish concession agreements with private companies? What is the average cost per cubic metre of water paid by urban users? Can you tell me the average annual cost per cubic metre per system, including operation and maintenance?

SONES response: In Senegal, there are three entities involved in the management of urban drinking water supply: the State, SONES and the farmer

SONES is the concessionaire of the public drinking water supply service. As such, it is responsible for "the management of all the State's water assets in urban and semi-urban areas" (Law No. 95-10 of 7 April 1995 creating SONES), for controlling the quality of operations and for raising public awareness. It is bound to the State by a concession contract.

The operator is responsible for the technical and commercial operation of the facilities, maintenance of the infrastructure and operating equipment, renewal of the operating equipment and part of the drinking water distribution network. Its relationship with the State is governed by a leasing contract. The current contractor is called "SEN EAU", and its leasing contract came into force on 1 January 2020 for a period of 15 years.

In 2020, in the area managed by SONES, the average price of drinking water excluding sanitation charges is CFAF 446.93 per cubic metre

The operating price paid to the farmer, SEN 'EAU, is 298.5 FCFA excluding taxes per cubic metre in 2020. This price is indexed each year according to variations in operating parameters. For the average annual cost per cubic metre per system, including operation and maintenance, the consultant can contact SEN'EAU.

ANNEX

Excel file on water quality monitoring until 2020_Kaolack_Kaffrine_Koungheul_Nioro_Tamba_Kédougou_Kolda and Ziguinchor



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