



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

Phase 2 - Elaboration the sectoral plans - 3/6

Transport and Communications

Final version - April 2022



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

Phase 2 - Transport and Information and Communication Technology Plan

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ABBREVIATIONS

Acronym	Meaning
AFD	French Development Agency
AIBD	Blaise Diagne International Airport
AIG	Africa Internet Group
ANADS	National Survey Data Archive of Senegal
ANCF	National Railway Agency
APIP	Private Investment Promotion Agency
BAD	African Development Bank
BID	Islamic Development Bank
BV	Basin / catchment area
CFS	Chemins de fer du Sénégal
CMC	Community multimedia centres
DBF	Dakar Bamako railway
ECOWAS	Economic Community of West African States
EDF	European Development Fund
EIB	European Investment Bank
ESTIC	Exports of ICT services
EU	European Union
FER	Road Maintenance Fund
FERA	Autonomous Road Maintenance Fund
GDP	Gross Domestic Product
HIMO	labour-intensive
ICT	Information and Communication Technology
IDI	ICT Development Index
I-PIB	Internet - Gross Domestic Product
ISP	Internet Service Provider
ITU	International Telecommunication Union
IXPs	Internet Exchange Point
LPST	Transport Sector Policy Letter
MITTD	Ministry of Infrastructure, Land Transport and Opening-up
MTPCU	Ministry of Public Works, Construction and Urbanism (Guinea Bissau)
MDG	Millennium Development Goals
NGO	Non-Governmental Organisation
NICT	New information and communication technologies
NTP	National Transport Plan
OECD	Organisation for Economic Co-operation and Development
OMVG	Organisation for the Development of the Gambia River
OPTIC	Organisation of ICT Professionals
OVI	Objectively verifiable indicators

Acronym	Meaning
PATMUR	Urban Transport and Mobility Support Project
PDDI	Integrated Development Master Plan
PGIRE	Integrated Water Resources Management and Multipurpose Use Development Programme in the Senegal River Basin
PIR	Road Infrastructure Programme
PMI	Small and Medium Industry
PNDES	National Economic and Social Development Plan
PNT	Plan National Transport
PPP	Public-Private Partnership
PSE	Emerging Senegal Plan
PURA	Public Service Regulatory Authority of The Gambia
R&D	Research & Development
RTLBS	Real Time Location Based System
SIRR	Rural Road Network Information System
SME	Small and medium-sized enterprises
SNCS	Société nationale des chemins de fer du Sénégal
SONATEL	National Telecommunications Company
STP	Public Transport Company
SWOT	Strengths, Weaknesses, Opportunities, Threats
ToR	Terms of reference
TRIE	Inter-State Road Transit
UNDP	United Nations Development Programme
UVS	Virtual University of Senegal
WAEMU	West African Economic and Monetary Union

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-Geba 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 member states to climate risks and preserve the balance of ecosystems in the sub-region, particularly in the basins of the three rivers.

BRL Ingénierie, in association with COBA and IDEV, has been selected to carry out the Integrated Development Master Plan (PDDI) for the Gambia, Kayanga-Geba 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 cooperation.

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

- 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 that make 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 basins PDDI. The PDDI will produce an investment plan composed of fundable 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 sector 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**

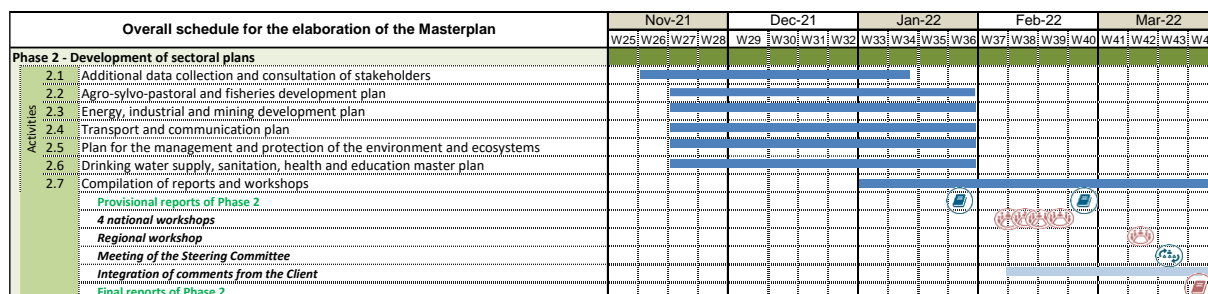
An inception report for the study was validated on 15 September 2021 at the Regional Validation Workshop held remotely and a final version of the inception report, incorporating the workshop recommendations, was submitted to OMVG and UNCDF on 30 September 2021.

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 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 draft version. This version of the report was the basis for consolidation work carried out in National Workshops and then in a Regional Validation Workshop, 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 sector 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 assess 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 report is the **final version** of the **Transport and Information and Communication Technology development plan**

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.

THE TRANSPORT AND COMMUNICATION SECTOR PLAN

The transport and communications sectors are essential to the regional economy in the OMVG area. It is therefore essential, for their harmonious development, to define the policy orientations and strategic axes that will contribute to the implementation of economically viable programmes and projects, likely to channel economic and financial flows. Optimised management of the Transport & Communications sectors should make it possible to promote acceptable and controllable volumes of investment, well programmed, according to the means made available and according to a previously established order of priority (the action plans or provisions, measures and timetables from 2022 to 2040). It is thus important for the OMVG and the four Member States (Gambia, Guinea, Guinea Bissau, Senegal) to better structure these two sectors and to consider them as the lever of a new dynamic, allowing the realization of economies of scale, essential for a strong and sustained growth of the other sectors of activity (agriculture, industries, mines, tourism) in the whole area targeted by the OMVG (the three basins covered by this master plan) by 2040.

A 2022 sector master plan should contribute efficiently to improving mobility and access to basic services for the majority of the population (mostly rural) located within the OMVG area, to improving the flow of goods, agricultural products and minerals (produced or transiting in this area), by opening up isolated regions and developing inter-state exchanges, and finally to contributing to the optimal achievement of regional integration in the WAEMU area.

In the rapidly changing globalisation system at the beginning of this century, the four Member States and the OMVG are driven to define a new strategic approach to the Transport & Communications sectors. For the implementation of such a strategy, it is necessary to take into account i) the external constraints of globalisation and its constant changes, and ii) the levels of consumption, current and future needs of the poorest populations and of the companies interacting in this geographical area. In this vision of development, the sector plan must take into consideration the development forecasts of the other sectors within this area, while taking into account that these four Member States are themselves inserted in a regional space with numerous transit corridors. These four Member States all have a maritime coastline, and therefore an important geostrategic situation vis-à-vis other landlocked countries, and a strategic position in the West African sub-region with north-south land corridors, thus obliging them to (i) develop an updated institutional framework for the implementation of strong transport-communications sectoral policies, and (ii) to put in place and maintain high-performance infrastructures for the optimal management of land, maritime, air and river corridors. The establishment of an appropriate harmonised inter-state institutional framework will lead to better management of developments in the transport and communications sectors, better understanding of the evolution of trade in the sub-region and globalisation, and the channelling of water resource needs.

1.3 DEVELOPMENT METHODOLOGY

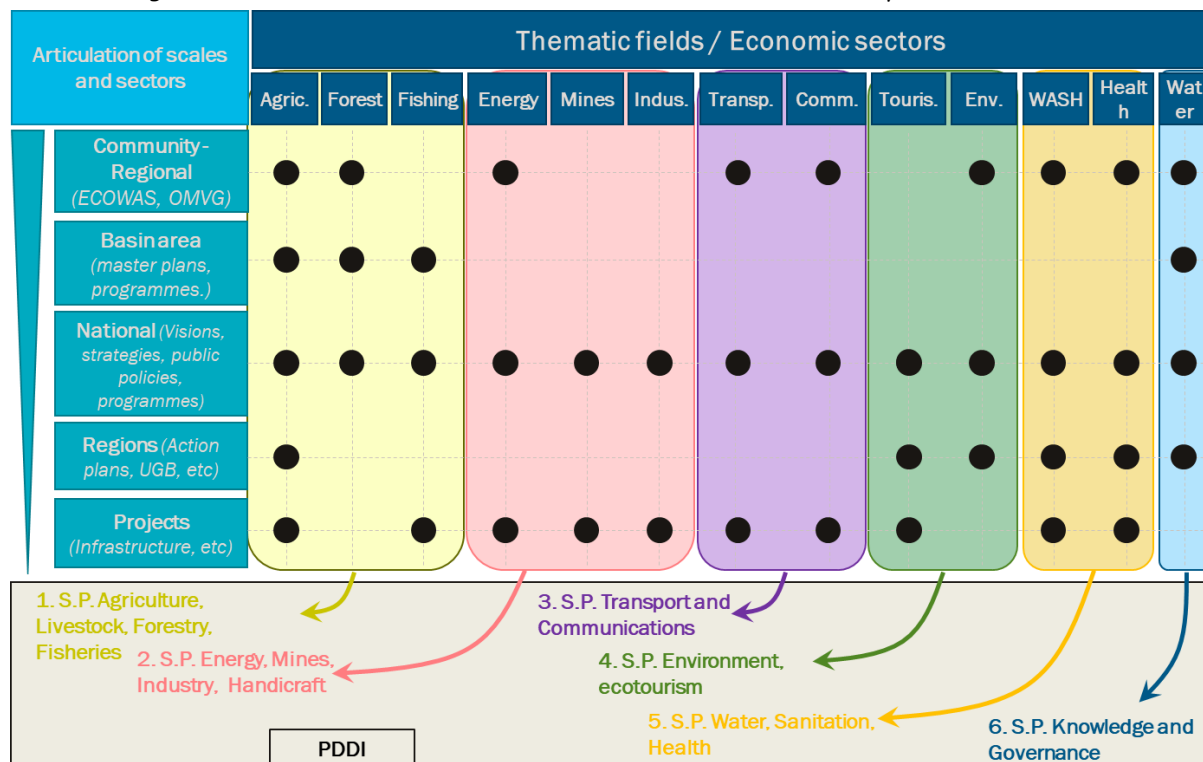
Each of the six sector plans presents the proposed intervention strategy for each sector, as well as the associated implementation tools. These strategies are an **aggregation of national and regional visions, policies and programmes, as well as the recommendations of the consortium**.

The elaboration of the agriculture, livestock, forestry and fisheries development plan is based in particular 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;
- Compilation and analysis of existing projects in the three river basins;
- Analysis of existing master plans for the Kayanga-Geba 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 sector plans have been drafted on a regional scale.

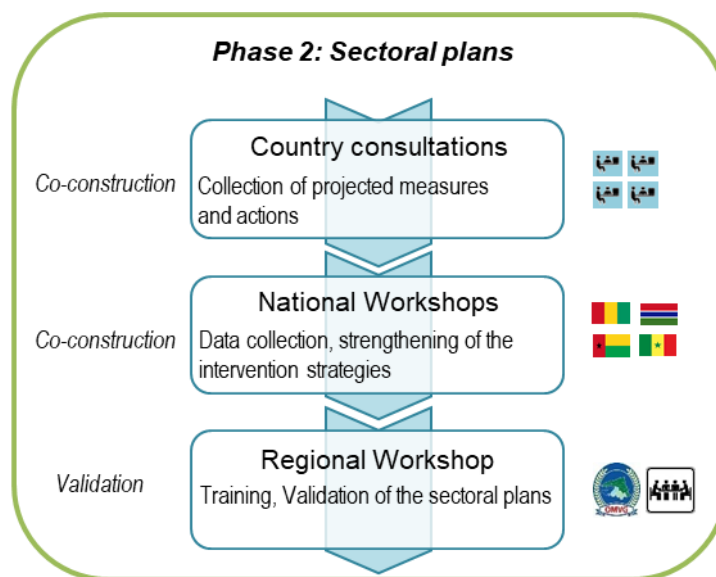
The necessary technical, legal and institutional interventions at national level were identified and analysed through the intervention of national experts in each of the 4 countries. The sector plans integrate these elements.

STAKEHOLDER CONSULTATION

The elaboration of the sector 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 sector plans. The stakeholders of the river basins proposed a series of actions, listed in the workshop minute.

The development of the plans was also informed by the consultation stages planned in Phase 2 (see Figure 1-3). 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 catchments. 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



TRANSPORT AND COMUNICATION

The Transport & Communications sector master plan provides OMVG, the four Member States and the active populations in the OMVG area with the key elements to adapt to the future challenges and major changes observed throughout the world, in terms of demographic evolution, resilience to climate change and connection to the great digital revolution. This Transport & Communications Master Plan should thus contribute to the sustainable development of the OMVG area, at the environmental, social and economic levels.

This sector plan i) presents the resumption of the critical analysis of the situation and the perspectives in the Transport & Communications sectors, ii) specifies the main lines of the sector plan allowing to serve the economic zones in the OMVG area and to reinforce the exchanges between the four Member States, iii) describes the means to promote economic activity and cross-border exchanges, and iv) allows to develop the agricultural zones and the potentials which are not yet exploited.

After a recap of the main causes of the inadequacy of the physical infrastructure and the sub-regional imbalances in terms of settlement, the Transport & Communications Master Plan, based on the expected development perspectives, proceeds to the study of the evolution of commercial exchanges (expected traffic), transport costs and legislation. Through the collection and analysis of national sectoral policy and planning documents, as well as regional documents, the compilation and analysis of existing projects concerning the three river basins, and the analysis of existing master plans (Kayanga-Geba and Gambia) (in particular unimplemented actions), the identified actions have been selected, consolidated around priority objectives, in order to form a coherent programme on 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.

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

This master plan for the development of transport and communications in the three OMVG basins includes programmes for the development of:

- Regional road network (link roads) and service roads;
- Rail network on the Dakar-Bamako corridor and its interconnections with other networks;
- River transport network on the three rivers: Gambia, Koliba-Corubal and Kayanga-Geba;
- Inter-state, intra-basin and rural ICT network to open up the three basins.

The master plan:

- Defines the investment needs up to 2040 as follows;
- Develops a 2040 investment plan with a short-term action plan (2027) including projects/measures, resources and timeframes, and a summary of medium (2028- 2032) and long-term (2033-2040) objectives/projects;
- Gives an estimate of the investment requirements as well as the financial mechanisms and funding sources, describes the implementation modalities specific to regional projects;
- At the same time, finalises the project profiles in collaboration with the sector experts of the Member States and the OMVG High Commission;
- Produces a list of projects and a GIS map showing the location of projects.

This transport and ICT sector plan also presents the risks posed by the proposed development scenarios to water resources and the environment and elaborates solutions to reduce or eliminate the predicted impacts.

2 THE TRANSPORT AND COMMUNICATIONS SECTORS IN THE OMVG

2.1 CURRENT STATE OF THE TRANSPORT & COMMUNICATIONS SECTORS

2.1.1 Current state of the transport sector

The state of play of the transport sector in the four Member States was carried out in the previous diagnostic report to this Master Plan (Phase 1). A synthesis of this inventory and of the SWOT analysis (related to the OMVG area) will be made here, allowing an understanding of the needs and challenges in the OMVG area and the basins.

ON THE LEGISLATIVE, REGULATORY AND LEGAL FRONT

In The Gambia, laws have been passed to regulate the transport sector in The Gambia. However, in practice, the regulations are sometimes inadequate, insufficiently comprehensive or outdated. Furthermore, the existing regulations are not consistently enforced. Thus, the strategy to achieve **the objectives of the National Transport Plan 2018-2027** has been geared towards reviewing the existing system of laws and regulations with a view to improving them. There are still actions to be taken to address these regulatory strategies since the drafting of the **NTP 1998-2006**.

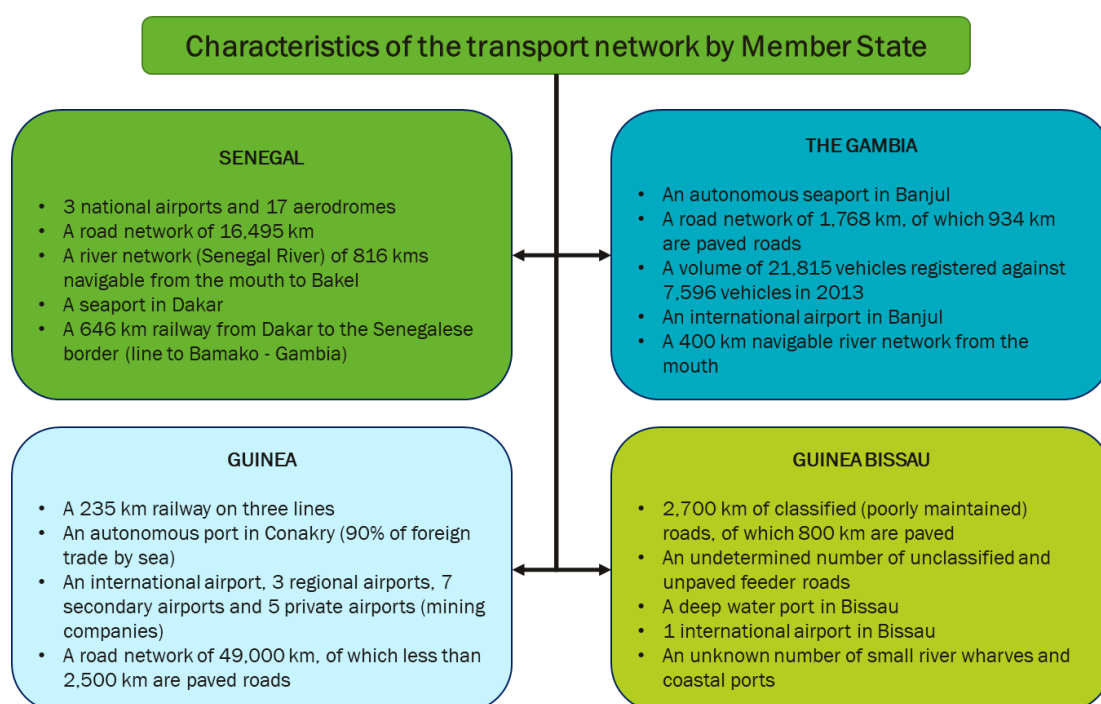
In Guinea, the **National Economic and Social Development Plan (PNDES)** became the programmatic framework for development for the period 2016 to 2020, and the **Transport Sector Policy Letter (LPST)** was adopted. This LPST reflected adherence to regional standards, helping West African countries to improve the sustainability of their primary road transport networks. In the rail sector, the Guinean Council of Ministers adopted in January 2020 a draft law aimed at establishing a sound economic and security basis for the pooling of existing and future rail infrastructure, both public and private, to serve priority public interest missions. Overall, during the last decade, the transport sector environment has suffered from an obsolescence of regulatory texts relating to transport, the movement of goods and people, as well as road safety, a major problem that is poorly measured by the available statistics.

In Senegal, the legislative and regulatory framework governing the transport infrastructure and services sub-sector was established and validated in 2002. The most recent laws date from 2019 and relate to the remit of the MITTD ministry. Senegal's current strategic framework is supported by the **Emerging Senegal Plan (PSE)**.

In Guinea Bissau, the government's strategy (**Terra Ranka - 2014**) recognises that the development of transport infrastructure, particularly roads, must be a priority. Indeed, an efficient transport and logistics system is essential to support the four drivers of economic development identified by the strategy, namely agriculture/agro-food, fisheries, mining and tourism.

ON THE STATE OF PLAY OF TRANSPORT NETWORKS IN THE OMVG AREA

The diagnosis preceding this Transport Master Plan presented the main characteristics of the different transport networks by Member State (see diagram below).



In summary, **road transport remains the main mode of transport in the OMVG area, rail transport is almost at a standstill** on the Dakar-Bamako line and **river transport remains a negligible mode of transport** in the three basins. **The state of the road network varies significantly** from one Member State to another, **climate conditions and overloading** have a negative impact on the state of the roads, and **mobility remains difficult overall** throughout the OMVG territory. The main weaknesses of the transport sector presented in the previous transport diagnosis (see diagram below), serve as a starting point for the master plan and for the development of the overall strategy and measures to be taken by 2040.

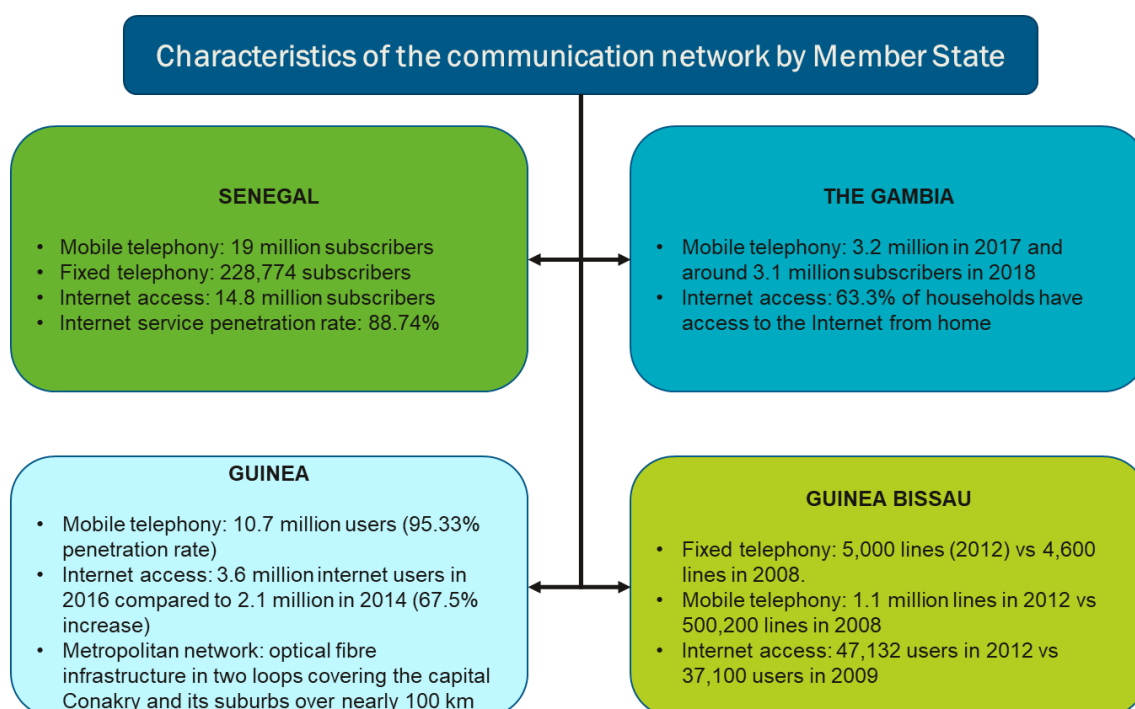
Table 2-1 SWOT matrix of the transport sector in the OMVG basins

Strengths	Weaknesses
<ul style="list-style-type: none"> • A strong OMVG organisation with experience in managing the three basins and recognised by its peers • A common understanding of the issues between the 4 Member States and common interests for the governments concerned, despite successive changes of governance • A well-established legislative and institutional framework for the management of inter-state transport • Existence of infrastructure and structuring facilities for transport and telecommunications 	<ul style="list-style-type: none"> • Transport infrastructure network still insufficient in the OMVG area • Declining railway sub-sector, obsolete rolling stock, discontinuation of the Dakar-Bamako railway line • Weakness of sea-river transport (weak equipment, silting up, lack of investment) • Inland waterway sub-sector which has not yet led to a better alternative to road, nor to all-season navigability. • No facilities for multimodal transport or multimodal platforms • Poorly performing urban and interurban transport • Weakness of domestic air transport • The road network is still generally in poor condition according to the Member States and there are problems of mobility during the rainy seasons. • Climate phenomena that degrade road infrastructure • Very high road maintenance needs and too little funding to ensure the sustainability of the road and/or rail network

	<ul style="list-style-type: none"> • Little technological innovation in the different modes of transport, nor operational regional transport information systems • Lack of optimisation in the management of transit corridors and border crossings • Very strong road hauliers lobby, not very favourable to multimodal transport • A lack of qualified personnel in the sub-region to master logistics flows and multimodal transport
Opportunities	Threats
<ul style="list-style-type: none"> • Donors willing to commit • Transport sector supported by country strategies including the three basins • Existence of identical models and success stories in the world for the duplication of multimodal transport development models • Successful projects in other countries for the deployment of inland waterway transport and port logistics • Contribution of PPP and BOT projects in the transport sector (tolling, port infrastructure management...) • Donor-supported rail projects • Mining projects that can boost transport projects • Fleet renewal programmes for better mobility of goods and people 	<ul style="list-style-type: none"> • Road sub-sector as a serious competitor to the development of inland waterway transport • The rail sub-sector is also a serious competitor to the development of inland waterway transport • The dynamic Dakar-Bamako railway corridor will be a complement or an alternative to river transport • Development of a Bamako Kankan Conakry rail axis is a competitor to river transport • The Gambia's river-sea ports can compete with the development projects of the seaports of Dakar, N'diogo, Sendhou and Conakry • Expected draught seems too small for vessels adapted to river/sea and loaded with ores • Equipment and river-sea vessels represent very heavy investments and a particular logistic organisation • Climate-related hazards have a significant impact on transport and port infrastructures

2.1.2 Current state of the communications sector

The Communication Sector Diagnostic Report presented in detail by Member State a sector that has been evolving rapidly in recent years and demonstrated the importance of new technologies in today's world.



The SWOT analyses highlighted the strengths and weaknesses of the Communications sector in the OMVG area, which will be the starting points of the OMVG strategy through strong provisions and accompanying measures to strengthen the Communications sector in the service of the populations in the three OMVG basins.

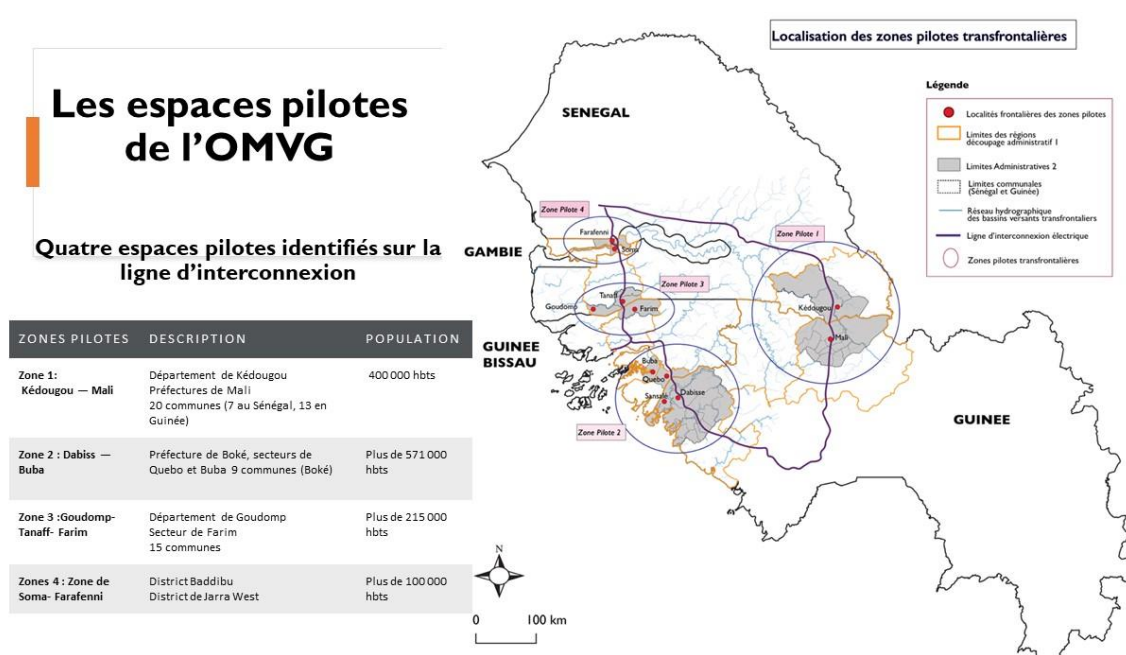
Table 2-2 SWOT matrix of the transport sector in the OMVG basins

Strengths	Weaknesses
<ul style="list-style-type: none"> Regulatory framework that has evolved significantly over the last decade in the OMVG area Substantial investments over 10 years in telecommunications and optical fibres Landing of the submarine fibre optic cable (ACE) in Guinea and Senegal Competence of private operators in the telecom and ICT sector in the 4 Member States Agreement of the four Member States to develop NICTs in the OMVG area Rapid growth of mobile telephony in each Member State Strong demand for telecommunications throughout the OMVG area Growing telecommunications offer and fairly good 2G and 3G coverage in the basin Digital development of Senegal by Helios Towers with 1,200 communication towers 	<ul style="list-style-type: none"> Legal and regulatory framework for the telecoms/tics sector not sufficiently strengthened and harmonised with ECOWAS community policies Lack of ownership of the regulatory framework by all telecom sector actors in the OMVG area Energy infrastructure still insufficiently developed in rural areas for the deployment of technologies in the basin Networks not yet fully deployed throughout the area and interconnected to others Sector players who have not yet adopted strategies for pooling their infrastructure The population living in the OMVG area does not yet have access to diversified broadband services and applications in many areas (health, education, administration, agriculture, culture and media....) at affordable rates, given the average standard of living New services such as e-health, e-education, smart transportation, smart corridor, e-logistics, smart energy, smart cities, Intelligent Transport System, AI, Robotics, Cloud, Big Data, smart building or smart home, Land/river video surveillance, deployment of indoor/outdoor wifi hotspots Insufficient access to new interactive multimedia programmes and services Lack of human resources with qualified ICT skills and public and private education with advanced training in AI, robotics, cloud, etc. Insufficient number of firms in the OMVG region that are recognised regionally / continentally / internationally for their technological know-how Lack of digital hubs and R&D centres for the development of local applications and content for the sub-region Little development in the fields of cyber security, AI and robotics Insufficient investment in telecom infrastructure
Opportunities	Threats
<ul style="list-style-type: none"> National backbone project in Guinea Donor interest in supporting the development of the telecom sector in each of the four Member States Real prospects for internet development in West Africa Quality and availability of research and training services in the OMVG area 	<ul style="list-style-type: none"> Continental competition (Morocco, Tunisia) on the development of digital clusters and R&D centres and international competition International or continental level of competitiveness Insufficient level of protection and external threat in cyber security

- | | |
|---|--|
| <ul style="list-style-type: none"> • Propensity of Member State governments to invest in advanced technology products • Ability to attract talent to the OMVG area • Important niches for the creation of new jobs in the future • High degree of innovation to attract investors | <ul style="list-style-type: none"> • Lagging of OMVG companies in know-how on new technologies of today and tomorrow (AI, robotics, cyber security, etc.) • Low availability and density of venture capital in this sector |
|---|--|

2.2 EVOLUTION OF THE TRANSPORT & COMMUNICATIONS SECTORS

A presentation was made by the OMVG in November 2021 (support to cross-border municipal financing for the OMVG area) announcing proposals for interventions in some pilot areas of the OMVG area, aiming to support the identification and mechanisms for financing and realisation of local projects in cross-border areas.



Legend: "OMVG pilot areas - Four pilot areas identified on the interconnection line"

The Transport & Communication Master Plan will focus on defining concrete provisions and measures in these two sectors to support the OMVG pilot areas.

Taking into account the state of play of the Transport and Communications sectors and the SWOT analyses on these two sectors, OMVG is implementing a new sector master plan in order to strengthen its assets and respond to the major challenges by 2040, including the large pilot areas located on the interconnection lines and transit corridor. The OMVG is thus acting in a spirit of partnership between Member States and complementarity with its other neighbours to find solutions in transport and communications in order to strengthen its socio-economic attractiveness and respond to the major issues of territorial anchorage for the inhabitants living in these three basins and the development of their activities, in the logic of sustainability over a period of nearly twenty years. The OMVG is therefore committed to meeting the following needs and challenges in the three basins:

- Anticipate the impacts and development opportunities generated by the strategies and projects of the four Member States in the Transport & Communications sectors by adapting them to the three river basins.

- Deepen the synergies and convergences between the four Member States in the field of transport and communications in order to carry weight at the WAEMU regional level and to become a key player in the management of transit corridors and a major regional player in new technologies
- Strengthen the sense of belonging to the basins for all residents and to reinforce a positive and dynamic image of the three basins on a regional level.
- Confirm the inclusion of the OMVG area in the major national and regional transport networks (paved road network, rural roads, interconnection, railways in the northern part of the area, innovative river transport, multimodality and logistics, airports, etc.).
- Improve the interconnection of the three basins with each other (paved roads/rural roads) and at regional level (increased regional mobility and efficient transit corridor)
- Strengthen a genuine modern, intermodal and multimodal transport offer.
- Enhance the policies implemented by each Member State in terms of digital coverage, and develop digital uses (mobility, services, teleworking, etc.) and the dissemination of a viable digital culture in all sectors of activity within the OMVG area.
- Reducing the negative impacts of the Transport & Communications sectors on water resources

And, in addition to the issues identified within the OMVG area in other sectors of activity on the economy, innovation and training:

- Deploy a network of transport and communication infrastructures to develop and strengthen the economic sectors of excellence and the associated research and development (R&D) activities, in order to anchor them sustainably on the territory of the three basins and thus increase their export capacity at regional and international level;
- Develop the economic value of the Transport and Communications sectors in a logic of sustainable management and development of jobs in the various modes of transport, in logistics services and in new technology services;
- Develop sustainable and efficient modes of transport with competitive transport costs to support the diversification of agricultural production and processing and distribution sectors such as cotton, cashew nuts, etc. (agro-tourism, local distribution, organic farming, etc.) in the context of climate change adaptation (agro-tourism, local distribution, organic farming) in a context of adaptation to climate change;
- Develop reliable and safe modes of transport to support the development of tourism in the three basins;
- Improve the level of technical training and qualification of the rural population to participate in the routine and periodic maintenance of rural tracks with labour-intensive techniques;
- Supporting ICT companies contributing to digital transformation.

TRANSPORT SECTOR

Transport needs will increase until 2040 in all three basins, and these needs will differ according to the regions concerned within the OMVG area.

Based on the national transport plans of each of the four Member States for the next five years, and on the economic development needs of the various socio-economic sectors (health, education, agriculture, mining and industry), profound changes must take place in the modes of land and sea transport.

In the road sub-sector, there will always be a need for the construction of new asphalt roads and/or the rehabilitation of existing networks in the four Member States, as well as a need for the construction/improvement of new tracks and rural roads (and their maintenance) to open up production areas, particularly in the OMVG area. Needs will be felt for the progressive establishment of local structures for the management of these roads within the Member States. Lastly, there are major needs in terms of river crossings in this area with the construction of infrastructure in the three basins to open up the area and promote economic development

In the railway sub-sector, there are plans to rehabilitate the Dakar-Bamako line, on which there are eleven railway stations within the OMVG area, which would make it possible to meet the need to relaunch rail transport, particularly for goods (heavy goods, bulk, ores) and passengers at lower costs than road transport.

COMMUNICATIONS SECTOR

For more than a decade, the four Member States have made significant efforts to support the new technology sector and to catch up with the industrialised countries in the sub-region.

The strengthening and harmonisation of the legal and regulatory framework of the telecoms/ICT sector with regional policies is an urgent and important need for the regulation of the ICT sector and for monitoring and managing its significant development.

There is also a clear need to enhance the policies implemented at regional level and in the four Member States in terms of digital coverage, connectivity and penetration, the development of numerous digital uses (instant communication, various services, mobility, and teleworking since the beginning of the Covid-19 pandemic) and the dissemination/penetration of digital culture.

Each Member State also needs to improve the level of training/qualifications of the population living in the basins in the digital world.

Economic development will also involve supporting SMEs working in the field of digital transformation. Companies located in the three basins need support in acquiring technological know-how and in creating digital clusters and R&D centres, enabling the development of applications and digital content specific to the region.

The region will need to deploy digital networks throughout the basins, interconnected with the four Member States and their neighbours (need for one or more IXPs and possibly a second submarine cable)

The deployment of infrastructure pooling strategies will be felt in order to make up for the delays observed in the communications sector in the sub-region.

The region needs to develop access to new and diverse broadband services, content and applications in many areas (e-health, e-education, e-administration, e-agriculture) and at affordable rates.

2.2.1 Trend scenario in both sectors

Trend scenario in the transport sector

From the SWOT analysis carried out during the 2021 diagnosis (see summary above), the future of the transport sector seems rather bleak if measures are not taken to improve or even eliminate the weaknesses noted by sub-sector and by major work areas (Transport infrastructure, Transport modes & services).

Road sub-sector

Without additional investment in the coming years, the transport infrastructure network will remain insufficient to contribute to the major challenges of good connectivity, accessibility and mobility. Without a major development plan, urban and inter-urban transport modes will remain ineffective in meeting the expectations and needs of the populations and businesses living in the three basins. The limited financial resources mobilised for road maintenance in recent years do not augur well for an improvement in the condition of the road network or for the resolution of mobility problems during the rainy seasons. Without strong intervention by the public authorities and a permanent and strong fight against axle overloading, without decisive action to build quality roads, road infrastructures and engineering structures will continue to deteriorate, until they become real economic bottlenecks, as the road is the only current mode of transport for goods and people in the OMVG area. Finally, without a global inter-state plan to convince the powerful road hauliers lobby to consider alternatives to road transport towards rail and waterways, there is little hope that these last two multimodal transport modes will be able to take off in the years to come.

Railway sub-sector

The railways have not taken off as initially planned in the various national development plans for the sub-region, and only private initiatives have been launched to transport minerals to the Atlantic coast. The existing railway lines have become obsolete and the projects designed to revive the railways have not yet allowed the development of long-distance rail solutions that can compete with road transport. The state of the rail paths is very bad and the budgets for the maintenance of the rolling stock have become too large for the revival of rail activity. Without a high-level consultation between states and donors, without a relevant approach to economic activity by rail and without solid business plans to ensure profitability, road transport will remain the only means of transport to meet demand for many years to come.

River transport and inland waterways sub-sector

Studies on river transport have been carried out to develop this mode of transport in the sub-region. This sub-sector has not yet led to a strong alternative to road transport, nor to all-season navigability. The only truly navigable river is the Gambia River, but it is little used between Banjul and Bassé. Many questions remain unanswered for the development of river transport, which, without adequate answers, will not allow the development of river transport as an alternative and serious competitor to road transport. If the issues of connectivity, accessibility and mobility are not met by an adequate IWT programme, private operators will not be convinced that they have a clear economic return on investment in this mode of transport. If the overall infrastructure (port areas, multimodal platforms, road-river connections, security of loading and unloading areas, modern storage areas and buildings, maintained river buoyage, periodic dredging units, assurance of the necessary draught for navigation in all seasons, If the quality of the equipment available for river-sea transport and the modern fleet for the transport of goods and people, and the training of economic operators trained in river transport and logistics are not high, these economic operators will have no incentive to use river transport and the current transport system will be consolidated for decades to come.

Without a programme of communication and information on the advantages of river transport, consultation with the various public and private operators, the establishment of a real river transport sector, and the construction of quality shipyards, river transport will have great difficulty finding its place in the OMVG area. River-sea transport on the River Gambia may be challenged by current projects to develop the seaports of Dakar (and its new port), Conakry, Bissau and Banjul, which already offer the beginnings of responses to the challenges of mobility, connectivity and accessibility.

Multimodal transport and logistics sub-sector

As a key sector for connecting all modes of transport, for reducing the time needed to transport goods, and for drastically reducing transport costs, this sub-sector is essential today for economic development. Without an ambitious programme for the implementation of multimodal infrastructures and connected logistics platforms of the latest generation, without a global training project for people skilled in logistics flows and multimodal transport, without the introduction of technological innovations in the various modes of transport, without a global programme to optimise the management of transit corridors and border crossings and their evolution into real economic corridors (smart corridors), the transport sector will not be competitive in the OMVG area and will not allow poverty reduction for the local populations.

Air transport sub-sector

The difficulties of the aviation sector at the global level are well known, and amplified by the global health crisis since the beginning of 2020. Without a major recovery plan for airport sites in the OMVG area, this sub-sector will only vegetate and will not be able to take its place in the challenges of connectivity, accessibility and mobility that are part of the OMVG 2040 vision. Without an in-depth study of the advantages of air transport in regional transport, this sector will not be able to respond to the demand for rapid movement of people, or even for the transport of high value-added goods, requiring extremely short delivery times.

Trend scenario in the Communications sector

From the SWOT analysis carried out during the 2021 diagnosis (see summary above), the future of the communication sector may develop, depending on global trends, but at a rate too slow to be able to contribute effectively to socio-economic development, if measures are not taken to improve, or even eliminate, the weaknesses noted by sub-sector and by major areas of work, particularly in strategic areas such as infrastructures, as well as modes of communication and associated technological services.

Without harmonisation/modernisation with ECOWAS or international community policies, the legal and regulatory framework for the telecoms and NICT sector (new information and communication technologies) is likely to stagnate, given the exponential development of the Communications sector, and the public and private players in the telecoms sector within the OMVG area will not be able to appropriate an essential regulatory framework due to lack of training.

For the rural world (the majority of the populations currently in the three basins), the deployment of technologies in these basins could be slowed down due to insufficiently developed energy infrastructures to supply the networks, which are themselves insufficiently interconnected to other networks (urban, submarine cables, optical fibres, etc.).

The cost of communications services will be a major obstacle for low-income populations, and the lack of services and applications in many areas (health, education, administration, agriculture, culture and media, transport, logistics, corridor management, energy, new interactive multimedia programmes and services, blockchain data banks, robotics) will act as a brake on socio-economic development. Without a paradigm shift, the current trend scenario will continue if the level of human resources is not strengthened in ICT and public and private education integrating advanced training in AI, robotics, Cloud, etc. and if the number of firms in the OMVG region with significant technological know-how is not strengthened.

Without strengthening ICT infrastructures such as community multimedia centres (CMCs) and research and development (R&D) centres, digital hubs and even a quantum institute, the OMVG region will not be able to benefit from comparative advantages.

Thus, without significant measures to fill the gaps, the population living in the OMVG area in the three basins will be confronted with major gaps in terms of connected digital infrastructure for access to services, in the development of infrastructure such as digital poles and R&D centres. The level of competitiveness will be low compared to international or continental and/or regional deployment. Without strong action, the levels of protection will very quickly become insufficient in the face of cyber-attacks, especially with the imminent arrival of solutions based on new quantum computing and decryption and hacking methods that are out of all proportion to the computing that we know today. Without innovative projects for the OMVG region, companies in this area will fall far behind in know-how on the new technologies of today and tomorrow (AI, robotics, cyber security, quantum computing, etc.). The low availability and density of venture capital in this sector in the OMVG area will lead to a crucial lack of competitiveness.

2.2.2 Key issues

2.2.2.1 *The three major issues of the transport sector*

Mobility: concerns reduced travel times for urban and rural populations (urban, interurban and international transport) and the fluidity and speed of goods transport in the OMVG area and on transit corridors.

Connectivity: concerns a perfect interconnection between road, rail, inland waterway and air transport infrastructures (multimodal transport and associated logistics, multimodal platforms, dry ports, port areas), interconnection between asphalt roads and rural roads and better connectivity (a network is said to be connected if it allows all nodes to be linked from one of them).

Accessibility: concerns better access for local populations and economic operators to transport services at affordable and competitive costs, easier access to health centres and markets, schools and other educational sites, administrative centres, business parks and multimodal platforms, etc.

2.2.2.2 *The three major issues of the communications sector*

Mobility: concerns the ease of dissemination of information in real time for urban and rural populations throughout the OMVG territory.

Connectivity: concerns a perfect interconnection between all communication infrastructures (submarine cable, optical fibres, and satellites) and between all the players in the different sectors of activity (content management, knowledge management, sector information, etc.).

Accessibility: concerns better access for local populations and economic operators to communications services (telephony and digital applications) at affordable and competitive costs, facilitated access to digital content and services (e-administration, e-health, other services by sector of activity), and finally reinforcement of data protection controls for actors.

2.2.3 Alternative scenarios

The phase of elaboration of alternative scenarios will focus on the issues that are partially or not satisfied according to their priority.

2.2.3.1 *Alternative scenarios for the transport sector*

World Bank - 2022: *"In addition to the human development benefits, investments in transport yield considerable economic benefits. The transition to sustainable mobility could save \$70 trillion by 2050 when all transport costs are taken into account: vehicles, fuel, operating costs, but also losses from traffic congestion. In addition, easier access to roads could help Africa become self-sufficient in food and create a regional commodity market worth \$1 trillion by 2030."*

The issues in the transport sector were identified in the diagnostic report preceding this master plan (and diagram above) and projects were proposed in the development perspectives. The 2021 diagnostic report highlighted the progress made over the last decade, particularly in the road sub-sector.

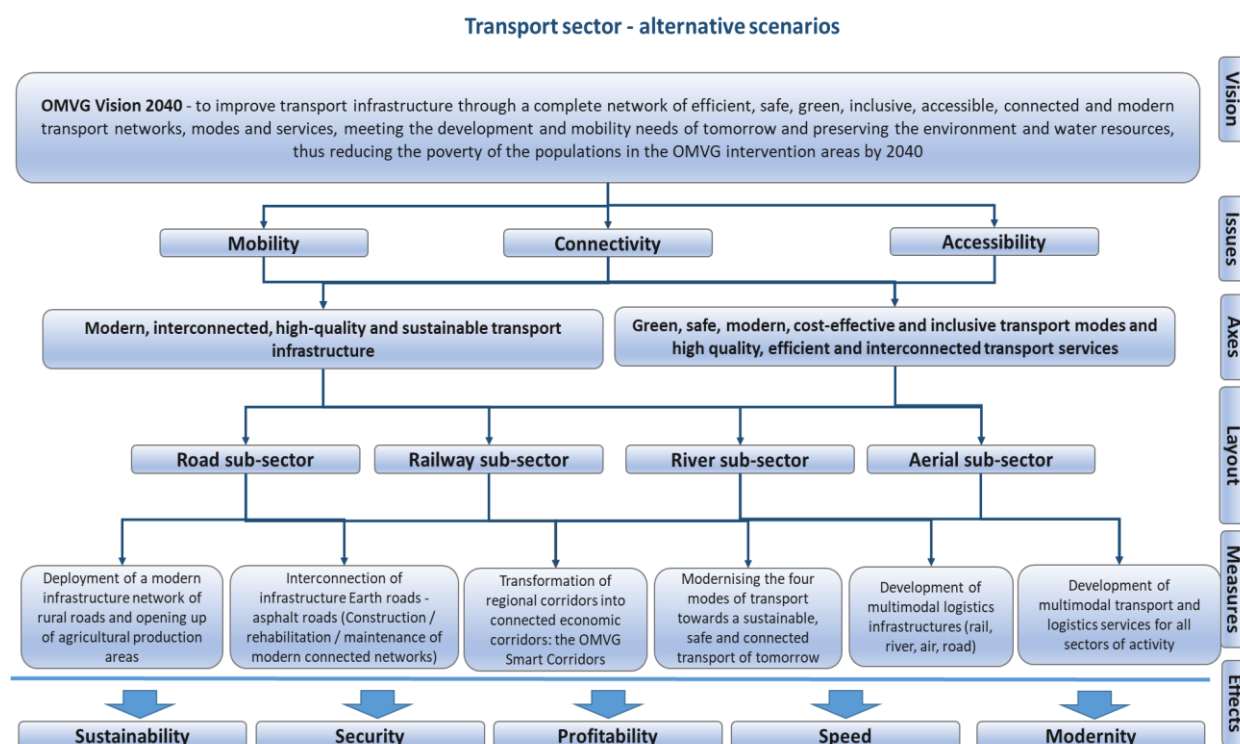
Achievements have been recorded in the area of road infrastructure, but progress still needs to be made for this road sub-sector to contribute effectively to socio-economic development. The state of asphalt roads is still insufficient for the transit corridors crossing the OMVG area to be fully effective and contribute to regional development, from the landlocked areas to the accesses to the maritime coast or to the major urban centres of the four Member States.

Some progress has also been made in the modernisation of airports in the OMVG area, with the creation of new airlines and some renovations, but the development of air transport in the OMVG area is struggling.

The railway sub-sector is still far from being a real alternative to road (lack of maintenance, lack of reorganisation, few multimodal or intermodal solutions, lack of optimal financing). The Bamako-Dakar line partly crosses the OMVG area via Tambacounda, but its activity has remained almost nil over the last decade.

Alternative scenarios to the current tandem scenario should be ambitious in order to make up for the delay in infrastructure, as well as in transport and communication services and modes. These scenarios must be adapted so that the OMVG area benefits from unavoidable comparative advantages to enter regional and international competition, and these scenarios must meet the mobility, accessibility and connectivity needs of the populations living in the three basins.

Strong provisions must therefore be put in place, supported by measures/projects specifically adapted to this geographical area. These provisions and measures are described in detail in this new master plan.



2.2.3.2 Alternative scenarios for the communications sector

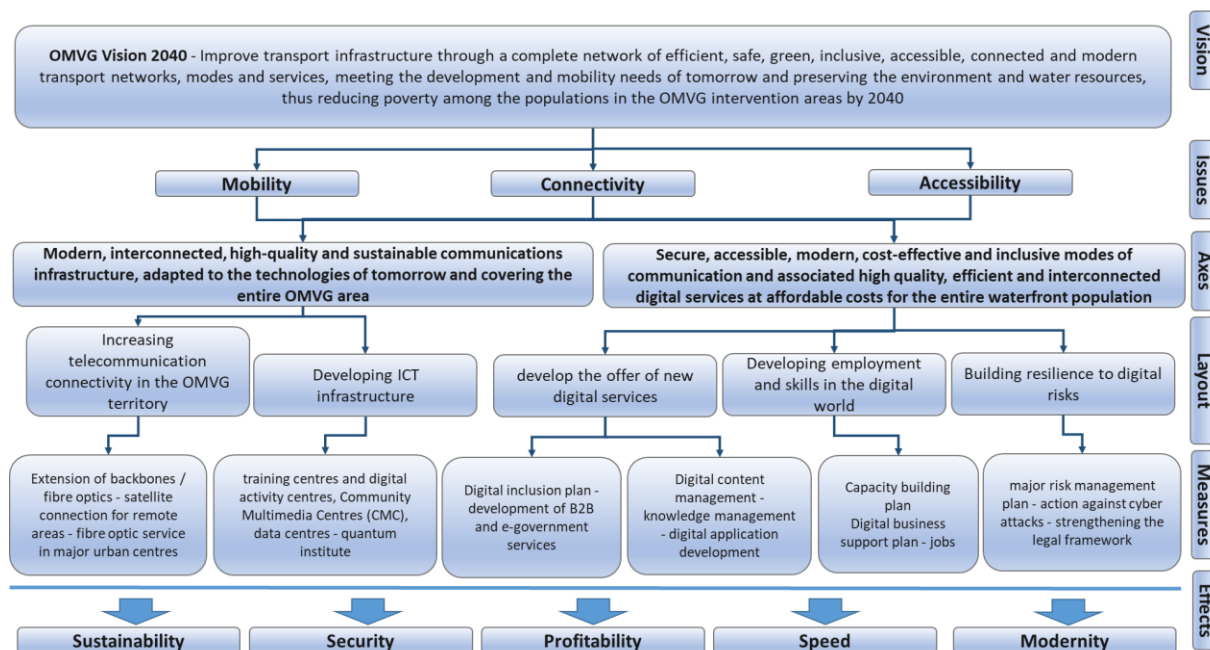
The challenges in the communications sector were identified in the diagnostic report preceding this master plan (and diagram above) and projects were proposed in the perspectives of development of telecommunications and digital services. The 2021 diagnostic report highlighted the major progress made over the last decade by Member States.

Achievements have been recorded in the field of telecommunications infrastructure, connection to submarine cables and deployment of optical fibres, but progress still needs to be made so that this communications sector can contribute effectively to socio-economic development, particularly in the areas of new technologies, the penetration of ICTs in the various sectors of activity and the public sector.

Alternative scenarios must be put in place to the current trend scenario and be ambitious in order to make up for the delay in communications infrastructure, in coverage throughout the OMVG area, as well as in the modes of communications, content and application offers and advanced digital services. These scenarios must be adapted so that the OMVG area benefits from unavoidable comparative advantages to enter regional and international competition, and these scenarios must meet the mobility, accessibility and connectivity needs of the riparian populations of the three basins. Strong provisions must therefore be put in place, supported by measures/projects specifically adapted to this geographical area. These provisions and measures are described in detail in this new master plan.

The development of concrete scenarios and strategies must therefore be developed to adapt ICT communication systems and sub-systems to present and future challenges for a period up to 2040. This scenario method allows for the identification of some of the most important and likely trends, particularly in the WAEMU regional context. The objective of this method is to encourage public decision-makers and private actors to take into account, in their day-to-day decisions, not only the short-term requirements but also the foreseeable long- and medium-term consequences in the field of new technologies. This methodology, widely applied at the various decision-making levels, can help to establish an approach whose main desired characteristics are security, cost-effectiveness, sustainability and timeliness of information.

Communications sector - alternative scenarios



2.2.4 Evolution of the sector's needs to 2040

2.2.4.1 Development potential / identified projects / trends

Transport sector

The diagnostic report preceding this master plan presented the weaknesses and vulnerability of the transport sector in the OMVG area and the growing needs of stakeholders for the development of more efficient infrastructure and transport modes.

The main needs recorded in the diagnosis are related to the mobility of goods and people, the interconnection of transport networks, the connectivity of infrastructures, the availability of efficient modes of transport, the safety of the different modes of transport and finally the reduction of transport costs which are currently too high in the region.

Thus, the transport sector must be able to respond to the demand for greater urban and interurban mobility of the actors, for fluid transport from home to work, to places of education and health, transport that should be a vector of socio-economic development. The riparian populations of the OMVG area need quality, sustainable and above all all-season infrastructure.

There is a clear need to rethink mobility and transport connectivity/ connectedness as a top priority to build resilience in the OMVG area and create the right conditions for greener and more inclusive economic development. This need relates to transport connectivity in the broadest sense (increased road interconnections, connectivity between transport modes, next generation connected transport, etc.). The need to move the current transport sector towards sustainable and inclusive modes of transport, to ensure equity of access to services, proximity to all-weather roads for the inhabitants of the OMVG area. The expansion of this sustainable transport offer for vulnerable populations is an important lever for human development and social inclusion.

Another need is to reduce the climate impact of the transport sector, as this sector contributes to energy-related greenhouse gas emissions. There is therefore an imperative need to reduce the carbon footprint of the various current and future transport modes in the OMVG area. Future options to meet this demand include policies and investments to improve the design of public and private transport networks, to increase the energy efficiency of transport vehicles, to better respond to and manage transport demand, and to promote regional development through fluid corridors and intermodal and/or multimodal transport systems.

People need safe modes of transport, and network safety is a major challenge. Reducing transport accidents has a direct impact on the well-being of people and an impact on the GDP of Member States. Global statistics estimate that transport fatalities and injuries reduce the GDP of low- and middle-income countries by 1 to 5%. By halving the number of transport fatalities, the GDP per capita of some countries could increase by 22% over 20 years.

Communications Sector

It is difficult to know exactly how telecommunications and new technology needs will evolve between now and 2040. Today we know the needs in terms of telephone network coverage, internet access rates for different populations, and software and ICT applications.

However, it is necessary to go further in the field of telecommunications than simply asserting the need for complete telephone and internet coverage within the OMVG area. It is necessary to take into account current research and emerging trends in ICT offerings.

Each sector of activity (industry, agro-industry, mining, transport, agriculture, administration and politics, education, health) will require ever greater connectivity and penetration of the digital world in order to develop comparative advantages in the context of globalisation. Thus, the internet world of yesterday and today will be boosted, revolutionised and transformed by the field of quantum computing and its applications beyond what we know today.

These applications will concern the field of medical sciences and health, very high-speed Internet access, new applications in the energy and river and maritime transport sectors, simulations in metrology and ecosystems, sensors in mining research, secure communications, and many other sectors. Some countries are already setting up quantum institutes to develop the industrial applications of tomorrow.

Mobility, connectivity and accessibility increasingly rely on technology in the digital world. People need to consult information in real time (time of arrival of transport, search for feasible routes, search for means of transport, taxi). Means of transport (vehicles, trains, river and maritime vessels, etc.) are equipped with on-board computers using information and communication technologies (ICT) for route calculation, logistical traceability and the transport of goods, for the automation of transport equipment, for all emergency communications, for on-board diagnostics. These technologies are also present in all sectors of activity, to enable better social interaction, for online commerce, etc. Freight transport is also using these technologies to optimise logistics by pooling assets, receiving real-time information for eco-driving, deploying the physical internet and more.

Taking into account the state of play in the Transport & Communication sectors within the OMVG area, the development potential is still very important over the next 20 years, and the selected strategic axes include clear provisions broken down into strong measures to accompany regional market trends and the needs of the populations.

2.2.4.2 Current and future water requirements for 2040

Road, rail and air transport sub-sectors

No quantitative studies have been found on the impacts of these sub-sectors on water resources in the OMVG region. Clearly, and as observed in other regions of the world, the road transport sector has a negative polluting impact on rivers in the vicinity of the infrastructure, through the discharge of oil and other polluting products. The road transport sub-sector does not require any particular water resources. However, according to estimates by the International Energy Agency, the digital transformation of road freight transport could lead to a decrease in energy consumption of 20-25%, which would result in a limited need for battery recharging for future electric vehicles, and a corresponding decrease in water resources.

River transport and inland waterways sub-sector

The Gambia River is navigable in all seasons by medium-capacity boats from Banjul to Bassé, whose natural depth is between 2 and 3 metres. This is the only water resource requirement in the OMVG area, as the other rivers in the other two basins are navigable and accessible only to pirogues for domestic agricultural goods traffic. Dredging operations will affect the depth and navigability of the rivers in the three basins to ensure quasi-permanent navigability. This determines the draught of ships that can navigate the three rivers. Comparative analyses carried out on the Senegal River have made it possible to establish a reference draught of 1.50 m, allowing a deadweight of 750 MT (e.g. for a barge of the Europa II type - i.e. more or less 30 full 20-foot containers). However, this draught does not allow 1,500 MT river-sea vessels (vessels adapted to navigation on the river and on the sea) to travel with a full load to the various river ports on the three rivers, including the port of Bassé. Indeed, these ships need a draught of 3 m and could only transport about 250 tonnes, i.e. the equivalent of a little less than 15 containers for a depth of 1.5 m, which would not be profitable for economic operators (even if, thanks to the rainy season, navigation with a 2-metre draught would be possible for 3 months of the year from August to October, with maintained dredging). In terms of impact, river transport will have a negative impact on rivers, fauna and flora through the discharge of oil, diesel and other polluting products. Similarly, the development of port infrastructures will have an impact on the banks and the level of silting of rivers.

3 VISION AND STRATEGIC OBJECTIVES

3.1 VISION TO 2040

The vision for 2040 is to **improve transport and communication infrastructure systems through a complete netting of transport networks, modes and services, and through the use of modern, efficient, safe, inclusive and environmentally friendly communication technologies, thus reducing the poverty of the populations in the OMVG intervention areas by 2040.**

The Sector Master Plan for Transport and Communications up to 2040 must set its medium and long-term objectives (2025 - 2030 - 2040) for the geographical area of the three basins in terms of balance and equality of these territories, and in terms of:

- The location of various infrastructures of regional interest (transport and communications);
- Opening up rural areas and economic development of the territories;
- Intermodality / multimodality and the development of future transport and logistics;
- Increased mobility for people within the three basins;
- Strengthening and building new transport links and developing smart corridors;
- Control and development of the communications sector (telecommunications, ICT);
- Increased connectivity between the four Member States, particularly in the three river basins;
- Digital penetration throughout the OMVG area;
- Development of new skills and employment opportunities in the digital sector;

And this while combating climate change, air pollution and water and river pollution, and waste pollution from different modes of transport.

This vision for 2040 is in line with the different sectoral policies and national transport and communications plans of the four Member States.

VISIONS OF THE FOUR MEMBER STATES IN THE TRANSPORT & COMMUNICATIONS SECTOR

The OMVG 2040 vision is based on the vision of each Member State and their national transport plans and adapts its vision for its three basins accordingly.

The Gambia: The overall objective of the National Transport Policy in The Gambia (2018-2027): The overall objective of the National Transport Policy expresses the Government's commitment to meeting the needs of the Gambian people and improving their standard of living, helping to reduce extreme poverty and stimulate shared prosperity. The guiding principles of the National Transport Policy: Government will assess proposals for transport and infrastructure provision in terms of their impact on a number of generic issues, namely adequacy, efficiency, safety, reliability, sustainability, equity, environmental protection, inclusion and universal access.

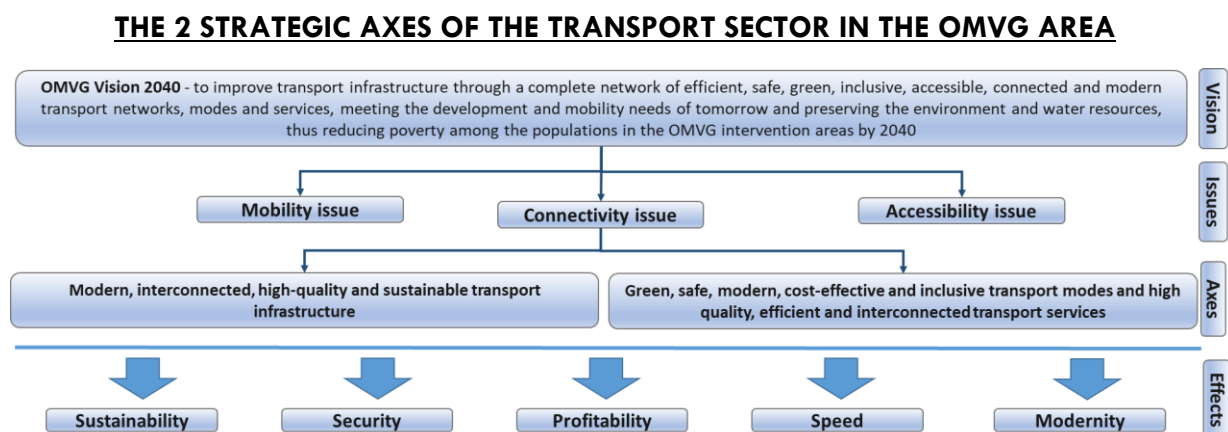
Guinea-Bissau: The DENARP II plan provides for the improvement of access to the country's production areas through the rehabilitation of rural roads (with priority given to the southern regions), the maintenance and/or construction of roads and crossing infrastructures, and the continuation of interconnection efforts with Senegal (Farim-Tanaff axis) and Guinea (Boké-Québo axis), as these regional interconnections, like the secondary road network, constitute a bottleneck for the agricultural sector. Terra Ranka strategy 2015-2025: The Infrastructure and Urban Development axis aims to provide the country with the logistical, energy, digital and urban infrastructure necessary for its development. Guinea-Bissau currently suffers from a profound infrastructure deficit. To ensure the required upgrading, this foundation is based on 4 areas of action, including transport, where bottlenecks will be removed (rehabilitation of the port and urban roads of Bissau, priority land routes, river and sea navigation routes), as well as communications and digital technology

Senegal (Strategic Development Plan 2017-2021): Ensure national coverage of the road and motorway network with quality infrastructure. General objective: ensure the development and preservation of the national road and motorway infrastructure and its development for the benefit of users. Transport Sector Policy Letter (LPST) 2016 - 2020, notably through two strategic orientations: (i) Consolidation of opening up and regional integration is one of the strategic orientations translating the vision into action and (ii) Effective governance and public administration. It is also in line with the foundations of emergence which support the three (3) strategic axes of the PSE: (i) structural transformation of the economy and growth; (ii) human capital, social protection and sustainable development; and (iii) governance, institutions, peace and security.

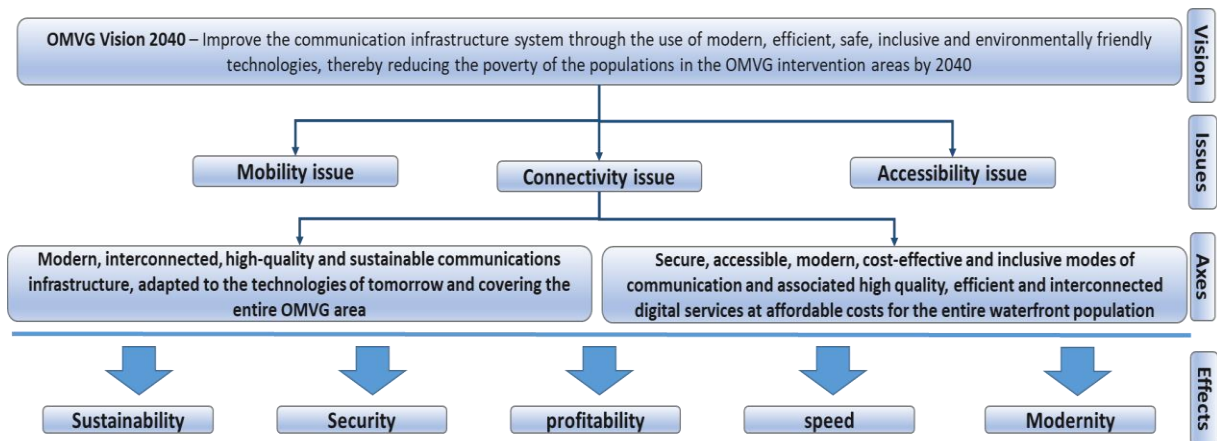
Guinea: The Vision of the Republic of Guinea in terms of sectoral transport policy is based on the liberalisation of competitive market sectors and the promotion of the private sector, a growth actor. The strategic objective of this policy is the development of transport infrastructures and services necessary for economic development and poverty reduction by providing the country with an efficient transport system, allowing it to meet the urban, interurban and international transport needs of people and goods at the lowest cost and under the best conditions of safety and environmental preservation.

3.2 STRATEGIC AXES OF THE SECTOR

Based on the OMVG vision for 2040, and in line with the National Transport Development Plans of the four Member States, the Transport and Communications Master Plan is based on four strategic objectives in the Transport and Communications sectors.



THE 2 STRATEGIC AXES OF THE COMMUNICATIONS SECTOR IN THE OMVG AREA



4 INTERVENTION STRATEGY - EXPECTED RESULTS AND ACTIONS TO BE UNDERTAKEN

4.1 LOGICAL FRAMEWORK FOR SECTOR INTERVENTION UP TO 2040

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 transport and communications sector up to 2040

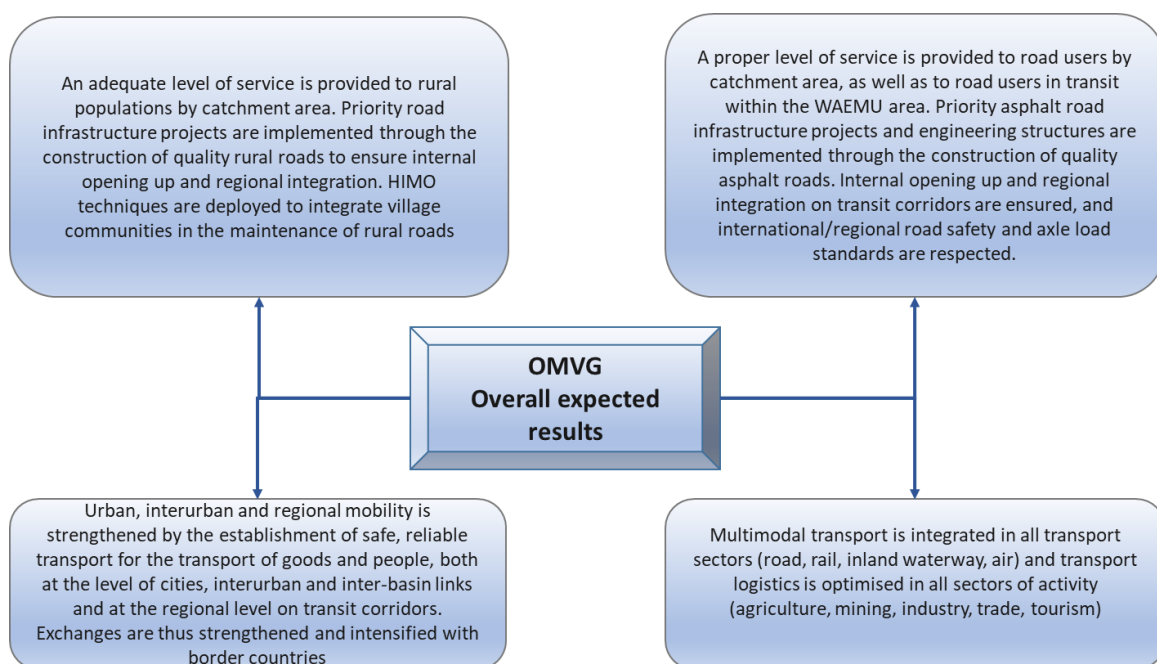
Strategic Axes	Provisions	Measures
Axis 1 - Modern, interconnected, high-quality and sustainable transport infrastructure	1.1 - Road sub-sector	1.1.1 - Rural roads construction / rehabilitation
		1.1.2 - Asphalt roads construction / rehabilitation (program PIR)
	1.2 - Railway sub-sector	1.2.1 - Development of railway infrastructure
		1.3.1 - Navigability in the three basins
	1.3 - River transport sub-sector	1.3.2 - Construction of at least 30 inland ports
		1.3.3 - Development of a modern inland waterway transport fleet
		1.4.1 - Modernisation of airports in the OMVG area
	1.4 - Air transport sub-sector	
Axis 2 - Green, safe, modern, cost-effective and inclusive transport modes and high quality, efficient and interconnected transport services	2.1 - Road sub-sector	2.1.1 - Rural roads and labour-intensive methods
		2.1.2 - Rural roads and information systems
		2.1.3 - Asphalt roads and training schools
		2.1.4 - Asphalt roads and OMVG road databases
		2.1.5 - Road safety in the OMVG area
		2.1.6 - Axle overload
		2.1.7 - Management of transit corridors
		2.1.8 - Modernisation of road transport modes
	2.2 - Railway sub-sector	2.2.1 - Railway safety and security
	2.3 - River transport sub-sector	2.3.1 - River safety
	2.4 - Air transport sub-sector	2.4.1 - Safety and security in air transport
Axis 3 - Modern, interconnected, quality and sustainable communications infrastructures, adapted to tomorrow's technologies and covering the entire OMVG area	3.1 - Increase telecom connectivity in the OMVG area	3.1.1 - Extending the connection between backbones and optical fibres
		3.1.2 - Full fibre optic coverage in major urban centres
		3.1.3 - Satellite connections for remote areas
		3.1.4 - Full 5G mobile access coverage and beyond (xxG)
		3.1.5 - Energy infrastructure to protect communications systems
	3.2 - Development of ICT infrastructure	3.2.1 - Creation of digital activity centres / training centres
		3.2.2 - Creation of Community Multimedia Centres (CMC)
		3.2.3 - Creation of data centres and quantum institutes
Axis 4 - Secure, accessible, modern, cost-effective and inclusive modes of communication and associated high quality, efficient and interconnected digital services at affordable costs for the entire OMVG area population	4.1 - Develop the offer of new digital services	4.1.1 - Digital services for the public and private sector
		4.1.2 - Digital content offers
	4.2 - Develop employment and skills in the digital world	4.2.1 - Digital inclusion plan, jobs and skills
		4.3.1 - Major Digital Risks Management Plan
	4.3 - Build resilience to digital risks	4.3.2 - Action plan against cyber-attacks in key sectors
		4.3.3 - Digital risks and the legal and regulatory framework

4.2 OVERALL OBJECTIVES / OUTCOMES OF THE TRANSPORT & COMMUNICATIONS SECTORS

TRANSPORT SECTOR AND OVERALL EXPECTED RESULTS

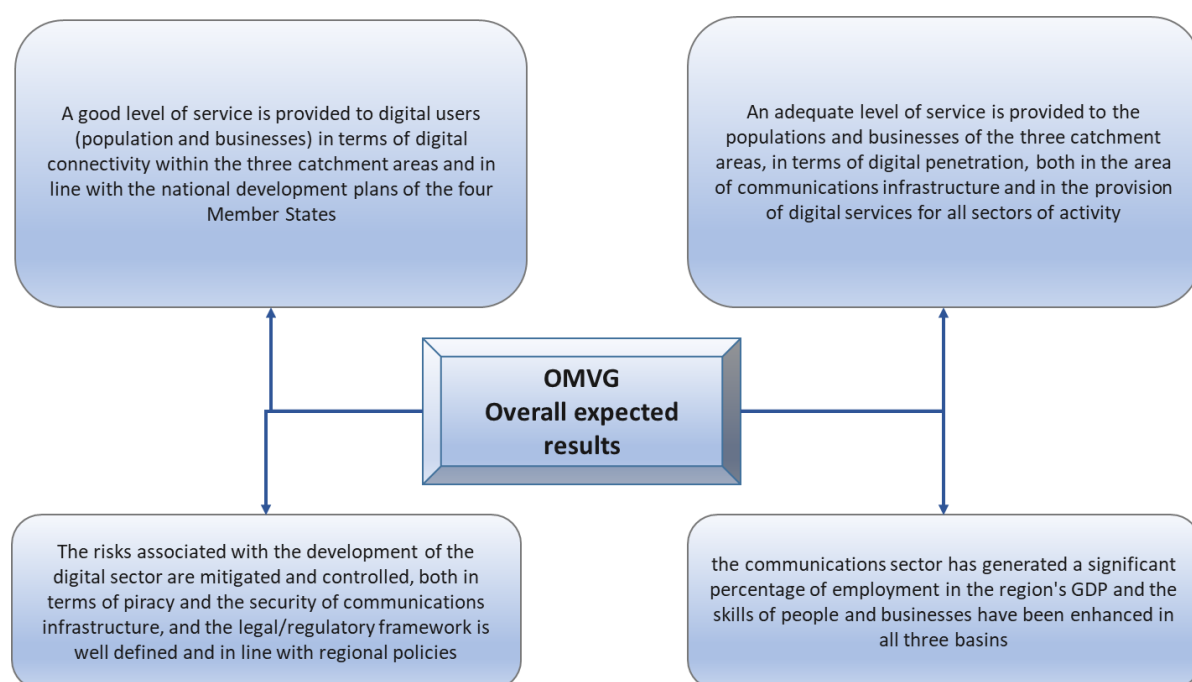
Four transport sub-sectors are present in the OMVG area: road, rail, river and air

This OMVG 2022-2040 Transport & Communication Master Plan will enable the assets (agriculture, mining, industry, tourism) of the OMVG area to be strengthened, with a view to partnership with donors and the private sector, and complementarity with neighbouring states in the WAEMU region. An efficient transport and communications sector supports economic development, strengthens attractiveness and land use planning, and supports the activities of the agricultural, mining and industrial sectors with a view to sustainable and harmonious development and in the context of preserving water resources.



The four overall expected results in the transport sector address the main challenges:

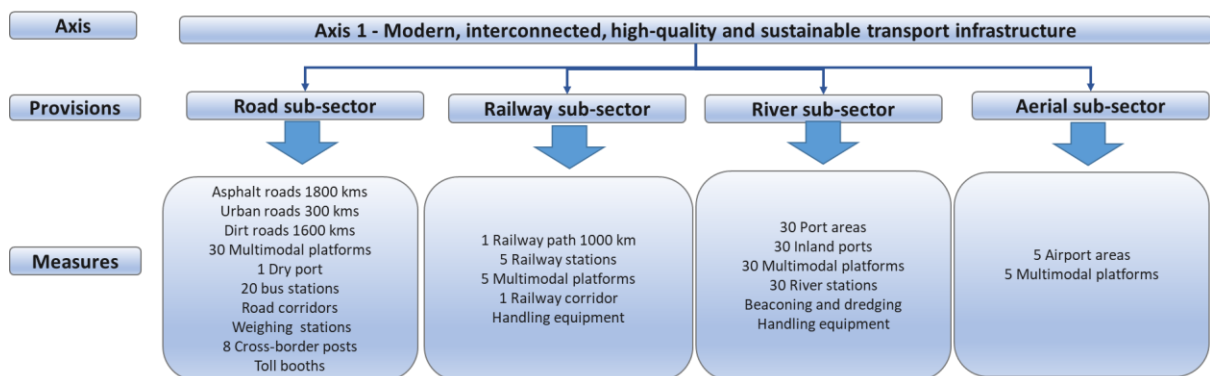
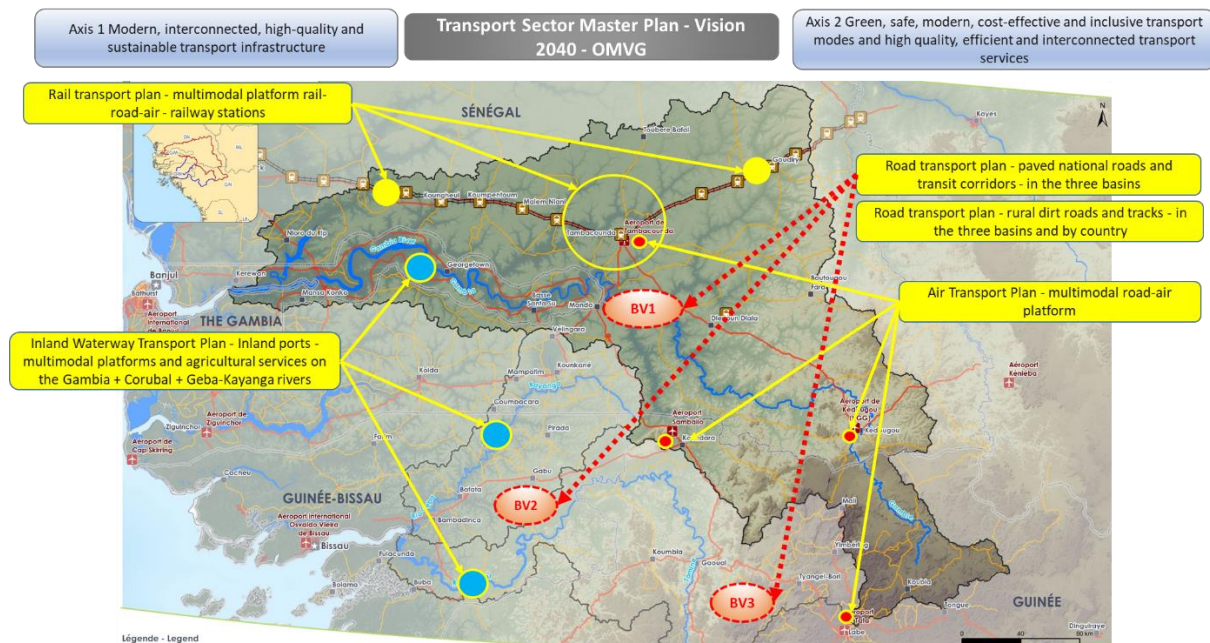
- Strengthen the sense of belonging of the riparian inhabitants to the OMVG region and to give a positive image of the three basins at regional level.
- Integrate the four transport networks into the WAEMU regional territory.
- Improve the seamless connection of the three river basins with each other and with the four Member States.
- Develop and strengthen a multimodal transport and quality logistics offer, in order to enhance/strengthen the economic sectors in order to anchor them sustainably on the territory of the sub-region and increase their export capacity.
- Support the diversification of agricultural production, processing and distribution through efficient transport, and in the context of adaptation to climate change.
- Promote tourism development in the three basins and their national parks.

COMMUNICATIONS SECTOR AND OVERALL EXPECTED RESULTS

The four overall expected results in the communications sector address the main issues:

- Enhance the policies implemented at regional level and in the four Member States in terms of digital coverage, connectivity and penetration, the development of numerous digital uses (instant communication, various services, mobility, and teleworking since the beginning of the Covid 19 pandemic) and the dissemination/penetration of digital culture.
- Improve the level of training/qualifications of the local population.
- Supporting SMEs working in the field of digital transformation.
- Strengthen and harmonise the legal and regulatory framework of the telecoms/ICT sector with regional policies and appropriate for all actors in the sector (population, enterprises).
- Deploy digital networks throughout the basins, interconnected with the four Member States and their neighbours (need for one or more IXPs and possibly a second submarine cable).
- Deploy infrastructure sharing strategies.
- Develop access to diverse broadband services and applications in many domains (e-health, e-education, e-administration, e-agriculture) at affordable rates.
- Support companies located within the three areas in acquiring technological know-how and creating digital clusters and R&D centres, enabling the development of digital applications and content specific to the region.

4.3 STRATEGIC AXIS 1 - TRANSPORT INFRASTRUCTURE



GENERAL PRINCIPLE

To achieve the OMVG 2040 vision, the first strategy is to build, rehabilitate and/or maintain by 2040 modern infrastructure in the four transport networks (road, rail, river and air), interconnected with each other, and of high quality and sustainable.

EXPECTED RESULTS

With an optimally meshed infrastructure network, the transport system will improve connectivity, contribute to the opening up of rural areas in the OMVG area, and to socio-economic development with better accessibility to markets, education sites and health centres.

AREA OF INTERVENTION

The entire OMVG area is covered by this Strategic Axis 1 with the objective of good geographical coverage of transport infrastructures in all regions.

PROVISIONS & PROPOSED MEASURES

Strategic Axis 1 is broken down into 4 main provisions per transport infrastructure sub-sector (road - rail - inland waterway - air), each of which is addressed in line with the national development visions and strategies of the four Member States.

The provision of the road sub-sector includes important infrastructure upgrading measures for urban roads, asphalt roads, dirt roads and tracks, infrastructure related to bus stations, multimodal platforms, dry ports and road corridors, as well as control and prevention infrastructure (weighing stations, toll booths, cross-border stations).

The provision of the railway sub-sector concerns modern infrastructure measures on the railway corridor and the five railway stations.

The provision of the air sub-sector includes measures to modernise five airport infrastructures.

The provision of the inland waterway sub-sector includes measures relating to inland waterway port infrastructure, multimodal platforms and river stations.

4.3.1 Provision 1.1 - Road sub-sector

Measure 1.1.1 - Rural roads construction / rehabilitation

The diagnosis revealed shortcomings in terms of rural roads in the OMVG area and a network in poor condition. This has a strong impact on the mobility of goods/agricultural production and people (difficult access to socio-economic centres, health centres, education, markets, etc.). A key measure therefore consists of building/rehabilitating/maintaining this network of rural roads in all seasons to allow perfect accessibility and interconnection with the major transport networks, asphalt road network, river network, and railway network. This measure therefore concerns the preservation of the infrastructure of a priority network of 1,600 km of rural roads in order to contribute to the socio-economic development of the populations living in the three basins.

Measure 1.1.1	1600 km of new rural farm roads are built/rehabilitated and maintained in connection with the major paved road links (100km/country/4 years)
Provision 1.1	Road sub-sector - rural roads
Objective:	An adequate level of service is provided to rural populations by basin. Priority road infrastructure projects are implemented through the construction of quality rural roads to ensure internal opening up and regional integration.
Activities / measures:	Technical and financial feasibility and environmental studies Contracting of rural road works Construction rehabilitation maintenance of 400 km per country (4 Member States) of rural roads (according to priorities and agricultural production centres) spread over 16 years Routine and periodic maintenance every two years Quarterly follow-up of the evolution of the measure by the OMVG Transport Unit in liaison with the national authorities of each Member State Quarterly reporting to OMVG management
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of transport and agencies under their supervision, road agencies, FER
Duration:	16 years - 2023 to 2038
Costs and funding:	Measure 1 = State and donors - €105 million (average €65000/km)

Expected results:	1600 km of new rural roads are built/rehabilitated and maintained in connection with the major asphalt road links (100 km completed per country every 4 years)
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Measure 1.1.2 - Asphalt roads construction / rehabilitation (PIR Programme)

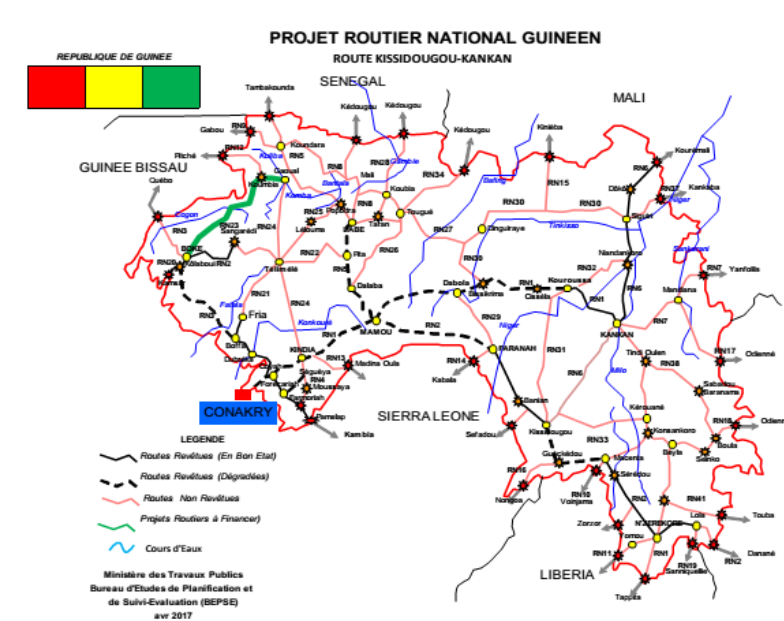
The diagnosis also revealed shortcomings in terms of asphalted roads in the OMVG area and a network in poor condition in certain regions of the OMVG area. This has a major impact on mobility in the broad sense of the term for goods and people (difficult access to socio-economic centres, health centres, education centres, markets, transit difficulties along structuring corridors, impassable links during inter-urban rainy seasons, etc.). A second key measure therefore consists of building / rehabilitating / maintaining this network of asphalt roads in all seasons in order to allow perfect accessibility and interconnection with other major transport networks such as railways and waterways, or even air transport.

This measure therefore concerns the preservation of the heritage of a priority paved network of national roads of more than 2,117 km of asphalt roads to contribute to the socio-economic development of the riparian populations of the three basins and to allow for the fluidity of inter-state and sub-regional transport on the major corridors, according to the OMVG **Road Infrastructure Programme (PIR)** developed in 2009.

This PIR programme aims essentially at improving road transport infrastructure (roads, rural roads and crossings) in the areas of the basins under the jurisdiction of the OMVG in order to increase economic growth and reduce poverty. It also aims at facilitating the movement of people, promoting trade, facilitating the marketing of agricultural production, reducing transport costs and vehicle operating costs, improving the length of the network and the quality of road infrastructure as well as their cross-border interconnection in the OMVG member countries. The main modes of transport in the OMVG area for The Gambia and Guinea-Bissau are road, sea, river and air transport, to which should be added rail transport for Guinea and Senegal.

Road transport in the OMVG area is the main mode of movement of people and goods, covering almost 90% of domestic transport.

The mapping study of the road networks in the OMVG region shows that many projects still need to be developed and significant investments made to improve the road network and promote economic exchanges (e.g. the gold road in the Mali prefecture). For example, the map below of the Guinean national road network in 2017 shows the roads that have not yet been resurfaced and the state of the paved roads.



The roads concerned by the PIR programme are listed in the annex. The 2022 unit cost per km is estimated at €150,000 or CFAF 98 million.

This list of roads is not exhaustive and will be reviewed according to the priorities and future national transport plans of each Member State.

Measure 1.1.2	Construction/rehabilitation/maintenance of 2,117 km of modern and quality asphalt road infrastructure (and related engineering structures and bridges) on the perimeter of the three catchment areas, according to the PIR 2009 OMVG programme		
Provision 1.1	Roads sub-sector - asphalt roads and transit corridors		
Objective:	A good level of service is provided to road users by river basin, as well as to road users in transit within the WAEMU area. Priority asphalt road infrastructure projects and engineering structures are implemented (PIR OMVG Programme) through the construction of quality asphalt roads. Internal opening up and regional integration on transit corridors are ensured		
Activities / measures:	Technical and financial feasibility and environmental studies (update of the 2009 PIR programme) on the following priority roads per Member State (analysis of roads already asphalted and possible level of rehabilitation + technical analysis of asphalted of roads still at the stage of dirt roads):		
	State (OMVG)	Roads	Length (km)
	Gambie	Bassé - Kundan Kunda - Ndimbo - Sudowal - Fatoto - Nyamanari - Manda (Frontière SN) Georgetown - Bani - Kunting - Tankan kunda - Dobbo (bac Dobbo - Bansang) Georgetown - Naude - Diabugu - Darsilami - Yorobawal - Satu koba - Brifu - Koinatenda - Passamassi Mandinka - Fatoto Fatoto - Kristi Kunda - Koina Bansang - Frontière SN (Madina yorofula)	51,5 40,0 125,0 8,5 9,0
	Guinée	Kandika (Frontière GB) - Saréboido (RN9) - Koundara (RN9) - Youkounkoun (RN9) - Touba (RN9) - Gaya (Mali) Koumbia (RN12) - Foulamori (Frontière GB) (Route Trans cotière) Boke (RN23) - Koumbia (RN 23) - Gaoual (RN23) Guidal (RN 23) - Frontière GB Kitchar (RN 12) - Kandika (RN 9) Saréboido (RN9) - Sambailo (RN5) Télémele (RN24) - Sarékali (RN24) - Kakoni (RN24) - Gaoual (RN24) - Kounsitel (RN5) Youkounkoun - Frontière SN	184,5 87,5 191,5 4,5 31,5 28,5 136,7 5,0
	Guinée-Bissau	Bafata - Gabu-Pitche - Kandika (FrontièreGN) Pitche-Foulamori (FrontièreGN) Gabu - Conjufa - Pirada (FrontièreSN) Tanta Cossé (Bafata) - Cuntuboel - Comboju(FrontièreSN) Saré bacar (FrontièreSN) - Cuntuboel Pirada - Tabassi - Bajoncounda - Canqélifa - burunhuma (Frontière GN) Pitche - Bac (Frontière GN) Gabu - Che Che - Beli - Vendu Leidi (Frontière GN) Kountakané(Vélingara) - Wassadou (FrontièreGB)	127,0 13,5 45,0 61,5 35,7 71,7 13,5 107,5 36,5
	Sénégal	Kolda-Salikhénié (FrontièreGB) Kolda - Soulabali - Pata - frontière GMB Dabo - Koumbakara (Frontière GB) Frontière GN - Bandafassi (Kédougou) Manda Douane - Frontière GMB Passi Ngayénne - Frontière GMB Médina Sabakh - Ngayène - Passi ngayène - Sali Koungheul - Sali Maka gouye Sali - Kahène - Mbaro - Kountouata - Maka Koumpeutoun - Ndiayèn kountouata Badiara - Saré Boido Mali - Leguédié - Dinguiraye - Médina - yorofoula - Ngoudouro - Pata Séléti - Tambacounda - Diaboudoir - Diokadou - Njoniam - Kandiou Mangana -Boudouk - Ndiamakouta	29,0 65,5 33,6 92,5 2,0 2,5 112,0 20,5 97,5 33,0 83,6 130,0
	<ul style="list-style-type: none"> Contracting of asphalt road works Construction, rehabilitation and maintenance of 2,117 km of asphalt road (according to priorities and levels of deterioration of the roads) over 18 years Routine and periodic maintenance every two years 		

	<ul style="list-style-type: none"> Quarterly monitoring of the evolution of the measure by the OMVG Transport Unit liaison with the national authorities of each Member State Quarterly reporting to the OMVG management
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of transport and agencies under their supervision, road agencies, FER
Duration:	16 years - 2023 to 2040
Costs and funding:	Measure 1 = State and donors = €317 million (average €150.000/km)
Expected results:	Approximately 2,117 km of paved roads (and associated bridges and structures) are maintained and in good condition within the three basins

4.3.2 Provision 1.2 - Railway sub-sector

Measure 1.2.1 - Development of railway infrastructure

Rail transport is a sensitive issue that has been the subject of many projects that have not been completed. This mode of transport is nevertheless indispensable as an alternative to road transport. The Dakar-Bamako railway line is taken into account in this master plan. Part of the railway line is located within the OMVG area, and has therefore been studied in order to set up an efficient transport system (once the Senegalese and Malian states have succeeded in setting up this mode of transport and rehabilitating the line from end to end). The railway stations located within the OMVG area will be of fundamental importance in the implementation of efficient transport modes.

Measure 1.2.1	Development of rail transport on the Dakar - Bamako axis with the construction of five railway stations and efficient multimodal logistics platforms in the OMVG area (links with air and road)
Provision 1.2	Railway sub-sector
Objective:	Relaunch of rail transport and integration of multimodal rail-road transport - optimisation of transport logistics in all sectors of activity (agriculture, mining, industry, trade, tourism)
Activities / measures:	<p>Technical and financial feasibility study for the construction of five railway stations (Tambacounda, Goudiry, Manem Niany, Koupentoum, Kounghoul) to support socio-economic development in the OMVG area</p> <p>Consultation of the OMVG Transport Unit with the national authorities in charge of this mode of transport, and the private sector (mines, agricultural producers, distributors)</p> <p>Procurement of technical assistance</p> <p>Implementation of the technical assistance for the implementation of the construction / modernisation plan of five railway stations and their associated multimodal platforms</p> <p>Awareness campaign and training for the development of a genuine multimodal rail-road and piggyback transport sector</p> <p>Promotional campaign with the private sector (logisticians, transporters, producers) to ensure and promote services to/from Bamako and Dakar at these five railway stations</p>

	Study and search for financing from governments and private companies. Search for innovative financing (State financing, TFP donations, private PPP, long-term instalment loans to finance the investment) Construction/upgrading of the five identified railway sites Construction/upgrading of five multimodal platforms, with their loading/unloading/storage facilities, safety enclosures, training of railway and multimodal transport personnel, logistics Establishment of a sustainable multimodal transport system organised with road hauliers and logisticians Plan for the sustainability of rail transport and organisation of marketing methods for this mode of transport Quarterly follow-up of the evolution of the measure by the OMVG Transport Unit in liaison with the national authorities of each Member State, technical assistance and the private sector Quarterly reporting to OMVG management
Location:	Northern Gambia River Basin Region
Main beneficiary states of the action:	Senegal
Project ownership and implementation:	Ministry in charge of infrastructure and agencies under their supervision
Duration:	10 years - 2023 to 2033
Costs and funding:	State and donors - €25 million estimate + project to rehabilitate the Bamako-Dakar line to be included in the cost of this project
Expected results:	Rail transport is developed on the Dakar - Bamako axis with the construction of efficient railway stations (including Tambacounda, Goudiry, Manem Niany, Koupentoum, Kounghoul) in the OMVG area with bimodal / trimodal platforms with the Tambacounda airport and the national roads crossing these railway stations

4.3.3 Provision 1 3 - River transport and inland waterways sub-sector

Measure 1.3.1 - Navigability in the three basins

The diagnosis preceding this master plan revealed that the river transport mode has been very little developed in the OMVG area. This measure should enable river transport to develop as an alternative (or multimodal complement) to road transport and to use the three rivers of the three basins (mainly the Gambia River) for the transport of goods (bulk, ores, agricultural products) and people in complete safety at low cost.

Given the potential of transport on the three rivers of the OMVG area, it is important to implement a regional action plan for the development of navigability and efficient port areas on these rivers, from the production areas (mining, agricultural, industrial) to the major cities and capitals located within this perimeter and to the major maritime ports of the region. With a view to developing a genuine intermodal and/or multimodal transport chain, river transport, or even river-sea transport, should be developed.

The latter mode of transport has significant advantages in terms of transport costs per kilometre for bulk goods and transport to foreign seaports. River ports on the three OMVG rivers must be small structures whose regulatory and statutory obligations (dockers, crane operators, etc.) can be reduced, their handling costs and ancillary expenses will be lower, and the handling equipment used will be better adapted to the size of small units. Sea-river transport eliminates the need for costly load breaks. Depending on the location of the production or trading centres sending or receiving goods, sea-river transport will solve several constraints such as i) the reduction of the number of costly handling operations, ii) the low level of competition compared to other transport modes, iii) the road traffic of exceptional convoys (for bulky goods), and the phenomena of damaged goods during handling operations. River-sea transport eliminates break bulk and improves the traceability of goods.

Measure 1.3.1	Establish navigability on 1200 km of three rivers for the development of inland waterway transport in the three river basins
Provision 1.3	Action Plan Inland Waterway Transport
Objective:	Inland waterway transport is becoming an alternative to road transport, and multimodal transport is being integrated into all transport sectors (road, rail, inland waterway, air) and transport logistics are being optimised in all sectors of activity (agriculture, mining, industry, trade, tourism) Objective 1: promote river traffic and its development towards multimodal transport Objective 2: establish navigability on the three river basins Objective 3: secure the river transport of people and goods Objective 4: set up waterway transport channels
Location:	Three basins - Gambia, Corubal and Kayanga rivers
Activities (details of measures):	Technical and financial feasibility study for the implementation of navigability on the three rivers of the OMVG area Consultation of the OMVG Transport Unit with the national authorities in charge of this mode of transport, and the private sector (river transporters, agricultural producers, distributors) Awareness campaign and training for the development of navigability Procurement of technical assistance Implementation of technical assistance for navigability implementation Cartographic works and constitution of a computerised database updated periodically or in real time Geodetic studies and works Hydrometric and limnometric works Rehabilitate the navigability of 1,200 km of waterways (400 km per river, Gambia, Kayanga Korubal) through actions on (i) hydrographic, hydrological and bathymetric measurements and (ii) marking and mapping of waterways; and dredging Implementation of bathymetric, marking, dredging and mapping solutions by the ministries and their subordinate agencies Sustainability of navigability and organisation of the maintenance mechanism of rehabilitated waterways. Buoyage upgrading work Quarterly monitoring of the evolution of the measure by the OMVG Transport Unit in liaison with the national authorities of each Member State Quarterly reporting to OMVG management
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministries in charge of inland navigation and agencies under their supervision Project management/implementation: International technical assistance, State, agencies under their supervision and partner companies specialised in bathymetry, dredging, buoying and cartography
Duration:	10 years - 2023 to 2032
Costs and funding:	Funders: State, international donors, river tax, Inland Waterways Maintenance Fund (if existing, otherwise to be created) Costs: the survey, tagging, mapping and database system creation phase is estimated at €2.4 million, at a rate of €2,000/km.
Expected results:	Inland waterway transport is being developed, with cost-effective and efficient solutions, in all three river basins, and navigability is becoming a good alternative to other modes of transport.

Measure 1.3.2 - Construction of at least 30 river ports

This second measure concerning the "river sub-sector" provision consists of the essential development of quality port infrastructures and multimodal platforms equipped to international standards to ensure the mobility of goods produced in the OMVG area towards the major urban centres and seaports (Banjul, Bissau, and Conakry) and to promote exchanges between inland ports, at affordable costs.

As already mentioned in measure 1.3.1, it will be essential to gradually adapt river ports to the concept of river-sea ports until 2040, especially in the large river ports that can accommodate river-sea units.

Measure 1.3.2	Modular construction of 30 river ports and multimodal platforms (bulk goods, agricultural services) on the Gambia, Korubal and Kayanga rivers
Provision 1.3	River sub-sector
Objective:	Overall objective: Multimodal transport is integrated in all transport sectors (road, rail, inland waterway, air) and transport logistics are optimised in all sectors of activity (agriculture, mining, industry, trade, tourism) Specific objective: offer of multimodal storage and logistics sites in response to the needs of the rural areas of the three river basins + offer of quality port services and associated multimodal logistics + contribution to the establishment of a development sector for the river economy, or even a river-sea economy.
Location:	Three basins – Gambia, Corubal and Kayanga rivers
Activities (details of measures):	<ul style="list-style-type: none"> • Technical and financial feasibility study for the identification of priority river ports to be modernised and technical studies for the construction of 30 river ports (quays and storage sites) on the three rivers of the OMVG area • Consultation of the OMVG Transport Unit with the national authorities in charge of this mode of transport, and the private sector (river transporters, river port managers, village communities, local authorities, agricultural producers, distributors, logisticians) • Awareness campaign and training for the deployment of new, modern and cost-effective river ports, interconnected with the rural road network • Procurement of technical assistance support and selection of contracting companies • Implementation of technical assistance for the construction plan of 30 river ports and their multimodal platforms and river stations, as well as their loading/unloading facilities • Establishment of a network of 30 river ports for agricultural services at an average distance of 30 km to promote intra-rural trade and facilitate the movement of agricultural goods and livestock to the major consumption centres, as well as the movement of people living along the rivers. These 30 agricultural service ports will be built and equipped progressively by modules (warehouse, quay, handling equipment, water and electricity supply, processing plants, etc.). • Feasibility study per river port and search for funding • Construction of loading/unloading docks • Construction of storage warehouses and administrative offices • Construction of a security fence • Acquisition of port equipment for lifting and loading (cranes, forklifts, etc.) • Development of the river port and installation of water and electricity • Training of inland port staff in port management and multimodal logistics techniques • creation of a computerised database of port sites (characteristics, transaction volumes) updated periodically or in real time • Development of a River Information System (RIS) of the major river ports in the three river basins, including real-time data on their bimodal or trimodal connections • Organisation of a sustainable logistics and handling management mechanism in the modernised port areas • Quarterly follow-up of the evolution of the measure by the OMVG Transport Unit in liaison with the national authorities of each Member State

	<ul style="list-style-type: none"> Quarterly reporting to OMVG management
Main beneficiary states of the action:	The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Project management: Ministries and line agencies Project management/implementation: International technical assistance, government, line agencies and partner companies
Duration:	10 years - 2023 to 2032
Costs and funding:	Funders: PPP, private sector, logisticians, state, international donors, river tax, Waterways Maintenance Fund (if existing, otherwise to be created) costs: €550,000 per river port, i.e. an overall investment of €16.5 million
Expected results:	Development of inland waterway transport in all three river basins, construction of port infrastructure at all major river ports in the three river basins, with bimodal or trimodal connections: inland waterway navigability established on all three rivers

Measure 1.3.3 - Establishment of a modern inland waterway transport fleet

This third accompanying measure to the "river sub-sector" provision is an indispensable complement to the development of the inland waterway sector. Transport must be provided by modern modes of transport, such as modern river boats with a capacity of up to 100 metric tonnes of goods and a draught of around 1.5 metres. This also implies that the measure should accompany the creation of a real inland waterway transport sector and support transport operators in the acquisition of such transport equipment.

Measure 1.3.3	Construction of 90 river boats for inland navigation on the three rivers Gambia - Corubal - Kayanga (network of three transport fleets consisting of 30 equipments per river)
Provision 1.3	River sub-sector
Objective:	<p>Overall objective: Multimodal transport is integrated in all transport sectors (road, rail, inland waterway, air) and transport logistics is optimised in all sectors of activity (agriculture, mining, industry, trade, tourism)</p> <p>Specific objective: to develop an inland waterway transport offer in accordance with technical laws and regulations, to offer a quality inland waterway transport service and Contribute to the development of the inland waterway economy in each of the three river basins.</p> <p>The project aims to provide river transporters serving agricultural areas with modern river boats (load capacity of 50 to 100 tonnes), built and equipped in compliance with technical laws and regulations to secure and promote intra-rural trade, the movement of goods and livestock to major consumption centres, and the movement of people</p>
Location:	Three basins - Gambia Corubal and Kayanga rivers
Activities (details of measures):	<p>Technical and financial feasibility study for the construction of 90 modern river boats (carrying capacity of 50 to 100 tons), built and equipped in compliance with the laws and technical regulations on the three rivers of the OMVG area</p> <p>Consultation of the OMVG Transport Unit with the national authorities in charge of this mode of transport, and the private sector (river transporters, agricultural producers, distributors)</p> <p>Awareness campaign and training for the development of a real inland waterway transport sector</p> <p>Procurement of technical assistance</p> <p>Implementation of technical assistance for the implementation of the 90 river boat construction plan and search for competent shipyards</p> <p>Feasibility study per basin and search for financing from the States and private companies. Search for innovative financing (State financing, TFP donations, private PPP, long-term instalment loans to finance the investment)</p> <p>Establishment of shipyards (at least one per river)</p> <p>Construction of transport river boats</p>

	<p>Establishment of a sustainable system of organised inland waterway transport with inland waterway transporters and logisticians and training in inland navigation and logistics</p> <p>Building up the modern and safe inland waterway transport fleet by basin</p> <p>Sustainability of navigability and organisation of marketing methods for this mode of waterway transport</p> <p>Quarterly follow-up of the evolution of the measure by the OMVG Transport Unit in liaison with the national authorities of each Member State, technical assistance and the private sector</p> <p>Quarterly reporting to OMVG management</p>
Main beneficiary states of the action:	The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Project management: ministries and line agencies Project management/implementation: international technical assistance, government, line agencies and private partner companies
Duration:	10 years - 2023 to 2032
Costs and funding:	Funders: PPP, private sector, logisticians, States, international donors, river tax, Waterways Maintenance Fund (if existing, otherwise to be created) costs: €60,000 per piece of equipment, i.e. an overall investment of €5.4 million
Expected results:	Inland waterway transport is developed on the three rivers and 90 modern river boats are built and operational for the transport of goods along the agricultural routes

4.3.4 Provision 1.4- Air transport sub-sector

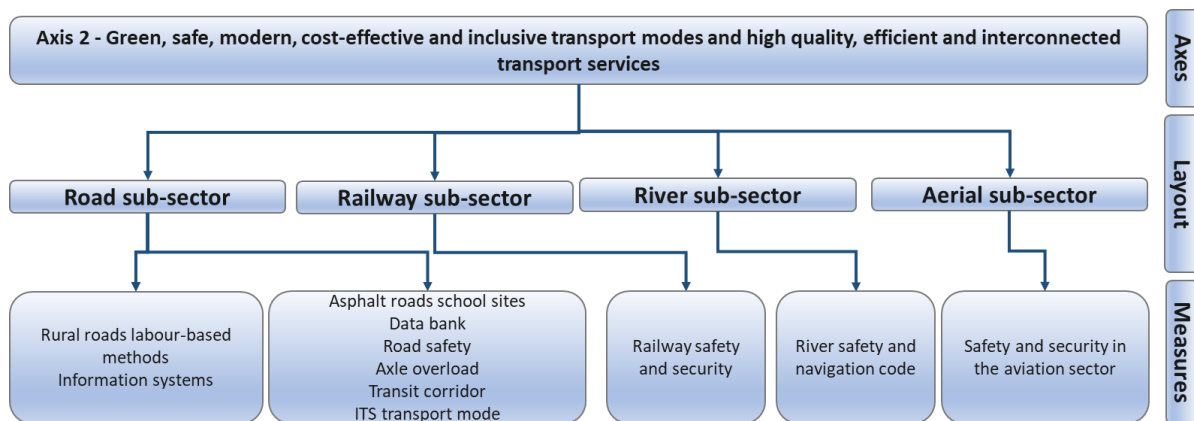
Measure 1.4.1 - Modernisation of airports in the OMVG area

Air transport is taken into account in this sector master plan because it is a significant mode of transport for the mobility of people (e.g. tourism) and sensitive goods with high added value that require short transport routes.

Measure 1.4.1	Strengthening of air transport for goods and people and modernisation of five airports Koundara, Tambacounda, Gaoual, Bafata and Kedougou located in the OMVG area - upgrading to international standards for air safety / security
Provision 1.4	Air transport sub-sector
Objective:	<ul style="list-style-type: none"> The modernisation of five airports located in the OMVG area. Multimodal transport is integrated in all transport sectors (road, rail, river, air) and transport logistics is optimised in all sectors of activity (agriculture, mining, industry, trade, tourism)

Activities / measures:	<ul style="list-style-type: none"> • Technical and financial feasibility study for the modernisation of five airports in compliance with the laws and technical regulations in the OMVG area • Technical and financial feasibility study of the modernisation of three airports to support socio-economic development and the implementation of all ICAO safety and security audit recommendations, • Consultation of the OMVG Transport Unit with the national authorities in charge of this mode of transport, and the private sector (logisticians, airlines, airport managers) • Awareness campaign and training for the development of a real domestic air transport network • Procurement of technical assistance and works contracts from competent public works companies • Implementation of technical assistance for the implementation of the modernisation plan for five airports and search for competent public works companies • Feasibility study per basin and search for financing from the States and private companies. Search for innovative financing (State financing, TFP donations, private PPP, long-term instalment loans to finance the investment) • Promotional campaign with the private sector (transporters, logisticians, tourism, business) and regional authorities to ensure and promote the service to these three domestic airports • Modernisation of the five identified airports (development of runways, terminals, multimodal road-air-rail platforms, goods storage warehouses, acquisition and modernisation of airport equipment) and interconnection of the road access routes to these airports • Establishment of a sustainable system of organised air transport with air carriers and logisticians and training of personnel in multimodal logistics • Plan for the sustainability and marketing of air transport and organisation of marketing methods for this mode of transport • Training plan for meteorological, multimodal transport, logistics, security and safety personnel • Quarterly follow-up of the evolution of the measure by the OMVG Transport Unit in liaison with the national authorities of each Member State, technical assistance, airlines and the private sector • Quarterly reporting to OMVG management
Location :	Five airports located in the OMVG area in the basins (Kedougou, Koundara, Tambacounda, Bafata, Gaoual)
Main beneficiary states of the action:	Senegal and Guinea
Project ownership and implementation:	Ministry in charge of infrastructure and their subordinate agencies
Duration:	5 years - 2023 to 2027
Costs and funding:	State and donors - €5 million
Expected results:	Air transport is strengthened for goods and people and the five airports in the OMVG area are upgraded and international air safety/security standards are met

4.4 STRATEGIC AXIS 2 – TRANSPORT MODES & SERVICES



GENERAL PRINCIPLE

In order to achieve the OMVG 2040 vision, the second strategy consists of strengthening the capacities of public and private actors in the management of the assets of the four transport networks (road, rail, inland waterway and air), in the major themes of transport safety, management of information on existing transport networks, preservation of existing infrastructure and in services related to the transport sectors.

EXPECTED RESULTS

The measures taken make it possible to respond to the three major challenges of connectivity, mobility and accessibility, to contribute to socio-economic development by developing a range of efficient transport services and by putting in place modern modes of transport for the benefit of the riparian populations in the OMVG area.

AREA OF INTERVENTION

The entire OMVG area is targeted by this Strategic Axis 2 with the objective of good coverage of capacity building in all regions and in an equal manner.

PROVISIONS & PROPOSED MEASURES

Strategic Axis 2 is broken down into 4 main provisions per transport infrastructure sub-sector (road - rail - inland waterway - air), each of which is addressed in line with the national development visions and strategies of the four Member States.

The various provisions include important capacity building measures for the various actors (i) for asphalt roads and rural roads (village communities, entities under State supervision, contracting companies, etc.) for the implementation of actions related to road safety and axle overloading, (ii) for railways in terms of safety and information systems, (iii) for the river transport sub-sector in terms of safety and information systems, and finally iv) for the air sub-sector with actions to be carried out in terms of air safety and security.

4.4.1 Provision 2.1 - Road sub-sector

Measure 2.1.1 - Rural roads and labour-intensive methods

The diagnosis revealed shortcomings in terms of rural roads in the OMVG area and a network in poor condition. This has a strong impact on the mobility of goods/agricultural production and people (difficult access to socio-economic centres, health centres, education, markets, etc.). A key measure therefore consists of building/rehabilitating/maintaining this network of rural roads in all seasons to allow perfect accessibility and interconnection with the major transport networks, asphalt road network, river network, and railway network. This measure therefore concerns the preservation of the infrastructure of a priority network of 1,600 km of rural roads to contribute to the socio-economic development of the populations living along the three basins.

Measure 2.1.1	Training plan for the local population of rural roads in labour-intensive techniques for the construction and maintenance of rural roads
Provision 2.1	Road sub-sector - rural roads
Objective:	A proper level of service is provided to rural populations at the basin level. HIMO (labour-intensive) techniques are deployed to integrate village communities in the maintenance of rural roads, in the area of priority road infrastructure projects implemented through the realization of quality rural road works to ensure internal opening up and regional integration.
Activities:	Technical and financial feasibility study of the target areas and village communities concerned Procurement of technical assistance Plan to train the local population of rural roads in HIMO techniques for the construction and maintenance of rural roads Quarterly follow-up of the evolution of the measure by the OMVG Transport Unit in liaison with the national authorities of each Member State Quarterly reporting to OMVG management
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of public works and their subordinate agencies road agencies, FER
Duration:	16 years - 2023 to 2038
Costs and funding:	Measure 2 = €2.5 million over 5 years
Expected results:	The population living along rural roads is trained and competent in HIMO techniques for the construction and maintenance of rural roads

Measure 2.1.2 - Rural roads and information systems

The diagnosis revealed shortcomings in terms of real-time information systems on the rural road network in the OMVG area. This lack of information has a strong impact on the mobility of goods/agricultural production and people (difficult access to socio-economic centres, health centres, education, markets, etc.). A key measure therefore consists of developing a high-performance rural road information system (database associated with a GIS) providing perfect knowledge of the state of the networks and their interconnections with the major transport networks, asphalt road network, river network and railway network. This measure therefore concerns both the prevention and maintenance of rural roads and information to the population and authorities on the level of socio-economic development in the three basins.

Measure 2.1.2	Creation and implementation of a road database/information system (CRIS) by basin dedicated to existing, completed and future rural roads, and in liaison with road agencies, RMFs and ministries in the four Member States
Provision 2.1	Road sub-sector - rural roads
Objective:	A good level of service is provided to the rural population by basin. The information and GIS system is made available to the populations and authorities on the entire network of rural roads and points of interest (health centres, schools, colleges, production by region, available transport networks), as well as on the priority road infrastructure projects implemented through the realisation of rural road works to ensure internal opening up and regional integration.
Activities:	Technical and financial feasibility study of a network of rural road databases and GIS (RRIS) on the OMVG area Procurement of a technical assistance contract Development or acquisition of a database of rural roads by basin and development of a regional OMVG GIS Making the application available as a web service for the benefit of the population Promotion to target populations for the use of the RRIS Quarterly follow-up of the evolution of the measure by the OMVG Transport Unit in liaison with the national authorities of each Member State Quarterly reporting to OMVG management
Location :	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of transport and their subordinate agencies road agencies, RMF, regional governors
Duration:	16 years - 2023 to 2038
Costs and funding:	Measure 3 = €1.5 million over 5 years
Expected results:	A Rural Road Information System (RRIS) is available as a free web service for the population by basin, providing real-time information on the state of roads, available transport and points of interest (health centres, schools, colleges, markets, available transport, etc)

Measure 2.1.3 - Asphalt roads and training schools

Measure 2.1.3	Training of national companies for the construction and maintenance of quality asphalt roads
Provision 2.1	Roads sub-sector - paved roads and transit corridors
Objective:	A proper level of service is provided to road users by basin, as well as to road users in transit within the WAEMU area. Priority asphalt road infrastructure projects and engineering structures are implemented through the construction of quality asphalt roads. Internal opening up and regional integration on transit corridors are ensured, and international/regional road safety and axle load standards are respected
Activities:	Technical and financial feasibility study for capacity building of contractors and control companies Procurement of technical assistance Training plan for regional public works companies for the construction and maintenance of quality asphalt roads Setting up of a training school Quarterly follow-up of the evolution of the measure by the OMVG Transport Unit in liaison with the national authorities of each Member State Quarterly reporting to OMVG management
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau

Project ownership and implementation:	Ministry in charge of transport and their subordinate agencies, road agencies, FER
Duration:	16 years - 2023 to 2040
Costs and funding:	€2.5 million
Expected results:	National contracting companies are trained to ensure the construction and maintenance of asphalt roads according to quality criteria and trained in international norms and standards and in new technologies related to asphalt roads of the future

Measure 2.1.4 - Asphalt roads and OMVG road databases

Measure 2.1.4	Setting up a regional database of asphalt roads by basin and linking it with the databases of the road agencies of the four Member States
Provision 2.1	Roads sub-sector - paved roads and transit corridors
Objective:	A proper level of service is provided to road users by basin, as well as to road users in transit within the WAEMU area. Priority asphalt road infrastructure projects and engineering structures are implemented through the construction of quality asphalt roads. Internal opening up and regional integration on transit corridors are ensured, and international/regional road safety and axle load standards are respected
Activities / measures:	Technical and financial feasibility study of a network of asphalt road databases and GIS (SIRB) on the OMVG area Procurement of a technical assistance contract Development or acquisition of a database of asphalt roads by basin and development of a regional GIS for the OMVG and in liaison with the databases of the road agencies of the four Member States Web service access to the application for the benefit of the population and national and international road transporters Promotion to target populations for the use of the SIRB Quarterly follow-up of the evolution of the measure by the OMVG Transport Unit in liaison with the national authorities of each Member State Quarterly reporting to OMVG management
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of transport and their subordinate agencies road agencies, FER
Duration:	16 years - 2023 to 2040
Costs and funding:	Measure 3 = €1.5 million
Expected results:	A regional database of paved roads by basin is developed and operational and linked to the databases of the road agencies of the four Member States

Measure 2.1.5 - Road safety in the OMVG area

The level of accidents in Africa is one of the highest in the world and the number of deaths by road accident has a strong impact on the populations living in the three basins. This measure over a period of 2023-2040 should make it possible to set up reliable transport networks through transport safety plans (especially road transport, the main mode of transport in the OMVG area) and to drastically reduce the level of accidents by 90% over the period.

Measure 2.15	Improving road safety in the three basins and bringing them up to international standards
Provision 2.1	Road sub-sector - capacity building
Objective:	Urban, inter-urban and regional mobility is enhanced by the provision of safe, reliable road transport for goods and people, both at city level, on inter-urban and inter-basin links, and at regional level on transit corridors. Exchanges are thus strengthened and intensified with border countries, and the accident rate is greatly reduced
Activities / measures:	Technical and financial feasibility study for the implementation of a road safety plan Awareness campaign and training for the deployment of the road safety plan Procurement of technical assistance Technical assistance for compliance with international road safety standards in line with Member States' national plans and strategies Awareness campaign and training on road transport standards for dangerous goods Awareness and information campaign for international transporters along road corridors and at border crossings Quarterly follow-up of the evolution of the measure by the OMVG Transport Unit in liaison with the national authorities of each Member State Quarterly reporting to OMVG management
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of transport and their subordinate agencies
Duration:	10 years - 2023 to 2033
Costs and funding:	State and donors - €2.5 million
Expected results:	Road safety for goods and people is ensured within the three basins and meets international standards

Measure 2.1.6 - axle overload

The regulatory framework at the level of the sub-region has been trying for many years to reduce axle overloading, and consequently to preserve the state of road assets (road maintenance being a very important burden for the states) and to reduce road accidents. This measure complements the previous one in order to put in place a real fight against this axle overload.

Measure 2.1.6	Combating axle overloading in the entire OMVG area of the three basins
Provision 2.1	Roads sub-sector - preservation of road infrastructure
Objective:	Urban, inter-urban and regional mobility is strengthened by the establishment of safe, reliable transport for the movement of goods and people, both at the level of cities, inter-urban and inter-basin links and at the regional level on transit corridors. Trade is thus strengthened and intensified with border countries. The application of WAEMU standards is implemented in the three basins and the road infrastructure is preserved from deterioration

Activities / measures:	Technical and financial feasibility study for the implementation of a plan to combat axle overloading Consultation of the OMVG Transport Unit with the national authorities in charge of this mode of transport Procurement of technical assistance Implementation of technical assistance for the implementation of regional standards for the fight against axle overloading Awareness campaign and training for the deployment of the plan to combat axle overloading Acquisition and installation of axle scales and weighing stations on the main roads in the three basins Training of staff in the use of weighing control equipment Quarterly follow-up of the evolution of the measure by the OMVG Transport Unit in liaison with the national authorities of each Member State Quarterly reporting to OMVG management
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of transport and their subordinate agencies
Duration:	5 years - 2023 to 2027
Costs and funding:	State - road fund - road agencies - donors - €5 million
Expected results:	Reduction of 90% of illegal vehicles on the three basins in 5 years, and the road infrastructure is thus protected from damage by heavy vehicles

Measure 2.1.7 - Transit corridor management

The OMVG area is at the centre of several inter-state transport and transit corridors. This strategic position should be able to contribute strongly to the socio-economic development of the region, as this area is an important transit region between landlocked countries and the various maritime ports, as each of the OMVG Member States has a maritime coastline and import/export ports. This measure therefore aims to optimise the management of corridors and inter-state border crossing points, to greatly reduce the costs of the various modes of transport (very high in Africa) and to adopt modern management practices such as Smart Corridors, studied within the framework of the major SSATP programme financed by the World Bank and the European Union.

Measure 2.1.7	Simplification of movement procedures at inter-Member State border crossings and along the transit corridors that cross the three basins
Provision 2.1	Road sub-sector - capacity building
Objective:	Urban, inter-urban and regional mobility is strengthened by the establishment of safe, reliable transport for the movement of goods and people, both at the level of cities, inter-urban and inter-basin links and at the regional level on transit corridors. Exchanges are thus strengthened and intensified with border countries
Activities / measures:	Technical and financial feasibility study for the implementation of a mobility plan and transport interconnection along the transit corridors crossing the three basins Consultation of the OMVG Transport Unit with the national authorities in charge of this mode of transport, and with the regional authorities Procurement of technical assistance Implementation of technical assistance for the implementation of the Smart Corridor file Implementation of the Smart Corridors portfolio of the SSATP continental programme Awareness campaign and training for the deployment of the Smart Corridor plan (inter-basin and inter-state traffic, management of border posts, etc.) Quarterly follow-up of the evolution of the measure by the OMVG

	Transport Unit in liaison with the national authorities of each Member State and the SSATP team Quarterly reporting to OMVG management
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of transport and their subordinate agencies
Duration:	15 years - 2023 to 2037
Costs and funding:	State and donors - €9 million
Expected results:	Movement procedures at inter-Member State border crossings and along the transit corridors that cross the three basins are improved and mobility/connectivity/accessibility is increased along all corridors

Measure 2.1.8 - modernisation of road transport modes

This provision is a fundamental element and driver of growth in the OMVG area. The modernisation of road transport is imperative in order to reduce the very high transport costs in the sub-region. The development of multimodal transport and logistics is a very important measure for socio-economic development in the entire OMVG area. It requires important skills (and can be coupled with the communications and ICT sector such as e-transport and e-logistics), efficient and modern infrastructure, and support from the private sector (PL to PL4 logisticians). Multimodal transport and supply chain management (SCM) are important assets for reducing transport and handling costs.

Measure 2.1.8	Modernisation of road transport modes for goods and people, development/modernisation of bus stations located in the OMVG area, deployment of an efficient regional transport logistics/supply chain management system
Provision 2.1	Road sub-sector - capacity building
Objective:	The modernization of road transport means, and the integration of multimodal transport and logistics for the benefit of all sectors of activity (agriculture, mining, industry, trade, tourism)
Activities / measures:	<ul style="list-style-type: none"> Technical and financial feasibility study for the implementation of a modernisation plan for transport and logistics Consultation of the OMVG Transport Unit with the national authorities in charge of this mode of transport Procurement of technical assistance Implementation of technical assistance for the implementation of the modernisation plan Awareness campaign and training for local authorities and road transport operators for fleet modernisation (passenger and freight transport) Awareness campaign and training for the deployment of an efficient regional transport logistics/supply chain management system Search for innovative financing for the renewal of transport fleets Technical and financial feasibility study for the development/modernisation of bus stations located in the OMVG area in strategic towns of the three basins Construction of modern bus stations equipped to international standards Training of staff in the management of connected bus stations Quarterly follow-up of the evolution of the measure by the OMVG Transport Unit in liaison with the national authorities of each Member State Quarterly reporting to OMVG management
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of transport and their subordinate agencies

Duration:	10 years - 2023 to 2033
Costs and funding:	State and donors - €7 million
Expected results:	Transport modes are modernised for goods and people - bus stations located in the OMVG area are modernised, transport logistics/Supply chain management is efficient and international safety/security standards by mode of transport are respected (axle overloads, transport of dangerous materials, etc.) and the management of transit corridors is improved (smart corridors)

4.4.2 Provision 2.2 - Railway sub-sector

Measure 2.2.1 - Railway safety and security

The level of accidents in Africa is one of the highest in the world and the number of deaths by accident has a strong impact on the populations living in the three basins. This measure over a period of 2023-2040 should make it possible to put in place reliable transport networks through rail transport safety plans within the OMVG area and to drastically reduce the level of accidents by 90% over the period.

Measure 2.2.1	Strengthening railway safety in the OMVG area and bringing it up to international standards
Provision 2.2	Railway sub-sector - capacity building
Objective:	Rail mobility in urban, interurban and regional areas is strengthened by the establishment of safe, reliable rail transport for the transport of goods and people, both at the level of cities, interurban and inter-basin links and at the regional level on the Bamako-Dakar transit rail corridor. Exchanges are thus strengthened and intensified with border countries and the accident rate is greatly reduced
Activities / measures:	<p>Technical and financial feasibility study for the implementation of a railway safety plan</p> <p>Consultation of the OMVG Transport Unit with the national authorities in charge of this mode of transport</p> <p>Procurement of technical assistance</p> <p>Implementation of technical assistance for compliance with international rail safety/security standards in line with Member States' national plans and strategies</p> <p>Awareness campaign and training for the deployment of the railway safety plan on the Bamako-Dakar corridor</p> <p>Awareness campaign and training on rail transport of dangerous goods</p> <p>Awareness and information campaign for local populations along the Bamako-Dakar railway corridor, in the five railway stations and at border crossings</p> <p>Development of a Rail Information System (RIS) with several modules (railway accidents, real time train tracking, railway equipment database, train timetables, statistics on passenger and freight railway traffic, statistics on maintenance levels of railway equipment and stations)</p> <p>Quarterly follow-up of the evolution of the measure by the OMVG Transport Unit in liaison with the national authorities of each Member State</p> <p>Quarterly reporting to OMVG management</p>
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of transport and their subordinate agencies
Duration:	10 years - 2023 to 2033
Costs and funding:	State and donors - €2.5 million
Expected results:	The safety of goods and people is ensured in rail transport within the OMVG area and complies with international standards

4.4.3 Provision 2.3 - River transport and inland waterways sub-sector

Measure 2.3.1 - River safety

Measure 2.3.1	Strengthening river safety in the OMVG area and bringing it up to international standards
Provision 2.3	River sub-sector - capacity building
Objective:	Inland waterway mobility is enhanced by the provision of safe and reliable inland waterway transport for goods and people, both in the river ports and during navigation in the three basins. This strengthens and intensifies exchanges between inland ports and towards seaports and significantly reduces the accident rate
Activities / measures:	<p>Technical and financial feasibility study for the implementation of a river safety plan</p> <p>Procurement of technical assistance</p> <p>Awareness campaign and training for the deployment of the river safety plan on the three rivers in the OMVG area</p> <p>Implementation of technical assistance for upgrading to international standards for river safety/security in line with Member States' national plans and strategies</p> <p>Consultation of the OMVG Transport Unit with the national authorities in charge of this mode of transport</p> <p>Awareness campaign and training on standards for the transport of dangerous goods by water</p> <p>Awareness and information campaign on river safety for the local population along the rivers and in the river ports</p> <p>Development of a River Information System (RIS) with several modules (navigation accidents, real time traceability of vessels, database of river port equipment, vessel passage schedules, statistics on river passenger and freight traffic, statistics on maintenance levels of river equipment, river port and river station infrastructure, buoyage system, river water levels and dangerous flood zones)</p> <p>Quarterly follow-up of the evolution of the measure by the OMVG Transport Unit in liaison with the national authorities of each Member State and the managers of river ports</p> <p>Quarterly reporting to OMVG management</p>
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of transport and their subordinate agencies
Duration:	10 years - 2023 to 2033
Costs and funding:	State and donors - €2.5 million
Expected results:	The safety of goods and people is ensured in inland waterway transport within the OMVG area and complies with international standards

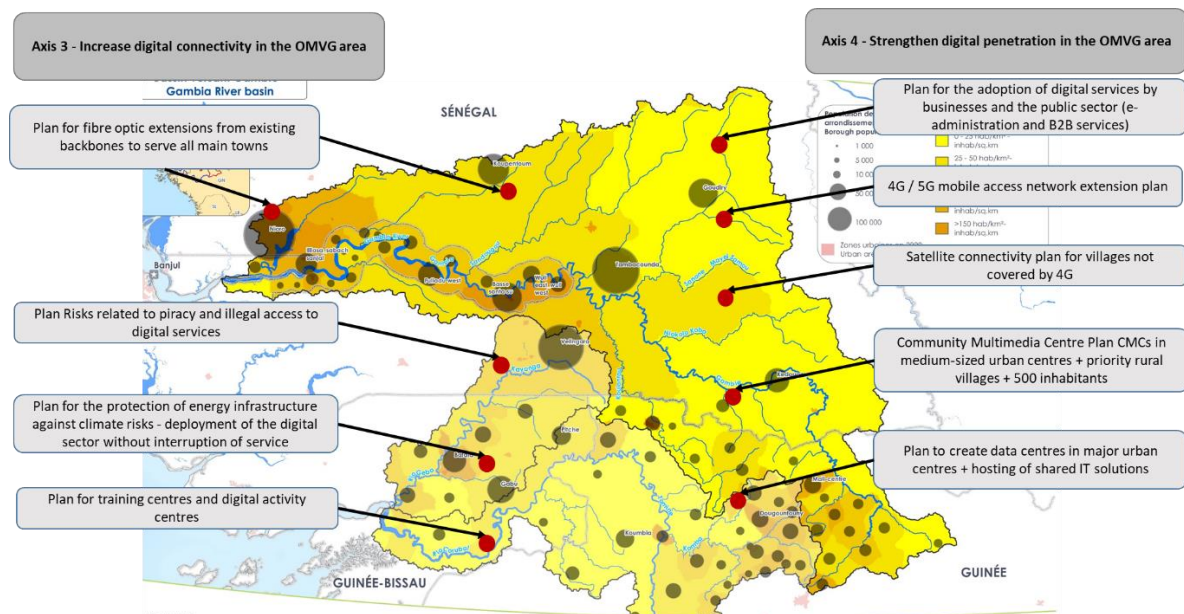
4.4.4 Provision 2.4 - Air sub-sector

Measure 2.4.1 - Safety and security in air transport

Measure 2.4.1	Strengthening air safety and security in the OMVG area and bringing it up to international standards
Provision 2.4	Aviation sub-sector - capacity building
Objective:	Air mobility is strengthened by the implementation of safe, reliable air transport for the transport of goods and people, both at the five terminals and at the multimodal air platforms in the three basins. Exchanges are thus strengthened and intensified between the airports and towards international airports and the accident rate is greatly reduced
Activities / measures:	<p>Technical and financial feasibility study for the implementation of an aviation safety and security plan</p> <p>Consultation of the OMVG Transport Unit with the national authorities in charge of this mode of transport</p> <p>Procurement of technical assistance</p> <p>Implementation of technical assistance for upgrading to international aviation safety/security standards in line with Member States' national plans and strategies</p> <p>Awareness campaign and training for the deployment of the aviation security plan at the five airports within the OMVG area</p> <p>Awareness campaign and training on air transport standards for dangerous goods</p> <p>Awareness and information campaign for the local population along the airports and the staff in the terminals</p> <p>Development of an Air Information System (AIS) with several modules (air navigation accidents and ground accidents, real time aircraft tracking, airport equipment database, flight schedules, statistics on passenger and cargo air traffic, statistics on maintenance levels of airport equipment, terminal infrastructure and storage areas, electronic ground lighting system)</p> <p>Quarterly follow-up of the evolution of the measure by the OMVG Transport Unit in liaison with the national authorities of each Member State</p> <p>Quarterly reporting to OMVG management</p>
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of transport and their subordinate agencies
Duration:	10 years - 2023 to 2033
Costs and funding:	State and donors - €2.5 million
Expected results:	The safety of goods and people is ensured in air transport within the OMVG area and complies with international standards

4.5 STRATEGIC AXIS 3 - INFRASTRUCTURE & CONNECTIVITY

COMMUNICATION SECTOR



GENERAL PRINCIPLE

To achieve the OMVG 2040 vision, the first communications strategic axis consists of building, rehabilitating and/or maintaining by 2040 modern, interconnected, high quality and sustainable communications infrastructure (backbones, fibre optics, data centres, CMCs, technopoles, training centres).

EXPECTED RESULTS

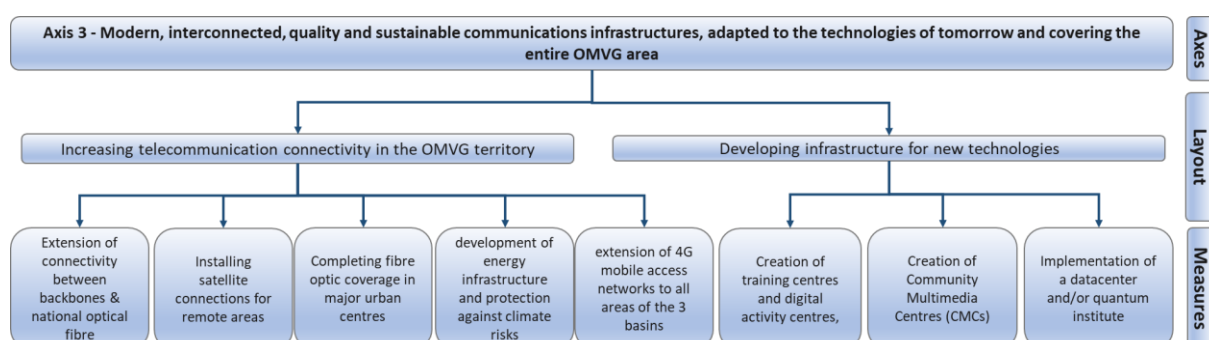
With an optimally meshed infrastructure network, the communications and ICT system will improve connectivity between business centres and towns, contribute to the digital opening up of rural areas in the OMVG area, and to socio-economic development with better and faster access to information.

AREA OF INTERVENTION

The entire OMVG area is targeted by this Strategic Axis 3 with the objective of good geographical coverage of communications infrastructures in all regions

PROVISIONS & PROPOSED MEASURES

Strategic Axis 3 is broken down into two main provisions per communications infrastructure sub-sector, telecommunications infrastructure and new technologies infrastructure, each provision being addressed in line with the national development visions and strategies of the four Member States in the field of communications. Seven major measures are used to achieve the objective of this strategic axis.



4.5.1 Provision 3.1 - Increase telecom connectivity in the OMVG area

Measure 3.1.1 - Extension of the connection between backbones and optical fibres

Increasing the digital connectivity of the OMVG territory will depend on the extension of optical fibres interconnected to the existing large backbones, in order to connect the major towns to each other, so that all the major activity centres are operational in the near future.

Measure 3.1.1	Deployment of fibre optic extensions from existing backbones to serve all the main towns in the three basins
Provision 3.1	Telecommunications infrastructure connectivity sub-sector
Objective:	Digital connectivity is increased within the three basins and in line with the national development plans of the four Member States
Activities / measures:	<p>Technical and financial feasibility study for fibre optic extensions from existing backbones to serve all the main towns</p> <p>Consultation of the OMVG ICT Communications Unit with the national authorities in charge of telecommunications infrastructures</p> <p>Procurement of technical assistance</p> <p>Implementation of technical assistance for the implementation of the fibre optic extension/backbone plan in line with Member States' national plans and strategies</p> <p>Awareness campaign and training for local authorities and chief towns on the extension of the fibre optic network interconnected to the backbones</p> <p>Implementation of the action plans of the extension file</p> <p>Definition of the number of chief towns concerned</p> <p>Round table meeting with relevant ministries, local government authorities and donors working in the telecommunications sector</p> <p>Drafting the terms of reference of the measure</p> <p>Launching of tenders</p> <p>Implementation of extensions</p> <p>Training plans for the deployment of optical fibre</p> <p>Development of a Fibre Optic Network Information System (FONIS)</p> <p>Quarterly monitoring of the measure's progress by the OMVG ICT Communications Unit in liaison with the national authorities of each Member State</p> <p>Quarterly reporting to OMVG management</p>
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of communications and ICT and their subordinate agencies - National ARTP
Duration:	5 years - 2023 to 2027
Costs and funding:	State and donors - €15 million
Expected results:	The optical fibres are installed from the existing backbones and serve all the main towns within the three basins

Measure 3.1.2 - Full fibre optic coverage in major urban centres

Following the previous backbone-fibre interconnection measure, the main purpose of this measure is to cover all major urban centres with an urban fibre optic network, so that administrations, businesses and the population can benefit from high-speed internet access.

Measure 3.1.2	Deployment of fibre optic services in the major urban centres in the three basins (Tambacounda, Kedougou, Bafata, Goergetown, Bassé, etc.)
Provision 3.1	Telecommunications infrastructure sub-sector
Objective:	Digital connectivity is increased within the three basins and in line with the national development plans of the four Member States
Activities / measures:	<p>Analysis of the number of large urban centres not yet covered by fibre optics</p> <p>Technical and financial feasibility study to obtain full fibre optic coverage to serve all the major urban centres within the three basins</p> <p>Consultation of the OMVG ICT Communications Unit with the national authorities in charge of telecommunications infrastructures</p> <p>Awareness campaign for telecom operators and companies specialising in fibre optic installation</p> <p>Round table meeting with relevant ministries, telecom operators and donors working in the telecommunications sector</p> <p>Procurement of technical assistance</p> <p>Drafting of the terms of reference of the measure</p> <p>Implementation of technical assistance for the implementation of the plan to provide fibre optic access to major urban centres in line with national plans and strategies of Member States</p> <p>Awareness campaign and training for large urban centres in the installation of their fibre optic mesh networks</p> <p>Implementation of the action plans of the fibre optic file for large urban centres</p> <p>Launching of tenders</p> <p>Training plans for telecom staff and specialised companies by region</p> <p>Integration of network data into the Fibre Network Information System (FNIS)</p> <p>Quarterly monitoring of the measure's progress by the OMVG ICT Communications Unit in liaison with the national authorities of each Member State</p> <p>Quarterly reporting to OMVG management</p>
Location;	The entire area of the three basins - major urban centres
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of communications and ICT and their subordinate agencies - National ARTP
Duration:	10 years - 2023 to 2033
Costs and funding:	State and donors - €9 million
Expected results:	Fibre optic service is provided in the major urban centres in the three basins (Tambacounda, Kedougou, Bafata, Goergetown, Bassé, etc.) and the population has access to broadband

Measure 3.1.3 - Satellite connections for remote areas

There will be white areas without fibre optic coverage, wifi access or 4G network. It is important that isolated villages are all connected, according to the "No one left behind" principle. Therefore, in the case of white zones, and in order for the population to benefit from an internet connection via satellite, it will be necessary to turn to providers specialising in this field.

Measure 3.1.3	Acquisition and installation of a satellite connection for remote areas and villages where 4G (or xxG) coverage cannot be provided
Provision 3.1	Communication infrastructure sub-sector
Objective:	Digital connectivity is increased within the three basins and in line with the national development plans of the four Member States
Activities / measures:	<p>Statistical analysis of the number of white areas and isolated villages not yet covered by internet access (either by fibre optic or 4G mobile access networks and beyond)</p> <p>Technical and financial feasibility study to obtain complete coverage of internet access by satellite connection to serve the entire area of the three basins in white areas and isolated villages</p> <p>Consultation of the OMVG ICT Communications Unit with the national authorities in charge of satellite telecommunications infrastructures</p> <p>Awareness campaign among telecom and satellite operators and companies specialising in satellite connection installation</p> <p>Round table meeting with relevant ministries, telecom & satellite operators and donors working in the telecommunications sector</p> <p>Procurement of technical assistance</p> <p>Drafting of the terms of reference of the measure</p> <p>Implementation of technical assistance for the implementation of the satellite connection plan</p> <p>Awareness campaign and training in satellite connection for target populations in white areas</p> <p>Implementation of the action plans of the satellite network internet coverage file</p> <p>Launching of tenders</p> <p>Installation and monitoring of the extension of satellite network coverage (connection via satellite, using a satellite dish correctly oriented and connected to a modem via a cable, connection via radio network, or Internet via WiMAX, connection via 3G key / 4G key, or a 4G box).</p> <p>Training plans for telecom staff and specialised companies by region and target user populations</p> <p>Integration of satellite connection data into the Communications Network Information System (CNIS)</p> <p>Quarterly monitoring of the measure's progress by the OMVG ICT Communications Unit in liaison with the national authorities of each Member State</p> <p>Quarterly reporting to OMVG management</p>
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of communications and ICT and their subordinate agencies - National ARTP
Duration:	18 years - 2023 to 2040
Costs and funding:	State and donors - €12 million
Expected results:	A satellite connection is provided for all remote areas and villages where 4G (or xxG) coverage cannot be provided for logistical reasons; and the rural population has access to communications systems and new technologies

Measure 3.1.4 - Full 5G mobile access coverage and beyond (xxG)

Strong digital penetration in the three basins depends on good coverage of mobile access networks (4G and later) throughout the OMVG area. The following measure will make it possible to extend this coverage over the largest part of the OMVG territory of the three basins and to meet the challenges of communications mobility.

Measure 3.1.4	Full coverage of 4G (xxG) mobile access networks in all three basins
Provision 3.1	Communications sub-sector - mobile access
Objective:	Digital connectivity is increased within the three basins and in line with the national development plans of the four Member States
Activities / measures:	Technical and financial feasibility study to obtain full 5G (and subsequent xxG) mobile network coverage to serve the entire area of the three basins Consultation of the OMVG ICT Communications Unit with the national authorities in charge of mobile access infrastructures Awareness campaign with telecom operators and companies specialising in the installation of mobile access relays Round table meeting with relevant ministries, telecom operators and donors working in the telecommunications sector Procurement of technical assistance Drafting of the terms of reference of the measure Implementation of technical assistance for the implementation of the 5G coverage plan and beyond Implementation of the action plans of the 5G mobile access file Launching of tenders 5G mobile access coverage extension installations and monitoring Training plans for telecom staff and specialised companies by region and target user populations Integration of data into the Communications Network Information System (CNIS) Quarterly monitoring of the measure's progress by the OMVG ICT Communications Unit in liaison with the national authorities of each Member State Quarterly reporting to OMVG management
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of communications and ICT and their subordinate agencies - national ARTP - telecom operators
Duration:	18 years - 2023 to 2040
Costs and funding:	State and donors - €9 million
Expected results:	5G (xxG) mobile access network coverage is 100% complete in all three basins

Measure 3.1.5 - Energy infrastructures for the protection of communication systems

All information systems, data centres and technology centres need to be supplied with energy and protected against climate-related hazards and power outages. Energy infrastructures must be designed to remain functional in order to preserve the continuity of services of the digital equipment with which they interact. This is intended to maintain the availability, efficiency and responsiveness of power systems while being protected against cyber attacks.

Measure 3.1.5	Deployment of energy infrastructures adapted to the protection of information systems, datacenters and servers of administrations against climate-related risks to allow the deployment of the digital sector without interruption of service for the populations living in the three basins
Provision 3.1	Communications infrastructure sub-sector
Objective:	The risks associated with the development of the digital sector are mitigated and controlled
Activities / measures:	Technical and financial feasibility study for the implementation of energy infrastructures protected against cyber attacks and climate-related hazards Consultation of the OMVG ICT Communications Unit with the national authorities in charge of energy infrastructures Awareness campaign with telecom operators and energy companies Round table meeting with relevant ministries, telecom/energy operators and donors working in the telecom sector Procurement of technical assistance Drafting of the terms of reference of the measure Implementation of technical assistance for the implementation of the energy infrastructure plan for the protection of systems Implementation of the action plans of the Energy Infrast file Launching of tenders Installation and monitoring of works Training plans for energy infrastructure staff and specialist companies by region and target user populations Integration of data into the Communications Network Information System (CNIS) Quarterly monitoring of the measure's progress by the OMVG ICT Communications Unit in liaison with the national authorities of each Member State Quarterly reporting to OMVG management
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of communications and ICT and their subordinate agencies - National ARTP
Duration:	10 years - 2023 to 2033
Costs and funding:	State and donors - €18 million
Expected results:	Energy infrastructure is developed and protected against climate risks to enable the roll-out of the digital sector without disruption of service

4.5.2 Provision 3.2 - Development of ICT infrastructure

Measure 3.2.1 - creation of digital activity centres / training centres

Unlike the previous measure on CMCs, whose target population concerns people with little or no knowledge of the digital world, this measure below allows for the creation of training centres in the new technologies sector and of activity poles that are more akin to the notion of incubators for start-ups in the digital sector. It therefore contributes to the development of new technologies and provides poles of creation and innovation in this sector, giving significant added value to the OMVG region. The terminology of technopoles will also be used here.

Measure 3.2.1	Training centres and digital activity centres are created in the major urban centres
Provision 3.2	Jobs and Skills Action Plan
Objective:	The communications sector has generated a significant percentage of employment in the region's GDP and the skills of people and businesses have been enhanced in all three basins
Activities / measures:	<p>In-depth analysis and studies of opportunities and locations for future technopoles (high-level training centres and start-up incubators).</p> <p>Identification of major urban centres that could host a technopole</p> <p>Benchmark with existing technology parks (e.g. in Morocco and Tunisia)</p> <p>Technical and financial feasibility study to support the creation of technopoles</p> <p>Definition of the scope of technopoles (needs, risks and feasibility)</p> <p>Market study & identification of opportunities for the creation of profitable technopoles</p> <p>Identification of locations capable of hosting a technopole</p> <p>Drafting and implementation of a set of specifications for the action plans of the technopole file</p> <p>Results of the survey on technopole needs</p> <p>Awareness-raising campaign among Member States</p> <p>Round table meeting with relevant ministries and donors working in the technopole sector</p> <p>Drafting of the terms of reference of the measure</p> <p>Setting up technical assistance to monitor the deployment of technopoles</p> <p>Launching of tenders</p> <p>Creation of reception structures, recruitment of staff, acquisition of equipment and premises</p> <p>Training plans for technopole staff by region</p> <p>Monitoring and evaluation tool for the action plan on the results of setting up technopoles and their impact on the economic development of each region</p>
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of communications and ICT and their subordinate agencies - National ARTP
Duration:	10 years - 2023 to 2033
Costs and funding:	State and donors - investment funds - €18 million
Expected results:	Technopoles (training centres and digital activity centres and incubators) are created in the major urban centres and are operational

Measure 3.2.2 - Creation of Community Multimedia Centres CMC

This measure complements the other previous measures and allows the creation of community multimedia centres for the benefit of local populations. It is about sharing knowledge in the digital world for all and helps to increase skills in the new technology sector to encourage the emergence of new professions. The main objective of CMCs is to facilitate access to the formidable resources of information and communication technologies for especially poor and marginalised communities. This measure is inspired by the experience of CMCs in Senegal, spread across the country from Dakar to Tambacounda and from Matam to Ziguinchor.

Measure 3.2.2	Establishment of Community Multimedia Centres (CMCs) in all medium-sized urban centres and priority rural villages of more than 500 inhabitants
Provision 3.2	Jobs and Skills Action Plan
Objective:	The communications sector has generated a significant percentage of employment in the region's GDP and the skills of people and businesses have been enhanced in all three basins

Activities / measures:	In-depth analysis and opportunity studies and location of future CMCs Identification of major urban centres that could host a CMC Benchmark with the CMCs created in Senegal Technical and financial feasibility study to support the creation of CMCs Definition of the scope of the CMC (needs, risks and feasibility) Market research & Identification of CMC creation opportunities Identification of locations capable of hosting a CMC Drafting and implementation of a set of specifications for the CMC action plans Results of the CMC needs survey Awareness-raising campaign among Member States Round table meeting with relevant ministries, and donors working in the CMC sector (e.g. UNESCO) Drafting the terms of reference of the measure Setting up technical assistance to monitor the deployment of CMC Launching of tenders Creation of reception structures, recruitment of personnel, acquisition of equipment (radios, internet, digital cultural centre, computers and cybercentres, etc.) Training plans for CMC staff by region Monitoring and evaluation tool for the action plan on the results of the installation of CMCs and their impact on the economic development of each region
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of communications and ICT and their subordinate agencies - National ARTP
Duration:	10 years - 2023 to 2033
Costs and funding:	State and donors - €24 million
Expected results:	Community Multimedia Centres (CMCs) are operational in all medium-sized urban centres and priority rural villages with more than 500 inhabitants

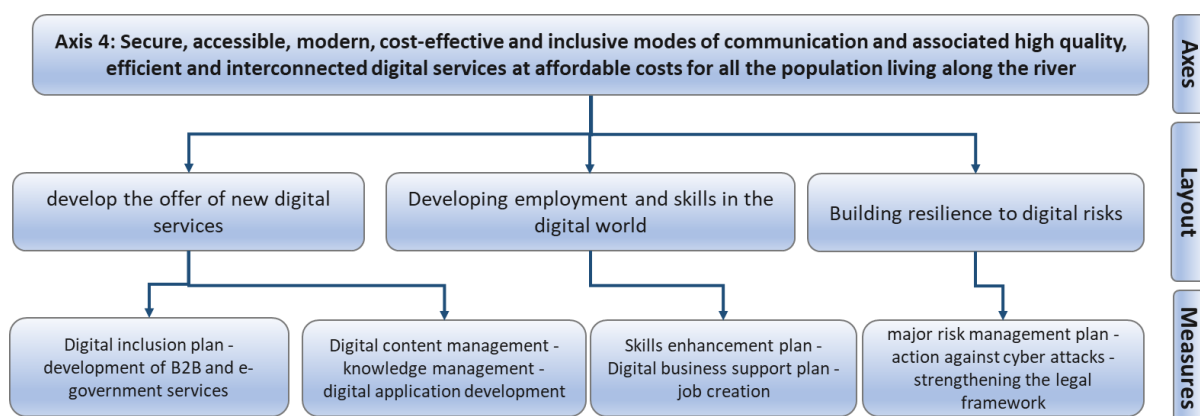
Measure 3 .2.3 - Creation of data centres and quantum institutes

To meet the growing needs for data storage and distribution, an IT infrastructure is becoming a nerve centre for communities and companies and their economic development in an area like the OMVG. The world is evolving very quickly in the areas of Big Data, Cloud Computing and the Internet of Things, and the creation of data centers may prove to be a necessity to control information at the regional level. Small and medium-sized data centres are available at an affordable cost to meet the needs of the digital sector in a given area.

Measure 3.2.3	Acquisition / installation of new data centres in major urban centres and deployment of shared IT hosting solutions
Provision 3.2	ICT - Infrastructure sub-sector
Objective:	Digital penetration is increasing both in the area of communications infrastructure and in the provision of digital services to public services, businesses and rural populations

Activities / measures:	<ul style="list-style-type: none"> • In-depth analysis and opportunity studies and location of data centres • Identification of major urban centres that could host a data centre • Benchmark with other data centres available at regional and global level in the various sectors of activity (administrations, agriculture, industry, mining, crafts, tourism, etc.) • Technical and financial feasibility study to support the acquisition of data centres in the digital sector • Definition of the scope (needs, risks and feasibility) • Market research & identification of business opportunities (land, investors/operators, customers, local facilitators...) • Identification of locations capable of hosting a data centre • Identification of possible technological principles • Economic simulation of the project • Drafting and implementation of specifications for action plans for the Data Centres file • Results of the data centre needs survey • Awareness campaign for data centre companies • Round table meeting with relevant ministries, specialised companies and donors working in the data centre sector • Drafting of the terms of reference of the measure • Implementation of technical assistance for monitoring the deployment of data centres • Launching of tenders • Training plans for data centre staff and specialist companies by region • Monitoring and evaluation tool for the action plan on the results of the installation of data centres and its impact on the economic development of each region
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of communications and ICT and their subordinate agencies - National ARTP - Private sector
Duration:	2028 to 2040
Costs and funding:	State and donors and private sector PPP - €18 million
Expected results:	<p>The new data centres are located in the major urban centres within the OMVG area</p> <p>- The hosting of shared IT solutions is carried out and the region's players benefit from data storage and distribution units in the various key sectors of the regional economy (administrations and local authorities, companies)</p>

4.6 STRATEGIC AXIS 4 - PENETRATION OF DIGITAL IN THE OMVG AREA



4.6.1 Provision 4.1 - Develop the offer of new digital services

Measure 4.1.1 - Digital services for the public and private sector

Once connectivity is ensured by various infrastructures (optical fibres, satellites, 4G mobile access networks, etc.), it is essential to implement strong measures to develop the offer of new digital services, both for administrations and local authorities and for businesses. The following measure will make it possible to support the development of new digital services such as e-administration or B2B services essential to the activity of all socio-economic sectors (e-health, e-agriculture, e-logistics, e-education, etc.)

Measure 4.1.1	Strong measures for the provision of quality digital services in the private and public sectors (e-administration and B2B services)
Provision 4.1	ICT sub-sector - digital services e-administration and B2B
Objective:	Digital penetration is increasing both in the area of communications infrastructure and in the provision of digital services to public services, businesses and rural populations
Activities / measures:	<p>In-depth analysis of the digital services available within the OMVG area and benchmarking with the offers available at regional and global level in the various sectors of activity (administrations, agriculture, industries, mines, crafts, tourism, etc.)</p> <p>Technical and financial feasibility study to develop quality digital services</p> <p>Drafting and implementation of specifications for action plans for digital service offers</p> <p>Results of the fibre optic coverage still to be carried out</p> <p>Awareness campaign for telecom operators and companies specialising in fibre optic installation</p> <p>Round table meeting with relevant ministries, telecom operators and donors working in the telecommunications sector</p> <p>Drafting of the terms of reference of the measure</p> <p>Implementation of technical assistance for monitoring the extension of fibre optic coverage in urban centres</p> <p>Launching of tenders</p> <p>Training plans for telecom staff and specialised companies by region</p> <p>Monitoring and evaluation tool for the action plan on the results of the extension of optical fibre coverage and its impact on the economic development of each region</p>
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau

Project ownership and implementation:	Ministry in charge of communications and ICT and their subordinate agencies - National ARTP
Duration:	10 years - 2023 to 2033
Costs and funding:	State and donors - €15 million
Expected results:	A complete range of new digital services is provided for companies in different sectors of activity and for the public sector (e-administration and B2B services)

Measure 4.12 - Digital content offers

Once the above measure has been implemented for the development of digital applications by sector of activity and for the public sector, it is essential to provide quality digital content for the benefit of the populations and businesses based within the area of the three OMVG basins. This measure therefore concerns both digital literacy and the development of access to digital content via dematerialised services. The aim here is to deploy the mastery of the uses of digital and computer tools and to reduce inequalities in access to public services and other content in the various sectors of activity. This measure can also include the deployment of high-potential digital content libraries. This is therefore a matter of Knowledge Management (KM) on a regional scale.

Measure 4.1.2	Development of quality digital content in the three basins and by sector of activity
Provision 4.1	ICT sub-sector - digital content management
Objective:	Digital penetration is increasing both in the area of communications infrastructure and in the provision of digital services to public services, businesses and rural populations
Activities / measures:	<p>In-depth analysis of available (and affordable) digital content in the OMVG area and benchmark with digital content available at regional and global level in the different sectors of activity (administrations, agriculture, industries, mines, crafts, tourism, etc.)</p> <p>Technical and financial feasibility study to support digital sector companies established within the OMVG area to develop quality digital content by sector of activity</p> <p>Drafting and implementation of specifications for action plans for the e-content file</p> <p>Results of the digital content needs survey</p> <p>Awareness campaign for digital content companies</p> <p>Round table meeting with relevant ministries, specialised companies and funders working in the digital content sector</p> <p>Drafting of the terms of reference of the measure</p> <p>Setting up technical assistance to monitor the deployment of digital content</p> <p>Launching of tenders</p> <p>Training plans for e-content staff and specialist companies by region</p> <p>Monitoring and evaluation tool for the action plan on the results of the digital content offer and its impact on the economic development of each region</p>
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of communications and ICT and their agencies under supervision
Duration:	18 years - 2023 to 2040
Costs and funding:	State and donors - €16 million
Expected results:	The digital content offer is effective in the three basins and by sector of activity

4.6.2 Provision 4.2 - Developing employment and skills in the digital world

Measure 4.2.1 - Digital inclusion plan, jobs and skills

The aim of this measure is to guarantee and promote digital access for vulnerable groups, in a context of dematerialisation of public services and digitalisation of society. The support of local authorities is essential to promote digital inclusion in their territories and to develop calls for projects in the digital sector, using labels and digital passes.

Action / measure 4.2.1	Digital inclusion is achieved in all three basins, employment in the digital world is increased and skills are enhanced
Provision 4.2	ICT sub-sector - employment and skills
Objective:	The communications sector has generated a significant percentage of employment in the region's GDP and the skills of people and businesses have been enhanced in all three basins
Activities / measures:	<ul style="list-style-type: none"> • In-depth analysis and opportunity studies for digital inclusion • Identification of major urban centres requiring support for digital inclusion • Technical and financial feasibility study to support digital inclusion • Definition of the scope (needs, risks and feasibility) • Market research & identification of opportunities in the digital inclusion sector • Identification of local authorities that can set up Digital Inclusion files • Drafting and implementation of the specifications of the action plans of the Digital Inclusion file • Results of the survey in needs by local authorities • Awareness and information campaign for local authorities • Round table meeting with relevant ministries, identified communities and donors working in the field of digital inclusion • Drafting of the terms of reference of the measure • Implementation of the technical assistance for monitoring the Digital Inclusion deployment • Calls for projects for the deployment of digital passes with local authorities • Support workshops and/or digital training in pre-identified locations • Application for labelling of training organisations and accompanying workshop • Labelling opportunities for digital inclusion and definition of a "Digital Inclusive" label by local authorities • Identify, recognise and promote mechanisms that work to develop the dissemination of digital culture and tools, and their appropriation by the entire population • Guarantee and promote digital access for vulnerable groups, in a context of dematerialisation of public services and digitalisation of society • Set up schemes to help vulnerable groups access and reintegrate into the labour market • Awareness campaign to connect people who are far from the digital world with digital facilitation centres • Actions to participate in the economic consolidation of the digital facilitation sector • Definition of a "Local Inclusive Digital Action Territories" label TANIL • Calls for expression of interest to obtain the label dedicated exclusively to local authorities • Supporting and equipping local authorities to develop their digital strategies and deploy local initiatives • Supporting local authorities to become digital project leaders • Identification of development projects (large urban centres, priority neighbourhoods in urban centres, deprived areas) • Definition of financial levers for local authorities to develop their digital strategies • Implementation of digital inclusion schemes and management in an OMVG database of digital passes, TANIL and RIL • Development of digital hubs by major urban centres

	<ul style="list-style-type: none"> Monitoring and evaluation tool for the action plan on the results of the Digital Inclusion projects and their impact on the economic development of each region
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of communications and ICT and their subordinate agencies - National ARTP - Local authorities
Duration:	18 years - 2023 to 2040
Costs and funding:	State and donors - local authorities - investment funds - €9 million
Expected results:	Digital inclusion is achieved in all three basins

4.6.3 Provision 4.3 - Develop resilience to digital risks

Measure 4.3.1 - Major Digital Risks Management Plan

The development of new technologies within a territory leads to collateral effects linked to major risks having an impact on information systems. The management of major risks must be perfectly mastered to avoid impacts on the various communications systems, computers and ICT communications networks.

Action / measure 4.3.1	Development of a plan to control the major risks linked to the deployment and consumption of digital sector activities and the impact on water resources
Provision 4.3	ICT sub-sector - Digital risks
Objective:	The risks associated with the development of the digital sector are mitigated and controlled
Activities / measures:	<p>In-depth analysis and studies of the different types of digital risks (cyber attacks, insufficiently secure payment sites, data loss and database backups, data hacking, power failure of servers and datacenters, natural disasters, individual data privacy, etc.)</p> <p>Identification of major digital risks and actions to be taken</p> <p>Technical and financial feasibility study to develop a major hazard management plan</p> <p>Results of the survey on digital skills by basin and region</p> <p>Major hazard awareness campaign for Member States and local authorities</p> <p>Round table meeting with relevant ministries and donors working in the field of digital hazards</p> <p>Drafting the terms of reference of the measure</p> <p>Setting up technical assistance for monitoring the major hazard plan</p> <p>Launching of tenders</p> <p>Creation of digital risk monitoring centres, recruitment of staff, acquisition of equipment and premises</p> <p>Training plans for staff responsible for managing the digital risk plan</p> <p>Drafting and maintaining the Information Systems Security Policy governing digital risk management.</p> <p>Define the digital security strategy for local authorities (and the investments needed to implement it).</p> <p>Prioritise the security of the most critical digital services for the three basins</p> <p>Action plan monitoring and evaluation tool on the results of the implementation of the risk plan and its impact on the economic development of each region</p>
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau

Project ownership and implementation:	Ministry in charge of communications and ICT and their subordinate agencies - National ARTP
Duration:	18 years - 2023 to 2040
Costs and funding:	State and donors - €3 million
Expected results:	The major risks linked to the deployment and consumption of digital sector activities are controlled and their impact on water resources is known

Measure 4.3.2 - Action plan against cyber attacks in the different key sectors

Cyber attacks are on the rise and cyber security is becoming a major issue for local authorities and governments. It is therefore essential to put in place a plan to monitor major risks to digital activities in order to protect the socio-economic development of a region. A system must be developed and operated on a permanent basis

Action / measure 4.3.2	Actions against cyber-attacks and risks related to hacking and illegal access to digital services
Provision 4.3	ICT sub-sector - digital risks
Objective:	The risks associated with the development of the digital sector are mitigated and controlled
Activities / measures:	<p>In-depth analysis and studies of different types of cyber attacks</p> <p>Identification of major digital risks in the event of cyber attacks</p> <p>Technical and financial feasibility study to develop a cyber-attack management plan</p> <p>Results of the survey on cyber attacks by basin and region</p> <p>Campaign to raise awareness of cyber attacks among Member States and local authorities and sensitive companies (banks, insurance companies, industries, mines, etc.)</p> <p>Roundtable meeting with relevant ministries and donors working in the area of cyber attacks</p> <p>Drafting of the terms of reference of the measure</p> <p>Implementation of technical assistance for monitoring the cyber-attack plan</p> <p>Launching of tenders</p> <p>Establishment of specialised centres to respond to cyber-attacks, recruitment of staff, acquisition of equipment and premises</p> <p>Training plans for staff responsible for managing the cyber-attack plan</p> <p>Write and maintain response procedures governing the management of cyber-attacks</p> <p>Defining the digital security strategy of local authorities against potential cyber attacks</p> <p>Prioritise the security of the most critical information systems for the three basins</p> <p>Action plan monitoring and evaluation tool on the results of the implementation of the cyber-attack plan and its impact on the economic development of each region</p>
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of communications and ICT and their subordinate agencies - National ARTP
Duration:	18 years - 2023 to 2040
Costs and funding:	State and donors - €6 million
Expected results:	Cyber attacks, risks linked to hacking and attempts to gain illegal access to digital services are controlled and the continuity of ICT services is ensured throughout the OMVG area

Measure 4.3.3 - Digital risks and legal and regulatory framework

Legal provisions need to be constantly updated to govern the field of major digital risks. This measure accompanies and reinforces the major risk management plans.

Action / measure 4.3.3	Action to strengthen the legal and regulatory framework of the telecoms/ICT sector and to harmonise it with regional policies for the protection of consumers and users of new technologies
Provision 4.3	ICT sub-sector - digital risks
Objective:	The risks associated with the development of the digital sector are mitigated and controlled
Activities / measures:	Technical and financial feasibility study for the periodic updating of the legal and regulatory framework of the telecom/ICT sector Implementation of the action plans of the "updated legal and regulatory framework" file Technical assistance implemented to update these legal and regulatory frameworks for the sector Awareness campaign and training for the deployment and application of laws and decrees in local authorities Monitoring and evaluation tool for the "legal and regulatory framework" action plan
Location:	The entire area of the three basins
Main beneficiary states of the action:	Senegal - The Gambia - Guinea - Guinea Bissau
Project ownership and implementation:	Ministry in charge of communications and ICT and their subordinate agencies - National ARTP
Duration:	18 years - 2023 to 2040
Costs and funding:	State and donors - €3 million
Expected results:	The legal and regulatory framework of the telecom/ICT sector is regularly updated and harmonised with the regional and political policies of the four Member States, and consumers and users of new technologies are protected by a framework of laws in line with international standards

4.7 MEANS OF IMPLEMENTATION OF THE PROVISIONS AND MEASURES

The four strategic axes of this master plan are the strategic objectives to be taken into account to achieve the OMVG 2040 vision

All the provisions and measures described above in this master plan support the strategic axes.

The implementation of these provisions and measures requires significant financial resources and, above all, a sophisticated organisational structure. This structure is to be set up in the form of two project management units, for the transport sector and for the communications sector.

These two units will be the operational base of the OMVG organisation and should be created with the recruitment of experienced engineers and project managers in the fields of transport and communications.

They will be in charge of the daily monitoring of the measures, as well as of carrying out accurate monitoring and evaluation programmes and storing all information and data related to the measures and projects launched by the technical assistance.

The use of international technical assistance will support the two OMVG project management units. The role of these technical assistants will be, in addition to bringing the projects to a successful conclusion, to transfer knowledge so that the members of the OMVG units can acquire know-how, enabling them to sustain the measures and revise the master plan, according to the developments observed in each sector.

The investment volumes required for these measures are given as an indication. They will have to be revised according to the technical and financial feasibility studies that will be carried out.

The success in seeking funding from Member States, donors and the private sector will depend on the quality and thoroughness of these feasibility studies, which will encourage investors to invest in projects with the certainty of a return on investment.

The quality of the monitoring and evaluation of projects and results will be a guarantee of the success of the master plan.

Hence the importance of updating in real time the various information systems mentioned in certain measures of this master plan. Without data storage and statistical analysis of the results of the measures, it will be impossible to have a global supervision of the strategic axes.

The use of competent human resources and efficient information systems is a guarantee of success in providing the OMVG High Authority with a genuine decision-making tool that will enable it to take new strategic directions.

5 PROGRAMME OF MEASURES

This programme of measures, or action plan, presents certain characteristics of the measures collected: deadlines, costs, risks, etc.

5.1 SUMMARY OF THE SECTOR PLAN AND RESULTS FRAMEWORK

Strategic axes/objectives	Overall results (provisions)	Specific results (measures)
Axis 1 - Modern, interconnected, high-quality and sustainable transport infrastructure	1.1 - Road sub-sector	1.1.1 - 1600 kms of new rural farm roads are built/rehabilitated and maintained in connection with major paved road links
		1.1.2 - Approximately 2,117 km of paved roads (and related bridges and structures) are maintained and in good condition within the three catchment areas
	1.2 - Railway sub-sector	1.2.1 - Rail transport is developed on the Dakar - Bamako axis with the construction of efficient railway stations (including Tambacounda, Goudiry, Manem Niany, Koupentoum, Kounghoul) in the OMVG area with bimodal / trimodal platforms with the Tambacounda airport and the national roads crossing these railway stations
		1.3.1 - Inland waterway transport is developed, with cost-effective and efficient solutions, in all three river basins, navigability becomes a good alternative to other modes of transport
	1.3 - River transport sub-sector	1.3.2 - Development of inland waterway transport in the three river basins, construction of port infrastructure at all major river ports in the three river basins, with bimodal or trimodal connections: inland waterway navigability established on all three rivers
		1.3.3 - Inland waterway transport is developed on the three rivers and 90 modern transport canoes are built and operational for the transport of goods along agricultural routes
		1.4.1 - Air transport for goods and people is strengthened and the five airports in the OMVG area are upgraded and international air safety/security standards are met
	1.4 - Air transport sub-sector	2.1.1 - The population living along rural roads is trained and competent in labour-based techniques for the construction and maintenance of rural roads
	Axis 2 - Green, safe, modern, cost-effective and inclusive transport modes and high quality, efficient and interconnected transport services	2.1.2 - A Rural Road Network Information System (RRIS) is available as an open access web service
		2.1.3 - National contracting companies are trained to build and maintain asphalt roads
		2.1.4 - A regional database of paved roads by catchment area is developed and operational
		2.1.5 - Road safety for goods and people is ensured within the three catchment areas
		2.1.6 - Road safety for goods and people is ensured within the three catchment areas
		2.1.7 - Movement procedures at inter-Member State border crossings and along the transit corridors that cross the three basins are improved and mobility/connectivity/accessibility is increased along the corridors
		2.1.8 - Road transport modes are modernised for goods and people
		2.2.1 - Safety of goods and people is ensured in rail transport
		2.3.1 - Safety of goods and people is ensured in inland waterway transport
		2.4.1 - Safety of goods and persons is ensured in air transport
Axis 3 - Modern, interconnected, quality and sustainable communications infrastructures, adapted to tomorrow's technologies and covering the entire OMVG area	3.1 - Increase telecom connectivity in the OMVG area	3.1.1 - Optical fibres are installed from existing backbones
		3.1.2 - Fibre optic coverage is provided in the major urban centres in the three basins and the population has access to broadband
		3.1.3 - A satellite connection is provided for all remote areas and villages where 4G (or xxG) coverage cannot be provided
		3.1.4 - 5G (xxG) mobile access network coverage is 100% complete in all three catchment areas
		3.1.5 - Energy infrastructure is developed and protected against climate risks
	3.2 - Development of ICT infrastructure	3.2.1 - Technology parks are created in major urban centres and are operational
		3.2.2 - Community Multimedia Centres (CMCs) are operational in all medium-sized urban centres and priority rural villages with more than 500 inhabitants
		3.2.3 - New data centres are located in the major urban centres within the OMVG perimeter

Axis 4 - Secure, accessible, modern, cost-effective and inclusive modes of communication and associated high quality, efficient and interconnected digital services at affordable costs for the entire OMVG area population	4.1 - Develop the offer of new digital services	4.1.1 - A comprehensive range of new digital services is provided for businesses in different sectors and for the public sector 4.1.2 - The digital content offer is effective in the three catchment areas and by sector of activity
	4.2 - Develop employment and skills in the digital world	4.2.1 - Digital inclusion is achieved in all three catchments
	4.3 - Build resilience to digital risks	4.3.1 - The major risks linked to the deployment and consumption of digital sector activities are controlled and their impact on water resources is known
		4.3.2 - Cyber attacks are controlled and continuity of ICT services is ensured throughout the OMVG perimeter
		4.3.3 - The legal and regulatory framework of the telecoms/ICT sector is regularly updated and harmonised with the regional policies and policies of the four Member States

5.2 TIMELINE OF MEASUREMENTS

PROGRAMMING OF ACTIONS BY 2040, IN THREE CATEGORIES: SHORT (2025), MEDIUM (2030) AND LONG TERM (2040)

OMVG strategic axes	Provisions	Measures	2023-2027	2028-2033	2034-2040
Axis 1 - Modern, interconnected, high-quality and sustainable transport infrastructure	1.1 - Road sub-sector	1.1.1 - Rural roads construction / rehabilitation			
		1.1.2 - Asphalt roads construction / rehabilitation			
	1.2 - Railway sub-sector	1.2.1 - Development of railway infrastructure			
		1.2.2 - Development of railway infrastructure			
	1.3 - River transport sub-sector	1.3.1 - Navigability in the three basins			
		1.3.2 - Construction of at least 30 inland ports			
		1.3.3 - Development of a modern inland waterway transport fleet			
	1.4 - Air transport sub-sector	1.4.1 - Modernisation of airports in the OMVG area			
Axis 2 - Green, safe, modern, cost-effective and inclusive transport modes and high quality, efficient and interconnected transport services	2.1 - Road sub-sector	2.1.1 - Rural roads and labour-intensive methods			
		2.1.2 - Rural roads and information systems			
		2.1.3 - Asphalt roads and training schools			
		2.1.4 - Asphalt roads and OMVG road databases			
		2.1.5 - Road safety in the OMVG area			
		2.1.6 - Axle overload			
		2.1.7 - Management of transit corridors			
		2.1.8 - Modernisation of road transport modes			
	2.2 - Railway sub-sector	2.2.1 - Railway safety and security			
	2.3 - River transport sub-sector	2.3.1 - River safety			
	2.4 - Air transport sub-sector	2.4.1 - Safety and security in air transport			
Axis 3 - Modern, interconnected, quality and sustainable communications infrastructures, adapted to tomorrow's technologies and covering the entire OMVG area	3.1 - Increase telecom connectivity in the OMVG area	3.1.1 - Extending the connection between backbones and optical fibres			
		3.1.2 - Full fibre optic coverage in major urban centres			
		3.1.3 - Satellite connections for remote areas			
		3.1.4 - Full 5G mobile access coverage and beyond (xxG)			

		3.1.5 - Energy infrastructure to protect communications systems			
	3.2 - Development of ICT infrastructure	3.2.1 - Creation of digital activity centres / training centres			
		3.2.2 - Creation of Community Multimedia Centres (CMC)			
		3.2.3 - Creation of data centres and quantum institutes			
Axis 4 - Secure, accessible, modern, cost-effective and inclusive modes of communication and associated high quality, efficient and interconnected digital services at affordable costs for the entire OMVG area population	4.1 - Develop the offer of new digital services	4.1.1 - Digital services for the public and private sector			
		4.1.2 - Digital content offers			
	4.2 - Develop employment and skills in the digital world	4.2.1 - Digital inclusion plan, jobs and skills			
	4.3 - Build resilience to digital risks	4.3.1 - Major Digital Risks Management Plan			
		4.3.2 - Action plan against cyber attacks in key sectors			
		4.3.3 - Digital risks and the legal and regulatory framework			

5.3 COST OF THE MEASURES

Strategic axes/objectives	Overall results (provisions)	Specific results (measures)	Cost (€ million)	Cost by axis (€ millions)
Axis 1 - Modern, interconnected, high-quality and sustainable transport infrastructure	1.1 - Road sub-sector	1.1.1 - Rural roads construction / rehabilitation	105.0	476,3
		1.1.2 - Asphalt roads construction / rehabilitation	310.0	
	1.2 - Railway sub-sector	1.2.1 - Development of railway infrastructure	25.0	
		1.3.1 - Navigability in the three basins	2.4	
	1.3 - River transport sub-sector	1.3.2 - Construction of at least 30 inland ports	16.5	
		1.3.3 - Development of a modern inland waterway transport fleet	5.4	
	1.4 - Air transport sub-sector	1.4.1 - Modernisation of airports in the OMVG area	5.0	
Axis 2 - Green, safe, modern, cost-effective and inclusive transport modes and high quality, efficient and interconnected transport services	2.1 - Road sub-sector	2.1.1 - Rural roads and labour-intensive methods	2.5	39,0
		2.1.2 - Rural roads and information systems	1.5	
		2.1.3 - Asphalt roads and training schools	2.5	
		2.1.4 - Asphalt roads and OMVG road databases	1.5	
		2.1.5 - Road safety in the OMVG area	2.5	
		2.1.6 - Axle overload	5.0	
		2.1.7 - Management of transit corridors	9.0	
		2.1.8 - Modernisation of road transport modes	7.0	
	2.2 - Railway sub-sector	2.2.1 - Railway safety and security	2.5	
	2.3 - River transport sub-sector	2.3.1 - River safety	2.5	
	2.4 - Air transport sub-sector	2.4.1 - Safety and security in air transport	2.5	
Axis 3 - Modern, interconnected, quality and sustainable communications infrastructures, adapted to tomorrow's technologies and covering the entire OMVG area	3.1 - Increase telecom connectivity in the OMVG area	3.1.1 - Extending the connection between backbones and optical fibres	15.0	123,0
		3.1.2 - Full fibre optic coverage in major urban centres	9.0	
		3.1.3 - Satellite connections for remote areas	12.0	
		3.1.4 - Full 5G mobile access coverage and beyond (xxG)	9.0	
		3.1.5 - Energy infrastructure to protect communications systems	18.0	
	3.2 - Development of ICT infrastructure	3.2.1 - Creation of digital activity centres / training centres	18.0	
		3.2.2 - Creation of Community Multimedia Centres (CMC)	24.0	
		3.2.3 - Creation of data centres and quantum institutes	18.0	
Axis 4 - Secure, accessible, modern, cost-effective and inclusive modes of communication and associated high quality, efficient and interconnected digital services at affordable costs for the entire OMVG area population	4.1 - Develop the offer of new digital services	4.1.1 - Digital services for the public and private sector	15.0	52,0
		4.1.2 - Digital content offers	16.0	
	4.2 - Develop employment and skills in the digital world	4.2.1 - Digital inclusion plan. jobs and skills	9.0	
	4.3 - Build resilience to digital risks	4.3.1 - Major Digital Risks Management Plan	3.0	
		4.3.2 - Action plan against cyber attacks in key sectors	6.0	
		4.3.3 - Digital risks and the legal and regulatory framework	3.0	
	Total investment		690.3	

5.4 OWNERSHIP OF THE MEASURES

Project owner	List of provisions / measures	Estimated cost M€	2023-2027	2028-2033	2034-2040	Planned / anticipated financing
Axis 1 - Modern, interconnected, high-quality and sustainable transport infrastructure						
Ministry in charge of transport infrastructure, public works and agencies under supervision road agencies, FER	1.1.1 - rural roads construction / rehabilitation	105,0				-
Ministry in charge of transport infrastructure, public works and agencies under supervision road agencies, FER	1.1.2 - asphalt roads construction / rehabilitation PIR programme	317,0				-
Ministry in charge of infrastructures and agencies under its supervision	1.2.1 - development of rail infrastructure	25,0				-
Ministries in charge of inland navigation and agencies under their authority - SOGENAV	1.3.1 - navigability in the three catchments	2,4				-
Ministries in charge of inland navigation and agencies under their authority - SOGENAV	1.3.2 - Construction of at least 30 inland ports	16,5				-
Ministries in charge of inland navigation and agencies under their authority - SOGENAV	1.3.3 - development of a modern inland waterway transport fleet	5,4				-
Ministry in charge of air infrastructure and agencies under its supervision	1.4.1 - modernisation of airports in the OMVG area	5,0				-
Axis 2 - Green, safe, modern, cost-effective and inclusive transport modes and high quality, efficient and interconnected transport services						
Ministry in charge of Public Works and agencies under its supervision road agencies, RMF, local authorities	2.1.1 - Rural roads and labour-based methods	2,5				-
Ministry in charge of Public Works and agencies under its supervision road agencies, RMF, local authorities, private sector IT	2.1.2 - rural roads and information systems	1,5				-
Ministry in charge of transport and agencies under its supervision road agencies, FER, public works companies, training centres	2.1.3 - Asphalt roads and school building sites	2,5				-
Ministry in charge of transport and agencies under its supervision road agencies, FER	2.1.4 - Asphalt roads and OMVG road databases	1,5				-
Ministry in charge of transport and agencies under its supervision road agencies, FER	2.1.5 - Road safety in the OMVG area	2,5				-
Ministry in charge of transport and agencies under its supervision road agencies, FER	2.1.6 - axle overload	5,0				-
Ministry in charge of transport and agencies under its supervision road agencies, FER	2.1.7 - management of transit corridors	9,0				-
Ministry in charge of transport and agencies under its supervision road agencies, FER	2.1.8 - modernisation of road transport modes	7,0				-
Ministry in charge of railway transport and railway agencies under its supervision	2.2.1 - railway safety and security	2,5				-

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Ministry in charge of inland waterway transport and agencies under its supervision - SOGENAV	2.3.1 - River safety	2,5				-
Ministry in charge of air transport and railway agencies under its supervision	2.4.1 - Safety and security in air transport	2,5				-
Axis 3 - Modern, interconnected, quality and sustainable communications infrastructures, adapted to tomorrow's technologies and covering the entire OMVG area						
Ministry in charge of communications and ICT and their supervising agencies - national ARTP - fibre optic operators	3.1.1 - extending the connection between backbones and optical fibres	15,0				-
Ministry in charge of communications and ICT and their supervising agencies - National ARTP - Local authorities	3.1.2 - full fibre optic coverage in major urban centres	9,0				-
Ministry in charge of communications and ICT and their supervising agencies - national ARTP - satellite operators	3.1.3 - Satellite connections for remote areas	12,0				-
Ministry in charge of communications and ICT and their supervising agencies - National ARTP - Telephone operators	3.1.4 - full 5G and higher mobile access coverage (xxG)	9,0				-
Ministry in charge of communications and ICT and their supervising agencies - National ARTP - Ministry of Energy	3.1.5 - Energy infrastructure to protect communications systems	18,0				-
Ministry in charge of communications and ICT and their supervising agencies - National ARTP - Training centres	3.2.1 - creation of digital activity centres / training centres	18,0				-
Ministry in charge of communications and ICT and their supervising agencies - National ARTP - Local authorities	3.2.2 - creation of Community Multimedia Centres (CMC)	24,0				-
Ministry in charge of communications and ICT and their supervising agencies - national ARTP - private sector	3.2.3 - creation of data centres and quantum institutes	18,0				-
Axis 4 - Secure, accessible, modern, cost-effective and inclusive modes of communication and associated high quality, efficient and interconnected digital services at affordable costs for the entire population along the river						
Ministry in charge of communications and ICT and its supervising agencies - national ARTP - private sector SSII	4.1.1 - Digital services for the public and private sector	15,0				-
Ministry in charge of communications and ICT and its supervising agencies - national ARTP - private sector SSII	4.1.2 - digital content offers	16,0				-
Ministry in charge of communications and ICT and its supervising agencies - National ARTP - Ministries of training and employment	4.2.1 - Digital inclusion plan, jobs and skills	9,0				-
Ministry in charge of communications and ICT and its supervising agencies - National ARTP	4.3.1 - Digital Major Hazard Management Plan	3,0				-
Ministry in charge of communications and ICT and its supervising agencies - national ARTP - private sector	4.3.2 - action plan against cyber-attacks in key sectors	6,0				-
Ministry in charge of communications and ICT and its supervising agencies - National ARTP	4.3.3 - Digital risks and the legal and regulatory framework	3,0				-

5.5 IMPLEMENTATION FRAMEWORK

In order to achieve the results expected by the various provisions and measures contained in the Transport & Communications Master Plan, a financial, institutional and technical framework will have to be implemented over the next 18 years (2022-2040).

THE INTER-STATE INSTITUTIONAL FRAMEWORK

In order to achieve the objectives, there is a need for a strong project management organisation (measures), including the following four important points:

- Establishment of an inter-state project management system by the OMVG in relation to the ministries concerned and donors (this requires a technical and financial unit per sector of activity)
- Establishment of a regional project management with a framework for exchange and regional governance by transboundary basin as well as with the local authorities and village communities
- Establishment of local project management with a framework of cross-border intermunicipalities in the pilot areas or cross-border cooperation structures/frameworks between local authorities in cross-border areas
- Include projects in local development plans and land-use planning at basin level.

THE INTER-STATE FINANCIAL FRAMEWORK

Similarly, in order to achieve the objectives of the Master Plan, there is a need to put in place a clear financial framework and sound financial organisation for the management of projects (measures), including the following three important points:

- Establish a donors' round table to define the financing mechanism (grants, loans, blending) and define the commitments of donors and governments in Transport & Communications economic infrastructure investment projects
- Establish a round table with the private sector to define commitments and the mobilisation of innovative financing (PPP for the financing of ICT and transport infrastructures)
- Define the projects that can be financed locally according to the areas of competence of the communities.

The investments required to carry out the Transport master plan are estimated at €465 million over the period 2023-2040.

The investments required to carry out the Communications master plan are estimated at €175 million over the period 2023-2040.

These amounts are given as an indication and may vary according to the feasibility studies that will be carried out on each project sheet or measure. The investments will be updated every 5 years, taking into account the new sub-projects developed in each project sheet, inflation and the increase in the cost of raw materials and new equipment offered on the world market.

THE TECHNICAL IMPLEMENTATION FRAMEWORK

Finally, in order to achieve the objectives of the master plan, there is a need to set up a technical and project management framework, with a well-defined periodic monitoring and evaluation unit (quarterly) and a solid technical organisation, composed of experts in the sectors concerned, including the following three important points:

- Define a framework for support and technical assistance from donors (including UNCDF) for all projects/measures in the master plan

- Define infrastructure projects (e.g. projects on transit corridors, projects with cross-border impact, inter-state river transport, cross-border rural roads) that can be financed in the regional framework (WAEMU, African Union)
- Define a specific technical framework for projects with a high income-generating potential for the population and for local authorities (labour-intensive techniques, multimodal logistics techniques, new modes of transport, etc.) and bring them to the level of inter-state government authorities.

The creation of a technical and project management unit within the OMVG for the transport and communications sectors could be as follow: a secretariat, a public works engineer, an ICT engineer, a project management officer, and a computer geomatician for GIS and database management.

Transport & communications	Description	Budget (M€)	OVI indicator - achieved in 2040	Stakeholders	period (Short / Medium / Long Term)	Sources of verification	Risks and assumptions
Overall goal - vision 2040	To improve infrastructure systems (Transport & Communication) through comprehensive networking of transport networks, modes and services and through the use of modern, efficient, safe, inclusive and environmentally friendly communication technologies, thereby reducing the poverty of the populations in the OMVG intervention areas by 2040.						
Strategic areas	Strategic axis 1 - Modern, interconnected, quality and sustainable transport infrastructure						
	Strategic Area 2 - Green, safe, modern, cost-effective and inclusive transport modes and high quality, efficient and interconnected transport services						
	Strategic Area 3 - Modern, interconnected, quality and sustainable communications infrastructure, adapted to the technologies of tomorrow and covering the entire OMVG area						
	Strategic Area 4 - Secure, accessible, modern, cost-effective and inclusive communications and associated high quality, efficient and interconnected digital services at affordable costs for the entire population along the river						
1.1 - road sub-sector	1.1.1 - rural roads construction / rehabilitation	105,0	1600 kms	Ministry in charge of transport infrastructure, public works and agencies under supervision road agencies, FER	LT	Databases of ministries and OMVS cell Transport	funding has been found and granted
	1.1.2 - asphalt roads construction / rehabilitation PIR programme	317,0	1800kms	Ministry in charge of transport infrastructure, public works and agencies under supervision road agencies, FER	LT	Databases of ministries and OMVS cell Transport	funding has been found and granted
1.2 - railway sub-sector	1.2.1 - development of railway infrastructure	25,0	5 railway stations	Ministry in charge of infrastructures and agencies under its supervision	LT	Databases of ministries and OMVS cell Transport	funding has been found and granted
1.3 - river sub-sector	1.3.1 - navigability in the three catchments	2,4	1200 kms navigable	Ministries in charge of inland navigation and agencies under their authority - SOGENAV	LT	Databases of ministries and OMVS cell Transport	funding has been found and granted
	1.3.2 - Construction of at least 30 inland ports	16,5	30 river ports	Ministries in charge of inland navigation and agencies under their authority - SOGENAV	LT	Databases of ministries and OMVS cell Transport	funding has been found and granted
	1.3.3 - development of a modern inland waterway transport fleet	5,4	90 whaleboats	Ministries in charge of inland navigation and agencies under their authority - SOGENAV	MT	Databases of ministries and OMVS cell Transport	funding has been found and granted
1.4 - air sub-sector	1.4.1 - modernisation of airports in the OMVG area	5,0	5 airports upgraded	Ministry in charge of air infrastructure and agencies under its supervision	ST	Databases of ministries and OMVS cell Transport	funding has been found and granted
2.1 - road sub-sector	2.1.1 - Rural roads and labour-based methods	2,5	completed training in labour-based techniques	Ministry in charge of Public Works and agencies under its supervision road agencies, RMF, local authorities	LT	Databases of ministries and OMVS cell Transport	funding has been found and granted
	2.1.2 - rural roads and information systems	1,5	road database/catchment information system (CIS) for rural roads	Ministry in charge of Public Works and agencies under its supervision road agencies, RMF, local authorities, private sector IT	LT	Databases of ministries and OMVS cell Transport	funding has been found and granted
	2.1.3 - Asphalt roads and school building sites	2,5	national contracting companies are trained to build and maintain asphalt roads	Ministry in charge of transport and agencies under its supervision road agencies, FER, public works companies, training centres	LT	Databases of ministries and OMVS cell Transport	funding has been found and granted
	2.1.4 - Asphalt roads and OMVG road databases	1,5	regional database of paved roads by catchment area	Ministry in charge of transport and agencies under its supervision road agencies, FER	LT	Databases of ministries and OMVS cell Transport	funding has been found and granted

PROGRAMME OF MEASURES

	2.1.5 - Road safety in the OMVG area	2,5	80% reduction in fatal accidents	Ministry in charge of transport and agencies under its supervision road agencies, FER	MT	Databases of ministries and OMVS cell Transport	funding has been found and granted
	2.1.6 - axle overload	5,0	90% reduction in overload violations	Ministry in charge of transport and agencies under its supervision road agencies, FER	MT	Databases of ministries and OMVS cell Transport	funding has been found and granted
	2.1.7 - management of transit corridors	9,0	traffic procedures at inter-Member State border posts and along transit corridors completed	Ministry in charge of transport and agencies under its supervision road agencies, FER	LT	Databases of ministries and OMVS cell Transport	funding has been found and granted
	2.1.8 - modernisation of road transport modes	7,0	modernised modes of transport for goods and people - modernised bus stations in the OMVG area - efficient transport logistics/ supply chain management	Ministry in charge of transport and agencies under its supervision road agencies, FER	MT	Databases of ministries and OMVS cell Transport	funding has been found and granted
2.2 - railway sub-sector	2.2.1 - railway safety and security	2,5	safety of goods and persons insured in the railway	Ministry in charge of railway transport and railway agencies under its supervision	MT	Databases of ministries and OMVS cell Transport	funding has been found and granted
2.3 - river sub-sector	2.3.1 - River safety	2,5	river code respected - 80% reduction in river accidents	Ministry in charge of inland waterway transport and agencies under its supervision - SOGENAV	MT	Databases of ministries and OMVS cell Transport	funding has been found and granted
2.4 - air sub-sector	2.4.1 - Safety and security in air transport	2,5	air code respected - airport security ensured	Ministry in charge of air transport and railway agencies under its supervision	MT	Databases of ministries and OMVS cell Transport	funding has been found and granted
3.1 - Increase telecom connectivity in the OMVG area	3.1.1 - extending the connection between backbones and optical fibres	15,0	optical fibres installed from existing backbones - all main towns served	Ministry in charge of communications and ICT and their supervising agencies - national ARTP - fibre optic operators	ST	Databases of ministries and OMVS cell Communications	funding has been found and granted
	3.1.2 - full fibre optic coverage in major urban centres	9,0	fibre optic service provided in all major urban centres	Ministry in charge of communications and ICT and their supervising agencies - National ARTP - Local authorities	MT	Databases of ministries and OMVS cell Communications	funding has been found and granted
	3.1.3 - Satellite connections for remote areas	12,0	100% satellite connection achieved for all remote areas and villages	Ministry in charge of communications and ICT and their supervising agencies - national ARTP - satellite operators	LT	Databases of ministries and OMVS cell Communications	funding has been found and granted
	3.1.4 - full 5G and beyond (xxG) mobile access coverage	9,0	100% coverage of 5G (xxG) mobile access networks	Ministry in charge of communications and ICT and their supervising agencies - National ARTP - Telephone operators	LT	Databases of ministries and OMVS cell Communications	funding has been found and granted
	3.1.5 - Energy infrastructure to protect communications systems	18,0	developed and climate-proofed energy infrastructure - no digital service interruptions	Ministry in charge of communications and ICT and their supervising agencies - National ARTP - Ministry of Energy	MT	Databases of ministries and OMVS cell Communications	funding has been found and granted
3.2 - Development of ICT infrastructure	3.2.1 - creation of digital activity centres / training centres	18,0	technopoles, training centres and digital activity poles, incubators created in major urban centres	Ministry in charge of communications and ICT and their supervising agencies - National ARTP - Training centres	MT	Databases of ministries and OMVS cell Communications	funding has been found and granted
	3.2.2 - creation of Community Multimedia Centres (CMC)	24,0	Community Multimedia Centres (CMCs) operational in all medium-sized urban centres and priority rural villages over 500 inhabitants	Ministry in charge of communications and ICT and their supervising agencies - National ARTP - Local authorities	MT	Databases of ministries and OMVS cell Communications	funding has been found and granted

	3.2.3 - creation of data centres and quantum institutes	18,0	new datacenters located in major urban centres - shared IT hosting solutions achieved	Ministry in charge of communications and ICT and their supervising agencies - national ARTP - private sector	LT	Databases of ministries and OMVS cell Communications	funding has been found and granted
4.1 - Developing the offer of new digital services	4.1.1 - Digital services for the public and private sector	15,0	new 100% digital services for companies in different sectors and for the public sector (e-administration and B2B services)	Ministry in charge of communications and ICT and its supervising agencies - national ARTP - private sector SSII	MT	Databases of ministries and OMVS cell Communications	funding has been found and granted
	4.1.2 - digital content offers	16,0	effective digital content supply by sector of activity	Ministry in charge of communications and ICT and its supervising agencies - national ARTP - private sector SSII	LT	Databases of ministries and OMVS cell Communications	funding has been found and granted
4.2 - Developing employment and skills in the digital world	4.2.1 - Digital inclusion plan, jobs and skills	9,0	100% digital inclusion achieved - increased employment in the digital world - enhanced skills	Ministry in charge of communications and ICT and its supervising agencies - National ARTP - Ministries of training and employment	LT	Databases of ministries and OMVS cell Communications	funding has been found and granted
4.3 - Building resilience to digital risks	4.3.1 - Digital Major Hazard Management Plan	3,0	major operational risk management plan in the digital sector	Ministry in charge of communications and ICT and its supervising agencies - National ARTP	LT	Databases of ministries and OMVS cell Communications	funding has been found and granted
	4.3.2 - action plan against cyber attacks in key sectors	6,0	cyber-attacks, risks related to hacking and attempts to gain illegal access to digital services under control - continuity of ICT services ensured	Ministry in charge of communications and ICT and its supervising agencies - national ARTP - private sector	LT	Databases of ministries and OMVS cell Communications	funding has been found and granted
	4.3.3 - Digital risks and the legal and regulatory framework	3,0	legal and regulatory framework of the telecom/ICT sector regularly updated and harmonised with regional and political policies of the four Member States	Ministry in charge of communications and ICT and its supervising agencies - National ARTP	LT	Databases of ministries and OMVS cell Communications	funding has been found and granted

5.6 RISKS OF NON-IMPLEMENTATION OF MEASURES

Risk of non-implementation	Possibility of occurrence (-, +, +++)	Importance of the impact (-, +, +++)	Proposed risk management measure
No agreement / conventions between Member States	-	-	Setting up periodic round table meetings to establish agreements and conventions and to reaffirm the will of the States to pursue the vision validated by all
Inter-state political risk hindering the smooth running of a decision / measure / project	+	+++	Establishment of inter-state conferences to determine potential options for pursuing any of the measures in the Master Plan
Change of vision and strategies in case of change of government	++	++	Establishment of a plan for a comprehensive review of the strategic visions and axes and a round table negotiation with the competent authorities to reshape the Transport Master Plan
Budgetary problems for the financing of the transport & communications sectors in the areas of infrastructure, modes and services	+++	+++	Establishment of provisional financing plans with alternative scenarios for the construction/rehabilitation/maintenance parts by sub-sector with a management chart - then organisation of consultation circles to seek innovative financing from States / Donors / investment funds / PPP
Lack of qualified human resources to implement the measures	++	++	Implementation of training plans and GPEC plans (<i>Gestion prévisionnelle Emplois & Compétences</i>)
No consultation between institutions to develop projects	++	+++	Establishing a sound information system of relevant stakeholders in a sub-sector and issues arising in the decision-making chain and organising effective consultation conferences and steering committees
No donor support in a given sub-sector	++	+++	Organisation of round table meetings with private investment funds and/or multinationals operating in the sub-sector in question, to compensate for the lack of interest of donors in certain projects
Inefficient organisation set up	+++	+++	Establishment of a monitoring and evaluation unit for the precise monitoring of the progress of projects and the quality of the organisational structures in place and their effectiveness
Senegal River flow insufficient (< 100 m ³ /s) for river navigation	++	+++	Consultation with dam managers and riparian states to increase the river's flow while avoiding a major negative impact on crop irrigation and flood risks
Significant climate change hindering the development of a sub-sector	++	+++	Establishment of a contingency and major risk management plan to mitigate the effects of climate on infrastructure and projects

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.

6.1 POTENTIAL IMPACTS ON WATER RESOURCES AND ECOSYSTEMS IDENTIFIED

TRANSPORT SECTOR

The water resources required per basin. These requirements are mainly for river transport and to a lesser extent for road transport. With the development of waterway transport, there will be impacts on water resources.

The development of river transport on the Gambia River will have potential negative impacts due to pollution from ships sailing from Banjuls to Bassé (fuel oil, oils, various discharges into the river), both for river waters and for fauna and flora.

The development of river ports (Faraféni, Georgetown, Bassé) and the development of trade and logistics will also lead to i) pollution of river waters (discharge of various wastes into the river) and ii) silting problems inherent in the construction of loading/unloading docks.

These adverse effects will be the same in the Kayanga-Geba and Coliba-Korubal basins.

Table 6-1 Social and environmental impacts identified

Potential impact	Possibility of occurrence (-, +, +++)	Importance of the impact (-, +, +++)	Possible avoidance, mitigation or compensation measures
Transport - Strategic Axis 1 - Infrastructure			
Impact of uncapped borrow pits on the environment and the safety of local residents	+++	+++	Mandatory follow-up evaluation of ESIA's after works
Transport infrastructure preventing rainwater run-off	+++	+++	More analysis and technical expertise at the feasibility stage
Port infrastructure causing silting in river port areas	+++	+++	More analysis, monitoring and technical expertise at the feasibility stage on the potential for silting and bank erosion
Transport - Strategic Axis 2 - Transport modes and services			
Transport pollutes water resources	+++	+++	Strengthen legislation, increase pollution controls, impose heavy penalties on offenders
Vehicles are overloaded and degrade the road network	+++	+++	Strengthen legislation on axle overloading, increase weighing controls, introduce heavy penalties for offenders
Insecurity is increasing in port, multimodal and logistics areas	++++	+++	Strengthen legislation, increase controls on entry into logistics zones, impose heavy penalties on offenders
Accident rates are rising on transport networks	+++	+++	Strengthen legislation on transport safety, increase checks on means of transport, impose heavy penalties on offenders (alcohol, speeding, non-compliance with the transport safety code, illegal transport of dangerous or inflammable materials, etc.).

COMMUNICATIONS SECTOR

There are no particular impacts of the Communication sector on water resources, except for the significant consumption of energy and water for the cooling of data centres.

6.2 AVOIDANCE, MITIGATION OR COMPENSATION MEASURES

In order to limit the negative impacts of the development of river transport on the River Gambia (pollution by ships sailing from Banjuls to Bassé, fuel or oil dumping, various discharges into the river), it is important that the authorities of each Member State take legislative measures in coordination with the ministries concerned (transport, fisheries, environment) to sanction the polluting carriers and/or river administrations in charge of the management of river ports.

Further measures should be taken by the authorities in each Member State to maintain the river banks and to carry out frequent dredging to limit silting.

7 CONCLUSIONS AND RECOMMENDATIONS

7.1 TRANSPORT SECTOR

CONCLUSION

Given the climate conditions impacting the infrastructure (rain) and the degrading factors (axles overloading, accidents), the road network (especially the rural roads) is periodically in poor condition. The interconnections between asphalt roads and rural roads are not yet good enough to contribute to the opening up of agricultural areas and the transport of produce to the major consumption centres

Transit corridors do not yet play a major role in economic development due to the state of the paved roads and the constraints of international transit at borders.

Inland waterway transport remains underdeveloped and is still an alternative to road transport for bulk cargo, etc. and at lower cost. Inland waterway transport has not taken off on the Gambia River for major ships for bulk and heavy goods transport. The river ports are not equipped to host multimodal road-river platforms and contribute to economic development. There is no inland waterway transport sector that could develop an alternative to road transport.

Rail transport is almost at a standstill on the Dakar-Bamako corridor. Eleven railway stations are within the OMVG area. Rail rehabilitation projects are being studied and thus offer alternative possibilities to road transport, at lower costs than road, in terms of multimodal road-rail transport. Multimodal transport and logistics are still struggling to emerge to support economic development in the sub-region.

The action plans developed in this master plan should contribute to boosting the economies of the three basins within the OMVG area. The projects to be implemented are broken down by transport sub-sector to increase mobility, interconnections and access.

RECOMMENDATIONS

Technical and financial studies must be carried out by socio-economic sector to define the real needs by basin and by sub-sector (road, rail, river, air, multimodal transport and logistics), in order to update the investment estimates presented in this master plan.

The implementation frameworks of the transport sector must be reviewed and updated every five years to reformulate infrastructure needs (new works, rehabilitation, maintenance) in the sub-sectors (road, rail, river-sea, air), and the indicators must also be updated to assess progress, work that must be carried out jointly by OMVG transport specialists and the staff of national institutions (Ministries of Infrastructure and Transport, Ageroute, Observatories, FER) and regional institutions (WAEMU)

7.2 COMMUNICATIONS SECTOR

CONCLUSION

Given the rapid and continuous evolution of the communications sector, it is difficult to predict the level of technology by 2040, and therefore the type of hardware and software equipment that will be available in the ICT and telecommunications markets.

The OMVG area is located in the hinterland, far from the capitals (Dakar, Banjul, Conakry, Bissau) and in remote geographical areas with more difficult access to telecommunication networks and the internet.

The level of hardware in these agricultural regions is much lower than in the capitals and the software solutions are not sufficiently adapted to the different economic sectors (transport, mining, industry, agriculture, health, education...).

The Transport & Communications Master Plan presents 4 strategic axes per sector (Transport and Communications) and recommends 5 major provisions in the Transport sector and 4 important provisions with thirteen accompanying measures and projects to be implemented over the period 2023-2040

RECOMMENDATIONS

Periodic studies must be carried out by socio-economic sectors to confirm the real needs updated by basin in new hardware and software technologies.

Implementation frameworks should be reviewed and updated every five years to reformulate needs according to the technological offers available on the international and regional markets, and indicators should also be updated to assess progress, work that should be carried out jointly by OMVG specialists and staff from national and regional institutions.

A unit of experts in Transport and Communications should be integrated into the OMVG organisation to monitor the provisions and measures of the Transport & Communications Master Plan.

As a **final recommendation**, the provisions and measures contained in this master plan are complex and involve a wide range of actors with multiple and not always coinciding interests. The success of this master plan will only be ensured if all the management and governance prerequisites are implemented:

- The in-depth studies required for each project sheet must be carried out as soon as possible, and must involve many stakeholders in the action scenarios
- OMVG management units in relation to the various ministries must be created, organised and composed of experts in the above-mentioned fields (managers experienced in project management, database managers, engineers and technicians by sector of activity, analysts and statisticians, economists specialising in transport and communications, etc.).
- Roundtable meetings should be organised with donors and investment fund managers to define possible agreements and to affirm the real willingness of external financing according to the sectors considered
- Complete projects must then be drafted with precise activities and very precise implementation timetables.

Finally, an OMVG monitoring and evaluation unit must be created and organised to follow, monitor and evaluate each year the progress and performance indicators of each of the measures presented in the master plan, in order to give the OMVG steering committee a synthetic view of the real progress of the projects

ANNEXES

Annexe 1. List of infrastructure projects in the transport sector

COUNTRY: SENEGAL - ROAD INFRASTRUCTURE PROJECTS

46 road infrastructure projects completed:

- The Tambacounda - Dialacoto road (65 km); The Mako - Kédougou road (50 km);
- The road from Ouroussogui to Matam (10 km); The rehabilitation of the RN2: Saint-Louis - Richard Toll (143 km);
- The Richard-Toll - Ndoum road (120 km); The rehabilitation of the RN6, Koukané - Kolda (93 km);
- Kolda - Tanaff (72 km); The Kafountine - Diouloulou road (25 km);
- The Cap Skiring - Diembering road (12 km);
- The three (3) bridges of Matam ;
- Ndoum bridge;
- the Gêole bridge;
- The Kédougou bridge;
- The Emile Badiane Bridge;
- the Kolda bridge ;
- Halwar Bridge;
- the Fanaye bridge;
- the Thiaroye autobridge;
- The Keur Massar autobridge;
- Katakalousse Bridge;
- The Emergence Interchange ;
- Blaise Diagne International Airport Highway (AIBD) - Sindia (19 km);
- The extension of the North clearance road from the Golf Club of Guédiawaye to Tivaouane Peulh (VDN 3 over 17.2 km);
- The rehabilitation of the Grandes Niayes Rufisque - Lompoul-Bayakh-Mboro-Diogo area, for a total length of more than 95 km;
- Development and asphaltting work on the Linguère - Boula section;
- Development and asphaltting work on the Tivaouane Touba toul - Khombole road (37 km);
- Construction of the Linguère - Matam road Section Boula - Ranérou - Patouki (55 km)
- Construction of the Linguère - Mata road Section Patouki - Ouroussogui (41km) ;
- Diamniadio control post ;
- Construction and asphaltting work on the Fatick-Bambey road (Bambey-Niakhar section);
- Rehabilitation work on the RN1 between Rufisque and Bargny 2X2 lanes;
- Rehabilitation of the Km 50 Kayar-Bayakh road ;
- Maintenance work on the Keur Massar road system;
- Development work on the jumbo car park in Tambacounda;
- Road construction project connectivity Toll motorway/Rufisque ;
- Construction of the Ouroussogui and Dahra checkpoints;
- Development work on the Madina - Gounass city bypass;

- Roads of the Diamniadio International Conference Centre (CCID) ;
- Development work on the Vélingara-Badiara road;
- Construction and rehabilitation of roads in Tivaouane ;
- Rehabilitation of Vélingara - Manda Douane ;
- Rehabilitation of the Passy-Sokone road (25.5 km) ;
- Rehabilitation of the Dahra-Linguère road (40 km) ;
- Tivaoune bypass (5 km)
- Construction of 25 km of tracks in the Thiès region;
- Development of the Esplanade of the mosques of Tivaoune (1 conference hall with 550 seats, accommodation, 1 library and a banquet hall)

4 projects carried out in road transport:

- 1607 minibuses in Dakar,
- 287 minibuses in Ziguinchor, Kaolack, Tambacounda, Thiès, Saint-Louis, Louga,
- acquisition of 475 Ashok Leyland buses for Dakar Dem Dikk
- 75 large vehicles delivered.

14 ongoing road infrastructure projects :

- Extension of the North clearance road (VDN) between the CICES and the Golf Club of Guédiawaye;
- Rehabilitation of the Touba-Dahra road (75 km) ;
- Long awaited reconstruction of the Fatick-Kaolack road (42 km);
- Development of the Joal-Samba Dia-Djiffer road (42 km) ;
- Development work on the Boucle du Blouf (28 km) ;
- Rehabilitation of Vélingara - Kounkané (29 km) and Tanaff - Ziguinchor (116 km);
- Rehabilitation of the Dinguiraye - Nioro - Keur Ayib road (46 km) ;
- Programme for the modernisation of Senegalese cities (Kaolack, Dakar, Gossas, Diourbel);
- Ila Touba motorway, from Thiès to Touba, over 113 km,
- Aibd-Thiès and Sindia-Mbour motorways;
- Construction of the Ganguel-Souleye and Windou Bosséabé bridges;
- Construction of the Kédougou Salémata road (85Km) ;
- Construction of the Hydrobase road (4.5km);
- Rehabilitation of the Dialocoto-Mako road (115km) ;

7 road infrastructure projects underway

- Development of the Routes des Niayes (65 km of paved roads, paved roads and 600 linear metres of bridges)
- Continuation of the rehabilitation of the RN2, over 336 km between Ndoum - Ourosogui - Bakel
- Completion of the important priority programme for the opening up of 412 km of roads: Boucle du Boudier, Boucle des Kalounayes, Boucle du Fouladou, Bambey - Baba Garage and Diogo - Fass Boye and the opening up of the Ile à Morphil
- Construction of 70 km of roads: Lompoul-Léona-Potou-Gandioul
- Rehabilitation of 250 km of roads: Tamba-Goudiry- Kidira-Bakel
- Start of a bridge programme: Foundiougne (1500 m), Baïla (100 m), Diouloulou (140 m), Marsassoum (483 m), Nianga Edy and Guédé Village

- The first phase of the programme to modernise Senegal's cities (PROMO-VILLES) concerns 13 cities, for a total of 114 km of roads and a cost of CFAF 89 billion. In addition to the urban roads that will be built, this programme also includes collective sanitation, public lighting and improvement of the living environment.

5 ongoing projects Road transport

- 92 minibuses scheduled in the cities of Fatick, Mbour, Tivaouane, Diourbel and Saint-Louis;
- Programme of more than 700 heavy-duty vehicles;
- Dedicated Bus Rapid Transit (BRT) project;
- Construction of a second technical control centre in Diamniadio;
- Modernisation of the road transport administration.

Annexe 2. Bibliography of national transport sector development plans

AT THE REGIONAL LEVEL

2005 - Regulation n°14/2005/CM/UEMOA harmonisation of standards and procedures for the control of the gauge, weight and axle load of heavy goods vehicles

2012 - ECOWAS - Supplementary Act/SP; 17/02/12

GAMBIA

National Transport Plan 2018-2027

NTP 1998-2006.

GUINEA

2016 - National Economic and Social Development Plan (PNDES) 2016 to 2020

Transport Sector Policy Letter (TSPL)

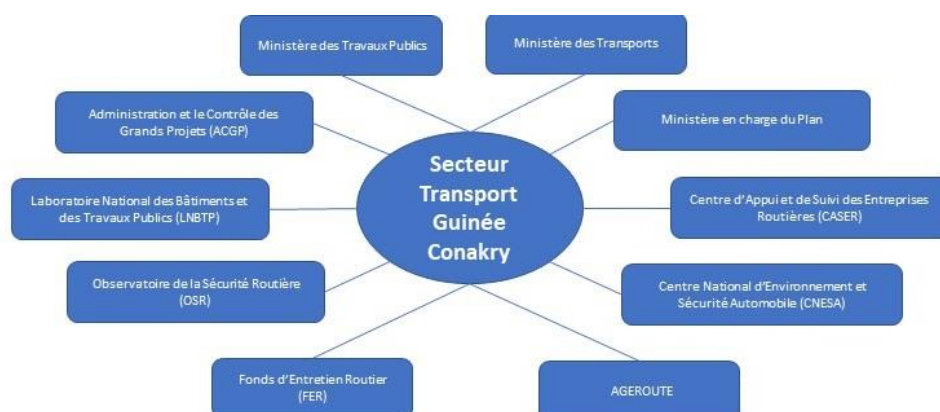
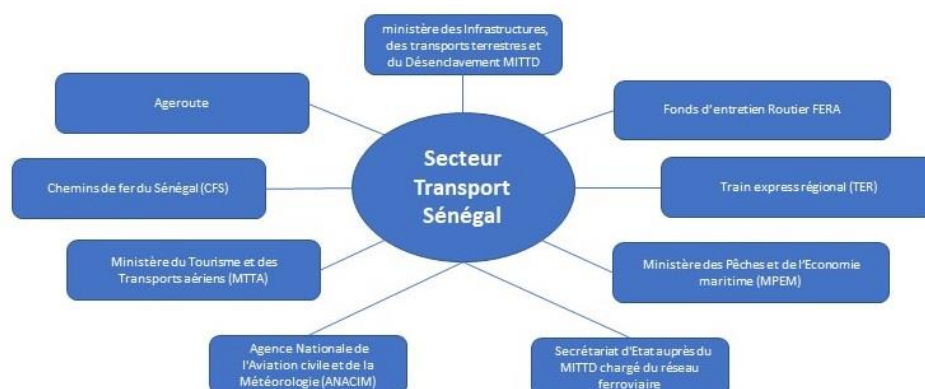
IN SENEGAL

Emerging Senegal Plan PSE

IN GUINEA BISSAU

Terra Ranka Strategy (2014)

STAKEHOLDERS BY MEMBER STATE



GUINEA BISSAU :

Ministry of Public Works, Construction and Urban Planning

Directorate General for Transport Infrastructure (Direcção Geral das Infraestruturas de Transporte - DGIT)

GAMBIA :

Ministry of Transport, Works, and Infrastructure (MOTWI) - the Directorate of Planning (Sector Policy Unit - Sector Planning Unit - Sector Regulatory Unit - Road Safety Unit), public entities under supervision such as the National Roads Authority (NRA) - Gambia Ports Authority (GPA) - Gambia Maritime Administration (GMA) - GCAA oversight aspect of the air transport sub sector - Gambia International Airlines

The Ministry of Trade, Regional Integration and Employment (MOTIE) and its Regional Integration Unit under MOTIE, responsible for all matters relating to regional integration programmes at ECOWAS, AU and OIC levels.

Ministry of Environment, Climate Change and Natural Resources (MoECCNAR) and its National Environment Agency (NEA)

Ministry of Lands and Regional Administration

Civil Society Organizations

The Gambia Road Safety Committee

The National Road Safety Council

National Transport Control Union/Association

Annexe 3. Bibliography of national development plans for the communications sector

NATIONAL DEVELOPMENT PLANS

Guinea

Universal service and digital solidarity policy and strategy (FSU-SN)

Senegal

Universal Service Policy

Emerging Senegal Plan (PSE)

Digital Strategy 2025

Senegal National Broadband Plan (2018)

National Cyber Security Strategy 2022 (NCS2022)

Gambia

Universal Access and Service (UAS) policy

Information and Communications Act (IC Act) 2009

The Gambia's ICT for Development Policy Statement 2018-2028

National broadband and telecommunications policy

National Broadband Policy and Strategy 2020-2024

National eGovernment Strategy 2020-2024.

Guinea Bissau

National Strategy Terra Ranka 2014

THE ACTORS IN THE COMMUNICATIONS SECTOR

Guinea Bissau

Ministry of Transport and Telecommunications

Directorate General of Traffic and Land Transport (Direcção Geral de Viação e Transportes Terrestres - DGVTT) and supervises eleven bodies

Guinea

National Digital Agenda Council (NDAC)

National ICT Council (CNTIC)

Research and Training Fund (RTF)

National Agency for Electronic Governance and State Information Technology (ANGEIE)

National Agency for the Security of Information Systems (ANSSI)

ARPT

Senegal

National Council for Audiovisual Regulation (CNRA)

Gambia

Public Utilities Regulatory Authority ("PURA"),

Universal Access and Service Fund Board

Guinea Bissau

National Regulatory Authority for Information and Communication Technologies

Ministry of Transport and Telecommunications

Annexe 4. Roads concerned by the PIR programme

State (OMVG)	Roads	Total cost FCFA	Total cost €
Gambia	Bassé - Kundan Kunda - Ndimbo - Sudowal - Fatoto - Nyamanari - Manda (SN border)	5 047	7,7
	Georgetown - Bani - Kunting - Tankan kunda - Dobbo (Dobbo - Bansang ferry)	3 920	6,0
	Georgetown - Naude - Diabugu - Darsilami - Yorobawal - Satu koba - Brifu - Koinatenda - Passamassi Mandinka - Fatoto	12 250	18,7
	Fatoto - Kristi Kunda - Koina	833	1,3
	Bansang - SN border (Madina yorofula)	882	1,3
Guinea	Kandika (GB border) - Saréboido (RN9) - Koundara (RN9) - Youkounkoun (RN9) - Touba (RN9) - Gaya (Mali)	18 081	27,6
	Koumbia (RN12) - Foulamori (GB border)	8 575	13,1
	(Route Trans cotière) Boke (RN23) - Koumbia (RN 23) - Gaoual (RN23)	18 767	28,6
	Guidal (RN 23) - UK border	441	0,7
	Kitchar (RN 12) - Kandika (RN 9)	3 087	4,7
	Saréboido (RN9) - Sambailo (RN5)	2 793	4,3
	Télémele (RN24) - Sarékali (RN24) - - Kakoni (RN24) - Gaoual (RN24) - Kounsitel (RN5)	13 397	20,4
	Youkounkoun - SN border	490	0,7
Guinea-Bissau	Bafata - Gabu-Pitche -Kandika (FrontierGN)	12 446	19,0
	Pitche-Foulamori (GN Border)	1 323	2,0
	Gabu - Conjufa - Pirada (SN border)	4 410	6,7
	Tanta Cossé (Bafata) - Cuntuboel - Comboju (SN Border)	6 027	9,2
	Saré bacar (SN border) - Cuntuboel	3 499	5,3
	Pirada - Tabassi - Bajoncounda - Canqélifa - burunhuma (GN Border)	7 027	10,7
	Pitche - Bac (GN border)	1 323	2,0
	Gabu - Che Che - Beli - Vendu Leidi (GN Border)	10 535	16,1
	Kountakané(Vélingara) - Wassadou (FrontierGB)	3 577	5,5
Senegal	Kolda-Salikénié (BorderGB)	2 842	4,3
	Kolda - Soulabali - Pata - GMB border	6 419	9,8
	Dabo - Koumbakara (UK border)	3 293	5,0

	GN-Bandafassi border (Kédougou)	9 065	13,8
	Manda Customs - GMB Border	196	0,3
	Passi Ngayénne - GMB Border	245	0,4
	Médina Sabakh - Ngayène - Passi ngayéne - Sali	10 976	16,7
	Koungheul - Sali Maka gouye	2 009	3,1
	Sali - Kahène - Mbaro - Kountouata - Maka	9 555	14,6
	Koumpeutoun - Ndiayèn kountouata	3 234	4,9
	Badiara - Saré Boido Mali - Leguédié - Dinguiraye - Médina - yorofoula - Ngoudouro - Pata	8 193	12,5
	Séléti - Tambacounda - Diaboudoir - Diokadou - Njoniam - Kandiou Mangana -Boudouk - Ndiamakouta	12 740	19,4
TOTAL ESTIMATED COST		207 495	316,3



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*Public limited company with a capital of 3 183 349 euros
SIRET: 391 484 862 000 19 - RCS: NÎMES B 391 484 862
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