



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

Phase 2 - Sector Plans - 5/6

**Protection of the environment and ecosystems,
development of tourism**

Final version - April 2022



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Phase 2 - Protection of the environment and ecosystems, development of tourism

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ABBREVIATIONS

Acronym	Meaning
AAAC	Competent Environmental Assessment Authority of Guinea Bissau
AAC	Adaptation to climate change
AEP	Drinking water supply
AFD	French Development Agency
ANSD	National Agency for Statistics and Demography
ANSD	National Agency for Statistics and Demography
BAD	African Development Bank
BID	Islamic Development Bank
BNP	Badiar National Park
BV	Basin / catchment area
CAD	Development Assistance Committee
CDBT	Dulombi-Boe-Tche-tche complex (Guinea Bissau)
COS	Strategic Policy Framework
ECOWAS	Economic Community of West African States
EDF	European Development Fund
EU	European Union
FAO	Food and Agriculture Organisation
FENU	United Nations Capital Development Fund (UNCDF)
GDP	Gross Domestic Product
GIE	Economic Interest Groups
GIRN-PBF	<i>Projet de Gestion intégrée des ressources naturelles dans le paysage du Bafing-Falémé</i>
HDI	Human Development Index
IBAP	Institute of Biodiversity and Protected Areas of Guinea Bissau
INAS	National Water and Sanitation Agency of Guinea Bissau
INE	National Institute of Statistics of Guinea Bissau
INS	National Institute of Statistics of Guinea
IWRM	Integrated Water Resources Management
LGA	Local Government Area (LGA)
MDG	Millennium Development Goals
MDRA	Ministry of Rural Development and Agriculture
MTEF	Medium Term Expenditure Framework of the Ministry of Environment, Water and Forests of Guinea (2017)
NAP	National Agricultural Investment Plan (Guinea Bissau)
NGO	Non-Governmental Organisation
NTFP	Non-timber forest products
OCB	Organisations communautaires de base
OECD	Organisation for Economic Co-operation and Development
OLAC	Office des Lacs et des Cours d'eau du Sénégal

Acronym	Meaning
OMVG	Organisation for the Development of the Gambia River
ONAS	Office National de l'Assainissement du Sénégal
OVI	Objectively verifiable indicators
PAGIRE	Action Plan for Integrated Water Resources Management
PAN	Plan d'Action National (Gambie)
PARSS3	Programme de l'Union Européenne d'Appui à la Réforme du Secteur de la Sécurité (Guinée)
PCB	Polychlorinated biphenyls
PDDI	Integrated Development Master Plan
PGIRE	Integrated Water Resources Management and Multipurpose Use Development Programme in the Senegal River Basin
PMI	Small and Medium Industry
PNADT	Plan national d'Aménagement et de développement territorial (Sénégal)
PNDES	National Economic and Social Development Plan
PNIASAN	Plan National d'Investissement Agricole et de Sécurité Alimentaire et Nutritionnelle (Guinée)
PNLC	Plan d'aménagement forestier du Parc Naturel de Lagoas de Cufada
PNNK	Parc National du Niokolo Koba
PNTC	Parc Naturel de Tarrafes de la rivière Cacheu
POP	Persistent Organic Pollutants
PPP	Public-Private Partnership
PREE-ACO	Partenariat Régional sur l'Eau et l'Environnement en Afrique Centrale et Occidentale
PRES	Economic and Social Resilience Programme (Senegal)
PSE	Emerging Senegal Plan
R&D	Research & Development
SDC	Swiss Agency for Development and Cooperation
SDG	Sustainable Development Goals
SFEMP	Sustainable Forest Ecosystem Management Programme (Programme de Gestion Durable des Ecosystèmes Forestiers (Guinea))
SMB	Boké Mining Company
SME	Small and medium-sized enterprises
SNAPE	Water point development service (Guinea)
SNDD	Senegal's National Strategy for Sustainable Development
SO	Strategic Objective
SS	Suspended solids (MES in French: Matières en suspension)
SSE	Senior Secondary Education
ToR	Terms of reference
UEMOA	West African Economic and Monetary Union
UNCDF	United Nations Capital Development Fund (UNCDF)
UNDP	United Nations Development Programme
UNFCCC	Conference of the Parties to the United Nations Framework Convention on Climate Change
UNOPS	United Nations Office for Project Services
WHO	World Health Organization

1 INTRODUCTION

1.1 BACKGROUND AND OBJECTIVE OF THE STUDY

The *Organisation pour la Mise en Valeur du fleuve Gambie* (OMVG) was created in 1978, and its member states are The Gambia, Guinea, Guinea-Bissau and Senegal. Its main mission is **the rational and harmonious exploitation of the common resources of the Gambia, Kayanga-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 Ingeniería, 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" (UNCDF, 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 watersheds 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**

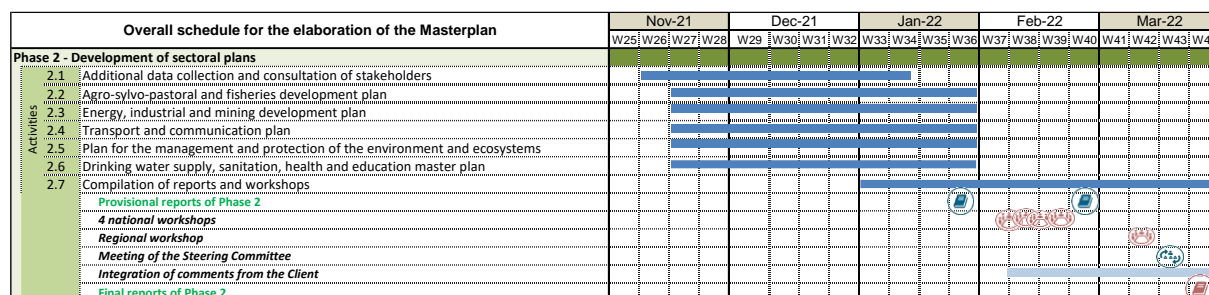
An inception report for the study was validated on 15 September 2021 at the Regional Validation Workshop held remotely and a final version of the inception report, incorporating the workshop recommendations, was submitted to OMVG and UNCDF on 30 September 2021.

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 in 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 environmental and ecosystem protection and management 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.

1.3 DEVELOPMENT METHODOLOGY

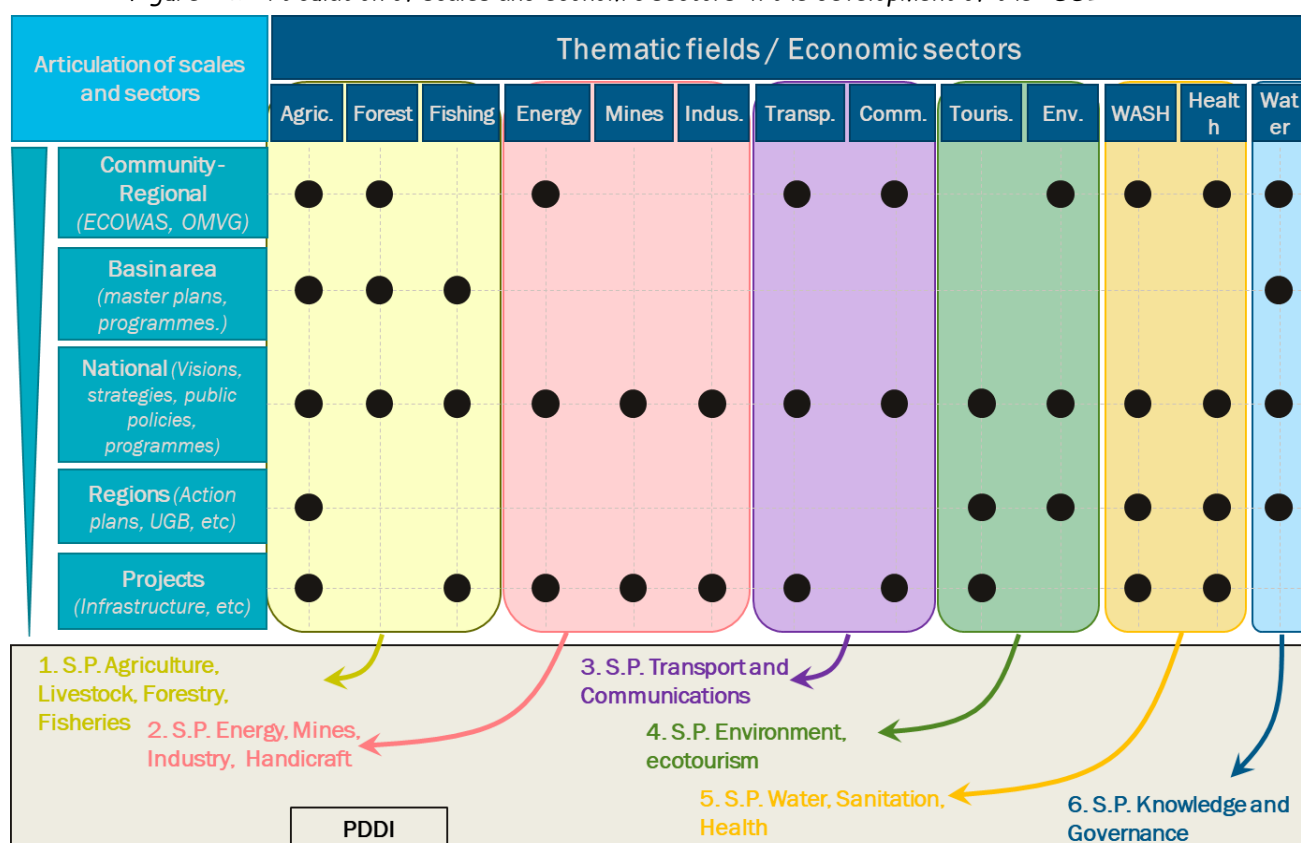
Each of the six sector plans presents the proposed intervention strategy for each sector, as well as the associated implementation tools. These strategies are an **aggregation of national and regional visions, policies and programmes, as well as the recommendations of the consortium.**

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.

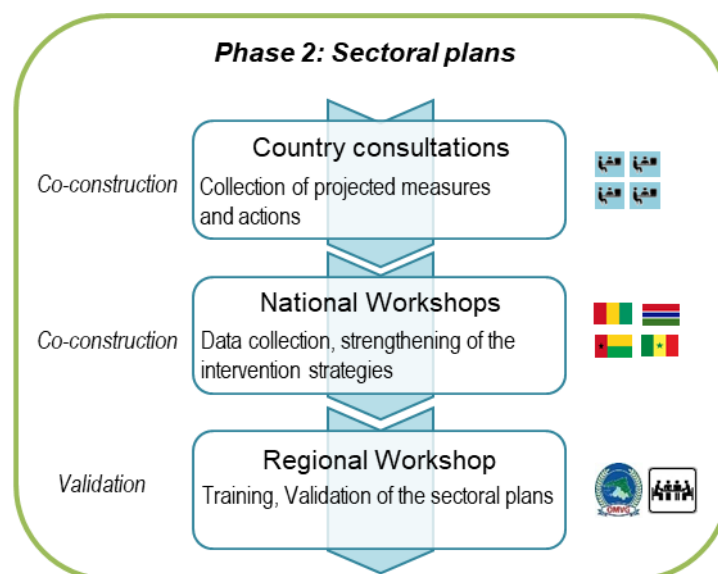
The necessary technical, legal and institutional interventions at national level were identified and analysed through the intervention of national experts in each of the 4 countries. The sector plans integrate these elements.

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



2 PROTECTION OF THE ENVIRONMENT AND ECOSYSTEMS, DEVELOPMENT OF TOURISM IN THE OMVG AREA

2.1 CURRENT STATE OF THE SECTOR

2.1.1 State of the natural environment and biodiversity

The state of biodiversity in the three basins is a real environmental issue, highlighted by the presence of numerous Protected Areas, but also by forests, riparian woodlands and mangroves, which cover a significant area and have considerable issues at the scale of the study area.

These Protected Areas are associated with numerous natural areas (notably forest areas, mangroves) which contribute to so-called "ordinary" biodiversity. They also represent a wealth to be preserved and developed in a reasoned manner.

The available documents show that there is pressure on resources and a decline in natural environments and the species that depend on them. Thus, the last three decades have been characterised by a notable trend towards the degradation of vegetation, with a consequent loss of animal diversity. **Human activity is the main pressure on biodiversity**. Due to population growth and the consequent need for more resources, deforestation and over-exploitation, vegetation cover is being lost to new infrastructure. The loss of natural habitats in which species can live and reproduce is also accompanied by the disappearance of more and more species of flora and fauna. Another factor responsible for the degradation of water-related environments is pollution by human activities (artisanal gold panning, mining, agriculture, various works) and the pressures they can also generate on the degradation of water quality and physical environments (including aquatic habitats).

The combination of the pollution of watercourses by these different activities, the lack of water treatment infrastructures and the occasional presence of waste deposits, reinforces the degradation of water quality and the quality of aquatic environments in which many species live.

Data on biodiversity are often very general, derived from numerous reports and ultimately very fragmented. It is difficult today to have a robust vision of both the state of health of environments (biodiversity - habitats) and their functional state (relations between compartments, adapted water needs, etc.).

Anthropogenic pressures seem to be better known within protected areas, but they only take into account a few criteria. Other, more detailed analyses show more contrasting trends, with pressures linked to higher population densities and more "extensive" declines at the basin level.

2.1.2 State of the forests

Declining water resources, combined with rising temperatures and deforestation linked to traditional gold panning, agriculture and infrastructure development, pose serious threats to forest stands and forest biodiversity, particularly in the dry zone.

The conclusions drawn from the documents on the state of forest cover in the four OMVG countries converge on the fact that the region's forest ecosystems are subject to human pressure, which can be significant. One cannot speak of 'massive' deforestation, the situation is a little more contrasted as some areas, on the contrary, are undergoing greening (as in the case of the Fouta Djallon plateaus in the study area). Deforestation dynamics seem to be closely linked to high population densities, particularly around large cities, major penetration routes (roads and tracks, rivers), and agricultural areas where deforestation can be more 'extensive' and could be preferentially associated with logging and charcoal production. But elsewhere in the more neglected rural areas, the forest is also likely to grow.

Within the study area, this logic seems to prevail, as the most significant degradation of forest cover is observed in mining areas (especially in Guinea), in agricultural areas and around large urban areas. This destruction is due to over-exploitation of the vegetation cover, deforestation and uncontrolled bush fires. In response, the destruction of the forest cover results in the impoverishment of ecosystems, i.e. a significant loss in terms of fauna and flora diversity, but also a risk of soil erosion, degradation of water quality and increased flooding.

Finally, the mixed forest and grassland natural formations are of major socio-economic importance, as they play an important role in the production of goods and income. They thus offer local populations strategies for combating poverty, particularly during the difficult lean season. However, sustainable and participatory management programmes are helping to correct this downward trend in forest cover.

2.1.3 Tourism as an environmental issue

The situation analysis shows that in the OMVG area, **despite the existing potential and opportunities, tourism will have to overcome a number of obstacles to meet the expectations of governments.** These include **access to land, access to credit for investors, taxes on tourism investments, poor tourism skills, poor security, high crime rates, public health, visa requirements.** Aware of this situation, the different countries concerned are implementing policies and actions to solve these problems. Thus, in each OMVG country, the government has undertaken a number of initiatives and strategic decisions on key issues after consulting all stakeholders at national and regional levels. These issues include **the scale of tourism development, the sustainability of the sector and the financing of tourism and economic rents.**

KEY FIGURES

Natural environment, biodiversity and forests

Protected areas and natural environments

- Protected areas represent 30% of the total catchment area of the study area, with 36% for the Gambia catchment, 21% for the Koliba-Corubal and 10% for the Kayanga-Geba,
- Agricultural development and demographic changes account for 64% and 60% respectively of the pressures observed within protected areas and road construction for 44%.
- Outside the protected areas, the share of natural environments per catchment area is 39.6% for the Gambia, 43.07% for the Kayanga-Geba and 45.4% for the Koliba-Corubal.
- The natural environments regularly flooded during a 5-year return period flood represent 175,733 Ha in the Gambia catchment, 23,182 Ha in the Kayanga-Geba and 70,156 Ha in the Koliba-Corubal.
- The length of watercourse where mangroves are present is 290 km on the Gambia, about 50 km on the Geba and about 88 km on the Rio Corubal.

Senegal

- The Niokolo-Koba Park contains 78% of the country's gallery forests
- 1400 species of vertebrates, 400 species of fish, 10 endangered reptiles, 623 species of birds and 192 mammals.

The Gambia

- 180 fish species, 19 crustacean species, 75 mollusc species, 4 aquatic mammal species, 494 plant species
- 194 wild species, including 117 mammals, 47 reptiles and 30 amphibians. 570 bird species

Guinea Bissau

- 64 mammal species, 374 bird species, 39 reptile species.

Guinea

- 3,623 species inventoried, with 1,734 species of vertebrates. 260 species of mammals, 518 species of birds, 536 species of fish, 140 species of reptiles and 76 species of amphibians.
- As regards ichthyofauna, the rivers of Upper Guinea have 45 endemic species (particularly high level of endemism)

Forest

- It covers an area of 8,068,160 Ha in Senegal, 6,189,000 Ha in Guinea, 1,980,010 Ha in Guinea Bissau and 433,000 Ha in The Gambia. The regression rates per Ha/year are respectively 40,000 Ha/year in Senegal and Guinea, 8,440 Ha in Guinea Bissau and 5,730 Ha in The Gambia.
- Carbon sequestered per year, in Tonnes/Ha: 23.59 T/Ha in Gambia, 47.47 T/Ha in Guinea Bissau, 76.46 T/Ha in Guinea, 27.95 T/Ha in Senegal.
- Area of protected areas under forest: 22,240 Ha in The Gambia, 26,000 Ha in Guinea Bissau, 3,006,000 in Guinea and 7,506,030 in Senegal.
- Forests under sustainable management: 94,270 Ha in The Gambia, 0 in Guinea Bissau, 242,000 in Guinea and 1,490,655 in Senegal.

Tourism in figures

The Gambia

- Tourism represents 16% of GDP in The Gambia
- Number of hotels increased from 1 in 1954, 13 in 1972/73 to over 50 currently
- 6,000 beds in 1993/94, 7,000 in 2005, 10,000 currently
- 134,000 tourists in 2015, a record year. Number of tourists from northern countries increased from 9,000 in 2017/18 to 17,000 in 2018/19 (State of the Environment Report, 2019).

Guinea

- Increase from 29 hotels with 603 rooms in 2014 to 36 hotels with 806 rooms in 2017. Most of these hotels are located in Boké (17), followed by Fria with 9 hotels
- 10 motels with 92 rooms in 2014 and 13 motels with 111 rooms in 2017. The highest number is in Boffa (5) followed by Boké (3) and the lowest in Fria (1). Many investment opportunities remain to be exploited in the sector.
- 879 tourists in 2014 and 1626 recorded in 2017 (influx of expatriates attracted by mining companies)
- The largest number of tourist sites (1,500) is located in Koundara, followed by Boké (33) and the lowest in Gaoual (2).

Guinea Bissau

- Tourist arrivals in the country for the years 2016, 2017, 2018 and 2019 are respectively 45,200, 49,500, 55,000 and 52,400
- However, these arrivals represent only 0.4% of those of the WAEMU. They are very low compared to other island countries.
- Vision to welcome 300,000 tourists in 2025. To achieve this, 240 billion CFA francs of investment will be needed between now and 2025, i.e. almost 40% of the stock of foreign direct investment in 2012

Senegal

- Tourism is the second largest source of foreign currency after fishing
- 700,000 tourists per year, with a hotel capacity of 20,000 beds in 320 hotels.
- Tourism is a priority of the State in the Emerging Senegal Plan
- +7.1% of rooms in 2018 compared to 2017, due to the reinforcement of the room capacity of hotels (+7.6%) as well as camps, hostels and hotel residences (+6.5%).
- Tourism receipts estimated in 2017 at CFAF 243.9 billion against CFAF 230.9 billion in 2016, i.e. an increase of +5.6%. This increase intensified to +13.0% during 2018 compared to 2017

SUMMARY OF THE SWOT MATRIX

Natural environment, biodiversity and forests

Table 2-1 SWOT matrix for environmental and ecosystem protection in the OMVG basins

- Diverse natural environments throughout the study area (forests, savannahs, wetlands, coastline)
- Watersheds generally benefit from a good level of protection (> 17% for the BVs considered) except for the Kayanga-Geba basin
- Share of environments that contribute to "ordinary" biodiversity greater than 39% (39.6% in the Gambia catchment but greater than 40% for the other two catchments).
- Presence of mangroves which constitute an important habitat for all species dependent on aquatic environments, particularly rare species.

Strengths



- Large to very large anthropogenic share depending on the catchment area (31% for the Gambia catchment area, 51% for the Kayanga-Geba catchment area and over 80% (83%) for the Koliba-Corubal catchment area)

Weaknesses



- Relatively dense network of protected areas, which should be built on and strengthened.
- Presence of wooded areas associated with vast flood zones (for Q5) which are of particular interest for fauna (particularly as refuge areas and breeding sites for ichthyofauna).
- Presence of wetlands (ponds, shallows, gallery forests, humid forest), which concentrate most of the threatened and sensitive plant and animal species. The protection of these species is one of the objectives of the national biodiversity strategies.

Opportunities



- Within protected areas: agricultural development and high population densities are the greatest threats
- Outside Protected Areas: abusive exploitation of resources or practices that do not respect the environment, soil degradation linked to agro-pastoral activities, introduction of improved varieties, insect pests, cultural nomadism, bush fires, charcoal burning, hunting, fishing, poaching, logging, industrial mining activities, large hydroelectric developments, urbanisation.
- Mangroves are among the areas most threatened by human activity.
- The main threats to coastal and marine ecosystems are erosion, sand extraction and pollution.

Threats



Tourism

Table 2-2 SWOT matrix for tourism in the OMVG basins

- Richness and diversity of landscapes, natural and cultural heritage
- Diversity of products (coastal and inland)
- Existing skills and craft production
- Emergence of new types of tourism
- Quality of the climate (sunshine all year round)

Strengths



- Poor condition of tourism and related infrastructure
- Poor product quality and diversity
- Expensive destination and high operating costs
- Enclavement and poor development of sites
- Inadequate quality of some product offerings to international standards
- Low level of presence and commitment of foreign investors
- Difficult access to land

Weaknesses



- Natural resources in upstream regions
- Increased intra-regional air services
- Ecotourism and community tourism trend
- Geographic location
- Use of borders to formulate itineraries with Guinea and Senegal
- Senegal: regional hub for multi-destination regional combinations (Gambia, Cape Verde) for distant markets (USA, China, Brazil, Russia)

Opportunities



- Lack of access to finance, cost of borrowing and duration of facilities
- Entry into the market economy and increased levels of consumption leading to rapid changes in the social fabric
- Socio-political unrest
- Climate change
- Disappearance of wildlife
- Taxes on tourism investments
- Visa requirements

Threats



Sources: National tourism development strategy documents in the 4 OMVG countries

2.2 EVOLUTION OF THE SECTOR

2.2.1 Trend scenario

2.2.1.1 Biodiversity and forests

According to the diagnosis, the consumption of natural environments and, more generally, damage to biodiversity concerns both protected areas and "ordinary" biodiversity. This damage is observed at a global level, but is in fact mainly concentrated near the areas of highest density, i.e. mainly urban areas, the edges of roads and rivers, the vicinity of agricultural areas and developed areas, resource exploitation sites, i.e. all activities that have an attractive (or polarising) effect on the population.

The basic trends observed over several decades show an increase in these polarising effects, which are in fact mainly observed around the major urban centres or more generally in the vicinity of activity zones linked to the exploitation of resources (mining, wood, soil and water). These trends are likely to continue over the next few years, if not increase locally, with the inevitable consequence of an increase in the activities that cause the various threats mentioned in the diagnosis.

The increase or maintenance of pressure on natural environments is a major and certainly lasting trend that has been observed for years. The causes of these trends are multiple and can be associated with political decisions, poverty, withdrawal, predatory behaviour, lack of control of activities, low "environmental awareness" (low level of education), economic conditions, etc., i.e. a set of parameters to be analysed in detail and whose combinations can differ from one territory to another.

The persistence of pressures on the natural environment is expressed in particular by the degradation of the main components of the environment, namely

- Soils with the effects of deforestation (erosion) or predatory behaviour on the environment, but also overexploitation or misuse of land (loss of soil quality);
- Air, with the increase in pollutants emitted (GHG, suspended solids, etc.);
- Water, with both quantitative (withdrawals) and qualitative (discharges) pressures on the resource.

The combination of pressures on these components has **direct knock-on effects on species habitats and ultimately on biodiversity loss.**

2.2.1.2 Tourism

The existing tourist offer is very poor, due to the lack of adequate infrastructures and facilities. Furthermore, it appears that tourism also represents a significant environmental pressure, both on the natural environment and through the pollution caused by the waste produced.

In the absence of strong intervention, the weaknesses and threats mentioned in the previous chapter can only be accentuated and lead to the following developments:

- Limited reception capacities due to the weakness of the infrastructure and the associated investments;
- A tourism offer with little interest, centred on the most attractive points but with no real link, if any, with the country and the people who live there (tourism that can be described as "confined" or "in isolation");
- "Predatory" tourism that consumes nature, potentially poaching it (hunting, fishing, flora), which is aimed at a particular public for the benefit of a few investors. It is almost like "parallel tourism";
- Tourism that pollutes, does not take into account the waste produced, has little respect for the environment and often goes hand in hand with predatory tourism;
- A tourism focused on the country itself, while the potential offered by the member countries is remarkable and offers a very great potential.

The trends observed may lead to such developments, which may be extreme but which can be seen in part today.

For the future, we must also consider that the type of tourism we wish to develop certainly allows us to select the tourists we wish to welcome.

2.2.2 Key issues

2.2.2.1 *Biodiversity and forests*

Considering the scope and importance of biodiversity, its protection must be included in the very broad framework of land use planning, the definition of its uses, the development possibilities that should be linked to the preservation of the environment, and beyond that, the restoration and enhancement of degraded environments. It must therefore be the first step in defining projects and no longer be the last resort.

To achieve these objectives, the needs identified for 2040 and even beyond **require large-scale actions in which the preservation of biodiversity and the restoration and enhancement of environments are a leitmotif in the various decision-making and operational levels of development.**

The elements resulting from the diagnosis make it possible to identify issues that can be described as structuring and which should serve as a basis for defining strategic objectives.

Improving knowledge on biodiversity

The current diagnosis highlights the lack of knowledge about the state of natural environments, both in terms of biodiversity (knowledge of species and species' habitats), but also in terms of functionality, which is expressed by the capacity of environments to provide satisfactory conditions for the life cycle of species.

The scales of data acquisition and analysis must therefore be multiple and concern both the Protected Areas, the characteristic environments that participate in ordinary biodiversity, as well as the links that may exist between these spaces within the territories (corridors), but also beyond the borders, in particular between the 4 countries of the OMVG

Of course, such work should be the basis for the definition of spatial planning policies and the deployment of activities and infrastructure.

In addition, it is clear that since the designation of Protected Areas, changes in the environment due to natural and anthropogenic causes have certainly led to the need to downgrade certain areas and propose new, more relevant and more functional ones. An example of this is the work undertaken by the Republic of Guinea on the redefinition of its Protected Areas (see below: paragraph concerning the summary of Guinea's national documents).

Finally, with regard to water resources in particular, it is not possible to identify, given the current state of knowledge, the needs in terms of duration and quantity of water-related environments in order to preserve or improve their functionality.

The improvement of knowledge therefore appears to be a fairly unavoidable necessity in order to accompany the development of the territories.

Strengthening the protection of biodiversity

The diagnosis mentions pressures that ultimately concern both the Protected Areas and other areas. The pressures identified within the Protected Areas are once again linked to the high population densities induced by the presence of activities (often agricultural) and/or urban extensions (infrastructure and housing).

As mentioned above, **the consumption of natural environments, even within Protected Areas, is certainly linked to a global reflection that includes the definition of land use policies, the management rules for Protected Areas, the possibility of establishing a sanctuary for some of these areas** (in addition to the National Parks for which this is already the case), i.e. in the end, the will to set up a real protection policy and ensure that it is respected.

Beyond the regulations relating to the management of Protected Areas, it is the **effective implementation of protection and its efficiency that must be improved**. The most recent experiences in West Africa (experiences supported by donors) favour the delegation of management on the basis of international funding. This delegation is based on a joint Board of Directors which associates the State and the donor, with the State retaining a strong role in the allocation of resources, the establishment and implementation of the management plan, etc., i.e. the main decision-making processes.

Biodiversity protection also involves the preservation of sites that are of particular interest due to their high dependence on water and significant pressures. This is the case for the following sites or environments:

- Protected areas;
 - Bamako, Baobolong (and Baobolong Wetland Reserve), Baro-Kunda, Chamen Nnjia, Kiang West, Niokolo-Koba National Park, River Gambia National Park, Bintang, Brefet, Farabada Banta, Saboya Forest, Kanuma, Kassange, Tambi National Park and Tambi Wetland Complex, Nuimi National Park (Ramsar site) on the Gambia basin;
 - Cufada on the Koliba-Corubal;
 - Oundou-Liti in the Gambia and Kayanga-Geba watersheds.
- Mangroves are under heavy pressure, particularly in The Gambia where this threat is cited, but it can be assumed that this is also the case elsewhere on the Geba and the Rio Corubal. Damage to mangroves has a direct impact on fish and oyster productivity as well as on bank and shoreline stabilisation.
- Water-related woodlands: riparian and gallery forests, i.e. localized linear areas:
 - On the Gambia River, in the crossing of the Niokolo-Koba Park, between its confluence with the Niokolo-Koba and the confluence with the Sanone;
 - The Koulountou at the border with Guinea to its confluence with the Gambia River;
 - The Rio Corubal between Sarangaïka and Koumbagni;
 - The Rio Corubal and its main tributary in the crossing of the Boé Protected Area;
 - The Gambia River in the Dankuk and Elephant Island area;
 - The Gambia River within the Baobolong Wetland Reserve.

Ensuring effective control of the activities responsible for the most significant degradation of biodiversity

The activities targeted are numerous and are the source of the threats mentioned above, particularly artisanal gold panning (including illegal gold panning), mining, agriculture, deforestation, but also the carrying out of various works which can have a lasting impact on the soil, water quality and habitats (aquatic and/or terrestrial), such as dams for example.

Of all these threats identified in the diagnostic phase, **deforestation stands out** because it is generally associated with activities such as gold panning, mining and agriculture. The carbonisation of wood is also responsible for a significant share, perhaps the highest, of deforestation with the practice of slash and burn.

Deforestation can therefore be considered a strong, recurrent impact, with direct effects on the loss of habitats and related species, erosion and soil loss in the pedological sense, and potentially higher inputs of suspended solids (SS) into receiving watercourses through soil leaching during rainfall.

To these impacts should be added those induced by the following activities and which were listed during the workshop meetings in the framework of the validation workshop of the PDDI Phase 1 in November 2021:

- **Gold panning** (which also includes illegal activities) with discharges of pollutants (mercury, cyanide), but also increased pressure on river morphology and quantitative resources in the case of damming or water diversion operations,
- **Dredging** (removal of sediments, sand), with the modification of the river morphology, in particular of the bottom, possibly of the banks and therefore of the habitats for aquatic fauna. The removal of sand can also more or less directly affect beach replenishment by removing the resource from the watercourse or more directly if the removal is carried out on the beach.
- **Agriculture**, with discharges of fertilisers (fertilisers in organic or mineral form), plant protection products/pesticides (herbicides, insecticides, fungicides) contained in fertilisers.
- We can also add, more locally, the presence of **dumping areas** (waste) which can affect the terrestrial and aquatic environments (pollution, attraction for harmful species).

Taking into account environmental issues in the management of future dams

The existing structures are few and small; several dams are planned to be built in the coming years. In general, the environmental effects of dams concern changes in water quality (within the reservoir and downstream of the structure), in river dynamics and in the hydrological regime. To these effects should be added all those concerning the social aspects, including all the uses associated with the water resource (agriculture, fishing, navigation, etc.) within the reservoir and downstream of the structure.

Within the framework of the studies relating to the creation of the Sambangalou dam, the modifications to the hydrological functioning imposed by the structure mention impacts on the reduction of flooding of the adjacent basins and ponds, the reduction of flooding within the alluvial plain or the rise of the salt water level.

These impacts have direct effects on the frequency of water supply to the wetlands, which directly affects the natural environments and the associated fauna, as well as uses, particularly agricultural. The reduction in the rise of the saltwater wedge may seem favourable to agricultural development, but it will certainly affect the mangrove.

Among the various measures envisaged, the one relating to the implementation of an **adaptive management of the environmental flow** certainly represents the flagship measure of the plan. This measure should make it possible to reconstitute artificial floods in order to feed the adjacent wetlands at least partially and preserve certain activities.

This type of measure should be promoted on future structures and requires specific studies to determine the environmental flows and their annual variability, in order to propose adaptive management.

2.2.2.2 Tourism

Tourism is one of the most important sectors for the socio-economic development of the study area, which is characterised by great natural wealth. In order to avoid the evolution of the trend scenario, the four OMVG countries have already chosen to **promote ecotourism** in order to develop and propose a tourism that respects its environment, a tourism that associates both culture and the uses of the residents.

This type of tourism can, for example, be partly inspired by the "Emerging Senegal Plan" as far as Senegal is concerned, which aims to improve the tourism offer and increase the country's tourism capacities. It aims above all to develop tourism based on the importance of the country's natural and cultural capital, in particular by making the most of the Niokolo-Koba National Park. This is also the case in Guinea, where the National Economic and Social Development Plan 2016-2020 (PNDES) is the main instrument for the operationalisation of Vision 2040. It defines the strategic orientations and medium-term objectives to achieve it. Tourism is clearly one of the key indicators for Guinea's development within Pillar 2: Sustainable and inclusive economic transformation. The other OMVG countries are following the same trend. The Gambia in its "Tourism, Hospitality and Culture Strategy 2015-2020" puts forward well-defined orientations towards sustainable and competitive tourism (The Gambia National Tourism Policy and Strategy - 2021-2031). Guinea Bissau has resolutely committed itself to the promotion of ecotourism by highlighting the tourist attraction of the BijagSO Islands in particular (Tourism Master Plan and Tourism Zone of Guinea Bissau and Bijagos, 2021).

In order for tourism to contribute to the creation of wealth and employment, it is therefore recommended to;

- **Rehabilitate, develop and promote** tourist sites in the countries;
- Develop and promote the hotel industry in general and in tourist areas in particular;
- **Promote culture as a lever for the development** of tourism and the hotel industry;
- Work towards **the harmonisation of the regulatory and institutional frameworks for tourism** in the four countries with a view to promoting cross-border tourism;
- Integrate **environmental and social safeguards** into tourism development strategies.

2.2.3 Alternative scenarios

2.2.3.1 Biodiversity and forests

The consumption of natural environments and the erosion of biodiversity observed over the last few decades are basic trends that will certainly continue. It can be seen that the greatest consumption is in the areas with the highest concentrations of people around large urban centres or, more generally, around areas of activity linked to the exploitation of resources (mines, agricultural areas, etc.).

Reducing biodiversity loss depends on a complex mix of factors including political decisions, poverty levels, predatory/ opportunistic behaviour of stakeholders, "environmental awareness" linked to environmental education, economic conditions, etc.

It is difficult to interact with all of these factors, but the themes addressed in the Master Plan address some of them and contribute to the preservation of the environment and, more broadly and more or less directly, to the reduction of biodiversity loss.

The proposed scenario attempts to address the issues that have been identified as fundamental to addressing the problem (i.e. building a foundation) and that can be considered as essential for the protection of the environment and ecosystems.

Improving knowledge of biodiversity is not an end in itself, but it is the basic link in locating ecological issues, habitats, the state of preservation of species and species habitats, the functional links between habitats, the presence of corridors, etc. This work, which should be carried out in protected areas and in all environments that contribute to ordinary biodiversity, should provide the basic material for the development of development and planning policies (development scheme, land use plan, etc.) and even for more modest projects, provided that the scale of acquisition is adapted.

The current situation shows that there are real difficulties in obtaining this data. The data acquired is often insufficient, too old and too partial to assess the diversity (in terms of species and habitats), or the level of preservation and quality of the environments.

The acquisition of complete and up-to-date knowledge is therefore necessary to understand the functioning of natural environments and to define development policies that can truly take biodiversity into account.

This knowledge acquisition will certainly allow the redefinition of high potential environments and the redrawing of the Protected Areas map, with the potential downgrading of sites and the classification of others. The constant and sometimes rapid evolution of environments necessarily implies changes since the classification of Protected Areas, some of which date back over 50 years.

In this respect, it is worth noting the need to clarify the network of Protected Areas undertaken by the Ministry of the Environment, Water and Forests of Guinea in its 2021 vision, which has enabled the entire network to be reviewed, by classifying new areas with more demanding protection such as the establishment of integral or managed nature reserves, or the reinforcement of the status of certain classified forests. Such an initiative can certainly be replicated in the other OMVG member countries.

This need for data acquisition on biodiversity is also reflected in the measures proposed by at least two countries:

- Guinea;
 - In the framework of its Sustainable Forest Ecosystem Management Programme (SFEMP) for adaptation to climate change and activity 2.1 of SO 2: Inventory biodiversity and map national forest ecosystems and protected areas and monitor their degradation.
 - Within the framework of the PREE - ACO, (Regional Partnership Project on Water and the Environment) which proposes several actions to reinforce the knowledge of the fauna and flora in Fouta Djallon and to define sustainable developments.
- The Gambia in its "Supplementary Policy on Agriculture and Natural Resources - produced by the NRA in 2017", one action of which is to commission a study and publish the results of the biodiversity and ecosystem services assessment.

These different examples demonstrate the need for up-to-date knowledge to effectively protect biodiversity. We can only protect what we know well, and there is no alternative.

Beyond the acquisition of knowledge, the pressures observed today both within the Protected Areas and on the "ordinary" natural environments require **an improvement in the level of protection and to make it effective in a sustainable way.**

The scenario therefore proposes to move towards levels of protection that will allow activities to be more closely supervised, and which may even propose totally safeguarded, sanctuarised sectors. This is the case of the classification of certain Protected Areas as National Parks or even towards more demanding statutes to be created, such as the Integral Natural Reserves following the example mentioned earlier for the Republic of Guinea.

Increasing the levels of protection is a first step, but it is necessary to ensure effective protection of biodiversity in the long term. Delegation of management in the form of a PPP is an interesting solution. It can be defined as follows (Brugière, 2020): *Many PAs in Africa, particularly in French-speaking Africa, benefit from the support of technical and financial partners (TFPs). This support can be punctual (a few years) or spread out over time and sometimes cover several decades. Most of the time, it takes the form of a project: financial and technical support defined in space and time and targeting given actions specified in a project document. These actions may be implemented by the permanent Protected Area team or via a dedicated (and project-paid) Technical Assistance team (usually contracted from a consultancy firm or provided by a national NGO).*

This type of delegation can be envisaged according to multiple modes of governance and operational management, but the State retains a primary role within the Board of Directors, Management Board and Management Committee. It can also, if it wishes, delegate these positions entirely.

In West Africa, two national parks are managed under PPP, Pendjari Park in Benin and W Park in Niger.

The trend scenario refers to **the progression of activities responsible for the degradation of biodiversity** (deforestation and slash-and-burn, gold mining, sand extraction, mining, agriculture).

The damage caused by such activities is sometimes irreparable and generally affects biodiversity in the long term and may even affect populations (which may be the case for coastal erosion). The very existence of some of these activities must be called into question (as in the case of illegal gold panning and sand extraction) or they must be more closely supervised (as in the case of deforestation operations and work, and the release of fertilisers, plant protection products and pesticides).

Finally, the construction of large dams such as the Sambagalous dam is likely to have a lasting effect on aquatic environments, particularly those associated with the watercourse. It is essential to think about the definition of environmental flows and implementation mechanisms as early as possible and in a mandatory manner, from the design stage of the works.

2.2.3.2 Tourism

With regard to tourism, the in-depth diagnosis carried out in each of the OMVG countries showed that, despite the existing potential and opportunities, tourism has to overcome a number of obstacles to meet the expectations of governments.

The other aspect concerns the insufficient development of tourism based on the important natural and cultural potential of the OMVG countries (national parks and nature reserves, cultural and artisanal diversity, etc.).

The proposed alternative scenario is to work towards **the promotion of sustainable and competitive tourism** through the rehabilitation and modernisation of hotel infrastructure and the diversification of tourism products, while improving the regulatory and institutional framework of the sector. Eco-tourism can add value to tourism in general, while contributing to the enhancement of protected areas and the improvement of the livelihoods of people living in the vicinity of parks and reserves. This explains the current impetus for the development of national policies and strategies for the promotion of sustainable and competitive tourism, integrating natural and cultural dimensions alongside beach tourism, which needs to be rehabilitated in these countries.

Within the framework of new tourism development policies, some countries such as Senegal are implementing large-scale projects such as the creation of tourist centres throughout the country. As far as the Petite Côte and Casamance regions are concerned, the development of beach resorts is accompanied by coastal erosion, thus contributing to the degradation of the beautiful beaches. This policy should therefore be accompanied by effective measures to protect the beaches against coastal erosion, but also against soil and water pollution by wastewater from these hotels.

The development of ecotourism in protected areas (vision tourism) is another scenario, which unfortunately is accompanied by a degradation of biological diversity if it is poorly managed. The overuse of these areas, as well as the many forms of erosion and pollution of soil and water resulting from the operation of accommodation facilities are to be taken into consideration.

2.2.4 Evolution of the sector's needs to 2040

2.2.4.1 Development potential / identified projects / trends

These needs are expressed on the basis of a summary by country of the strategies and objectives drafted in national action plans, national policies, national strategies and other orientation or planning documents. The fact that the documents are sometimes dated does not affect their validity or timeliness.

In some cases, these documents have implementation dates that are slightly outdated or tangential to the current period, but they are not obsolete and the strategies, objectives and actions proposed show that the trends that led to their definition are still largely valid today.

Therefore, the summary of these documents can also serve the strategy and vision.

Within this chapter, the expression of needs is more clearly expressed in the paragraphs that highlight the main ideas of the strategies developed at country level. These expressions allow for a better understanding of the country strategies and the objectives that may be attached to them.

2.2.4.1.1 The Gambia

SUMMARY OF NATIONAL DOCUMENTS

The Gambia, through its National Development Plan (2018 to 2021), wishes to become "a secure country that maintains a stable green economy". Thus, in line with this vision, but also respecting the principle of sustainable development and the Aichi objectives, various national strategies have been developed, including:

- Environmental Management Action Plan (2019 and 2028);
- The National Biodiversity Strategy and Action Plan (2015-2020);
- The National Forest Strategy and Action Plan (2019-2028);
- The National Policy for Agriculture and Natural Resources (2019);
- The Programme of Action for the Protection of the Marine Environment from Land-based Activities (2014);
- The National Tourism Strategy (2019).

The Gambia has developed an Environmental Management Action Plan that runs from 2019 to 2028. The document states that accelerated integration of environmental considerations into economic decision-making is the ultimate measure and a viable long-term solution to achieving the Gambia's sustainable development goal. Thus nine strategic objectives are defined:

- 1: Strengthen the institutional framework for environmental coordination and management at local and national levels
- 2: Strengthen environmental monitoring and enforcement within an integrated legal and institutional framework
- 3: Protect the well-being, health and quality of life of Gambians through sustainable environmental management
- 4: Promote sustainable management and protection of coastal, marine and inland water resources
- 5: Encourage public-private partnerships in all areas related to the environment
- 6: Develop and strengthen NEA's human and infrastructural capacity (through training, maintenance of buildings and provision of vehicles, etc.)

- 7: Strengthen the capacity of the Environmental Research, Innovation and Publication Agency
- 8: Strengthen integration with sister sector programmes for an inclusive approach to environmental management
- 9: Further strengthen collaboration with existing international partners and explore opportunities to develop new international partners.

To support this drive to mainstream the environment into all aspects of national development, The Gambia also has a National Action Plan for the Improvement of Environmental Statistics (2018-2022), which should enable the sustained and regular production of a set of priority environmental statistics and indicators to measure progress towards sustainable development.

The National **Biodiversity** Strategy and Action Plan (2015-2020) has the ambition to "conserve and promote the wise use of national biological diversity for the benefit of present and future generations in a manner consistent with the overall goal of sustainable development". In line with the commitment to the AICHI objectives, five strategic objectives have been defined:

- **Strategic Objective A:** Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society. This includes a target that by 2020, biodiversity considerations are included in all national and local development planning, poverty reduction and national accounts processes. But also the objective that all forms of pollution from water and land related activities are reduced to levels that do not impair ecosystem functions.
- **Strategic goal B:** Reduce direct pressures on biodiversity and promote its sustainable use. In particular, with a target of 50% of agricultural, aquaculture and forest land being managed sustainably, ensuring biodiversity conservation, and the rate of biodiversity loss (including forest fragmentation and land degradation) being reduced by 50% by 2020.
- **Strategic goal C:** Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity. In particular, with a target of a system of protected areas covering at least 5% of terrestrial and inland waters and 10% of coastal and marine areas by 2020.
- **Strategic Objective D:** Increase the benefits to all from biodiversity and ecosystem services. In particular, with a target of reducing poverty in protected area dependent communities by 10% by 2020, to significantly reduce pressure on natural resources.
- **Strategic Objective E:** Improve implementation through participatory planning, knowledge management and capacity building. In particular, with the aim of improving, disseminating and applying scientific knowledge and technologies on biodiversity, its values, functioning, status and trends, and understanding the consequences of its loss by 2020.

In line with this strategy, the National Agriculture and Natural Resources Policy includes a component on the parks and wildlife sub-sector for the period 2017/2026. This aims to address the underlying causes of biodiversity loss, in particular through greater and systematic involvement of people, especially local communities, in effective biodiversity management.

The **protection of marine areas** is deployed within the framework of the Action Programme for the Protection of the Marine Environment from Land-based Activities of 2014. This defines three main categories of objectives:

- **Biological objective:** sustainable shellfish and oyster farming, which avoids the harvesting of small juveniles and allows the harvesting of larger and more valuable oysters and cockles.
- **Ecological Objective:** To maintain the health and functioning of the mangrove ecosystem, protecting habitats for oysters and other shellfish, fish and marine mammals, including the West African manatee.
- **Social objective:** To strengthen community participation in planning, implementation and decision-making in the rational and sustainable use and management of oyster and shellfish resources.

The National Forest Strategy and Action Plan for 2019-2028 has a vision in line with The Gambia's National Development Plan (2018-2021). Thus the ambition to make The Gambia "a secure country that maintains a stable green economy" is translated for the forest through the provision of "flourishing forest ecosystem goods and services that fulfil ecological values, and bring economic and social benefits to society".

Thus the second pillar aims to reduce forest degradation by minimising deforestation and reducing the rate of desertification, while supporting environmental values and services such as carbon sequestration and conservation of water, soil and biodiversity; and increasing direct benefits to people through alternative livelihood initiatives for employment and income generation.

In its **National Policy for Agriculture** and Natural Resources, The Gambia outlines its desire to strengthen the development of the agricultural economy, while preserving the environment and its resources. In particular, the objective of protecting and conserving sensitive habitats along the coast is formulated. The 2019 agricultural policy highlights in its first objective the promotion of intensive and sustainable agricultural production, through capacity building of small and large producers for sustainable agricultural production and intensification (organisation of demonstration days, training on "good agricultural practices", etc.) and the improvement of the capacity of "clients" to deal with environmental and livelihood issues (radio/TV broadcasts on sustainability, environment and livelihood issues).

The Gambia's **tourism strategy** mentions ecotourism and cultural tourism as opportunities, especially for community-based tourism. The objective is to promote the added value of culture and nature. It is proposed in this strategy to set up river cultural tours in rural areas (Ninki Nanka Trail) and to develop tourism in Janjanbureh: cultural and nature tours carried out by the community.

In addition, ecotourism development is mentioned in the Forest Management Action Plan, as well as in the National Agriculture and Natural Resources Policy (Natural Parks and Wildlife sub-sector component), where it is advocated within protected areas. In both cases, the opportunities for ecotourism are linked to the economic interest for local communities.

KEY IDEAS OF THE STRATEGIES DEVELOPED AT COUNTRY LEVEL

- In general, the guidelines propose to strengthen the institutional and regulatory framework for environmental coordination and management at local and national levels.
- Sustainable environmental management is achieved by mainstreaming biodiversity at all levels of government and society (SO A of the NAP for Biodiversity), reducing pressures on biodiversity and using it sustainably (SO B), and enhancing biodiversity under SO C.

- Public participation is recalled in many action plans, notably in the framework of participatory planning, but also by involving the population in order to limit the loss of biodiversity.
- The importance of the coastline, its management and its interactions with the land environment are recalled, with emphasis on the sustainable exploitation of resources and the protection of environmental issues linked to the maritime environment (mangroves, fish, marine mammals, etc.).
- As far as forests are concerned, a balance must be sought between the exploitation of (forest) resources and the preservation of the ecological values of these environments. The National Forest Strategy and Action Plan recalls the need to combat deforestation.
- The development of the agricultural economy to strive towards is based on a balance that includes the preservation of the environment and its resources and the search for intensive and sustainable production.
- The development of eco-tourism and cultural tourism is to be sought (to promote culture-nature added value). It should also be combined with agricultural development and natural resources: aim for economic interest for the local populations.

2.2.4.1.2 *Guinea*

SUMMARY OF NATIONAL DOCUMENTS

The National Economic and Social Development Plan (PNDES), drafted in 2017, aims for a "prosperous, more inclusive Guinea with sustainably managed natural capital" by 2020. In line with this guideline, Guinea has adopted strategic documents that are coherent with each other and that encourage the consideration of environmental issues in all aspects of national development. The main strategic documents are the following:

- The Medium Term Expenditure Framework (MTEF) of the Ministry of Environment, Water and Forests of Guinea (2017)
- The National Biodiversity Strategy for the implementation in Guinea of the Strategic Plan 2011-2020 and the AICHI objectives (2016)
- The National Strategy for Implementing the Mitigation Hierarchy and Offsetting Impacts on Biodiversity and Ecosystems (2019)
- The Sustainable Forest Ecosystem Management Programme (SFEMP) for adaptation to climate change
- The Vision for Guinea's new protected area network
- The National Plan for Agricultural Investment and Food and Nutritional Security (PNIASAN) (2018-2025)
- The National Strategy for Sustainable Tourism Development.

The **Medium Term Expenditure Framework (MTEF)** of the Ministry of Environment, Water and Forests of Guinea (2017), provides information on the priority themes supported by the Ministry, and 'natural resource management' is listed as the first general objective of the MTEF. Various actions are supported, ranging from soil and forest protection and restoration to environmental education.

Guinea has developed its **National Biodiversity Strategy for the implementation in Guinea of the Strategic Plan 2011-2020 and the AICHI (2016) targets**. This aims to achieve a state where "biological diversity is restored, conserved, valued and wisely used by all stakeholders, ensuring the maintenance of ecosystem services provided, keeping ecosystems healthy, guaranteeing essential benefits to current and future generations of Guinea". The strategy then unfolds around five main strategic goals:

- **Strategic goal A:** Manage the underlying causes of biodiversity loss by mainstreaming biodiversity into all government and societal programmes.
- **Strategic Goal B:** Reduce direct pressures on biological diversity and promote sustainable use.
- **Strategic Goal C:** Improve the status of biological diversity by safeguarding ecosystems, species and genetic diversity.
- **Strategic Goal D:** Enhance the benefits to all from biological diversity and ecosystem services.
- **Strategic Goal E:** Strengthen implementation through participatory planning, knowledge management and capacity building.

The Sustainable Management of **Forest Ecosystems** Programme (SFEMP) for adaptation to climate change aims to "contribute to strengthening the adaptive capacity of populations to the effects of climate change through the sustainable management of forest ecosystems". Four strategic objectives are formulated:

- **SO1 - Improve forest governance** by involving all stakeholders and harmonising legislation and regulations
- **SO2 - Restore and rehabilitate degraded forest landscapes** to increase carbon sequestration and provide ecosystem services to riparian communities on which they are highly dependent to reduce their vulnerability to climate change
- **SO3 - Manage protected areas sustainably** through community and stakeholder involvement for better conservation of natural resources
- **SO4 - Improve the living conditions and resilience of the population** through the development of forestry potential.

In addition, the Ministry of Environment, Water and Forests of Guinea has identified the need to clarify **the network of protected areas**, classified and community forests in the country, particularly with regard to the regulatory aspect and the different existing statutes, delimitations, overlaps and international commitments linked to these protected areas. In **its Vision for the new network of protected areas in Guinea (2021)**, it proposes to create a network of 17 national parks, building on the existing national parks and those in the process of being created, and creating a series of other parks including the most important classified forests and the main internationally recognised areas. It is also proposed to complement the national park network with a network of smaller protected areas: Nature Reserves (integral or managed) by strengthening the status of a series of classified forests and other special sites recognised internationally as having biodiversity importance. The overhaul of Guinea's protected area network is expected to meet the following key objectives:

- Ensure the conservation of the biological diversity of the major ecosystem groups in our country;
- Contribute to a better valorisation of biological diversity for a sustainable socio-economic development through ecotourism;
- Facilitate the establishment of a sustainable financing mechanism for protected areas;
- Contribute to the improvement of the living conditions of the local population;
- Contribute to the reduction of climate change through carbon absorption;
- Cover 25% of the national territory in protected areas in accordance with the country's commitment.

In the Moyen-Bafing region, the **Integrated Management of Natural Resources in the Bafing-Falémé Landscape Project (GIRN-PBF)** aims to promote integrated and sustainable management of natural resources. This project is being implemented between 2020 and 2026 and is intended to be a test project in the Republic of Guinea, to be subsequently integrated into a national strategy and replicated throughout the country. The project consists of;

- Introducing a landscape approach;
- Creating and operationalising a cluster of protected areas (Moyen-Bafing National Park, wildlife reserve and community forests) along the Bafing and Falémé rivers;
- Establishing ecovillages around protected areas. The ecovillage model embraces the concepts of integrated sustainable development (low carbon development, biodiversity conservation, income generation based on sustainable resource management).

The expected results are the strengthening of the integrated management of the Bafing-Falémé landscape, the preservation of its biodiversity, the adoption by farming and agro-pastoralist households of improved gender-sensitive agricultural practices to manage natural resources through the establishment of the ecovillage model, the integration of gender issues and the dissemination of best practices.

The **National Strategy for the implementation of the hierarchy of mitigation and compensation of impacts on biodiversity and ecosystems (2019)** is in line with the national strategy on biological diversity and the Environmental Code of 2019. It is also part of the National Economic and Social Development Plan (PNDES). This strategy aims to "control the conversion and degradation of natural ecosystems, restore forest cover, and re-establish viable populations of threatened species of fauna and flora, while offering economic opportunities to the population, thus contributing to the sustainable development of the country". To enable stronger, more effective and more efficient consideration of mitigation and compensation of environmental impacts of major development projects, the strategy defines seventeen strategic axes and five major results to be achieved:

- A. Control the conversion and degradation of natural, terrestrial, aquatic, coastal and marine ecosystems.
- B. Increase the area of natural forest through conservation and targeted restoration, including gallery forests and other wildlife corridors.
- C. Prevent the extinction of the most threatened species in the short term and then, in the medium term, restore viable populations of these threatened species, or even reintroduce some species that have already disappeared.
- D. Provide local communities with economic opportunities based on the sustainable use of ecosystems and the valorisation of biodiversity.
- E. Ensure that the offset (no net loss and/or net gain of biodiversity) is designed and sized to achieve the biodiversity conservation and restoration objectives.

In the Fouta Djallon region, the **Regional Partnership on Water and the Environment in Central and West Africa (PREE-ACO)** aims to strengthen the implementation of integrated water resources management (IWRM) and the resilience of communities and ecosystems in order to prevent and manage natural resource use conflicts. The EERP-COA has a logical framework built on the "results-based management (RBM)" approach:

- Result 1: An ecosystem, environmental and socio-economic baseline is established to serve as a knowledge base and guide the planning, implementation and monitoring of integrated ecosystem management in the Niger, Lake Chad and Fouta Djallon sub-basins
- Result 5: Economic and ecosystem service restoration initiatives are identified and supported to secure livelihoods and increase resilience to climate change and natural disasters.

The **National Plan for Agricultural Investment and Food and Nutritional Security (PNIASAN)** (2018-2025) aims to "make Guinea an emerging agricultural power in 2025 where farmers and other entrepreneurs create, manage and develop their businesses in the different agricultural value chains, in a sustainable development logic". Thus the overall objective is to increase "the contribution of the agricultural sector to food security, nutrition and poverty reduction of the Guinean population". To achieve this objective, PNIASAN envisages, through its programme 3, the "strengthening of the resilience of the agricultural sector and improvement of food and nutritional security of vulnerable populations", with in particular:

- Regeneration, restoration and sustainable management of natural resources (Component 3.1): strengthening the sustainable management of fisheries resources and sustainable management of forest and wildlife resources and biodiversity management
- Promotion of Sustainable Development and Adaptation to Climate Change (Component 3.2): development and popularisation of environmental standards in the agro-sylvo-pastoral and halieutic sector and strengthening the management of pastoral areas and transhumance.

Guinea's **National Plan for Agricultural Investment and Food and Nutritional Security (PNIASAN)** (2018-2025) also takes into consideration the challenges of preserving the environment and the forest by setting quantified objectives to be achieved by 2025:

- Forest cover rate: 30.5%;
- Reduce the proportion of threatened plant and animal species: 4.0%;
- Area of forest set aside: 10.0%;
- Population using improved cookstoves: 15.0%;
- Number of timber permits issued: 200;
- Cumulative number of structured non-timber forest product (NTFP) chains: 10.

The national strategy for the sustainable development of tourism emphasises the importance of the potential of ecotourism, but identifies the need to develop protected areas and to improve the supply of accommodation, with the establishment of ecolodges. Among the five strategic axes, two are based on the synergies between environment and tourism:

- **Strategic Axis 2:** Development of high value-added sustainable tourism, particularly in the Haut Niger National Park, the Ziamia Biosphere Reserve, the Diwasi Park and the Tristao and Alcatraz marine protected areas. The Moyen Bafing National Park has also been selected, but it is in the process of being created and is more relevant to Axis 3 on chimpanzee tourism.
- **Strategic Axis 3:** Development of a flagship tourism product: chimpanzee-based great ape tourism. With an estimated population of over 17,000, Guinea is the country with the largest number of chimpanzees in West Africa. Areas suitable for chimpanzee tourism in Guinea include the Haut Niger National Park, (the park is also home to the Chimpanzee Conservation Centre (CCC)), the Moyen Bafing National Park and the Fouta Djallon Region.

Through the **environment component of the European Union Security Sector Reform Support Programme in Guinea (PARSS3)**, UNOPS has embarked on a major programme to enhance Guinea's main protected areas (Haut Niger National Park, Badiar National Park, Ziamia and Mount Nimba Biosphere Reserves, Diwasi Reserve and the marine protected areas). Its work includes the rehabilitation of reception facilities and tracks, the development of wildlife observation platforms, increased surveillance and anti-poaching activities to restore wildlife and the training of eco-guides.

KEY IDEAS OF THE STRATEGIES DEVELOPED AT COUNTRY LEVEL

- Natural resource management is listed as the first general objective (of the MTEF)
- As for The Gambia, sustainable environmental management requires the integration of biodiversity at all levels of government and society (SO A of the National Biodiversity Strategy), the reduction of pressures on biodiversity and its sustainable use (SO B), and the enhancement of biodiversity under SO C.
- With regard to the management of natural environments and forests, the various policies agree on the objectives of conservation, enhancement, restoration and compensation of biological diversity, but also on the control of ecosystem degradation.
- They also insist on the need to integrate local populations, to improve their living conditions and economic opportunities within the framework of a sustainable exploitation of resources. Thus, the sustainable management of natural resources must be envisaged through regeneration and restoration actions that respond to the agro-sylvo-pastoral and halieutic issues in order to ensure food security, nutrition and poverty reduction for the populations, in a context of climate change. In this respect, the Moyen-Bafing region, within the framework of its GIRN-PBF project, is proposing an integrated management model in line with these policies.
- As in the Gambia, public participation is desired, particularly in the context of participatory planning (knowledge management and capacity building).
- With regard to water resources, policies aim at integrated management for planning purposes, economic development, increasing resilience to climate change and natural disasters, and preventing and managing resource use conflicts.
- Tourism has a strong development potential in protected areas, but it is conditional on the improvement of the accommodation offer. The development axes centred on the environment/tourism synergies advocate the development of high added value sustainable tourism and, more specifically, vision tourism. The PARSS3 programme also supports and insists more specifically on the development of infrastructures and the fight against poaching.

2.2.4.1.3 Guinea Bissau

SUMMARY OF NATIONAL DOCUMENTS

The Strategic and Operational Plan 2015-2020 "Terra Ranka" develops a vision for 2025 of Guinea-Bissau: "a society of solidarity, respectful of biodiversity and on the path to prosperity". It is the reference document in line with which other strategic documents such as;

- The National Agricultural Investment Plan (NAP) (2018)
- The National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants in Guinea Bissau (2016)
- The development and management plans for the Dulombi-Boe-Tche-tche Complex (CDBT) in Guinea Bissau (2021) and the Cantanhez National Park for the period 2017-2022

The Strategic and Operational Plan 2015-2020 "Terra Ranka" sets out a vision for Guinea-Bissau by 2025: "a society of solidarity, respectful of biodiversity and on the path to prosperity". Thus, "Biodiversity and natural capital" have been identified as one of the five foundations retained to carry out this strategy. Sixty-four programmes are defined and divided into the five pillars. Those relating to the "Biodiversity and natural capital" foundation are divided into two areas of action:

- **Institutional development** with institutional and regulatory framework reforms for environmental management and sustainable development (programme 13) and capacity building for natural capital management (programme 14).

- **Sustainable management of ecosystems**, notably through the themes of knowledge and monitoring of natural resources (programme 15), management of protected areas (implementation of SNAP) (programme 16) and Preservation of ecosystems* (*excluding management of protected areas and agro-pastoral ecosystems) (programme 17).

Environmental issues are taken into account in the management plans of protected areas.

- Thus, the **Development and Management Plan for the Dulombi-Boe-Tche-tche (CDBT) complex in Guinea Bissau (2021)** aims to make the CDBT a reference area for the balance between the resident population and environmental services and natural resources, for the protection of ecosystems, for the promotion of regenerative agroforestry and for the management of knowledge. There are three main objectives:
 - To encourage the knowledge and know-how of the resident population in the management of the PAs, to enhance their role as citizens and in the valorisation of the natural and cultural (historical) heritage of the CDBT;
 - Use of environmental services;
 - To ensure integration between scientific research and CDBT resident relations.
- In the case of the **Forest Management Plan for the Lagoas de Cufada Natural Park (PNLC) and the Xitole-Mina-Fifiol corridor (2018)**, the main objective is to promote sustainable management of forest resources that reconciles the maintenance of ecosystems in good condition with the sustainable use of natural resources by resident populations. In particular through:
 - Valorisation of local knowledge and resources;
 - Promotion of community forest areas (areas reserved for use by resident communities);
 - Reforestation and community nurseries;
 - Promotion of agroforestry systems;
 - Promotion of beekeeping.

The **National Implementation Plan of the Stockholm Convention on Persistent Organic Pollutants in Guinea Bissau (2016)** aims to reduce, as soon as possible, the sources and releases of POPs (persistent organic pollutants) in Guinea Bissau in order to protect human health and the environment against the harmful effects of these substances. This document defines an action plan to combat POPs pesticides, with the ambition of eliminating existing stocks once and for all. An action plan to combat pollution from polychlorinated biphenyls (PCBs) is also defined in this document.

The **2017 National Agricultural Investment Plan (NAP)** supports the "Sustainable management of forest resources" through actions of:

- Forest classification, planning and management;
- Forest management;
- Forest resource management;
- National Flora Herbarium;
- Institutional support;
- Carrying out a forest inventory.

The **"Terra Ranka" strategic and operational plan** envisages tourism, and in particular ecotourism, as the "third engine of growth" along with the agriculture, fisheries and mining sectors. Thus, by relying on its biodiversity, Guinea-Bissau aims to become a world-renowned destination for ecotourism and beach tourism by 2025. The objective is to make the Bijagós archipelago the "bridgehead" of national tourism by 2020, within the framework of a Special Tourist Zone managed by a dedicated agency. The objectives for the tourism development of the archipelago are:

- Upgrading of infrastructure;
- Establishing a model of excellence in responsible ecosystem management;
- Participatory and inclusive development;
- The development of local communities.

In line with this ambition, the different management plans of the protected areas of Guinea Bissau take into account the development of ecotourism:

- The Cantanhez National Park Management Plan (2017-2022) mentions ecotourism in two of its priority areas, ecological restoration and habitat and species conservation.
- The Forest Management Plan for the Lagoas de Cufada Natural Park (PNLC) and the Xitole-Mina-Fifiol corridor identifies ecotourism as a source of income for local people and a factor in the sustainable development of the National Park.
- The Development and Management Plan for the Dulombi-Boe-Tche-tche (DBT) complex has defined six specific objectives, the last of which aims to "Develop eco-tourism and ensure an equitable sharing of conservation benefits".
- Finally, in the case of the Tarrafes Natural Park of the Cacheu River (PNTC), its location both close to Bissau and on the border with Senegal is an asset for the development of tourism. Four development factors have been identified:
 - Wildlife - birdwatching, hippo watching, and mammal and reptile trails.
 - Flora, landscapes and vegetation of mangrove and terrestrial forests such as palm trees and open forests, villages of the Felupes, the humanised landscape of the Bolanhas.
 - Cultures and traditions - i.e. festivities and traditions of the Felupes, religious ceremonies in the Cobia region, sacred woods and their significance.
 - History and monuments - Cacheu Fort, Slavery Museum, history of human occupation and ethnic groups, liberation war, etc.

Two towns in particular are targeted for ecotourism development, the town of Cacheu, located in the south of the park, has several points of particular tourist interest: the port and the Fort of Cacheu. And to the north of the park, the town of São Domingos, has in its immediate vicinity the Susana and Varela Beach (outside the park).

KEY IDEAS OF THE STRATEGIES DEVELOPED AT COUNTRY LEVEL

- Biodiversity and natural capital are identified as one of the five foundations for achieving the vision of the Terra Ranka strategic plan. They are broken down into two areas of action:
 - Institutional development with institutional and regulatory framework reforms for environmental management and sustainable development and capacity building for natural capital management.
 - Sustainable management of ecosystems, in particular through the themes of Knowledge and monitoring of natural resources, Management of protected areas and Preservation of ecosystems.
- The two reference development plans (CDBT and PNLC) illustrate a development policy based on the balance between the activities of resident populations, the protection and maintenance of ecosystems in good condition and the sustainable use of resources.

- Agricultural development, through the NAP, focuses on the development and management of forest resources and the need for improved ecological knowledge. This development also relies on the reduction of sources and discharges of POPs (persistent organic pollutants) and PCBs (polychlorinated biphenyls) that are harmful to human health and the environment.
- Tourism is considered the "third engine of growth", especially ecotourism, along with the agricultural, fishing and mining sectors. Tourism policy is being developed around:
 - The development of ecotourism and beach tourism centred on the BijagSO archipelago, considered as the "bridgehead" of national tourism;
 - The development of ecotourism in 4 main protected areas: Cantanhez National Park, Lagoas de Cufada Natural Park, Dulombi-Boe-Tche-tche Complex, Tarrafes Natural Park of the Cacheu River.

2.2.4.1.4 Senegal

SUMMARY OF NATIONAL DOCUMENTS

The **Plan Sénégal Émergent (2014)** (Emerging Senegal Plan) defines the national strategy to achieve emergence by 2035 around the strong values of solidarity and the rule of law. The vision of this strategy is "an emerging Senegal in 2035 with a society based on solidarity and the rule of law". With regard to Senegal's environmental ambitions, the plan mentions that the country is committed to integrating the principles of sustainable development into national policies and to reversing the trend noted in relation to the loss of environmental resources. The PSE notably pursues the objective of reducing biodiversity loss. It is a reference document, and the other documents mention it and are in line with it, in particular:

- Situation Economique et Sociale du Sénégal (SES) 2017-2018 - Chapter X: Environment and Chapter XIV: Tourism;
- National Plan for Territorial Planning and Development (PNADT) - Horizon 2035 (2020);
- National Strategy and Action Plan for Biodiversity (SPNAB) (2015);
- Senegal's Forestry Policy (2005-2025).

In the **chapter on the environment (Chapter X)** of the document **Situation Économique et Sociale du Sénégal (SES) 2017-2018**, it is stated that environmental protection is a high priority for the Senegalese government. In line with the strategic orientations of the Emerging Senegal Plan, the mission assigned to the Environment and Sustainable Development sector is "to ensure rational management of natural resources and the living environment with a view to economic and social emergence through a sustainable development path". This general objective is divided into two specific objectives:

- Specific Objective 1. Reduce environmental degradation, adverse effects of climate change and biodiversity loss;
 - Programme 1: Combating deforestation and land degradation;
 - Programme 2: Biodiversity Conservation and Protected Area Management;
 - Programme 3: Combating pollution, nuisances and the adverse effects of climate change.
- Specific Objective 2. Integrate the principles of sustainable development into public policies, management of the living environment, promotion of livelihoods, resilience of vulnerable groups and patterns of production and consumption.

The **National Plan for Territorial Planning and Development (PNADT) - Horizon 2035**, is inspired by the vision of the Emerging Senegal Plan, a desired future that guides medium-term strategic choices, reconciles economic efficiency and territorial and social development with ethical values. The first strategic axis of the PNADT concerns the environment and natural resources, and is divided into four strategic orientations comprising several objectives:

- Strategic Orientation 1.1 Strengthen strategies to preserve and restore the environment and natural resources:
 - Conserve forestry potential;
 - Preserve soil resources;
 - Preserve and enhance wetlands.
- Strategic Orientation 1.2 Ensure good information management of natural resources:
 - Improve the knowledge base of the environment and natural resources;
 - Monitor the evolution of natural resources and the environment.
- Strategic Orientation 1.3 Promote sub-regional cooperation for the management and sustainable development of transboundary ecosystems and resources:
 - Ensure good management of transboundary ecosystems;
 - Ensure the sustainable use of shared natural resources.
- Strategic Orientation 1.4: Promote climate change adaptation and mitigation strategies:
 - Ensure appropriate management of environmental risks;
 - Reduce the vulnerability of sensitive areas to environmental risks;
 - Mitigate the adverse effects of climate change on environmentally sensitive areas.

The **National Strategy and Action Plan for Biodiversity (SPNAB)** developed in 2015, provides an ambitious strategic Vision for Senegal: "By 2030, biodiversity is restored, conserved and enhanced to provide goods and services in a sustainable manner with equitable sharing of benefits and advantages in order to contribute to economic and social development". The strategy consists of four strategic axes divided into specific objectives:

- Strategic Axis A: Improving biodiversity knowledge and building institutional and technical capacity to implement the Strategy:
 - Specific objective A.1. Strengthen the collection of information on biodiversity;
 - Specific objective A.2. Develop research on biodiversity;
 - Specific objective A.3. Capitalise on and disseminate knowledge on biodiversity.
- Strategic Axis B: Pressure reduction, restoration and conservation of biodiversity:
 - Specific objective B.1. Strengthen ecosystem resilience;
 - Specific objective B.2. Improve the level of biodiversity conservation.
- Strategic Axis C: Promoting the integration of biodiversity into economic and social development policies;
 - Specific objective C.1. Integrate biodiversity into development policies and strategies;
 - Specific Objective C.2. Promote good governance of biodiversity.
- Strategic Axis D: Promoting the sustainable use of biodiversity and mechanisms for access to biological resources and the fair and equitable sharing of benefits arising from their use:
 - Specific objective D.1. Valorise ecosystem goods and services;
 - Specific objective D.2: Promote an appropriate legal framework for the equitable sharing of benefits and advantages;
 - Specific objective D.3. Promote sustainable production and consumption patterns.

Senegal's Forest Policy (2005-2025) aims to 'contribute significantly to poverty reduction through the conservation and sustainable management of forest potential, in particular through the coherent implementation of the decentralisation and cooperation policy in the framework of local and international conventions and sub-regional partnership'. The policy defines five main strategic axes with specific themes for each of them:

- Axis 1 - Development and rational management of forest and wildlife resources:
 - Rationalisation of forest resource management

- Conservation / Protection of Water and Soil
- Development of silvo-pastoral resources and water management
- Support for participatory and integrated land use planning
- Conservation of biological diversity
- Applied or accompanying research
- Axis 2. Capacity building of local authorities and CBOs:
 - Technical, organisational and institutional capacity development
 - Strengthening material and financial resources
- Axis 3. Strengthening the intervention capacities of the forestry service:
 - Consolidation and strengthening of the workforce
 - Training and/or retraining of staff
 - Strengthening the means of intervention
 - Institutional capacity building of the service
- Axis 4. Development of private forestry:
 - Promotion and valorisation of forestry and agricultural products
 - Private sector involvement in protected area management
- Axis 5. Development of urban and peri-urban forestry:
 - Greening of cities.

The chapter relating to tourism in the Situation Économique et Sociale du Sénégal (SES) 2017-2018, recalls the ambition of the PSE which is "to welcome three million tourists per year by 2023, to develop new integrated poles and to requalify the existing sites, targeted around seaside products, eco-tourism, culture, religious and business sites". With this in mind, the Tourism Administration has initiated a project to develop ecotourism in the regions of Saint-Louis, Fatick, Tambacounda, Kédougou and Ziguinchor, based on the importance of the country's natural and cultural capital.

The interventions carried out are related to the identification and enhancement of sites with high ecotourism potential in the regions concerned, to the coherence between ecotourism activities and the management of the offer, to the elaboration of promotional materials and to the marketing of ecotourism products.

KEY IDEAS OF THE STRATEGIES DEVELOPED AT COUNTRY LEVEL

- Environmental protection is a high priority for Senegal. This is reflected in its commitment to integrating the principles of sustainable development into national policies and to reversing the trend towards the loss of environmental resources.
- The Emerging Senegal Plan proposes economic and social development through a sustainable development path. This objective is reflected in the PNADT or the SPNAB, which sets out the strategic vision for 2030. The synthesis of the strategic axes of these policies concerns:
 - Improving knowledge of the environment, natural resources and monitoring, strengthening institutional and technical capacities;
 - Reducing pressures, restoring and conserving biodiversity (especially forest, soil and wetland resources);
 - Taking biodiversity into account in economic and social development policies;
 - Sustainable use of biodiversity and fair and equitable sharing of the benefits arising from its use;
 - Senegal stresses the need to promote sub-regional cooperation for the management and sustainable development of transboundary ecosystems and resources.

- Senegal's Forest Policy also emphasises that poverty reduction is also to be achieved through the conservation and sustainable management of forest potential.
- Tourism development aims to develop around integrated poles and a requalification of existing sites targeted around seaside products, eco-tourism, culture, religious and business sites.

2.2.4.2 Current and 2040 water needs of the sector

The available elements and, more generally, the treatment of the environmental theme do not always allow or lend themselves to a quantified definition of water requirements. The need for quantification is in all cases necessary when it comes to defining the water needs of wetlands in forests, when it comes to defining an environmental flow, when it is necessary to quantify the needs adapted to tourist frequentation... but these evaluations require very specific studies.

The strategies and objectives set out below are generally in line with a thrifty management of water resources or a reconstitution of environments that participate in the preservation or reconstitution of this resource.

3 VISION AND STRATEGIC DIRECTIONS

3.1 VISION TO 2040

The vision to 2040 is based on the main issues identified in the diagnosis and information gathered in the workshops. It also draws on the various documents produced by the countries (national action plans, national policies, national strategies and other guidance or planning documents) which have helped to complete this vision.

It is based on **the following major issues, the central element of which is the conservation and enhancement of biodiversity:**

- Improving knowledge of biodiversity;
- Strengthening the protection of biodiversity;
- Ensure effective control of the activities responsible for the most significant degradation of biodiversity;
- Take into account environmental issues in the management of future dams;
- Develop ecotourism, i.e. tourism that builds on the natural and cultural capital and on the activities of local people.

The country visions confirm that these issues have been taken into account and also underline the importance of sub-regional cooperation with regard to the consideration and management of biodiversity.

At the OMVG level, this vision for 2040 can be broken down as follows: **Improve knowledge and control of biodiversity in order to ensure its protection and consideration in the various development and infrastructure projects, and more particularly in ecotourism development.**

3.2 STRATEGIC AXES OF THE SECTOR

The 2040 vision is broken down into 5 strategic axes.

STRATEGIC AXIS 1

Promote sub-regional cooperation for the management and sustainable development of transboundary ecosystems and resources.

This axis focuses on the sustainable development of natural resources shared by the OMVG countries and the management of transboundary ecosystems. The proposed measures include those proposed by Senegal in its National Plan for Territorial Planning and Development (PNADT) - Horizon 2035, which seem to be perfectly suited to a wider extension to the OMVG. This axis also raises the question of the interest of defining a water charter.

STRATEGIC AXIS 2

Strengthen the regulatory and institutional framework for environmental management.

This axis brings together a set of demanding measures to limit the pressures that affect biodiversity and the coastline and to ensure the control of regulatory provisions.

STRATEGIC AXIS 3

Better understand biodiversity to protect its wealth, reduce major environmental pressures and propose integrated development.

This is the core of the plan. It includes the majority of measures relating to;

- Improving knowledge;
- Reduction of emissions from agriculture;
- The reduction of waste deposits;
- Reducing the effects of deforestation;
- The integration of the public in actions for sustainable management;
- Valorisation of non-timber forest products (NTFPs);
- Strengthening PAs;
- The promotion of actions/projects based on the balance between the activities of resident populations and the sustainable exploitation of resources.

STRATEGIC AXIS 4

Ensure rational quantitative and qualitative water management in line with the needs of the natural environment, with measures relating to the monitoring of water quality, the taking into account of environmental issues within the framework of dam management, or the problem of land salinisation.

STRATEGIC AXIS 5

Promote ecotourism development.

This promotion is articulated around a part that concerns more directly the development of infrastructures linked to tourism and a part centred on the development of a sustainable and global tourism associating the values "culture - nature - human activities".

4 INTERVENTION STRATEGY - EXPECTED RESULTS AND ACTIONS TO BE UNDERTAKEN

4.1 LOGICAL FRAMEWORK FOR SECTOR INTERVENTION UP TO 2040

The logical framework proposed below takes the 5 strategic axes announced earlier and breaks them down into Provisions and Measures.

Many of the proposed measures are based on those contained in national action plans, national policies, national strategies and other guidance or planning documents. The measures proposed in these documents are often very numerous and certainly not all of them have been (yet) implemented. The aim here is not to include all of them, but to analyse only those that are consistent with the specific issues associated with this plan.

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 of intervention of the sector - Protection of the environment and ecosystems, development of tourism by 2040

STRATEGIC AXIS	PROVISIONS	MEASURES	COMMENTS
1. Promote sub-regional cooperation for the management and sustainable development of transboundary ecosystems and resources.	1.1 Ensure the sustainable use of natural resources	1.1.1 Establish a Water Convention or Charter to make IWRM effective	
		1.1.2 Pool information on natural resources	In reference to action SO 1.2; Action 1.10 of the National Plan for Territorial Planning and Development (PNADT) - Horizon 2035. (République du Sénégal , 2020)
		1.1.3 Strengthen the scientific and technical capacities of stakeholders	In reference to action SO 1.2; Action 1.11 of the National Plan for Territorial Planning and Development (PNADT) - Horizon 2035. (République du Sénégal , 2020)
		1.1.4 Set up an observatory on the environment and natural resources	In reference to action SO 1.2; Action 1.13 of the National Plan for Territorial Planning and Development (PNADT) - Horizon 2035. (République du Sénégal , 2020)
2. Strengthen the regulatory and institutional framework for environmental management	2.1 Address the pressures most damaging to biodiversity	2.1.1 Ensure an effective ban on illegal gold mining, outside the corridors where gold panning is permitted.	Republic of Guinea: Law L / 2019 / 0034 / AN of 4 July 2019 on the Environmental Code of the Republic of Guinea - Article 64
		2.1.2 Establish a principle of no loss of biodiversity for all deforestation operations/works and major works	
	2.2 Protect the coastline and waterways	2.2.1 Regulate the mining of sand and gravel from watercourses	<ul style="list-style-type: none"> ➤ Republic of Senegal: Law on coastal management. With reference to Decree No. 2003-651 of 12 August 2003 creating a special section within the gendarmerie responsible for environmental protection and, among other things, the control of illicit extraction of marine sand. ➤ Republic of Guinea: Ordinance n°045/PRG/SGG/87 of 28 May 1987 on the Environment Code "prohibits the occupation and exploitation of any kind on the sea shore throughout the public maritime domain as well as the extraction of sand and shellfish ➤ Republic of Guinea Bissau: Law n°1/2011 of 2 March 2011 on the basic law of the environment

INTERVENTION STRATEGY - EXPECTED RESULTS AND ACTIONS TO BE UNDERTAKEN

		2.2.2 Control sand removal from the coastline	<ul style="list-style-type: none"> ➤ Republic of Senegal: Law on coastal management. With reference to Decree No. 2003-651 of 12 August 2003 creating a special section within the gendarmerie responsible for environmental protection and, among other things, the control of illicit extraction of marine sand. ➤ Republic of Guinea: Ordinance n°045/PRG/SGG/87 of 28 May 1987 on the Environment Code "prohibits the occupation and exploitation of any kind on the sea shore throughout the public maritime domain as well as the extraction of sand and shellfish ➤ Republic of Guinea Bissau: Law n°1/2011 of 2 March 2011 on the basic law of the environment
		2.2.3 Prohibit, control coastal developments that block sediment transit	<ul style="list-style-type: none"> ➤ Republic of Senegal: Law on coastal management. In reference to Decree n°2003-651 of 12 August 2003 creating a special section within the Gendarmerie in charge of Environmental Protection ➤ Republic of Guinea: Ordinance n°045/PRG/SGG/87 of 28 May 1987 on the Environment Code ➤ Republic of Guinea Bissau: Law n°1/2011 of 2 March 2011 on the basic law of the environment
	2.3 Ensure compliance with environmental regulations	2.3.1 Capacity building of the environmental protection services in the different member countries	<ul style="list-style-type: none"> ➤ Republic of Senegal: Law on coastal management. In reference to Decree n°2003-651 of 12 August 2003 creating a special section within the Gendarmerie in charge of Environmental Protection ➤ Republic of Guinea: Ordinance n°045/PRG/SGG/87 of 28 May 1987 on the Environment Code ➤ Republic of Guinea Bissau: Law n°1/2011 of 2 March 2011 on the basic law of the environment ➤ Republic of Guinea Bissau: Guinea Bissau 2025 - Strategic and Operational Plan 2015-2020 "Terra Ranka" - Document II, March 2015
3. Better understand biodiversity to protect its richness, reduce major	3.1 Enhance knowledge of biodiversity	3.1.1 Plan an overall assessment of the state of biodiversity at the scale of the basins and ensure monitoring;	

environmental pressures and propose integrated development		<ul style="list-style-type: none"> ➤ Inventory biodiversity and map national forest ecosystems and protected areas and monitor their degradation. ➤ Ensure a minimum of monitoring, with updating and provision of biodiversity data 	
		<p>Similar measures have been undertaken in part of the study area:</p> <ul style="list-style-type: none"> ➤ Inventory biodiversity and map national forest ecosystems and protected areas and monitor their degradation. ➤ Conduct a study and publish the results of the biodiversity and ecosystem services assessment. ➤ Establish the Red List of fluvial and lacustrine ecosystems in Fouta Djallon Massif ➤ Carry out a prospective diagnosis of the Fouta Djallon Massif to determine the opportunities and options/priorities for sustainable development and restoration of degraded ecosystems 	<p>Republic of Guinea: Programme for the sustainable management of forest ecosystems (SFEMP) for adaptation to climate change. Activity 2.1 of SO 2</p> <p>The Gambia: Supplementary Agriculture and Natural Resources Policy - NRA, 2017)</p> <p>Republic of Guinea: PREE-ACO, activity 1.1</p> <p>Republic of Guinea: PREE-ACO, activity 1.4</p>
		<ul style="list-style-type: none"> ➤ Support the development and implementation of community management plans for gallery forests and spring heads in the Fouta Djallon Massif 	Republic of Guinea: PREE-ACO, activity 2.7
		<ul style="list-style-type: none"> ➤ Implement actions to protect and restore degraded ecosystems in Ramsar sites 	Republic of Guinea: PREE-ACO, activity 5.5
		3.1.2 Identify the water requirements (in terms of time, quantity) of water-dependent environments	
	3.2 Reduce sources and releases of POPs and PCBs used in agriculture	3.2.1 Review the lists of regulated or prohibited products and harmonise these lists between countries	

INTERVENTION STRATEGY - EXPECTED RESULTS AND ACTIONS TO BE UNDERTAKEN

		3.2.2 Strengthen laboratory capacity in terms of expertise and equipment for the monitoring of POPs (Persistent Organic Pollutants) and PCBs (Polychlorinated Biphenyls)	Guinea Bissau; Source spécifiée non valide. - Forest management plan for the Lagoas de Cufada Natural Park (PNLC) and the Xitole-Mina-Fifiol corridor
		3.2.3 Conduct Information, Education and Communication sessions with farmers	
	3.3 Eliminate waste disposal sites likely to degrade water quality	3.3.1 Carry out feasibility studies of 7 waste disposal sites	
		3.3.2 Develop a waste treatment plan	
	3.4 Reduce the effects of deforestation	3.4.1 Establish nurseries for the production of local exotic species for the restoration and rehabilitation of degraded forest landscapes	Rep. Guinea: Sustainable management of forest ecosystems programme (SFEMP) for adaptation to climate change. Activity 2.3 of SO 2
		3.4.2 Reforest degraded areas	Rep. Guinea: Sustainable management of forest ecosystems programme (SFEMP) for adaptation to climate change. Activity 2.4 of SO 2
		3.4.3 Maintain the plantations created	Rep. Guinea: Sustainable management of forest ecosystems programme (SFEMP) for adaptation to climate change. Activity 2.5 of SO 2
		As a reminder: Similar measures have been undertaken in part of the study area: <ul style="list-style-type: none"> ➤ Reforestation of degraded areas (especially mining areas), headwaters, riverbanks and watersheds, protection of classified areas (forests and protected areas), ➤ Strengthen the fight against soil erosion 	Republic of Guinea: National Agricultural Investment and Security Plan, 2018. Action 3.1.4 (I) Reference to action 1.6 of the "National Plan for Territorial Planning and Development (PNADT)" - Horizon 2035. (République du Sénégal , 2020) -

	3.5 Involve the public in sustainable management actions	3.5.1 Conduct Information - Education - Communication for adults and young people "Carry out communication, education and public awareness campaigns on the maintenance of the forest ecosystem". Two types of actions have been identified: <ul style="list-style-type: none">➤ Promotion of information, education and achievements in sustainable management of our environment (training of 50 teachers in 10 schools);➤ Information - Education - Communication for adults and young people (12 training courses)	The Gambia: One such action has already been proposed in response to Pillar II on Sustainable Forest and Tree Management of the Forestry Sub-Sector Policy 2010 - 2019)
		3.5.2 Raise awareness of local communities for the experimentation and dissemination of good agroforestry practices and adapted technologies likely to contribute to the reduction of pressure on natural plant resources	Republic of Guinea: Programme for the sustainable management of forest ecosystems (SFEMP) for adaptation to climate change. Activity 2.2 of SO 2
		3.5.3 Promote participatory forest management	The Gambia: One such action has already been proposed in response to Objective A of the 2017 NRA Supplementary Policy on Agriculture and Natural Resources.)
		3.5.4 Promote the restoration of degraded mangrove sites through community participation	
	3.6 Valorise NTFPs (Non Timber Forest Products)	3.6.1 Valorise NTFPs by supporting the production, processing and marketing of these products	Republic of Guinea: Sustainable Forest Ecosystem Management Programme (SFEMP) for adaptation to climate change. Activity 4.2 of SO 3 Develop, in the implementation of forest management plans, the NTFP sector with improved methods of collection, storage, processing and valorisation by maximising the added value for producers.
		3.6.2 Promote income-generating but ecologically 'useful' activities, such as regenerative agroforestry systems, with 'food forests' and seed and species nurseries.	Guinea Bissau; Management plan for the Dulombi Boé and Tch-Tche complex (CDBT) of the Republic of Guinea Bissau

INTERVENTION STRATEGY - EXPECTED RESULTS AND ACTIONS TO BE UNDERTAKEN

	3.7 Strengthen the value and role of Protected Areas	3.7.1 Strengthen the network of Protected Areas; ➤ "Redesign" the PAs (as in Guinea) and propose new and more demanding levels of classification. ➤ Identify other Protected Areas. Examples include the following: ♦ Create at least 3 marine protected areas	Guinea Bissau " Strategic and Operational Plan 2015-2020 Terra Ranka 16: Strengthening of IBAP and implementation of the National Protected Areas System of the Bio-Guinea Foundation; etc. The Gambia: One such action has already been proposed in response to Objective A of the document: "Supplementary Agriculture and Natural Resources Policy - NRA, 2017)"
		♦ Effective creation of the Moyen-Bafing National Park	Republic of Guinea "World Tourism Organization, UNWTO, Sustainable Tourism Development Strategy; axis 3 Development of a flagship tourism product: great ape tourism through chimpanzees".
		♦ Develop or update and support the implementation of comprehensive management plans for protected areas, including transboundary protected areas, to ensure sustainable management of natural resources and to integrate climate change issues into these plans	Republic of Guinea: Activity 3.1 of the Sustainable Forest Ecosystem Management Programme (SFEMP) for adaptation to climate change.
		3.7.2 Improve the management of PAs through the implementation of delegated management	
	3.8 Promote actions/projects based on the balance between the activities of resident populations and the sustainable exploitation of resources	3.8.1 Implement cashew tree and <i>Acacia mellifera</i> hedge plantations	
4. Ensure rational quantitative and qualitative water management in line with the needs of the natural environment	4.1 Ensure regular monitoring of water quality	4.1.1 Establish and monitor water quality at the level of the OMVG area	
		4.1.2 Assess laboratory capacity and potential laboratories to perform the analyses (see Measure 3.2.2 above)	

	4.2 Take environmental issues into account in the management of dams	4.2.1 Define environmental flows and instream flow modulations to meet the water needs of the environment	
		4.2.2 Implement the environmental flow: mechanism, management arrangements...	
		4.2.3 Assess the impacts of land salinisation	In reference to SO 101 Action 1.4: Strengthen strategies to combat land salinisation, (République du Sénégal , 2020) - National Territorial Planning and Development Plan (PNADT) - Horizon 2035
5. Promote eco-tourism development	5.1 Develop a sustainable and global tourism combining the values of culture - nature - human activities	5.1.1 Know the potential of each park and carry out a feasibility study and a study of the infrastructure needs for accommodation and tourist reception	In reference to the "Forest Management Plan of the Lagoas de Cufada Natural Park (PNLC) and the Xitole-Mina-Fioli corridor", Guinea Bissau.
		5.1.2 Develop river cultural routes in rural areas like the Ninki Nanka trail	The Gambia, see "International Trade Center: the Gambia Tourism Strategy" The Youth Empowerment Project. 2019
		5.1.3 Develop tourism in Janjanbureh: community-based cultural and nature tours	The Gambia, see "International Trade Center: the Gambia Tourism Strategy" The Youth Empowerment Project. 2019
		5.1.4 Develop ecotourism and vision tourism in the Badiar National Park (BNP).	With reference to 'Sustainable Tourism Development Strategy', World Tourism Organization (UNWTO): Axis 3 Development of a flagship tourism product: 'Chimpanzee-based great ape tourism', Republic of Guinea
		5.1.5 Establish at least 9 ecolodges in protected areas, by the sea and near selected natural sites	With reference to 'Sustainable Tourism Development Strategy', World Tourism Organization (UNWTO): Axis 3 Development of a flagship tourism product: 'Chimpanzee-based great ape tourism', Republic of Guinea
		5.1.6 Develop a chimpanzee tourism activity at Mont Loura (Mali Prefecture, Guinea)	With reference to 'Sustainable Tourism Development Strategy', World Tourism Organization (UNWTO): Axis 3 Development of a flagship tourism product: 'Chimpanzee-based great ape tourism', Republic of Guinea
		5.1.7 Engage communities and their community organisations in ecotourism	The Gambia: Pillar II on Sustainable Forest and Tree Management of the Forestry Sub-Sector Policy 2010 - 2019)

INTERVENTION STRATEGY - EXPECTED RESULTS AND ACTIONS TO BE UNDERTAKEN

	5.2 Create, strengthen, improve infrastructures that serve tourism development	5.2.1 Promote the development of hotels, access roads, other infrastructure	
		5.2.2 Improve road, water and energy infrastructure and park facilities in the prefectures of Gaoual and Koundara	Guinea - UNWTO, 2018: Sustainable tourism development project in a network of parks - Gaoual and Koundara Prefectures: Construction of infrastructure in and around the parks (roads, water supply and energy); Construction of facilities in the parks (kiosks, information centres, signage)
		5.2.3 Improve facilities in the BijagSO Archipelago and Varela	Guinea Bissau: Programme to build some 50 hotel sites in 2025 in the Bolama-BjagSO islands

4.2 STRATEGIC AXIS 1 - PROMOTE SUB-REGIONAL COOPERATION FOR THE MANAGEMENT AND DEVELOPMENT OF TRANSBOUNDARY ECOSYSTEMS AND RESOURCES

4.2.1 Provision 1.1 - Ensure the sustainable use of natural resources

GENERAL PRINCIPLE

- Define common management principles and procedures concerning water management and in particular the pressures considered to have the greatest impact on the maintenance of biodiversity.
- To provide a common and shared base of information, documents collected and tools for processing and dissemination.

EXPECTED RESULTS

- Drafting of a Convention or a Water Charter to specify the rules relating to water management and specific aspects mentioned in particular under axis 2 "Strengthening the regulatory and institutional framework for environmental management".
- Creation of a common database on natural resources, in which ecological inventory data (fauna, flora, habitats, etc.), data concerning all the PAs, scientific and technical reports, etc. would be collected.
- Creation of an environmental observatory, i.e. a tool for collecting, processing and disseminating data.

AREA OF INTERVENTION

This corresponds to the whole of the Gambia, Kayanga-Geba and Koliba-Corubal river basins.

PROPOSED MEASURES

The management of natural resources within such a vast territory requires both common management rules and a basis for acquiring and sharing data.

This common base should include the following main tools:

- Management rules on points considered important, decisive because they constitute the main threats to the preservation of biodiversity and water resources.
- Pooling of information in order to feed an "OMVG" database that is easily accessible to member countries and kept up to date.
- Monitoring and dissemination through the implementation of an observatory on the environment and natural resources.

The implementation of these tools also requires a strengthening of the scientific and technical capacities of the actors, in particular on the aspects relating to the management of the database and the environmental observatory.

Measure 1.1.1 - Establish a Water Convention or Charter to make IWRM effective

The definition of a common management framework is an essential measure for countries that are integrated within the same organisation and that must harmonise on specific points in terms of water management or, more broadly, natural resources. Such a document exists in the region for the Niger basin, the Lake Chad basin and will certainly be produced for the Senegal River.

Measure 1.1.1	Establish a Water Convention or Charter to make IWRM effective
Origin (institution / project / programme)	OMVG as a key player
Objective	To have a common management of water and biodiversity threats and in particular of the main threats to the preservation of biodiversity, including the specific points mentioned in Axis 2
Location	The whole of the Gambia, Kayanga-Geba and Koliba-Corubal river basins.
Description of the action	<p>Joint management can be the subject of a Water Charter or, preferably, a Convention on the various elements dealing with the management of aquatic environments, either directly or indirectly. In addition to the aspects dealing with the quantitative and qualitative management of water resources, the Charter or Convention must regulate the following activities</p> <ul style="list-style-type: none"> ➤ Recall that gold panning activities are regulated and that illicit ones must disappear; ➤ Introduce strong measures such as: ➤ Introduce the notion of no net loss of biodiversity for all deforestation operations or works; ➤ Regulate the removal of sand and gravel from watercourses; ➤ Prohibit sand removal from the coastline with pictorial prohibition signs; ➤ Prohibit coastal developments that block the transit of sediments; ➤ Define the principle of a water and environmental police force that could act on behalf of the member countries and the OMVG.
Ownership and implementation arrangements	Project owner: OMVG
Duration	At least two years to discuss the content and terms of the Convention
Costs and funding	<p>80 million CFA francs</p> <p>This amount includes (i) the fees and travel expenses of the expert in charge of drawing up the Charter or the Convention, (ii) the organisation of consultations with water users, (iii) the organisation and running of workshops for the presentation and approval of the Convention.</p>
Risks envisaged	Lack of agreements between member countries or agreements difficult to reach
Expected results	Signature of a joint management document.

Measure 1.1.2 - Pooling information on natural resources

Pooling information means having global knowledge, which is essential for knowing the state of natural resources and the associated issues, but also for better managing these resources. The diagnostic phase showed that the existing data currently available in the OMVG basins are few. An effort to collect data, a specific effort, should already be made at the level of the various countries, protected area managers, etc., to gather all the information that may exist and to set up a database.

Measure 1.1.2	Pooling information on natural resources
Origin (institution / project / programme)	OMVG as initiator, in the framework of a specific project
Objective	To have the most comprehensive information possible on natural resource data
Location	The whole of the Gambia, Kayanga-Geba and Koliba-Corubal river basins.
Description of the action	<ul style="list-style-type: none"> ➤ Produce a detailed summary of data concerning species inventories, species habitats and the state of conservation (of species and environments) for the various organisations such as ministries, protected areas, managers, etc. This inventory must also include data on water quality, including quantitative data. ➤ Establish a common database of the collected data accessible to the OMVG member countries. ➤ This work can also be the subject of a Biodiversity Atlas based on this initial knowledge.
Ownership and implementation arrangements	OMVG as project owner in the framework of the realisation of a specific project
Duration	1 year
Costs and funding	300 million CFA francs This amount includes (i) the fees and travel expenses of the experts in charge of collecting and pooling the information, (ii) the mobilisation of the actors who will assist in the collection and provision of the data, (iii) the organisation and facilitation of workshops for the presentation and approval of the Atlas
Risks envisaged	<ul style="list-style-type: none"> ➤ Weak mobilisation of actors for research and data provision. ➤ Meticulous research, collection, investigation and necessarily time-consuming work.
Expected results	<ul style="list-style-type: none"> ➤ Setting up a database of collected information on natural resources. ➤ Drafting and possible publication of a Biodiversity Atlas at the OMVG level

Measure 1.1.3 - Strengthen the scientific and technical capacities of stakeholders

The actions concerning mutualisation or the setting up of an observatory on the environment and natural resources require multiple skills, in particular:

- Naturalists - ecologists for the targeting of data searches and the interpretation of these data;
- Specialists in GIS, but also in the creation, structuring and management of databases;
- IT specialists for the management and evolution of the networks.

These very specific skills require the reinforcement of the capacities of the existing staff whose profile seems to be adapted but also the recruitment of staff for the missing profiles.

Measure 1.1.3	Strengthen the scientific and technical capacities of stakeholders
Origin (institution / project / programme)	At the initiative of the OMVG, as part of a capacity building and recruitment programme for the management of databases common to the OMVG member countries.
Objective	To have competent personnel to process data on natural resources, to set up an environmental observatory and to keep it alive both in terms of its content and on a technical level. These staff could be grouped in a unit responsible for the collection, processing and dissemination of data on natural resources.
Location	These reinforcements mainly concern the OMVG
Description of the action	<ul style="list-style-type: none"> ➤ Establishment of an audit of the staff in the fields of competence that concern ecology, natural environments, but also GIS and database assembly/management skills including data processing.

	<ul style="list-style-type: none"> ➤ Formulation of a skills development programme for the staff selected following the audit. This programme may take the form of training courses, courses in institutes (universities, colleges, etc.), partnerships with research institutes or companies, and participation in conferences. ➤ Possible recruitment of new skills, if in-house skills are not sufficient.
Ownership and implementation arrangements	Project owner: OMVG
Duration	About 6 months for the audit phase. Ongoing training for staff.
Costs and funding	250 million CFA francs This amount includes (i) the formulation of the staff capacity building programme, (ii) the training (sometimes abroad) of OMVG staff in charge of collecting and sharing information, (iii) the possible recruitment of new skills to better support the services of the staff
Risks envisaged	Co-opted profiles without the required skills. Low motivation of prospective staff.
Expected results	The OMVG has competent staff in the following areas <ul style="list-style-type: none"> ➤ Ecology and expertise in environmental enhancement, restoration, environmental impacts; ➤ Acquisition, database management, data processing, GIS and IT skills.

Measure 1.1.4 - Set up an observatory on the environment and natural resources

The processing and dissemination of data forms both a basis for "in-house" work, i.e. within the OMVG and its member countries, and a visibility tool that must be considered indispensable today.

The environmental observatory is the OMVG's database from which it can document its action, evaluate it, present it and assess its results in the short, medium and long term.

Measure 1.1.4	Setting up an observatory on the environment and natural resources
Origin (institution / project / programme)	OMVG
Objective	To monitor the indicators of the state and pressure on the environment in the Gambia, Kayanga-Geba and Koliba-Corubal river basins by setting up a web observatory to monitor and measure the effectiveness of the programme's actions.
Location	Observatory hosted within the OMVG
Description of the action	<p>The observatory will take the form of a web platform incorporating a dashboard for monitoring environmental indicators. The indicators must be defined and calculated beforehand so that the observatory can be regularly updated (annual frequency recommended).</p> <p>To implement the web observatory, it will be necessary to (i) carry out an opportunity study to define the needs and functionalities of the tool, (ii) define the monitoring indicators and the way they are calculated, (iii) acquire the software and develop the web platform, (iv) write the application's instructions for use and a guide to good practice, (v) train the staff</p> <p>The platform will preferably be developed under ArcGis Online technology</p>
Ownership and implementation arrangements	OMVG project management and recruitment of specialised service provider
Duration	6 months to set up the observatory
Costs and funding	33 million CFA francs

Risks envisaged	Staff membership / Post-service update and maintenance
Expected results	Functional web platform and staff trained in the tool and its maintenance

4.3 STRATEGIC AXIS 2 - STRENGTHEN THE REGULATORY AND INSTITUTIONAL FRAMEWORK FOR ENVIRONMENTAL MANAGEMENT

4.3.1 Provision 2.1 - Addressing the pressures most damaging to biodiversity

GENERAL PRINCIPLE

The main cause of biodiversity loss in the OMVG area is the increase in the use of natural resources, leading, among other things, to the destruction and fragmentation of ecosystems, the degradation of habitats and the decline in soil fertility. Thus, the abusive exploitation of biological resources, particularly forestry, fisheries and mining resources, is one of the major factors that compromise biological diversity in the OMVG area. This exploitation, which is often abusive and fraudulent and uses very destructive practices and techniques, often does not take into account the renewal capacity of biological resources.

In order to reverse the current trend of continuous erosion of biodiversity and to improve the use of biodiversity ecosystem goods, it is necessary to intervene on the most harmful factors for biodiversity, which concern overexploitation of biological resources, bushfires, destruction and fragmentation of ecosystems, pollution, climate change as well as socio-economic, legal and institutional factors. This must be accompanied in each of the OMVG countries by the reinforcement of the relevant regulations and institutional strengthening.

EXPECTED RESULTS

The main expected results of provision 2.1 are:

- Biological resources are used in a rational and sustainable manner, in particular through the use of sustainable techniques and practices that respect the renewal capacity of the resources;
- Policy (especially at the OMVG level), institutional and legal instruments are harmonised and adapted to provide a coherent system for the conservation of biological diversity;
- The regulatory and institutional framework is adapted to support measures to reduce the most damaging pressures on biodiversity.

AREA OF INTERVENTION

Biodiversity conservation actions will be carried out both inside protected areas (in situ conservation) and outside them (ex situ conservation) in the OMVG countries.

In situ conservation concerns protected areas (classified areas and classified sites of the protected area), cemeteries or places of worship (e.g. sacred groves in Senegal) and agro-forestry parks. In addition to conservation, protected areas promote scientific research, education and recreation that can support biodiversity conservation objectives.

Ex situ conservation contributes to the restoration of ecosystems and the improvement of the conservation status of species outside protected areas. This includes botanical gardens, herbariums, arboreta, but also reforestation and recovery of degraded land.

To this end, harmonisation of the regulatory and institutional frameworks of the OMVG countries will be required.

PROPOSED MEASURES

Biodiversity is being continuously eroded both inside and outside protected areas in the OMVG area. Several anthropogenic and natural factors contribute to this situation. This is why the OMVG countries, like the international community, have subscribed to conventions and treaties relating to the preservation of biodiversity. This commitment has manifested itself in laws, regulations and sectoral policies in these countries. Through these legal and policy instruments, several measures are advocated to preserve biodiversity and ecosystem diversity.

The following measures are highlighted in this OMVG PPDI:

- Ensure an effective ban on illegal gold mining;
- Establish a principle of no net loss of biodiversity in relation to deforestation works.

These measures, applied in full, should contribute to the preservation of biological diversity.

Measure 2.1.1 - Ensure an effective ban on illegal gold panning, outside the corridors where gold panning is permitted

Gold panning, especially illegal gold panning, is on the increase, particularly in Senegal (e.g. Kédougou region) and Guinea. This practice uses chemical products that are harmful to the environment and are responsible for the pollution of surface and/or underground water and soil (mercury, oils, hydrocarbons, etc.), the depletion of water resources (massive use of water, water discharges during sinking), and the destruction of the river bed, particularly due to dredging operations.

Illegal gold panning is practised in unregulated conditions, and thus contributes to the degradation of biodiversity. Its prohibition is therefore a necessity if we want to contribute to the preservation of biodiversity, especially when the activity is practiced in or near the boundaries of protected areas. To this end, it is essential to integrate measures prohibiting the practice of illegal gold panning into the regulatory and institutional frameworks of the OMVG countries.

Measure 2.1.1	Ensure an effective ban on illegal gold panning - outside the corridors where gold panning is authorised - (at least 3 gold panning sites are identified, with the presence of illegal sites: Gaoual, Kedougou, including at least 1 considered illegal: Mako)
Origin (institution / project / programme)	Ministries in charge of the Environment and Mines and Geology
Objective	Contribute to the preservation of the biodiversity of waterways and natural land environments
Location	Rivers of the OMVG countries
Description of the action	<p>This action supports those identified in the chapter dealing specifically with mines. Illicit gold panning refers to activity outside of gold panning corridors and/or unregistered gold panners.</p> <ul style="list-style-type: none"> ➢ Inventory all the gold panning sites in the OMVG waterways (support to the Mines and Geology and Environment departments) ➢ Establish or strengthen a system for monitoring sites and deterring gold mining in the OMVG area ➢ Introduce or harmonise provisions in the laws and regulations of the OMVG countries prohibiting the illicit practice of gold panning ➢ Harmonise methods of combating illegal gold washing in the OMVG area (adaptation of the regulatory and institutional frameworks of the OMVG countries)

Ownership and implementation arrangements	OMVG and the ministries in charge of mines and geology in each country
Duration	2 years (setting up of the operational monitoring system) / OMVG State
Costs and funding	USD 80,000 per year
Risks envisaged	<ul style="list-style-type: none"> ➤ Non-operationality of measures put in place to combat illicit gold mining ➤ Weaknesses in the regulation of illegal gold mining ➤ Lack of alternatives for illegal gold miners
Expected results	<ul style="list-style-type: none"> ➤ Contribution to the preservation of the biological diversity of the river basins of the OMVG countries

Measure 2.1.2 - Establish a principle of no loss of biodiversity in relation to deforestation and major works

Major works (e.g. hydro-agricultural developments) are generally accompanied by biodiversity losses related to the release of the right-of-way of the sites concerned by the deforestation. These losses of biodiversity can have consequences for climate change (reduction in the absorption of GHGs) and the livelihoods of populations if measures to avoid, mitigate or compensate for these losses are not taken and effectively implemented. It is therefore important to ensure that no loss of biodiversity is established as a principle in operations and major works.

Measure 2.1.2	Establish a principle of no loss of biodiversity for all deforestation operations/works and major works
Origin (institution / project / programme)	Ministries in charge of the environment in the OMVG countries
Objective	Contributing to the preservation of biodiversity
Location	OMVG Space
Description of the action	<ul style="list-style-type: none"> ➤ Before any work is carried out, an environmental and social assessment must be carried out to identify, among other things, the negative impacts on biological diversity and the measures recommended to avoid, mitigate or compensate for biodiversity losses; ➤ Implement the identified avoidance, mitigation or compensation measures; ➤ Design a reforestation programme as an accompanying measure for projects to reclaim degraded environments in the OMVG countries. <p>The project owner's commitment (project owner) can be envisaged in the form of an environmental bond to be put in place after the environmental authorisation has been received and before the work is carried out. This guarantee would be paid into a fund for the restoration of ecosystems:</p> <ul style="list-style-type: none"> ➤ disbursed if the measures implemented by the project promoter are not committed or are considered insufficient ➤ rendered in the case of a restoration considered satisfactory, in line with what is proposed in the environmental studies.
Ownership and implementation arrangements	OMVG and ministries in charge of the environment in the different countries
Duration	Continuous
Costs and funding	No specific amount, measure to be integrated into the texts dealing with environmental assessment in the various member countries and/or within the Water Convention or Charter mentioned in 1.1.1.
Risks envisaged	Non-application of the relevant environmental legislation in the OMVG countries
Expected results	<ul style="list-style-type: none"> ➤ Deforestation operations and major works do not generate any loss of biodiversity in the OMVG area due to the avoidance, mitigation and compensation measures implemented

	➤ A coherent and concerted reforestation programme as an accompanying measure to the OMVG projects is implemented in the OMVG countries
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4.3.2 Provision 2.2 - Protecting the coastline and waterways

GENERAL PRINCIPLE

The coastline is generally made up of diverse and rich ecosystems. However, it is threatened by a combination of natural action exacerbated by climate change and the effects of anthropogenic pressures marked by a high economic and demographic concentration. Coastal erosion, the causes of which are both natural and anthropogenic, results in a retreat of the coastline, estimated on average at between 0.5 and 2 m per year for Senegal, 1.80 m per year for Guinea (at Koba and Tabounssou), 1.5 to 2.3 m per year in The Gambia (Kololi Point - Kotu Point), and around 2.5 m / year for Guinea Bissau. This problem is one of the national priorities in the fight against the effects of climate change.

The causes are mainly anthropogenic, and concern in particular the rise in sea level (climate change of mainly anthropogenic origin), the sediment deficit (linked in particular to withdrawals), the instability of slopes (exacerbated by soil erosion), surface runoff, and poorly designed coastal protection works.

With regard to the degradation of mangroves, the effects of climate change combined with human action (abusive cutting) are leading to the degradation of the mangrove ecosystem (reduction in the size of mangroves before total disappearance) which plays an important role in the conservation of biodiversity (nursery) and constitutes a barrier against erosion. This ecosystem is gradually being replaced by bare surfaces called acid sulphate soil tans.

If the anarchic occupation of the coast and erosion are often cited, as well as the invasion of salt water, the lack of cleanliness of the coastline is also noted, with the issue of waste of all kinds polluting the beaches and ending up in the coastal waters.

All these factors mean that the coastline must be protected by a strong legal and institutional arsenal in the OMVG countries.

EXPECTED RESULTS

- The coastline in the OMVG countries is protected by an adequate and operational legal and institutional arsenal.
- Coastal protection measures are designed and implemented.

AREA OF INTERVENTION

All coastal areas of the OMVG countries

PROPOSED MEASURES

The coastline of the OMVG countries is faced with various environmental and socio-economic problems. These constraints, related to coastal erosion, flooding, salinisation of rice fields and the nature of natural resource exploitation, have not yet been subject to concerted planning. Due to the effects of climate change (sea level rise and erosion) and human activities (removal of marine sand, uncontrolled development, etc.), the coastal area is undergoing a very pronounced degradation. The effects include the recurrent flooding observed in recent decades. To combat this phenomenon, the OMVG countries have introduced provisions and coercive measures in their laws and regulations (notably environmental codes). The removal of sand and uncontrolled development are the main causes of coastal degradation. For this reason, the following measures are part of the provisions to protect the coastline:

- Regulate the removal of sand and gravel from watercourses;
- Prohibit sand removal from the coastline;
- Prohibit coastal developments that block the transit of sediments.

These measures are developed in the following sections.

Measure 2.2.1 - Regulate the mining of sand and gravel from watercourses

The solid load of sand and gravel in rivers represents a stock that is necessary to ensure the proper hydrodynamic functioning of the river and to preserve its habitability for related species, particularly fish and benthic fauna. Removals from the minor beds are responsible for habitat degradation, disrupting the dynamic functioning of the river and reducing the stock of fine sediments that reach the coastline. Regulating withdrawals also means preserving the coastline.

Measure 2.2.1	Regulate the mining of sand and gravel from the watercourse
Origin (institution / project / programme)	OMVG
Objective	Protect the coastal sediment resource. Protect river habitats
Location	All rivers in the OMVG area
Description of the action	<ul style="list-style-type: none"> ➢ Set up a regulatory and institutional system to combat sand and gravel extraction from watercourses or improve the way this issue is taken into account in existing texts. ➢ Strengthen the capacities of the environmental protection services in the different member countries (see measure 2.3.1)
Ownership and implementation arrangements	OMVG and ministries in charge of the environment in the different countries
Duration	2 years for the implementation and operationalisation of the monitoring system in each OMVG country. Effective and enforceable measure without time limit as soon as adopted
Costs and funding	No specific amount, measure to be integrated into the texts dealing with the environment in the various member countries and/or within the Water Convention or Charter mentioned in 1.1.1.
Risks envisaged	Lack of enforcement, or difficult enforcement
Expected results	Watercourses are better preserved with the ban on sand and gravel extraction from these ecosystems

Measure 2.2.2 - Control sand removal from the coastline

Sand is however a fragile resource supplied essentially by the contributions of rivers and coastal currents which ensure coastal dynamics. Taking sand directly from the beaches greatly increases the risk of erosion, which is compounded by rising sea levels.

Measure 2.2.2	Control sand removal from the coastline
Origin (institution / project / programme)	Ministries in charge of the environment in the OMVG countries
Objective	Combating coastal erosion and flooding by ensuring beach protection
Location	Senegal, The Gambia Guinea-Bissau, Guinea
Description of the action	<ul style="list-style-type: none"> ➤ Implement the legal and regulatory measures (Environmental Code, Coastal Act) related to the ban on sand removal from the coast, in particular by mobilising the environmental protection brigade. ➤ Equip and support the environmental police or brigades (logistics, operation) ➤ Mission to be allocated to the services in charge of environmental protection in the different member countries (see measure 2.3.1 concerning the strengthening of these services).
Ownership and implementation arrangements	OMVG and ministries in charge of the environment in the different countries
Duration	2 years for the implementation and operationalisation of the monitoring system in each OMVG country. Effective and enforceable measure without time limit as soon as adopted
Costs and funding	250,000 USD / Financing to be sought with technical and financial partners.
Risks envisaged	Illegal exploitation of marine sand
Expected results	Beaches, coasts and settlements are better protected against coastal erosion and flooding through the application of the provisions of existing laws and regulations on coastal management and the control of marine sand extraction

Measure 2.2.3 - Prohibit coastal developments that block the transit of sediments

The various anthropogenic factors, more or less direct, likely to induce the increase of coastal erosion at the scale of the OMVG countries, or even worldwide, correspond to the rise in sea level (and its consequences on meteorological events) as well as coastal developments which can sometimes cause the subsidence of a whole region. A third factor causing coastal erosion is related to the direct supply of coastal sediments from upstream rivers.

Coastal dynamics are the product of swell and nearshore currents whose dynamic balance maintains the coastline and therefore the beaches. Developments that block this dynamic generally cause a sheltering effect upstream of the littoral current with a storage of sand and erosion downstream when the competence of the current requires the removal of sand to regain a dynamic balance. Poorly designed structures can therefore cause significant imbalances, resulting in long-lasting erosion.

Measure 2.2.3	Prohibit coastal developments that block the transit of sediments
Origin (institution / project / programme)	All OMVG countries
Objective	Protect the coastline by designing and implementing developments compatible with the functioning of the marine ecosystem through the establishment of an adequate regulatory and institutional framework
Location	All OMVG countries

Description of the action	<ul style="list-style-type: none"> ➤ Set up/implement a regulatory and institutional mechanism for coastal management or improve the way this issue is taken into account in existing texts; ➤ Equipping the environmental police in each country (logistics, operation) ➤ Implement actions to combat unauthorised development on the coast (field surveillance missions by the environmental police) ➤ Mission to be allocated to the services in charge of environmental protection in the different member countries (see measure 2.3.1 concerning the strengthening of these services).
Ownership and implementation arrangements	OMVG and ministries in charge of the environment in the different countries
Duration	2 years (setting up of the monitoring system in the OMVG countries)
Costs and funding	USD 2,000,000 - Funding to be sought from technical and financial partners
Risks envisaged	Failure to effectively implement the law on coastal management
Expected results	Coastal areas are equipped with facilities compatible with the proper functioning of the marine ecosystem

4.3.3 Provision 2.3 - Ensure effective enforcement of environmental regulations

GENERAL PRINCIPLE

The environmental changes expected in the coming decades are likely to increase to the point of reaching or exceeding critical and irreversible thresholds, if appropriate safeguard measures are not carefully designed and effectively implemented. Indeed, a large part of the economy of the OMVG countries is based on production systems which, once affected by environmental crises, will necessarily weaken them because these countries are characterised by a still fragile socio-economic situation.

However, the challenge of preserving the environment is at the heart of national political action, especially in the context of sustainable development and climate change. Today, awareness of the need to preserve the environment is a reality at all levels of decision-making in relation to the specific environmental problems to be solved. All these countries are signatories to most of the international agreements and conventions on the environment, biodiversity and natural resources as well as climate change. Thus, there is a political will to link all programmes, projects and interventions in favour of development with environmental protection concerns. In the case of Senegal, this will is reflected in Article L.4 of the Environment Code (Law 2001-01 of 15 January 2001).

This environmental regulation set up in each OMVG country should be subject to continuous monitoring to ensure that it is effectively applied.

EXPECTED RESULTS

Environmental regulation and planning are well implemented in the OMVG countries.

AREA OF INTERVENTION

All OMVG countries

PROPOSED MEASURES

Sustainable development, an aspiration reflected in virtually all policy documents, strategies and sectoral planning, combines the economic, social and environmental pillars. In the particular case of the environmental dimension of development, several provisions are taken in each of the OMVG countries, following the example of other countries in the world. This is reflected in the laws and regulations of each country. The implementation of environmental provisions requires bold measures to enforce the law in all its dimensions. It is for this reason that in each country an environmental police force is set up, embodied by different government departments. The reinforcement of the capacities of the services in charge of the environmental police to better assume their roles and responsibilities. This justifies the following measure, which, when applied in full, will contribute to the effective control of environmental regulations.

Measure 2.3.1 - Capacity building of environmental protection services in the different member countries

In the OMVG countries, services have been set up to monitor the implementation of environmental policies. However, most of these services face constraints in carrying out their mission: low operating budget, logistical problems, lack of human resources, etc. Capacity building of these services is necessary to enable them to assume their policing role and their responsibilities in the implementation of environmental regulations.

Measure 2.3.1	Capacity building of environmental protection services
Origin (institution / project / programme)	OMVG
Objective	Monitor the effective application of environmental regulations in the OMVG area.
Location	OMVG member country
Description of the action	<p>This reinforcement of the police force notably concerns illegal gold panning, which is a real problem, but we should also add all the illegal pressures on the environment that can affect biodiversity: deforestation (including fires), river dredging, sand removal (in rivers and on the coast), coastal development, illegal dumping, illegal dumping, etc.</p> <ul style="list-style-type: none"> ➤ Institutional support of the competent services in the application of environmental regulations ➤ Establishment of the human, technical and financial resources necessary for the proper functioning of the services responsible for monitoring the application of environmental regulations in the OMVG countries
Ownership and implementation arrangements	OMVG and ministries in charge of the environment in the different countries
Duration	2 years
Costs and funding	USD 1,000,000 / Technical and financial partners to be identified
Risks envisaged	Lack of funding
Expected results	The enforcement of environmental regulations is effective in the OMVG area

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4.4 STRATEGIC AXIS 3 - BETTER UNDERSTAND BIODIVERSITY TO PROTECT ITS RICHNESS, REDUCE THE MAIN ENVIRONMENTAL PRESSURES AND PROPOSE INTEGRATED DEVELOPMENT

4.4.1 Provision 3.1 - Enhance knowledge of biodiversity

GENERAL PRINCIPLE

Have the most complete data possible on biodiversity: species of fauna and flora, habitats, functional links², etc., in order to have a precise picture of biodiversity and the state of the environment. This work should serve as a basis for measure 3.7.1 concerning the strengthening of protected areas and land-use policies and strategies.

EXPECTED RESULTS

Have an inventory of species (fauna, flora), habitats and functional links sufficient to assess the state of the environment and biodiversity.

AREA OF INTERVENTION

Whole study area

PROPOSED MEASURES

The disparity of available data on biodiversity and the overall difficulty in gathering this data and obtaining a truly functional vision are an obstacle to the preservation of biodiversity, but also to the restoration of environments and the definition of protection policies and land use strategies. Improved knowledge should make it possible to plan an overall assessment of biodiversity and to monitor it. With regard to water-related environments, this knowledge should make it possible to better identify the water needs of natural environments in order to improve their management.

Measure 3.1.1 - Plan a global assessment of biodiversity at the scale of the basins and ensure follow-up

Apart from the observation made during the diagnostic phase concerning the lack of data, there are several initiatives within the study area that demonstrate the need to have a sufficient level of knowledge of biodiversity to better manage the territories. In addition to acquiring data, it is important to monitor these environments in order to assess the dynamics, changes and actions to be implemented.

Measure 3.1.1	Plan a global bibliographic and naturalistic inventory to be targeted on the areas of least knowledge
Origin (institution / project / programme)	<p>With reference to the following studies:</p> <ul style="list-style-type: none"> ➤ Republic of Guinea: Sustainable Forest Ecosystem Management Programme (SFEMP) for climate change adaptation. Activity 2.1 of SO 2Gambia: Supplementary Agriculture and Natural Resources Policy - ANR, 2017). ➤ Republic of Guinea: PREE-ACO, activity 1.1; ➤ Republic of Guinea: PREE-ACO, activity 1.4; ➤ Republic of Guinea: PREE-ACO, activity 2.7.

² An example is the transit corridors for large animals along the Coliba River (elephants).

Objective	<ul style="list-style-type: none"> ➤ To have a document on the scale of the OMVG containing an inventory of species of fauna, flora, habitats, functional links (including corridors) and the state of the environment. ➤ Monitor the environments with the greatest issues.
Location	Whole study area
Description of the action	<ul style="list-style-type: none"> ➤ Establish a thorough search of existing data on fauna, flora, habitats and corridors. These surveys should include interviews with managers of protected areas and other holders of data on natural environments (e.g. the study on chimpanzees at the Mako gold project); ➤ Draw up, as far as possible, one or more assessments of historical developments on the basis of the data collected (evaluation of trends); ➤ Target the areas where specific inventories are to be carried out to complete the knowledge and carry out these inventories (fauna, flora, habitats); ➤ Draw up a summary of the state of the environment and trends in its evolution... ➤ Define a protocol to ensure operational monitoring thereafter: which environments to monitor? which protocols? which organisations?
Ownership and implementation arrangements	Environment ministries of the different countries
Duration	2 to 3 years to cover all territories
Costs and funding	Total cost estimated at 330 million CFA francs according to the consultant's estimate (500 000€) Funding to be identified: international donors, UICN?.
Risks envisaged	<ul style="list-style-type: none"> ➤ Difficulty in obtaining a comprehensive inventory and truly operational data. ➤ Difficulty in monitoring the state of biodiversity
Expected results	<ul style="list-style-type: none"> ➤ A document on the state of biodiversity, functional links and the state of the environment is produced ➤ The state of biodiversity is monitored

Measure 3.1.2- Identify the water needs of water-dependent environments

This is a very specific point in the analysis of the functionality of aquatic environments, but it is of particular interest in order to better quantify the water requirements over the year and then to provide details on the management methods for these environments, i.e. the definition of an optimum management level.

This point corresponds to the quantitative aspect that is missing from this plan in relation to the "biodiversity" aspects.

Measure 3.1.2	To have data on the water needs of the main aquatic environments
Origin (institution / project / programme)	Specific measure, not mentioned elsewhere
Objective	To have quantitative elements for the management of natural environments
Location	Wetlands, streams, ponds and marshes within the study area.
Description of the action	<ul style="list-style-type: none"> ➤ Identification of wetlands based on the results of the global biodiversity assessment. ➤ Assessment of the water needs of these environments: details of the functioning, the water resources used, the seasonality and the quantitative and possibly qualitative needs. ➤ Definition of management rules to maintain or restore the good functional status of these environments.

Ownership and implementation arrangements	Environment ministries of the different countries
Duration	2 years, after the measure "Draw up a global assessment of biodiversity at the scale of the basins and ensure a follow-up".
Costs and funding	Total cost estimated at 131 million CFA francs by the consultant. Note: this analysis is to be undertaken after the inventory mentioned in measure 3.1.1
Risks envisaged	Lack of information for quantification of water needs.
Expected results	Assessment of annual water requirements of wetlands

4.4.2 Provision 3.2 - Reduce sources and releases of POPs and PCBs used in agriculture

GENERAL PRINCIPLE

Agriculture generally uses various chemicals to control weeds, insects, soil parasites or parasitic fungi. Misuse of these chemicals is often observed and can affect both the quality of water and therefore the habitats for species that depend on aquatic environments, as well as the farmer who handles products that are considered dangerous and, in some cases, carcinogenic.

The control of the effects of these products on the environment involves both restrictions on the marketing of certain products, capacity building in the detection of products in soil and water, and information to farmers on good practices.

EXPECTED RESULTS

- Improve the control and regulation of products placed on the market by proposing a list of accepted products, harmonised at the OMVG level;
- Have one or more laboratories equipped to detect POPs and PCBs and carry out routine soil and water analyses;
- Training of farmers in the proper use of products.

AREA OF INTERVENTION

Cultivated areas, areas identified at the scale of the Gambia, Kayanga-Geba and Koliba-Corubal river basins.

PROPOSED MEASURES

In general, the use of chemicals is a recurrent topic in Africa (particularly in West, Central and Sub-Saharan Africa), but it is often poorly documented due to the lack of effective monitoring in the field and the impossibility of carrying out research on the molecules used in agriculture. The information gathered in the field shows poor practices in the use of chemicals (lack of protection) and certainly overdosing by farmers. Moreover, it is not uncommon to see these products used for purposes other than those initially intended. Considering the relatively dangerous nature (carcinogenic in particular) of these products, it seems relevant;

- To control the placing on the market of these products, by having an updated and harmonised list of authorised products for the different member countries;
- To have the means to analyse and monitor the concentrations of these products in water and soil;
- To offer training to farmers in the use of these products.

Measure 3.2.1 - Review the lists of regulated or prohibited products and harmonise these lists between countries

This measure represents a component of the harmonisation of actions to be envisaged between countries, in relation to recurrent practices whose effect can be harmful not only to the farmer but also to the environment (soil and water) and biodiversity.

Harmonisation of regulated or banned products allows for redefining the levels of requirements by removing the most harmful products, or by ensuring stricter regulation. It also reduces distortions between countries and the unofficial circulation of banned products, as long as frequent controls are ensured.

Measure 3.2.1	To have a revised list of regulated or prohibited products that is harmonised between the different member countries of the OMVG
Origin (institution / project / programme)	Measure from the interpretation of diagnostic data
Objective	<ul style="list-style-type: none"> ➤ Draw up a list of regulated products banned in the various member countries and revise this list, which must be signed by these countries. ➤ Effectively implement these provisions by prohibiting the entry and marketing of prohibited products.
Location	All OMVG member countries
Description of the action	<p>The revision of this list includes the following steps to be carried out at member country level:</p> <ul style="list-style-type: none"> ➤ Seek harmonisation of regulated and prohibited products (if not already done), ➤ Assessment of the need to remove products, if any, or to add new ones deemed harmful to humans and the environment. <p>This revision can be based in particular on the "Global list of pesticides authorised by the Sahelian Pesticides Committee" in its most updated version. It must also integrate other products that may have been the subject of specific decrees in each country.</p> <p>Once the list has been adopted, a control system will have to be put in place to control the products arriving on the market (officially or unofficially) and then, as far as possible, to evaluate the stocks still available of prohibited products.</p>
Ownership and implementation arrangements	OMVG as coordinator and Ministries of Agriculture of the different member countries
Duration	1-2 years to establish an updated and harmonised list. Multi-annual monitoring with regard to the control of products entering the market and the control of stocks.
Costs and funding	Total cost estimated at about 53 million CFA francs by the consultant. Financing to be identified (Member States + OMVG)
Risks envisaged	Limited or no control of products that very often escape the official market.
Expected results	<ul style="list-style-type: none"> ➤ Revision and harmonisation of the list of prohibited and regulated products. ➤ Monitoring of products put on the market and stocks of products available in the countries.

Measure 3.2.2 - Strengthen laboratory capacities in terms of expertise and equipment for the monitoring of POPs (Persistent Organic Pollutants) and PCBs (Polychlorinated Biphenyls)

This measure emanates from the "Forest Management Plan of the Lagoas de Cufada Natural Park (PNLC) and the Xitole-Mina-Fioli Corridor" of 2018 in Guinea Bissau.

The analysis of classic water quality parameters does not generally pose a problem, but for analyses dealing with metal pollution or the search for certain molecules used in agriculture, there are no (or very few) laboratories equipped for this type of analysis. This research therefore requires the samples to be sent, most often to a European laboratory, in compliance with the required conservation conditions. This process is particularly restrictive.

Measure 3.2.2	Identification of 2 to 3 laboratories likely to carry out POP and PCB measurements and analyses
Origin (institution / project / programme)	Measure from the "Forest Management Plan of the Lagoas de Cufada Natural Park (PNLC) and the Xitole-Mina-Fifiol corridor", Guinea Bissau.
Objective	<ul style="list-style-type: none"> ➤ Identification of laboratories that need to be technically and humanly strengthened to carry out analyses on the research of molecules used by agriculture in soil and water ➤ Establish a list of existing laboratories in the different countries
Location	All OMVG member countries.
Description of the action	<ul style="list-style-type: none"> ➤ Summary of existing laboratories in member countries and capacities in terms of analysis, technical and human resources; ➤ Analysis of the main purposes of these laboratories and the levels of standardisation; ➤ Selection of laboratories likely to propose POP and PCB measurements on specific molecules and estimation of technical, human and financial means to evolve. ➤ Definition of a possible partnership with the OMVG allowing the evolution of the selected laboratory(ies) and the realisation of regular analyses within the framework of water quality monitoring.
Ownership and implementation arrangements	OMVG in partnership with the Ministries of Agriculture and Environment of member countries?
Duration	<ul style="list-style-type: none"> ➤ 4 months for the evaluation of the competences and the selection of the laboratories. ➤ 6 additional months for the definition of a capacity-building partnership and clarification of the quality monitoring procedures (i.e. once the measurement network has been defined, as well as the parameters monitored and the frequency of monitoring).
Costs and funding	50,000 Euros, estimated by the consultant (33 million FCFA) Funding to be identified (Member states + OMVG).
Risks envisaged	<ul style="list-style-type: none"> ➤ Sustainability of laboratories over time ➤ Quality / reliability of the results produced <p>This type of risk leads to the search for solid, well-established structures backed by a "routine" activity (such as a university or research laboratory, or a fishery products analysis laboratory).</p>
Expected results	Selection of several laboratories (2 or 3) and definition of partnerships to carry out follow-up measurements.

Measure 3.2.3 - Carry out Information - Education - Communication sessions with farmers

This type of measure is essential to disseminate good practices to farmers, who are the target audience for reducing POPs and PCBs discharges.

The training sessions also provide an opportunity to better understand farmers' current practices, which can vary greatly.

These training sessions should target POs, men's and women's cooperatives, producer groups, etc.

Measure 3.2.3	Carry out about 30 training sessions considering the main exploitation sites in the study area
Origin (institution / project / programme)	Measure specific to this plan.
Objective	Encourage good practice in the use of chemicals among farmers.
Location	Training to be carried out on the main agricultural areas of the study area, with Producers' Organisations, men's and women's cooperatives and producers' groups.
Description of the action	<ul style="list-style-type: none"> ➤ Definition of a training programme; ➤ Targeting the relevant groups within the different member countries; ➤ Practical application with comparative plots: current practices / proposed practices; ➤ Drawing up a report on the entire training. <p>Note: the assessment of good practices must be associated with long-term monitoring of water quality.</p>
Ownership and implementation arrangements	Ministries of Agriculture of member countries
Duration	At least 3 to 4 years (to assess developments)
Costs and funding	Total cost estimated by the consultant: 197 million CFA francs Funding to be identified: Member States + OMVG + international donors
Risks envisaged	<ul style="list-style-type: none"> ➤ Low mobilisation of farmers; ➤ Conservation of old practices (low receptivity).
Expected results	<ul style="list-style-type: none"> ➤ Formation of about 30 Groups, POs, Cooperatives; ➤ Collection and synthesis of training reviews.

4.4.3 Provision 3.3 - Eliminate waste disposal sites likely to degrade water quality

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GENERAL PRINCIPLE

The group sessions, in the framework of the workshop work (sessions of 19 and 20 November 2021), made it possible to identify various qualitative and quantitative issues on water resources. In particular, the results identified several waste disposal sites that could affect water quality and certainly also landscape aspects.

EXPECTED RESULTS

Define for each of the sites the strategies for the reclamation of these dumps and evaluate their feasibility. The state of knowledge does not allow us to know the importance and typology of the waste to be treated. It poses the question of waste treatment in a more extensive way, which represents a fundamental problem.

AREA OF INTERVENTION

It concerns 7 sites identified in the framework of the working sessions:

- Brikama, The Gambia;
- Kaolack, Senegal;
- Gabu, Guinea Bissau;
- Gaoual, Republic of Guinea;

- Labé, Republic of Guinea;
- Mako, Senegal;
- Kountadala within the KNP park.

PROPOSED MEASURES

In general, the presence of waste feeds waterways but also contributes to coastal pollution. Treatment raises many complex issues, which need to be properly analysed and understood in order to define a suitable solution or solutions.

In the absence of knowledge on the extent and the waste to be treated, it is necessary to define for each site a feasibility study of the reclamation solutions.

Measure 3.3.1 - Carry out feasibility studies for 7 waste disposal sites

This measure emanates from the working sessions and allows a substantive issue (waste treatment) to be addressed at a few specific sites that can also serve as a reference for a larger treatment strategy.

Measure 3.3.1	Carry out feasibility studies on 7 sites in the OMVG area
Origin (institution / project / programme)	Proposed action following the working sessions of 19 and 20 November 2021
Objective	Define the means and modalities for the reclamation of 7 disposal areas
Location	Sites of Brikama, Gambia; Kaolack, Senegal; Gabu, Guinea Bissau; Gaoual, Republic of Guinea; Labé, Republic of Guinea; Mako, Senegal and Kountadala within KNP Park.
Description of the action	<ul style="list-style-type: none"> ➤ Carry out a summary diagnosis of the extent of the disposal areas, the types of waste and the volumes to be treated. Identify, as far as possible, the origin of these deposits and the impact on the environment; ➤ Identify the possible treatment methods (on site? burning? ...), the existing channels, the actors and institutions in place; ➤ Propose one or more ways of reclaiming the disposal sites. <p>The service does not include any measurements for the time being (topography, soundings, analysis of polluted sites and soils, etc.), but it will be necessary to define their possible relevance in the context of these feasibility studies.</p>
Ownership and implementation arrangements	Ministries in charge of waste management in the different member countries.
Duration	1 year to complete these studies
Costs and funding	Approximately 50,000 EurSO per site, according to the consultant's estimate, i.e. a total of 350,000 Euros, or 229.2 million CFA francs. Funding: Member States + international donors
Risks envisaged	Lack of operability of the study
Expected results	<ul style="list-style-type: none"> ➤ Feasibility studies with details of reclamation methods. ➤ Implementation of the means of reclamation, if the modalities envisaged allow it (easily implemented actions).

Measure 3.3.2 - Draw up a waste treatment plan

This measure complements the one concerning the carrying out of feasibility studies on 7 disposal sites. It is part of a broader vision that aims to propose sustainable treatment methods on the scale of a territory or a city.

Measure 3.3.2	Production of 5 plans
Origin (institution / project / programme)	This measure will accompany the sites identified during the working sessions of 19 and 20 November 2021
Objective	To propose a waste treatment scheme within the localities affected by a waste dump
Location	Cities Brikama, Gambia; Kaolack, Senegal; Gabu, Guinea Bissau; Gaoual, Republic of Guinea; Labé, Republic of Guinea.
Description of the action	<ul style="list-style-type: none"> ➤ Carrying out the additional investigations specified in the feasibility studies; ➤ Definition of collection, sorting and treatment methods and of the actors/partners who can be mobilised; ➤ Identification of sorting, collection, final disposal sites... other treatment processes; ➤ Evaluation of investment and operating amounts
Ownership and implementation arrangements	Ministries in charge of waste management in the different member countries.
Duration	2 years for each scheme
Costs and funding	Between 150,000 and 200,000 EurSO per scheme, excluding measures. (These measures can reach more than 100,000 Euros, depending on the request and the location). Total amount estimated at 1 million eurSO for 5 schemes, i.e. 655 million CFA francs.
Risks envisaged	Lack of operability of the study
Expected results	Drafting of waste management plans for 7 localities.

4.4.4 Provision 3.4 - Reduce the effects of deforestation

GENERAL PRINCIPLE

The studies consulted highlight the impacts of human activities on forest ecosystems linked to carbonisation, abusive wood cutting, land clearing, bush fires, climate change, etc. The authorities are committed to supporting the adaptation efforts of rural communities to develop agro-sylvo-pastoral techniques that allow them to continue their activities and preserve the resources on which they rely. It is necessary to develop actions to reconstitute degraded vegetation cover in order to limit the effects of deforestation.

EXPECTED RESULTS

- Restore and rehabilitate degraded forest ecosystems.
- Promote reforestation with local species.

AREA OF INTERVENTION

In all OMVG countries: Senegal, Guinea, Guinea Bissau and The Gambia.

PROPOSED MEASURES

In the various countries, forest ecosystems are undergoing severe degradation due to poor cultivation practices, abusive wood cutting, bush fires, overgrazing, mining, etc. It is therefore necessary to undertake actions to restore and rehabilitate the woody plant cover through the development of nurseries and the promotion of local species through planting.

Measure 3.4.1- Set up nurseries for the production of local exotic species for the restoration and rehabilitation of degraded forest landscapes

Anthropogenic activities and climate change have led to widespread destruction of forest ecosystems. This measure aims to reduce the level of degradation of forest landscapes and ensure the promotion of local tree species.

Measure 3.4.1	Promote both central nurseries (03) and village nurseries (10) for the production of local and even exotic species Production of 35-45,000 plants per year for reforestation
Origin (institution / project / programme)	This measure stems from the Programme de gestion durable des écosystèmes forestiers (SFEMP) for adaptation to climate change in Guinea. March 2017
Objective	Set up three central nurseries and ten village nurseries for the annual production of 35 to 40 thousand forest plants
Location	Environment of the three OMVG basins
Description of the action	The seedling production process, after training of nurserymen, includes the following steps: Central nursery: (i) choice of site with a water point (well), (ii) layout of beds, (iii) provision of small equipment [shovels, watering cans, rakes, etc.] and inputs [seeds, phytosanitary products, sheaths, etc.], (iv) filling of sheaths, (v) sowing of the sheaths, (vi) watering and monitoring of the growth of the seedlings, with regular weed control and anti-termite treatment
Ownership and implementation arrangements	OMVG or National Directorates of Water and Forests/Ministry of Environment, Water and Forests
Duration	5 years
Costs and funding	Total cost: 12 million CFA francs. Reference: SFEMP, Guinea Financing: OMVG
Risks envisaged	<ul style="list-style-type: none"> ➤ Lack of qualified personnel ➤ Lack of participation/involvement of local communities
Expected results	<ul style="list-style-type: none"> ➤ Three central nurseries and ten village nurseries in production, ➤ 35,000 - 40,000 plants offered per year

Measure 3.4.2 - Reforesting degraded areas

This measure comes from the Programme de gestion durable des écosystèmes forestiers (SFEMP) for adaptation to climate change in the Republic of Guinea. March 2017. Several thousand hectares of forest are currently being destroyed. It is therefore necessary to reconstitute the vegetation cover in order to increase the ecosystem services linked to forest ecosystems. The measure aims to ensure that degraded areas are planted with local species produced in nurseries.

Measure 3.4.2	30 Ha of planting per year for 5 years, i.e. a total of 150 Ha.
Origin (institution / project / programme)	This measure stems from the Programme de gestion durable des écosystèmes forestiers (SFEMP) for adaptation to climate change in the Republic of Guinea. March 2017. This measure is also combined with that of the energy component, which provides for the creation of productive forest plantations in the most degraded areas (eucalyptus plantations) to meet household needs.
Objective	Restore degraded forests by planting with local species
Location	Guinea, Senegal, Guinea Bissau and The Gambia
Description of the action	<ul style="list-style-type: none"> ➤ Delimitation, staking and hole marking of the plot ➤ Planting of a living hedge around the plot ➤ Installation of a wire fence ➤ Planting of seedlings in the three plots, ➤ Evaluation of reforested plots;

	<ul style="list-style-type: none"> ♦ Recovery rate: 3-4 months after planting ♦ Survival rate: 8-9 months after planting ♦ Success rate: 2 to 3 years after planting
Ownership and implementation arrangements	Direction des Eaux et Forêts/Ministry of the Environment, Water and Forests
Duration	3 years
Costs and funding	Total estimated cost of 30 million CFA francs to reforest 150 ha of degraded forest. Funding: OMVG and international donors
Risks envisaged	<ul style="list-style-type: none"> ➢ Lack of monitoring of plantations ➢ Insufficient means for maintenance ➢ Non collaboration of local communities
Expected results	150 ha of degraded land re-greened

Measure 3.4.3- Maintain the plantations created

This measure is taken from the Programme de gestion durable des écosystèmes forestiers (SFEMP) pour une adaptation aux changements climatiques de la République de Guinée. March 2017. It aims to ensure the sustainability of plantations.

Successful planting of seedlings is not enough to ensure the future of a reforestation. Indeed, good maintenance of the plantations is a necessity. Like all living creatures, seedlings need care to grow well. The following facts should be carefully considered: (i) plant them in a large hole that can provide stored water for a long time, (ii) ensure that the plants are weeded, in order to reduce competition for water and nutrients, (iii) apply the required anti-termite treatment, (iv) carry out the required pruning and thinning in case of planting at a narrow spacing.

Measure 3.4.3	Ensure the maintenance of the plantations carried out (30 ha/year to reach 150 ha)
Origin (institution / project / programme)	This measure emanates from the Sustainable Forest Ecosystem Management Programme (SFEMP) for adaptation to climate change. March 2017
Objective	Periodically maintain the various forest plantations
Location	Guinea, Senegal, The Gambia and Guinea Bissau
Description of the action	<ul style="list-style-type: none"> ➢ Maintain the plantations (weeding and thinning, possible replacement of plants); ➢ Securing plantations.
Ownership and implementation arrangements	Direction des Eaux et Forêts/Ministry of the Environment, Water and Forests
Duration	5 years
Costs and funding	13 million CFA francs for 30 ha for 5 years (a total of 150 ha). Funding: OMVG and international donors
Risks envisaged	<ul style="list-style-type: none"> ➢ Insufficient financial resources ➢ Lack of participation of local communities
Expected results	150 ha well maintained to ensure a good deployment of the plants and a good achievement of the announced productions.

4.4.5 Provision 3.5 - Involve the public in sustainable management actions

GENERAL PRINCIPLE

In general, there is little public involvement in actions for sustainable natural resource management. In most countries, the institutional framework is often not conducive to the integration of the public in sustainable biodiversity management. However, civil society organisations, local authorities and the central administration are increasingly mobilising for a better integration of the public in sustainable management initiatives through awareness-raising and Information-Education-Communication actions.

EXPECTED RESULTS

- Better public participation in sustainable management;
- Appropriation of good agroforestry practices by the public;
- Reduced pressure on plant resources.

AREA OF INTERVENTION

In all OMVG basins.

PROPOSED MEASURES

The appropriation of good agroforestry practices by the public is one of the key factors for the success of sustainable plant resource management actions in the OMVG countries. To achieve this, it is necessary to carry out awareness-raising, information, education and communication activities in favour of local communities in order to ensure the acceptability of good agroforestry practices.

Define promotion, education and demonstration actions

As part of the environmental education of the population in general, and of children in particular, concrete actions are generally proposed, such as (i) the organisation of clean-up days, (ii) the reforestation of roads, neighbourhoods or public places. In school forestry, in addition to training teachers in the integration of content on the roles and uses of trees and forests, concrete reforestation actions can be carried out within schools.

Measure 3.5.1	Promotion of information, education and achievements in the sustainable management of our environment. Training of 50 teachers in 10 schools
Origin (institution / project / programme)	OMVG, Forestry and Environmental Services
Objective	Inform, educate and carry out environmental management actions
Location	Environment of the three basins
Description of the action	Promotion of school forestry by training teachers to better supervise their students.
Ownership and implementation arrangements	Ministries of Environment and Education / OMVG
Duration	5 years
Costs and funding	Total cost estimated at CFAF 98.250 million Potential funding: international donors
Risks envisaged	
Expected results	➤ Number (50) of teachers trained, number of schools involved (10)

Measure 3.5.1 - Information - Education - Communication for adults and young people

This measure comes from the Gambia's Forestry Sub-Sector Policy 2010 - 2019. Local actors need to acquire information and knowledge to enable them to intervene effectively in the sustainable management of natural resources.

Measure 3.5.1	Information - Education - Communication for adults and young people. 12 training courses conducted
Origin (institution / project / programme)	Information - Education - Communication for adults and young people
Objective	Conducting information and communication campaigns
Location	All OMVG countries
Description of the action	<ul style="list-style-type: none"> ➤ Training young people and adults ➤ Develop and disseminate communication and training tools ➤ Implementing information campaigns ➤ Strengthening curricula at the level of education systems
Ownership and implementation arrangements	OMVG and National Water and Forestry Directorates/Ministry of the Environment
Duration	2 years
Costs and funding	Estimated amount of 39.3 million CFA francs for the realisation of 12 training courses, at a rate of 3.3 million per course. Potential funding: international donors
Risks envisaged	<ul style="list-style-type: none"> ➤ Lack of appropriate institutional framework ➤ Quality of training and information tools ➤ Mobilisation of actors
Expected results	<ul style="list-style-type: none"> ➤ Youth and adult training: number of people who attended these IECs ➤ Production of IEC tools

Measure 3.5.2 - Raise awareness of local communities for the experimentation and dissemination of good agroforestry practices and adapted technologies likely to contribute to the reduction of pressure on natural plant resources

This measure stems from the Programme de gestion durable des écosystèmes forestiers (SFEMP) for adaptation to climate change in Guinea. The destruction of the vegetation cover is mainly due to bad cultivation practices, anarchic transhumance and abusive wood cutting by local communities. The measure aims to raise public awareness of good agroforestry practices and appropriate technologies to reduce pressure on plant resources.

Measure 3.5.2	Raise awareness among local communities for the experimentation and dissemination of good agroforestry practices and adapted technologies that can contribute to the reduction of pressure on natural plant resources (16 facilitation sessions)
Origin (institution / project / programme)	Sustainable Forest Ecosystem Management Programme (SFEMP) for climate change adaptation in Guinea
Objective	Lead the public to experiment with good agroforestry practices
Location	In all OMVG countries
Description of the action	<ul style="list-style-type: none"> ➤ Organisation of animation sessions on good agroforestry practices

	<ul style="list-style-type: none"> ➤ Production of awareness-raising tools and materials on good agroforestry practices for the public ➤ Establishment of demonstration plots of good agroforestry practices
Ownership and implementation arrangements	OMVG and National Water and Forestry Directorates/Ministry of the Environment Funding: international donors
Duration	2 years
Costs and funding	US\$ 2,000,000 (16 sessions). This cost includes the organisation of awareness sessions on good agroforestry practices and the production of awareness tools.
Risks envisaged	<ul style="list-style-type: none"> ➤ Multiplicity of actors ➤ Lack of a concerted framework ➤ Reluctance of local communities to adopt new practices
Expected results	<ul style="list-style-type: none"> ➤ Carrying out awareness-raising activities ➤ Public experimentation with good agroforestry practices

Measure 3.5.3 - Promote participatory forest management

Natural mixed forest and grassland forests are sources of life for the rural populations living in them. Their management can only be done on a participatory basis, thus strongly involving local authorities and populations. They are the first to intervene in the event of bush fires and act as a shield against criminals wishing to fraudulently exploit the resources of these forests.

It is therefore legitimate to make the populations responsible for the management programmes of these forests. It should be noted that in Gambia, communities are already doing this. It is therefore necessary to capitalise on what is being done in this respect in that country.

In Senegal, in the former Kaolack region (now Kaolack and Kaffrine regions), there were several wooded areas until the mid-1990s, most of which were degraded due to a lack of management:

- Multiple cuts of wood to meet the demand for domestic fuel in the regional capital Kaolack,
- Agricultural clearings to compensate for reduced crop yields,
- Unsustainable pastoral practices with abusive pruning and even topping,
- The annual passage of bushfires,
- Low supply of NTFPs.

Following the programme to put these degraded forest areas under protection, with technical and financial assistance from GTZ, after six to eight years of protection, facilitated by the approval of a code of conduct, regulating relations between the population and the forest, With the following sometimes restrictive points such as (i) prohibition of green wood cutting (ii) authorised grazing but prohibition of unsustainable practices, (iii) passive fight against fires with the opening of bare firebreaks all around the forest, these areas had admirably recovered, with the following signs

- Absence of bushfires in the protected forest area,
- Abundant supply of NTFPs,
- Cutting straw for huts and for animal feed.

There were 98 areas set aside in the Fatick and Kaolack regions, covering 128,000 ha. One tenth of these areas were subject to a participatory management plan oriented towards the production of wood fuels and NTFPs.

In addition, at the level of the Community Nature Reserves set up in the regions of Tamba and Kédougou on the periphery of KNP, with the support of sustainable forest management projects such as PROGEDE & PAGRN, small projects have been financed and implemented for the benefit of local populations, focusing on

- Guinea fowl breeding,

- The promotion of beekeeping with the provision of beehives and other equipment,
- Etc.

Measure 3.5.3	Promote and popularise participatory forest management
Origin (institution / project / programme)	OMVG and Ministry of Environment / Forestry Department
Objective	Develop a participatory approach to forest management
Location	Environment of the three OMVG basins
Description of the action	<p>The process of implementing participatory management in a given forest should follow the following steps:</p> <ul style="list-style-type: none"> ➢ Identification of the forest to be managed and the villages concerned by its management, ➢ Establishment of village committees to monitor and protect the forest, and an inter-village committee to oversee forest management and relations with partners, ➢ Delimitation and mapping of the forest with the support of the technical services ➢ Elaboration of a consensual code of conduct on the modalities of use of forest resources, with fines for those who violate them; this code sets out the beginning and techniques of NTFP collection (fruits, oils, exudates...), ➢ Setting the objectives of the proposed development, ➢ Elaboration of the sustainable and participatory development plan by a consultant, ➢ Presentation, amendments and approval of the development plan, ➢ Validation of the development plan by the Water and Forestry Service, ➢ Search for financial partners for the implementation of the development plan, ➢ Implementation of the development plan, with mid-term monitoring and evaluation arrangements. <p>A forest will be identified for each of the three basins for management</p>
Ownership and implementation arrangements	OMVG / Ministry of the Environment - Directorate of Water and Forests
Duration	5 years
Costs and funding	Total estimated cost of CFAF 18 million. Potential funding: international donors
Risks envisaged	
Expected results	Three (3) forests (one per basin) will be identified to initiate their participatory management.

Measure 3.5.4 - Promote the restoration of degraded mangrove sites through community participation

The ecological importance of mangroves is no longer in question: this ecosystem cannot be reduced to its carbon capture potential. Although the plant biodiversity of mangroves is limited, they can be home to more than 3,000 species of fish and shellfish. They thus make a major contribution to maintaining the biodiversity of tropical areas.

Today, this important ecosystem is threatened mainly by human activities, including the mining of oysters, with women cutting the stilt roots on which the oysters cling, and the cutting of firewood.

Measure 3.5.4	Promote the maintenance of the mangrove, with the dissemination of more sustainable management techniques. Carrying out about 10 training sessions
Origin (institution / project / programme)	Sustainable management of the mangrove ecosystem
Objective	Sustainable management of mangroves will involve abandoning mining techniques by (i) adopting the technique of garlands to carry oysters, instead of roots, (ii) limiting the removal of wood to dead wood.
Location	Mangrove areas
Description of the action	<ul style="list-style-type: none"> ➤ Train women in new techniques of oyster farming by garlands; ➤ Observe a biological rest period each year; ➤ Reforestation with fast-growing species as an alternative to cutting mangrove wood.
Ownership and implementation arrangements	Ministry of Fisheries and Ministry of the Environment
Duration	5 years
Costs and funding	Total cost estimated at 100 million CFA francs. Potential funding: international donors
Risks envisaged	Non-compliance with the biological rest period
Expected results	<ul style="list-style-type: none"> ➤ The women are trained in new techniques of breeding and collecting oysters. ➤ An annual biological rest of three to four months is strictly observed.

4.4.6 Provision 3.6 - Adding value to non-timber forest products (NTFP)

GENERAL PRINCIPLE

The natural mixed forest and grassland forests offer a multitude of goods and services to the local populations. With the collection of NTFPs by the populations, which are stored and then resold at weekly markets, these forests constitute a real green bank for the populations, who can structure themselves into groups to try to reach national or even international markets.

EXPECTED RESULTS

- The most promising NTFPs (fruits, oils, honey, oils, medicinal plants, etc.) are identified;
- Rural actors are organised in NTFP commodity groups;
- Adding value to their products (Bouye powder, honey, oil, etc.);
- Collection methods are improved;
- Honey collectors are transformed into beekeepers and well equipped.

AREA OF INTERVENTION

Environment of the three OMVG basins

PROPOSED MEASURES

A local convention will have to be drawn up and approved by the riparian actors of the three basins to define technical and temporal standards for the collection of the various NTFPs, their storage, processing and marketing, while seeking to label their products.

The following annual revenues can be expected:

- Fruit and forestry sector:
 - Bouye: 40-50 tons of raw fruit for a production of Bouye powder of 5-6 tons and an annual income of 20 million CFA,
 - Madd: 30-35 tons of raw fruit worth 7 million FCFA
 - Palm oil: 25-30 tonnes of bunches for a production of 600 tonnes of oil worth 150 million CFA francs
- Honey: with modern beekeeping, we can aim for an annual production of 200 tonnes in the three basins, worth 300 million CFA francs.

Improved collection, storage and processing techniques will add value for primary producers.

Measure 3.6.1 - Valorise NTFPs by supporting the production, processing and marketing of these products

NTFPs offer a great opportunity for the populations of the villages bordering the basins to (i) improve their living conditions, and (ii) increase their income conditions through the production, transformation and marketing of these products. The mixed natural forest and grass formations thus constitute a real green bank for these populations. By better organising these populations into groups of producers, and by supporting them in collection, storage, processing and marketing techniques, we will contribute to significantly increasing their income.

Measure 3.6.1	NTFP collection and processing techniques are improved and producers are better trained and equipped
Origin (institution / project / programme)	Directorate of Water and Forests / OMVG
Objective	<ul style="list-style-type: none"> ➢ Identify the most promising NTFPs ➢ Improve NTFP collection, storage and processing techniques
Location	Environment of the three OMVG basins
Description of the action	<ul style="list-style-type: none"> ➢ Identification of the most promising NTFPs, in terms of quantity of supply and market value; ➢ Organization of rural actors into clusters; ➢ Improve collection, storage and marketing techniques; ➢ Equipment allocation to clusters; ➢ Promote processed and labelled products.
Ownership and implementation arrangements	OMVG / Ministry of the Environment
Duration	5 years
Costs and funding	Total cost estimated at 500 million CFA francs. Funding: member countries and international donors
Risks envisaged	
Expected results	The most promising NTFPs (fruit and honey) are subject to labelled production

Measure 3.6.2 - Promote income-generating but ecologically "useful" activities: Establishment of agroforestry and horticultural nurseries

Potential activities could include fish farming, game and poultry farming, beekeeping, alleviating the workload of rural women by equipping them with millet mills and palm oil presses, etc. However, it is difficult to target the most relevant activities and the sectors concerned without more precise information on the vital needs of the population.

The establishment of agroforestry and horticultural nurseries is clearly a major need. These activities are still in their infancy but are largely under-exploited: the exploitation of nurseries for the multiplication of cashew, mango, *Acacia-mellifera* (species prized for hedges), coconut and ornamental horticultural species (flowers). These are very profitable activities that can be carried out in a small area and do not require much investment. The support and supervision of the Water and Forestry Service could facilitate the integration of a fringe of the young population in this niche of activities where a demand already exists at the local and national level, as well as in The Gambia.

Measure 3.6.2	Establish about 100 nurseries Train and supervise about 100 young people per nursery
Origin (institution / project / programme)	OMVG and Water & Forestry and Agriculture Services
Objective	Ensure the integration of young people and women in the agroforestry seedling production sector
Location	In targeted villages within the basins of the study area
Description of the action	<ul style="list-style-type: none"> ➤ Selection and training of nurserymen, ➤ Identification of nursery sites that should have a water source nearby (wells, streams, etc.) ➤ Provision of small equipment (shovels, watering cans, rakes, etc.) and inputs (seeds, sheaths, PPS, etc.), ➤ Sowing, monitoring and production of fruit and ornamental plants
Ownership and implementation arrangements	OMVG / Water & Forestry Service
Duration	1 year
Costs and funding	Total cost estimated at 25 million CFA francs (the target is one hundred young people from the villages bordering the basins, each with a start-up budget of 200,000 CFA francs). The cost of training is included in this cost. Funding to be identified.
Risks envisaged	
Expected results	<ul style="list-style-type: none"> ➤ Equipped nurseries are set up; ➤ About 100 young people are trained and supervised in the production of seedlings; ➤ The needs for plants in the environment of the three basins are assured; ➤ Each beneficiary has an income of 700,000 F per campaign (duration 5 months), or 140,000 F/month.

4.4.7 Provision 3.7 - Strengthen the value and role of Protected Areas**GENERAL PRINCIPLE**

Within the study area, the network of Protected Areas is well developed, but the pressures highlighted in the diagnostic phase show that these areas are not sufficiently protected. Furthermore, the changes in the environment since their designation certainly require a review of these PAs, as has been done in the Republic of Guinea.

EXPECTED RESULTS

- Redraw the network of Protected Areas by designating the environments that require protection, taking into account current ecological issues and expected developments,
- Propose a more demanding level of protection in order to limit the pressure on natural environments.

These results correspond to the core of the biodiversity conservation strategy.

AREA OF INTERVENTION

This corresponds to the whole of the Gambia, Kayanga-Geba and Koliba-Corubal river basins.

PROPOSED MEASURES

These measures follow on from those relating to the provision "Improve knowledge of biodiversity". Improving knowledge will provide an updated and, above all, most exhaustive view of the issues at stake in terms of species, species' habitats, and the state and functionality of the environment. This update will make it possible to specify the trends perceived in the diagnosis, which reflect pressures both within the Protected Areas and on the other natural environments that constitute "ordinary biodiversity". This approach will certainly lead to the identification of:

- Degraded environments, whether already protected or not;
- Terrestrial, aquatic, maritime and coastal sites with real biodiversity that require protection or enhanced protection;
- Wildlife corridors to be preserved or restored;
- Remarkable watercourses or sections of watercourses that need to be protected.

In addition to this "recasting" work, the management of Protected Areas is also mentioned. Beyond the level of protection alone, the pressures observed within the PAs also highlight management difficulties, particularly in terms of control and, finally, means (technical, financial and human).

Measure 3.7.1 - Strengthen the network of Protected Areas

This measure stems directly from the findings of the diagnostic phase, as outlined above, but is consistent with what has been achieved in several member countries, including

- In the Republic of Guinea as part of its Vision for the new network of Protected Areas, carried by the Ministry of Environment, Water and Forests of Guinea, as part of the "Programme for the Sustainable Management of Forest Ecosystems (SFEMP) for adaptation to climate change";
- But also in Guinea Bissau within the framework of the strategic and operational plan "Terra Ranka" 2015 - 2020, with the reinforcement of IBAP and the implementation of the National System of Protected Areas of the Bio-Guinea foundation.

Other initiatives in The Gambia concern the creation of at least 3 Marine Protected Areas (in response to objective A of the document: "Supplementary Policy on Agriculture and Natural Resources" - ANR, of 2017).

Measure 3.7.1	Overhaul of the PA network and strengthening of the level of protection
Origin (institution / project / programme)	<p>This measure is based on the following regional experiences:</p> <ul style="list-style-type: none"> ➢ Republic of Guinea: Vision for the new network of Protected Areas, carried by the Ministry of Environment, Water and Forests of Guinea, in the framework of the "Programme for the Sustainable Management of Forest Ecosystems (SFEMP) for adaptation to climate change. ➢ Guinea Bissau within the framework of the strategic and operational plan "Terra Ranka" 2015 - 2020, with the strengthening of IBAP and the implementation of the National System of Protected Areas of the Bio-Guinea Foundation

Objective	Review the PA network, designate new areas and strengthen the levels of protection.
Location	The entire basins of the Gambia, Kayanga-Geba and Koliba-Corubal rivers.
Description of the action	<p>Based on the results of the global assessment of biodiversity at the basin level (see measure 3.1.1), the action includes the following main steps</p> <ul style="list-style-type: none"> ➤ Take stock of the general biodiversity, in particular of PAs and new areas that could join the network; ➤ Propose new PAs: terrestrial, aquatic, wetlands, maritime, coastal; ➤ Specify "reasonable" levels of protection for all PAs, including existing ones; ➤ Propose guidelines or, if possible, measures to restore/enhance the most degraded PAs. <p>It should be noted that this reinforcement of the level of protection can now concern the Fouta Djallon massif, which presents a multiple challenge both for the water resources of all the watercourses within the OMVG area and for the natural environment.</p>
Ownership and implementation arrangements	Environment Ministries of the different member countries
Duration	3 years, considering the difficulties that this may cause
Costs and funding	Cost estimated by the Consultant: 196.5 million CFA francs Funding to be identified.
Risks envisaged	Mobilisation of local actors, willingness to propose a reform that may be significant or profound.
Expected results	The network of Protected Areas is updated and strengthened with new PAs. The level of protection of PAs (especially those that are critical from a biodiversity point of view) is reinforced.

Measure 3.7.2 - Improve the management of PAs through the implementation of management delegation

The management of Protected Areas is the responsibility of the States, but they often have difficulty managing numerous areas that require financial, technical and human resources. According to (Brugière, 2020): *For the past twenty years or so, a new model of protected area management has been gradually emerging in French-speaking Africa: public-private partnerships (PPPs). Three elements make up this model: (i) a contractual agreement (AcC) signed between the State and a non-state ("private") partner; (ii) a delegation by the State to the private partner of all or part of its prerogatives; (iii) the private partner provides or manages all the financing necessary for the management of the PA. As of September 2020, a total of 15 PPPs concerning some twenty PAs were active in Francophone Africa.*

Measure 3.7.2	4 protected areas benefit from delegated management
Origin (institution / project / programme)	With reference to (Brugière, 2020)
Objective	To improve the management of protected areas, notably through the protection of natural environments, the restoration/enhancement of biodiversity in general, and the controlled development of human activities
Location	The whole of the Gambia, Kayanga-Geba and Koliba-Corubal river basins are potentially concerned.
Description of the action	<ul style="list-style-type: none"> ➤ Identify PAs that can benefit from management delegation, based on a multi-criteria diagnosis combining environmental, technical, financial and political aspects. ➤ Research into possible partnerships and levels of delegation ➤ Definition and drafting of the contractual agreement (AcC) with the partners

Ownership and implementation arrangements	Ministries in charge of the environment in the different member states.
Duration	At least 2 years to set up partnerships and sign a framework agreement. Implementation of the measure from the second year.
Costs and funding	Funding to be identified: donors and countries' own funds. Own funds (based on the practice of financing the Pendjari Park in Benin): 1,000,000 USD/year per PA. This means a total amount of 4,000,000 USD/year of own funds for 4 PAs (or 2,331.8 million CFA francs per year for 4 PAs)
Risks envisaged	States' reluctance to enter into this type of partnership
Expected results	4 AcC s, corresponding to as many protected areas, are signed

4.4.8 Provision 3.8 - Promote actions/projects based on the balance between the activities of resident populations and the sustainable exploitation of resources

GENERAL PRINCIPLE

Climate change has significantly disrupted the environment in many countries, both developed and emerging, with impacts on the economic activities of the people in these countries, such as

- Declining rainfall ;
- The reduction of cultivation areas due to erosive factors;
- The loss of economic activities by populations ;
- Loss of housing with coastal erosion;
- Etc.

The actions to be developed must enable resilient populations to carry out economic activities that allow them to earn a living in their new ecological environment.

EXPECTED RESULTS

The expected results of the projects to be implemented are as follows:

- The populations carry out sustainable economic activities in their territories, enabling them to earn a living within the limits of the ecological conditions of their territories,
- The village forests, protected from the various anthropic aggressions that weigh on them, provide the riparian populations with various products (PFL & PFNL) and ecological services.

AREA OF INTERVENTION

The intervention area corresponds to all three basins and adjacent areas.

PROPOSED ACTION

Promotion of cashew plantations (*Anacardium occidentale*): plantations of 2-3 ha are being established in degraded agricultural or forest areas, plots that will benefit from a living hedge of *Acacia mellifera*, whose seeds can be marketed. These plantations will start producing 3 to 4 years after the cashew seedlings are planted. Two productions are expected: (i) cashew nuts, an important export product, both in its raw form and in fine with the processing of the nuts, which gives a better added value to the production obtained, (ii) the seeds of the *Acacia mellifera* living hedge, are in great demand on the market, at a price of 25,000 CFA francs/kg. The owners of these orchards, with these two productions, will be able to ensure an appreciable source of income.

Measure 3.8.1: Planting of cashew trees and *Acacia mellifera* hedges

Measure 3.8.1	Planting of thirty (30) plots of 2-3 ha of cashew trees with <i>Acacia mellifera</i> hedges
Origin (institution / project / programme)	OMVG
Objective	Creation of 30 plots of 2-3 ha of cashew trees (60-90 ha) with <i>Acacia mellifera</i> hedges.
Location	Three OMVG basins and adjacent areas.
Description of the action	<ul style="list-style-type: none"> ➤ Agreement with the forestry services for the production of cashew and <i>Acacia mellifera</i> seedlings for the plots ; ➤ Selection of plots for the planting operation ; ➤ Delivery of the seedlings to the owners of the plots for planting, under the supervision of forestry agents; ➤ Monitoring of plantations ; ➤ Harvesting and valorisation of cashew nuts and <i>Acacia</i> seeds.
Ownership and implementation arrangements	OMVG / Water & Forestry Services
Duration	5 years
Costs and funding	Total cost estimated at 50 million CFA francs (85,771 USD). Financing OMVG
Risks envisaged	Availability of plots for the operation, which will have to be secured by a deliberation of the local authorities.
Expected results	<ul style="list-style-type: none"> ➤ Thirty (30) cashew plots produce significant quantities of cashew nuts and <i>Acacia mellifera</i> seeds; ➤ Valuation of cashew nuts and <i>Acacia</i> seeds ; ➤ Processing of cashew nuts into kernels for the national and international markets.
Details of costs: (i) memorandum of understanding with the forestry services for the production of seedlings and supervision during planting, (ii) provision of an oven for processing cashew nuts into roasted almonds, (iii) packaging of roasted almonds and <i>Acacia</i> seeds in bags of 100, 250 and 500 grams.	

4.5 STRATEGIC AXIS 4 - ENSURE QUANTITATIVE AND QUALITATIVE WATER MANAGEMENT IN LINE WITH THE NEEDS OF THE NATURAL ENVIRONMENT

4.5.1 Provision 4.1 - Ensure regular monitoring of water quality

GENERAL PRINCIPLE

The aim is to have regular data (multi-year monitoring) on water quality on the main rivers, in addition to what is currently being done on the River Gambia.

EXPECTED RESULTS

Implementation of water quality monitoring on the main rivers: Gambia, Kayanga-Geba, Koliba-Corubal. Integration of data in the environmental observatory on natural resources. To be integrated into the existing monitoring carried out on the Gambia River.

AREA OF INTERVENTION

Main rivers: Gambia, Kayanga-Geba, Koliba-Corubal

PROPOSED MEASURES

Apart from the Gambia River, which is monitored for a few parameters in the downstream part of its basin, no data are available for the other main rivers. The monitoring of water quality represents a challenge for the local populations and for the natural environment. The populations still use a lot of river water for their personal consumption and even more so for their livestock. The quality of the water also has a direct influence on the species present (fish and benthos) as well as on the enrichment of the environment and the development of invasive plants (habitat conditions for the species).

Measure 4.1.1 - Establish and monitor water quality at the level of the OMVG area

Measure 4.1.1	Implementation of a monitoring network of several quality stations and integration of the data into the environmental observatory (measure 1.1.4)
Origin (institution / project / programme)	Measure not referenced in the documents consulted
Objective	Carry out regular monitoring of water quality in order to assess the pressures on the environment for human consumption, related species and other uses.
Location	Main rivers: Gambia, Kayanga-Geba, Koliba-Corubal
Description of the action	<ul style="list-style-type: none"> ➤ Choice of measurement stations, parameters to be measured and periodicity according to the issues identified on the watercourses; ➤ Implementation of a measurement protocol using automatic stations for some parameters and operator surveys for others (proposed parameters: dissolved O₂, O₂ saturation rate, BOD₅, Conductivity, Chlorides, Sulphates, pH, Phosphate, Total Phosphorus, Ammonium, Nitrites, Nitrates); ➤ Setting up a database and making the results available; ➤ Integration of these elements into the environmental observatory.
Ownership and implementation arrangements	Ministries of Environment of the different member countries and OMVG as coordinator and data collector.
Duration	2 years to set up monitoring, then continuous monitoring.

Costs and funding	Consultant's estimate: USD 1.011 million including monitoring to 2040. Funding to be identified: Member States + OMVG
Risks envisaged	Sustainability of monitoring. Quality of analyses.
Expected results	Results of analyses of the multiannual monitoring of water quality and integration of the data into the environmental observatory.

Measure 4.1.2 - Assess laboratory capacity and potential laboratories to perform the analyses

This measure complements the measure 3.2.2 on strengthening laboratory capacities in terms of expertise and equipment for monitoring POPs and PCBs. This evaluation concerns the search for laboratories that would be responsible for the analysis of parameters that cannot be automatically acquired by a sensor (sensor installed on site or manual sensor), i.e. bacteriological analyses, micropollutants, certain physico-chemical parameters.

Measure 4.1.2	Identification of 2 to 3 laboratories likely to carry out measurements of specific parameters (bacteriology, micropollutants, physico-chemical parameters)
Origin (institution / project / programme)	Measure related to the "Forest Management Plan of the Lagoas de Cufada Natural Park (PNLC) and the Xitole-Mina-Fifiol corridor", Guinea Bissau.
Objective	Identification of laboratories likely to carry out analyses of parameters that cannot be directly measured in the field.
Location	All OMVG member countries.
Description of the action	<ul style="list-style-type: none"> ➤ Summary of existing laboratories in member countries and capacities in terms of analysis, technical and human resources; ➤ Analysis of the main purposes of these laboratories and the levels of standardisation; ➤ Selection of laboratories likely to offer measurements of parameters that are not directly measurable in the field; ➤ Definition of a possible partnership with the OMVG in order to carry out regular analyses as part of the monitoring of water quality.
Ownership and implementation arrangements	OMVG in partnership with the Ministries of Agriculture and Environment of member countries
Duration	<ul style="list-style-type: none"> ➤ 4 months for the evaluation of the competences and the selection of the laboratories. ➤ 6 additional months for the definition of a partnership with the OMVG to specify the modalities for carrying out the quality monitoring (i.e. once the measurement network has been defined, as well as the parameters monitored and the frequency of monitoring).
Costs and funding	50,000 Euros, estimated by the consultant, or 32.75 million CFA francs. Funding to be identified: OMVG + Member States
Risks envisaged	<ul style="list-style-type: none"> ➤ Sustainability of laboratories over time ➤ Quality / reliability of the results produced <p>This type of risk leads to the search for solid, well-established structures based on a "routine" activity (such as a university or research laboratory, or a fishery product analysis laboratory).</p>
Expected results	Selection of several laboratories (2 or 3) and definition of partnerships to carry out follow-up measurements.

4.5.2 Provision 4.2 - Take into account environmental issues in the management of dams

GENERAL PRINCIPLE

Define the instream flows downstream of the dam, taking into account all environmental needs (water quality, needs of the fauna, needs of the natural environment) and human needs (drinking water needs, uses for agriculture and livestock, water needs for industry, etc.).

EXPECTED RESULTS

To have an environmental flow that meets environmental needs and uses throughout the year.

AREA OF INTERVENTION

Concerns all dams under construction (Sambangalou) or planned in all basins of the study area.

PROPOSED MEASURES

Large dams cause significant hydrological changes that generally smooth downstream flows by increasing the flow delivered during low-water periods and by ensuring that frequent floods are capped, which are generally stored to reconstitute the structure's reserve.

This management modifies in depth the functioning of the downstream hydrosystem. It is particularly sensitive for small floods, where the flood control no longer ensures the flooding of adjacent areas such as ponds or flooded areas used for flood recession farming. The lack of regular flooding of these areas results in a decrease in ecological interest and productivity, particularly for fish. It also implies a decrease in flood recession farming, which is generally aimed at the less well-off populations.

The definition of the environmental flow must also integrate all the reflections on the definition of "sufficient" transparency to maintain a hydro-sedimentary balance downstream of the structure and limit the impacts on the coastline.

Measure 4.2.1 - Define environmental flows and instream flow modulations to meet the water needs of the environment

This measure is currently being studied for the future Sambangalou dam. It is based on the principle of adaptive management of the environmental flow, which tends to restore a hydrological functioning closer to the natural one. This modulation is based in particular on a system of "artificial floods" sized to feed the adjacent environments, i.e. the numerous pools in the upstream part of the Gambian basin and the floodable areas in the middle part.

Measure 4.2.1	Definition of adaptive management for all the planned dams
Origin (institution / project / programme)	Proposal from the ongoing studies on the Sambangalou dam.
Objective	Implement hydrological management closer to the natural configuration to meet the water needs of the natural environment and uses
Location	All planned new dams.
Description of the action	<ul style="list-style-type: none"> ➤ Description of the natural hydrological functioning of the watercourse and the water needs of the adjacent environments with reference to measure 3.1.2, the water needs of the associated uses, the needs in relation to water quality.

	<ul style="list-style-type: none"> ➤ Consideration of hydrodynamic functioning in the management of the structure and in particular its effects on the evolution of the coastline (in terms of sediment input) ➤ Proposal of one or more adaptive management scenarios
Ownership and implementation arrangements	OMVG and Ministries in charge of the environment in member countries
Duration	1 year for each study
Costs and funding	100,000 EurSO excluding tax per work, according to the Consultant's estimate, i.e. 65.5 million CFA francs. Financing: Public Private Partnership type
Risks envisaged	Difficulties for the manager to integrate this type of management
Expected results	An adaptively managed environmental flow is defined for all planned dams.

Measure 4.2.2 - Implement environmental flow

In addition to the definition of the adaptive management of the environmental flow, its effective implementation requires the technical devices to be foreseen from the design studies, but also to integrate these flow modulations in the management instructions of the structures (water body regulations).

Measure 4.2.2	Implementation of adaptive management on all planned dams
Origin (institution / project / programme)	Proposal from the ongoing studies on the Sambangalou dam.
Objective	Effective implementation of adaptive environmental flow management
Location	All planned new dams.
Description of the action	<ul style="list-style-type: none"> ➤ Define at the design stage the level(s) of water abstraction within the reservoir, usually by configuring a variable level intake. ➤ Define, at the design stage, the devices and procedures to ensure sediment transparency and the integration of these procedures into the management instructions for the structure. ➤ Integrate the adaptive management of the environmental flow into the management instructions for the structure and specify in particular the conditions under which this flow cannot be respected (drafting of water regulations) ➤ Effective implementation of adaptive environmental flow management: definition of the monitoring of the implementation of the measure and its environmental follow-up.
Ownership and implementation arrangements	OMVG and Ministries in charge of the environment in member countries
Duration	<ul style="list-style-type: none"> ➤ 1 year for studies and drafting of water regulations. ➤ Multi-year monitoring of adaptive management
Costs and funding	39.3 million CFA francs (excluding VAT) per work, as estimated by the Consultant Financing to be identified: Public Private Partnership type
Risks envisaged	Difficulties for the manager to integrate this type of management
Expected results	<ul style="list-style-type: none"> ➤ Drafting of the "water regulations" integrating all the instructions for the environmental management of the structure ➤ Effective implementation of the water regulation

Measure 4.2.3 - Evaluate the impacts linked to land salinisation

The salinisation of land was mentioned during the workshop sessions (19 and 20 November 2021); it was also mentioned to a lesser extent in the other information gathered during the diagnostic phase. From an agricultural point of view, salinisation is generally perceived as a hindrance to development, but from an environmental point of view, maintaining the level of salinity also makes it possible to preserve the mangroves, whose beneficial effects on fish productivity and the preservation of the coastline and riverbanks against erosion are well known.

These two relatively opposed aspects need to be studied more precisely and operationally with the new flow management imposed by future dams. A delicate balance remains to be found and must feed both the reflections on the adaptive management of the environmental flow and the interest of building anti-salt dams but also the impacts on agricultural development, tourism, fish resources...

Measure 4.2.3	Assessing the impacts of land salinisation At least in the three downstream stretches of the Gambia, Geba and Corubal rivers directly affected by this measure.
Origin (institution / project / programme)	Measure proposed by the Consultant
Objective	<ul style="list-style-type: none"> ➤ To have a clear vision of the balance to be found between freshwater and saltwater fluctuations in estuarine areas, taking into account environmental issues and human uses. ➤ Integrate these considerations into the management instructions for future dams (upstream dam and anti-salt dam).
Location	All estuarine areas affected by the saltwater wedge, the presence of mangroves and the combination of uses, particularly agricultural uses, i.e. the downstream parts of the Gambia River, the Geba and the Rio Corubal.
Description of the action	<ul style="list-style-type: none"> ➤ Draw up an inventory of uses associated with the river in estuarine areas or more widely, subject to the influence of salinity: agricultural uses, ecosystem services provided by mangroves, influences on the life cycle of fish, tourist uses, etc. Draw up an economic and social summary of the services provided (what populations, what income?) ➤ Evaluate the effects induced by the management of the planned dams (upstream dams, anti-salt dams) and propose management measures to ensure the best socio-economic understanding.
Ownership and implementation arrangements	OMVG and Ministries in charge of the environment in member countries
Duration	1 year per study.
Costs and funding	80,000 to 100,000 eurSO depending on the river, or an average of 90,000 eurSO or 59 million CFA francs. Financing to be identified: OMVG + Member State directly concerned by the work
Risks envisaged	Low interest of the MOA, of the managers for this type of subject
Expected results	<ul style="list-style-type: none"> ➤ Economic and social synthesis of the uses and ecosystem services of the estuarine zone ; ➤ Proposal for guidelines and management measures for the estuarine area.

4.6 STRATEGIC AXIS 5 - PROMOTING ECOTOURISM DEVELOPMENT

4.6.1 Provision 5.1 - Develop sustainable and comprehensive tourism combining the values of culture, nature and human activities

GENERAL PRINCIPLE

Tourism is an undeniable development factor in the OMVG countries. It contributes to the GDP of the countries and provides sustainable employment, particularly for young people, through the many activities developed around tourism: accommodation, catering, transport, crafts, etc. Over time, the seaside resort, which was the best-selling product, is experiencing more and more difficulties linked in particular to the weakness of accommodation infrastructures, the poor state of roads, the mediocre quality of tourist services, the high price of destinations, security, etc. Governments are, however, aware of the growth potential of tourism and the spin-offs that this sector can bring in terms of revenue and employment. This is why tourism is mentioned as a key development sector in the development plans and strategies of the countries of the OMVG area. In these countries, the cultural richness and diversity of natural resources constitute an added value on which eco-tourism can build.

EXPECTED RESULTS

In developing sustainable tourism, the main expected results are, among others:

- Diversification of products and strengthening of the tourist appeal of the countries of the OMVG area (increase in tourist receipts and revenues);
- Enhancement of local cultural and natural resources (e.g. vision tourism in protected areas);
- Improving the living conditions and environment of rural populations by enhancing their cultural and craft heritage.

AREA OF INTERVENTION

The development of eco-tourism in the countries of the OMVG area will take place mainly in and around protected areas (parks, nature reserves) because of the richness of the biological diversity they contain. Outside parks and reserves, eco-tourism can be developed on the coastline, such as the private islet of Kerer with its fine sand beach in the BijagSO archipelago in Guinea Bissau (taking care to integrate the strategic documents developed on this subject). Cultural heritage is an ecotourism attraction, as in the case of Kankourang in Gambia and Casamance (Senegal).

PROPOSED MEASURES

The development of eco-tourism in the OMVG area is booming, and could have multiple effects on the development of income-generating activities. Indeed, tourism is a lever for the development of a range of social, economic and cultural activities. In order to develop this activity, a better knowledge of the product and the mastery of all the segments that make it up seem necessary. Among other things, it is a question of knowing the existing potential, the needs in infrastructures, and the implementation of structuring projects to offer the best conditions for the development of eco-tourism.

To this end, the following measures are proposed, which will be developed in the following sections.

- Know the potential of each park, and carry out a feasibility study and infrastructure needs for accommodation and tourist reception;
- Development of ecotourism and vision tourism - Rehabilitation of infrastructure in 3 protected areas;
- Establishment of at least 9 ecolodges in protected areas, by the sea and near selected natural sites by 2025;
- Development of a chimpanzee tourism activity at Saala Falls / Pélél Koura;

- Engage communities and their community organisations in ecotourism.

Measure 5.1.1 - Know the potential of each park and carry out a feasibility study and a study of the needs in terms of infrastructures for accommodation and the reception of tourists

Protected areas constitute an undeniable tourist attraction in that they contain an interesting biological diversity. This tourist attraction is nowadays promoted through visits to parks and reserves. For this reason, the states are developing their protected areas in order to develop visionary tourism.

The promotion of tourism in protected areas requires adequate tourist infrastructure facilities. In the case of the Lagoas de Cufada Natural Park (PNLC), which represents a reference measure, the development must be preceded by a feasibility study to determine the potential and the needs for tourism infrastructure.

Measure 5.1.1	Feasibility study on 2 parks in Guinea Bissau
Origin (institution / project / programme)	Forest management plan for the Lagoas de Cufada Natural Park (PNLC) and the Xitole-Mina-Fifiol corridor.
Objective	<ul style="list-style-type: none"> ➤ Ensure the sustainability and stability of the PNLC and the Xitole-Mina-Fifiol corridor by making the most of the knowledge of the existing potential; ➤ Promotion of ecotourism, in particular by developing tourism infrastructure.
Location	Throughout the PNLC, and the Xitole-Mina-Fifiol corridor (Guinea Bissau)
Description of the action	<ul style="list-style-type: none"> ➤ Conduct a biological inventory to determine the potential of the two parks; ➤ Assess the tourism potential of the parks; ➤ Carry out a feasibility study and infrastructure needs for accommodation and tourist reception.
Ownership and implementation arrangements	Ministry of the Environment
Duration	5 years
Costs and funding	52.5 million CFA francs / study according to the consultant's estimate Funding: Member State + international donors
Risks envisaged	Pollution and degradation of biodiversity in protected areas during the construction and operation of tourism infrastructure
Expected results	<ul style="list-style-type: none"> ➤ Development of sustainable ecotourism ➤ Strengthening the livelihoods of local populations ➤ Consequent contribution to the socio-economic development of the country

Measure 5.1.2 - Development of river cultural routes in rural areas, like the Ninki Nanka trail

The promotion of ecotourism and the development of river trips, birdwatching and cultural activities are at the heart of the Gambia's tourism development strategy. Domestic tourism is an under-exploited area, yet it has enormous potential for sector development. Given its importance, it will help many destinations recover from the economic impacts of the pandemic, while preserving jobs, protecting livelihoods and providing social benefits.

The Ninki Nanka Trail is a concept of tourism that explores the country's interior and cultural products through river tours in The Gambia, including small villages along the Gambia River where traditional activities (traditional blacksmithing, weaving and salting) are still practiced. This type of tourism thus contributes to the strengthening of livelihoods, the local culture of communities and the development of the local economy.

Measure 5.1.2	Development of river cultural routes in rural areas, like the Ninki Nanka trail
Origin (institution / project / programme)	GTA / Ministry of Tourism
Objective	<ul style="list-style-type: none"> ➤ To promote ecotourism, in particular by developing river tours to discover the rural environment and traditional activities; ➤ Contribute to community livelihoods and local development
Location	Gambia
Description of the action	<ul style="list-style-type: none"> ➤ Make an inventory of tourist products and mark out river routes; ➤ Acquire means of transport and equipment, and build small hotel accommodation at the various stages; ➤ Research and marketing
Ownership and implementation arrangements	GTA / Ministry of Tourism
Duration	5 years
Costs and funding	2,000,000 USD, or 1,165 million CFA francs. Funding: Member State (Gambia)
Risks envisaged	<ul style="list-style-type: none"> ➤ Pandemic Covid-19 Lack of funding
Expected results	<ul style="list-style-type: none"> ➤ Development of sustainable ecotourism ➤ Strengthening rural livelihoods and promoting local culture ➤ Contribution to local socio-economic development

Measure 5.1.3 - Tourism development in Janjanbureh: community-based cultural and nature tours

Janjanbureh Island and Janjanbureh town are located in the central river region of The Gambia, in the Niamina East district, 300 km upstream from the capital Banjul. The site offers tourists a wealth of cultural and natural attractions: bird watching, river cruises, wildlife watching, the Janjanbureh Cultural Festival, colonial architecture, the Kounkiling Forest Park, etc. Janjanbureh is a definite tourist attraction and presents real opportunities for the development of community-based ecotourism.

Supporting communities to develop ecotourism is a way to contribute to the development of tourism in general, but also to contribute to the improvement of people's livelihoods and local development.

Measure 5.1.3	Tourism development in Janjanbureh: community-based cultural and nature tours
Origin (institution / project / programme)	GTA/Ministry of Tourism
Objective	Promote community-based ecotourism (natural and cultural) to strengthen people's livelihoods and local development
Location	Janjanbureh / The Gambia
Description of the action	<ul style="list-style-type: none"> ➤ Carry out a feasibility study; ➤ Create adequate hotel facilities that are compatible with the cultural and natural practices of the locality; ➤ Acquisition of various equipment; ➤ Acquisition of means of transport for the tours; ➤ Training / capacity building of staff ➤ Marketing

Ownership and implementation arrangements	GTA / Ministry of Tourism
Duration	5 years
Costs and funding	2,500,000 USD, or 1,457 million CFA francs. Funding: Member State (Gambia)
Risks envisaged	➤ Pandemic Covid-19 Lack of funding
Expected results	➤ Development of sustainable ecotourism ➤ Strengthening the livelihoods of local communities ➤ Contribution to local socio-economic development

Measure 5.1.4 - Development of ecotourism and vision tourism - Rehabilitation of infrastructures in 3 protected areas

National parks, biosphere reserves, nature reserves and classified forests protect the country's varied ecosystems both on land and in the sea. Monkeys, antelopes, hippos, elephants and chimpanzees can be seen in Guinea. The last two species are emblematic species. The country is home to the largest population of chimpanzees in West Africa (more than 17,000) and this species can be observed throughout the country, but more easily in protected areas, particularly in Fouta Djallon, which is home to most of Guinea's chimpanzees. Guinea thus has the capacity to develop ecotourism and vision tourism, types of tourism that are currently growing rapidly. This tourism product needs to be structured before it can be offered to outbound tour operators.

Measure 5.1.4	Development of ecotourism and vision tourism. Rehabilitation of the infrastructure of the protected areas of the Gambia and Koliba basins (Badiar National Park, Dima Classified Forest, Komba Gambia and Nyalama)
Origin (institution / project / programme)	Republic of Guinea: National Strategy for Sustainable Tourism Development
Objective	Rehabilitate the infrastructure of the protected areas of Badiar National Park, Dima Classified Forest, Komba Gambia and Nyalama, to develop ecotourism and vision tourism.
Location	In and around the Badiar National Park (Youkounkoun, Sambailo, Koundara, Kamabi, Sarébhoïdho and Guingan). Guinea
Description of the action	➤ Rehabilitation of tourism infrastructure and related facilities (tourist routes) ➤ Promotion of ecotourism and vision tourism ➤ To enable the population of the rural areas of Fouta Djallon to benefit from a tourist activity based on chimpanzee watching
Ownership and implementation arrangements	Ministry of the Environment
Duration	3 years (2023 - 2026)
Costs and funding	2,500,000 USD, or 1,457 million CFA francs. Funding: Member State and international donors
Risks envisaged	➤ Disturbance of ecosystems by human actions ➤ Pollution and possible degradation of biological diversity due to overuse of protected areas
Expected results	➤ Ecotourism is well developed in Badiar National Park

	<ul style="list-style-type: none"> ➤ The biological diversity of the protected areas (Badiar National Park, Badiar South and N'Dama Classified Forest) is preserved and promoted through ecotourism ➤ The incomes of people in the rural areas of Fouta Djallon are improved by the development of chimpanzee tourism
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Measure 5.1.5 - Establishment of at least 9 ecolodges in protected areas, by the sea and near selected natural sites

Ecolodges adapted to the demand of the current tourist clientele are built with local materials and are integrated into the environment: tented camp ecolodge in the Badiar National Park.

Measure 5.1.5	Establishment of 9 ecolodges
Origin (institution / project / programme)	Ministry of the Environment
Objective	Build ecolodges adapted to the clientele with local materials to improve the conditions for tourists in protected areas
Location	Badiar National Park
Description of the action	<ul style="list-style-type: none"> ➤ The project involves the construction of a luxury tented camp ecolodge in the Badiar National Park. ➤ This ecolodge is aimed at a more demanding ecotourist clientele looking for comfort, charm and ecologically friendly structures. In addition to chimpanzee watching activities, the structure will offer the discovery of the national park, waterfalls and natural attractions (traditions, folklore, dance, music).
Ownership and implementation arrangements	Ministry of the Environment
Duration	5 years
Costs and funding	2,000,000 USD, or 1,165.9 million CFA francs. Financing: Public Private Partnership. International donors
Risks envisaged	<ul style="list-style-type: none"> ➤ Degradation of biological diversity due to overuse of sites; ➤ Water pollution due to poor management of solid and liquid waste from the operation of accommodation facilities
Expected results	<ul style="list-style-type: none"> ➤ A tented camp ecolodge is created in the Badiar National Park to complete the accommodation capacity and satisfy a more demanding clientele. ➤ Direct, indirect and induced jobs are created, particularly for young people and women in the villages on the outskirts of the national park. Tourism promotes the protection of chimpanzees.

Measure 5.1.6 - Development of a chimpanzee tourism activity at at Mount Loura (Mali Prefecture)

Of the emblematic species that Guinea possesses, the chimpanzee is the most notable. Great ape tourism could thus be a flagship product for the country on which the destination could base its communication. With over 17,000 chimpanzees, Guinea has a very promising product.

Measure 5.1.6	Development of a chimpanzee tourism activity at Mont Loura (Mali Prefecture)
Origin (institution / project / programme)	MHTA, Ministry of the Environment
Objective	Developing great ape tourism through chimpanzees
Location	Mount Loura (Commune Mali centre)
Description of the action	Mount Loura with its 1,350 m of altitude is the highest point of the Fouta Djallon massif. It contains several curiosities such as the Lady of Mali, the Man of Mali, caves around which legends have been shaped. It has been a recognised tourist site since independence and could be of great benefit and interest in solidarity tourism.
Ownership and implementation arrangements	NGO Guinea Ecology
Duration	2 years
Costs and funding	100,000 USD, i.e. 58.3 million CFA francs Funding: Member State + international donors
Risks envisaged	Disruption of customs and traditions due to the mixing of visitors and local people
Expected results	<ul style="list-style-type: none"> ➢ A camp of 8 huts is created with at least 10 direct jobs for the young people and women of the village. Indirect and induced jobs are also expected (construction, supplies, transport, crafts, cultural activities). Guides are trained to observe chimpanzees. ➢ Tourism also promotes the protection of chimpanzees.

Measure 5.1.7 - Engage communities and their community organisations in ecotourism

The roles and responsibilities of communities in economic and social development in general are becoming increasingly apparent in the OMVG countries. Through their grassroots community organisations, people are increasingly taking initiatives and becoming involved in different development sectors.

In the context of ecotourism, community participation could be an alternative to government efforts to promote this sub-sector. Indeed, it is generally accepted that tourism activity, in order to be sustainable, must contribute to the empowerment of local communities through their participation both in decision-making and in the development process. They are then no longer considered as passive actors in tourism. It allows them to help determine their own development by drawing on their practices and imagination. Engaging communities and their community-based organisations in ecotourism is therefore a relevant measure selected by the National Forest Action Plan (NFAP) 2019-2028 to contribute to the development of ecotourism in The Gambia.

Measure 5.1.7	Engaging communities and their community-based organisations in ecotourism
Origin (institution / project / programme)	Forestry Department / Republic of the Gambia
Objective	Promoting ecotourism through community empowerment
Location	The Gambia
Description of the action	The main actions to be taken:

	<ul style="list-style-type: none"> ➤ Identification and capacity building of community-based organisations that may be involved in ecotourism; ➤ Support to community organisations for accommodation facilities, identification of ecotourism routes, logistics; ➤ Support for the establishment of a working capital fund.
Ownership and implementation arrangements	Ministry of Tourism / Community Based Organisations
Duration	5 years (test phase)
Costs and funding	USD 2,000,000 (Consultant's proposal), i.e. CFAF 1,165.9 million - Financing: Member State (Gambia) + international donors
Risks envisaged	Poor targeting of community organisations to be engaged
Expected results	Communities and their community-based organisations effectively contribute to the development of ecotourism in their localities

4.6.2 Provision 5.2 - Create, strengthen and improve infrastructures that serve tourism development

GENERAL PRINCIPLE

Tourism in the OMVG region has grown in recent decades, with an increase in tourist arrivals and recorded revenues. Its contribution to GDP is significant in some countries such as Senegal (6.8% in 2018) and The Gambia (16%). This is linked to the will of governments to make tourism one of the pillars of development.

However, the growth observed in tourism could be more sustained if the reception infrastructures were sufficient and adapted to all categories of tourists and marked by a better quality/price ratio. Hotels are sometimes far from tourist sites, which leads some agencies to have to accommodate their clients in precarious conditions. Generally speaking, the hotel stock shows signs of obsolescence calling for major efforts to upgrade it. The hotel stock is also threatened in the coastal regions by the phenomenon of coastal erosion which limits the development of seaside tourism. Many hotels are increasingly losing their beaches.

Hotel infrastructure is one of the factors blocking the development of tourism in the OMVG countries. To meet this challenge, substantial investments must be made to create, strengthen and improve the infrastructures that serve tourism.

EXPECTED RESULTS

The main results expected in the creation, strengthening and improvement of hotel infrastructure are:

- The creation of favourable reception and accommodation conditions to motivate and encourage the arrival of tourists in the OMVG countries;
- Increasing tourism revenues and improving the contribution of the tourism sector to the GDP of the OMVG countries.

AREA OF INTERVENTION

All OMVG countries

PROPOSED MEASURES

Hotel infrastructures are important factors in the development of tourism. They favour the reception and stay of tourists in good conditions and require substantial investments. They concern access to hotel sites, accommodation as well as various facilities to improve reception areas.

Several measures are thus envisaged for the creation and improvement of hotel infrastructures in the OMVG area in order to have facilities that comply with international norms and standards. The measures envisaged concern the following projects mentioned in various documents

- Senegal: network of tracks, crossing structures, reception infrastructures in the Niokolo Koba National Park (Tambacounda and Kédougou regions) to support ecotourism and conservation actions for the large and medium-sized Sudano-Sahelian fauna in Senegal;
- Guinea: "Road infrastructure, water and energy, equipment for parks (kiosks, information centres, signage) in the prefectures of Gaoual and Koundara";
- Guinea-Bissau: about 50 hotel sites in 2020 and 75 in 2025 (lodges with a maximum of 15 bungalows) for 6,000 rooms in the Bolama-BijagSO islands, a Club Med type hotel chain in Varela.

Measure 5.2.1 - Promote the development of hotels, access roads and other infrastructure

Since the 1990s, PNNK has had an extensive 900 km network of tracks that encircle the park and allow visitors to tour the places of interest through circuit systems. At present, these tracks are mostly impassable by car during the rainy season, so that the park is cut in two during this period.

Twenty years ago, the Park had six crossing structures, namely Bafoulabé, Damantan, Wassadou, Wouroli, Malapa, Bantamba (all on the Gambia River), Koulountou (on the Koulountou River), and Koba Passage (on the Niokolo River). These infrastructures were built with inverters consisting of roon tree bridges installed between iron gabions filled with stone. In addition to these six major structures, there are about fifteen inverters scattered on the related secondary rivers, without which circulation within the Park would not be possible. These are essentially the 2 Woulou riffles, Loumako Ba 1 and 2, Wounkou, Thiagol Iolédji, Gokirimol, Bouloufing, Sinkari Boulou, Badoye, Dalafourounté, Patte d'oie, Lamoudian, the two Malapa riffles, etc.

These structures are currently being rehabilitated to facilitate the movement of tourists and staff, and thus develop vision tourism in the park.

In the long term, these rehabilitated infrastructures will be able to meet the needs for the improvement of sightseeing tourism and the fight against wildlife crime in the park. Thus, an increase in tourist flows and consequent revenues can be expected to support the conservation of the large and medium-sized Sudano-Sahelian fauna in Senegal.

Measure 5.2.1	Promote the development of hotels, access roads and other infrastructure: Improve conditions for ecotourism development in Niokolo Koba National Park
Origin (institution / project / programme)	National Parks Directorate (DPN) / Ministry of the Environment and Sustainable Development (MEDD)
Objective	The aim is to improve the conditions for the development of ecotourism and vision tourism in the region and to combat wildlife crime.
Location	Senegal: Niokolo Koba National Park (Tambacounda and Kédougou regions)
Description of the action	<p>Improving the conditions for the development of ecotourism and vision tourism concerns :</p> <ul style="list-style-type: none"> ➢ The perpetuation of the track network (reprofiling, embankment and laterite coating); ➢ The construction/rehabilitation of crossing structures by means of scuppers; ➢ Rehabilitation of ponds (reprofiling, biological control of invasive plant species such as Mimosa pigra, Mitragyna inermis), <p>The promotion of holiday villages in the park for the reception of national and foreign schoolchildren and university students as part of the environmental education and awareness policy promoted by the park authorities</p>
Ownership and implementation arrangements	National Parks Directorate

Duration	2 years
Costs and funding	12,000,000 USD, i.e. 6,995.4 million CFA francs / State and Private (75%) Financing : Public Private Partnership (PPP)
Risks envisaged	Delayed Financing
Expected results	Vision tourism is well developed in KNP, and the revenues from it support the conservation of the large and medium-sized Sudano-Sahelian fauna in Senegal.

Measure 5.2.2 - Improve road, water and energy infrastructures, equipment for parks in the prefectures of Gaoual and Koundara

National parks, biosphere reserves, nature reserves and classified forests protect the country's varied ecosystems, both terrestrial and marine. Even if the fauna suffers from poaching and demographic pressure, it is still possible to observe monkeys, antelopes, hippos, elephants and chimpanzees in Guinea. The last two species are emblematic species. Moreover, Guinea is home to the largest population of chimpanzees in West Africa (more than 17,000) and this species can be observed throughout the country, but more easily in Guinea Forest Region and in Fouta Djallon, which is home to most of the country's chimpanzees.

The parks in the prefectures of Gaoual and Koundara have the potential to promote tourism. In order to do so, a number of facilities and services are needed. These include improving access conditions (roads), energy and water supply, and various facilities (kiosks, information centres, signage, etc.).

Measure 5.2.2	Road infrastructure, water and energy, park facilities (kiosks, information centres, signage) in the prefectures of Gaoual and Koundara
Origin (institution / project / programme)	MHTA (Guinea)
Objective	To improve the conditions of visits and stay of tourists in the parks of the prefectures of Gaoual and Koundara
Location	Parks in the prefectures of Gaoual and Koundara (Guinea)
Description of the action	The main actions foreseen in the programme are <ul style="list-style-type: none"> ➤ Conduct a feasibility study; ➤ Carry out the development of the access roads; ➤ Develop accommodation and catering facilities; ➤ Build the drinking water supply system; ➤ Set up the electrical power supply; ➤ Creation of an information centre; ➤ Produce signage.
Ownership and implementation arrangements	Ministry of the Environment. Financing: Private investors
Duration	5 years
Costs and funding	2,500,000 USD, i.e. 1,457.4 million CFA francs - Financing from the State and Guinea's technical and financial partners
Risks envisaged	Lack of funding
Expected results	The parks in the prefectures of Gaoual and Koundara, which have been developed and equipped, are better suited to their vocation as tourist sites

Measure 5.2.3 Improving facilities in the Bijagós archipelago and in Varela

This strategy is based on the SESA (Strategic Environmental and Social Assessment) of the development activities of the Bijagós archipelago carried out in 2021, in view of its economic and geo-ecological zoning. This section is extracted from the chapter that deals with tourism in this study.

The proposed zoning strategy for tourism on the scale of the Bijagós archipelago has been elaborated in such a way as to avoid the emergence of mass tourism while offering interesting perspectives for the territory. This orientation leads to guide the development of the economic sector around a few poles allowing to control its expansion and to avoid any installation on sacred or not permanently inhabited islands.

In concrete terms, this translates into the structuring of a main tourist centre in Bubaque, which already benefits from quality hotel infrastructures and which should subsequently benefit from easier access to quality public services: training centre, reference hospital, bank branch, etc. This centre could also accommodate seaside tourism, but also based on Bijagó culture and the richness of its natural heritage. This pole could also welcome seaside tourism, but also based on the Bijagó culture and the richness of the natural heritage.

Secondary tourism development centres can then be set up in the various administrative sectors of Bolama, Orango and finally Caravela. As the former capital of Guinea Bissau and one of the gateways to the archipelago, Bolama would thus constitute a tourist centre based on the history, Bissau Guinean culture and architectural heritage. In order to be able to accommodate such tourism, the service area will have to be the subject of an economic revitalisation as mentioned elsewhere and of a real urban, architectural and cultural renewal.

The other poles will necessarily be oriented towards wildlife observation and the discovery of the archipelago through different beaches and the presence of the bijagó culture. In these secondary centres, infrastructure will be kept under control, particularly in Orango where we recommend maintaining only the eco-hotel run efficiently by the NGO CBD Habitats. Existing infrastructure outside these poles can be maintained if it meets the environmental and social standards recommended in this report, but cannot be developed beyond its current footprint.

These tourist hubs would then provide access to the various surrounding islands and to the protected areas of the archipelago. In addition to the ecotourism offer that could be developed in these centres, a specific tourism offer based on day visits to protected areas or tourist sites could also be developed, but in a more "confidential" way, with a strong limitation of the number of visitors in order to preserve the ecosystems and local communities from negative impacts that could disturb them. Day trips could be offered from these four tourism development hubs to visit targeted sites in the archipelago that were identified during the workshops by local communities as presenting no risk to sacred places or the environment. These sites could be developed with small, light infrastructure (with little or no impact on the environment) to accommodate tourists and limit tourism activities to the scale of each island. Temporary, demountable camps may be considered for a night or two, but should leave no trace of their presence once dismantled. Local communities should benefit from tourists coming to their islands through an entrance fee paid to them, which can be used for investment in local basic infrastructure or public services. Entry fees to protected areas remain insignificant today (the equivalent of €2 to €8 per visitor per day) in view of the exceptional nature of the biodiversity they harbour. Higher fees (without necessarily reaching those of the large African parks, which can reach several hundred US\$/day and per visitor) would allow these protected areas and their managers to have more means to ensure more effective protection measures.

The amounts presented below combine both:

- the amounts of tourism-specific mitigation measures envisaged in the SESA carried out in 2021;
- investment amounts from the Bijagós Archipelago Emergency Integrated Development Programme, based on an old programme. These amounts are therefore quoted for the record, considering that the current strategy tends to modulate the ambitious measure described below

Measure 5.2.3	Development of about 50 hotel sites in 2020 and 75 in 2025 (lodges with up to 15 bungalows) for 6,000 rooms in the BijagSO Islands, a Club Med type hotel chain in Varela
Origin (institution / project / programme)	State of Guinea Bissau
Objective	To make the BijagSO Archipelago a major tourist pole, dedicated to sustainable ecotourism in 2025
Location	Bolama-BijagSO Archipelago (Guinea Bissau)
Description of the action	The measure is part of the BijagSO Archipelago Emergency Integrated Development Programme. It is intended to provide hotel investors and tourists with the health, security, transport, energy and telecommunications services they will need. To achieve this, the sustainable management of the archipelago's ecosystems, in particular its protected areas, the first guarantee of an exceptional and world-class ecotourism offer, will remain an absolute priority. Thus, a numerous clausus (25,000 tourists in 2020, and 40,000 in 2025) will minimise the pressure on the terrestrial and marine ecosystems and will favour the maintenance of a top-of-the-range positioning, with other sites on the mainland positioning themselves on the mid-range clientele (i.e. a "Club Med" type hotel group in Varela). To promote its international visibility and the development of its offer, the Bolama-Bijagós archipelago will be set up as a Special Tourist Zone, with an Agency dedicated to its management, its tourist development and its promotion. In addition, the archipelago will be the subject of an integrated programme for the development of its infrastructures, an emergency programme which should enable it to offer hotel investors and tourists the health, safety, transport, energy and telecommunications services they need.
Ownership and implementation arrangements	Ministry of Tourism
Duration	5 years (from 2020)
Costs and funding	380,000,000. To this amount should be added that of the mitigation measures from the SESA, which amounts to a total of 1,130,000 Euros. Financing: Public Private Partnership (PPP). International donors
Risks envisaged	Lack of funding
Expected results	The tourism vocation of the BijagSO archipelago is concretised with hotel infrastructures that meet international norms and standards

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 FOCUS	PROVISIONS	SPECIFIC RESULTS
1. Promote sub-regional cooperation for the management and sustainable development of transboundary ecosystems and resources.	1.1 Ensure the sustainable use of natural resources	1.1.1 A Water Convention or Charter is produced and ratified by states.
		1.1.2 The OMVG has comprehensive data information (information and knowledge) on natural resources.
		1.1.3 OMVG has competent staff to process data on natural resources, set up an environmental observatory and keep it alive both in terms of content and technical aspects
		1.1.4 The OMVG has a web-based observatory to monitor and measure the effectiveness of the programme's actions.
2. Strengthen the regulatory and institutional framework for environmental management	2.1 Addressing the pressures most damaging to biodiversity	2.1.1 Gold panning activities are confined to sites where this activity is permitted.
		2.1.2 The principle of no loss of biodiversity is adopted and included in the Water Convention or Charter and in national legislation. The principle of an environmental bond is accepted and implemented in the different countries.
	2.2 Protecting the coastline and waterways	2.2.1 The extraction of sand and gravel from watercourses is subject to specific regulations at the OMVG level, which are reflected in national legislation. Compliance with the regulations is monitored by the department(s) responsible for environmental protection.
		2.2.2 The removal of sand from the coastline is subject to specific regulations at the OMVG level and is reflected in national legislation. Compliance with the regulations is monitored by the department(s) responsible for environmental protection.
		2.2.3 Coastal developments are subject to specific regulations relating to existing and future works, which are set out in national legislation. Compliance with the regulations is monitored by the department(s) responsible for environmental protection.
	2.3 Ensure effective enforcement of environmental regulations	2.3.1 A strengthening or creation of services in charge of environmental protection is achieved in each member country. These services are operational on the ground.

<p>3. Better understand biodiversity to protect its richness, reduce major environmental pressures and propose integrated development</p>	<p>3.1 Enhance knowledge of biodiversity</p>	<p>3.1.1 An overall assessment of the state of biodiversity is carried out at the level of the various basins.</p>
		<p>3.1.2 The water requirements in terms of time/quantity of the main water-dependent environments are known</p>
	<p>3.2 Reduce sources and releases of POPs and PCBs used in agriculture</p>	<p>3.2.1 The list of regulated or prohibited products is reviewed and harmonised across the different member countries.</p>
		<p>3.2.2 Two to three laboratories likely to carry out analyses of POPs (Persistent Organic Pollutants) and PCBs (Polychlorinated Biphenyls) are identified. A partnership has been established with the OMVG to carry out measurements integrated into the monitoring of water quality provided for in measure 4.1.1.</p>
		<p>3.2.3 About thirty Information, Education and Communication sessions for farmers were held</p>
	<p>3.3 Eliminate areas of deposition likely to degrade water quality</p>	<p>3.3.1 Seven repository sites are undergoing a feasibility study: Brikama, Gambia; Kaolack, Senegal; Gabu, Guinea Bissau; Gaoual, Republic of Guinea; Labé, Republic of Guinea; Mako, Senegal; and Kountadala within KNP Park.</p>
		<p>3.3.2 Five waste treatment schemes are carried out for the cities of Brikama, Gambia; Kaolack, Senegal; Gabu, Guinea Bissau; Gaoual, Republic of Guinea; Labé, Republic of Guinea</p>
	<p>3.4 Reduce the effects of deforestation</p>	<p>3.4.1 Three central nurseries and 10 village nurseries are created for an annual production of 35 to 40 thousand forest seedlings.</p>
		<p>3.4.2 150 Ha of plantations are carried out over a period of 5 years, at a rate of 30 Ha per year.</p>
		<p>3.4.3 Maintenance is defined and carried out on the 150 ha of plantations planned in 3.4.2</p>
	<p>3.5 Involve the public in sustainable management actions</p>	<p>3.5.1 50 teachers in 10 schools are trained in environmental management actions. 12 training courses were also provided for adults and young people.</p>
		<p>3.5.2 16 awareness-raising sessions for local communities on good agroforestry practices were carried out.</p>
		<p>3.5.3 Three forests (one per basin) benefit from a sustainable and participatory FMP (Forest Management Plan).</p>
		<p>3.5.4 Approximately 10 trainings were provided to women on new techniques for breeding and collecting oysters, reforestation and preservation of mangroves.</p>
	<p>3.6 Add value to NTFPs (Non-Timber Forest Products)</p>	<p>3.6.1 NTFP collection and processing techniques are improved and producers are better trained and equipped</p>
		<p>3.6.2 About 100 nurseries are established and about 100 young people per nursery are trained.</p>

	3.7 Strengthen the value and role of Protected Areas	3.7.1 The network of Protected Areas (PAs) is reviewed in the different countries and new PAs are designated, including at least 3 marine protected areas. Levels of protection are reviewed, redefined and restoration/enhancement measures are proposed on the most degraded PAs.
		3.7.2 4 Protected Areas benefit from a delegation of management.
	3.8 Promote actions/projects based on the balance between the activities of resident populations and the sustainable exploitation of resources	3.8.1 Thirty (30) cashew plots produce significant quantities of cashew nuts and <i>Acacia mellifera</i> seeds. The cashew nuts and <i>Acacia mellifera</i> seeds are valued.
4. Ensure rational quantitative and qualitative management of water in accordance with the needs of the natural environment	4.1 Ensure regular monitoring of water quality	4.1.1 A water quality monitoring network in the OMVG area has been implemented and includes about 20 stations.
		4.1.2 two to three laboratories likely to carry out measurements of specific parameters (bacteriology, micropollutants, physico-chemical parameters) are identified (see measure 3.2.2 above)
	4.2 Take environmental issues into account in the management of dams	4.2.1 Dams under study or completed benefit from a definition of environmental flows integrating a modulation of the instream flow to meet the water needs of the environment
		4.2.2 The environmental flow following the requirements of measure 4.2.1 is implemented on dams in operation.
5. Promote eco-tourism development	5.1 Develop a sustainable and global tourism combining the values of culture - nature - human activities	4.2.3 The environmental and human impacts of salinisation on the lower reaches of the Gambia, Geba and Corubal rivers are known.
		5.1.1 A feasibility study of the needs in terms of infrastructure for accommodation and reception of tourists is carried out on 2 parks in Guinea Bissau.
		5.1.2 One or more river cultural tours are implemented
		5.1.3 One or more community-based cultural and nature tours are conducted in Janjanbureh.
		5.1.4 Tourism infrastructure in Badiar National Park is rehabilitated. Vision tourism is developed.
		5.1.5 Nine luxury tented camp ecolodges are established
		5.1.6 A chimpanzee tourism activity at Mont Loura
		5.1.7 Community-based organisations in The Gambia are contributing to the development of ecotourism in their localities.
	5.2 Create, strengthen, improve infrastructures that serve tourism development	5.2.1 Vision tourism is well developed in KNP, and the revenues from it support the conservation of the large and medium-sized Sudano-Sahelian fauna in Senegal.

		5.2.2 The parks in the prefectures of Gaoual and Koundara are developed and equipped in order to better meet their tourist vocation
		5.2.3 Hotel facilities are upgraded or created in the BijagSO Archipelago and Varela. Tourism products are developed and offered to visitors.

5.2 TIMELINE OF MEASUREMENTS

Strategic Axes, Provisions, Measures	Horizons																		
	Horizon 2025					Horizon 2030					Horizon 2040								
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
1. Promote sub-regional cooperation for the management and sustainable development of transboundary ecosystems and resources																			
Provision 1.1: Ensure sustainable use of natural resources																			
1.1.1 Establish a Water Convention or Charter to make IWRM effective																			
1.1.2 Pool information on natural resources																			
1.1.3 Strengthen the scientific and technical capacities of stakeholders																			
1.1.4 Set up an observatory on the environment and natural resources																			
2. Strengthen the regulatory and institutional framework for environmental management																			
Provision 2.1: Intervene on the pressures most harmful to biodiversity																			
2.1.1 Ensure an effective ban on illegal gold panning, outside the corridors where gold panning is permitted																			
2.1.2 Establish a principle of no loss of biodiversity for all deforestation operations/works and major works																			
Provision 2.2: Protect the coastline and waterways																			
2.2.1 Regulate the removal of sand and gravel from watercourses																			
2.2.2 Control sand removal from the coastline																			
2.2.3 Prohibit and control coastal developments that block the transit of sediments																			
Provision 2.3: Ensure the effective application of environmental regulations																			
2.3.1 Capacity building of environmental protection services in the different member countries																			
3. Better understand biodiversity to protect its richness, reduce major environmental pressures and propose integrated development																			
Provision 3.1: Improve knowledge of biodiversity																			
3.1.1 Plan an overall assessment of the state of biodiversity at the scale of the basins and ensure a follow-up																			
3.1.2 Identify the water requirements (in terms of duration, quantity) of water-dependent environments																			
Provision 3.2: Reduce sources and releases of POPs and PCBs used in agriculture																			
3.2.1 Review the lists of regulated or banned products and harmonising these lists between countries																			
3.2.2 Strengthen the capacity of laboratories in terms of expertise and equipment for the monitoring of POPs (Persistent Organic Pollutants) and PCBs (Polychlorinated Biphenyls)																			
3.2.3 Conduct Information, Education and Communication sessions with farmers																			
Provision 3.3: Eliminate the areas of deposits likely to degrade water quality																			
3.3.1 Carry out feasibility studies of 7 depot sites																			
3.3.2 Develop up a waste treatment plan																			
Provision 3.4: Reduce the effects of deforestation																			
3.4.1 Establish nurseries for the production of local exotic species for the restoration and rehabilitation of degraded forest landscapes																			
3.4.2 Reforest degraded areas																			
3.4.3 Maintain the plantations that have been created																			
Provision 3.5: Involve the public in actions to promote sustainable management																			
3.5.1 Conduct Information - Education - Communication for adults and young people																			
3.5.2 Sensitise local communities to experiment with and disseminate good agroforestry practices and adapted technologies that can help reduce pressure on natural plant resources																			
3.5.3 Promote participatory forest management																			
3.5.4 Promote the restoration of degraded mangrove sites through community participation																			

Strategic Axes, Provisions, Measures		Horizons																		
		Horizon 2025				Horizon 2030					Horizon 2040									
		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
<i>Provision 3.6: Valorise NTFPs (Non Timber Forest Products)</i>																				
3.6.1	Valorise NTFPs by supporting the production, processing and marketing of these products																			
3.6.2	Promote income-generating but ecologically "useful" activities, such as regenerative agroforestry systems, with "food forests" and seed and species nurseries.																			
<i>Provision 3.7: Strengthen the interest and role of Protected Areas</i>																				
3.7.1	Strengthen the network of Protected Areas																			
3.7.2	Improve the management of PAs through the implementation of management delegation																			
<i>Provision 3.8: Promote actions/projects based on the balance between the activities of resident populations and the sustainable exploitation of resources</i>																				
3.8.1	Implement cashew tree and Acacia mellifera hedge plantations																			
4. Ensure rational quantitative and qualitative management of water in accordance with the needs of the natural environment																				
<i>Provision 4.1: Ensure regular monitoring of water quality</i>																				
4.1.1	Establish and monitor water quality in the OMVG area																			
4.1.2	Assess laboratory capacity and potential laboratories to perform the analyses (see measure 3.2.2 above)																			
<i>Provision 4.2: Take into account environmental issues in the management of dams</i>																				
4.2.1	Define environmental flows and instream flow modulations to meet the water needs of the environment																			
4.2.2	Implement the environmental flow: device, management modalities...																			
4.2.3	Assess the impacts of land salinisation																			
5: Promote ecotourism development																				
<i>Provision 5.1: Develop sustainable and comprehensive tourism combining the values of culture, nature and human activities</i>																				
5.1.1	Know the potential of each park and carry out a feasibility study and infrastructure needs for accommodation and tourist reception																			
5.1.2	Develop river cultural routes in rural areas such as the Ninki Nanka trail																			
5.1.3	Develop tourism in Janjanbureh: community-based cultural and nature tours																			
5.1.4	Develop ecotourism and vision tourism in the Badiar National Park (BNP)																			
5.1.5	Establish at least 9 ecolodges in protected areas, by the sea and near natural sites																			
5.1.6	Develop a chimpanzee tourism activity at Mont Loura (Mali Prefecture)																			
5.1.7	Engage communities and their community organisations in ecotourism																			
<i>Provision 5.2: Create, strengthen and improve infrastructures that serve tourism development</i>																				
5.2.1	Promote the development of hotels, access roads, other infrastructure																			
5.2.2	Improve road, water and energy infrastructure, park facilities in the prefectures of Gaoual and Koundara																			
5.2.3	Improve facilities in the Bijagos Archipelago and Varela																			

5.3 COST OF THE MEASURES

	Activities	Total budget (USD)	2025	2030	2040
Strategic Area 1. Promote sub-regional cooperation for the management and sustainable development of transboundary ecosystems and resources		1 136 890	1 136 890		
			100%		
	<i>Provision 1.1 Ensure sustainable use of natural resources</i>				
1.1.1	Establish a Water Convention or Charter to make IWRM effective	137 233	137 233		
1.1.2	Pool information on natural resources	514 624	514 624		
1.1.3	Strengthen the scientific and technical capacities of stakeholders	428 853	428 853		
1.1.4	Set up an observatory on the environment and natural resources	56 180	56 180		
Strategic Area 2. Strengthen the regulatory and institutional framework for environmental management		3 330 000	3 330 000		
			100%		
	<i>Provision 2.1: Intervene on the pressures most harmful to biodiversity</i>	<i>80 000</i>	<i>80 000</i>	<i>0</i>	<i>0</i>
2.1.1	Ensure an effective ban on illegal gold panning, outside the corridors where gold panning is permitted	80 000	80 000		
2.1.2	Establish a principle of no loss of biodiversity for all deforestation operations/works and major works	0			
	<i>Provision 2.2: Protect the coastline and waterways</i>	<i>2250000</i>	<i>2250000</i>	<i>0</i>	<i>0</i>
2.2.1	Regulate the removal of sand and gravel from watercourses	0			
2.2.2	Control sand removal from the coastline	250 000	250 000		
2.2.3	Prohibit and control coastal developments that block the transit of sediments	2 000 000	2 000 000		
	<i>Provision 2.3: Ensure the effective application of environmental regulations</i>	<i>1 000 000</i>	<i>1 000 000</i>	<i>0</i>	<i>0</i>
2.3.1	Capacity building of environmental protection services in the different member countries	1 000 000	1 000 000		
Strategic axis 3: Better understand biodiversity to protect its wealth, reduce the main environmental pressures and propose integrated development		35 348 332	11 935 778	23 412 553	0
			33,77%	66,23%	0
	<i>Provision 3.1: Improve knowledge of biodiversity</i>	<i>786 517</i>	<i>561 798</i>	<i>224 719</i>	<i>0</i>
3.1.1	Plan an overall assessment of the state of biodiversity at the scale of the basins and ensure a follow-up	561 798	561 798		
3.1.2	Identify the water requirements (in terms of duration, quantity) of water-dependent environments	224 719		224 719	
	<i>Provision 3.2: Reduce sources and releases of POPs and PCBs used in agriculture</i>	<i>483 146</i>	<i>393 258</i>	<i>89 888</i>	<i>0</i>
3.2.1	Review the lists of regulated or banned products and harmonising these lists between countries	89 888		89 888	
3.2.2	Strengthen the capacity of laboratories in terms of expertise and equipment for the monitoring of POPs (Persistent Organic Pollutants) and PCBs (Polychlorinated Biphenyls)	56 180	56 180		
3.2.3	Conduct Information, Education and Communication sessions with farmers	337 079	337 079		
	<i>Provision 3.3: Resolve the areas of deposits likely to degrade water quality</i>	<i>1 516 854</i>	<i>1 067 415</i>	<i>449 439</i>	<i>0</i>
3.3.1	Conduct feasibility studies of 7 depot sites	393 258	393 258		
3.3.2	Develop a waste treatment plan	1 123 596	674 157	449 439	
	<i>Provision 3.4: Reduce the effects of deforestation</i>	<i>24 800 000</i>	<i>7 200 000</i>	<i>17 600 000</i>	<i>0</i>
3.4.1	Establish nurseries for the production of local exotic species for the restoration and rehabilitation of degraded forest landscapes	18 000 000	7 200 000 €	10 800 000	
3.4.2	Reforest degraded areas	6 000 000		6 000 000	
3.4.3	Maintain the plantations that have been created	800 000		800 000	

	Activities	Total budget (USD)	2025	2030	2040
	<i>Provision 3.5: Involve the public in actions to promote sustainable management</i>	2 438 374	2 121 451	316 922	0
3.5.1	Conduct Information - Education - Communication for adults and young people	235 955		235 955	
3.5.2	Sensitise local communities to experiment with and disseminate good agroforestry practices and adapted technologies that can help reduce pressure on natural plant resources	2 000 000	2 000 000		
3.5.3	Promote participatory forest management	30 877	18526	12 351	
3.5.4	Promote the restoration of degraded mangrove sites through community participation	171 541	102925	68 616	
	<i>Provision 3.6: Valorise NTFPs (Non Timber Forest Products)</i>	900 592	540 355	360 236	0
3.6.1	Valorise NTFPs by supporting the production, processing and marketing of these products	857 706	514624	343 082	
3.6.2	Promote income-generating but ecologically "useful" activities, such as regenerative agroforestry systems, with "food forests" and seed and species nurseries.	42 885	25731	17 154	
	<i>Provision 3.7: Strengthen the interest and role of Protected Areas</i>	4 337 079	0	4 337 079	0
3.7.1	Strengthen the network of Protected Areas	337 079		337 079	
3.7.2	Improve the management of PAs through the implementation of management delegation	4 000 000		4 000 000	
	<i>Provision 3.8: Promote actions/projects based on the balance between the activities of resident populations and the sustainable exploitation of resources</i>	85771	51500	34271	0
3.8.1	Implement cashew tree and Acacia mellifera hedge plantations	85 771	51 500	34 271	
Strategic axis 4: Ensure rational quantitative and qualitative management of water in accordance with the needs of the natural environment		1 348 159	685 315	438 124	224 720
			50,83%	32,50%	16,67%
	<i>Provision 4.1: Ensure regular monitoring of water quality</i>	1 067 260	404 416	438 124	224 720
4.1.1	Establish and monitor water quality in the OMVG area	1 011 080	348 236	438 124	224 720
4.1.2	Assess laboratory capacity and potential laboratories to perform the analyses (see measure 3.2.2 above)	56 180	56 180		
	<i>Provision 4.2: Take into account environmental issues in the management of dams</i>	280 899	280 899	0	0
4.2.1	Define environmental flows and instream flow modulations to meet the water needs of the environment	112 360	112 360		
4.2.2	Implement the environmental flow: device, management modalities...	67 416	67 416		
4.2.3	Assess the impacts of land salinisation	101 124	101 124		
Strategic Area 5: Promote ecotourism development		407 049 438	165 715 730	241 333 708	0
			40,70%	59,30%	0%
	<i>Provision 5.1: Develop sustainable and comprehensive tourism combining the values of culture, nature and human activities</i>	11 279 775	7 407 865	3 871 910	0
5.1.1	Know the potential of each park and carry out a feasibility study and infrastructure needs for accommodation and tourist reception	179 775	107 865	71 910	
5.1.2	Develop river cultural routes in rural areas such as the Ninki Nanka trail	2 000 000	1 200 000	800 000	
5.1.3	Develop tourism in Janjanbureh: community-based cultural and nature tours	2 500 000	1 500 000	1 000 000	
5.1.4	Develop ecotourism and vision tourism in the Badiar National Park (BNP)	2 500 000	2 500 000		
5.1.5	Establish at least 9 ecolodges in protected areas, by the sea and near natural sites	2 000 000	800 000	1 200 000	
5.1.6	Develop a chimpanzee tourism activity at Mont Loura (Mali Prefecture)	100 000	100 000		
5.1.7	Engage communities and their community organisations in ecotourism	2 000 000	1 200 000	800 000	
	<i>Provision 5.2: Create, strengthen and improve infrastructures that serve tourism development</i>	395 769 663	158 307 865	237 461 798	0
5.2.1	Promote the development of hotels, access roads, other infrastructure	12 000 000	4 800 000	7 200 000	
5.2.2	Improve road, water and energy infrastructure, park facilities in the prefectures of Gaoual and Koundara	2 500 000	1 000 000	1 500 000	
5.2.3	Improve facilities in the Bijagos Archipelago and Varela	381 269 663	152 507 865	228 761 798	

5.4 RISKS OF NON-IMPLEMENTATION OF MEASURES

	Activities	Risk of non-fulfilment	Possibility of occurrence	Importance of the impact	Proposed risk management measure
Strategic Area 1. Promote sub-regional cooperation for the management and sustainable development of transboundary ecosystems and resources					
<i>Provision 1.1: Ensure sustainable use of natural resources</i>					
1.1.1	Establish a Water Convention or Charter to make IWRM effective	Lack of agreements between member countries or agreements difficult to reach	-	+	Implementing a consultation that takes into account all stakeholders
1.1.2	Pool information on natural resources	Lack of or too little mobilisation of actors for research and data provision	-	+	Consult on the interest of the measure and implement the appropriate technical and human resources
1.1.3	Strengthen the scientific and technical capacities of stakeholders	Co-opted profiles lacking the required skills. Low motivation of prospective staff.	-	+	Recruiting staff according to their abilities and performance Providing appropriate technical resources
1.1.4	Set up an observatory on the environment and natural resources	Lack of staff buy-in Update and maintain after service	-	+	Consult on the interest of the measure and recruit staff according to their capacities and performance (level of expertise) Provide appropriate technical means
Strategic Area 2. Strengthen the regulatory and institutional framework for environmental management					
<i>Provision 2.1: Intervene on the pressures most harmful to biodiversity</i>					
2.1.1	Ensure an effective ban on illegal gold panning, outside the corridors where gold panning is permitted	Lack of willingness to regulate and control these practices	-	+	Consult and convince on the environmental damage of these practices and the interest to regulate them
2.1.2	Establish a principle of no loss of biodiversity for all deforestation operations/works and major works	Lack of willingness to integrate these provisions	+	+	Consult and convince on the need to compensate for the loss of woodland
<i>Provision 2.2: Protect the coastline and waterways</i>					
2.2.1	Regulate the removal of sand and gravel from watercourses	Lack of willingness to regulate and control these practices	+	+	Consult and convince on the environmental damage of these practices and the interest to regulate them
2.2.2	Control sand removal from the coastline	Lack of willingness to regulate and control these practices	+	+	Consult and convince on the environmental damage of these practices and the interest to regulate them
2.2.3	Prohibit and control coastal developments that block the transit of sediments	Lack of willingness to regulate and control these practices	+	+	Consult and convince on the environmental damage of these practices and the interest to regulate them
<i>Provision 2.3: Ensure the effective application of environmental regulations</i>					
2.3.1	Capacity building of environmental protection services in the different member countries	Lack of willingness to strengthen or establish such a service Lack of funding	+	+	Consult and convince on the environmental damage of illegal practices Allocate sufficient human and technical resources to ensure the sustainability of the service
Strategic axis 3: Better understand biodiversity to protect its wealth, reduce the main environmental pressures and propose integrated development					
<i>Provision 3.1: Improve knowledge of biodiversity</i>					
3.1.1	Draw up an overall assessment of the state of biodiversity at the scale of the basins and ensure a follow-up	No risk of non-fulfilment			
3.1.2	Identify the water requirements (in terms of duration, quantity) of water-dependent environments	Unable to obtain information for quantification of water needs.	-	-	Have proven skills and expertise in the field
<i>Provision 3.2: Reduce sources and releases of POPs and PCBs used in agriculture</i>					
3.2.1	Reviewing the lists of regulated or banned products and harmonising these lists between countries	Lack of willingness to harmonise these lists	+	+	To consult and convince on the need to control the most harmful products for the natural environment and humans
3.2.2	Strengthen the capacity of laboratories in terms of expertise and equipment for the monitoring of POPs (Persistent Organic Pollutants) and PCBs (Polychlorinated Biphenyls)	Lack of specialised laboratories for these analyses	+	+	Set up a partnership with an existing laboratory or set up a specific laboratory
3.2.3	Conduct Information, Education and Communication sessions with farmers	Lack of interest and participation of farmers	-	-	Targeting the most interested groups
<i>Provision 3.3: Eliminate the areas of deposits likely to degrade water quality</i>					
3.3.1	Carry out feasibility studies of 7 depot sites	No risk of non-fulfilment			
3.3.2	Plan a waste treatment plan	No risk of non-fulfilment			

	Activities	Risk of non-fulfilment	Possibility of occurrence	Importance of the impact	Proposed risk management measure
<i>Provision 3.4: Reduce the effects of deforestation</i>					
3.4.1	Establish nurseries for the production of local exotic species for the restoration and rehabilitation of degraded forest landscapes	Lack of available land	+	+	Ensuring the availability of land
3.4.2	Reforest degraded areas	Lack of available land	+	+	Ensuring the availability of land
3.4.3	Maintain the plantations that have been created	Lack of participation / motivation of local communities	+	+	Allocate sufficient human and technical resources to monitor the plantations Ensure follow-up with local communities
<i>Provision 3.5: Involve the public in actions to promote sustainable management</i>					
3.5.1	Information - Education - Communication for adults and young people	Lack of interest and participation of target populations	-	-	Targeting the most interested groups
3.5.2	Sensitise local communities to experiment with and disseminate good agroforestry practices and adapted technologies that can help reduce pressure on natural plant resources	Lack of interest and participation of target populations	-	-	Targeting the most interested groups
3.5.3	Promote participatory forest management	Lack of interest and participation of target populations	-	-	Targeting the most interested groups
3.5.4	Promote the restoration of degraded mangrove sites through community participation	Lack of interest and participation of target populations	-	-	Targeting the most interested groups
<i>Provision 3.6: Valorise NTFPs (Non Timber Forest Products)</i>					
3.6.1	Valorise NTFPs by supporting the production, processing and marketing of these products	Lack of interest and participation of target populations	-	-	Targeting the most interested groups
3.6.2	Promote income-generating but ecologically "useful" activities, such as regenerative agroforestry systems, with "food forests" and seed and species nurseries.	Lack of interest and participation of target populations	-	-	Targeting the most interested groups
<i>Provision 3.7: Strengthen the interest and role of Protected Areas</i>					
3.7.1	Strengthen the network of Protected Areas	Absence or too little mobilisation of local actors (willingness to propose a reform that may be important or profound)	-	-	Implementing a consultation process that takes into account all stakeholders Having people with experience in conducting this type of action
3.7.2	Improve the management of PAs through the implementation of management delegation	Rejection by states of this type of partnership (loss of sovereignty)	+	+	To have feedback on this type of management
<i>Provision 3.8: Promote actions/projects based on the balance between the activities of resident populations and the sustainable exploitation of resources</i>					
3.8.1	Implement cashew tree and Acacia mellifera hedge plantations	Lack of available land	+	+	Ensuring the availability of land
Strategic axis 4: Ensure rational quantitative and qualitative management of water in accordance with the needs of the natural environment					
<i>Provision 4.1: Ensure regular monitoring of water quality</i>					
4.1.1	Establish and monitor water quality in the OMVG area	Lack of willingness to do so	-	-	Allocate sufficient human and technical resources to ensure the sustainability of monitoring Search for reliable analytical laboratories
4.1.2	Assess laboratory capacity and potential laboratories to perform the analyses (see measure 3.2.2 above)	Lack of specialised laboratories for these analyses	+	+	Set up a partnership with an existing laboratory or set up a specific laboratory
<i>Provision 4.2: Take into account environmental issues in the management of dams</i>					
4.2.1	Define environmental flows and instream flow modulations to meet the water needs of the environment	Focusing solely on deliverability versus environmental issues	-	+	Impose environmental management of flows as part of the design studies for structures Base a choice on the manager who ensures the best compromise between "electricity production capacity and consideration of and respect for environmental issues".
4.2.2	Implement the environmental flow: device, management modalities...	Non-functional device(s)	-	+	Impose an obligation of result on the manager
4.2.3	Assess the impacts of land salinisation	Absence or low interest of the MOA, managers for this type of subject	+	+	Impose these subjects in the framework of the definition studies of the works

PROGRAMME OF MEASURES

	Activities	Risk of non-fulfilment	Possibility of occurrence	Importance of the impact	Proposed risk management measure
Strategic Area 5: Promote ecotourism development					
<i>Provision 5.1: Develop sustainable and comprehensive tourism combining the values of culture, nature and human activities</i>					
5.1.1	Know the potential of each park and carry out a feasibility study and infrastructure needs for accommodation and tourist reception	Lack of will or sufficient financial means to carry out these studies Destination neglected by tourist circuits	+	-	Evaluate the interest of the destination Have sufficient technical and financial means
5.1.2	Develop river cultural routes in rural areas such as the Ninki Nanka trail	Lack of will or sufficient financial means to carry out these studies Destination neglected by tourist circuits	+	-	Evaluate the interest of the destination Have sufficient technical and financial means
5.1.3	Develop tourism in Janjanbureh: community-based cultural and nature tours	Lack of will or sufficient financial means to carry out these studies Destination neglected by tourist circuits	+	-	Evaluate the interest of the destination Have sufficient technical and financial means
5.1.4	Develop ecotourism and vision tourism in the Badiar National Park (BNP)	Lack of will or sufficient financial means to carry out these studies Destination neglected by tourist circuits	-	-	Evaluate the interest of the destination Have sufficient technical and financial means
5.1.5	Establish at least 9 ecolodges in protected areas, by the sea and near natural sites	Lack of will or sufficient financial means to carry out these studies Destination neglected by tourist circuits	+	-	Evaluate the interest of the destination Have sufficient technical and financial means
5.1.6	Develop a chimpanzee tourism activity at Mont Loura (Mali Prefecture)	Lack of will or sufficient financial means to carry out these studies Destination neglected by tourist circuits	-	-	Evaluate the interest of the destination Have sufficient technical and financial means
5.1.7	Engage communities and their community organisations in ecotourism	Lack of interest in the community organisations to be engaged	-	-	Have a solid vision of the communities that can be involved in the projects envisaged
<i>Provision 5.2: Create, strengthen and improve infrastructures that serve tourism development</i>					
5.2.1	Promote the development of hotels, access roads, other infrastructure	Lack of funding	+	-	Ensuring a sound plan for sources of investment (as well as how to pay for running costs)
5.2.2	Improve road, water and energy infrastructure, park facilities in the prefectures of Gaoual and Koundara	Lack of funding	+	-	Ensuring a sound plan for sources of investment (as well as how to pay for running costs)
5.2.3	Improve facilities in the Bijagos Archipelago and Varela	Lack of funding Destination not included in tourist circuits	+	-	Ensuring a sound plan for sources of investment (as well as how operating costs will be met) Ensuring promotion of the destination

5.5 OWNERSHIP OF THE MEASURES

Project owner	List of provisions / measures	Estimated costs (USD)	2022 - 2025	20 252 030	2030 - 2040	Planned / Anticipated financing
Strategic Area 1. Promote sub-regional cooperation for the management and sustainable development of transboundary ecosystems and resources						
<i>Provision 1.1: Ensure sustainable use of natural resources</i>						
OMVG	1.1.1	137 233	137 233			OMVG
OMVG	1.1.2	514 624	514 624			OMVG
OMVG	1.1.3	428 853	428 853			OMVG
OMVG	1.1.4	56 180	56 180			OMVG
Strategic Area 2. Strengthen the regulatory and institutional framework for environmental management						
<i>Provision 2.1: Intervene on the pressures most harmful to biodiversity</i>						
OMVG + Ministries of Mines and Geology of the different countries	2.1.1	80 000	80 000			Member States + OMVG
OMVG + environment ministries of the different countries	2.1.2	0				Member States + OMVG
<i>Provision 2.2: Protect the coastline and waterways</i>						
OMVG + environment ministries of the different countries	2.2.1	0				Member States + OMVG
OMVG + environment ministries of the different countries	2.2.2	250 000	250 000			Member States + OMVG
OMVG + environment ministries of the different countries	2.2.3	2 000 000	2 000 000			Member States + OMVG
<i>Provision 2.3: Ensure the effective application of environmental regulations</i>						
OMVG + environment ministries of the different countries	2.3.1	1 000 000	1 000 000			Member States + OMVG
Strategic axis 3: Better understand biodiversity to protect its wealth, reduce the main environmental pressures and propose integrated development						
<i>Provision 3.1: Improve knowledge of biodiversity</i>						
Environment ministries of the different countries	3.1.1	561 798	561 798			international donors, IUCN ?
Environment ministries of the different countries	3.1.2	224 719		224 719		international donors, IUCN ?
<i>Provision 3.2: Reduce sources and releases of POPs and PCBs used in agriculture</i>						
OMVG + ministries of agriculture of different countries	3.2.1	89 888		89 888		Member States + OMVG
OMVG + ministries of agriculture of different countries	3.2.2	56 180	56 180			Member States + OMVG
Ministries of Agriculture of the different countries	3.2.3	337 079	337 079			Member States + OMVG + international donors
<i>Provision 3.3: Resolve the areas of deposits likely to degrade water quality</i>						
Ministries in charge of waste management in member countries	3.3.1	393 258	393 258			Member States + international donors
Ministries in charge of waste management in member countries	3.3.2	1 123 596	674 157	449 439		Member States + international donors
<i>Provision 3.4: Reduce the effects of deforestation</i>						
OMVG or National Directorates of Water and Forests/Ministry of Environment, Water and Forests	3.4.1	18 000 000	7 200 000 €	10 800 000		OMVG
Direction des Eaux et Forêts/Ministry of the Environment, Water and Forests	3.4.2	6 000 000		6 000 000		OMVG and international donors
Direction des Eaux et Forêts/Ministry of the Environment, Water and Forests	3.4.3	800 000		800 000		OMVG and international donors
<i>Provision 3.5: Involve the public in actions to promote sustainable management</i>						
OMVG + ministries of environment and education	3.5.1	235 955		235 955		international donors
OMVG + national water and forestry directorates / ministries of the environment	3.5.2	2 000 000	2 000 000			international donors
OMVG + Ministries of Environment / Forestry Department	3.5.3	30 877	18 526	12 351		international donors
Ministry of Fisheries and Ministry of the Environment	3.5.4	171 541	102 925	68 616		international donors

PROGRAMME OF MEASURES

Project owner	List of provisions / measures	Estimated costs (USD)	2022 - 2025	20 252 030	2030 - 2040	Planned / Anticipated financing
<i>Provision 3.6: Valorise NTFPs (Non Timber Forest Products)</i>						
OMVG + Ministry of Environment	3.6.1	857 706	514624	343 082		member countries and international donors
OMVG + Water and Forestry Service	3.6.2	42 885	25731	17 154		member countries and international donors
<i>Provision 3.7: Strengthen the interest and role of Protected Areas</i>						
Environment ministries of the different countries	3.7.1	337 079		337 079		member countries and international donors
Environment ministries of the different countries	3.7.2	4 000 000		4 000 000		member countries and international donors
<i>Provision 3.8: Promote actions/projects based on the balance between the activities of resident populations and the sustainable exploitation of resources</i>						
OMVG + ministries of environment of the different member countries	3.8.1					
Strategic axis 4: Ensure rational quantitative and qualitative management of water in accordance with the needs of the natural environment						
<i>Provision 4.1: Ensure regular monitoring of water quality</i>						
OMVG + ministries of environment	4.1.1	1 011 080	348 236	438 124	224 720	OMVG + Member States
OMVG + ministries of agriculture	4.1.2	56 180	56 180			OMVG + Member States
<i>Provision 4.2: Take into account environmental issues in the management of dams</i>						
OMVG + ministries of environment	4.2.1	112 360	112 360			Public Private Partnership
OMVG + ministries of environment	4.2.2	67 416	67 416			Public Private Partnership
OMVG + ministries of environment	4.2.3	101 124	101 124			OMVG + Member States
Strategic Area 5: Promote ecotourism development						
<i>Provision 5.1: Develop sustainable and comprehensive tourism combining the values of culture, nature and human activities</i>						
Ministry of the Environment	5.1.1	179 775	107 865	71 910		Member State + international donors
GTA / Ministry of Tourism	5.1.2	2 000 000	1 200 000	800 000		Member State (Gambia)
GTA / Ministry of Tourism	5.1.3	2 500 000	1 500 000	1 000 000		Member State (Gambia)
Ministry of the Environment	5.1.4	2 500 000	2 500 000			Member State + international donors
Ministry of the Environment	5.1.5	2 000 000	800 000	1 200 000		Public Private Partnership. International donors
NGO Guinea ecology	5.1.6	100 000	100 000			Member State + international donors
Ministry of Tourism / Community organisations to be engaged	5.1.7	2 000 000	1 200 000	800 000		Member State (Gambia) + international donors
<i>Provision 5.2: Create, strengthen and improve infrastructures that serve tourism development</i>						
Ministry of Tourism	5.2.1	12 000 000	4 800 000	7 200 000		Public Private Partnership
Ministry of the Environment	5.2.2	2 500 000	1 000 000	1 500 000		Private investors
Ministry of Tourism	5.2.3	381 269 663	152 507 865	228 761 798		Public Private Partnership. International donors

5.6 IMPLEMENTATION FRAMEWORK

Environment and ecosystems	Description	OVI indicator (Baseline)	Budget (USD)	Actors	Period	Sources of verification	Risks and assumptions
Overall goal - vision 2040	Improve knowledge and control of biodiversity in order to ensure its protection and consideration in various development and infrastructure projects, and more particularly in ecotourism development.						
Strategic axes	Strategic Axis 1: Promote sub-regional cooperation for the management and sustainable development of transboundary ecosystems and resources						
	Strategic Axis 2: Strengthen the regulatory and institutional framework for environmental management						
	Strategic Axis 3: Better understand biodiversity to protect its wealth, reduce the main environmental pressures and propose integrated development						
	Strategic Axis 4: Ensure rational quantitative and qualitative management of water in accordance with the needs of the natural environment						
	Strategic Axis 5: Promote ecotourism development						
1.1 Ensure sustainable use of natural resources	1.1.1 Establish a Water Convention or Charter to make IWRM effective	Agreement or charter produced	137 233	OMVG	2022-2025	Agreement or charter produced	Inter-country consultation includes all stakeholders
	1.1.2 Pool information on natural resources	Data collected (type, country concerned, associated metrics)	514 624	OMVG	2022-2025	Annual review of data collected at the OMVG level	Provision of the necessary human and technical resources
	1.1.3 Strengthen the scientific and technical capacities of stakeholders	Type and number of actors and reinforcements carried out	428 853	OMVG	2022-2025	Competence audit of trained personnel	Recruitment of suitable profiles and the necessary technical resources
	1.1.4 Establish an observatory on the environment and natural resources	Platform developed Type and number of indicators monitored No. of people trained in the tool	56 180	OMVG	2022-2025	Functioning of the developed platform	Recruitment of suitable profiles and the necessary technical resources
2.1: Intervene on the pressures most harmful to biodiversity	2.1.1 Ensure an effective ban on illegal gold panning, outside the corridors where panning is permitted	No. of illegal sites identified	80 000	OMVG + Ministries of Mines and Geology of the different countries	2022-2025	Annual report of the services in charge of environmental protection	Operational environmental protection unit
	2.1.2 Establish a principle of no loss of biodiversity for all deforestation operations/works and major works	Balance of deforested areas (Ha) / reforested areas (Ha)	0	OMVG + environment ministries of the different countries	2022-2025	Annual report of the services in charge of environmental protection	Operational environmental protection unit
2.2: Protect the coastline and waterways	2.2.1 Regulate sand and gravel extraction from rivers	Number of sites and volumes withdrawn	0	OMVG + environment ministries of the different countries	2022-2025	Annual report of the services in charge of environmental protection	Operational environmental protection unit
	2.2.2 Controlling sand removal from the coastline	Number of sites and volumes withdrawn	250 000	OMVG + environment ministries of the different countries	2022-2025	Annual report of the services in charge of environmental protection	Operational environmental protection unit
	2.2.3 Prohibit and control coastal developments that block the transit of sediments	Type and No. of coastal developments	2 000 000	OMVG + environment ministries of the different countries	2022-2025	Annual report of the services in charge of environmental protection	Operational environmental protection unit
2.3: Ensure effective enforcement of environmental regulations	2.3.1 Capacity building of environmental protection services in the different member countries	No. of operational cells No. of observations made (checks, fines, etc.)	1 000 000	OMVG + environment ministries of the different countries	2022-2025	Production of annual reports on monitoring carried out	Implementation of the necessary human, technical and financial resources
3.1: Improve knowledge on biodiversity	3.1.1 Draw up an overall assessment of the state of biodiversity at the basin level and ensure monitoring	No. and location of habitat types surveyed No. and location of sites surveyed and inventoried No. and location of fauna/flora species surveyed	561 798	Environment ministries of the different countries	2022-2025	Drawing up the balance sheet report	Implementation of the necessary human, technical and financial resources
	3.1.2 Identify the water requirements (in terms of time, quantity) of water-dependent environments	No. of types and sites surveyed Seasonal requirements: volumes, flows... according to site	224 719	Environment ministries of the different countries	2025-2030	Needs analysis report	Implementation of the necessary human, technical and financial resources
3.2: Reduce sources and releases of POPs and PCBs used in agriculture	3.2.1 Review the lists of regulated or prohibited products and harmonise these lists between countries	List of regulated or banned products by country Annual monitoring of quantities of regulated or banned products	89 888	OMVG + ministries of agriculture of different countries	2025-2030	Revised national lists of regulated or banned products Annual monitoring of regulated or banned products	Operational environmental protection unit
	3.2.2 Strengthen laboratory capacity in terms of expertise and equipment for monitoring POPs (Persistent Organic Pollutants) and PCBs (Polychlorinated Biphenyls)	List of laboratories and the measurements they can perform	56 180	OMVG + ministries of agriculture of different countries	2022-2025	Sustainability of the selected laboratories	
	3.2.3 Carry out Information, Education and Communication sessions with farmers	No. of sessions carried out (max 30) Duration of sessions No. of farmers benefiting	337 079	Ministries of Agriculture of the different countries	2022-2025	Annual review of training provided by the Ministries of Agriculture	Provision of specialist trainers

PROGRAMME OF MEASURES

Environment and ecosystems	Description	OVI indicator (Baseline)	Budget (USD)	Actors	Period	Sources of verification	Risks and assumptions
3.3: Resolve areas of deposition likely to degrade water quality	3.3.1 Carry out feasibility studies of 7 depot sites	Number of studies carried out (max 7)	393 258	Ministries in charge of waste management in member countries	2022-2025	Feasibility studies produced	Implementation of appropriate skills and sufficient financial means
	3.3.2 Develop a waste treatment plan	No. of schemes completed (max 5)	1 123 596	Ministries in charge of waste management in member countries	2022-2030	Product diagrams	Implementation of appropriate skills and sufficient financial means
3.4: Reduce the effects of deforestation	3.4.1 Establish nurseries for the production of local exotic species for the restoration and rehabilitation of degraded forest landscapes	Number of functional central and village nurseries (max 3 central and 10 village nurseries)	18 000 000	OMVG or National Water and Forestry Directorates / Ministry of Environment, Water and Forests	2022-2030	Annual report drawn up by the OMVG, the National Water and Forestry Directorate or the Ministry of the Environment, Water and Forests	Provision of sufficient human, technical and financial resourcesLand for planting is available
3.4: Reduce the effects of deforestation	3.4.2 Reforesting degraded areas	Reforested areas (max 150 Ha)	6 000 000	Direction des Eaux et Forêts/Ministry of the Environment, Water and Forests	2025-2030	Annual report prepared by the Directorate of Water and Forests/Ministry of the Environment, Water and Forests	Provision of sufficient human, technical and financial resourcesLand for planting is available
	3.4.3 Maintain the plantations created	Areas maintained (max 150 Ha)	800 000	Direction des Eaux et Forêts/Ministry of the Environment, Water and Forests	2025-2030	Annual report prepared by the Directorate of Water and Forests/Ministry of the Environment, Water and Forests	Provision of sufficient human, technical and financial resources
3.5: Involve the public in sustainable management actions	3.5.1 Information - Education - Communication for adults and young people	No of teachers/schools trained (max 50 in 10 schools)	235 955	OMVG + ministries of environment and education	2025-2030	Annual review by OMVG and/or environment and education ministries	Provision of sufficient human, technical and financial resources
	3.5.2 Sensitise local communities to experiment with and disseminate good agroforestry practices and adapted technologies that can contribute to reducing pressure on resources	No. of training sessions carried out (max 12) Duration of sessions No. of people benefiting	2 000 000	OMVG + national water and forestry directorates / ministries of the environment	2022-2025	Annual report drawn up by the OMVG + national water and forestry directorates / ministries of the environment	Provision of sufficient human, technical and financial resources
	3.5.3 Promoting participatory forest management	No. of completed Forest Management Plans (max: 3 forests)	30 877	OMVG + Ministries of Environment Forestry Department	2022-2030	Design plans produced	
	3.5.4 Promoting the restoration of degraded mangrove sites through community participation	No. of women trained Area of mangrove reforested	171 541	Ministry of Fisheries and Ministry of the Environment	2022-2030	Annual report of the Ministry of Fisheries and the Ministry of the Environment	Provision of sufficient human, technical and financial resources
3.6: Add value to NTFPs (Non Timber Forest Products)	3.6.1 Add value to NTFPs by supporting the production, processing and marketing of these products	List of NTFPs concerned Volume of processed products Labelled products	857 706	OMVG + Ministry of Environment	2022-2030	OMVG Annual Report and Ministry of Environment	Provision of sufficient human, technical and financial resources
	3.6.2 Promote income-generating but ecologically 'useful' activities, such as regenerative agroforestry systems, with 'food forests' and seed and species nurseries.	No. of nurseries established No. of young people trained per nursery	42 885	OMVG + Water and Forestry Service	2022-2030	Annual report of the OMVG and the Water and Forestry Service	Provision of sufficient human, technical and financial resourcesLand for planting is available
3.7: Strengthen the value and role of Protected Areas	3.7.1 Strengthen the network of Protected Areas	No. and type of existing Pas No. and type of PAs created No. of restoration/enhancement projects per PA	337 079	Environment ministries of the different countries	2025-2030	Report of the Ministries of Environment of the different countries	Provision of sufficient human, technical and financial resources
	3.7.2 Improving the management of PAs through the implementation of delegated management	No. of PAs with delegated management	4 000 000	Environment ministries of the different countries	2025-2030	Annual report produced by the manager	
3.8: Promote actions/projects based on the balance between the activities of resident populations and the sustainable exploitation of resources	3.8.1 Cashew tree and <i>Acacia mellifera</i> hedge plantations	Number of plots (max 30) and planted areas (2-3 Ha/plot)	85 771	OMVG + Water and Forestry Services		Annual report of the OMVG and the Water and Forestry Service	Provision of sufficient human, technical and financial resourcesLand for planting is available
4.1: Ensure regular monitoring of water quality	4.1.1 Establish and monitor water quality in the OMVG area	Number and location of stations monitored List of parameters/station monitored	0	OMVG + ministries of environment	2022-2040	Annual report on the state of water quality produced by the OMVG	Functional monitoring: stations identified, samples and analyses carried out
	4.1.2 Assess laboratory capacity and potential laboratories to perform the analyses (see action 3.2.2 above)	List of laboratories and the measurements they can perform	56 180	OMVG + ministries of agriculture	2022-2025	Sustainability of the selected laboratories	

Environment and ecosystems	Description	OVI indicator (Baseline)	Budget (USD)	Actors	Period	Sources of verification	Risks and assumptions
4.2: Take into account environmental issues in the management of dams	4.2.1 Define environmental flows and instream flow modulations to meet the water needs of the environment	Seasonal flows and volumes	112 360	OMVG + ministries of environment	2022-2025	Environmental flow definition report	Environmental management principle imposed on the manager
	4.2.2 Implementing the environmental flow mechanism, management arrangements...	Management guidelines Water body regulations Flow rates / daily volumes delivered	67 416	OMVG + ministries of environment	2022-2025	Establishment of the water regulations and the monitoring report on daily flows and volumes issued by the manager	Environmental management principle imposed on the manager
	4.2.3 Assessing the impacts of land salinisation	No. of studies carried out (max: 3 sites, i.e. 3 studies)	101 124	OMVG + ministries of environment	2022-2025	Specific studies carried out	Implementation of the necessary human, technical and financial resources
5.1: Develop a sustainable and global tourism combining the values of culture - nature - human activities	5.1.1 Know the potential of each park and carry out a feasibility study and a study of the infrastructure needs for accommodation and tourist reception	No. of feasibility studies carried out (max 2 studies)	179 775	Ministry of the Environment	2022-2030	Feasibility studies produced	Implementation of the necessary human, technical and financial resources
	5.1.2 Development of river cultural routes in rural areas like the Ninki Nanka trail	Length of marked circuit No. and type of equipment installed	2 000 000	GTA / Ministry of Tourism	2022-2030	Report prepared by the GTA / Ministry of Tourism	Implementation of the necessary human, technical and financial resources
	5.1.3 Tourism development in Janjanbureh: community-based cultural and nature tours	No. of circuits created No. and type of equipment created	2 500 000	GTA / Ministry of Tourism	2022-2030	Report prepared by the GTA / Ministry of Tourism	Implementation of the necessary human, technical and financial resources
5.1: Develop a sustainable and global tourism combining the values of culture - nature - human activities	5.1.4 Development of ecotourism and vision tourism in Badiar National Park (BNP)	No. of infrastructures built / rehabilitated by APR and economic benefits and beneficiary populations	2 500 000	Ministry of the Environment	2022-2025	Report by the Ministry of the Environment	Implementation of the necessary human, technical and financial resources
	5.1.5 Establishment of at least 9 ecolodges in protected areas, by the sea and near natural sites	Number and location of ecolodges built (max 9 ecolodges)	2 000 000	Ministry of the Environment	2022-2030	Report by the Ministry of the Environment	Implementation of the necessary human, technical and financial resources
	5.1.6 Development of a chimpanzee tourism activity at Mount Loura (Mali Prefecture)	No. of huts created No. Of direct jobs created among youth and women Chimpanzee population change	100 000	NGO Guinea ecology	2022-2025	Report by the NGO Guinée écologie	Implementation of the necessary human, technical and financial resources
	5.1.7 Engaging communities and their community organisations in ecotourism	Number of community organisations supported Types of support provided	2 000 000	Ministry of Tourism / Community organisations to be engaged	2022-2030	Review by the Ministry of Tourism	Implementation of the necessary human, technical and financial resources
5.2: Create, strengthen, improve infrastructures that serve tourism development	5.2.1 Promote the development of hotels, access roads, other infrastructure	No. of feasibility studies carried out Types and No. of infrastructure created	12 000 000	Ministry of Tourism	2022-2030	Review by the Ministry of Tourism	Implementation of the necessary human, technical and financial resources
	5.2.2 Improving road, water and energy infrastructure and park facilities in the prefectures of Gaoual and Koundara	No. of feasibility studies carried out Types and No. of infrastructure created	2 500 000	Ministry of the Environment	2022-2030	Report by the Ministry of the Environment	Implementation of the necessary human, technical and financial resources
	5.2.3 Improving facilities in the Bijagos Archipelago and Varela	Location and No. of developed hotel sites	381 269 663	Ministry of Tourism	2022-2030	Review by the Ministry of Tourism	Implementation of the necessary human, technical and financial resources

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.

The impact assessment is based on the level of definition of the projects. It therefore remains relatively generic at this stage, but this level of analysis makes it possible to list certain points of attention to be taken into account in the subsequent phases of the implementation of these measures.

The tables on the following pages list the main impacts identified and the mitigation measures envisaged.

The impacts related to Axis 1 concern mainly social aspects and impacts that report:

- The difficulty of reaching agreements in the context of establishing a Water Convention or Charter;
- The low level of support and mobilisation of stakeholders for the provision of data in the context of the sharing of information on natural resources;
- The possibility of mobilising profiles that do not have the necessary skills within the framework of the measure relating to the reinforcement of the scientific and technical capacities of the actors or the setting up of an environmental observatory.

For the first two points, the mitigation measures involve the implementation of a consultation process that is extended to all the stakeholders concerned and that is sufficiently sustained over time to settle the various issues that will arise, particularly during the preparation of the Water Convention or Charter.

With regard to the third point, the use of competent profiles requires the definition of sound and transparent recruitment procedures that are also based on gender equity.

Axis 2 concerns the reinforcement of the regulatory framework and the control of the main illegal and/or harmful activities for the environment and biodiversity. The measures envisaged call for the reinforcement or harmonisation of regulations between Member States and the implementation of effective and operational environmental control, which is the cornerstone of compliance with the regulations on the ground.

As for the previous axis, the impacts related to axis 2 concern:

- The difficulty in harmonising or strengthening regulations between different countries;
- The need to have sufficient human, technical and financial resources to ensure not only the controls on the ground but also the sustainability of these controls, which is certainly the most important point.

The proposed mitigation measures lead once again to a proposal for consultation between the member countries on subjects that are difficult to deal with but which constitute significant pressures on the natural environment and biodiversity.

These measures must be backed up by the definition of effective control on the ground (of the "environmental police" type) to be reinforced in each member country by sufficient human, technical and financial resources to ensure these missions.

Axis 3 covers all measures to improve knowledge and enhance the natural environment, as well as measures to promote biodiversity. The main impacts are listed below

- Lack of reliable or sufficient data to improve knowledge;
- With regard to the reduction of POPs and PCBs:

- Weak environmental control (echoes the need for stronger control mentioned in axis 2);
- Insufficient, unsustainable or unreliable technical means to monitor water quality;
- Low mobilisation of farmers, low receptivity on their part in the framework of IEC (Information, Education, Communication);
- The carrying out of studies that are not or not sufficiently operational for all matters concerning the reduction of deposits;

Apart from the lack of land, which represents the main risk of not carrying out reforestation and nursery creation measures, the projects aimed at involving local populations emphasise the need:

- To define in advance the target populations, the most receptive to the measures envisaged,
- To have a framework for these populations in the medium to long term,
- To ensure sufficient technical and financial means to ensure the sustainability of the measures.

All measures involving the public must be able to mobilise different categories of actors and all genres.

The strengthening of the Protected Areas network is based on a broad consultation with all stakeholders and the mobilisation of experienced actors.

The delegation of the management of PAs may eventually lead to a loss of interest on the part of the state if it does not retain a leading decision-making role.

Axis 4 concerns the rational management of water resources, in terms of quantity and quality, in accordance with the needs of the natural environment. Water quality monitoring is based on the implementation of sufficient human, technical and financial resources to ensure the sustainability and quality of monitoring. On the quantitative level, the development of dams and the modification of hydrological regimes can strongly affect water-dependent natural environments. It is necessary, if not essential, to define environmental flows, to implement them and to respect them in order to preserve the functionality of these environments and the environmental services they provide to the population.

The development of ecotourism, which is addressed in Axis 5, is seen as an opportunity to promote sustainable tourism based on natural and cultural wealth and to involve local populations as much as possible. Much remains to be done to promote such tourism and, beyond the necessary and essential development of infrastructures, it seems essential to target the populations to be involved. The definition of the tourism project also requires a reflection that cannot be limited to the site alone but must be considered within a global logic, a network both nationally and within the Member States, in order to bring about the greatest possible coherence.

The potential impacts relating to the construction of infrastructure and its operation may generate various impacts discussed in the diagnostic phase, in particular the consumption of natural environments and habitats, potential water and soil pollution and GHG emissions. These impacts lead to the selection of environmentally friendly and truly sustainable projects

ASSESSMENT OF THE SOCIAL AND ENVIRONMENTAL IMPACTS OF THE SECTOR PLAN

	Activities	Potential impact of the envisaged measures	Possibility of occurrence	Importance of the impact	Avoidance, mitigation or compensation measures
Strategic Axis 1. Promote sub-regional cooperation for the management and sustainable development of transboundary ecosystems and resources					
<i>Provision 1.1: Ensure sustainable use of natural resources</i>					
1.1.1	Establish a Water Convention or Charter to make IWRM effective	Lack of agreements between member countries or agreements difficult to reach	-	+	Implement a consultation process that takes into account all stakeholders Implement sufficient technical, human and financial resources
1.1.2	Pooling information on natural resources	Weak mobilisation of actors for research and data provisionDetailed research, collection, survey and necessarily time-consuming work.	-	+	Implement a consultation process that takes into account all stakeholders Implement sufficient technical, human and financial resources
1.1.3	Strengthen the scientific and technical capacities of stakeholders	Co-opted profiles lacking the required skills. Low motivation of prospective staff.	-	+	Recruiting staff according to their abilities and performance Providing appropriate technical resources
1.1.4	Setting up an observatory on the environment and natural resources	Staff membership Update and maintenance after delivery	-	+	Recruiting staff according to their abilities and performance (level of expertise) Providing appropriate technical resources
Strategic Axis 2. Strengthen the regulatory and institutional framework for environmental management					
<i>Provision 2.1: Intervene on the pressures most harmful to biodiversity</i>					
2.1.1	Ensure an effective ban on illegal gold panning, outside the corridors where gold panning is permitted	Non-operationality of measures put in place to combat illicit gold mining Weaknesses in the regulations relating to the practice of illicit gold mining	-	+	Implementing a concerted effort to strengthen and harmonise regulations in the various member countries Strengthening environmental protection on the ground through the implementation of effective control
2.1.2	Establish a principle of no loss of biodiversity for all deforestation operations/works and major works	Non-application of the relevant environmental legislation in the OMVG countries	+	+	Implement a consultation between the member countries on this subject Implement an effective control
<i>Provision 2.2: Protect the coastline and waterways</i>					
2.2.1	Regulate the removal of sand and gravel from watercourses	Lack of enforcement, or difficult enforcement	+	+	Implement an effective control in terms of human and technical resources
2.2.2	Controlling sand removal from the coastline	Illegal exploitation of marine sand	+	+	Implement an effective control in terms of human and technical resources
2.2.3	Prohibit and control coastal developments that block the transit of sediments	Failure to effectively implement the law on coastal management	+	+	Implement a consultation between the member countries on this subject Implement effective control in terms of human and technical resources
<i>Provision 2.3: Ensure the effective application of environmental regulations</i>					
2.3.1	Capacity building of environmental protection services in the different member countries	Lack of funding	+	+	Allocate sufficient human and technical resources to ensure the sustainability of the service
Strategic Axis 3: Better understand biodiversity to protect its wealth, reduce the main environmental pressures and propose integrated development					
<i>Provision 3.1: Improve knowledge of biodiversity</i>					
3.1.1	Draw up an overall assessment of the state of biodiversity at the scale of the basins and e	Difficulty in obtaining a comprehensive inventory and solid data Difficulty in monitoring the state of biodiversity	-	+	Define precise specifications for the mission Have proven skills in the field of ecology Implement sufficient human and technical resources
3.1.2	Identify the water requirements (in terms of duration, quantity) of water-dependent environments	Lack of information for quantification of water needs.	-	-	Have proven skills and expertise in the field
<i>Provision 3.2: Reduce sources and releases of POPs and PCBs used in agriculture</i>					
3.2.1	Reviewing the lists of regulated or banned products and harmonising these lists between countries	Limited or no control of products that very often escape the official market.	+	+	Implementing effective control in terms of human and technical resources
3.2.2	Strengthen the capacity of laboratories in terms of expertise and equipment for the monitoring of POPs (Persistent Organic Pollutants) and PCBs (Polychlorinated Biphenyls)	Problem of sustainability of laboratories over time Quality/reliability of results produced	+	+	Look for solid structures, well established and backed up by a "routine" activity (such as a university or research laboratory, a fishery products analysis laboratory, etc.).
3.2.3	Carry out Information, Education and Communication sessions with farmers	Low mobilisation of farmers Conservation of old practices (low receptivity).	-	-	Follow-up after the sessions have been completed
<i>Provision 3.3: Resolve the areas of deposits likely to degrade water quality</i>					
3.3.1	Carry out feasibility studies of 7 depot sites	Lack of operationality of the study	-	+	Have proven skills and expertise in the field
3.3.2	Drawing up a waste treatment plan	Lack of operationality of the study	-	+	Have proven skills and expertise in the field

	Activities	Potential impacts of the envisaged measures	Possibility of occurrence	Importance of the impact	Proposed risk management measure
Provision 3.4: Reduce the effects of deforestation					
3.4.1	Establish nurseries for the production of local exotic species for the restoration and rehabilitation of degraded forest landscapes	Lack of qualified staff Lack of participation/involvement of local communities	+	+	To have proven skills and expertise in the field To follow up with local communities
3.4.2	Reforesting degraded areas	Lack of monitoring of plantations Insufficient means for maintenance No collaboration from local communities	+	+	Allocate sufficient human and technical resources to monitor the plantations Ensure follow-up with local communities
3.4.3	Maintain the plantations that have been created	Lack of financial resources Lack of participation of local communities	+	+	Allocate sufficient human and technical resources to monitor the plantations Ensure follow-up with local communities
Provision 3.5: Involve the public in actions to promote sustainable management					
3.5.1	Information - Education - Communication for adults and young people	Lack of an appropriate institutional framework Quality of training and information tools Mobilisation of actors	-	-	Need to target the target populations Have skills, proven expertise in the field to ensure quality training
3.5.2	Sensitise local communities to experiment with and disseminate good agroforestry practices and adapted technologies that can help reduce pressure on natural plant resources	Lack of framework for consultation Reluctance of local communities to adopt new practices	-	-	Define target populations Have experienced trainers Follow-up with local communities
3.5.3	Promoting participatory forest management	Lack of interest from target populations			Define the target populationsImplement supervision and monitoring of the target populations Ensure sufficient technical and financial means
3.5.4	Promote the restoration of degraded mangrove sites through community participation	Failure to respect the biological resting period Deterioration of the planted cuttings	-	-	Implementing effective control in terms of human and technical resources
Provision 3.6: Add value to NTFPs (Non Timber Forest Products)					
3.6.1	Adding value to NTFPs by supporting the production, processing and marketing of these products	Low interest from target populations or discouragement if results are considered too poor	+	-	Define the target populationsImplement supervision and monitoring of the target populations Ensure sufficient technical and financial means
3.6.2	Promote income-generating but ecologically "useful" activities, such as regenerative agroforestry systems, with "food forests" and seed and species nurseries.	Low interest from target populations or discouragement if results are considered too poor	+	-	Define the target populationsImplement supervision and monitoring of the target populations Ensure sufficient technical and financial means
Provision 3.7: Strengthen the interest and role of Protected Areas					
3.7.1	Strengthen the network of Protected Areas	Designation of "secondary" or irrelevant sites	-	-	Ensuring sufficient consultation, involving all the actors involved over the duration of the mission Having people with experience in conducting this type of action
3.7.2	Improve the management of PAs through the implementation of management delegation	Possible disinterest of the State with regard to PAs under delegation of management	+	+	
Provision 3.8: Promote actions/projects based on the balance between the activities of resident populations and the sustainable exploitation of resources					
3.8.1	Cashew tree and Acacia mellifera hedge plantations	Lack of monitoring of plantations Insufficient means for maintenance No collaboration from local communities	+	+	Allocate sufficient human and technical resources to monitor the plantations Ensure follow-up with local communities
Strategic axis 4: Ensure rational quantitative and qualitative management of water in accordance with the needs of the natural environment					
Provision 4.1: Ensure regular monitoring of water quality					
4.1.1	Establish and monitor water quality in the OMVG area	Sustainability of monitoring. Quality of analyses.	+	+	Allocate sufficient human and technical resources to ensure the sustainability of monitoringSearch for reliable analytical laboratories
4.1.2	Assess laboratory capacity and potential laboratories to perform the analyses (see measure 3.2.2 above)	Problem of sustainability of laboratories over time; Quality/reliability of results produced	+	+	Look for solid structures, well established and backed up by a "routine" activity (such as a university or research laboratory, a fishery products analysis laboratory, etc.).
Provision 4.2: Take into account environmental issues in the management of dams					
4.2.1	Define environmental flows and instream flow modulations to meet the water needs of the environment	Difficulties for the manager to integrate this type of management	-	+	Impose environmental management of flows as part of the design studies for structures Base a choice on the manager who ensures the best compromise between "electricity production capacity and consideration of and respect for environmental issues".
4.2.2	Implement the environmental flow: device, management modalities...	Favouring productivity over environmental flow	+	+	Ensuring control of the flows released
4.2.3	Assess the impacts of land salinisation	Lack of consideration of study results	+	+	Consult on the results and implications for planning

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	Activities	Risk of non-fulfilment	Possibility of occurrence	Importance of the impact	Proposed risk management measure
Strategic Area 5: Promote ecotourism development					
	<i>Provision 5.1: Develop sustainable and comprehensive tourism combining the values of culture, nature and human activities</i>				
5.1.1	Know the potential of each park and carry out a feasibility study and infrastructure needs for accommodation and tourist reception	Pollution and degradation of biodiversity in protected areas during the construction and operation of tourism infrastructure	+	-	Compete projects on the basis of best sustainability and smallest environmental footprint
5.1.2	Development of river cultural routes in rural areas such as the Ninki Nanka trail	Pandemic Covid-19 Lack of funding	+	-	Ensuring sufficient human, technical and financial resources for capital and operational expenditure
5.1.3	Tourism development in Janjanbureh: community-based cultural and nature tours	Pandemic Covid-19 Lack of funding	+	-	Ensuring sufficient human, technical and financial resources for capital and operational expenditure
5.1.4	Development of ecotourism and vision tourism in the Badiar National Park (BNP)	Disturbance of ecosystems by human actions Pollution and possible degradation of biological diversity due to overuse of protected areas	-	-	Monitoring the use of the sites
5.1.5	Establishment of at least 9 ecolodges in protected areas, by the sea and near natural sites	Degradation of biological diversity due to overuse of sites; Water pollution due to poor management of solid and liquid waste from the operation of accommodation facilities	+	-	Ensure monitoring of site use Competing projects on the basis of best sustainability and smallest environmental footprint
5.1.6	Development of a chimpanzee tourism activity at Mont Loura (Mali Prefecture)	Disruption of customs and traditions due to the mixing of visitors and local people	-	-	Ensuring control of the number of visitors to the sites Providing information/guidance to tourists
5.1.7	Engaging communities and their community organisations in ecotourism	Poor targeting of community organisations to be engaged	-	-	Have a solid vision of the communities that can be involved in the projects envisaged
	<i>Provision 5.2: Create, strengthen and improve infrastructures that serve tourism development</i>				
5.2.1	Promote the development of hotels, access roads, other infrastructure	Pollution and degradation of biodiversity during the construction and operation of tourism infrastructure	+	-	Consider the environment as an input and not only when carrying out ESAs
5.2.2	Improve road, water and energy infrastructure, park facilities in the prefectures of Gaoual and Koundara	Pollution and degradation of biodiversity during the construction and operation of tourism infrastructure	+	-	Consider the environment as an input and not only when carrying out ESAs
5.2.3	Improve facilities in the Bijagos Archipelago and Varela	Pollution and degradation of biodiversity during the construction and operation of tourism infrastructure	+	-	Consider the environment as an input and not only when carrying out ESAs

7 CONCLUSIONS AND RECOMMENDATIONS

7.1 THE DETERMINANTS OF THE SCHEME

Natural and anthropogenic environmental changes are leading to the continuous and increasing erosion of habitats, species and natural terrestrial and marine environments. It is becoming urgent to consider environmental issues as a key to all reflections on land use planning or the creation of infrastructures. The environment should no longer be considered primarily (as is too often the case) at the time of drawing up environmental documentation (SESA, ESIA, EESR, etc.), but should set the framework for the discussions from the outset.

Taking the environment into account is not only about limiting consumption (of water, natural environments, species, soil) but also about adopting a much higher level of ambition which aims to :

- to enhance or even restore environments and habitats conducive to biodiversity,
- to preserve remarkable sites, and again if necessary to restore and enhance them, but also to protect and restore corridors between these spaces;
- to integrate the human being not only as a destructive fact, but by engaging him in a sustainable, responsible and empowered approach that allows the preservation of his living environment and biodiversity.
- But also to regulate, control and prohibit the destructive actions of the 'exploiters' and 'plunderers' of resources.

This is the ambition for tomorrow, but it must already be the ambition for today. The plan is therefore structured around these principles, which form the basis of the proposed measures.

As mentioned in the analysis of the risks of non-implementation or the summary analysis of the impacts, the measures often highlight the need for consultation, targeting, proper assessment and the availability of human, technical and financial resources commensurate with the issues at stake.

- Consultation is essential when it comes to adopting common rules for resource management or having a common vision of the functional links between habitats and species. The establishment of a common base of knowledge and rules is necessary in order to integrate environmental issues into all sectors of the plan, particularly agriculture, the various types of infrastructure and energy.
- Targeting to address initially the most receptive groups and communities, which can be extended to others in the longer or shorter term through a knock-on effect;
- Evaluate well so as not to think of a development only within its implementation site, but to consider it in a wider framework, both social and environmental, but also geographical, which may be of interest to the region, the basin, the OMVG...
- Have human, technical and financial resources available, as these are essential to implement and ensure the sustainability of the measures envisaged. This is an important point, and efforts must be made to mobilise carefully selected, proven skills. Technical and financial aspects are closely linked. The sustainability of the measures depends firstly on the resources that can be mobilised in terms of investment, but even more so on the means to ensure the running costs, as this is often the stumbling block for projects.

7.2 LINKS BETWEEN SECTORAL PLANS

The cross-cutting nature of the environment sector leads to the identification of links with other plans in order to appreciate the relationships that may exist. These links are specified in the table below. The variability of their nature should be noted.

MEASURES CONCERNED	SECTORAL PLAN CONCERNED AND NATURE OF THE LINK
1.1.1 Establish a Water Convention or Charter to make IWRM effective	Institutional / Governance: All measures foreseen in Axis 2: Addressing pressures on biodiversity and strengthening environmental protection services
2.1.1 Ensure an effective ban on illegal gold panning, outside the corridors where panning is permitted	Mining: similar to the Mining Sector Plan
3.1.2 Identify the water needs of water-dependent environments	Hydrology: knowledge of available resources and monitoring of the resource
3.2.2 Strengthen laboratory capacity in terms of expertise and equipment for POPs and PCB monitoring	Agriculture: monitoring of products used in agriculture
3.2.3 Carry out Information - Education - Communication sessions with farmers	Agriculture: accompanying measures for farmers
3.4.1 Establish nurseries for the production of local exotic species for the restoration and rehabilitation of degraded forest landscapes	Energy: common measure with the "wood energy" plantations planned on degraded areas.
3.4.2 Reforesting degraded areas	
3.8.1 Cashew tree and Acacia mellifera hedge plantations	Agriculture: complementary measure to be combined with what is planned in the framework of agricultural development
4.2.1 Define environmental flows and instream flow modulations to meet the water needs of the environment	Energy: Measure to be integrated into the definition studies for hydroelectric dams
4.2.2 Implementing the environmental flow	
4.2.3 Assessing the impacts of land salinisation	<ul style="list-style-type: none"> ➤ Agriculture: provision of results in the context of decision support for agricultural land development ➤ Infrastructures: provision of results in the context of decision support for the construction of anti-salt dams.
5.1.2 Development of river cultural routes in rural areas like the Ninki-Nanka trail	Energy: consideration of these uses in the context of the introduction of the environmental flow rate mentioned in 4.2.2
5.2.1 Promote the development of hotels, access roads, other infrastructure	Infrastructure and energy: to be coupled with the measures foreseen in these sectoral plans.
5.2.2 Improving road, water and energy infrastructure and park facilities in the prefectures of Gaoual and Koundara	Infrastructure and energy: to be coupled with the measures foreseen in these sectoral plans.



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Public limited company with a capital of 3 183 349 euros
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Intracom VAT number: FR 35 391 484 862 000 19

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